DIESEL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Use adequate ventilation.
Respiratory Protection	Not generally required unless needed to prevent respiratory irritation. In case of spill or leak resulting in unknown concentration, use NIOSH/MSHA-approved supplied air respirator.
Eye Protection	For splash protection, use chemical goggles and face shield.
Skin Protection	Use gloves resistant to the material being used, i.e., neoprene or nitrile rubber. Use protective garments to prevent excessive skin contact.

2.0 HEALTH HAZARD DATA

Recommended Exposure Limits	Not established.
Acute Effects of Overexposure	Eye: May cause mild irritation, with stinging and redness of eyes.
	Skin: May cause severe irritation. Repeated or prolonged contact may cause defatting of the skin, resulting in dermatitis. Dermal LD50 for diesel fuel is >5 mL/kg (rabbit).
	Inhalation: May cause irrigation to nose, throat or lungs. Headache, nausea, dizziness, unconsciousness may occur.
	Ingestion: May cause irritation to intestines. May cause headache, nausea, unconsciousness. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs. Oral LD50 for diesel fuel is 9 mL/kg (rat).

3.0 FIRST AID AND EMERGENCY PROCEDURES

Eye	Flush eyes with running water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
Skin	Immediately wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.
Inhalation	Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.
Ingestion	Do not induce vomiting. Seek immediate medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>130°F (>54°C) (Estimated)
Flammable Limits (% by Volume in Air)	LEL: Not Established; UEL: Not Established.
Fire Extinguishing Media	Dry chemical, foam or carbon dioxide.
Special Fire Fighting Procedures	Evacuate area of all unnecessary personnel. Shut off source, if possible. Use NIOSH/MSHA-approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 1.0 if conditions warrant. Water fog or spray may be used to cool exposed containers and equipment. Do not spray water directly on fire – product will float and could be reignited on surface of water.
Fire and Explosion Hazards	Carbon and sulphur oxides and various hydrocarbons formed when burned.

5.0 SPILL AND LEAK PROCEDURES

Evacuate the area of all unnecessary personnel. Wear protective equipment and/or garments described in Section 1.0 if exposure conditions warrant. Shut off source, if possible, and contain the spill. Protect from ignition. Keep out of water sources and sewers. Absorb in dry, inert material (sand, clay, etc.). Transfer to disposal drums using non-sparking equipment.

6.0 RESPONSE PERSONNEL

- Emergency Coordinator (large spill);
- Mine Site Services Department;
- Environment and Safety Manager;
- Other personnel as required and designated by the Site Manager.

7.0 EQUIPMENT

Small Spill

- Portable diesel pump and hoses;
- Container of appropriate size;
- Absorbents from facility spill kit (which require replacement once the spill is cleaned up);
- Personal protective equipment as specified in MSDS.

Large Spill

- The Emergency and Spill Coordinator may set up a decontamination zone with decontamination equipment (solvent wash, steamer, tyvek suits, etc);
- Portable diesel pump and hoses;
- Truck-, or skid-mounted tank of appropriate size;
- Absorbents as directed by Mine Site Services (spill kit absorbents will likely not be sufficient); absorbents may need to be flow to Jericho for the final clean up;
- Personal protective equipment as specified in MSDS.

8.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Spills at the fuel farm or bulk tanks will be contained by containment berms. These are the only places at Jericho where bulk diesel is stored. Recovery would involve pumping the spilled diesel back into the tank if tank integrity were not affected or into a suitable tank or tanks for temporary storage if the subject tank were damaged. Any diesel that was not contaminated by foreign matter would be put back into the supply

store. Contaminated diesel would be burned or backhauled on the winter supply for disposal by a hazardous waste contractor. If backhauled, the contaminated fuel would be temporarily stored at the Hazardous Waste Transfer Area.

A spill from a tanker truck used to transport fuel during the winter haul could be anywhere between the fuel supplier and Jericho. It is unlikely Jericho personnel would be called upon to assist with clean up of such a spill unless it was near the Jericho Mine. The method of containment and recovery would depend on the surface where the spill occurred. Section 5.4 of the Contingency Management Plan details procedures to be used, depending on where the spill occurred.

If the spill is reportable (>100 L) report on the NT/NU Spill Line, **867-920-8130**. In any case, log the spill and complete report.

Water

- Very unlikely;
- Containment boom deployed if possible;
- Diesel pumped from within berm and burned or pumped to a waste oil tank for backhaul south.

Ice

- Scrape up contaminated ice with heavy equipment and burn;
- Remove residual ice to a container and transport to the landfarm at the mine or south to hazardous waste facilities (depending on the location of the spill).

Land

- Use dyking, trenching, ditches, weirs, or berms as appropriate to contain spill; pump diesel uncontaminated by foreign matter into suitable containers for use
- Pump to a waste oil container for backhaul south;
- Place contaminated soil in the landfarm.
- Log the spill and complete report.

9.0 RESTORATION

Restoration applied will depend entirely on the nature of the spill and where it occurs:

- Spill behind berms may require replacement of sand used to protect berm liners to the extent possible without removing the tank(s). Contaminated sand may be burned to remove petroleum residues and re-used within a containment berm or placed in the PKCA or backhauled south to a hazardous waste contractor for disposal.
- Spills on soil require removal of the soil and replacement with clean soil; sites will be revegetated if practical.

- Spills on ice require no restoration.
- Spills on wetlands or muskeg will require restoration of wetland vegetation if practical once contaminants are removed.

AMMONIUM NITRATE SPILL RESPONSE

Ammonium nitrate is delivered and stored in one-tonne bags; emulsions are manufactured on site. Emulsion materials are stored in a controlled drainage area and emulsion manufacture occurs in a silled area within the emulsion plant that drains to a sump. Any spill of materials would be completed contained and could be cleaned up. Reusable spilled materials would be repackaged and used; materials contaminated with foreign material would be repackaged and shipped south on the winter supply to a contractor licensed to dispose of explosives materials.

The maximum credible ammonium nitrate spill would be one to a few bags, either at Jericho or on the winter road. Spills remote from the mine would likely be handled by contractor crews licensed to handle explosives; spills close to or at the mine would be handled by the mine's explosive contractor crews.

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible.
Personal Respirators (NIOSH-Approved)	For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection	Wear protective gloves and clean body-covering clothing
Eye Protection	Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	None established
Acute Effects of Overexposure	Eye: Causes irritation, redness and pain.
	Skin: Causes irritation to skin. Symptoms include redness, itching, and pain.
	Inhalation: May cause irritation to the respiratory tract; symptoms may include coughing, sore throat, and shortness of breath. At high temperatures, exposure to toxic nitrogen oxides decomposition products can quickly cause acute respiratory problems, Inhalation of large amounts causes systemic acidosis and abnormal hemoglobin.
	Ingestion: Large oral doses of nitrates may cause dizziness, abdominal pain, vomiting, bloody diarrhea, weakness, convulsions, and collapse. Harmful if swallowed. May cause methemoglobinemia resulting in cyanosis.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion	If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact	Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Eye Contact	Wash thoroughly with running water. Get medical advice if irritation develops.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	Not given
Flammable Limits	Not combustible, but substance is a strong oxidizer and its heat reaction with reducing agents or combustibles may cause ignition. May support combustion in an existing fire.
Explosion	Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated. Sensitive to mechanical impact.
Fire Extinguishing Media	Use flooding amounts of water in early stages of fire involving ammonium nitrate. Use any means suitable for extinguishing surrounding fire.
Special Fire Fighting Procedures	In the event of fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

5.0 SPILL AND LEAK PROCEDURES

Remove sources of heat and ignition. Collected waste may be transferred to a closed, preferably metal, container and sent off site to an approved hazardous waste disposal facility.

Small and moderate amounts of ammonium nitrate may be retained on site for use as nitrogen fertilizer. Do not allow to leach into fish-bearing waters.

Alternately, sweep spill into noncombustible container and dissolve in a large amount of water. Add soda ash. Mix and neutralize with 6M-HCl. Neutralized sludge may be sent off site to an approved hazardous waste disposal facility.

Contact the NT/NU Spill Line **867-920-8130** if there is a spill to the environment.

Log and complete a spill report.

6.0 RESPONSE PERSONNEL

- Explosives Superintendent;
- Explosives contractor employees as required;
- Mine Site Services Department (under the direction of the explosives contractor; employees will not directly handle explosives);
- Environment and Safety Manager (under the direction of the explosives contractor; Manager will not directly handle explosives).

7.0 EQUIPMENT

Ammonium nitrate is delivered in the form of prills.

- Heavy equipment and hand tools, depending on the size of the spill (very small spills and final clean up would be by hand).
- Appropriate containers for the size of the spill.

- Personal protective equipment as indicated in MSDS.

8.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Containment and recovery are detailed in Section 5.4 of the Contingency Management Plan.

Into Water

- If feasible, construct a berm to divert flowing water onto land.
- If spill is to a small lake and if feasible, divert the outflow onto land; if a large lake, control will likely not be possible but monitoring of the aquatic environment will be required until any impact to aquatic biota and water quality is no longer evident.

Land

- Recover the spilled prill with heavy equipment and hand tools as appropriate.
- Repackage and reuse if uncontaminated or repackage for shipment south on the winter resupply if contaminated to extensively to use.
- Monitor the site to determine whether vegetation is 'burned' by the ammonium nitrate.

Ice

- Clean up with heavy equipment and hand tools as appropriate.
- Scrape up residual ice and move to land away from a water body where it can melt in the spring.

Wetlands, Muskeg

- Assess the situation; it may be more damaging to remove the spilled prill than to leave it in place to act as fertilizer in the wetland.
- If removal is chosen, it is likely that only hand tools will be effective.
- In either case, monitor the site to determine whether vegetation is 'burned' by the ammonium nitrate.

