**NWB Annual Report** **Year being reported:** 2008

**License No:** 2BE-BAK0712 **Issued Date:** February 23, 2007
**Expiry Date:** November 30, 2009

**Project Name:** Baker Lake Project

**Licensee:** Tanqueray Resources Ltd.

**Mailing Address:** #310 - 505 8th Ave SW, Calgary, AB T2P 1G2

**Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):**

Tanqueray Resources Ltd.

**General Background Information on the Project (*optional):**

Please refer to Tanqueray's file on the NIRB ftp site for details.
LINK:
ftp://ftp.nirb.ca/SCREENINGS/COMPLETED%20SCREENINGS/ARCHIVE/2005_SCREENINGS/05EN025-Tanqueray%20Resources%20Ltd/1-SCREENING/

**Licence Requirements: the licensee must provide the following information in accodance with**

Part B Item 2

**A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.**

Water Source(s): Thom Lake for camp; small lakes near drill sites for drilling

| Water Quantity: | |
|---|---|
| 5 | Quantity Allowable Domestic (cu.m) |
| avg 5.39 | Actual Quantity Used Domestic (cu.m) |
| 40 | Quantity Allowable Drilling (cu.m) |
| avg approx 38-40 per day | Total Quantity Used Drilling (cu.m) |

Waste Management and/or Disposal

- [x] Solid Waste Disposal
- [x] Sewage
- [x] Drill Waste
- [x] Greywater
- [ ] Hazardous
- [ ] Other:

Additional Details:

Combustible solid waste was incinerated at Thom Lake Camp in a SmartAsh incinerator. Non-combustibles, including human waste, were removed to Baker Lake for proper disposal. Greywater was collected in sumps lined with rocks and a screen to filter out particulate matter.

**A list of unauthorized discharges and a summary of follow-up actions taken.**

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

No unauthorized spills in 2008.

**Revisions to the Spill Contingency Plan**

SCP submitted and approved - no revision required or proposed

Additional Details:

Spill Contingency Plan attached.

**Revisions to the Abandonment and Restoration Plan**

AR plan submitted and approved - no revision required or proposed

Additional Details:

Abandonment and Restoration Plan attached.

**Progressive Reclamation Work Undertaken**

Additional Details (i.e., work completed and future works proposed)

Tanqueray pilots cleaned up and reported any garbage found on the tundra during the course of their normal daily activities. Several scattered empty fuel drums and one full fuel drum were found during 2008, as well as some scattered timbers and scrap metal. These items were removed from the tundra and sent into Baker Lake for proper disposal.

**Results of the Monitoring Program including:**

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;**

Details attached

Additional Details:

See "GPS Coordinates" tab

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;**

Details attached

Details attached

Additional Details:

See "GPS Coordinates" tab

**Results of any additional sampling and/or analysis that was requested by an Inspector**

Additional sampling requested by an Inspector or the Board (See below)

Additional Details: (date of request, analysis of results, data attached, etc)

Water samples were collected at Thom Lake Camp on July 22, 2008. Results of testing by ALS Laboratory Group in Thunder Bay, Ontario are summarized in the "Results of Analysis" tab and the accompanying PDF file "Results of Water Analysis at Thom Lake Camp, 2008"

**Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.**

No additional sampling requested by an Inspector or the Board

Additional Details: (Attached or provided below)

**Any responses or follow-up actions on inspection/compliance reports**

Inspection Report received by the Licensee (Date):

Additional Details: (Dates of Report, Follow-up by the Licensee)

Thom Camp was inspected on July 22, 2008 by Henry Kablalik of INAC. Mr Kablalik recommended regular cleaning of the greywater sump to prevent transmission of solid kitchen waste. Camp was also inspected on September 25 by Jackson Lindell and Steve Hartman of the KIA. They recommended installing secondary fuel containment around the generator shack at camp and cleanup of minor fuel contamination around the generator shack. These recommendations will be implemented before beginning work in 2009.

**Any additional comments or information for the Board to consider**

Please refer to the summary of water use at Thom Lake Camp between Sept 1, 2008 and Sept 30, 2007 in the tab "ThomLk_water_use_log".

| | | |
|---|---|---|
| **Date Submitted:** | March 30, 2009 | |
| **Submitted/Prepared by:** | Jacques Stacey, Taiga Consultants Ltd. | |
| **Contact Information:** | **Tel:** | 403-265-2777 ext. 207 |
| | **Fax:** | 403-265-6410 |
| | **email:** | jstacey@taiga-ltd.com |

## GPS Coordinates for water sources utilized

| Source Description | Latitude | | | Longitude | | |
|---|---|---|---|---|---|---|
| | Deg | Min | Sec | Deg | Min | Sec |
| | ° | ' | " | ° | ' | " |
| Thom Lake Camp pump | 64 | 22 | 30.0 | 96 | 38 | 7.6 |
| MH drill site water source | 64 | 35 | 27.0 | 96 | 31 | 3.0 |
| SV drill site water source 1 | 64 | 34 | 56.0 | 96 | 33 | 5.4 |
| SV drill site water source 2 | 64 | 34 | 50.0 | 96 | 33 | 30.8 |
| JV drill site water source | 64 | 34 | 10.7 | 96 | 33 | 17.0 |
| JS drill site water source | 64 | 34 | 4.3 | 96 | 34 | 23.0 |
| Silver Zone drill site water source | 64 | 31 | 53.8 | 96 | 42 | 13.3 |
| UM drill site water source | 64 | 11 | 40.4 | 97 | 38 | 24.3 |

## GPS Locations of areas of waste disposal

| Location Description (type) | Latitude | | | Longitude | | |
|---|---|---|---|---|---|---|
| | Deg | Min | Sec | Deg | Min | Sec |
| | ° | ' | " | ° | ' | " |
| greywater sump | 64 | 22 | 30.7 | 96 | 38 | 7.9 |
| | | | | | | |
| | | | | | | |
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| THOM LAKE CAMP WATER USE LOG | | | | | |
|---|---|---|---|---|---|
| Date | Time | Total Litres (cumulative) | Previous Total | Litres used since last reading | Cubic metres used since last reading |
| 1-Sep-08 | 0700 | 360558 | 357603 | 2955 | 2.955 |
| 2-Sep-08 | 0700 | 365551 | 360558 | 4993 | 4.993 |
| 3-Sep-08 | 0700 | 368796 | 365551 | 3245 | 3.245 |
| 4-Sep-08 | 0700 | 372555 | 368796 | 3759 | 3.759 |
| 5-Sep-08 | 0700 | 376966 | 372555 | 4411 | 4.411 |
| 6-Sep-08 | 0700 | 384994 | 376966 | 8028 | 8.028 |
| 7-Sep-08 | 0700 | 388444 | 384994 | 3450 | 3.45 |
| 8-Sep-08 | 0700 | 390119 | 388444 | 1675 | 1.675 |
| 9-Sep-08 | 0700 | 395443 | 390119 | 5324 | 5.324 |
| 10-Sep-08 | 0700 | 398833 | 395443 | 3390 | 3.39 |
| 11-Sep-08 | 0700 | 403695 | 398833 | 4862 | 4.862 |
| 12-Sep-08 | 0700 | 404330 | 403695 | 635 | 0.635 |
| 13-Sep-08 | 0700 | 410835 | 404330 | 6505 | 6.505 |
| 14-Sep-08 | 0700 | 414184 | 410835 | 3349 | 3.349 |
| 15-Sep-08 | 0700 | 417665 | 414184 | 3481 | 3.481 |
| 16-Sep-08 | 0700 | 421939 | 417665 | 4274 | 4.274 |
| 17-Sep-08 | 0800 | 426907 | 421939 | 4968 | 4.968 |
| 18-Sep-08 | 0730 | 430268 | 426907 | 3361 | 3.361 |
| 19-Sep-08 | 0700 | 433430 | 430268 | 3162 | 3.162 |
| 20-Sep-08 | 0730 | 437512 | 433430 | 4082 | 4.082 |
| 21-Sep-08 | 0730 | 440399 | 437512 | 2887 | 2.887 |
| 22-Sep-08 | 0700 | 445810 | 440399 | 5411 | 5.411 |
| 23-Sep-08 | 0700 | 455630 | 445810 | 9820 | 9.82 |
| 24-Sep-08 | 0700 | 464643 | 455630 | 9013 | 9.013 |
| 25-Sep-08 | 0700 | 479909 | 464643 | 15266 | 15.266 |
| 26-Sep-08 | 0800 | 486038 | 479909 | 6129 | 6.129 |
| 27-Sep-08 | 0700 | 490794 | 486038 | 4756 | 4.756 |
| 28-Sep-08 | 0700 | 507006 | 490794 | 16212 | 16.212 |
| 29-Sep-08 | 0700 | 511345 | 507006 | 4339 | 4.339 |
| 30-Sep-08 | 0730 | 519346 | 511345 | 8001 | 8.001 |
| | | | | **AVERAGE** | **5.39** |

**Project**
**Report To** DAVE BRADLEY, OUTLAND REFORESTATION INC.~TB
**ALS File No.** L659639
**Date Received** 23-Jul-08
**Date** 28-Jul-08

## RESULTS OF ANALYSIS

| Sample ID | SOURCE | KITCHEN SINK | HANDWASH 1 | HANDWASH 2 |
|---|---|---|---|---|
| Date Sampled | 22-JUL-08 | 22-JUL-08 | 22-JUL-08 | 22-JUL-08 |
| Time Sampled | 13:30 | 13:30 | 13:30 | 13:30 |
| ALS Sample ID | L659639-1 | L659639-2 | L659639-3 | L659639-4 |
| Matrix | Water | Water | Water | Water |
| **Physical Tests** | | | | |
| Transmittance, UV (254 nm)-Unfiltered | 89 | 86 | - | - |
| **Bacteriological Tests** | | | | |
| Escherichia Coli | 1 | 0 | 0 | 0 |
| Total Coliforms | > 201 | 0 | 0 | 0 |

# Appendix III
# Tanqueray Resources Ltd.

## SPILL CONTINGENCY PLAN
## *BAKER LAKE PROJECT*

# NUNAVUT

*Revised December 2008*

# Table of Contents

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# List of Appendices

## 1.0 Introduction

This Spill Contingency Plan shall be in effect from February 01, 2007. Any proposed changes and/or amendments will be submitted to the Nunavut Water Board, DIAND and the Kivalliq Inuit Association.

This Spill Contingency Plan has been specifically prepared for the Baker Lake Project exploration program. This Plan shall be posted at operational remote camps and drill shacks.

Tanqueray Resources Ltd. endeavours to take every reasonable precaution toward ensuring the protection and conservation of the natural environment and the safety and health of all employees and contractors from any potential harmful effects of stored materials and operations.

## 2.0 Facilities

The property is located at:
a. All claims:

| | |
|---|---|
| max Lat: | N64.73903º/ N 64º 44' 20.5" |
| min Lat: | N64.12461º/ N 64º 07' 28.6" |
| max Lon: | W98.11219º/ W 98º 06' 43.9" |
| min Lon: | W96.35624º/ W 96º 21' 22.5" |

b. All claims on IOLs:

| | |
|---|---|
| max Lat: | N64.73903º/ N 64º 44' 20.5" |
| min Lat: | N64.25003º/ N 64º 15' 00.1" |
| max Lon: | W97.97038º/ W 97º 58' 13.4" |
| min Lon: | W96.56382º/ W 96º 33' 49.8" |

Crews are based out of Thom Lake Camp, located 30 km west of the Baker Lake airport at:
Lat N64.27430º/N64º 22' 29.7", Lon W96.58587º/W96º 35' 09.1"

The site was chosen by Tanqueray in 2004, in consultation with the people of Baker Lake.

Fuel cache locations:

| Cache | Latitude | Longitude | UTM Easting | UTM Northing | Fuel Type | Quantity (# drums) |
|---|---|---|---|---|---|---|
| | (WGS84) | (WGS84) | (NAD83 Zone 14) | (NAD83 Zone 14) | | (as of October 2008) |
| Tanqueray North | N64 34 12.6 | W96 34 16.3 | 616350 | 7162780 | P50, Jet | 5 P50, 0 Jet |
| Thom Lake | N64 22 30.4 | W96 38 45.1 | 613580 | 7140920 | P50, Jet, propane | 60 P50, 0 Jet, 40 propane |

## 3.0 Petroleum and Chemical Product Storage and Inventory

### 3.1 Remote Location Fuel Inventory, Storage and Handling Procedures

Remote fuel caches will be stored in accordance with approved methods of storage of drummed product. Inspections of the fuel caches will be conducted during each visit.

