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PETRO-CANADA

MACKENZIE DELTA PROJECT

EMERGENCY RESPONSE PLAN

August, 2002

	Onsite Drilling Operations	MacKenzie Delta
19	Supervisor	
20	Supervisor	
21	Supervisor	
22-25	Contractors	
	Onsite Completions Operations	MacKenzie Delta
26	Supervisor	
27	Supervisor	
28	Supervisor	
29-32	Contractors	
33	Larry Krusel	26 PCCW
34	Don Thompson	26 PCCW
35-40	Swimming Point Logistics Operations Wray Adams Alistair Sim	MacKenzie Delta
41	NWT Water Board	
42-44	NEB	Calgary

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INTRODUCTION

The Mackenzie Delta Project Emergency Response Plan is intended to define the authority and general procedures for response to an emergency that may develop during the drilling, completion, workover or abandonment of Petro-Canada operated wells in the Mackenzie Delta area of the Northwest Territories.

The Emergency Response Plan outlines procedures for notification of the personnel and equipment to handle any emergency which may develop. The plan describes a system for rapid communication of essential details of the emergency to personnel having direct responsibility for implementing corrective action. Responsibilities within the emergency organization are outlined and an integration of the job positions and functions are shown on the organization charts.

All personnel directly involved with the Company operations including both operator and contractor personnel shall become familiar with this Emergency Response Plan. Supervisory personnel shall know and understand their responsibilities and co-ordinate their response action in conjunction with their staff and contractor personnel. Response action shall also be co-ordinated in conjunction with other detailed procedures and safety and security manuals where applicable.

EMERGENCY DEFINITION

An emergency is defined, for the purpose of this plan, as any potential or real developing situation that may result or results in serious injury, loss of life, property damage, or impact on the environment which calls for immediate action to control and mitigate the problem.

FIGURE 1.1
GUIDELINES FOR IDENTIFYING THE TIER LEVEL OF A RESPONSE
(FROM PETRO CANADA MAJOR EMERGENCY RESPONSE PLAN TIER II & III)

Tier I Local Response	Tier II Business Unit Response	Tier III National Response
• Self-contained, and • Short duration (<24 hours), and • Local resources sufficient, and • No significant customer impact, and • No regulatory threat, and • No strategic issues result, and • Local management can solve	• Off-site resources required, or • Medium duration (24 – 72 hours), or • Local media coverage, or • Significant impact on crude or product supply, or • It is an oil spill for which the Response Organization has been activated, or • It is a third party emergency which affects the Company image, or • Potential for regulatory threat, and • Within Business Unit financial ability, and • Business Unit management can solve	• Beyond the Business Unit resources, or • Major financial impact, or • Major impact on crude or product supply, or • Prolonged involvement (>72 hours), or Significant Federal/Provincial regulatory effect, or • External to Canadian Business Unit activities, or • Significant security threat, or • A concern for the shareholders, or • National media coverage, or • Could have critical impact on Company image

EMERGENCY ORGANIZATION

In the event of an on-site emergency as defined in this Emergency Response Plan, the Senior Petro-Canada Representative On-Site will notify the Superintendent and additional staff from Petro-Canada, and any other contractor or mutual aid individuals as appropriate and warranted by the nature of the emergency, to establish an "Emergency Organization". In the event of an off site emergency the Superintendent and the Drilling Manager would be responsible for establishing the emergency team. Should the emergency become too large to be dealt with by the Drilling and Completions Department the Petro-Canada Major Emergency Response Plan will be activated to help deal with the situation.

PETRO-CANADA MAJOR EMERGENCY RESPONSE PLAN (TIER II & III)

The Major Emergency Response Plan (MERP) describes how a major incident response operation will be managed to a level appropriate to the scale of the incident. This plan identifies the management system and personnel necessary to effect a response to emergencies that are beyond the resources of a local (Tier I) team. It identifies the steps to escalate to the Western Canada Tier II team and a National and/or crisis response team (Tier III). The plan applies to all types of emergencies within Canadian and international operations. Figure 1.1 of this section illustrates the main criteria, which help to define the tiered level of response.

Several positions in this plan also have duties in the MERP. They are:

MacKenzie Delta Project Department Emergency Response Plan (Tier I)	Major Emergency Response Plan Tier II & III
VP Exploration	Incident Commander
Drilling Manager	Deputy Incident Commander
Lead Drilling Superintendent	Operations Section Chief
Lead Completions Superintendent	Operations Section Chief
Superintendent	Contractor Supervisor
Superintendent	Contractor Supervisor
Drilling Engineering Leader	Planning Section Chief
Logistics Superintendent	Logistics Section Chief

Note: These Tier II&III positions are on the Petro-Canada Oil & Gas Major Emergency Team For drilling, completions and other downhole events.