9.0 RESTORATION

Water

- Restoration may or may not be required, or possible.
- If fish-bearing waters were affected, negotiations will be required with DFO to determine what method of restoration, if any, is appropriate.
- Once the water is clean, any diversions can be removed.

Land

- If restoration is required, revegetate the affected area if practical; clean soil may be required if substantial amounts of soil were removed for clean up.

Ice

- No restoration is required.

Wetlands/Muskeg

- If restoration is required, revegetation of 'burned' areas should be attempted once nitrate levels drop below levels that will inhibit plant growth.
- Do not attempt to remove muskeg sediments from an unaffected muskeg to replace any sediments that were removed for clean up as this will just compound the damage.

JET A SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Use adequate ventilation.
Respiratory Protection	Not generally required unless needed to prevent respiratory irritation. In case of spill or leak resulting in unknown concentration, use NIOSH/MSHA-approved supplied air respirator.
Eye Protection	Use splash-proof, dust-resistant SAF goggles.
Skin Protection	Use gloves resistant to the material being used, i.e., neoprene or nitrile rubber. Use protective garments to prevent excessive skin contact.

2.0 HEALTH HAZARD DATA

Recommended Exposure Limits	Not established.
Acute Effects of Overexposure	Eye: May cause mild irritation, with stinging and redness of eyes.
	Skin: May cause severe irritation. Repeated or prolonged contact may cause defatting of the skin, resulting in dermatitis.
	Inhalation: May cause irrigation to nose, throat or lungs. Headache, nausea, dizziness, unconsciousness may occur.
	Ingestion: May cause irritation to intestines. May cause headache, nausea, unconsciousness. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Eye	Flush eyes with running water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
Skin	Immediately wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.
Inhalation	Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.
Ingestion	Do not induce vomiting. Seek immediate medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>130°F (>54°C) (Estimated)
Flammable Limits (% by Volume in Air)	LEL: 0.7. UEL: Not Established.
Fire Extinguishing Media	Dry chemical, foam, carbon dioxide or water spray.
Special Fire Fighting Procedures	Evacuate area of all unnecessary personnel. Shut off source, if possible. Use NIOSH/MSHA-approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 1.0 if conditions warrant. Water fog or spray may be used to cool exposed containers and equipment. Do not spray water directly on fire – product will float and could be reignited on surface of water.

Fire and Explosion Hazards	Moderate fire hazard when exposed to heat/flame. Vapour heavier than air; may travel considerable distance to ignite source and flashback.

5.0 SPILL AND LEAK PROCEDURES

Evacuate the area of all unnecessary personnel. Wear protective equipment and/or garments described in Section 1.0 if exposure conditions warrant. Shut off source, if possible, and contain the spill. Protect from ignition. Keep out of water sources and sewers. Absorb in dry, inert material (sand, clay, etc.). Transfer to disposal drums using non-sparking equipment.

6.0 RESPONSE PERSONNEL

- Emergency Coordinator (large spill);
- Mine Site Services Department;
- Environment and Safety Manager;
- Other personnel as required and designated by the Site Manager.

7.0 EQUIPMENT

Small Spill

- Portable diesel pump and hoses;
- Container of appropriate size;
- Absorbents from facility spill kit (which require replacement once the spill is cleaned up);
- Personal protective equipment as specified in MSDS.

Large Spill

- The Emergency and Spill Coordinator may set up a decontamination zone with decontamination equipment (solvent wash, steamer, tyvik suits, etc);
- Portable diesel pump and hoses;
- Truck- or skid-mounted tank of appropriate size;
- Absorbents as directed by Mine Site Services (spill kit absorbents will likely not be sufficient); absorbents may need to be flow to Jericho for the final clean up;
- Personal protective equipment as specified in MSDS.

8.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Spills from bulk tanks will be contained by containment berms. The airstrip is the only place at Jericho where bulk Jet A is stored. Recovery would involve pumping the spilled Jet A back into the tank if tank integrity were not affected or into a suitable tank or tanks for temporary storage if the subject tank were damaged. Any Jet A that was not contaminated by foreign matter would be put back into the supply store. Contaminated Jet A would be burned or backhauled on the winter supply for disposal by a hazardous waste contractor. If backhauled, the contaminated fuel would be temporarily stored at the Hazardous Waste Transfer Area.

A spill from a tanker truck used to transport Jet A fuel during the winter haul could be anywhere between the fuel supplier and Jericho. It is unlikely Jericho personnel would be called upon to assist with clean up of such a spill unless it was near the Jericho Mine. The method of containment and recovery would depend on the surface where the spill occurred. Section 5.4 of the Jericho Contingency Management Plan details procedures to be used, depending on where the spill occurred.

If the spill is reportable (>100 L), report on the NT/NU Spill Line, **867-920-8130**. In any case, log the spill and complete report.

Water

- Very unlikely;
- Containment boom deployed if possible;
- Jet A pumped from within berm and burned or pumped to a waste oil tank for backhaul south.

Ice

- Scrape up contaminated ice with heavy equipment and burn;
- Remove residual ice to a container and transport to the contaminated ice treatment facility at the mine or south to hazardous waste facilities (depending on the location of the spill).

Land

- Use dyking, trenching, ditches, weirs, berms, as appropriate to contain spill;
- Pump jet a uncontaminated by foreign matter into suitable containers for use;
- Burn contaminated Jet A or pump to a waste oil container for backhaul south;
- Place contaminated soil in the landfarm or containerize for backhaul south to a hazardous waste facility.
- Log the spill and complete report.

9.0 RESTORATION

Restoration applied will depend entirely on the nature of the spill and where it occurs:

- Spill behind berms may required replacement of sand used to protect berm liners to the extent possible without removing the tank(s). Contaminated sand may be burned to remove petroleum residues and re-used within a containment berm or placed in the landfarm or backhauled south to a hazardous waste contractor for disposal.
- Spills on soil require removal of the soil and replacement with clean soil; sites will be revegetated, if practical.
- Spills on ice require no restoration.
- Spills on wetlands or muskeg will require restoration of wetland vegetation, if practical, once contaminants are removed.

RAW SEWAGE SPILL RESPONSE

Treated sewage is pumped to the PKCA. A raw sewage spill would occur with a break in any of the sewer lines from the accommodations toilet gathering lines or the main trunk line to the sewage treatment plant. A break in one of the sewage treatment plant tanks would result in loss of more or less treated sewage to the floor of the plant and to the crushed rock pad the plant is founded on. Any break in the outfall pipe from the sewage treatment plant would result in sewage flowing by gravity to the PKCA.

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	None required, unless confined space where methane could accumulate where ventilation is required.
Personal Respirators (NIOSH-Approved)	None required. Dust mask should be worn if risk of splashing.
Skin Protection	Wear protective gloves and clean body-covering clothing.
Eye Protection	Goggles or safety glasses

2.0 HEALTH HAZARD DATA

Potential for infection if sewage accidentally inhaled or ingested or comes in contact with injured skin or eyes. Seek medical attention if any signs of ill health.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Move affected person to fresh air
Ingestion	Induce vomiting. Over-the-counter medicines to relieve upset stomach, such as Malox, Pepto bismol, etc., may be taken as directed by medical staff.
Skin	Wash thoroughly with soap and water.
Eye	Flood affected eye(s) in an eye wash for a minimum of 10 minutes. Seek medical attention if irritation persists after this time.

4.0 FIRE AND EXPLOSION DATA

Not flammable; will not explode unless methane builds up in a confined space.

5.0 RESPONSE PERSONNEL

- Mine Site Services Department;
- Environment and Safety Manager.

6.0 EQUIPMENT

Equipment required depends entirely on the location of the spill.

- Portable diesel or electric pump;

- Vacuum truck if practical;
- Portable containers for sewage;
- Personal protective equipment.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Sewage will either be contained by building structures or escape to the crushed rock pad founding the accommodations complex or the sewage treatment plant.
- If the spill is large and if practical, use the vacuum truck to recover the sewage.
- If the spill is small use a portable pump and a suitably sized container.
- If the sewage treatment plant is operational, dispose of the raw sewage at the plant; if not use the PKCA.
- When all the sewage that can be is recovered, disinfect the affected area(s).
- In any building area, other than the sewage treatment plant, do swipe tests and culture for coliform bacteria to determine whether disinfection was complete. Swipe tests will not be practical in the sewage treatment plant itself because of routine small spills and aerosol deposition of bacteria.
- Log the spill and complete a report.

8.0 RESTORATION

- Restoration will consist of replacing damaged piping or valves and, where practical, contaminated crushed rock with clean fill.
- Place contaminated fill on the waste dump where drainage off the dump is unlikely and cover with waste rock.

SODIUM NITRITE SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Ensure good ventilation at the workplace.
Personal Respirators (NIOSH-Approved)	Use suitable respirator when high concentrations are present. Wear SCBA near fire.
Skin Protection	Wear impervious protective clothing, including boots, gloves, as appropriate, to prevent skin contact.
Eye Protection	Use safety glasses.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	Eye: Irritating effect.
	Skin: Irritant to skin and mucous membranes.
	Inhalation: Inhalation of vapours irritates the respiratory tract.
	Ingestion: Exposure to nitrites may cause nausea, vomiting, cyanosis, and collapse into a coma. Small doses cause a fall in blood pressure, rapid pulse, muscle weakness, headache and visual disturbances..

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Call a physician immediately.
Skin Contact	Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	Not applicable
Flammable Limits	Contact with combustible material may cause fire
Explosion	LEL and UEL not determined
Fire Extinguishing Media	Product is not flammable. Use fire fighting measures that suit the surrounding fire.
Special Information	In the event of a fire, wear full protective clothing and NIOSH-approved SCBA with full facepiece operated in the pressure demand or other positive pressure mode. Wear fully protective impervious suit.