### 3.2 Petroleum Product Transfer

Manual and automatic pumps (and aviation fuel filters for jet fuel) are used for the transfer of all petroleum products. Smoking, sparks, or open flames are **prohibited** in fuel storage and fuelling areas at all times.

## 4.0 Risk Assessment and Mitigation of Risk

### 4.1 Petroleum Products and Other Fuels

Following, is a list of sources:

1) Drummed product: Leaks or ruptures may occur. This includes drums of Jet A, Diesel, Gasoline, Waste Fuel, and Waste Oil.

2) Fuel cylinders: Propane, leaks may occur at the valves. All cylinders are secured at all times.

3) Vehicles and equipment: Wheeled vehicles and equipment, aircraft (fixed and rotary wing), snowmobiles, generators, pumps. Incidents involving leaking or dripping fuels and oils may occur due to malfunctions, impact damage, and lack of regular maintenance, improper storage, or faulty operation.

Regular inspection and maintenance in accordance with recognized and accepted standard practices at all camps and fuel caches, reduces risks associated with the categories listed above. Large fuel caches of 20 drums or more will be inspected daily.

Spill response training is provided to all personnel with particular attention to those personnel who handle fuels and other petroleum products. This training will include a presentation, “mock” spill, review of spill kit contents and their use and reporting.

Spill Kits will be located at all camps and drill shacks. A description of contents is listed in Section 7.0.

## 5.0 Responding to Failures and Spills

### 5.1 Spill Response Contact List

24 Hour Spill Line
(867) 920-8130

DIAND Water Resources Inspector
Iqaluit, Nunavut
(867) 975-4295

Environment Canada
Iqaluit, Nunavut
(867) 975-4644
24 hour pager – (867) 766-3737

Tanqueray Resources Ltd.
Steve Balch, President
#310 - 505 8th Ave SW
Calgary, AB T2P 1G2
Tel: 403-263-9055
Fax: 403-263-9061
Email: tanqueray@shaw.ca

## 5.2 Basic Steps — Spill Procedure

In the case of any spill or other environmental emergency, it is necessary to react in the most immediate, safe, and environmentally responsible manner. No spill or incident is so minor that it can be ignored.

The basic steps of the response plan are as follows:

1. *Ensure* the safety of all persons at all times.

2. *Identify* and find the spill substance and its source, and, if possible, stop the process or shut off the source.

3. *Inform* the on-site coordinator or his/her designate at once, so that he/she may take the appropriate actions. Appropriate action includes the notification of the spill to the 24 hour Spill Line and DIAND Water Resource Officer, a copy of the Spill Report form can be found in Appendix I.

4. *Contain* the spill or environmental hazard, as per its nature, and as per the advice of the Spill Line and the DIAND Water Resource Officer as required.

5. *Implement* any necessary cleanup and/or remedial action.

## 5.3 Basic Steps — Chain of Command

1. *Immediately* notify and report to the 24-Hour Spill Line at (867) 920-8130, the DIAND Water Resources Inspector in Nunavut at (867) 975-4298, and Environment Canada personnel at 867-975-4644.

2. ***A Spill Report Form (Appendix SC-I)*** is filled out as completely as possible before or after contacting the 24 Hour Spill Line.

3. Notify Steve Balch (Tanqueray) at (905) 407-9586 and Linda Falkenberg (Tanqueray) at 403-263-9055

### 5.4 Other contacts for spill response/assistance and further reporting

| | |
|---|---|
| Nunavut Water Board | (867) 360-6338 |
| Fisheries and Oceans Canada Habitat Impact Assessment Biologist | (867) 979-8007 |
| Government of Nunavut Department of Environment | (867) 975-5910 |
| Kivalliq Inuit Association, Land Use Inspector | (867) 645-2800 |
| Taiga Consultants Ltd. (Calgary) | (403) 265-2777 |

## 6.0 Taking Action

### 6.1 Before the Fact: Preventative Measures

The following actions illustrate a proactive approach to environmental stewardship. In addition, these actions minimize the potential for spills during fuel handling, transfer and storage:

1. Fuel transfer hoses with cam lock mechanisms are used.

2. Carefully monitor fuel content in the receiving vessel during transfer. Always have additional absorbent pads on hand while transferring fuel.

3. Clean up drips and minor spills immediately.

4. Regularly inspect drums, tanks and hoses for leaks or potential to leak and for proper storage.

5. Create fuel caches in natural depressions that are located a **minimum** of 31 metres from the normal high-water mark of any water body.

6. Train personnel, especially those who will be operators, in proper fuel handling and spill response procedures.

### 6.2 After the Fact: Mitigative Measures

1. First steps to take when a spill occurs:
    a) Ensure your own safety and that of others around you, beginning with those nearest to the scene.
    b) Control danger to human life, if necessary.
    c) Identify the source of the spill.
    d) Notify your supervisor, request assistance if needed.
    e) Assess whether or not the spill can be readily stopped.
    f) Contain or stop the spill at the source.

2. Secondary steps to take:
    a) Determine status of the spill event.
    b) If necessary, pump fuel from a damaged and/or leaking tank or drum into a refuge container.
    c) Notify the 24-hour Spill Report Line, and receive further instructions from the appropriate contact agencies listed in *Section 5.3.* (disposal of contaminated soil or ice/snow in sealed containers for removal from site, etc.).
    d) Complete and Fax a copy of the Spill Report Form *(Appendix I).*
    e) Notify permitting authorities.
    f) If possible, resume cleanup and containment.

**Emergency Contact Information**

| CONTACT | TELEPHONE NUMBER |
|---|---|
| Jacques Stacey (Taiga Consultants Ltd.) – On-site coordinator, June to October | Calgary: (403) 265-2777 ext 207; Thom Camp: (604) 628-9872 (June to October) |
| DIAND Water Resource Officer, Iqaluit | (867) 975-4295 |
| Environment Canada | (867) 975-4644, 24hr page (867) 766-3737 |
| Nunavut Department of Environment | (867) 975-5910 |
| Kivalliq Inuit Association – Jackson Lindell, Land Use Inspector | (867) 645-2800 |
| Department of Fisheries and Oceans | (867) 979-8007 |
| Tanqueray Resources – Steve Balch, President | (905) 407-9586 |
| Tanqueray Resources – Linda Falkenberg, CFO | (403) 263-9055 |
| Ookpik Aviation | (867) 793-4720 |
| Yellowknife Fire Department | (867) 873-2222 |
| Baker Lake RCMP | (867) 793-0123 |
| Stanton Regional Hospital – Yellowknife | (867) 920-4111 |
| Taiga Consultants | (403) 265-2777 |

**Baker Lake Lodge – Boris Kotelowetz – (867) 793-2905**

## 6.3 SPILL RESPONSE ACTIONS
## DIESEL FUEL, HYDRAULIC OIL, AND LUBRICATING OIL

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources. **Never smoke** when dealing with these types of spills.

**On Land**
Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.
Remove the spill by using absorbent pads or excavating the soil, gravel or snow.
Remove spill splashed on vegetation using particulate absorbent material.
Contact regulatory agencies for approval before commencing with the removal of any soil, gravel, or vegetation.

**On Muskeg**
Do not deploy personnel and equipment on marsh or vegetation.
Remove pooled oil with sorbent pads and/or skimmer.
Flush with low pressure water to herd oil to collection point.
Burn only in localized areas, e.g., trenches, piles or windrows.
Do not burn if root systems can be damaged (low water table).
Minimize damage caused by equipment and excavation.

**On Water**
Contain spill as close to release point as possible.
Use containment boom to capture spill for recovery after vapours have dissipated.
Use absorbent pads to capture small spills.
Use skimmer for larger spills.

**On Ice and Snow**
Build a containment berm around spill using snow.
Remove spill using absorbent pads or particulate sorbent material.
The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

**Storage and Transfer**
All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labelled containers. All containers will be stored in a well ventilated area away from incompatible materials.

**Disposal**
Any contaminated material will be shipped from site to an appropriate and approved facility. The DOE monitors the movement of hazardous wastes from generators, carriers to receivers, through a tracking document (Waste Manifest). A Waste Manifest will accompany all movements. Tanqueray will register at DOE with Robert Eno at reno@gov.nu.ca or (867) 975-7748.

## 6.3 SPILL RESPONSE ACTIONS
## GASOLINE AND JET B AVIATION FUEL

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources. **Never smoke** when dealing with these types of spills.

**On Land**
Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.
Remove the spill by using absorbent pads or excavating the soil, gravel or snow.
Remove spill splashed on vegetation using particulate absorbent material.
Contact regulatory agencies for approval before commencing with the removal of any soil, gravel, or vegetation.

**On Muskeg**
Do not deploy personnel and equipment on marsh or vegetation.
Remove pooled gasoline or Jet B with sorbent pads and/or skimmer.
Flush with low pressure water to herd oil to collection point.
On advice from regulatory agencies, burn only in localized areas, e.g., trenches, piles or windrows.
Do not burn if root systems can be damaged (low water table).
Minimize damage caused by equipment and excavation.

**On Water**
Contain spill as close to release point as possible.
Use containment boom to capture spill for recovery after vapours have dissipated.
Use absorbent pads to capture small spills.
Use skimmer for larger spills.

**On Ice and Snow**
Build a containment berm around spill using snow.
Remove spill using absorbent pads or particulate sorbent material.
The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

**Storage and Transfer**
All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labelled containers. All containers will be stored in a well ventilated area away from incompatible materials.

**Disposal**
Any contaminated material will be shipped from site to an appropriate and approved facility. The DOE monitors the movement of hazardous wastes from generators, carriers to receivers, through a tracking document (Waste Manifest). A Waste Manifest will accompany all movements. Tanqueray will register at DOE with Robert Eno at reno@gov.nu.ca or (867) 975-7748.

## 6.3 SPILL RESPONSE ACTIONS
## PROPANE

Take action only if safety permits. Gases stored in cylinders can explode when ignited. Keep vehicles away from area. **Never smoke** when dealing with these types of spills.

**On Land**
Do not attempt to contain the propane release.

**On Water**
Do not attempt to contain the propane release.

**On Ice and Snow**
Do not attempt to contain the propane release.

**General**
It is not possible to contain vapours when released.
Water spray can be used to knock down vapours if there is no chance of ignition.
Small fires can be extinguished with dry chemical of $CO_2$.
Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.
If tanks are damaged, gas should be allowed to disperse and no recovery attempt should be made.
Personnel should avoid touching release point on containers since frost forms very rapidly.
Keep away from tank ends.

**Storage and Transfer**
It is not possible to contain vapours when released.

**Disposal**
Any contaminated material will be shipped from site to an appropriate and approved facility. The DOE monitors the movement of hazardous wastes from generators, carriers to receivers, through a tracking document (Waste Manifest). A Waste Manifest will accompany all movements. Tanqueray will register at DOE with Robert Eno at reno@gov.nu.ca or (867) 975-7748.

## 7.0 Spill Equipment

Complete spill kits are kept on hand at all camps and drill shacks. Spill kits contain:

1 – 360 litre/79 gallon polyethylene over-pack drum
4 – oil sorbent booms (5" X 10')
100 – oil sorbent sheets (16.5" X 20" X 3/8")
1 – drain cover (36" X 36" X 1/16")
1 – Caution tape (3" X 500')
1 – 1 lb plugging compound
2 – pair Nitrile gloves
2 – pair Safety goggles
2 – pair Tyvek coveralls
1 – instruction booklet
10 – printed disposable bags (24" X 48")
1 – shovel

In addition at least one empty fuel drum will be located at each fuel cache in the event of damaged or leaking drums. Extra absorbent pads will be kept with the helicopter, drill and any area where re-fuelling, transferring and/or handling is done.

## 8.0 Training and Practice Drills

### 8.1 Training

All employees and contractors will be familiar with the spill response resources at hand, this Contingency Plan, and will also be trained for initial spill response methods. Involvement of other employees may be required, from time to time. Annual refreshers will be conducted to review the procedures within this plan.

