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MIRAMAR NORTHERN MINING LTD. CON MINE

December 12, 2016

Mackenzie Valley Land and Water Board
P.O. Box 2130
Yellowknife, NT X1A 2P6

Attention: W. Floyd Adlem – Acting Chair MVLWB

Re: Emergency Response and Spill Contingency Plan for Con Mine

Dear Mr. Adlem:

As required under Part F, Item 1 of Water License MV2007L8-0025, attached please find the most recent update of the integrated Emergency Response and Spill Contingency Plan (ERSCP) for Con Mine. Miramar Northern Mining Ltd. (MNML) last updated this plan in December 2015. The revisions in this update are minimal, and have been tracked in the revision table included in the document.

There are four full time employees at Con Mine. In the event of a serious emergency, it will continue to be necessary to rely on our contractors, or resources available in the City of Yellowknife. All employees and contractors are required to review the ERSCP at least once each year as part of the site orientation program. Sections of the plan are also reviewed at our monthly safety meetings. In addition, we conduct job specific training that includes handling of spills and emergencies appropriate to the type of work that is being performed.

This completes the latest review and update of the Con Mine Emergency Response and Spill Contingency Plan. Please contact me at the address above if you have any questions concerning the foregoing.

Sincerely,

Dwight Grabke,
Manager, Environmental

Distribution: Tyree Mullaney, Regulatory Officer – MVLWB
Heather Beck, Water Resources Officer – GNWT-ENR
Nahum Lee, Water Resources Officer – GNWT-ENR
Kurt DeBlicke, Enforcement Officer – Environment Canada
Scott Stringer, General Manager – Miramar Northern Mining Ltd.



**MIRAMAR NORTHERN
MINING LTD.**

CON MINE

YELLOWKNIFE, NT

**EMERGENCY RESPONSE
&
SPILL CONTINGENCY PLAN**

Date of Last Revision: December 2016

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Attachments:

Figure 1 - Site Plan of buildings, roads, hazardous material and spill kit locations

Figure 2 – Site Plan showing water bodies and water flow patterns

NT-NU Spill Report Form

CON MINE EMERGENCY RESPONSE & SPILL CONTINGENCY PLAN

INTRODUCTION

Company Name: **Miramar Northern Mining Ltd.**
Site: **Con Mine**
Location: **Yellowknife, NT**
Effective Date of Plan: **January 2017**
Date of Previous Revision: **December 2015**

This Emergency Response and Spill Contingency Plan (ERSCP) applies to the site of Con Mine, as required under the terms and conditions of Water License MV2007L8-0025. It has been distributed to all supervisors on the Con Mine property and externally to government agencies, as follows:

- i) Miramar Northern Mining Ltd. – Con Mine
 - Scott Stringer – General Manager
 - Al Gagnon – Senior Supervisor
 - Jerry Stuckey – Supervisor
 - Dwight Grabke – Environmental Manager

- ii) Government Agencies
 - Tyree Mullaney – Regulatory Officer, Mackenzie Valley Land & Water Board
 - Nahum Lee – Water Resource Officer (Inspector) – Government of the Northwest Territories – Environment and Natural Resources
 - Heather Beck – Water Resource Officer (Inspector) – Government of the Northwest Territories – Environment and Natural Resources
 - Kurt deBlicke – Enforcement Officer – Environment Canada

Additional copies of this plan can be obtained by writing to:

Miramar Northern Mining Ltd. – Con Mine
P.O Box 2000
Yellowknife, NT X1A 2M1
Attention: Scott Stringer, General Manager
Telephone (867) 766-5311
Fax (867) 873-6357

Purpose

The purpose of the combined ERSCP is to provide a plan of action for each foreseeable emergency or spill event that could take place at the Con Mine site. It defines the responsibilities of key personnel and outlines the action plan that will be implemented. It should be read in context with the Hazardous Waste Management Plan, and the Non Hazardous Waste Management Plan, all of which are included in the site Emergency Response Manual (ERM). This plan is presented to all staff and contractors during on-site orientation sessions and re-iterated during site safety and training sessions.

Site Description

Owned and operated by Miramar Northern Mining Ltd. (MNML), Con Mine is a former gold mine located on a 350 hectare mine lease southeast of Yellowknife, within city limits. The mine ceased production in September 2003. Since that time MNML has carried out closure and reclamation activities in accordance with the approved Final Closure and Reclamation Plan. Most of the infrastructure on the minesite has been decommissioned and demolished. At this time there are four full time employees on site. The majority of activities are carried out by contractors. Activities on site are confined to reclamation, inspection, monitoring, and periodic water treatment.

Site History

During its 65 years of operation, Con Mine consisted of underground mine workings, a mill processing facility, several Tailing Containment Areas, a water treatment plant, and other infrastructure necessary to support mining and milling operations. These are briefly described as follows:

Underground Workings

The Con Mine workings reach 6,240 feet below the surface. The Robertson Shaft was the primary access route, with C-1 Shaft formerly providing a secondary access route. Underground mining activities ceased in September 2003, at which time all power, ventilation, pumping, hoisting services and equipment were shut down. The underground workings have been allowed to flood since November 2003.

Milling Operations

The Mill was permanently shut down in July 2004. Demolition was completed in 2010.

Tailing Containment Areas (TCA's)

Tailing was discharged to several Tailing Containment Areas, most recently the Upper and Middle Pud basins. Other than a small volume of material resulting from processing historical arsenic sludges and calcines, no tailing has been pumped to the TCA's since July 2004. Reclamation of the TCA's commenced in 2007 and is ongoing.

Water Treatment Plant (WTP)

The construction of a new water treatment plant was completed in 2015. Ferric sulphate, lime, and a polymer are added to precipitate and remove arsenic and other metals. The old water treatment plant was demolished in 2016.

With the exception of the Central Shops & Administration building, all structures on site have been decommissioned and demolished. A site map of Con Mine (Figure 1.) and a plan showing the site topography and water flow (Figure 2.) are appended to this plan.

PROTECTION PRIORITIES

MNML has the following protection priorities in the event of any emergency:

- P. **People** - Protect the health, safety and wellbeing of those involved (eg first responders, emergency response teams, impacted employees and contractors and affected communities) to minimize and recover from any negative impacts resulting from a crisis
- E. protect, preserve and restore the **environment**
- A. **Assets** - repair property and process losses and offset production losses to the extent practical
- R. – preserve and, where possible, enhance **reputation**
- L. **Livelihood** - return to safe operating conditions as quickly as possible

SERIOUS INJURIES OR INCIDENTS

For any emergency, spill or incident involving severe injuries or death, significant environmental impact, major loss of property, or serious damage to the reputation of the company, the **NEWMONT RAPID RESPONSE SYSTEM** will be implemented. In the event of a crisis of this nature, refer to and follow the instructions therein. In such cases, the **Newmont Rapid Response System** will be activated and the corporate Legacy Response Group will participate in planning and directing the response. A copy of the Newmont Rapid Response System is located under Tab #1 in the site Emergency Response Manual.

SITE EMERGENCY & SPILL RESPONSE TEAM (ERT)

Four full time employees constitute the present workforce at Con Mine. These individuals form the site Emergency & Spill Response Team (ERT) and carry out the initial response to any emergency or spill on site. They act under the guidance of the mine General Manager or his designate, and interchange roles and responsibilities as required. The primary role of the site ERT is to take control of the situation and render the site safe, utilizing available local resources until an assessment of the emergency can be completed and a decision made as to whether or not to upgrade the response.

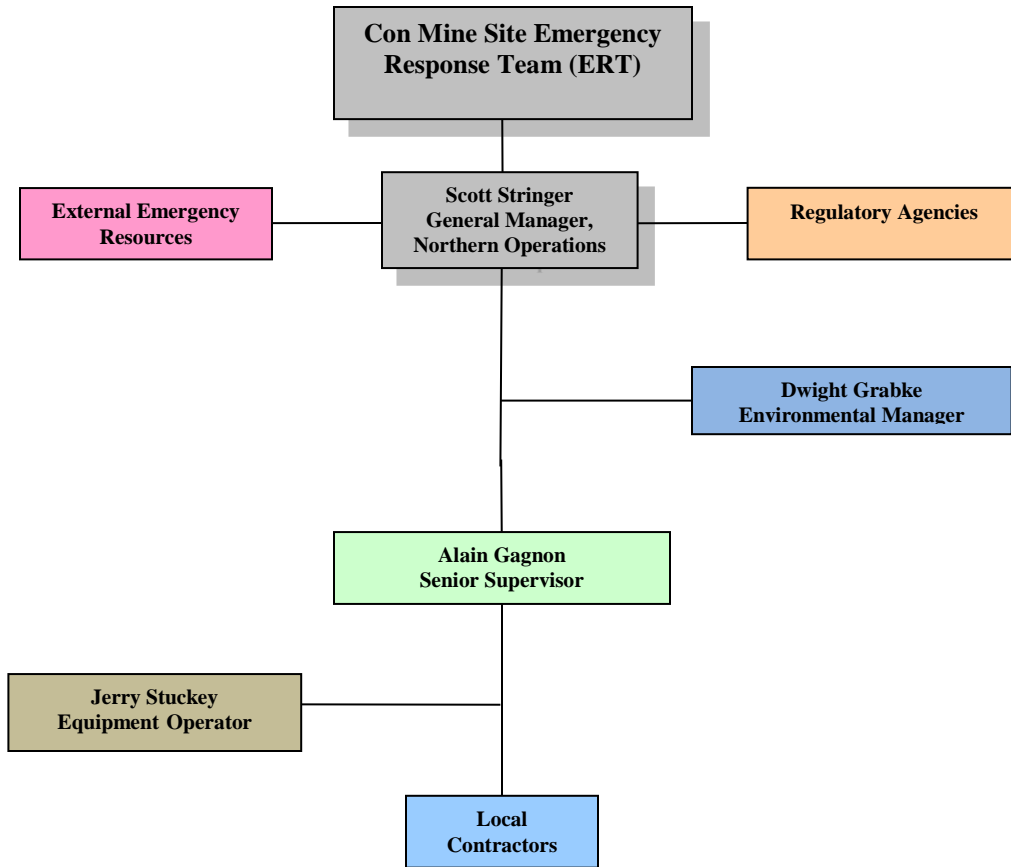
Due to the limited resources at Con Mine, the site is heavily dependent on outside agencies such as the City of Yellowknife Fire Department. Physical response to any emergency or spill by the ERT will be determined by the magnitude and type of incident.