5.0 RESPONSE PERSONNEL

- Explosives Superintendent;
- Site Manager;

- Environment and Safety Manager;
- Explosives contractor employees.
- Heavy equipment operators and other mine employees if required.

6.0 EQUIPMENT

Small Spill

- Hand tools as appropriate for clean up;
- Container of appropriate size to hold spilled product;
- Hose and water to wash down residue to emulsion plant sump if inside the building.

Large Spill

- Explosives plant front end loader;
- Container of appropriate size to hold spilled product;
- Hand tools for final clean up.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Sodium nitrite is poisonous to fish and other aquatic organisms. Do not dispose in waterbodies; do not wash into drainage ditches that empty into waterbodies.

Spills to the environment could only occur during the winter resupply. Scrape up contaminated snow and place in a suitable container; label and temporarily store in the Hazardous Waste Transfer Area. When temperatures rise above freezing, water may be placed in the PKCA if the volume is small. Any other spills of product will be within a contained area at the emulsion plant and can therefore be controlled.

Log the spill and complete report.

Small Spill

- Recover product with appropriate hand tools into a suitable container for reuse in the plant.
- If the product is contaminated beyond use with foreign material, place in a suitable container, seal, attach a WHMIS label and warning and place in the Hazardous Waste Transfer Area for backhaul south by a hazardous waste carrier.
- Damaged bags can be burned or temporarily placed in the Hazardous Waste Transfer Area and backhauled south on the winter resupply.
- Wash down tools in the emulsion plant where water will drain to the sump.

Large Spill

- The same procedure as for a small spill should be employed, except with the assistance of heavy equipment, if appropriate.
- Wash down the heavy equipment in the explosives truck shop where water will drain to the sump.

8.0 RESTORATION

Not applicable; spills will not be to the environment.

ETHYLENE GLYCOL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Respirators (NIOSH-Approved)	For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection	Wear protective gloves and clean body-covering clothing.
Eye Protection	Use chemical safety goggles.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	OSHA PEL 50 ppm Ceiling; ACGIH TLV 50 ppm Ceiling (vapour)
Acute Effects of Overexposure	Eyes: Splashes may cause irritation, pain, eye damage.
	Skin: Minor skin irritation and penetration may occur.
	Inhalation: Vapour inhalation is generally not a problem unless heated or misted. Exposure to vapours over an extended time period has caused throat irritation and headache. May cause nausea, vomiting, dizziness and drowsiness. Pulmonary edema and central nervous system depression may also develop. When heated or misted, has produced rapid, involuntary eye movement and coma.
	Ingestion: Initial symptoms in massive dosage parallel alcohol intoxication, progressing to central nervous system depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow. Lethal dose in humans is 100 mL (3 – 4 ounces).

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion	Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact	Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	232F, 111C (CC)
Flammable Limits	LEL: 3.2%; UEL: 15.3%
Explosion	Above flash point, vapour-air mixtures are explosives within flammable limits noted above. Containers may explode when involved in a fire.
Fire Extinguishing Media	Dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.
Special Fire Fighting Procedures	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Toxic gases and vapours may be released if involved in a fire.

5.0 SPILL AND LEAK PROCEDURES

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

6.0 RESPONSE PERSONNEL

Emulsion Plant

- Explosives Superintendent, Environment and Safety Manager;
- Explosives Contractor employees as required.

Truck Shop

- Mechanical Superintendent
- Environment and Safety Manager;
- Mechanical employees as required.
- Site Manager if reportable spill (>100 L).

7.0 EQUIPMENT

Small Spill

- Appropriate hand tools;
- Absorbent materials;
- Floor dry or equivalent.

Large Spill

- Front end loader, if appropriate;

- Portable pump if product pooled;
- Appropriately sized liquid container(s);
- Appropriate hand tools to complete clean up;
- Absorbent materials;
- Floor dry or equivalent.

8.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container, and stored in HWTA for winter haul out. Do not use combustible materials, such as sawdust. Do not flush to sewer.

Log the spill and complete report.

Small Spill

- Soak up spill with inert absorbents and dispose of absorbents as hazardous waste.
- Use Floor Dry or similar to remove residue and dispose of the Floor Dry with the absorbents. Decontaminant hand tools, if used; ensure any wash water drains to a sump and not the environment.

Large Spill

- If product has pooled, recover by pumping or appropriate means into a suitable container for reuse.
- Clean up residue as for a small spill.
- Place damaged and empty containers in the Hazardous Waste Transfer Area for backhaul south by a hazardous waste contractor for disposal.
- Decontaminate the pump, if used; ensure any wash water drains to a sump and not the environment.

9.0 RESTORATION

Not applicable; product is not used outside of contained areas at the mine.

ACETIC ACID SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Respirators (NIOSH-Approved)	Use NIOSH-approved respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection	Wear chemical resistant gloves and clean body-covering clothing.
Eye Protection	Use chemical safety goggles.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	No data
Acute Effects of Overexposure	Eyes: Direct contact or exposure to high concentrations of vapour with skin or eyes can cause erythema, blisters, tissue destruction with slow healing and possible blindness.
	Skin: Material extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin.
	Inhalation: May result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.
	Ingestion: Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include hematemesis, bloody diarrhea, edema and/or perforation of the esophagus, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock and death.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion	Do not induce vomiting. Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact	Flush with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Wash clothing before reuse. Call physician.
Eye Contact	Flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	427°C, 800.6°F (CC)
Flammable Limits	LEL: 4.0%; UEL: 16.0%
Explosion	Above flash point, vapour-air mixtures are explosives within flammable limits noted above. Containers may explode when involved in a fire.
Fire Extinguishing Media	Water, dry chemical, foam, carbon dioxide. Water spray may be used to keep fire exposed containers cool.

Special Fire Fighting Procedures	Wear full protective clothing and NIOSH-approved Self-Contained Breathing Apparatus with full facepiece operated in pressure demand or other positive pressure mode. Water may be used to flush spill away from exposure/to dilute spill to non-flammable mixture. Water diluted acid can react with metals to form hydrogen gas.

5.0 RESPONSE PERSONNEL

- Explosives Superintendent;
- Environment and Safety Manager;
- Explosives Contractor employees as required.
- Site Manager if reportable spill (>100 L).

6.0 EQUIPMENT

Small Spill

- Appropriate hand tools;
- Dry lime or soda ash.

Large Spill

- Fire hose and water source;
- Appropriately sized liquid container(s);
- Appropriate hand tools to complete clean up;
- Dry lime or soda ash.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

This product is used exclusively in bulk in the emulsion plant.

Ventilate area. Remove ignition sources. Wear protective equipment. Cover with dry lime or soda ash, pick up, keep in a closed container, and stored in the HWTA for winter haul out. Use non-sparking tools and equipment. Do not flush to sewer.

Log the spill and complete report.

Small Spill

- Soak up spill with dry lime or soda ash and dispose of absorbents as hazardous waste.
- Decontaminant hand tools, if used; ensure any wash water drains to a sump and not the environment.

Large Spill

- Use water spray to dilute spill to a non-flammable mixture.
- Contain liquid and collect in container or absorb with inert material.
- Clean up residue as for a small spill.
- Place damaged and empty containers in the Hazardous Waste Transfer Area for backhaul south by a hazardous waste contractor for disposal.
- Decontaminate clean up equipment; ensure any wash to drains to a sump and not the environment.

8.0 RESTORATION

Not applicable; product is not used outside of contained areas at the mine.

NITRIC ACID SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Use only in a chemical fume hood to keep airborne levels below recommended exposure limits. Ventilation should be corrosion proof. Do not use in unventilated spaces.
Personal Respirators (NIOSH-Approved)	Use NIOSH-approved respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection	Wear impervious neoprene gloves, synthetic apron, coveralls and/or other resistant protective clothing sufficient to protect skin.
Eye Protection	Wear face shield and splash goggles.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	Nitric Acid >90%: ACGIH TWA 2 ppm (5.2 mg/m^3); STEL 4ppm (10 mg/m^3). Nitrogen Dioxide 7.5–12.7%: ACGIH TWA 3 ppm (5.6 mg/m^3); STEL 5 ppm (9.4 mg/m^3).
Acute Effects of Overexposure	Eyes: Vapours, liquids and mists are extremely corrosive to the eyes. Brief contact of the vapours will be severely irritating. Brief contact of the liquid or mist will severely damage the eyes and prolonged contact may cause permanent eye injury which may be followed by blindness.
	Skin: Causes severe burns, blisters and yellow skin discolouration.
	Inhalation: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, laryngitis, bronchitis, dyspnea, headache, nausea, hypotension, cyanosis, and vomiting. May cause delayed lung injury.
	Ingestion: Burns in mouth, pharynx and gastrointestinal tract. Risk of vomiting, nausea, diarrhea, abdominal pain, stomach perforatin, hematemesis, hemoptysis, hypotension, nephritis, albuminuria, oliguria, anuria, hematuria, convulsions, kidney damage, coma and death

3.0 FIRST AID AND EMERGENCY PROCEDURES

Ingestion	If conscious, wash out mouth with water. Have conscious person drink several glasses of water or milk. Aim to dilute acid 100 times approximately. DO NOT induce vomiting. Seek immediate medical attention. Never give anything by mouth to an unconscious or convulsing person. Guard against aspiration into lungs. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth, and administer more water.
Skin Contact	Immediate first aid is needed to prevent skin damage.
	IMMEDIATELY flush skin with running water for at least 30 minutes. Remove contaminated clothing, protecting your own hands and body. Seek immediate medical attention. If irritation persists, repeat flushing. Do not transport victim unless the recommended flushing period is completed or flushing can be continued during transport. Wash contaminated clothing before reusing.