# Appendix SC-I

# Nunavut Spill Report Form

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

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

**REPORT LINE USE ONLY**

| | | | | |
|---|---|---|---|---|
| A | REPORT DATE: MONTH – DAY – YEAR | REPORT TIME | ☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT | REPORT NUMBER _____-_____ |
| B | OCCURRENCE DATE: MONTH – DAY – YEAR | OCCURRENCE TIME | | |

| | | |
|---|---|---|
| C | LAND USE PERMIT NUMBER (IF APPLICABLE) | WATER LICENCE NUMBER (IF APPLICABLE) |
| D | GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION | REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN |
| E | LATITUDE DEGREES MINUTES SECONDS | LONGITUDE DEGREES MINUTES SECONDS |

| | | | |
|---|---|---|---|
| F | RESPONSIBLE PARTY OR VESSEL NAME | RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION | |
| G | ANY CONTRACTOR INVOLVED | CONTRACTOR ADDRESS OR OFFICE LOCATION | |
| H | PRODUCT SPILLED | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES | U.N. NUMBER |
| | SECOND PRODUCT SPILLED (IF APPLICABLE) | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES | U.N. NUMBER |
| I | SPILL SOURCE | SPILL CAUSE | AREA OF CONTAMINATION IN SQUARE METRES |
| J | FACTORS AFFECTING SPILL OR RECOVERY | DESCRIBE ANY ASSISTANCE REQUIRED | HAZARDS TO PERSONS, PROPERTY OR 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 STATION OPERATOR | EMPLOYER | LOCATION CALLED YELLOWKNIFE, NT | REPORT LINE NUMBER (867) 920-8130 |

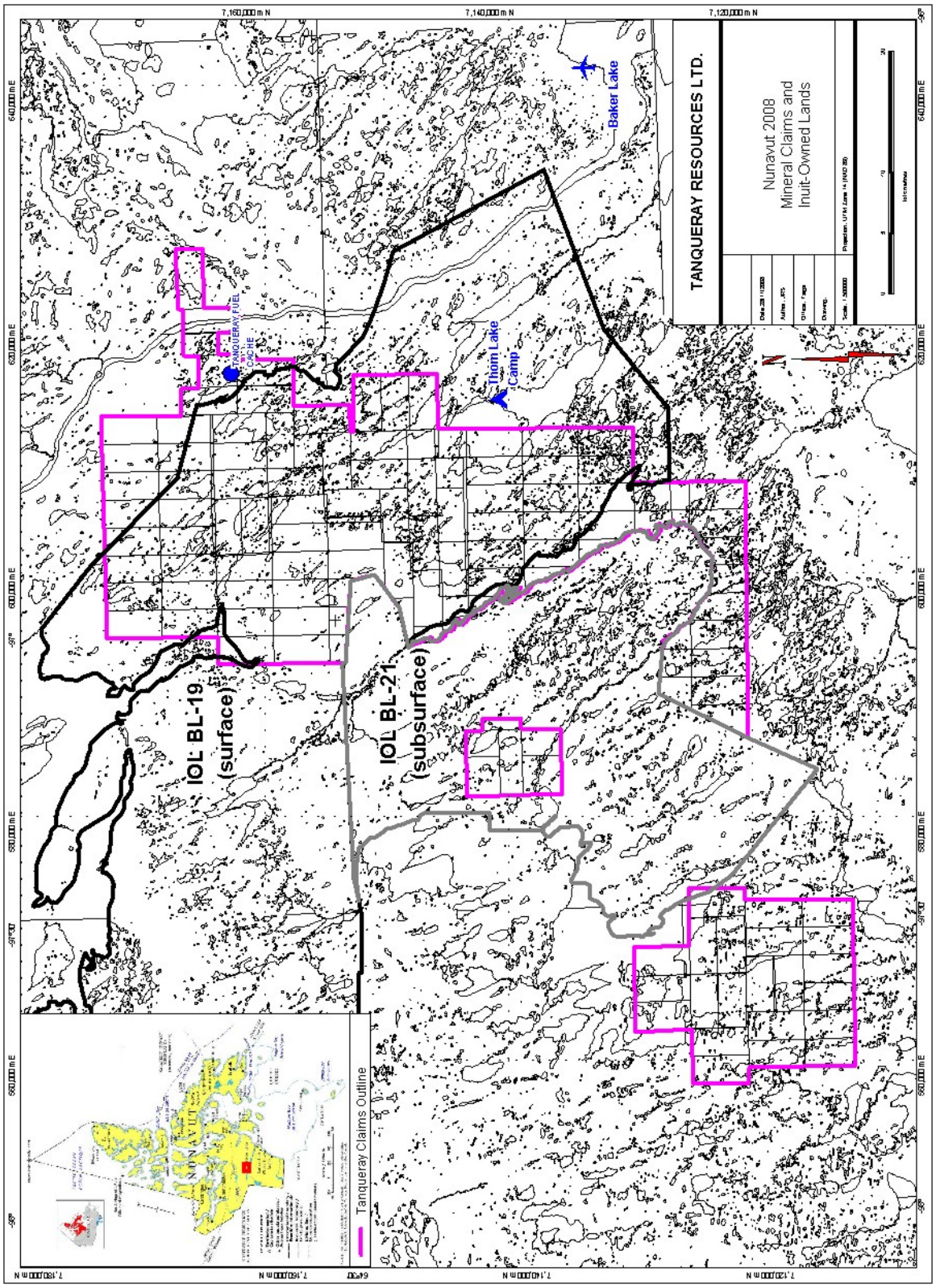
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

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

SC-13

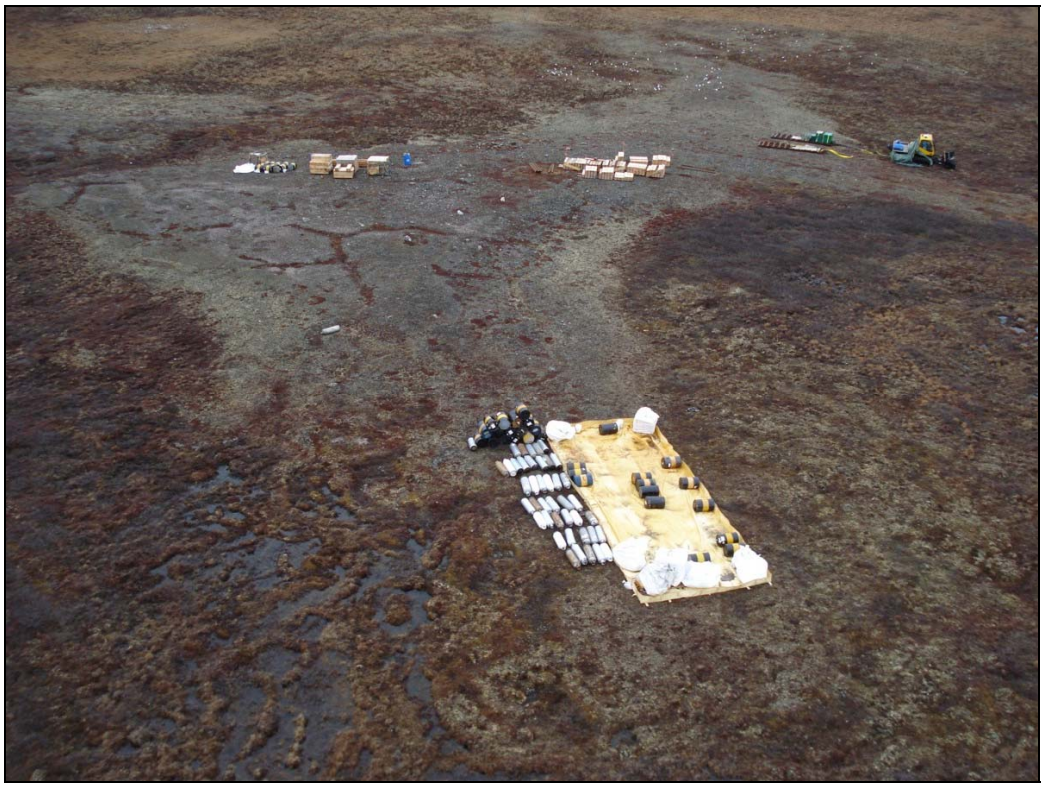
# Appendix SC-II

# Maps & Photos




Location Map, Tanqueray Resources Baker Lake Project

Thom Lake Camp, October 1, 2008



Thom Lake fuel cache and core storage, September 2008.

# Appendix SC-III

# MSDS Sheets

# MATERIAL SAFETY DATA SHEET

## CALCASIEU REFINING COMPANY

**DATE:** July 19, 2002 **PAGES:** 4

**PRODUCT IDENTIFICATION**

**PRODUCT:** **AVIATION FUEL (JET-A AVIATION GRADE TURBINE FUEL) JET-A**

CAS No. 8008-20-6
DOT No. Aviation Fuel, 3, Flammable Liquid, UN1863, PGIII

MANUFACTURER: Calcasieu Refining Company
4359 West Tank Farm Road
Lake Charles, Louisiana 70605
(337) 478-2130

TRANSP. EMER: INFOTRAC 1-800-535-5053 (24 HR)

**HAZARDOUS INGREDIENTS**

This material is defined as hazardous by OSHA's 29 CFR 1910.1200

| | | | OSHA 191.1000 | |
|---|---|---|---|---|
| | | | TWA | STEL |
| INGREDIENT | CAS No. | VOL. % | (8 HR.) | (15 MIN.) |
| Hydrocarbons | Mixture | 100 (Total) | ---------- | ---------- |
| Naphthalene | 91-20-3 | 0.7 – 1.5 | 10 PPM | 15 PPM |

**NFPA HAZARD RATING**

HEALTH: 0 (LEAST) FLAMMABILITY: 2 (MODERATE) REACTIVITY: 0 (LEAST)

**PHYSICAL PROPERTIES DATA**

Boiling Range: 280 - 550°F
Vapor Press. (100° F): 0.1 psia
Vapor Density: > 1
Sp.Gr. (60°F): 0.80 – 0.83
Solubility (water): negligible
Color: clear to light straw

**STABILITY AND REACTIVITY**

Chemical stability: ---------- Stable at normal temperatures
Incompatibility: ---------- Avoid strong oxidizers and acids. Avoid storage or contact with some plastics and elastomers. Consult a chemical resistance guide.
Conditions to avoid: ---------- Avoid heat, sparks, flame and other ignition sources.
Decomposition: ---------- Combustion may produce carbon monoxide or dioxide and/or other hazardous hydrocarbons.

Polymerization: ---------- Should not occur.

## FIRE AND EXPLOSION INFORMATION

FLASH POINT (CC): > 100°F FLAM. LIMITS: 0.7% (L) – 5.0% (U)
**Note:** Avoid heat, sparks, or build-up of static electricity.

EXTINGUISHING MEDIA: Foam, dry chemical, C02.
**Note:** Water could be use, but may be ineffective except to keep exposed container cool. Can also be used to disperse if unignited.

## HEALTH HAZARD INFORMATION

PRIMARY ROUTES (EXPOSURE / ENTRY): Skin, Inhalation

Typical petroleum hydrocarbons in this boiling range may cause irritation tot he eyes lungs, or skin after prolonged or repeated exposure. Prompt removal of this product should prevent any chronic health problems. Also, avoid breathing of the vapors.

The reportable toxic ingredient (Naphthalene) may cause nausea, headache, vomiting, anemia upon prolonged or repeated contact.

## FIRST AID

| | |
|---|---|
| INHALATION: | Remove to fresh air. If breathing difficult, give oxygen. If not breathing difficult, give artificial respiration and call a physician. |
| SKIN CONTACT: | Immediately wash with soap and water. Change clothing. |
| EYE CONTACT: | Immediately flush with water. Call physician. |
| INGESTION: | Do not induce vomiting. Call physician. |

## PROTECTIVE EQUIPMENT

HANDLING: Wear protective gloves (Neoprene or NBR). Wear safety glasses with side shields or, if splashing is probable, wear chemical goggles

RESPIRATORY PROTECTION: Avoid breathing vapors. If a situation exists for the potential of exceeding exposure limits, it will be necessary to determine whether an organic vapor cartridge will suffice or positive pressure breathing equipment will be required.