OPERATIONS COORDINATOR

The Operations Coordinator for the property is the General Manager or his designate. In his absence the Senior Supervisor will assume these responsibilities.

RESPONSE ORGANIZATION

An organization chart showing the structure of the Con Mine ERT is shown on the following page. **These key individuals have the same roles and responsibilities in the event of any emergency or a spill on the property, and will interchange roles and responsibilities as required.**



EMERGENCY RESPONSE TEAM STRUCTURE

Emergency Response Phone Numbers and other important information are shown on the following page.

EMERGENCY TELEPHONE NUMBERS (ALL AREA CODE 867)

CON MINE ERT	<u>OFFICE#</u>	<u>HOME#</u>	<u>CELLULAR#</u>
Scott Stringer, General Manager	766-5311	444-9249	444-9249
Al Gagnon, Senior Supervisor	766-5315	444-8096	444-8096
Jerry Stuckey, Equipment Operator	766-5303	920-2071	444-8099
Dwight Grabke, Environmental Manager	766-5317	446-1256	446-1256
EMERGENCY RESOURCES			
WSCC Accident Reporting Line (24 H)	1-800-661-0729	Or Office	920-3888
NT- NU 24-HOUR SPILL LINE	920-8130	FAX	873-6924
STANTON HOSPITAL EMERGENCY	669-4100		
FIRE DEPARTMENT	873-2222		
AMBULANCE	873-2222		
POLICE (RCMP)	669-1111		
24 hour Propane Emergency line	1-877-873-7467		
CORONER'S OFFICE	920-8713		
CON MINE RADIO FREQUENCY	RX 163.980		TX 165.000

ALL CON MINE EMPLOYEES AND CONTRACTORS ARE NORMALLY EQUIPPED WITH RADIO TRANSMITTERS TUNED TO THE CON MINE FREQUENCY.

THESE RADIOS ARE MONITORED BY SUPERVISORS DURING NORMAL OPERATIONS.

IN THE EVENT OF A FIRE – CALL FIRE, FIRE, FIRE

IN THE EVENT OF A SERIOUS INJURY – CALL CODE 1, CODE 1, CODE 1

1.0 EMERGENCY AND SPILL RESPONSE PROCEDURES

All Supervisors, including Contractor Supervisors on the property are responsible to be completely familiar with their duties in respect to initiation of the Con Mine ERSCP. Each Supervisor will ensure that employees under their control are familiar with the emergency procedures and standards for their area of work.

1.1 Supervisors on Duty

Upon notice of a possible emergency situation, the Supervisor will determine if an emergency exists and initiate emergency procedures for the area.

At the scene of any emergency, the supervisor will assume control until such time as control is turned over to more appropriate Company Officials or their designate.

1.2 Primary Responsibilities

- Take prompt action to control the emergency situation.
- Withdraw all personnel from the danger area to the Designated Assembly Point.
- Ensure uninvolved personnel remain out of the danger area and report to the Designated Assembly Point.
- Record names of all personnel affected by the emergency situation. Establish identity of personnel that may be missing and the last known location. Report the status of all personnel to the General Manager or his designate and rescue personnel if applicable and safe to do so.
- Identify possible hazards in the area.
- Identify electrical supply where its presence may cause danger to victims or emergency responders.

2.0 TYPES OF ALARMS

2.1 Emergency Signal:

The Emergency Warning Signal is the standard audible Fire Alarm Bell.

These alarms can be activated manually at Fire Alarm Stations on the property.

Personnel detecting an audible alarm are to stop all activities immediately and follow the appropriate emergency procedures for the area.

2.2 Remote work areas with no alarm system

In work areas where there is no telephone communication or alarm system, radio communication tied into the Con Mine radio frequency becomes the primary mode for emergency warning and announcement on site.

All Supervisors, are responsible for carrying a radio at all times.

2.3 Fire Alarm Tests

Fire alarm tests will be performed in all active working areas of the minesite at least once every 6 months. Tests will be coordinated by the Senior Supervisor.

3.0 EMERGENCY RESPONSE NOTIFICATION

Key personnel are responsible to notify the following in response to an Emergency or disaster situation. Refer to the **EMERGENCY TELEPHONE INDEX on Page 5.**

3.1 Serious Injury and/or Illness

For all **serious** injury and/or illness the Supervisor, will notify the following:

- Hospital and Ambulance Services
- Senior Supervisor
- General Manager or his designate

3.2 Emergency or Fire

For all Emergencies and Fire the **SUPERVISOR RESPONSIBLE FOR THE AREA** will notify the following:

- Fire Department (Fire Only)
- Senior Supervisor
- General Manager or his designate

3.3 Environmental Emergencies/Spills

For all Environmental Emergencies/Spills the **SUPERVISOR** will notify the following:

- Senior Supervisor
- Environmental Manager
- General Manager or his designate

3.4 Other Emergencies

For all other Emergencies, the **SUPERVISOR** will notify:

- Senior Supervisor
- General Manager or his designate

3.5 WSCC (Mines Inspector) Notification

The **General Manager** or his designate will notify WSCC **IMMEDIATELY** when responding to the following:

- An Accident that has Caused Serious Injury to an Employee
- An Accident that has Caused Loss of Life

Where loss of life has occurred, the **General Manager** or his designate will also notify the Royal Canadian Mounted Police and Coroner, and activate the Newmont Rapid Response System.

The **General Manager** or his designate will take steps to ensure the scene of these types of accidents remain undisturbed until they are fully investigated.

The **General Manager** or his designate will verbally notify WSCC (Mines Inspector) **WITHIN 24 HOURS** when responding to the following:

- Any outbreak of fire
- Premature or unexpected explosion
- Asphyxiation effecting a partial or total loss of physical control

- Explosion or fire related to operation of air compressor, air receiver, compressed air line, or steam boiler;
- Major damage to any vehicle.

Subsequent to verbal notification, written notification will be provided **WITHIN 72 HOURS**.

Should an outbreak of fire occur, which **ENDANGERS THE HEALTH OR SAFETY** of employees or serious injury or death occurs; the **General Manager** or his designate shall notify WSCC (Mines Inspector) **IMMEDIATELY**.

*******Refer to the N.W.T. Mine Safety Act and Regulations for further reference.**

Contact Information for other government agencies can be found in Section 3.6 on the following page.

3.6 GOVERNMENT CONTACTS TELEPHONE NUMBERS

AGENCY	NT- NU 24-HOUR SPILL LINE	PHONE	FAX
Government of Canada	FISHERIES AND OCEANS: Area Habitat Biologist and/or Fishery Officer	1-800-265-0237 669-4900	873-6924 669-4940
Government of the N.W.T.	LAND ADMINISTRATION Director, Land Administration Manager, Land Administration ENVIRONMENT AND NATURAL RESOURCES	(867) 767-9185 ext. 24105 (867) 767-9185 ext. 24106	
	Superintendent, ENR North Slave Region	(867) 767-9238 ext. 53234	
	Water Resource Officer (Inspector)	(867) 767-9238 ext. 53243 or 53244	
	Hazardous Substance Specialist	(867) 767-9236 ext. 53187	
Mackenzie Valley Land & Water Board	Executive Director	766-7459	873-6610
City of Yellowknife	Mayor Director of Public Works and Engineering	920-5693 920-5624	

4.0 EMERGENCY PROCEDURES

ALL PERSONNEL INCLUDING CONTRACTORS

BE SURE . . YOU KNOW the nearest Emergency Exits from your work place.