Eye Contact	Immediate first aid is needed to prevent eye damage. Washing within 1 minute is essential to achieve maximum effectiveness.
	IMMEDIATELY flush eyes with copious quantities of water for at least 30 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention. If irritation persists, repeat flushing.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	Not applicable
Flammable Limits	Not applicable
Explosion	Container explosion may occur under fire conditions or when heated. Flammable/explosive hydrogen gas may be formed upon contact of this product with metals.
Fire Extinguishing Media	Use flooding quantities of water.
Special Fire Fighting Procedures	Wear adequate personal protection to prevent contact with material or its combustion products. Self-contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode. Cool containing vessels with flooding quantities of water until will after fire is out. Powerful oxidizing agent; may ignite oxidizable materials. Contributes to combustion of other materials. Contact with other material may cause fire and/or explosion. Emits toxic and corrosive fumes under fire conditions. Reacts violently with water.

5.0 RESPONSE PERSONNEL

Emulsion Plant

- Explosives Superintendent;
- Environment and Safety Manager;
- Explosives Contractor employees as required.
- Site Manager if reportable spill (>5 L).

Lab

- Diamond Plant Superintendent;
- Environment and Safety Manager.
- Site Manager if reportable spill (>5 L).

6.0 EQUIPMENT

Small Spill

- Appropriate hand tools;
- Dry lime or soda ash.

Large Spill

- Fire hose and water source;
- Appropriately sized liquid container(s);
- Appropriate hand tools to complete clean up;
- Dry lime or soda ash.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Any spill over 5 L to the environment must be reported on the NT/NU Spill Line: 867-920-8130.

Eliminate all sources of ignition. Don protective equipment; nitric acid is extremely corrosive.

A spill to the environment could only occur during the winter resupply. Scrape up any contaminated snow and ice and place in suitable containers. The melt water may be placed in the PKCA after temperatures rise above freezing.

Log the spill and complete report.

Small Spill

- Cover with soda ash or lime. Adequate ventilation is required for soda ash to release carbon dioxide gas.
- Place absorbent in a suitable container and mark for disposal. Temporarily store in the HWTA for backhaul to a hazardous waste contractor.
- Decontaminant hand tools, if used; ensure any wash water drains to a sump and not the environment.

Large Spill

- Evacuate and ventilate the area.
- If water can be contained, flood area to dilute acid.
- If water cannot be contained, use soda ash or lime to neutralize as for a small spill.
- Clean up residue as for a small spill.
- Place damaged and empty containers in the HWTA for backhaul south by a hazardous waste contractor for disposal.
- Decontaminate clean up equipment; ensure any wash water drains to a sump and not the environment.

8.0 RESTORATION

Not applicable; product is not used outside of contained areas at the mine.

N7, N23 EMULSIFIER SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	General mechanical; local exhaust preferred.
Personal Respirators (NIOSH-Approved)	Approved respirator if exposed to vapours or mist.
Skin Protection	Rubber or plastic gloves. Impermeable apron and boots to prevent skin contact.
Eye Protection	Rubber or plastic gloves.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	No data.
Acute Effects of Overexposure	Eyes: May cause irritation.
	Skin: May cause irritation.
	Inhalation: May cause irritation of the respiratory tract.
	Ingestion: May cause adverse health effects.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. Assist breathing if necessary. Consult a physician.
Ingestion	Give 2 glasses water and induce vomiting. Consult a physician immediately.
Skin Contact	Wash with soap and water. Remove contaminated clothing and launder before reuse. Consult a physician if irritation develops.
Eye Contact	Flush immediately with flowing water for at least 15 minutes and consult a physician if irritation develops.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>149°C (PMCC)
Flammable Limits	LEL: no data UEL: no data
Auto-Ignition Temperature	No data
Fire Extinguishing Media	Water, water fog, CO_2, foam
Special Fire Fighting Procedures	Wear self-contained breathing apparatus in confined areas or when exposed to combustion products.

5.0 RESPONSE PERSONNEL

- Explosives Superintendent;
- Environment and Safety Manager;
- Explosives Contractor employees as required.
- Site manager if reportable spill to the environment (>100 L)

6.0 EQUIPMENT

Small Spill

- Appropriate hand tools;
- Absorbent;
- Suitably sized container for used absorbent.

Large Spill

- Spill containment equipment as appropriate to the situation, e.g., booms, dump drain blocks;
- Portable electric or diesel pump;
- Suitably sized container(s) for recovered product;
- Hand tools for final clean up;
- Absorbent;
- Suitably sized container for used absorbent.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

A spill to the environment could only occur during the winter resupply. Scrape up any contaminated snow and ice and place in suitable containers. Store container(s) in the Hazardous Waste Transfer Area. If volume is small material can be disposed of in the PKCA. Large volumes may require backhaul for disposal off the mine. NOTE: N7 and N23 emulsifiers are not hazardous substances, but their environmental toxicity is unknown.

Log the spill and complete report.

Small Spill

- Use absorbent to soak up spill.
- Placed used absorbent in a suitable container and mark as waste; incinerate or temporarily store in the Hazardous Waste Transfer Area pending backhaul south on the winter resupply for disposal.
- Decontaminant hand tools, if used; ensure any wash water drains to a sump and not the environment.

Large Spill

- Contain spill if possible as appropriate to the situation.
- Pump the pooled product into suitable clean containers, such as barrels, for re-use.
- Label containers with contaminated product that cannot be re-used and dispose of in the PKCA if small volume or temporarily store in the Hazardous Waste Transfer Area for backhaul south during the winter resupply for disposal.

- Clean up residue as for a small spill.
- Decontaminate clean up equipment; ensure any wash water drains to a sump and not the environment.

8.0 RESTORATION

Not applicable; product is not used outside of contained areas at the mine.

N4 SODIUM THIOCYANATE SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.
Personal Respirators (NIOSH-Approved)	For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face, positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection	Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection	Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye-wash fountain and quick-drench facilities in work area.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	No data.
Acute Effects of Overexposure	Eyes: Causes irritation, redness, and pain.
	Skin: Causes irritation to skin. Symptoms may include coughing and shortness of breath.
	Inhalation: May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.
	Ingestion: May cause vomiting, disorientation, weakness, hypotension, convulsions and death which may be delayed. The probable lethal dose is between 13 g and 30 g.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medial attention immediately.
Skin Contact	Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>1250°C (2570°F)
Flammable Limits	No data
Auto-Ignition Temperature	No data
Fire Extinguishing Media	Any means suitable for extinguishing surrounding fire.

Special Fire Fighting Procedures	Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the positive pressure demand or other positive pressure mode. Poisonous gases are produced in fire.

5.0 RESPONSE PERSONNEL

- Explosives Superintendent;
- Environment and Safety Manager;
- Explosives Contractor employees as required.
- Site manager if reportable spill to the environment (>100 kg)

6.0 EQUIPMENT

Small Spill

- Appropriate hand tools;
- Shop vacuum cleaner;
- Suitably sized container for clean product;
- Suitably sized container for contaminated product that cannot be re-used.

Large Spill

- Appropriate hand tools, or front end loader if very large spill (several containers broken);
- Suitably sized container(s) for recovered product
- Suitably sized container(s) for contaminated product that cannot be reused;
- Hand tools for final clean up.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

A spill to the environment could only occur during the winter re-supply. Scrape up any contaminated snow and ice and place in suitable containers. Store container(s) in the Hazardous Waste Transfer Area. If volume is small, material can be disposed of in the PKCA. Large volumes may require backhaul for disposal off the mine. NOTE: N4 emulsifier is known to be toxic to aquatic organisms.

Log the spill and complete report.

Small Spill

- Place useable product in a suitable container and label.
- Place contaminated product that cannot be re-used in another container and label as waste. Temporarily transfer container to the Hazardous Waste Transfer Area for backhaul on the winter resupply to a hazardous waste contractor.
- Decontaminant hand tools, if used; ensure any wash water drains to a sump and not the environment.

Large Spill

- Use hand tools or front end loader to clean up spilled product.
- Handle as for small spills.
- Clean up residue as for a small spill.
- Decontaminate clean up equipment; ensure any wash water drains to a sump and not the environment.

8.0 RESTORATION

Not applicable; product is not used outside of contained areas at the mine.

CITRIC ACID SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Local exhaust sufficient to control dust.
Personal Respirators (NIOSH-Approved)	NIOSH-approved chemical respirator with dust and mist filter while handling crystalline material and concentrated solutions.
Skin Protection	Standard work gloves.
Eye Protection	Safety glasses.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	No data.
Acute Effects of Overexposure	Eyes: slight eye irritant.
	Skin: long-term exposure to skin could be a mild irritant.
	Inhalation: irritant to respiratory tract.
	Ingestion: irritant to digestive tract.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove patient to fresh air and rest. Call a physician.
Ingestion	Rinse mouth; refer to medical attention.
Skin Contact	Wash area with water, remove contaminated clothing and launder before reuse.
Eye Contact	Immediately flush with plenty of water for at least 15 minutes. Call a physician.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	No data.
Flammable Limits	No data.
Auto-Ignition Temperature	1000°C (1832°F)
Fire Extinguishing Media	Water, CO_2, Foam, Power extinguisher.
Special Fire Fighting Procedures	Fire fighters wear protective clothing and NIOSH-approved respirator. No explosion hazard at optimum air concentration; explosive rating = weak.

5.0 RESPONSE PERSONNEL

- Explosives Superintendent;
- Environment and Safety Manager;
- Explosives Contractor employees as required.
- Site manager if reportable spill to the environment (>25 kg).

6.0 EQUIPMENT

Small Spill

- Appropriate hand tools;
- Shop vacuum cleaner;
- Suitably sized container for clean product;
- Suitably sized container for contaminated product that cannot be re-used.