## SPILL, LEAK, AND DISPOSAL INFORMATION

| | |
|---|---|
| SPILLS & LEAKS: | Evacuate as required. Remove sources of heat, sparks, etc. Attempt to isolate spill and keep from entering sewers and waterways. Recover free liquid for reclamation. |
| DISPOSAL: | Soak up with an absorbent material. This material may be a RCRA hazardous waste and, if so, must be handled according to applicable regulation. |
| Note: | Review appropriate safety sections of this MSDS. |

## REGULATORY INFORMATION

### CERCLA (40 CFR 302)

This material contains the following hazardous ingredients which, when released in quantities equal to or greater than shown, triggers National Response Center and possibly State notification requirements.

| INGREDIENT | REPORTABLE QUANTITY |
|---|---|
| Naphthalene | 100 Pounds |

### SARA TITLE III

1) SECTION 302 / 304 (40 CFR 355)
This material is not known to contain extremely hazardous substances at greater than 1.0% concentration.

2) SECTION 311/ 312 (40 CFR 370)
This material should be reported under the following hazard categories:

Immediate (Acute), Delayed (Chronic), Fire

3) SECTION 313 (40 CFR 372)
This material contains the following ingredients subject to reporting as a toxic chemical.

| INGREDIENT | CAS No. | APPROX. MAX. CONC. |
|---|---|---|
| Naphthalene | 91-20-3 | 3% |

## TSCA (40 CFR 710)

This material is a mixture as defined by TSCA. The chemical ingredients in this material are in section (8b) chemical substance inventory and/or otherwise in compliance.

## RCRA (40 CFR 261 – SUBPART C AND D)

This material, when discarded or disposed of, is not specifically listed as a hazardous waste. However, it could be considered hazardous if it meets the criteria for being ignitable or toxic. Also, it may be hazardous due to State regulations, If it contacts a listed hazardous waste, check 40 CFR 261, 262-265, and 268 to determine status.

## FEDERAL CLEAN WATER ACT (40 CFR 116.4) SECTION 311

This material contains the following ingredient (s) which is considered hazardous if spilled in navigable waters.

| INGREDIENT | REPORTABLE QUANTITY |
|---|---|
| Petroleum Hydrocarbon | film or sheen upon or discoloration of water surface or adjoining shoreline. |

## HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS (49 CFR 171-178)

This material contains the following ingredient (s) which is considered a hazardous substance as defined in 49 CFR 172.101 if spilled while being transported in commerce.

| INGREDIENT | REPORTABLE QUANTITY |
|---|---|
| Naphthalene | 100 Pounds |

## STATE REGULATION

CALIFORNIA (PROPOSITION 65)

Chemicals known to California to cause cancer, birth defects, or other reproductive harm might be found in this product, although none have been specifically identified.

LOUISIANA (RS. 30:2361 et seq.)

This material may be regulated by Louisiana's Right-To-Know Law.

---

# CERTIFICATE OF ANALYSIS

VESSEL: SHORE TANK 306 CALCASIEU REF. CO. LABORATORY # 123-986 12/12/03 Job#301403
SAMPLE DESIGNATED AS: Jet A Fuel SUBMITTED BY: DELTA ANALYTICAL CENTER/LAPLACE, LA

| TEST | METHOD | RESULT |
|---|---|---|
| GRAVITY, API @ 60 DEG F | D-4052 | 45.2 |
| GRAVITY,SPECIFIC@60/30F | D-4052 | 0.8009 |
| DENSITY @ 15 C | D-4052 | 800.4 |
| COLOR, Saybolt Inc. | D-156 | +29 |
| SULFUR X-RAY WT% | D-4294 | 0.0150 |
| DOCTOR TEST | IP-30 | NEGATIVE |
| MERCAPTAN SULFUR PPM | D-3227 | WAIVED |
| FLASH POINT, TAC CC, DEG F | D-56 | 114 |
| FREEZING POINT DEG C (F) | D-2386 | -45.0/-49.0 |
| HEAT OF COMBUSTION, NET (CALC) | D-3338 | 18,625 |
| AROMATICS, (FIA) VOL% | D-1319 | 16.0 |
| SMOKE POINT, MM | D-1322 | 25 |
| CORROSION 2 HRS @ 100DEG C | D-130 | 1a |
| ACIDITY TOTAL MG KOH/GM | D-3242 | 0.038 |
| VISCOSITY,KIN@-20C/-4, cst | D-445 | 5.446 |
| WATER REACTION: SEPARATION RATING | D-1904 | 1 |
| INTERFACE RATING | D-1094 | 1b |
| VOLUME CHANGE | D-1094 | 0.0 |
| THERMAL STABILITY - JFTOT@260 C | D-3241 | |
| PRESSURE DROP,MM | D-3241 | <1 |
| TUBE RATING | D-3241 | 1 |
| NAPHTHALENES, VOL% | D-1840 | 2.34 |
| GUM,EXISTENT(STEAM)MG/100ML | D-381 | 1 |
| ELECTRICAL CONDUCTIVITY,ps/m@77m | D-2624 | 5 |
| VISCOSITY KIN @ 40 C, cSt | D-445 | 1.316 cst |
| BURNING QUALITY,KEROSENE(16 HOURS) | D-187 | |
| AVERAGE BURNING RATE, gm/hr | D-187 | |
| INITIAL FLAME HEIGHT,mm | D-187 | |
| FINAL FLAME HEIGHT,mm | D-187 | |
| INITIAL FLAME WIDTH,mm | D-187 | |
| FINAL FLAME WIDTH,mm | D-187 | |
| CHIMNEY DEPOSIT COLOR | D-187 | |
| CHIMNEY DEPOSIT DENSITY | D-187 | |
| DISTILLATION, DEG,F , I.B.P. | D-86 | |
| IBP | | 307 |
| 5 % | | 330 |
| 10% " | | 342 |
| 20% " | | 358 |
| 30% " | | 373 |
| 40% " | | 387 |
| 50% " | | 401 |
| 60% " | | 417 |
| 70% " | | 433 |
| 80% " | | 451 |
| 90% " | | 474 |
| 95% " | | 493 |
| END POINT | | 517 |
| RECOVERY, VOL % | | 98.0 |
| RESIDUE, VOL % | | 1.6 |
| LOSS, VOL % | | 0.4 |

-THIS LABORATORY REPORT MAY NOT BE PUBLISHED OR USED EXCEPT IN FULL. IT SHALL NOT BE USED IN CONNECTION WITH ANY FORM OF ADVERTISING UNLESS WRITTEN CONSENT IS RECEIVED FROM SAYBOLT INC.
-RESULTS WERE BASED ON ANALYSIS MADE AT THE TIME SAMPLES WERE RECEIVED AT THE LABORATORY.
-SAMPLE NOMENCLATURE IS DESIGNATED BY THE CUSTOMER.
-THIS REPORT IS ISSUED SOLELY FOR THE USE OF OUR CUSTOMERS AND SUPPLIES ONLY INFORMATION THEY SPECIFICALLY REQUESTED. THERE MAY BE OTHER RELEVANT INFORMATION WHICH HAS NOT BEEN REPORTED. SAYBOLT INC. WILL NOT BE RESPONSIBLE TO THIRD PARTIES FOR THE CONTENTS OF THIS REPORT OR FOR ANY OMISSION THEREFROM.
-SAMPLES SHALL BE RETAINED BY SAYBOLT INC. FOR 45 DAYS UNLESS OTHERWISE REQUESTED IN WRITING.
NOTE: PRODUCT MEETS ASTM-1655 & K-1 SPECS
*WAIVED IF DR. NEGATIVE
PRECISION PARAMETERS APPLY IN THE EVALUATION OF THE TEST RESULTS SPECIFIED ABOVE. PLEASE ALSO REFER TO ASTM D3244(EXCEPT FOR ANALYSIS OF RFG), IP 367 AND APPENDIX E OF IP STANDARD METHODS FOR ANALYSIS & TESTING WITH RESPECT TO THE UTILIZATION OF TEST DATA TO DETERMINE CONFORMANCE WITH SPECIFICATIONS.

ANDY LARA SAYBOLT LP

PETRO-CANADA

# Material Safety Data Sheet

| WHMIS (Pictograms) | WHMIS (Classification) | Protective Clothing | TDG (pictograms) |
|---|---|---|---|
|  | **Not controlled** |  |  |

## *Section 1. Chemical Product and Company Identification*

| | | | |
|---|---|---|---|
| **Product Name** | **ATF BASEOIL P50** | **Code** | P50, 440-248 |
| **Synonym** | None. | **Validated on** | **8/25/1998.** |
| **Manufacturer** | PETRO-CANADA<br>P.O. Box 2844<br>Calgary, Alberta T2P 3E3 | **In case of Emergency** | Petro-Canada: 403-296-3000<br>Canutec Transportation: 613-996-6666<br>Poison Control Centre: Consult local telephone directory for emergency number(s). |
| **Material Uses** | ATF Baseoil P50 is used for blending lubricants or as a process oil in production of a variety of finished oil products. | | |

## *Section 2. Composition and Information on Ingredients*

| | | | *Exposure Limits (ACGIH)* | | |
|---|---|---|---|---|---|
| **Name** | **CAS #** | **% (V/V)** | **TLV-TWA(8 h)** | **STEL** | **CEILING** |
| 1) Mixture of severely hydrotreated, hydrocracked, hydroisomerized paraffinic hydrocarbons. | Mixture | 100 | 5 mg/m³ (oil mist) | Not established | Not established |

| | |
|---|---|
| **Manufacturer Recommendation** | 8-hour TLV-TWA of 5 mg/m³ recommended by manufacturer based on ACGIH TLV for oil mists. Consult local authorities for acceptable exposure limits. |
| **Other Exposure Limits** | Consult local, state, provincial or territory authorities for acceptable exposure limits. |

## *Section 3. Hazards Identification.*

| | |
|---|---|
| **Potential Health Effects** | Non irritating to eyes and skin. Relatively non-toxic via ingestion. This product has a low vapour pressure and is not expected to present an inhalation exposure at ambient conditions up to 38°C. Upon heating to high temperatures, or mechanical actions which may produce vapours, mists or fumes, inhalation of product may cause irritation of the breathing passages. For more information, refer to Section 11. |

## *Section 4. First Aid Measures*

| | |
|---|---|
| **Eye Contact** | Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. DO NOT use an eye ointment. Seek medical attention if irritation persists. |
| **Skin Contact** | Remove contaminated clothing - launder before reuse. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. Get medical attention if redness or irritation occurs. |
| **Inhalation** | Evacuate the victim to a safe area as soon as possible. Allow the victim to rest in a well ventilated area. Administer oxygen if available. If the victim is not breathing, perform mouth-to-mouth resuscitation. If resuscitation is required, physician assessment mandatory. |
| **Ingestion** | DO NOT induce vomiting because of danger of aspirating liquid into lungs. Has laxative effect - rapidly eliminated. Physician assessment advised. |
| **Note to Physician** | No additional remark. |

## *Section 5. Fire-fighting Measures*

| | | | |
|---|---|---|---|
| **Flammability** | Nonflammable, but will burn on prolonged exposure to flame or high temperature. | **Flammable Limits** | Not applicable. |
| **Flash Points** | OPEN CUP: 152°C (305.6°F) (Cleveland) | **Auto-Ignition Temperature** | Not available |
| **Fire Hazards in Presence of Various Substances** | Low fire hazard. Must be moderately heated before ignition will occur. Avoid contact with strong oxidizing agents. | **Explosion Hazards in Presence of Various Substances** | Do not cut, weld, heat, drill or pressurize empty container. |
| **Products of Combustion** | Carbon oxides (CO, CO2), smoke and irritating fumes as products of incomplete combustion. | | |



*Continued on Next Page*

*Available in French*

| | |
|---|---|
| **Fire Fighting Media and Instructions** | NAERG96, GUIDE 171, Substances (low to moderate hazard). If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (0.5 mile) in all directions; also, consider initial evacuation for 800 meters (0.5 mile) in all directions. DO NOT extinguish a leaking gas flame unless leak can be stopped. Shut off fuel to fire if it is possible to do so without hazard. If this is impossible, withdraw from area and let fire burn out under controlled conditions. Withdraw immediately in case of rising sound from venting safety device or any discolouration of tank due to fire. Cool containing vessels with water spray in order to prevent pressure build-up, autoignition or explosion. SMALL FIRE: use DRY chemicals, foam, or CO2. LARGE FIRE: use water spray, fog or foam. For small outdoor fires, portable fire extinguishers may be used, and self contained breathing apparatus (SCBA) may not be required. For all indoor fires and any significant outdoor fires, SCBA is required. Respiratory and eye protection are required for fire fighting personnel. |