YOU KNOW the Designated Assembly Points

YOU KNOW the location of nearby Fire Extinguishing Equipment and that you are familiar with the proper use of the equipment

YOU KNOW the Emergency Procedures for your area

4.1 Duties and Responsibilities during an Emergency

A Person Who Discovers a Fire:

- Small fires that can be safely extinguished should be put out. At all times keep an exit at your back for safe retreat. Notify the area Supervisor so that the incident can be investigated and to ensure no further danger exists.

- **IF YOU ARE UNABLE TO PUT THE FIRE OUT, DO NOT HESITATE, INITIATE EMERGENCY PROCEDURES:**

ACTIVATE THE ALARM SYSTEM FOR THE AREA. IF THERE IS NO ALARM SYSTEM CALL "FIRE, FIRE, FIRE" IN THE AREA AND ON THE RADIO.

- **NOTIFY THE FOLLOWING:**

- **CITY FIRE DEPARTMENT** **873-2222 ...AND...**
- **Refer to Page 5 and section 3.6 for additional contact requirements once Emergency Services have been contacted and or on scene.**

- **STAY CALM, AND GIVE THE FOLLOWING INFORMATION:**

- **Your full name**
- **Your location**
- **The location where the fire is located**
- **Confirm the designated assembly point**

- **Proceed Immediately To the Nearest Exit and Go To the Designated Assembly Point.**

- **ENSURE** all doors are closed, but not locked, as you leave the building, as it will help to limit the spreading of the fire.

- **DO NOT STOP** for personal belongings.

- **DO NOT** re-enter an area or building until an emergency is declared over by the Fire Department and permission has been granted by your supervisor.

The Supervisor of the area affected will ensure all personnel are evacuated and accounted for at the assembly point.

4.2 Medical Emergencies

- Persons witnessing an accident should assist the injured person. If possible, remove any hazards, taking into consideration the responder's OWN safety.

DO NOT ENDANGER YOURSELF OR OTHERS when attempting to deal with an **EMERGENCY. GET HELP** and return to the scene to give what support you can until **TRAINED RESCUE PERSONNEL** arrives.

FOR SERIOUS INJURIES: ACTIVATE THE EMERGENCY RESPONSE TEAM - CALL "CODE 1, CODE 1, CODE 1" IN THE AREA AND ON THE RADIO.

- NOTIFY THE FOLLOWING:
SERIOUS INJURIES (requiring immediate medical attention)
 - **Supervisor ...AND...**
 - **CITY AMBULANCE at 873-2222 ...AND...**
 - **Refer to page 5 and/or sections 3.6 for additional contact requirements once Emergency Services have been contacted and are on scene.**

MINOR INJURIES

- **Supervisor**
- Give the following information:
 - Your name
 - Location you are calling from
 - Location of the casualty
 - Nature of injuries or what happened

4.3 Designated Emergency Assembly Points

WORK AREA

CENTRAL SHOP & WAREHOUSE
GATEHOUSE BUILDING
WATER TREATMENT PLANT

DESIGNATED ASSEMBLY POINT

ROB SHAFT CAP, Dewatering Portal
CENTRAL SHOP LUNCH ROOM
CENTRAL SHOP LUNCH ROOM

****OR** ANY OTHER AREA DESIGNATED BY THE SUPERVISOR**

ONCE CHECKED IN AND ACCOUNTED FOR AT THE ASSEMBLY POINT, ALL PERSONNEL ARE TO REMAIN THERE UNDER THE DIRECTION OF THE SUPERVISOR UNTIL RELEASED. DO NOT LEAVE THE PROPERTY - ALL PERSONNEL MUST BE ACCOUNTED FOR.

4.4 SUPERVISOR

Upon receiving notification of an emergency situation perform the following:

4.4.1 Fire Emergency Duties:

1. Confirm that the Yellowknife fire department has been contacted. If in doubt, call city fire department (873-2222) and inform them where the fire is located and the location of the gate they should enter (Robertson Main Gate). This is the second entrance to the property.
2. Proceed immediately to the Robertson Main Gate and wait for the arrival of the Fire Department.
3. If gate is closed, have it opened for the arriving fire department.
4. Direct the Yellowknife Fire Department to scene of the fire.
5. Return to the Gatehouse and man the gate.
6. During after hours, weekends and statutory holidays contact the MNML Management Team using the Emergency Telephone Numbers Index on **page 5**.
7. Once Emergency Services are on site, close the gate. No one is permitted on or off site unless permission has been granted by the General Manager or his designate.

4.4.2 Responding To Serious Injury:

1. Upon being notified of a **SERIOUS INJURY** on the property, proceed directly to the location of the injured and provide emergency care.
2. Call for an AMBULANCE (873-2222) and have a Supervisor standby to direct them to the appropriate area.
3. If on site assistance is required call on the RADIO and request for help.

5.0 SPILL CONTINGENCY PROCEDURES

These contingency procedures form an integral part of the Emergency Response & Spill Contingency Plan for Con Mine. They have been developed in order to minimize or prevent any possible effects to the environment and been prepared to provide easy access to all information required in dealing with any spill. The Emergency Telephone Numbers below are the same as those on page 6 of this document. They are repeated below to minimize the response time in dealing with an emergency.

CON MINE ERT	<u>OFFICE#</u>	<u>HOME#</u>	<u>CELLULAR#</u>
Scott Stringer, General Manager	766-5311	444-9249	444-9249
Al Gagnon, Senior Supervisor	766-5315	444-8096	444-8096
Jerry Stuckey, Equipment Operator	766-5303	920-2071	444-8099
Dwight Grabke, Environmental Manager	766-5317	446-1256	446-1256
EMERGENCY RESOURCES			
WSCC Accident Reporting Line (24 H)	1-800-661-0729	Or Office	920-3888
NT- NU 24-HOUR SPILL LINE	920-8130	FAX	873-6924
STANTON HOSPITAL EMERGENCY	669-4100		
FIRE DEPARTMENT	873-2222		
AMBULANCE	873-2222		
POLICE (RCMP)	669-1111		
24 hour Propane Emergency line	1-877-873-7467		
CORONER'S OFFICE	920-8713		
CON MINE RADIO FREQUENCY	RX 163.980		TX 165.000

EMERGENCY TELEPHONE NUMBERS (ALL AREA CODE 867)

ALL CON MINE EMPLOYEES AND CONTRACTORS ARE NORMALLY EQUIPPED WITH RADIO TRANSMITTERS TUNED TO THE CON MINE FREQUENCY.

THESE RADIOS ARE MONITORED BY SUPERVISORS DURING NORMAL OPERATIONS.

IN THE EVENT OF A FIRE – CALL FIRE, FIRE, FIRE

IN THE EVENT OF A SERIOUS INJURY – CALL CODE 1, CODE 1, CODE 1

5.1 Reporting Procedures

As outlined in Section 1.0, any Con Mine employee or contractor encountering a spill or unauthorized discharge shall **immediately** report the situation to their supervisor and take action to stop or contain the spill, if this can be done safely. The first goal is to prevent any danger to people.

The first person on the scene **MUST**:

- Be alert and consider the safety of yourself and your co-workers as paramount
- Assess the hazard to persons in the vicinity of the spill and if necessary, take action to control danger to human life. Stay upwind of the spilled material. If possible, identify the material or product released
- Keep all people not involved in spill containment a safe distance away
- **IMMEDIATELY** report the situation to their supervisor
- Make every reasonable and SAFE effort to **IDENTIFY** the spilled product
- **STOP** the leak, or contain the spill **ONLY** if it is safe to do so

The Supervisor receiving such a report will implement the Spill Response Action Plan for the type of material involved (Section 6.0).

Persons responding to the spill shall:

- Proceed to the emergency location.
- Assess the situation.
- Not take any unnecessary risks.
- Arrange for first aid and removal of injured personnel.
- Coordinate equipment support to the location.
- Liaise with emergency response personnel regarding containment, recovery, and disposal procedures.

Several government departments are available with expert advice to assist in decision-making where environmental considerations are of concern. A telephone listing of these departments is included in Section 3.6, page 10 of the ERP.

5.2 General Manager

The duties and role of the General Manager or his designate include:

- Ensuring that a Spill Report is submitted to the 24-Hour Spill Report Line. A copy of the NT-NU Spill Report form is appended to this plan.
- Contacting the GNWT – ENR inspector and forwarding the Spill Report by Fax or email.
- Providing or arranging for technical advice on matters relating to the spill
- Estimating the effectiveness of containment, recovery, and disposal options.
- Arranging for collection of samples using appropriate methods and containers for the particular spilled material, and arranging for sample analysis.
- Following up at the spill site; monitoring the effectiveness of the clean-up operation and giving directions for further work if necessary.

- Gathering all relevant information and submitting a detailed Spill Report no later than 30 days after the initial spill.

5.3 Spill Response Training

All site personnel are familiar with the ERSCP and are refreshed through regularly scheduled safety meetings. A copy of the ERSCP is available to all individuals involved in site reclamation activities at Con Mine. A review of the ERSCP is included in the site orientation program for all employees and contractors.

5.4 Spill Prevention and Minimization

The purpose of this section is to identify control measures that have been undertaken to prevent spills.