Large Spill

- Appropriate hand tools, or front end loader if very large spill (several containers broken);
- Suitably sized container(s) for recovered product
- Suitably sized container(s) for contaminated product that cannot be reused;
- Hand tools for final clean up

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

A spill to the environment could only occur during the winter resupply. Scrape up any contaminated snow and ice and place in suitable containers. Store container(s) in the Hazardous Waste Transfer Area. If volume is small material can be disposed of in the PKCA. Large volumes may require backhaul for disposal off the mine. NOTE: Citric acid is not toxic to aquatic organisms in low concentrations (US EPA 19921); however, high concentrations may depress pH to acute or chronic effects levels in small water bodies.

Log the spill and complete report.

Small Spill

- Place useable product in a suitable container and label.
- Place contaminated product that cannot be re-used in another container and label as waste. Temporarily transfer container to the Hazardous Waste Transfer Area for backhaul on the winter resupply.
- Decontaminant hand tools, if used; ensure any wash water drains to a sump and not the environment.

Large Spill

- Use hand tools or front end loader to clean up spilled product.
- Handle as for small spills.
- Clean up residue as for a small spill.
- Decontaminate clean up equipment; ensure any wash water drains to a sump and not the environment.

8.0 RESTORATION

Not applicable; product is not used outside of contained areas at the mine.

HYDRAULIC OIL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	None.
Respiratory Protection	None required under normal use. If mist is being generated or vapours are being produced at high temperatures, use NIOSH approved organic vapour mask.
Skin Protection	None.
Eye Protection	Safety goggles with optional face shield.

2.0 HEALTH HAZARD DATA

Symptoms of Overexposure	Skin and eye irritation.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Inhalation of mist may cause irrigation.
Ingestion	No ill effects expected. Minute amounts aspirated into lungs may cause pulmonary injury.
Skin Contact	Not normally expected to cause ill effects. Chronic-prolonged/repeated skin contact may cause irritation.
Eye Contact	Irritation.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>90°F, >32°C (COC)
Flammable Limits	Not given.
Explosion	Not given.
Fire Extinguishing Media	Use water fog, carbon dioxide, foam, dry chemical, earth, or sand.
Special Fire Fighting Procedures	Wear fire fighting protective equipment and full-faced self-contained breathing apparatus. Cool fire exposed containers with water spray. Contain runoff.
Unusual Fire Hazards	Dense smoke.

5.0 RESPONSE PERSONNEL

- Mechanical Superintendent;
- Mine Site Services Department;
- Environment and Safety Manager.
- Site Manager if reportable environmental spill (100L).

6.0 EQUIPMENT

Small Spill

- Hand tools;
- Absorbent.

Large Spill

- Containment materials (boom, etc.);
- Heavy equipment (if outside);
- Portable pump;
- Suitable containers (barrels, etc.);
- Absorbent;
- Hand tools.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Recover bulk of mixture into another container. Absorb residue with an inert material such as earth, sand, or vermiculite. Sweep up and dispose as solid waste.

Log the spill and complete report.

Small Spill

Inside

- Cover with inert absorbent such as Floor Dry or zonelite.
- Sweep up and place in a suitable container and mark as waste oil.
- Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.

Outside

- Dig up contaminated snow, ice, soil, or vegetation and place in a suitable container, mark as waste oil and temporarily store in Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- If soil contaminated, test clean soil to ensure petroleum levels meet CCME Soil Quality Guidelines.
- If not excavate more soil, dispose of and retest clean soil.
- Log the spill.

Large Spill

Inside

- Contain the spill as appropriate, e.g., with booms, absorbent pads, etc.
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill inside.

Outside

- If reportable, call the NT/NU Spill Line, **867-920-8130**.
- Contain the spill as appropriate (See Jericho Contingency Management Plan, Section 5.4).
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill outside.
- Log the spill.

8.0 RESTORATION

- If spill is to soil, once soil has tested clean, replace contaminated soil with clean fill.
- If practical and not on an actively used surface, revegetate the area with a suitable seed or plant mix based on revegetation trials.
- If not practical, protect from erosion if necessary with suitable armouring (e.g. coarse crushed rock or rip-rap).

MOTOR OIL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	None.
Respiratory Protection	None required; however use of adequate ventilation is good industrial practice.
Skin Protection	Impervious gloves.
Eye Protection	Chemical workers goggles (FP D).
Other Protective Equipment	Protective clothing.

2.0 HEALTH HAZARD DATA

Eyes/Inhalation/Ingestion	No significant health hazards identified.
Skin	None expected for single short-term exposures. Prolonged/repeated contact may produce some irritation.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	If adverse effects occur, remove to uncontaminated area.
Ingestion	If large amount swallowed, induce vomiting; get medical attention.
Skin Contact	None required for unused motor oil. Contact with used motor oil, wash area thoroughly with soap and water or use waterless hand cleaners. Do not use gasoline, thinners or solvents.
Eye Contact	Flush with plenty of water for at least 15 minutes.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	401°F, 205°C (COC)
Flammable Limits	Not given.
Explosion	Not given.
Fire Extinguishing Media	Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, steam) or water fog.
Special Fire Fighting Procedures	Wear NIOSH/MSHA approved SCBA and full protective equipment.

5.0 RESPONSE PERSONNEL

- Mechanical Superintendent;
- Mine Site Services Department;
- Environment and Safety Manager.
- Site Manager if reportable environmental spill (100L).

6.0 EQUIPMENT

Small Spill

- Hand tools;
- Absorbent.

Large Spill

- Containment materials (boom, etc.);
- Heavy equipment (if outside);
- Portable pump;
- Suitable containers (barrels, etc.);
- Absorbent;
- Hand tools.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Recover bulk of mixture into another container. Absorb residue with an inert material such as earth, sand, or vermiculite. Sweep up and dispose as solid waste.

Log the spill and complete report.

Small Spill

Inside

- Cover with inert absorbent such as Floor Dry or vermiculite.
- Sweep up and place in a suitable container and mark as waste oil.
- Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.

Outside

- Dig up contaminated snow, ice, soil, or vegetation and place in a suitable container, mark as waste oil and temporarily store in Hazardous Waste Transfer Area pending backhaul to a hazardous waste contractor for disposal.
- If soil contaminated, test clean soil to ensure petroleum levels meet CCME Industrial Site Guidelines.
- If not, excavate more soil, dispose of, and retest clean soil.
- Log the spill.

Large Spill

Inside

- Contain the spill as appropriate, e.g., with booms, absorbent pads, etc.
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill inside.

Outside

- If reportable, call the NT/NU Spill Line, **867-920-8130**.
- Contain the spill as appropriate (See Jericho Contingency Management Plan, Section 5.4).
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill outside.
- Log the spill.

8.0 RESTORATION

- If spill is to soil, once soil has tested clean, replace contaminated soil with clean fill.
- If practical and not on an actively used surface, revegetate the area with a suitable seed or plant mix based on revegetation trials.
- If not practical, protect from erosion if necessary with suitable armouring (e.g. coarse crushed rock or rip-rap).

JET B SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Local exhaust and mechanical (general) ventilation to maintain exposure levels.
Respiratory Protection	Avoid breathing vapour and/or mist. Use with adequate ventilation. If ventilation is inadequate, use NIOSH/MSHA certified respirator which will protect against organic vapour/mist.
Skin Protection	Impervious protective gloves.
Eye Protection	Safety glasses or goggles.
Other Protective Equipment	Protective clothing as required, to avoid skin contact. An emergency eye wash station and shower should be available.
Work Hygienic Practices	Wash with soap and water after handling product and before eating, drinking or smoking.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	May be mildly irritating to eyes. Prolonged or repeated contact may cause dermatitis. Vapours may irritate the nose, throat and upper respiratory tract and cause central nervous system depression. Aspiration hazard.
Signs/Symptoms of Overexposure	Eye irritation, skin irritation, dermatitis, upper respiratory tract irritation, nausea, vomiting, diarrhea, headaches, dizziness, drowsiness.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. Restore breathing. Get medical attention.
Ingestion	Do not induce vomiting. Get medical attention.
Skin Contact	Remove contaminated clothing. Wash with soap and water. If irritation persists, get medical attention.
Eye Contact	Flush with water for 15 minutes while holding eyelids open. Get medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method)	-10°F, -23°C (CC)
Explosion	LEL: 1.3% UEL: 8%
Fire Extinguishing Media	Agents approved for Class B hazards (dry chemical, carbon dioxide, halogenated agents, foam, steam) and water fog.
Special Fire Fighting Procedures	Fire fighters should use NIOSH-approved SCBA and full protective equipment when fighting chemical fire. Use water spray to cool nearby containers exposed to fire.
Unusual Fire and Explosion Hazards	Do not use direct stream of water on fire. Toxic gases are released during combustion. Vapour may explode if ignited in enclosed area.

5.0 RESPONSE PERSONNEL

- Mine Site Services Department;
- Environment and Safety Manager.
- Site Manager if reportable environmental spill (100L).

6.0 EQUIPMENT

Small Spill

- Hand tools;
- Suitable waste container;
- Absorbent.

Large Spill

- Front-end loader;
- Spill containment materials;
- Absorbent;
- Suitable containers;
- Hand tools.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

If spill is reportable, report on the NT/NU Spill Line, **867-920-8130**.

If material released/spilled, eliminate sources of ignition. Evacuate area. Wear proper personal protective equipment. Contain spill (see Contingency Plan, Section 5.4). Stop leak. If can be done without risk, absorb liquid with suitable absorbent material. Collect for disposal.

If spill is on soil, excavate soil to below visible contamination, and place the soil in the landfarm for treatment.

Test the clean soil and if petroleum concentrations meet the applicable CCME Soil Quality Guidelines. If not excavate more soil and retest.