## *Section 6. Accidental Release Measures*

| | |
|---|---|
| **Material Release or Spill** | NAERG96, GUIDE 171, Substances (low to moderate hazard). ELIMINATE ALL IGNITION SOURCES. Avoid contact. Stop leak if without risk. Contain spill. Absorb with inert absorbents such as dry clay, or diatomaceous earth. Avoid inhaling dust of diatomaceous earth for it may contain silica in very fine particle size, making this a potential respiratory hazard. Place used absorbent in closed metal containers for later disposal or burn absorbent in a suitable combustion chamber. DO NOT FLUSH TO SEWERS, STREAMS OR OTHER BODIES OF WATER. Check with applicable jurisdiction for specific disposal requirements of spilled material and empty containers. Notify the appropriate authorities immediately. |

## *Section 7. Handling and Storage*

| | |
|---|---|
| **Handling** | Keep away from sources of ignition. DO NOT reuse empty containers without commercial cleaning or reconditioning. Practice good personal hygiene. Wash hands after handling and before eating. Launder work clothes frequently. Discard saturated leather goods. |
| **Storage** | Store in tightly closed containers in cool, dry, isolated, well-ventilated area, and away from strong oxidizing agents. |

## *Section 8. Exposure Controls/Personal Protection*

| | |
|---|---|
| **Engineering Controls** | For normal application, special ventilation is not necessary. If user's operations generate fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station. |
| **Personal Protection** - ***The selection of personal protective equipment varies, depending upon conditions of use.*** | |
| **Eyes** | Safety glasses or chemical splash goggles in case of splashing. |
| **Body** | Wear long sleeved clothing to minimize skin contact. |
| **Respiratory** | No special respiratory protection is normally required. If mist generated by heating, spraying, etc., wear an organic vapour respirator with a mist filter. All respirators must be NIOSH approved. |
| **Hands** | For casual contact, PVC gloves are suitable. For direct contact for more than 2 hours, NEOPRENE or NITRILE gloves are recommended. |
| **Feet** | Safety boots or shoes. |

## *Section 9. Physical and Chemical Properties*

| | | | |
|---|---|---|---|
| **Physical State and Appearance** | Viscous liquid. | **Viscosity** | 7.0 cSt @ 40°C (104°F), 2.1 cSt @ 100°C (212°F), VI=96 |
| **Colour** | Clear and bright. | **Pour Point** | -42°C (-44°F) |
| **Odour** | No odour or slight petroleum oil like. | **Softening Point** | Not applicable. |
| **Odour Threshold** | Not available. | **Dropping Point** | Not applicable. |
| **Boiling Point** | Not available | **Penetration** | Not applicable. |
| **Density** | 0.8252 kg/L @ 15°C (59°F). | **Oil / Water Dist. Coefficient** | Not measurable. The product is more soluble in oil. |
| **Vapour Density** | Lower than air. | **Ionicity (in water)** | Insoluble in water. |
| **Vapour Pressure** | Negligible at ambient temperature and pressure. | **Dispersion Properties** | Nonvolatile and immobile. |
| **Volatility** | Non-volatile. | **Solubility** | Insoluble in cold water, soluble in non-polar hydrocarbon solvents. |

## *Section 10. Stability and Reactivity*

| | | | |
|---|---|---|---|
| **Corrosivity** | Non corrosive. | | |
| **Stability** | The product is stable under normal handling and storage conditions. | **Hazardous Polymerization** | Will not occur under normal working conditions. |
| **Incompatible Substances / Conditions to Avoid** | Can react with strong organic oxidizing agents. | **Decomposition Products** | Releases of COx, smoke and irritating fumes when heated to decomposition. |



*Continued on Next Page* *Available in French*

## Section 11. Toxicological Information

| | |
|---|---|
| **Routes of Entry** | Skin contact, eye contact, inhalation and ingestion. |
| **Acute Lethality** | Based on toxicity of base oils, product is practically non-toxic.<br>Acute oral toxicity (LD50): >5000 mg/kg (rat). Acute dermal toxicity (LD50): >2000 mg/kg (rabbit). Acute inhalation toxicity (LC50): >2500 mg/m³/4h (rat). Acute dermal/eye irritation: non irritating to rabbit. |
| **Chronic or Other Toxic Effects** | |
| Dermal Route: | Based on toxicity of similar product, base oils are not skin irritant. However, prolonged or repeated contact may cause skin irritation characterized by dermatitis or oil acne for sensitive individuals. |
| Inhalation Route: | Due to low volatility, inhalation is not likely. However, prolonged or repeated inhalation of excessive amount of mists or fumes may cause irritation of the respiratory tract. Oil deposits in the lung may lead to fibrosis and reduced pulmonary function. |
| Oral Route: | Relatively non-toxic via ingestion. |
| Eye Irritation/Inflammation: | Base oils are not eye irritants. |
| Immunotoxicity: | No studies were found. |
| Skin Sensitization: | Base oils are not skin sensitizer in guinea pig. |
| Respiratory Tract Sensitization: | No studies were found. |
| Mutagenic: | Base oils exhibited negative mutagenic activity toward: (a) Salmonella Typhimurium TA98 using the Modified Ames Assay for Petroleum Product; (b) Salmonella-Escherichia coli/Mammalian-Microsome Reverse Mutation Assay (Ames test) with a Confirmatory Assay. |
| Reproductive Toxicity: | Based on the available animal data, severely hydrotreated base oils do not pose a reproductive risk. |
| Teratogenicity/Embryotoxicity: | Based on the available animal data, severely hydrotreated base oils do not pose a developmental or teratogenicity risk. |
| Carcinogenicity (ACGIH): | ACGIH(Oil mist)--Based on the available human studies, exposure to oil mist alone has not been demonstrated to cause human health effects at levels below 5 mg/m³. It is anticipated that this level minimize the potential for skin and respiratory tract irritation. |
| Carcinogenicity (IARC): | IARC Group 3: cannot be classified as to carcinogenicity to humans. |
| Carcinogenicity (NTP): | No studies were found. |
| Carcinogenicity (IRIS): | No studies were found. |
| Carcinogenicity (OSHA): | OSHA PEL (8-hour TWA) = 5 mg/m³ for mineral oil mists. |
| **Other Considerations** | No additional remark |

## Section 12. Ecological Information

| | | | |
|---|---|---|---|
| **Environmental Fate** | The product has the potential for degradation by hydroxyl radicals in the troposphere under the influence of sunlight, and by bacteria in soil or water. | **Persistance/ Bioaccumulation Potential** | No studies were found. |
| **BOD5 and COD** | Not available. | **Products of Biodegradation** | Not available. |
| **Additional Remarks** | Base oils are none to low acute toxicity toward aquatic organisms: LC50 (rainbow trout): >400,000 ppm in 96 hours; 0% mortality at 400,000 ppm in 96 hours; LC50 (Mysidopsis bahai): >500,000 ppm in 96 hours; passed the EPS 1/RM/24 Microtox test using luminescent bacteria; 57-88% of base oils are biodegradable in 28 days. | | |

## Section 13. Disposal Considerations

| | |
|---|---|
| **Waste Disposal** | Spent/used/waste oil may meet the requirements of a hazardous waste. Consult your local or regional authorities. Preferred waste management priorities are: (1) recycle or reprocess; (2) incineration with energy recovery; (3) disposal at licensed waste disposal facility. Ensure that disposal or reprocessing is in compliance with government requirements and local disposal regulations. Consult your local or regional authorities. |

## Section 14. Transport Information

| | | | |
|---|---|---|---|
| **TDG Classification** | Not regulated. | **Special Provisions for Transport** | No additional remark. |

## Section 15. Regulatory Information

| | |
|---|---|
| **Other Regulations** | CEPA: This product is acceptable for use under the provisions of WHMIS-CPR. All components of this formulation are listed on DSL. This product is not listed on NPRI or contains Reportable Quantity (RQ) Substances.<br><br>USEPA: All components of this formulation are listed on TSCA. This product is not known to contain any of the carcinogens required to be listed under OSHA hazard communication standard, 29 CFR 1910.1200 (U.S.). Not listed on EPCRA or SARA Title III, Section 302/304/311/312 (40 CFR 355/370) for Extremely Hazardous Substances. Not listed on EPCRA or SARA Title III, Section 313 (40 CFR 372) for Toxic Chemicals. Not listed on CERCLA Hazardous Substances (RQ Chemicals)(40 CFR 302.4). Not listed on RCRA (40 CFR 261.33) for Hazardous Waste. Please note that the chemical identity of some or all of the ingredients that may be listed herein is confidential business information and is being withheld as permitted by 29 CFR 1910.1200 and various State Right to Know Laws. |



Continued on Next Page Available in French

EU: All components of this formulation are listed on EINECS. Not listed as hazardous chemical in CHIP96-Approved Supply List (675/548/EEC). Not classified as R65 - Aspiration hazard, by the 22nd ATP (Adaptation to Technical Progress) of the European DSD.

| | | | |
|---|---|---|---|
| **DSD/DPD (Europe)** | Not classified under the Dangerous Substances or Dangerous Preparations Directives. | **HCS (U.S.A.)** | Not controlled |
| **ADR (Europe) (Pictograms)** | **NOT EVALUATED FOR EUROPEAN TRANSPORT**<br>**NON ÉVALUÉ POUR LE TRANSPORT EUROPÉEN.** | **DOT (U.S.A) (Pictograms)** |  |

**HMIS (U.S.A.)**

| | |
|---|---|
| **Health Hazard** | 0 |
| **Fire Hazard** | 1 |
| **Reactivity** | 0 |
| **Personal Protection** | a |

**NFPA (U.S.A.)**


| Rating | |
|---|---|
| 0 | Insignificant |
| 1 | Slight |
| 2 | Moderate |
| 3 | High |
| 4 | Extreme |

## *Section 16. Other Information*

**References** Available upon request.

**Glossary**

ACGIH - American Conference of Governmental Industrial Hygienists
ADR - Agreement on Dangerous goods by Road (Europe)
ASTM - American Society for Testing and Materials (
BOD5 - Biological Oxygen Demand in 5 days
CAN/CGA B149.2 Propane Installation Code
CAS - Chemical Abstract Services
CEPA - Canadian Environmental Protection Act
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CFR - Code of Federal Regulations
CHIP - Chemicals Hazard Information and Packaging Approved Supply List
COD5 - Chemical Oxygen Demand in 5 days
CPR - Controlled Products Regulations
DOT - Department of Transport
DSCL - Dangerous Substances Classification and Labeling (Europe)
DSD/DPD - Dangerous Substances or Dangerous Preparations Directives (Europe)
DSL - Domestic Substance List
EEC/EU - European Economic Community/European Union
EINECS - European Inventory of Existing Commercial Chemical Substances
EPCRA - Emergency Planning and Community Right to Know Act
FDA - Food and Drug Administration
FIFRA - Federal Insecticide, Fungicide and Rodenticide Act
HCS - Hazardous Communication System
HMIS - Hazardous Material Information System
IARC - International Agency for Research on Cancer
IRIS - Integrated Risk Information System
LD50/LC50 - Lethal Dose/Concentration kill 50%
LDLo/LCLo - Lowest Published Lethal Dose/Concentration
NAERG'96 - North American Emergency Response Guide Book (1996)
NFPA - National Fire Prevention Association
NIOSH - National Institute for Occupational Safety & Health
NPRI - National Pollutant Release Inventory
NSNR - New Substances Notification Regulations (Canada)
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PEL - Permissible Exposure Limit
RCRA - Resource Conservation and Recovery Act
SARA - Superfund Amendments and Reorganization Act
SD - Single Dose
STEL - Short Term Exposure Limit (15 minutes)
TDG - Transportation Dangerous Goods (Canada)
TDLo/TCLo - Lowest Published Toxic Dose/Concentration
TLm - Median Tolerance Limit
TLV-TWA - Threshold Limit Value-Time Weighted Average
TSCA - Toxic Substances Control Act
USEPA - United States Environmental Protection Agency
USP - United States Pharmacopoeia
WHMIS - Workplace Hazardous Material Information System

**For Copy of MSDS**
**Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518**
**Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285**
**Quebec & Eastern Canada, telephone: 1-800-787-5682; fax: 905-403-5528**

**Prepared by May Chau on 8/25/1998.**
**Data entry by Product Safety - JDW.**

# Praxair Material Safety Data Sheet

## 1. Chemical Product and Company Identification

| | | | |
|---|---|---|---|
| **Product Name:** | Compressed gas, flammable, n.o.s. (Ethane, Propane) | **Trade Name:** | Mixture of Propane and Ethane |
| **MSDS#** | P-18-0413 | | |
| **Chemical Name:** | Mixture of Propane and Ethane | **Synonym:** | Not applicable. |
| **Chemical Formula:** | Mixture of $C_3H_8$ & $C_2H_6$ | **Chemical Family:** | Not applicable. |
| **Telephone:** | **Emergencies:*** 1-800-645-4633<br>**CHEMTREC:*** 1-800-424-9300<br>**Routine:** 1-800-PRAXAIR | **Company Name:** | Praxair, Inc.<br>39 Old Ridgebury Road<br>Danbury, CT 06810-5113 |

**Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier, Praxair sales representative, or call 1-800-PRAXAIR (1-800-772-9247).*

## 2. Composition and Information on Ingredients

| COMPONENTS | CAS NUMBER | CONCENTRATION, % by volume | OSHA PEL ACGIH TLV-TWA |
|---|---|---|---|
| Propane | 74-98-6 | 10-60 | **ACGIH (United States, 2003).** TWA: 2500 ppm **OSHA (United States).** TWA: 1000 ppm |
| Ethane | 74-84-0 | 40-90 | Simple asphyxiant. |

## 3. Hazards Identification

### Emergency Overview

**DANGER! Flammable, high-pressure gas. May form explosive mixture with air. Can cause rapid suffocation. May cause dizziness and drowsiness. Self-contained breathing apparatus may be required by rescue workers.**

**THRESHOLD LIMIT VALUE:** TLV-TWA Data from 2003 Guide to Occupational Exposure Values (ACGIH). TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations.

**EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:**

**INHALATION:** Asphyxiant. Effects are due to lack of oxygen. Moderate concentrations may cause headaches, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconciousness. Lack of oxygen can kill.

**SKIN CONTACT:** This product is a liquefied gas. Contact with liquid may cause frostbite.

**SWALLOWING:** This product is a liquefied gas.

**EYE CONTACT:** Liquid may cause frostbite and severe irritation with corneal injury. Moderate irritation from high concentrations of vapor.

**EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE:**

**CARCINOGENIC EFFECTS**: Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Propylene].
Contains material which may cause damage to the following organs: liver.

**OTHER EFFECTS OF OVEREXPOSURE:**
This material may be a cardiac sensitizer; avoid the use of epinephrine. There is no specific antidote, and treatment of overexposure should be directed at the control of symptoms and the clinical condition.

**MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:**
Repeated or prolonged exposure is not known to aggravate medical condition.

**SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:**
Not available - mixture not tested.

**CARCINOGENICITY:**
Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Propylene].

## 4. First Aid Measures

**INHALATION:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**SKIN CONTACT:**
Wash with soap and water. No emergency care anticipated.

**SWALLOWING:**
A highly unlikely route of exposure. This product is a gas at room temperature and pressure.

**EYE CONTACT:**
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. See a physician, preferably an ophthalmologist.

***NOTES TO PHYSICIAN:***
*This material may be a cardiac sensitizer; avoid the use of epinephrine. There is no specific antidote, and treatment of overexposure should be directed at the control of symptoms and the clinical condition.*

## 5. Fire Fighting Measures

| | | | |
|---|---|---|---|
| **FLASH POINT (test method)** | The lowest known value is CLOSED CUP: -135°C (-211°F). (Tag). (Ethane) | **AUTOIGNITION TEMPERATURE** | The lowest known value is 450°C (842°F) (Propane). |

| | | | |
|---|---|---|---|
| **FLAMMABLE LIMITS IN AIR, % by volume:** | **LOWER:** Not available - mixture not tested. | **UPPER:** | Not available - mixture not tested. |

**EXTINGUISHING MEDIA:**
CO2, dry chemical, water spray or fog.

**SPECIAL FIRE FIGHTING PROCEDURES:**
**DANGER! Flammable, high-pressure gas.** Evacuate all personnel from danger area. Immediately deluge cylinders with water from maximum distance until cool, then move them away from fire area if without risk. Continue cooling water spray while moving cylinders. Do not extinguish any flames emitted from cylinders; allow them to burn out. Self-contained breathing apparatus may be required by rescue workers. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

**UNUSUAL FIRE AND EXPLOSION HAZARD:**

Forms explosive mixtures with air and oxidizing agents. Heat of fire can build pressure in cylinder and cause it to rupture. No part of a cylinder should be subjected to a temperature higher than 125°F (52°C). Cylinders are equipped with a pressure-relief device. (Exceptions may exist where authorized by DOT.) If venting or leaking gas catches fire, do not extinguish flames. Flammable gas may spread from leak, creating an explosive re-ignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point.

### HAZARDOUS COMBUSTION PRODUCTS:

These products are carbon oxides (CO, $CO_2$) and water.

## 6. Accidental Release Measures

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

**DANGER!** **Flammable, high-pressure gas.** Forms explosive mixtures with air. Immediately evacaute all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if without risk. Reduce gas with fog or fine water spray. Shut off flow if without risk. Ventilate area or move cylinder to a well-ventilated area. Flammable gas may spread from leak. Before entering area, especially confined areas, check atmosphere with an appropriate device.

### WASTE DISPOSAL METHOD:

Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

## 7. Handling and Storage

### PRECAUTIONS TO BE TAKEN IN STORAGE:

Store and use with adequate ventilation. Separate flammable cylinders from oxygen, chlorine, and other oxidizers by at least 20 ft. (6.1 m) or use a barricade of non-combustible material. This barricade should be at least 5 ft (1.53 m) high and have a fire resistance rating of at least ½ hour. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. All electrical equipment in storage areas must be explosion-proof. Storage areas must meet national electric codes for Class 1 hazardous areas. Store only where temperature will not exceed 125°F (52°C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.

### PRECAUTIONS TO BE TAKEN IN HANDLING:

Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Electrical equipment must be non-sparking or explosion-proof. Leak check system with soapy water; never use a flame. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Open valve slowly. If valve is hard to open, discontinue use and contact your supplier. For other precautions, see section 16.

For additional information on storage and handling, refer to Compressed Gas Association (CGA) pamphlet P-1, *Safe Handling of Compressed Gases in Containers,* available from the CGA. Refer to section 16 for the address and phone number along with a list of other available publications.

## 8. Exposure Controls/Personal Protection

**VENTILATION/ENGINEERING CONTROLS:**

**LOCAL EXHAUST:** An explosion-proof local exhaust system is acceptable. See SPECIAL.

**MECHANICAL (general):** Inadequate. See SPECIAL.

**SPECIAL:** Use only in a closed system.

**OTHER:** See SPECIAL.

**PERSONAL PROTECTION:**

**RESPIRATORY PROTECTION:** Wear appropriate respirator when ventilation is inadequate.

Respiratory protection must conform to OSHA rules as specified in 29 CFR 1910.134.

**SKIN PROTECTION:** Wear work gloves when handling cylinders.

**EYE PROTECTION:** Wear safety glasses when handling cylinders.

Select in accordance with OSHA 29 CFR 1910.133.

**OTHER PROTECTIVE EQUIPMENT:** Metatarsal shoes for cylinder handling. Select in accordance with OSHA 29 CFR 1910.132 and 1910.133. Regardless of protective equipment, never touch live electrical parts.

## 9. Physical and Chemical Properties

| | |
|---|---|
| **SPECIFIC GRAVITY** (Air=1) at 21.1ºC (70ºF) and 1 atm: | Not available. |
| **PERCENT VOLATILES BY VOLUME:** | 100% (v/v). (Ethane.) Weighted average: 85% (v/v) |
| **APPEARANCE:** | Colorless. |
| **ODOR:** | Odorless. |
| **STATE:** | Gas. (Liquefied.) |

## 10. Stability and Reactivity

| | |
|---|---|
| **STABILITY:** | The product is stable. |
| **INCOMPATIBILITY (materials to avoid):** | Oxidizing agents, halogens and acids. |
| **HAZARDOUS DECOMPOSITION PRODUCTS:** | Not available - mixture not tested. |
| **HAZARDOUS POLYMERIZATION:** | Will not occur. |
| **CONDITIONS TO AVOID:** | Not available - mixture not tested. |

## 11. Toxicological Information

See section 3.

## 12. Ecological Information

No adverse ecological effects expected. This product does not contain any Class I or Class II ozone-depleting chemicals. The components of this mixture are not listed as marine pollutants by DOT.

## 13. Disposal Considerations

**WASTE DISPOSAL METHOD:** Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

## 14. Transport Information

**DOT/IMO SHIPPING NAME:** Compressed gas, flammable, n.o.s. (Ethane, Propane)

| | | | | | |
|---|---|---|---|---|---|
| **HAZARD CLASS:** | 2.1 | **IDENTIFICATION #:** | UN1954 | **PRODUCT RQ:** | None. |

**SHIPPING LABEL(s):** Flammable gas

**PLACARD (when required):** Flammable gas

**SPECIAL SHIPPING INFORMATION:**

Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, nonventilated compartment of vehicle can present serious safety hazards.

Shipment of compressed gas cylinders that have been filled without the owner's consent is a violation of federal law [49 CFR 173.301 (b)].

## 15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

**HCS Classification**

CLASS: Flammable gas.
CLASS: Target organ effects.

**U.S. Federal Regulations**

TSCA 8(b) inventory: Propane; Ethane

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Propane: Fire Hazard, Sudden Release of Pressure, Immediate (Acute) Health Hazard; Ethane: Fire Hazard, Sudden Release of Pressure, Immediate (Acute) Health Hazard

SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

**State Regulations**

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
Pennsylvania RTK: Propane: (not a special hazard); Ethane: (not a special hazard)
California Prop. 65: No products were found.

## 16. Other Information

### OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:

**Flammable high-pressure liquefied gas.** Use only in a closed system. Use piping and equipment adequately designed to withstand pressures and temperatures to be encountered. Use only spark-proof tools and explosion-proof equipment. Keep away from heat, open flame and sparks. **Gas can cause rapid suffocation due to oxygen deficiency.** Store and use with adequate ventilation. Close valve after each use; keep closed even when empty. **Prevent reverse flow.** Reverse flow into cylinder may cause rupture. Use a check valve or other protective device in any line or piping from the cylinder. **Never work on a pressurized system.** If there is a leak, close the cylinder valve. Blow the system down in an environmentally safe manner in compliance with all federal, state, and local laws, then repair the leak. **Never place a compressed gas cylinder where it may become part of an electrical circuit.**

### MIXTURES:

When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

### HAZARD RATING SYSTEM:

| NFPA RATINGS: | | HMIS RATINGS: | |
|---|---|---|---|
| HEALTH | 0 | HEALTH | 0 |
| FLAMMABILITY | 4 | FLAMMABILITY | 4 |
| REACTIVITY | 0 | REACTIVITY | 0 |
| SPECIAL | None. | | |

### STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

| | |
|---|---|
| **THREADED:** | CGA-350 for High Pressure Cylinders<br>CGA-510 for Low Pressure Cylinders |
| **PIN-INDEXED YOKE:** | Not applicable. |
| **ULTRA-HIGH-INTEGRITY CONNECTION:** | Not applicable. |

Use the proper CGA connections. **DO NOT USE ADAPTERS.** Additional limited-standard connections may apply. See CGA pamphlets V-1 and V-7 listed below.

Ask your supplier about free Praxair safety literature as referred to in this MSDS and on the label for this product. Further information about this product can be found in the following pamphlets published by the Compressed Gas Association, Inc. (CGA), 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923, Telephone (703) 788-2700, Fax: (703) 934-1830, website: www.cganet.com.

| | |
|---|---|
| AV-1 | Safe Handling and Storage of Compressed Gas |
| P-1 | Safe Handling of Compressed Gases in Containers |
| SB-2 | Oxygen-Deficient Atmospheres |
| V-1 | Compressed Gas Cylinder Valve Inlet and Outlet Connections |
| V-7 | Standard Method of Determining Cylinder Valve Outlet Connections for Industrial Gas Mixtures |
| --- | Handbook of Compressed Gases, Fourth Edition |

Praxair asks users of this product to study this MSDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

**For more in-depth information for each component, refer to the pure product MSDS.**

***The information contained in this MSDS is generated from technical sources using the Chemmate Mixture MSDS system and the pure-product MSDS for each component. These mixtures are not tested as a whole for chemical, physical, or health effects.***

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair MSDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current Praxair MSDSs for these products, contact your Praxair sales representative or local distributor or supplier. If you have questions regarding Praxair MSDSs, would like the form number and date of the latest MSDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR; Address: Praxair Call Center, Praxair, Inc., PO Box 44, Tonawanda, NY 14151-0044).