EMERGENCY OPERATIONS CENTRES/COMMUNICATION PROCEDURES AND EQUIPMENT

Key company personnel, upon notification of an emergency (if required), will report to their respective offices which will serve as "Emergency Operations Centres" for communication and co-ordination of all activities relative to the emergency. The Senior Petro-Canada On-Site Representative's Office at the drilling site, the main office at the Swimming Point Base Camp, and the Drilling & Completions Office, 26th floor, P.C.C.W., are designated as the main Emergency Operations Centres.

If the emergency warrants, the Corporate Crisis Management Centre (17 PCCW) may be utilized. Access to this room may be gained by phoning (403) 296-3000. This room is equipped with extra outside phone lines and has other specialized communications equipment. Copies of all current Petro-Canada emergency response plans are located in this room.

The following equipment and materials should be situated at the Emergency Centres:

A) A communication system of telephones, cell phones, radios, etc. to ensure direct communications between all parts of the emergency organization.

B) Petro-Canada and other pertinent Operator Emergency Procedure Guides.

C) Information regarding operation of emergency control equipment.

D) Technical support information outlined in operations manuals, clean-up procedure manuals, disposal guidelines, and so on.

E) Copies of government regulations and other documents which are relevant to the emergency.

F) Maps showing topography, facilities, roads, residents and hazardous areas.

G) Telephone numbers of key company, contractor and government personnel.

SAFETY IN AN EMERGENCY SITUATION

The safety of personnel responding to an emergency situation is a priority item. Under no circumstances should anyone jeopardize their own safety when responding to an emergency. Actions such as dangerous driving or speeding are not advised. Personnel should be aware of fire, releases of toxic chemicals and/or explosion hazards in an emergency and conduct their activities accordingly. Fatigue may affect judgement and reflexes. Provisions should be made for relief if fatigue may become a factor in responding to an emergency. Good communication is important for responding to an emergency. Personnel should ensure their actions, intent and location are made known to someone, preferably their Supervisor.

MACKENZIE DELTA PROJECT DESCRIPTION

The DRILLING & COMPLETIONS DEPARTMENT is responsible for the drilling, completion, workover and abandonment of all Petro-Canada operated wells in the Mackenzie Delta area.

Petro-Canada will has an ongoing commitment to conducting drilling and testing exploration operations.

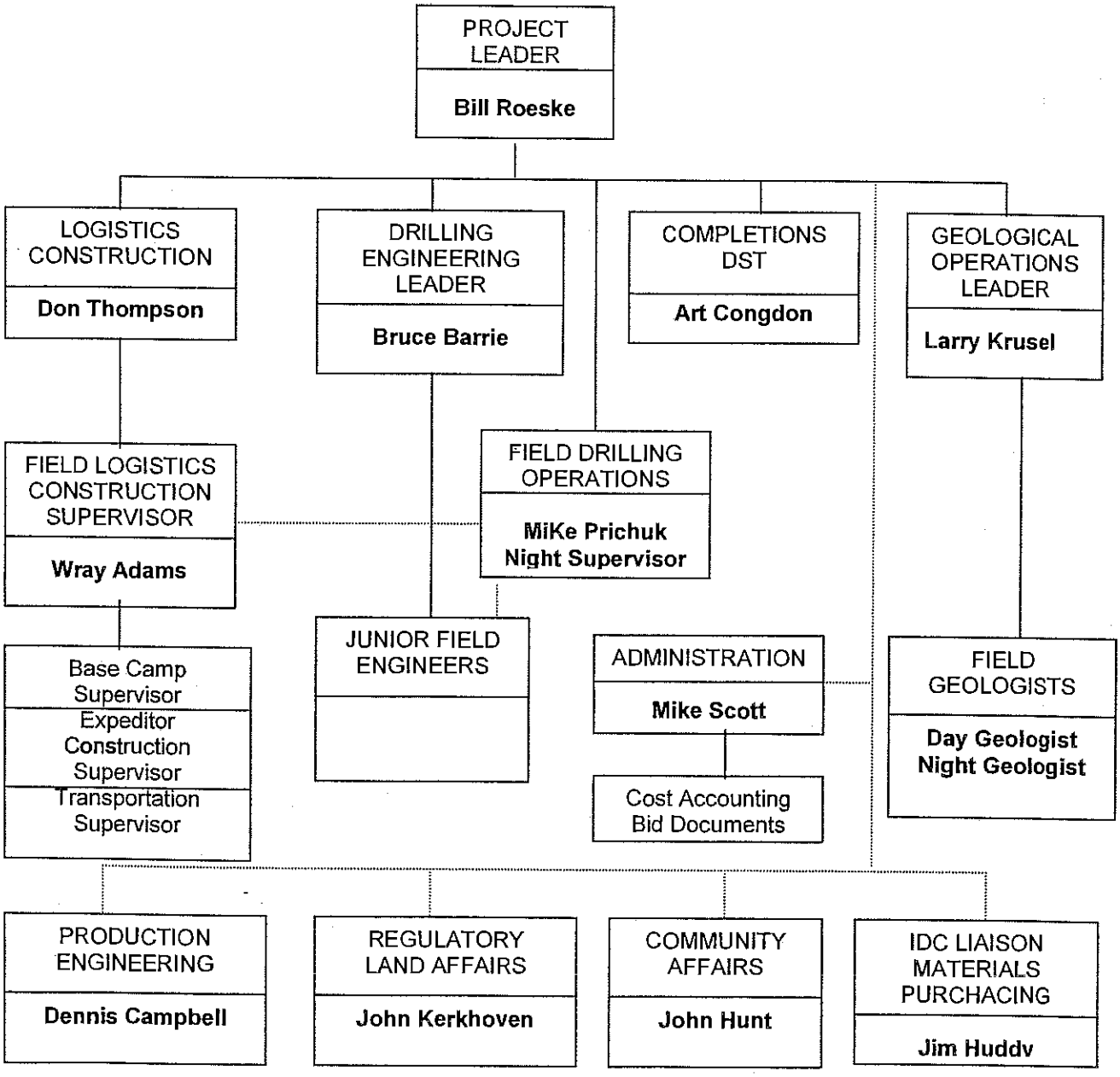
A base camp will be established at Swimming Point on the west side of the Mackenzie River to support all Petro-Canada operations in the area.