Log the spill and complete report.

8.0 RESTORATION

- If spill is to soil, once soil has tested clean, replace contaminated soil with clean fill.
- If practical and not on an actively used surface, revegetate the area with a suitable seed or plant mix based on revegetation trials.
- If not practical, protect from erosion if necessary with suitable armouring (e.g. coarse crushed rock or rip-rap).

SODA ASH SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Local exhaust; if product is dusty, use an exhaust fan.
Respiratory Protection	Dust respirator when dust is excessive.
Skin Protection	Plastic coated gloves.
Eye Protection	Goggles.
Other Protective Equipment	No data.
Work Hygienic Practices	No data.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	No data.
Signs/Symptoms of Overexposure	No data.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	No data
Ingestion	No data
Skin Contact	Wash with running water.
Eye Contact	Wash eyes with water for at least 15 minutes, occasionally lifting the eye lids to ensure water reaches all of the eye.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method)	None
Explosion	None
Fire Extinguishing Media	Suitable for surrounding fire.
Special Fire Fighting Procedures	None
Unusual Fire and Explosion Hazards	None

5.0 RESPONSE PERSONNEL

- Emulsion plant employee;
- Environment and Safety Manager, if spill to environment.
- Site Manager if reportable environmental spill (100 kg).

6.0 EQUIPMENT

- Hand tools;
- Shop vacuum cleaner;
- Suitable re-use and waste containers.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Sweep or vacuum up spilled product or wash down with excess water only if water can be contained, i.e., flows to a sump.
- Place recovered product in a suitable container and label for reuse.
- Incinerate torn bag(s).
- Log the spill and complete report.

8.0 RESTORATION

Not applicable; product stored and used within a contained area.

GASOLINE SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Local exhaust generally not required. Use only explosion proof electrical equipment.
Personal Respirators (NIOSH-Approved)	Use NIOSH-approved SCBA in confined spaces or if exposed to heavy mist.
Skin Protection	Impervious gloves (viton, nitrile, neoprene) and impervious clothing.
Eye Protection	Safety glasses with side shields and face shield.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	Eye: Mild irritant with stinging and redness of the eyes.
	Skin: Prolonged exposure may cause defatting, redness, itching, inflammation, cracking and possible secondary infection.
	Inhalation: Headache, nausea, weakness, sedation, unconsciousness
	Ingestion: May cause irritation to the intestines. If swallowed maybe aspirated resulting in inflammation and possible fluid accumulation in the lungs.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air, provide oxygen therapy or resuscitation as indicated.
Ingestion	Rinse mouth with water. Do not induce vomiting. Call physician immediately.
Skin Contact	Remove contaminated clothing and flush with soap and water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
Eye Contact	Flush with water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	-40°C, -40°F (TCC)
Flammable Limits	LEL: 1.4%; UEL: 7.4%
Explosion	Fumes may accumulate away from the produce and if ignited flash back.
Fire Extinguishing Media	Dry chemical, foam, CO_2
Special Information	Evacuate the area of all unnecessary personnel. NIOSH/MSHA approved SCBA and full protective equipment. Approach from upwind if possible. Water should be used to keep surrounding materials not on fire cool. Burning may cause toxic products of combustion.

5.0 RESPONSE PERSONNEL

- Mine Site Services Department;
- Mechanical Superintendent;
- Environment and Safety Manager.

- Site Manager if spill reportable (100 L).

6.0 EQUIPMENT

- Hand tools as appropriate for clean up;
- Portable pump if spill contained and pooled;
- Absorbent materials;
- Appropriate container for recoverable spilled product.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

If spill is reportable, report on the NT/NU Spill Line, **867-920-8130**.

If material released/spilled, eliminate sources of ignition. Evacuate area. Wear proper personal protective equipment. Contain spill (see Jericho Contingency Management Plan, Section 5.4). Stop leak. If can be done without risk, absorb liquid with suitable absorbent material. Collect for disposal.

If spill is on soil, excavate soil to below visible contamination. Place contaminated soil in the landfarm for onsite treatment.

Test the clean soil and if petroleum concentrations meet applicable CCME Soil Quality Guidelines. If not excavate more soil and retest.

Log the spill and complete report.

8.0 RESTORATION

- If spill is to soil, once soil has tested clean, replace contaminated soil with clean fill.
- If practical and not on an actively used surface, revegetate the area with a suitable seed or plant mix based on revegetation trials.
- If not practical, protect from erosion if necessary with suitable armouring (e.g., coarse crushed rock or rip-rap).

VARSOL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Mechanical (general and/or local exhaust, explosion-proof).
Respiratory Protection	If engineering controls are inadequate, a NIOSH-approved air-supplied respirator should be worn.
Skin Protection	Rubber gloves.
Eye Protection	Safety glasses with side shield/goggles.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	Eyes: Irritation, tearing, redness.
	Skin: Drying and cracking of skin.
	Ingestion: Nausea, vomiting, coughing, headache, dizziness, drowsiness, weakness, fatigue, unconsciousness.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Move to fresh air, provide CPR if needed.
Ingestion	Do not induce vomiting. If person is drowsy/unconscious, place on left side with head down. Get medical attention. If possible, do not leave individual unattended.
Skin Contact	Wash with soap and water.
Eye Contact	Flush with water for 15 minutes. Hold eyelids open.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	104°F, 40°C (TCC)
Flammable Limits	LEL: 2.3%; UEL: 14.4%
Explosion	Vapour may explode if reaches a source of ignition.
Fire Extinguishing Media	Use CO_2, sand, water spray, foam/dry chemical. Water spray may be used to keep fire exposed containers cool.
Special Fire Fighting Procedures	Wear protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in positive pressure mode.
Unusual Fire and Explosion Hazards	Vapour is heavier than air and can travel considerable distance to a source of ignition and flash back. Containers may rupture due to vapour pressure buildup.

5.0 RESPONSE PERSONNEL

- Mine Site Services Department;
- Mechanical Superintendent;
- Environment and Safety Manager.
- Site Manager if spill reportable (100 L).

6.0 EQUIPMENT

- Hand tools as appropriate for clean up;
- Portable pump if spill contained and pooled;
- Absorbent materials;
- Appropriate container for recoverable spilled product.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

If spill is reportable (>100 L), report on the NT/NU Spill Line, **867- 920-8130**.

If material released/spilled, eliminate sources of ignition. Ventilate the area. Wear proper personal protective equipment. Contain spill (see Contingency Plan, Section 6.5). Stop leak. If can be done without risk, absorb liquid with non-flammable material such as vermiculite or sand. Place in a container for chemical waste. Label and temporarily store in the Hazardous Waste Transfer Area for backhaul on the winter resupply to a hazardous waste contractor for disposal.

If spill is on soil, excavate soil to below visible contamination. Place in a suitable container, label as waste varsol and temporarily store in the Hazardous Waste Transfer Area for backhaul on the winter resupply to a hazardous waste contractor for disposal.

Test the clean soil and if petroleum concentrations meet applicable CCME Soil Quality Guidelines. If not excavate more soil and retest.

Log the spill and complete report.

8.0 RESTORATION

Not applicable; product is only used in a controlled drainage area.

GEAR OIL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	None.
Respiratory Protection	None required; however use of adequate ventilation is good industrial practice.
Skin Protection	Neoprene or nitrile rubber gloves.
Eye Protection	Safety glasses; chemical workers goggles if splash risk
Other Protective Equipment	Not required.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	OSHA PEL 5 mg/m^3 (oil mist). ACGIH TLV 5 mg/m^3 STEL 10 mg/m^3
Acute Effects of Overexposure	Eye: Mild effects of over exposure.
	Skin: May be a slight irritant to sensitive skin on prolonged contact.
	Inhalation: Breathing mists in excess of TLV may cause irritation of upper respiratory tract.
	Ingestion: No significant effects expected.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to source of fresh air.
Ingestion	Do not induce vomiting. Give liquids, consult physician.
Skin Contact	Wash with soap and water.
Eye Contact	Flush with water for at least 15 minutes, consult physician if irritation persists.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	182°C, 360°F
Flammable Limits	Not known
Explosion	Not known
Fire Extinguishing Media	Carbon dioxide, foam, dry chemical, water fog, water spray.
Special Fire Fighting Procedures	Wear NIOSH/MSHA-approved SCBA and full protective equipment; treat as an oil fire. Toxic fumes may be evolved on burning or exposure to heat.

5.0 RESPONSE PERSONNEL

- On duty mechanic(s)
- Mechanical Superintendent;
- Mine Site Services Department;
- Environment and Safety Manager (notification).
- Site Manager if reportable environmental spill (100L).

6.0 EQUIPMENT

Small Spill

- Hand tools;
- Dry oil absorbent material.

Large Spill

- Containment materials (boom, etc.);
- Portable pump;
- Suitable containers (barrels, etc.);
- Absorbent;
- Hand tools.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Recover bulk of mixture into another container. Absorb residue with an inert material such as earth, sand, or vermiculite. Sweep up and dispose as solid waste.

Log the spill and complete report.

Small Spill

Inside

- Cover with inert absorbent such as Floor Dry or vermiculite.
- Sweep up and place in a suitable container and mark as waste oil.
- Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.

Outside

- Dig up contaminated snow, ice, soil or vegetation and place in a suitable container, mark as waste oil and temporarily store in Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- If soil contaminated, test clean soil to ensure petroleum levels meet applicable CCME Soil Quality Guidelines.
- If not excavate more soil, dispose of and retest clean soil.
- Log the spill and complete report.

Large Spill

Inside

- Contain the spill as appropriate, e.g., with booms, absorbent pads, etc.
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill inside.