Praxair, Inc.
39 Old Ridgebury Road
Danbury CT 06810-5113

Printed in USA

# Material Safety Data Sheet

# RVP GASOLINE

February 26, 1993


| | PHONE NUMBERS | |
|---|---|---|
| PHILLIPS CHEMICAL COMPANY | Emergency: | (918) 661-8118 |
| A Division of Phillips Petroleum Company | Technical Services: | (918) 661-9091 |
| Bartlesville, Oklahoma 74004 | For Additional MSDSs: | (918) 661-7297 |


## A. Product Identification

Synonyms: Gasoline test fuel
Chemical Name: Mixture
Chemical Family: Hydrocarbon
Chemical Formula: Mixture
CAS Reg. No.: Mixture
Product No.: GA0400

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

## B. Components

| Ingredients | CAS Number | % By Wt. | OSHA PEL | ACGIH TLV |
|---|---|---|---|---|
| Paraffinic hydrocarbons | Various | > 55 | NE | NE |
| Olefinic hydrocarbons | Various | < 10 | NE | NE |
| Aromatic hydrocarbons | Various | < 35 | NE | NE |
| may include, Benzene | 71-43-2 | < 5 | 10 ppm(1) | 10 ppm |
| MAY INCLUDE ANY OF THE FOLLOWING OR SIMILAR FEEDSTOCKS: | | | | |
| Natural gasoline | 8006-61-9 | | 300 ppm | 300 ppm |
| Light alkylate naphtha | 64741-66-8 | | NE | NE |
| Heavy reformate naphtha | 64741-68-0 | | NE | NE |
| Heavy cat cracked naphtha | 64741-54-4 | | NE | NE |
| Straight run gasoline | 68606-11-1 | | NE | NE |
| Toluene | 108-88-3 | | 100 ppm | 100 ppm |
| Isopentane | 78-78-4 | | NE | NE |
| n-Butane | 106-97-8 | | 800 ppm | 800 ppm |
| Isooctane | 26635-64-3 | | NE | NE |
| C7-C8 Isoparaffins | 70024-92-9 | | NE | NE |
| n-Heptane | 142-82-5 | | 400 ppm | 400 ppm |
| Cyclohexane | 110-82-7 | | 300 ppm | 300 ppm |

| | | | |
|---|---|---|---|
| Cyclopentane | 287-92-3 | 600 ppm | 600 ppm |

(1) Areas covered by the Benzene Standard, 29 CFR 1910.1028, will have a 1 ppm 8 hour TWA and 5 ppm STEL.

# C. Personal Protection Information

**Ventilation:** Use adequate ventilation to control exposure below recommended levels.

**Respiratory Protection:** For concentrations exceeding the recommended exposure level, use NIOSH/MSHA approved air purifying respirator.

When entry into or exit from concentrations of unknown exposure, use NIOSH/MSHA approved self-contained breathing apparatus (SCBA).

**Eye Protection:** Use safety glasses with side shields and face shield for splash protection.

**Skin Protection:** Use gloves resistant to the materials being used (Viton, nitrile, neoprene). Use full-body, long sleeved garments to prevent skin contact.

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

# D. Handling and Storage Precautions

Do not get in eyes, on skin or on clothing. Do not breathe vapors, mist, fume or dust. Do not swallow. May be aspirated into lungs. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use only with adequate ventilation.

Keep away from heat, sparks, and flames. Store in a well-ventilated area. Store in tightly closed container. Bond and ground during transfer.

# E. Reactivity Data

**Stability:** Stable
**Conditions to Avoid:** Not Applicable
**Incompatibility (Materials to Avoid):** Oxygen and strong oxidizing agents

**Hazardous Polymerization:** Will Not Occur
**Conditions to Avoid:** Not Applicable
**Hazardous Decomposition Products:** Carbon oxides and various hydrocarbons when burned.

# F. Health Hazard Data

## Recommended Exposure Limits:

See Section B.

## Acute Effects of Overexposure:

Eye: May cause mild irritation, with stinging and redness of the eyes.

Skin: May cause mild irritation. Repeated or prolonged contact may cause defatting of the skin, resulting in dermatitis.

Inhalation: May cause headache, nausea, weakness, sedation, and unconsciousness. The inhalation LC50, rat, for unleaded gasoline is 300 g/m3.

Ingestion: May cause irritation to intestines. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs. The oral LD50, rat, for unleaded gasoline is 18.8 ml/kg.

## Subchronic and Chronic Effects of Overexposure:

Unleaded gasoline has produced kidney cancer in male rats only. No comparable kidney disease is known to occur in humans.

Gasolines generally contain benzene which has been designated a carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), and the Occupational Safety and Health Administration (OSHA). Benzene may produce blood changes which include reduced platelets, red blood cells, and white blood cells. Also, aplastic anemia, and acute nonlymphotic leukemia. Benzene has produced fetal death in laboratory animals and caused chromosome changes in humans and mutation changes in cells of other organisms.

Laboratory animals have exhibited a higher degree of narcosis when exposed to both butane and butylene (additive effect), than the degree of narcosis exhibited following exposure to butane or butylene alone.

Isopentane did not produce kidney damage in a subchronic oral laboratory study or in a subchronic inhalation exposure to 4500 ppm and 1000 ppm of a 50/50 mixture of isobutane and isopentane.

Exposure of pregnant rats during gestation to toluene at levels 250 ppm and higher produced some maternal toxicity and embryo/fetotoxicity. A lifetime inhalation study in rats did not show any toxic effects even at the high dose of 300 ppm.

Behavioural signs of hearing loss were observed in rats exposed to toluene subchronically at levels of 1000 ppm or more. Comparable effects have not been reported in humans.

Rabbits exposed eight hours per day, for forty days, to 762-6296 ppm cyclohexane showed no significant effects to the kidney, liver, heart, lungs, spleen, adrenals, intestines or brain.

Isooctane (2,2,4-Trimethylpentane), a component of this product, has produced kidney damage in male rats only in a subchronic oral laboratory study. No comparable health hazard for kidney disease is known to occur in humans.

## Other Health Effects:

Combustion, a normal use of gasoline, results in an exhaust that has been associated with skin cancer in laboratory animals. Skin cancer was observed in these animals when exhaust was concentrated and repeatedly applied to the skin. It is unknown if this route of exposure is relevant to human exposure.

Combustion (burning) of most carbon-containing material forms carbon monoxide. Carbon monoxide inhalation may cause carboxyhemoglobinemia. Chronic exposure to carbon monoxide causes fatigue, poor memory, loss of sensation in fingers, visual disturbances and insomnia. Carboxyhemoglobinemia is frequently misdiagnosed as flu.

Sensitive sub-populations to the inhalation of carbon monoxide exist. Carbon monoxide displaces oxygen in the bloodstream and therefore, can adversely effect people with pre-existing heart disease, pregnant women and smokers.

## Health Hazard Categories:

| | Animal | Human | | Animal | Human |
|---|---|---|---|---|---|
| Known Carcinogen | _X_ | _X_ | Toxic | ___ | ___ |
| Suspect Carcinogen | ___ | ___ | Corrosive | ___ | ___ |
| Mutagen | _X_ | ___ | Irritant | ___ | ___ |
| Teratogen | ___ | ___ | Target Organ Toxin | _X_ | _X_ |
| Allergic Sensitizer | ___ | ___ | Specify - Blood Toxin; Reproductive Toxin-Embryo/Fetotoxin; Lung-Aspiration Hazard | | |
| Highly Toxic | ___ | ___ | | | |

## First Aid and Emergency Procedures:

**Eye:** Flush eyes with running water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

**Skin:** 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.

**Note to Physician:** Gastric lavage using a cuffed endotracheal tube may be performed at your discretion.

---

# G. Physical Data

| | |
|---|---|
| Appearance: | Clear to amber liquid |
| Odor: | Mild |
| Boiling Point: | 75-415F (24-213C) |
| Vapor Pressure: | 7 - 15 psia @ 100F (38C) |
| Vapor Density (Air = 1): | 3-4 |
| Solubility in Water: | Negligible |
| Specific Gravity (H2O = 1): | 0.74 @ 60/60F (16/16C) |
| Percent Volatile by Volume: | 100 |

Evaporation Rate (Butyl Acetate = 1): > 1
Viscosity: Not Established

# H. Fire and Explosion Data

| | |
|---|---|
| Flash Point (Method Used): | <-35F (-37C) (Estimated) |
| Flammable Limits (% by Volume in Air): | LEL - 1.5<br>UEL - 7.6 |
| Fire Extinguishing Media: | Dry chemical, foam or carbon dioxide (CO2) |
| Special Fire Fighting Procedures: | Evacuate area of all unnecessary personnel. Wear appropriate safety equipment for fire conditions including NIOSH/MSHA self-contained breathing apparatus (SCBA). Shut off source, if possible. 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 oxides and various hydrocarbons formed when burned. Gasolines containing Tetraethyl Lead will form lead fumes when burning. Highly flammable vapors which are heavier than air may accumulate in low areas and/or spread along ground away from handling site. Flashback along vapor trail may occur. |

# I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:
Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source, if possible and contain 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.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):
Incinerate or otherwise manage in a RCRA permitted waste management facility.

# J. DOT Transportation

| | |
|---|---|
| Shipping Name: | Gasoline |
| Hazard Class: | 3 (Flammable liquid) |
| ID Number: | UN 1203 |
| Packing Group: | II |
| Marking: | Gasoline, UN 1203 |
| Label: | Flammable liquid |
| Placard: | Flammable/1203 |

Hazardous Substance/RQ: Not applicable
Shipping Description: Gasoline, 3 (Flammable liquid), UN 1203, PG II
Packaging References: 49 CFR 173.150, 173.202, 173.242

## K. RCRA Classification - Unadulterated Product Waste

Ignitable (D001)

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

## L. Protection Required for Work on Contaminate Equipment

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

## M. Hazard Classification

_X_ This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

___ Combustible Liquid ___ Flammable Aerosol ___ Oxidizer
___ Compressed Gas ___ Explosive ___ Pyrophoric
___ Flam
mable Gas _X_ Health Hazard (Section F) ___ Unstable
_X_ Flammable Liquid ___ Organic Peroxide ___ Water Reactive
___ Flammable Solid

___ Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

## N. Additional Comments

SARA 313

This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. (See Section B).

Benzene
Toluene
Cyclohexane

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# Appendix IV
# Tanqueray Resources Ltd.

## ABANDONMENT & RESTORATION PLAN

## *BAKER LAKE PROJECT*

# NUNAVUT

*Revised December 2008*

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**North Thelon Joint Venture Exploration Program/Remote Camp**
**Abandonment and Restoration Plan**

## 1. Preamble

This Abandonment and Restoration (A&R) Plan is in effect as of February 1, 2007. It applies specifically to the Baker Lake Project. The property is located at:

a. All claims:

| | |
|---|---|
| max Lat: | N64.66258º/ N64º 39' 45.3" |
| min Lat: | N64.12508º/ N64º 07' 30.3" |
| max Lon: | W97.80472º/ W97º 48' 17.0" |
| min Lon: | W96.34814º/ W96º 20' 53.3" |

b. All claims on IOLs:

| | |
|---|---|
| max Lat: | N64.67334º/ N64º 40' 24.0" |
| min Lat: | N64.27430º/ N64º 16' 27.5" |
| max Lon: | W97.29029º/ W97º 17' 25.0" |
| min Lon: | W96.58587º/ W96º 35' 09.1" |

Crews are based out of Thom Lake Camp, located 30 km west of the Baker Lake airport at:

Lat N64.27430º/N64º 22' 29.7", Lon W96.58587º/W96º 35' 09.1"

The site was chosen by Tanqueray in 2004, in consultation with the people of the Hamlet of Baker Lake.

## 2. Introduction

The work proposed for this project comprises: diamond drilling; prospecting; geological mapping; rock and soil/till sampling; grid establishment/line cutting; airborne geophysics; ground geophysics; possibility of trenching (non-mechanical); and fuel transport (fixed- and rotary-wing, overland), including the establishment of fuel caches during winter months. No equipment or waste will remain once the project is complete.