5.4.1 Tailing Containment Areas (TCA's)

With the exception of the collection pond in Middle Pud, the TCA's are inactive and undergoing reclamation. Middle Pud TCA is utilized as the collection point for precipitation reporting to the minesite. Water collected in Middle Pud is treated to remove contaminants prior to discharge to the environment. There are nine dam structures surrounding the Middle Pud TCA, identified as follows:

- Dam #2, #2 North, #3 West, #3 Central, #3 East, #4, #5, #6 and #7

Most of these dams are small structures, and all are several meters above the highest anticipated water elevation in Middle Pud. There are no plans to use these structures to retain water, now or in the future. The Upper Pud TCA was breached by construction of an engineered drainage channel in 2007. It is no longer a water retaining structure. All dams are visually inspected at least once per week during open water season. In addition, an inspection conducted by a qualified Geotechnical Engineer is required annually in June under the terms and conditions of the Water License. This report is submitted to the MVLWB and the AANDC inspector within 60 days of the inspection.

5.4.2 WTP Solution Containment

Spills within the water treatment plant are contained within the facility and flow to drains that discharge to the Middle Pud TCA.

5.4.3 Fuel Containment

All large on-site bulk fuel storage tanks have been removed from the property. Three small surface Envirotanks remain on site. One is for gasoline and two are for diesel fuel.

5.5 Spill Containment

Measures outlined in this section are intended to minimize contamination following release of a hazardous material. For all spills, the initial response will be to immediately minimize any direct threat to human life or the environment. Personnel not directly involved with containment and remedial operations will not be permitted near the incident scene.

5.5.1 Containment on Open Water

For spills on open water, containment procedures may vary depending on whether the material floats or sinks, and whether the water is flowing or standing. For floating materials (such as hydrocarbon products) a surface boom will be deployed.

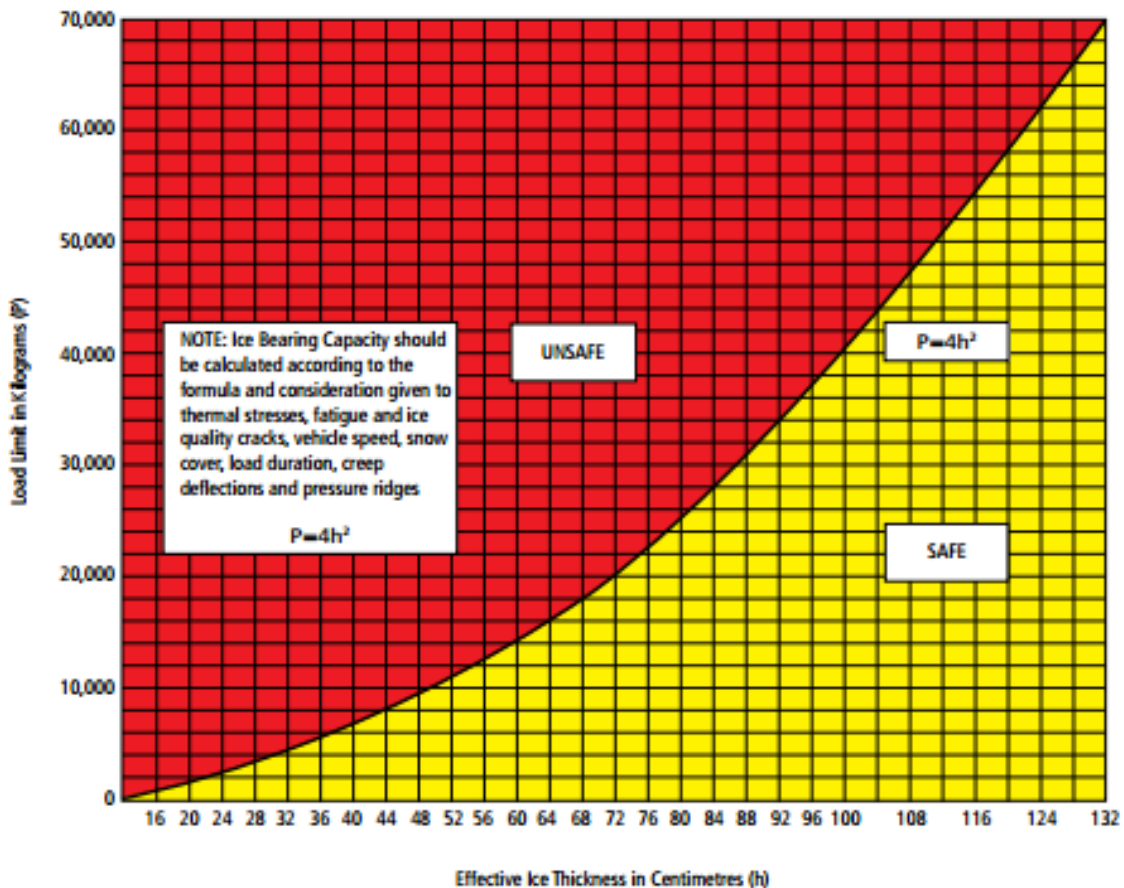
In flowing water, the boom should be stretched across the flow downstream from the spill. In standing water the boom should contain the spill close to the shore. If a boom is not available, a containment dyke should be constructed in shallow areas.

For sinking materials a containment dyke should be constructed if possible. This will contain the dispersion of the material in standing water. In small amounts of flowing water, the flow may be diverted around the material by constructing a dyke, or ditching if possible. Removal of containers involved in a spill must receive the same priority as spill containment.

5.5.2 Containment on Ice

Spills on ice are affected by the strength of the ice and/or the floating and sinking characteristics of the material. The safe bearing capacity of ice must be carefully assessed. If the spill does not penetrate the ice, containment will take the same form as that on land. The following ice thickness table can be used to estimate load-bearing capacity for equipment used in the containment and recovery operation.

Ice Bearing Capacity Chart



Ice Bearing Capacity Chart
Gold's Formula (Capacity = 4 x h²) (Height in centimetres – Capacity in kilograms)

cm (h)	Capacity	cm (h)	Capacity	cm (h)	Capacity	cm (h)	Capacity
2.5	25	37.5	5625	75	22500	112.5	50625
3.5	49	40	6400	77.5	24025	115	52900
5.0	100	42.5	7225	80	25600	120	57600
7.5	225	45	8100	82.5	27225	125	62500
10	400	47.5	9025	85	28900	130	67600
12.5	625	50	10000	87.5	30625	135	72900
15	900	52.5	11025	90	32400	140	78400
17.5	1225	55	12100	92.5	34225	145	84100
20	1600	57.5	13225	95	36100	150	90000
22.5	2025	60	14400	97.5	38025	155	96100
25	2500	62.5	15625	100	40000	160	102400
27.5	3025	65	16900	102.5	42025	165	108900
30	3600	67.5	18225	105	44100	170	115600
32.5	4225	70	19600	107.5	46225	175	122500
35	4900	72.5	21025	110	48400	180	129600

If a spill penetrates the ice, the situation is analogous to spills in open water. If the spilled material floats, the ice will be broken and removed, absorbent materials and/or containment boom installed and active skimming or vacuuming undertaken as required. Depending on the size and location of the spill (relative to land/shoreline), the ice will be broken and removed by backhoe or loader (near shore and/or large spills) or cut by chainsaw and cut pieces pushed under the ice or removed using tongs. Ice between the spill and the boom will be collected and disposed of with the spilled material.

5.5.3 Containment on Snow

Since snow is one of the best absorbents and spilled material will migrate into snow until it becomes immobile, it should be used as much as possible when it is available. Contaminated and saturated snow facilitates removal of the contaminant to a recovery or disposal site. Methods to prevent a spill on snow from spreading include:

- Compacting snow around the perimeter of the spill to direct contaminated material to a desired location
- Constructing , compacting, and/or water spraying snow berms or dams to contain the spill
- Locating the low point of the spill area, then clearing channels in the snow to allow material not being absorbed to flow into the low area.

5.5.4 Containment on Land

In all cases of liquid spills the initial containment step is to prevent further dispersion. This is usually accomplished by constructing a dyke as needed around the spill area using readily available materials placed with heavy equipment. Absorbent materials such as Hazorb Pillows, Zorbol, fiber pads, peat moss, sawdust and snow or gelling agents such as Chemgel should be used to prevent further spread or seepage.

5.6 Recovery, Waste Disposal and Site Reclamation

Once a spill has been contained it is necessary to recover the spilled material, dispose of this material in an appropriate manner, and reclaim the site. Recovery operations must include all:

- spilled material
- soil or snow beneath the spill that has been contaminated
- material used for construction of dykes that has been contaminated
- contaminated absorbent materials that are contaminated
- shipping containers

Intact or largely intact containers should be recovered and any seepage stopped. For small volumes – manually shovel / place contaminated materials into empty drums. The contents of each container must be clearly identified with a permanent marker. For large volumes – use heavy equipment to remove contaminated materials.