Outside

- If reportable, call the NT/NU Spill Line, **867-920-8130**.
- Contain the spill as appropriate (See Contingency Plan, Section 6.5).
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill outside.
- Log the spill.

8.0 RESTORATION

- If spill is to soil, once soil has tested clean, replace contaminated soil with clean fill.
- If practical and not on an actively used surface, revegetate the area with a suitable seed or plant mix based on revegetation trials.
- If not practical, protect from erosion if necessary with suitable armouring (e.g., coarse crushed rock or rip-rap).

TRANSMISSION OIL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	None.
Respiratory Protection	None required; however use of adequate ventilation is good industrial practice.
Skin Protection	Neoprene or nitrile rubber gloves.
Eye Protection	Safety glasses; chemical workers goggles if splash risk
Other Protective Equipment	Not required.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	OSHA PEL 5 mg/m^3 (oil mist). ACGIH TLV 5 mg/m^3 STEL 10 mg/m^3
Acute Effects of Overexposure	Skin/Eye: May cause irritation manifested by burning and redness asa well as dermatitis for skin on prolonged or repeated contact and tearing for eyes with direct contact.
	Inhalation: Heated mist or vapours may cause irritation to nose and throat.
	Ingestion: May cause irritation of the digestive tract.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to source of fresh air. Get medical attention if irritation persists.
Ingestion	Do not induce vomiting. Get immediate medical attention. Product could be harmful if aspirated into the lungs.
Skin Contact	Wash with soap and water. Remove contaminated clothing. If irritation or redness develop and persist, get medical attention.
Eye Contact	Flush with water for at least 15 minutes, consult physician if irritation persists.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>200°C, >392°F
Flammable Limits	Not known
Explosion	Not known
Fire Extinguishing Media	Carbon dioxide, foam, dry chemical, water fog.
Special Fire Fighting Procedures	Wear NIOSH/MSHA-approved SCBA and full protective equipment. Combustion may produce hazardous decomposition products and vapours.

5.0 RESPONSE PERSONNEL

- On duty mechanic(s)
- Mechanical Superintendent;
- Mine Site Services Department;
- Environment and Safety Manager (notification).

- Site Manager if reportable environmental spill (100 L).

6.0 EQUIPMENT

Small Spill

- Hand tools;
- Dry oil absorbent material.

Large Spill

- Containment materials (boom, etc.);
- Portable pump;
- Suitable containers (barrels, etc.);
- Absorbent;
- Hand tools.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Recover bulk of mixture into another container. Absorb residue with an inert material such as earth, sand, or vermiculite. Sweep up and dispose as solid waste.

Log the spill and complete report.

Small Spill

Inside

- Cover with inert absorbent such as Floor Dry or vermiculite.
- Sweep up and place in a suitable container and mark as waste oil.
- Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.

Outside

- Dig up contaminated snow, ice, soil, or vegetation and place in a suitable container, mark as waste oil and temporarily store in Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- If soil contaminated, test clean soil to ensure petroleum levels meet the applicable CCME Soil Quality Guidelines.
- If not excavate more soil, dispose of and retest clean soil.
- Log the spill and complete report.

Large Spill

Inside

- Contain the spill as appropriate, e.g., with booms, absorbent pads, etc.
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill inside.
- Log the spill and complete report.

Outside

- If reportable, call the NT/NU Spill Line, **867-920-8130**.
- Contain the spill as appropriate (see Jericho Contingency Management Plan, Section 5.4).
- Pump pooled material into an appropriate container, such as a barrel for re-use.
- Pump any contaminated material that cannot be re-used into a separate container and mark as waste oil. Temporarily store in the Hazardous Waste Transfer Area pending backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Complete clean up as for a small spill outside.
- Log the spill and complete report.

8.0 RESTORATION

- If spill is to soil, once soil has tested clean, replace contaminated soil with clean fill.
- If practical and not on an actively used surface, revegetate the area with a suitable seed or plant mix based on revegetation trials.
- If not practical, protect from erosion if necessary with suitable armouring (e.g., coarse crushed rock or rip-rap).

BATTERY ACID SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Not applicable for finished product.
Personal Respirators (NIOSH-Approved)	Not applicable for finished product.
Skin Protection	Wear acid-resistant gloves.
Eye Protection	Wear safety glasses.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limit	Not available.
Acute Effects of Overexposure	Eyes: Corrosive. May cause permanent eye damage.
	Skin: Corrosive. May cause severe burns.
	Inhalation: Corrosive. May cause irritation of respiratory tract.
	Ingestion: Corrosive. May cause burns to gastrointestinal tract.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. Get medical attention for any breathing difficulty
Ingestion	If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medial attention immediately.
Skin Contact	Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Eye Contact	Wash thoroughly with running water. Get medical advice if irritation develops.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	Not given.
Flammable Limits	None.
Explosion	Not explosive.
Fire Extinguishing Media	Product is not combustible. Use water, carbon dioxide, or dry chemical on fires.
Special Fire Fighting Procedures	None specified by manufacturer.

5.0 RESPONSE PERSONNEL

- Mechanical Superintendent;
- Truck Shop mechanic(s);
- Environment and Safety Manager.
- Site Manager if reportable spill (5 L).

6.0 EQUIPMENT

- Soda ash;
- Portable pump (or connection to running water);
- Hose;
- Hand tools.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Wear safety glasses, acid-resistant gloves, and full-coverage acid-resistant clothing.
- Use soda ash to neutralize.
- Place in acid resistant containers; mark as waste acid; temporarily store in the Hazardous Waste Transfer Area; backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Flush spill area with large amounts of water only if to a contained area, e.g., sump. Do not flush water to an uncontained area.
- Do not incinerate.
- Log and complete report.

8.0 RESTORATION

Not applicable; product is only used in a controlled area.

FERROSILICON SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Use adequate ventilation.
Respiratory Protection	Use SCBA with minimal ventilation. In well-ventilated, open areas, the use of a respirator equipped with combination organic vapour/acid gas, HEPA cartridges and dust/ mist prefilter is required.
Skin Protection	Use protective gloves resistant to material being used.
Eye Protection	Wear safety goggles.
Work Hygienic Practices	Avoid contamination of work clothing.

2.0 HEALTH HAZARD DATA

Recommended Exposure Limit	Not established
Acute Effects of Overexposure	High concentrations of dust will cause some irritation to eyes, nose and throat.
	Inhalation may cause benign pneumoconiosis, mottling of the lungs.
	Inhalation/ingestion: manganese poisoning. Irritation. Central nervous system disorders, apathy, drowsiness, sleep disturbance, muscular twitching, spastic gait, and emotion control problems.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. Support. Flush with water for 15 minutes. Obtain medical attention in all cases.

4.0 FIRE AND EXPLOSION DATA

Lower Explosive Limit	800°F
Extinguishing Media	Dry powder, dry sand, CO_2.
Special Fire Fighting Procedures	Isolate fire and allow to burn out.
Fire and Explosion Hazards	Dust can be ignited when suspend in air. Will propagate flame but isn't expected to generate sufficient pressure to explode.

5.0 RESPONSE PERSONNEL

- Diamond Plant Superintendent;
- On Duty Diamond Plant Operator;
- Mine Services Department for large spills;
- Environment and Safety Manager (notification).

6.0 EQUIPMENT

- Hand tools;
- Shop vacuum cleaner;
- Suitably sized container for reusable product;
- Depending on size of spill and location, mechanized equipment for clean up.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Use appropriate protective equipment.
- Avoid the use of compressed air to manoeuvre spilled material.
- Fine material should be swept up/vacuumed using explosion proof equipment.
- Keep dry and wet material separated.
- Avoid repacking wet material in sealed containers.

8.0 RESTORATION

Not applicable.

HYDROCHLORIC ACID SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Respirators (NIOSH Approved)	For emergencies or instances where the exposure levels are not known, us a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection	Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.
Eye Protection	Use chemical safety goggles and/or a full face shield where splashing is possible.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	OSHA PEL 5 ppm Ceiling; ACGIH TLV 5 ppm Ceiling
Acute Effects of Overexposure	Eye: Corrosive. Vapours are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
	Skin: Corrosive. Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolour skin.
	Inhalation: Corrosive. Inhalation of vapours can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure and death.
	Ingestion: Corrosive. Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea. Swallowing may be fatal.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	DO NOT INDUCE VOMITING. Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. 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 clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	Not given.
Flammable Limits	Not flammable.
Explosion	Not considered to be an explosion hazard.
Fire Extinguishing Media	If involved in a fire, use water spray. Neutralize with soda ash or slaked lime.

Special Fire Fighting Procedures	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving hydrochloric acid. Stay away from end of tanks. Cool tanks with water spray until well after fire is out.

5.0 RESPONSE PERSONNEL

- Lab technician;
- Plant Superintendent;
- Environment and Safety Manager (notification);
- Site Manager if reportable spill (5L)

6.0 EQUIPMENT

- Soda ash or lime;
- Hand tools;
- Suitably sized container for absorbent;
- Hose and water supply.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Ventilate area of leak or spill.
- Wear appropriate personal protective equipment.
- Isolate hazard area.
- Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible.
- Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Label container and temporarily store in Hazardous Waste Transfer Area for backhaul on the winter resupply to a hazardous waste contractor for disposal.
- Do not flush to sewer.

8.0 RESTORATION

Not applicable.