## 3. Schedule

The final restoration of the camp site will begin once the program is complete. All work under the Abandonment and Restoration Plan will be completed prior to the date of expiry of the land use permits and water licence unless a renewal is applied for. Empty fuel drums will be removed from site regularly. Once a fuel cache is retired, a thorough inspection will be conducted. Any contamination will be cleaned up according to the Spill Contingency Plan and debris will be removed from the site.

## *4. Infrastructure – Fuel Caches*

| Cache | Latitude | Longitude | UTM Easting | UTM Northing | Fuel Type | Quantity (# drums) |
|---|---|---|---|---|---|---|
| | (WGS84) | (WGS84) | (NAD83 Zone 14) | (NAD83 Zone 14) | | (as of October 2008) |
| Tanqueray North | N64 34 12.6 | W96 34 16.3 | 616350 | 7162780 | P50, Jet | 5 P50, 0 Jet |
| Thom Lake | N64 22 30.4 | W96 38 45.1 | 613580 | 7140920 | P50, Jet, propane | 60 P50, 0 Jet, 40 propane |

**Seasonal Shutdown**

**Buildings and Contents**

All tents are cleaned out and sealed up for the winter. Accommodation tents at Thom Camp have zippered doors which are battened for the winter. The cook shack/dry complex is cleaned of all perishable and semi-perishable foodstuffs and the doors and windows sealed with plywood. The means to enter the cookshack (claw hammer) is left on site in an obvious location in case somebody requires emergency shelter at the camp during the winter.

**Water system**

Pumps and hoses will be drained and dismantled and removed from site for servicing and storage.

**Fuel caches and Chemical Storage**

An inventory will be conducted prior to leaving at the end of the field season. A thorough inspection of all fuel caches will be completed and empty fuel drums will be removed from site.

The only chemical to be stored on site over winter is Calcium Chloride drilling salt. The salt is sealed in plastic bags on palettes, and is contained in the Instaberm® secondary containment system at Thom Lake Camp's fuel cache. The likelihood of salt escaping its secondary containment is very slim.

**Drill sites**

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be flown out by the drilling contractor upon completion of the project.

All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned if possible or to be flown out to an approved disposal location. Greywater and sludge sumps will be filled and leveled.

As much as possible, drill sites will be restored immediately after the drill has been moved to the next site.

### Contamination Clean Up

Any soil around camp that has become contaminated and gone unnoticed will be treated as per the Spill Contingency Plan. Before and after photos will be taken to document the contamination and the clean up. These photos will make up part of the final report to be submitted to the Water Resource Inspector following any spill and will also be attached as part of the Annual Report submitted to the Nunavut Water Board and the Kivalliq Inuit Association.

### Inspection and Documentation

A complete inspection will be conducted of all areas prior to seasonal closure. Photos will be taken to document the conditions prior to leaving the site for the winter. A full inventory will be conducted.

## Final Abandonment and Restoration

### Buildings and Contents

All buildings and contents will be dismantled and removed from the project area.

### Equipment

All equipment, including pumps, will be dismantled and removed from the project area.

### Fuel caches and Chemical Storage

All fuel drums will be removed. All areas where there have been fuel caches will be thoroughly inspected. Any contamination will be cleaned up as well as any debris removed. Contaminated soil will be handled as per the Spill Contingency Plan. Final photos will be taken of all fuel caches for inclusion in the final report.

All chemicals will be removed from site. Areas where chemicals have been stored will be inspected to ensure that there has been no contamination.

### Sumps

All sumps will be inspected to ensure that there is no leaching or run-off. Sumps will be back-filled and levelled as required. Final photos will be taken.

## Drill Sites

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be flown out by the drilling contractor.

All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned if possible or to be flown out to an approved disposal location. Greywater and sludge sumps will be filled and levelled.

An inspection will be conducted to ensure that all drill sites are/have been restored and sumps have been covered and levelled.

## Contamination Clean Up

Any contamination will be treated as per the Spill Contingency Plan. Before and after photos will be taken to document the contamination and the clean up. These photos will make up part of the final report to be submitted to the Water Resource Inspector following any spill and will also be attached as part of the Annual Report submitted to the Nunavut Water Board and the Kivalliq Inuit Association.

## Inspection and Documentation

A complete inspection will be conducted of all areas prior to closure. Photos will be taken to document the conditions prior to leaving the site for use in the final plan. All appropriate agencies will be contacted and notified once the final clean up has been conducted. The photos will make up part of the final closure reports to be submitted to DIAND, the Nunavut Water Board and the Kivalliq Inuit Association.

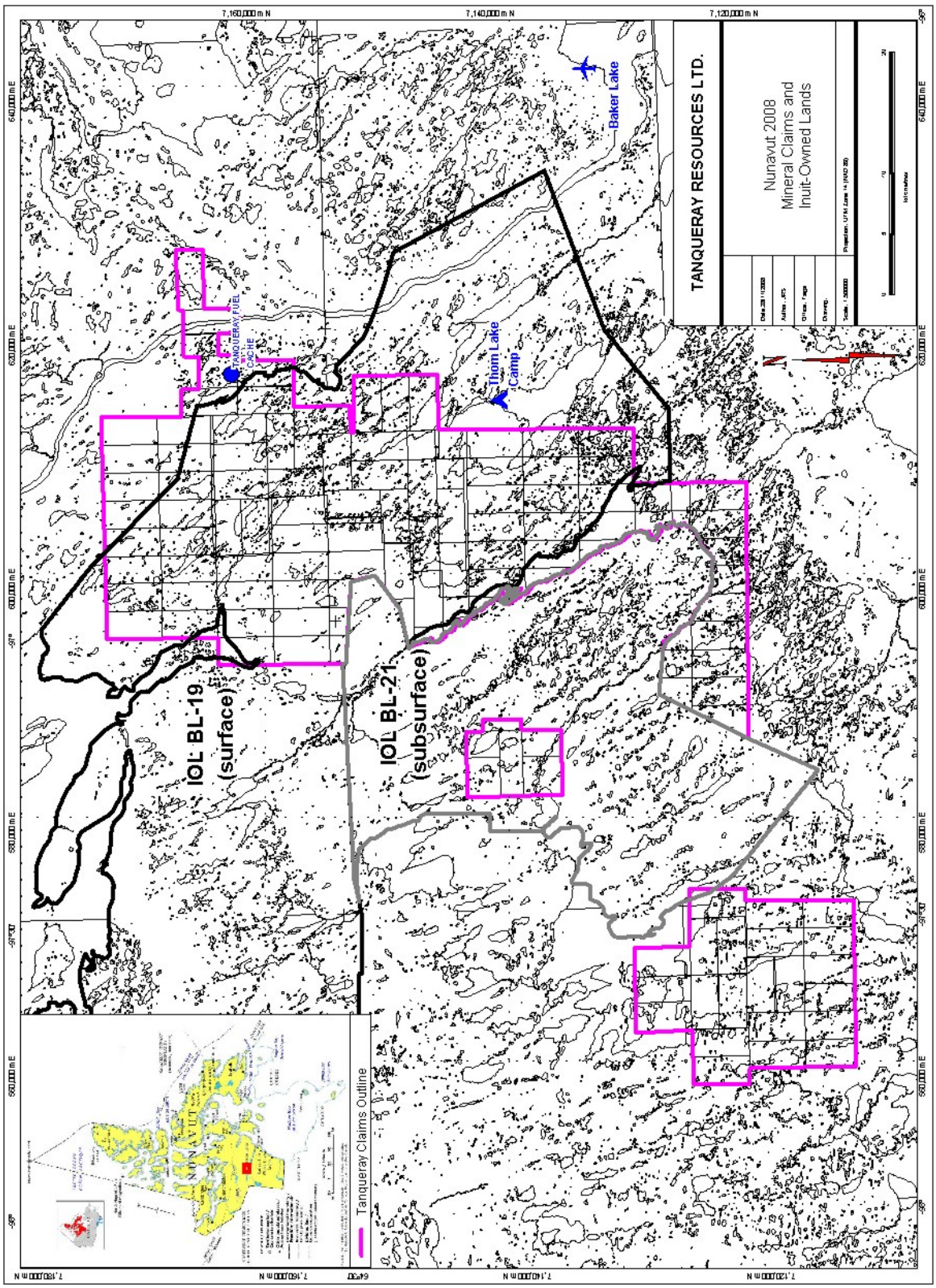
## Emergency Contact Information

| CONTACT | TELEPHONE NUMBER |
|---|---|
| Jacques Stacey – On-site coordinator (Taiga Consultants Ltd.) | Calgary: (403) 265-2777 ext 207; Thom Camp: (604) 628-9872 (June to October) |
| DIAND Water Resource Officer, Iqaluit | (867) 975-4295 |
| Environment Canada | (867) 975-4644, 24hr page (867) 766-3737 |
| Nunavut Department of Environment | (867) 975-5910 |
| Kivalliq Inuit Association – Melodie Sammurtok, Land Use Inspector | (867) 645-2800 |
| Department of Fisheries and Oceans | (867) 979-8007 |
| Tanqueray Resources – Steve Balch, President | (905) 407-9586 |
| Tanqueray Resources – Linda Falkenberg, CFO | (403) 263-9055 |
| Ookpik Aviation | (867) 793-4720 |
| Yellowknife Fire Department | (867) 873-2222 |
| Baker Lake RCMP | (867) 793-0123 |
| Stanton Regional Hospital – Yellowknife | (867) 920-4111 |
| Taiga Consultants | (403) 265-2777 |

**Baker Lake Lodge – Boris Kotelowetz – 867-793-2905**

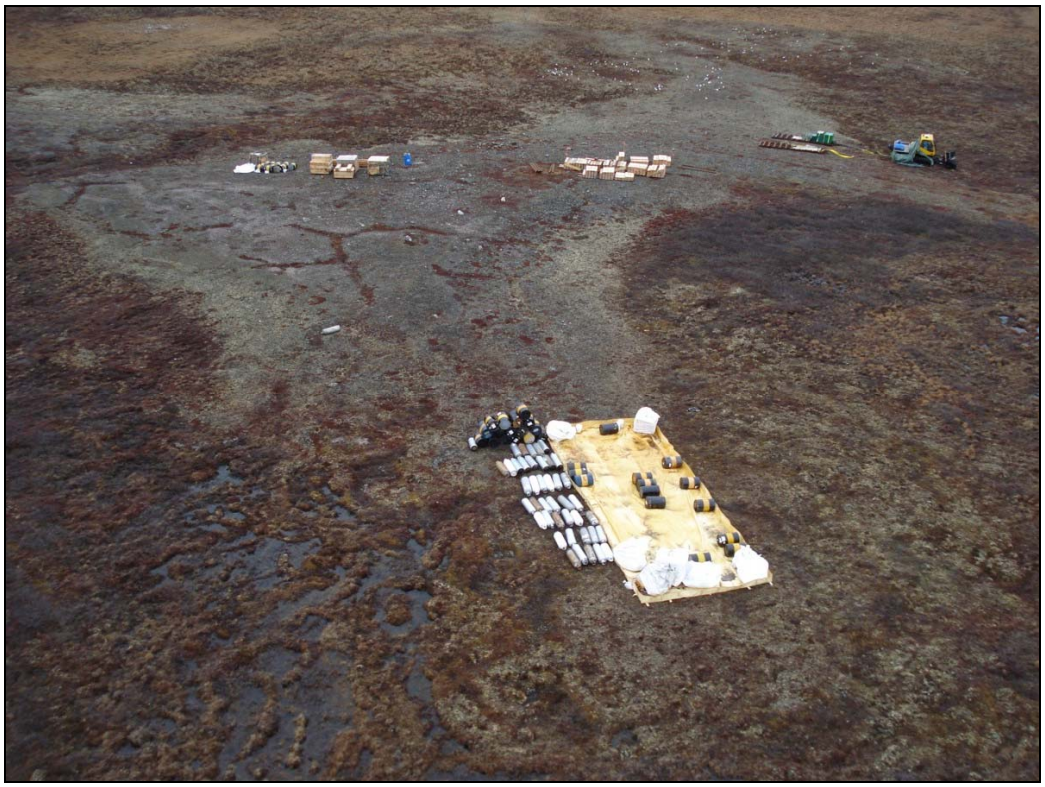
# Appendix AR-I

# Maps and Photos




Location Map, Tanqueray Resources Baker Lake Project

Thom Lake Camp, October 1, 2008



Thom Lake fuel cache and core storage, September 2008.