5.6.1 Waste Disposal

All spill residues must be disposed of, stored or treated in a manner approved by the General Manager or his designate. Final disposal of the recovered material will be determined in consultation with the regulatory officials. The Material Safety Data Sheet (MSDS) for the material recovered will also give instructions for final disposal.

Oils and Oil Products: Materials contaminated by petroleum products may be transported off-site by the Supplier or treated at the KBL Soil Treatment Facility (following approval).

Water Treatment Plant Reagents: These materials include liquid Ferric Sulphate, Hydrated Lime, Sulphuric Acid, and flocculating agents, all of which can be deposited in the Middle Pud water collection pond.

5.6.2 Spill Site Restoration

The General Manager, in consultation with the responsible government officials, will select an appropriate reclamation plan. Final remediation work, including contouring and revegetation of the affected areas, will be conducted under the direction of the General Manager or his consultants. Remediation work on a spill site is not considered complete until the responsible regulatory officials have approved of the work conducted and do not consider the spill site to be a long term threat to the natural environment.

5.7 Spill Definition and Types of Spills

The ERSCP covers spills and unauthorized discharges of hazardous materials that could negatively impact human health or the environment. Petroleum products and chemicals used on site are listed in Table 1. Only materials that are hazardous and have annual usage, such as petroleum products used in the maintenance shop and chemicals used in the water treatment plant, are discussed. MSDS for these substances are available on site. Types of spills that may occur with these materials are identified.

Table 1: Hazardous Materials and Types of Spills

ITEM	USE	TYPES OF SPILLS
Diesel Fuel	Heavy Equipment	Tank rupture or leak, spills during fueling, or filling of fuel storage tank.
Ethylene or Propylene Glycols	Antifreeze	Drum leaks, spills/leaks during use.
Ferric Sulfate	Water Treatment Plant	Liquid material spill during transport to place of use.
Gasoline	Vehicles	Tank rupture or leak, spills during fueling, or filling of fuel storage tank.
Lime	Water Treatment Plant	Solid material spill during transport or during filling of silo.
Motor and Lube Oils	Equipment Lubrication	Drum leaks, spills/leaks during use.
Propane	Heating	Tank or pipeline rupture or leak.
WTP Feed (untreated effluent)	Stored in Middle Pud TCA	1. Dam failure. 2. Seepage through dams. 3. Pipeline failure
Sewage	Waste	Pipe rupture or leak between Tanker truck and storage tank
Sulfuric Acid (drums ¹)	Water Treatment Plant	1. Liquid spill during transport. 2. drum leaks,

¹ Sulfuric Acid is no longer used as part of the water treatment plant process, drums remaining on site are awaiting disposal.

6.0 RESPONSE ACTION PLANS

This section outlines the procedures and steps that would occur in the event of a spill or unauthorized discharge. In all cases, **environmental monitoring** is a vital and extremely important aspect of any spill or unauthorized discharge. It ensures that the ERT has acted correctly and the action plan has been effective.

Sampling of liquid, soil, and vegetation from any seepage or spill area is required to determine contaminant levels, if any. Samples collected at the site of the incident, and areas downstream, are used to assess contaminant levels.

Once the spill is terminated and/or contained, the same areas will be monitored until results conclude that levels are below contaminant limits. The General Manager or his designate will tabulate the results and prepare a detailed Spill Report within 30 days.

6.1 UNTREATED EFFLUENT

A spill involving untreated effluent would apply to a breach or leak from a drainage collection channel or the Middle Pud TCA, or a break in a pipeline during conveyance from the either Underground dewatering pump to middle pud or WTP influent pump to the WTP. In both cases pipelines moving un-treated water all fully contained within the Middle Pud TCA.

6.1.1 Initial Response

The Senior Supervisor or his designate, shall be immediately advised of the incident by radio, phone or in person. They will initiate procedures to stop flow and activate the response action plan.

Contain flow by constructing a dyke with earth, sand bags, snow or other barrier, blocking any entry to waterways. Construct an interceptor trench or direct flow towards a low area away from water. If the spill has reached natural waters, try to prevent additional material from entering the water. Construct a berm if required. Use earth-moving equipment to complete repairs to containment dam.

A spill report will be filed on the 24 hours Spill Line by the General Manager or his designate.

6.1.2 Recovery

Pump solution to the Middle Pud TCA or an emergency containment area. Excavate any contaminated soils/snow and dispose of at the Middle Pud TCA. Replace all excavated soils with clean backfill to previous levels.

6.1.3 Properties

Untreated effluent may contain low levels of arsenic as well as traces of lime, other metals, or finely ground rock. It is generally odourless and colourless.

6.1.4 Environmental Concerns

This solution may be toxic to fish and other aquatic organisms, and may be harmful to wildlife and waterfowl. It is environmentally stable.

6.1.5 Containers

N/A

6.1.6 Personal Protection

Wear impervious chemical resistant clothing, gloves, footwear and goggles.

6.2 DIESEL FUEL SPILL

6.2.1 Initial Response

The Senior Supervisor or his designate shall be advised of the incident and a response initiated.

Eliminate ignition sources and any open flame.

Stop the flow of product.

Contain flow by dyking with earth or other barrier, blocking any entry to waterways, construction of an interceptor trench or underflow dam, etc. If spill has reached natural waters, deploy a containment boom and apply oil absorbent materials.

A spill report will be filed on the 24 hour Spill Line by the General Manager or his designate.

6.2.2 Recovery

Recover as much free product as possible by pumping into drums or portable tanks. Excavate any contaminated soils/snow and dispose of at an approved site. Diesel fuel spilled on water can be recovered by using skimmers or absorbent booms.

6.2.3 Fire Response

Use CO₂, dry chemical, foam or water spray (fog),

Use water to cool tanks.

Divert the fuel to a secure area for controlled burning.

If diesel fuel is escaping, get it contained as soon as possible.

6.2.4 Properties

Chemical composition hydrocarbon C₉ to C₁₆

Clear to yellow with hydrocarbon odour.

Diesel fuel will float on water.

Flash Point of diesel fuel is 40° C.

6.2.5 Environmental Concerns

Diesel fuel is toxic to fish and other aquatic organisms and harmful to waterfowl.

6.2.6 Containers

Diesel fuel is transported to the site by tanker truck and transferred to a double-walled storage tank.

6.2.7 Personal Protection

Wear impervious chemical resistant clothing, gloves, footwear and goggles. For confined spaces SCBA may be required.

Avoid contact with strong oxidizers such as sulphuric acid.

6.3 GASOLINE SPILL

6.3.1 Initial Response

The Senior Supervisor or his designate shall be advised of the incident and a response initiated.

Eliminate ignition sources and any open flame.

Remove all personnel not involved with the incident from the area.

Stop the flow of product.

Contain flow by dyking with earth or other barrier, blocking entry to waterways, construction of an interceptor trench or underflow dam. If spill has reached natural waters, deploy a containment boom and oil absorbent materials, or leave to evaporate.

Gasoline contains benzene, a suspected carcinogen. Avoid breathing vapours, and if necessary, obtain an organic vapour cartridge full-face respirator or wear SCBA.

A spill report will be filed on the 24 hour Spill Line by the General Manager or his designate.

6.3.2 Recovery

Conduct regular explosive atmosphere monitoring with an intrinsically safe instrument. Recover as much free product as possible by pumping into drums or portable tanks. Free Product recovery operations should utilize an explosion proof pump and all equipment involved in the transfer must be properly grounded. Excavate any contaminated soils/snow and dispose of at an approved site. Gasoline spilled on water can be recovered by using skimmers or absorbent booms or left to evaporate.

If excavating gasoline-contaminated soils, consider using a layer of fire suppression foam to reduce the potential of explosion arising from sparks caused during excavation.

6.3.3 Fire Response

Use CO₂, dry chemical, foam, or water spray (fog).

Use water to cool tanks.

Divert the gasoline to a secure area for controlled burning.

If gasoline is escaping, get it contained as soon as possible.

6.3.4 Properties

Chemical composition - hydrocarbon C₄ to C₁₂ range.

Light green, clear, amber coloured liquid with hydrocarbon odour.

Gasoline floats on water.

Gasoline has a Flash Point of -50° C.

Vapours and product are highly flammable and explosive.

Vapours are heavier than air.

6.3.5 Environmental Concerns

Gasoline is toxic to fish and other aquatic organisms and harmful to waterfowl.

6.3.6 Containers

Transported to site by tanker truck and transferred to a double-walled storage tank situated on the northeast side of the central shops & Administration Building.

6.3.7 Personal Protection

Wear impervious chemical resistant clothing, gloves, footwear and goggles. For confined spaces SCBA may be required.

Eliminate all sources of ignition.

Restrict access and work upwind from the spilled product.

Avoid contact with strong oxidizers such as sulphuric acid.

6.4 LUBRICATING OR HYDRAULIC OIL SPILL

6.4.1 Initial Response

The Senior Supervisor or his designate shall be advised of the incident and a response initiated.

Eliminate ignition sources and any open flame.

Stop the flow of product.