POTASSIUM NITRATE SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	No information.
Personal Respirators (NIOSH-Approved)	NIOSH/MSHA-approved dust-type respirator.
Skin Protection	Impervious gloves, butyl or rubber, coveralls and impervious boots.
Eye Protection	Goggles.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	Eye: No information.
	Skin: Irritation of the skin and mucous membranes.
	Inhalation: No information.
	Ingestion: Ingestion of large amounts causes violent gastroenteritis.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air; call physician.
Ingestion	Drink water and induce vomiting.
Skin Contact	Flush thoroughly with water.
Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	Not applicable
Flammable Limits	Not applicable
Explosion	Not applicable
Fire Extinguishing Media	Small fire: dry chemical. Large fire: water spray, fog or foam.
Special Information	Remove containers, if possible without risk. Cool containers with water. Use NIOSH/MSHA-approved SCBA when material is involved in fire. Oxidizer - keep away from reducing agents. Will explode if heated to 1000°F in presence of reducing agents, organic materials, or if mixed with cyanides. Yields toxic gaseous oxides when heated above 1000°F.

5.0 RESPONSE PERSONNEL

- Lab technician;
- Plant Superintendent;
- Environment and Safety Manager (notification).

6.0 EQUIPMENT

- Hand tools as appropriate for clean up;
- Shop vacuum cleaner;
- Container of appropriate size to hold spilled product;
- Hose and water to wash down residue to sump.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Log the spill and complete report.
- Recover product with appropriate hand tools into a suitable container for reuse in the plant.
- If the product is contaminated beyond use with foreign material, place in a suitable container, seal, attach a WHMIS label and warning, and place in the Hazardous Waste Transfer Area for backhaul south by a hazardous waste carrier.
- Damaged bags can be burned or temporarily placed in the Hazardous Waste Transfer Area and backhauled south on the winter resupply.
- Wash down tools in the plant where water will drain to the sump.

8.0 RESTORATION

Not applicable; spills will not be to the environment.

SODIUM HYDROXIDE SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Respirators (NIOSH Approved)	Wear NIOSH/MSHA-approved, dust type respirator, where dust or mists may be generated.
Skin Protection	Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.
Eye Protection	Use chemical safety goggles and/or a full face shield where splashing is possible.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	OSHA/PPM PEL: 2 mg/cu m; % by Wt.: 99.00%
Acute Effects of Overexposure	Eye: Causes severe burns. Small quantities can result in permanent damage and/or loss of vision.
	Skin: Corrosive action causes burns and frequently deep ulceration with subsequent scarring. Prolonged contact destroys tissue. Dust or mist from solutions can cause irritant dermatitis.
	Inhalation: Inhalation of dusts or mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild irritation of mucous membranes, severe pneumonitis and destruction of lung tissue.
	Ingestion: Ingestion either in solid or liquid form can cause very serious damage to the mucous membranes or other tissues with which contact is made, and may be fatal.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen. Contact a physician.
Ingestion	If conscious, drink large quantities of water or acidic beverages (tomato or orange juice, carbonated soft drinks). DO NOT induce vomiting. Take immediately to a hospital or physician. If vomiting occurs, administer additional water. If unconscious, or in convulsions, take immediately to a hospital. Never give anything to eat or drink to someone who is unconscious, having convulsions, or unable to swallow.
Skin Contact	Immediately flush skin with plenty of water while removing contaminated clothing and boots. Call a physician. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash burn. Continue washing until slick skin feeling is gone. Thoroughly clean contaminated clothing and boots before reuse or discard.
Eye Contact	Flush eyes with large quantities of running water for a minimum of 15 minutes. If victim is wearing contact lenses, remove them. Hold eyelids apart during the flushing to ensure rinsing of entire surface of the eye and lids with water. DO NOT let victim rub eye(s). Do not attempt to neutralize with chemical agents. Oils/ointments should not be used at this time. Get medical attention if eye irritation occurs.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	Not applicable.
Flammable Limits	Not flammable.
Explosion	Not explosive.
Fire Extinguishing Media	Use extinguishing method suitable for surrounding fire.
Special Fire Fighting Procedures	Firefighters should wear NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Evacuate residents who are downwind of fire. Dyke area to prevent runoff and contamination of water sources. Dispose of fire control water later. Contact with some metals particularly magnesium, aluminum and zinc (galvanized) can rapidly generate hydrogen, which is explosive.

5.0 RESPONSE PERSONNEL

- Lab technician;
- Plant Superintendent;
- Environment and Safety Manager (notification);
- Site Manager if reportable spill (5L)

6.0 EQUIPMENT

- Hand tools;
- Suitably sized container for absorbent;
- Hose and water supply.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Only trained personnel equipped with NIOSH/MSHA-approved, full-facepiece combination dust/mist and acid gas respirators should be permitted in area.
- For dry material, use appropriate methods, shovels, brooms, and vacuums to clean up the spill.
- If mixed with water, or likely to become mixed with water or any liquid, dike area to contain spill. Reclaim if possible. Or, dilute spill with large amounts of water then neutralize with dilute acid.
- Use vacuum truck to pick up neutralized liquid residues (pH 6 to 9) may be disposed of in waste water treatment facilities that allow the discharge of neutral salt solutions.
- After all visible traces have been removed, flush area with large amounts of water.
- Runoff from fire control may cause pollution.
- Log spill and complete report.

8.0 RESTORATION

Not applicable.

MAGNAFLOC 156 SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Provide adequate ventilation to minimize dust inhalation.
Personal Respirators (NIOSH-Approved)	Use dust mask if handling in bulk to prevent inhalation of airborne particles.
Skin Protection	Use gloves, if needed, to avoid prolonged or repeated skin contact.
Eye Protection	Use splash goggles when eye contact may occur.

2.0 HEALTH HAZARD DATA

Airborne Exposure Limits	OSHA PEL 10 mg/m^3; ACGIH TLV 10 mg/m^3; MFRS Recommendation 10 mg/m^3.
Acute Effects of Overexposure	Eye: may produce irritation and redness.
	Skin: None provided.
	Inhalation: dust may cause irrigation to the respiratory system.
	Ingestion: None provided.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	None provided.
Ingestion	If ingested, do not induce vomiting; remove product from mouth and call a physician.
Skin Contact	In case of skin contact, remove contaminated clothing and wash skin thoroughly with soap and water.
Eye Contact	If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	None exhibited.
Flammable Limits	Not flammable.
Explosion	As with most organic powders, flammable dust clouds may be formed in air. Avoid creating dust. Keep away from sources of ignition.
Fire Extinguishing Media	Carbon dioxide, dry chemical, foam, in preference to a water spray.
Special Fire Fighting Procedures	None given.

5.0 RESPONSE PERSONNEL

- On duty plant operator;
- Plant Superintendent;
- Environment and Safety Manager (notification).
- Site Manager (reportable spill, 100 L).

6.0 EQUIPMENT

- Hand tools;
- Shop vacuum;
- Hose and water.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

- Sweep up dry and flush spill area with water. Drain water to plant sump, not the environment. The product or its solutions should not be allowed to enter waterways without treatment.
- Spills of dilute solutions may be flushed with copious amounts of water, or alternately, they may be absorbed with an inert material such as earth or Floor Dry and contained for disposal.
- Log spill and complete report.

8.0 RESTORATION

Not applicable. Spill would be within a completely contained area.

RADIOACTIVE SOURCE LEAK RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Unless authorized, remain a minimum of 5 m away from a damaged density meter, or until the meter's radioactive source has been determined to be safely shielded.

2.0 HEALTH HAZARD DATA

Radiation from meters is normally shielded and must be below 2.5 Siverts/h outside the shield (instrument).

3.0 FIRST AID AND EMERGENCY PROCEDURES

There are no special first aid procedures as injury should not occur except for high radiation exposure. If high radiation exposure (above the health hazard limit) is suspected, seek immediate medical attention.

In the case of an emergency that may have damaged the meters containing the radioactive sources, the following steps must be taken:

- Cease work immediately.
- If the gauge has been partially damaged or destroyed, keep people at least 5 m away until the source is replaced or shielded, or until radiation levels are known to be safe.
- If possible, shutters on the sources in the density meters must be closed and the meters removed from danger of fire exposure if time permits. These procedures must be carried out by personnel trained in the safe use of radioactive prescribed substances.
- Have leak test performed after any incident that may result in source damage.
- In case of an accident or fire, do not use the gauge until any danger from or damage to the source is assessed.
- In the case of damage to meters, notify the Atomic Energy Control Board within 24 hours and file a report in accordance with licence conditions. The report, if required, will be prepared by the Plant Manager or designate.

4.0 FIRE AND EXPLOSION DATA

Meters and sources are non-flammable and will not explode. If meters are exposed to fire, they must be assumed to be leaking radiation until tested.

5.0 RESPONSE PERSONNEL

- On-duty plant operator;
- Plant Superintendent;

- Radiation Safety Officer;
- Environment and Safety Manager;
- Site Manager.

6.0 EQUIPMENT

- Radiation survey meter;
- Packing container to seal leaking radiation source.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

All testing and recovery is to be done ONLY by personnel trained in the safe handling of radioactive devices. If the sample radioactivity is greater than 200 becquerels, assume the radioactive source is leaking.

Meters and radioactive sources are not liquid and cannot spill or leak in that sense. Defective meters must be returned to the supplier, sent to the Atomic Energy Control Board of Canada or an approved waste handling facility following Transportation of Dangerous Goods Regulations for radioactive substances. Radioactive sources must be effectively sealed prior to shipment. The consignee of meters must be notified prior to shipment. Label the package to indicate its contents and affix a radiation warning sign. If in doubt, contact AECB.

- Discontinue using the affected nuclear gauge.
- Take measures to limit the spread of radioactive contamination from the leaking source.
- Isolate the leaking radioactive source by placing exclusion barriers at a distance of 5 m around the nuclear gauge installation.
- Immediately after complying with the above, inform the Canadian Nuclear Safety Commission that a leaking source has been detected.
- Seek qualified professional advice on how to manage the leaking radioactive source.
- Make arrangements for disposal of the leaking source.
- Attempt to determine the source leakage and submit findings in writing to the Canadian Nuclear Safety Commission.

8.0 RESTORATION

Not applicable.