Contain flow of oil by dyking with earth or other barrier, blocking any entry to waterways, construction of an interceptor trench or underflow dam, etc. If spill has reached natural waters, deploy a containment boom and apply oil absorbent materials.

A spill report will be filed on the 24 hour Spill Line by the General Manager or his designate.

6.4.2 Recovery

Recover as much free product as possible by pumping into drums or portable tanks. Excavate any contaminated soils/snow and dispose of at an approved site. Lubricating and hydraulic oil spilled on water can be recovered by using skimmers or absorbent booms. Use absorbent pads or granular absorbents for minor spills.

6.4.3 Fire Response

Use CO₂ dry chemical, foam or water spray (fog). Water may spread fire.

Use water to cool other containers.

Divert the oil to a secure area and allow to burn under control.

If oils are escaping, get it contained as soon as possible.

Wear SCBA and eye protection.

6.4.4 Properties

Chemical composition - mixture of hydrocarbons and conventional industrial oil additives C22 to C61 range.

Light and dark amber colours with hydrocarbon odour.

Floats on water.

Flash Point 190 to 215 °C.

6.4.5 Environmental Concerns

Lubricants and hydraulic oil are toxic to fish and other aquatic organisms, harmful to waterfowl. They will foul riverbanks, shorelines, etc.

6.4.6 Containers

Transported to site by oil company truck and transferred to storage locations at the mine. Products stored in various size containers up to 205 litre drum.

6.4.7 Personal Protection

Wear impervious chemical resistant clothing, gloves, footwear and goggles. The use of an organic cartridge respirator will not likely be required.

Avoid contact with strong oxidizers such as sulphuric acid.

6.5 WASTE OIL SPILL

6.5.1 Initial Response

The Senior Supervisor or his designate shall be advised of the incident and a response initiated.

Eliminate ignition sources and any open flame.

Stop the flow of product.

Contain flow of oil by dyking with earth or other barrier, blocking any entry to waterways, construction of an interceptor trench or underflow dam, etc. If spill has reached natural waters, deploy a containment boom and apply oil absorbent materials.

A spill report will be filed on the 24 hour Spill Line by the General Manager or his designate.

6.5.2 Recovery

Recover as much free product as possible by pumping into drums or portable tanks. Excavate any contaminated soils/snow and dispose of at an approved site. Waste oil spilled on water can be recovered by using skimmers or absorbent booms. Use absorbent pads or granular absorbents for minor spills.

6.5.3 Fire Response

Use CO₂, dry chemical, foam, or water spray (fog). Water may spread fire.

Use water to cool other containers.

Divert the oil to a secure area and allow to burn under control.

If oils are escaping, get it contained as soon as possible.

Wear SCBA and eye protection.

6.5.4 Properties

Chemical composition - mixture of hydrocarbons and conventional industrial oil additives C₂₂ to C₆₆ range.

Black and brown colours with hydrocarbon odours.

Waste Oil floats on water.

Waste Oil has a Flash Point of 100° to 200° C.

6.5.5 Environmental Concerns

Waste Oil is toxic to fish and other aquatic organisms, harmful to waterfowl.

Waste Oil will foul riverbanks, shorelines, etc.

6.5.6 Containers

Transported to site by oil company truck and transferred to storage locations at the mine. Products stored in various size containers up to 205 l drum.

6.5.7 Personal Protection

Wear impervious chemical resistant clothing, gloves, footwear and goggles. The use of an organic cartridge respirator will not likely be required.

Avoid contact with strong oxidizers such as sulphuric acid.

6.6 FERRIC SULPHATE SPILL

6.6.1 Initial Response

The Senior Supervisor or his designate shall be advised of the incident and a response initiated.

Stop the flow of ferric sulphate at source.

Contain flow of ferric sulphate solution by dyking with earth, sand bags or other barrier, blocking any entry to waterways, construction of an interceptor trench or depression.

Neutralize with lime (note reaction will produce excess CO₂, ventilation is required when neutralizing in enclosed areas. If spill has reached water, deploy a containment boom and apply oil absorbent materials.

A spill report will be filed on the 24 hour Spill Line by the General Manager or his designate.

6.6.2 Recovery

Recover as much product as possible by pumping into drums or containers. Excavate contaminated soil or snow and dispose of at an approved site or Middle Pud TCA. Waste ferric sulphate spilled on water can be collected and pumped to the Middle Pud TCA for treatment through the water treatment plant.

6.6.3 Fire Response

Material is non-combustible.

Use extinguishers compatible with storage site construction materials.

Wear SCBA and protective clothing.

6.6.4 Properties

Chemical formula is Fe₂(SO₄)₃. Product is water soluble, ~50% ferric by weight.

Liquid is clear red.

Odourless and not flammable.

6.6.5 Environmental Concerns

Ferric Sulphate is toxic to fish and other aquatic organisms, through accumulation in the ecosystem.

6.6.6 Containers

Ferric Sulphate is transported to the mine site in bulk and stored in a tank at the Water Treatment Plant.

6.6.7 Personal Protection

Wear impervious chemical resistant clothing, gloves, footwear and goggles. The use of SCBA is required for confined space.

Avoid contact with skin clothing and **do not get into eyes.** Wash thoroughly after handling.

6.7 HYDRATED LIME SPILL

6.7.1 Initial Response

The Senior Supervisor or his designate shall be advised of the incident and a response initiated.

Secure the site and prevent non-authorized entry.

Stop the flow of lime at source and prevent material from contacting any acid, acid salts, water, or combustible materials, as the chemical reaction may produce heat.

Isolate spilled material. If spill has reached water, build dykes or berms to isolate the remainder of spill from the water and contain the lime/water mixture.

If the spill is inside a building, wear protective clothing and ventilate.

Alert First Aid staff as to the nature of the emergency.

A spill report will be filed on the 24 hour Spill Line by the General Manager or his designate.

6.7.2 Recovery

Recover as much dry product as possible by shovelling into drums or containers. Provide workers with dust masks. Do not mix or dispose of with combustible materials. Excavate any contaminated soils/snow and dispose of at an approved site as identified by the General Manager or his designate, ensuring no spillage during transport. Wash affected area with water.

6.7.3 Fire Response

Material is non-flammable, non-combustible and non-explosive.

6.7.4 Properties

The chemical formula for lime is CaOH

Material is a white powder, highly soluble in water.

Aqueous solutions are alkaline and subject to rapid decomposition.

Lime absorbs moisture from the air.

6.7.5 Environmental Concerns

Lime can adversely affect fish and aquatic life – prevent direct entry into waterways.

Dispose of lime in the Middle Pud TCA water collection pond.

6.7.6 Containers

Lime is transported to site in bulk tankers (40,000 kg) and stored in a silo at the Water Treatment Plant.

6.7.7 Personal Protection

Wear impervious chemical resistant clothing, gloves, footwear and goggles. A disposable dust mask or cartridge type respirator with filter cartridge should be worn.

Avoid contact with skin, clothing and do not get into eyes. Wash thoroughly after handling.

Avoid inhalation of dust and prevent it from contacting eyes.

Shower after the completion of your work. Refrain from eating and smoking until after you have finished washing up.

6.8 PROPANE SPILL OR LEAK

6.8.1 Initial Response

Incidents involving propane leaks should only be dealt with by the City Fire Department and/or trained staff from Superior Propane.

- FIRST PRIORITY IS TO CALL THE CITY FIRE DEPARTMENT AT 873-2222

The Senior Supervisor or his designate shall be IMMEDIATELY advised of the incident by radio, phone or in person.

The Senior Supervisor or his designate shall immediately notify the General Manager and contact representatives of Superior Propane.

Contact Information for Superior Propane:

Office Location 346 Old Airport Road, Yellowknife, NT. X1A 3T4
Lot # 9, Old Airport Road Subdivision # 1, Plan # 1223

Superior Propane operates a 24hr / 365 day on call schedule in the event that their services are required.

24-hour propane emergency number – 1-877-873-7467

6.8.2 Spill Plan Activation

All Superior Propane operating staff members are aware of the proper procedures for dealing with an emergency situation. The first respondent to the call will make a decision as to the severity and the necessary actions that will take place. **With safety being the highest priority, this usually involves a call to the local fire department as well as to the authorities in the event that an area has to be secured for public safety.** At all storage locations the emergency contact numbers are posted along with the Fire Department.

6.8.3 Activation Procedures

Superior's emergency response plan for events involving their equipment or product is multi-layered, with each level providing more comprehensive resources as the scale of events increase.

1. The Yellowknife level component of the emergency response plan consists of establishing and maintaining 24-hour emergency response capabilities utilizing local staff. These resources will generally respond to small-scale events without further assistance.
2. Corporate office resources are available to supplement the local response capability in larger scale events. This includes the following resources:
 - Communications – public announcements / advisory
 - Human Resources Team
 - Leadership Team

- Legal Team
 - Regulations, Safety & Technical Support Team
 - Supply Team
 - Transportation Team, Canutec @ (613) 996-6666 – 24-hour response number.
3. Third party resources; LPG Emergency Response Corporation.
The emergency response activation and notification process is driven from the Yellowknife Office level and escalates as follows:
- a) The initial call is received directly by 24hr propane emergency operator.
 - b) The Yellowknife staff will respond with personnel and equipment to deal with small scale events.
 - c) Field based member of the Regulations, Safety & Technical Support Team can provide additional advice via telephone and/or attend the event with local personnel. This applies to any event the local office may respond to.
 - d) The national emergency response plan is activated by calling the LPG Emergency Response Corp. at 1-800-265-0212 and activating Superior's Emergency Response Assistance Plan (ERAP # 20010-072)
 - e) A Remedial Measure Advisor (RMA) will be dispatched by the LPGERC.
 - f) If required, the RMA may activate a team of specialists that can respond with additional personnel and equipment.

Superior's corporate office resources may be contacted at any time to assist as required.

6.8.4 Reporting

In keeping with Government Regulation and Company policies all spills over 100 liters are to be reported to the NWT 24-Hour Spill Report Line and followed up with the reports located at Superior's office in Yellowknife. In addition to this a near miss report will be filled by the Yellowknife staff and forwarded to Superior's Corporate Office Officials, Safety and OH&S.

6.8.5 Containment

Containment of Propane Gas is much different due to the fact we are dealing with a gas as opposed to a liquid such as diesel fuel. Accordingly, incidents involving propane should only be dealt with by trained staff from Superior Propane. Ideally, if the situation warrants it, Superior Propane would flare the gas to atmosphere. In a situation where this cannot be accomplished, other measures such as fans to increase air movement will be employed to aid in dispersing the gas.

6.8.6 Location of Emergency Equipment

All emergency related equipment is located at the local office in Yellowknife. This includes portable pumps, flaring equipment, containers, etc.

6.8.7 Recovery

Due to the chemical properties of propane, ground contamination is usually not an issue. Being a liquefied petroleum gas under pressure, once it is released to

atmosphere it returns to its natural state as a gas and is dispersed into the atmosphere. Guidelines are in place to control the amount of raw gas that can be released to atmosphere, see CAN/CSAB 149.2 Propane Handling and Storage Code.

1. In the event that a tank or storage vessel has to be serviced, whether by choice or otherwise, the preferred method is flaring it or to burn the product off to either allow access to the tank internally or to reduce an existing hazard. In all cases every effort is made to recover as much as possible prior to flaring. Yellowknife Fire Department is notified for all flaring operations.
2. Ground that has been in contact with LPG will be disturbed to allow the gas to vaporize, hence eliminating the hazard. In the event there is any oil associated with the spill, the surface soil will be removed and replaced. The contaminated soil will then be disposed of according to Government regulations.

6.8.8 Fire Response

Exercise extreme caution. Propane is extremely flammable and can be explosive under some conditions.

6.8.9 Properties

The chemical formula for propane is C_3H_8 .
Propane is a gas that will disperse in air.

6.8.10 Environmental Concerns

Fire and/or explosion in the immediate area of a leak or rupture

6.8.11 Containers

The containers are pressurized cylinders having various containment volumes (from 15 liter BBQ cylinders to 4,542 liter horizontal tanks).

6.8.12 Training

Superior Propane has several layers of ERP training requirements for all of their staff, including office staff. In addition, the Health and Safety Steering Committee reviews these procedures regularly and trains all new employees through the procedures. As stated earlier in this document, incidents involving propane should only be dealt with by trained staff from Superior Propane.

7.0 RESOURCE INVENTORY

In the event of a spill or unauthorized discharge, the prompt deployment of equipment is important to minimize environmental damage. Minimal resources and manpower from the Con Mine would be available immediately. However, support from local contractors could be obtained reasonably quickly if required.

7.1 Resources Available On-Site

The following heavy equipment is maintained and used regularly on-site at Con Mine. All equipment is located at the Central Shop and Warehouse:

- 1 – IT 28 Loader
- 1 – Water Truck
- 1 – 315 Excavator
- 1 – 4” - 16” HDPE Pipe Welder (fusing)

Con Mine also maintains several light duty vehicles, portable gas pumps, generators and absorbent materials that can be utilized in an emergency response. All of this equipment is stored at the Central Shop and Administration Complex.

7.2 Resources Available From External Sources

Vendors, local contractors, and consultants will be contacted on an as-required basis to provide resources for spill containment and site remediation not readily available at Con Mine. These agencies include Weatherby Trucking, RTL, Polar Tech, KBL Environmental and Golder Associates.

7.3 MSDS Data Sheets

MSDS sheets are available from the Senior Supervisor. The Central Shop has a set of “core” MSDS sheets for substances routinely used on site. Updates are provided on an annual basis. All personnel have undergone WHMIS training. It is standard procedure for personnel to their immediate supervisor for any other MSDS sheets.

8.0 HAZARDOUS MATERIALS INVENTORY

The following is a list of chemicals consumed during the various activities taking place on the Con Mine property.

Material	Unit Size	Location	Max. Quantity
50% Ferric Sulphate	Bulk truckload	WTP	57,865 Liters
Bulk Hydrated Lime	Bulk truckload	WTP	72,000 Kilos
93 % Sulphuric Acid	205 liter drum	WTP/Warehouse	10,000 Liters
Percol E10	25 kg bags	WTP	900 Kilos
Magnafloc10	25 kg bags	WTP	900 Kilos

P-50 Diesel Fuel: Diesel Fuel is purchased in bulk from Petro-Canada in Yellowknife and delivered via tank truck to a surface 4500L Envirotank located on the northeast side of the Central Shop and Administration Complex and a 2270L located at the water treatment plant.

Oils and Greases:

A variety of products are purchased in drums, pails, and case lots from suppliers in Yellowknife. Deliveries are made with the agent's truck to the Central Shop and Warehouse.

Gasoline:

Gasoline is purchased in bulk from Petro-Canada in Yellowknife and delivered via tank truck to a surface 4500L Envirotank located on the north side of the Central Shop and Administration Complex.

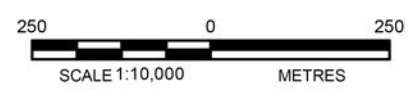
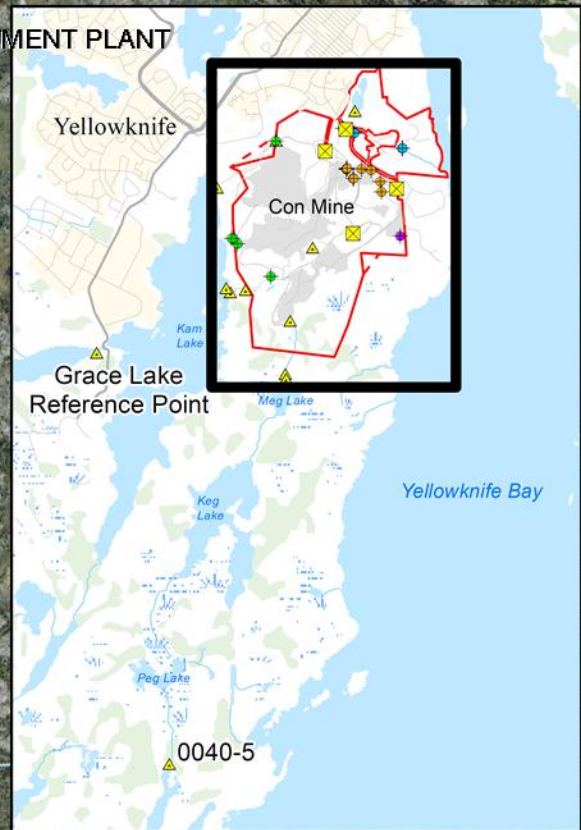
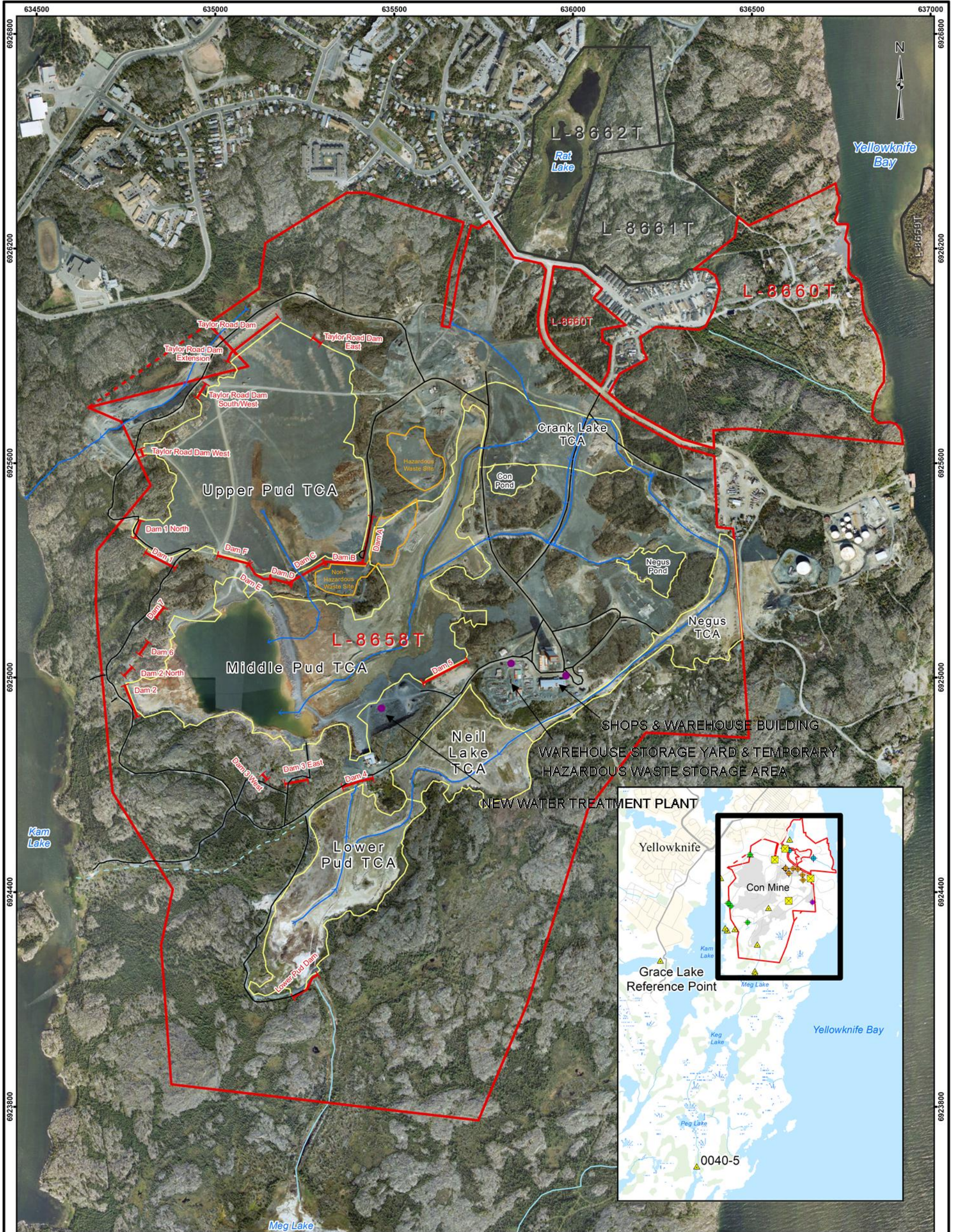
Halocarbons:

The AC unit located on the roof of the Warehouse complex was formerly charged with R22 a halocarbon regulated under the Federal Halocarbon Regulation. This system has been decommissioned and tagged as such.

Propane:

Propane is purchased in bulk from Superior Propane Ltd. and delivered to the minesite. Storage tanks vary in from 1,000 to 4,542 liters in size.

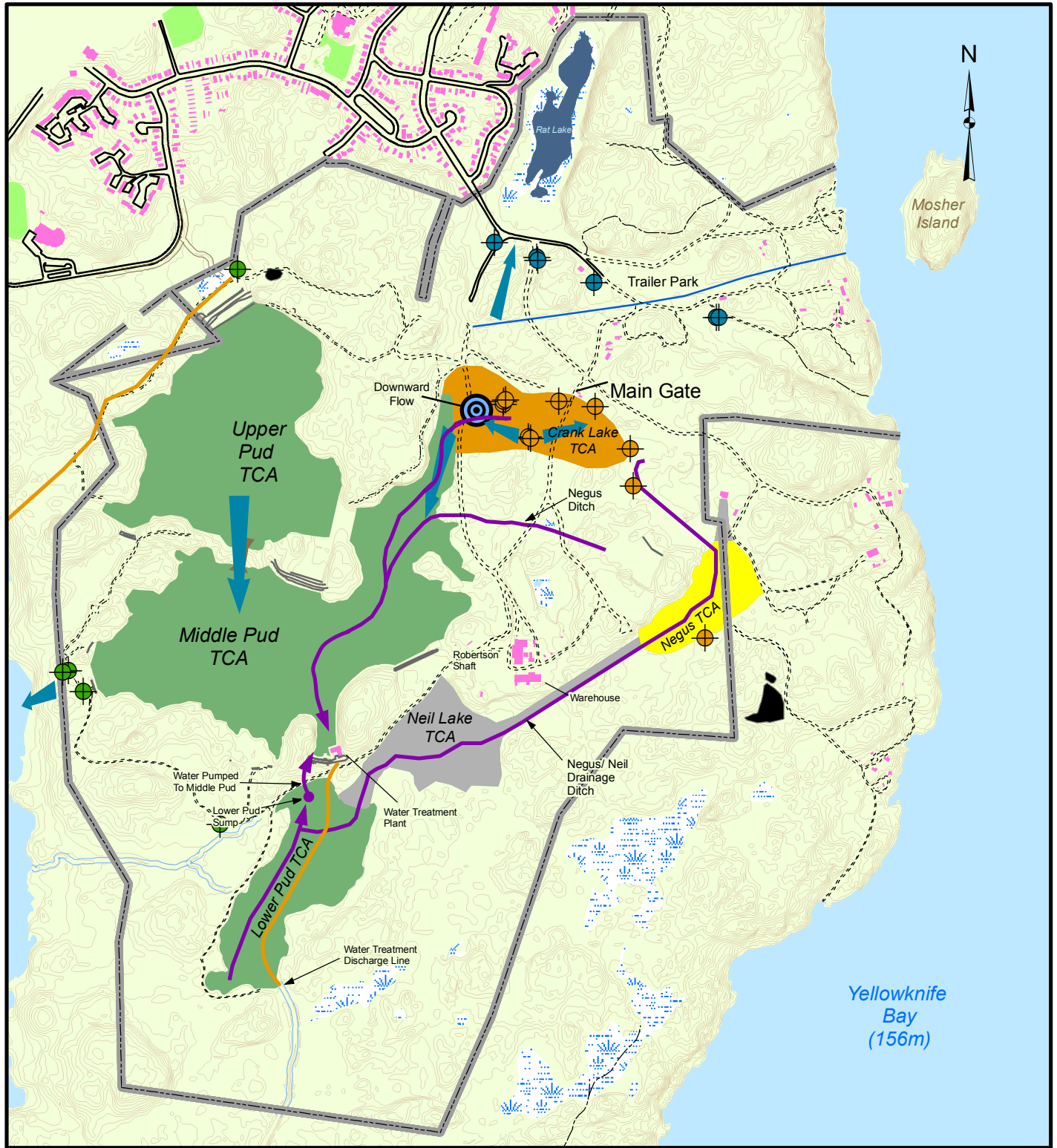
Serial #	Location	Volume
NN2050	Security	3,785 Liters
DD1248	Con Camp behind mailbox	4,542 Liters
Unknown	House #23	1,000 Liters



LEGEND	
	MINEWATER SAMPLE STATION
	SURFACE WATER/ EFFLUENT SAMPLE STATION
	CRANK LAKE TCA WELL
	NEGUS TCA WELL
	PUD TCA WELL
	RAT LAKE TCA WELL
	CLOSED OPENING TO SURFACE
	SURFACE WATER MONITORING PROGRAM POINT
	DRAINAGE DITCH
	ROAD
	DAM
	WATERCOURSE
	INTERMITTENT WATERCOURSE
	LOCATION OF SPILL KIT
	EXISTING WASTE SITE
	TAILINGS CONTAINMENT AREA (TCA)
	LEASE BOUNDARY
	LEASE BOUNDARY FROM THE CITY OF YELLOWKNIFE
	RELINQUISHED LEASE BOUNDARY

REFERENCE
 DATUM: NAD83 PROJECTION: UTM ZONE 11
 BACKGROUND IMAGE SUPPLIED BY ESRI
 Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PROJECT		Miramar Northern Mining Ltd. Con Mine - Standard Operating Procedures for Treated Effluent and Water Quality Monitoring	
TITLE		Con Mine Treated Effluent and Water Quality Monitoring Overview Map	
	PROJECT	1527446	FILE No.
	DESIGN	KWM	04 Nov. 2014
	GIS	KWM	19 Aug. 2015
	CHECK	AC	01 Dec. 2014
REVIEW	HM	18 Dec. 2014	SCALE AS SHOWN
			REV. 4
			FIGURE: 1

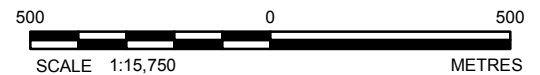


LEGEND

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REFERENCE

Base data: CAD Drawings
 Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 11



PROJECT			
MIRAMAR NORTHERN MINING LTD. CON MINE			
TITLE			
WATER FLOW PATTERNS OF CON MINE			
PROJECT No. 11 1427 0008		SCALE AS SHOWN	REV. 1
DESIGN	KM 05 Dec. 2008	FIGURE: 2	
GIS	KM 17 May, 2011		
CHECK			
REVIEW			





NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	B		OCCURRENCE DATE: MONTH – DAY – YEAR			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE		SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES		
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER	
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130	
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						