Due to the transient nature of these projects the men and equipment located at each site are kept at a minimum required to safely conduct operations. It is likely that for any major emergency extra men and equipment would be required to assist the site personnel to resolve the problem and return the situation to normal.

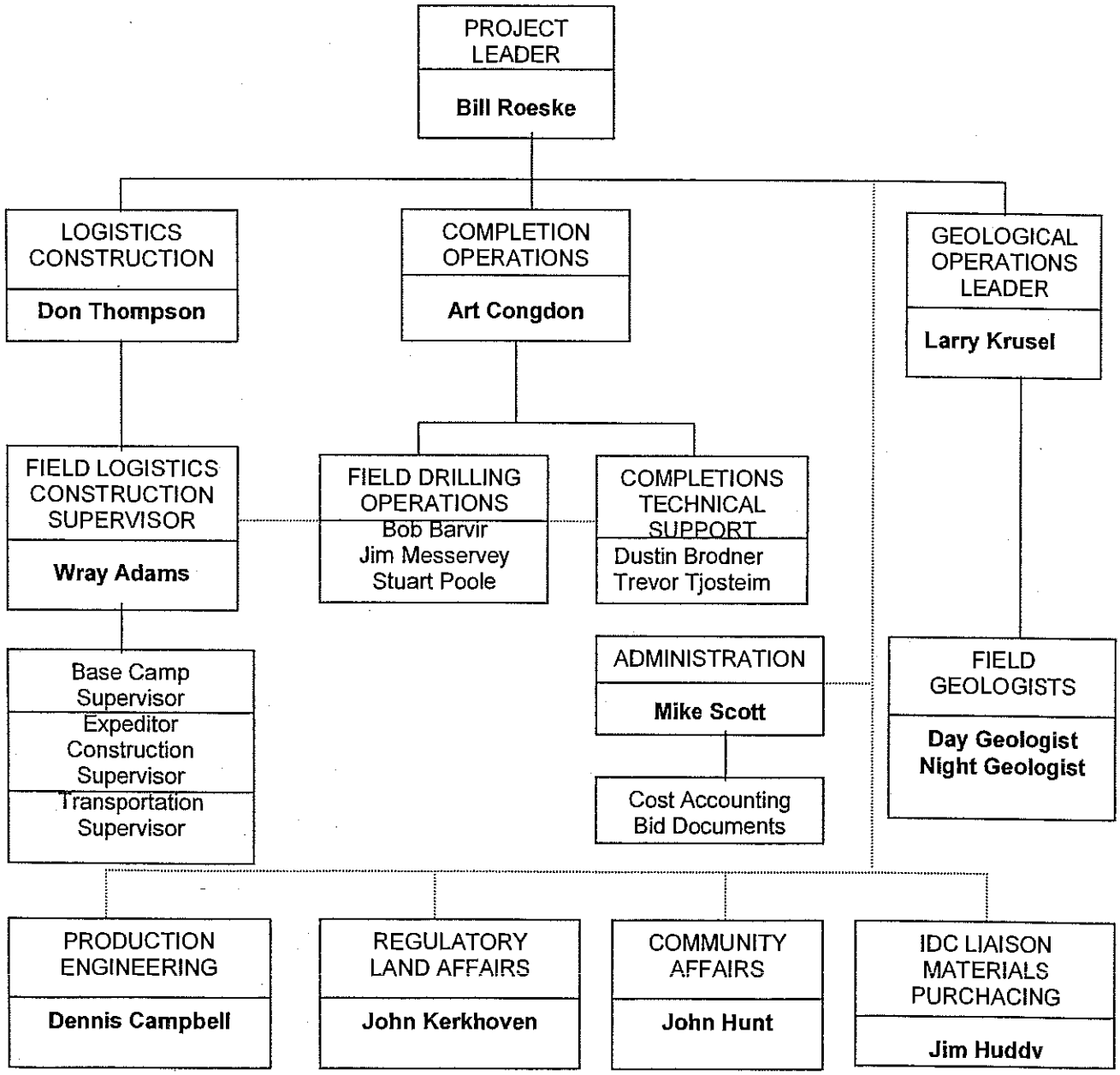
Communications on these projects will consist of:

- Microwave phone systems located at Swimming Point and the rig for both voice and data.
- Satellite phones at the rig for both voice and data.
- VHF repeater system for coverage of the entire project area.

DRILLING OPERATION ORGANIZATION



COMPLETION OPERATIONS ORGANIZATION



Note: There are three major activities involved in Petro-Canada's MacKenzie Delta operations:

1) **Completion and testing of wells,**
2) **Drilling sites,**
3) **Base camp and construction activities originating from Swimming Point.**

The Senior Petro-Canada Representative with control of the site of the incident will be the initial On Scene Commander. The non-affected sites will provide support to the emergency site.

SENIOR PETRO-CANADA REPRESENTATIVE ON-SITE (On Scene Commander)

A) Receives the initial report of an emergency and communicates the nature and details of the emergency to all necessary on-site personnel and provides immediate attention to the protection of life.

B) The Senior Petro-Canada Representative On-Site (if necessary) will activate the Emergency Response Plan and contact the Superintendent for response or standby assistance. The Senior Petro-Canada Representative On-Site, in consultation with the Superintendent, will determine the initial response level required to control the emergency and to isolate the public from danger. This determination will be based on the following criteria:

- No potential danger to off-site persons or property. The emergency can be controlled by personnel on-site.
- No immediate danger is yet apparent, but potential danger exists to justify notifying outside services (police, fire department, emergency organizations, regulatory agencies) of the potential danger and keeping them informed of the situation.
- Safe operating control has been lost, causing or potentially causing hazard to project personnel, property, the public or the environment.

C) Make initial contact with the N.E.B, as required by regulations and make them aware of the situation.

D) Except for brief statements of fact, news media personnel at the site should be referred to the Petro-Canada Communications Department (refer to "Media and General Public" in this section).

E) Ensure accurate record keeping for all events and activities and assist in the preparation of all reports regarding the emergency.

FIRST CONTACT LEVEL (Superintendent)

A) Obtain all pertinent facts and ensure a record of the information is kept and recorded on the appropriate report forms.

B) Assist the Senior Petro-Canada Representative On-Site in deciding what immediate action is required. Determine if Calgary based employees or other outside assistance is required.

C) Relay the information regarding the emergency to the Second Contact Level (Drilling Manager).

D) If contractor or service company personnel are involved, contact the local contractor representative.

E) Begin mobilization of required Petro-Canada personnel and outside assistance as required.

F) Obtain internal and external approvals before resuming operations (especially where death or serious injury has occurred).

SECOND CONTACT LEVEL (Drilling Manager)

A) Relay information regarding the emergency to the Third Contact Level (Vice-President, Exploration) and send out a "Major Loss Announcement".

B) Mobilize Calgary based personnel if required.

C) Contact the NEB and keep them informed and up to date on the situation.

D) Ensure that contractor's head office is notified if contract personnel are involved.

E) Ensure contact with the media is co-ordinated through Communications (Consult with the Vice-President, Exploration).

F) Mobilize support from other Petro-Canada departments as required (eg. EH&S, Security, Aviation, HR, Legal).

G) Contact other operators and arrange mutual aid support where necessary.

H) In cases involving serious injury or death, ensure that next of kin are informed on a timely basis. Provide support to next of kin wherever possible.

I) Provide support to field emergency teams as required.

THIRD CONTACT LEVEL (Vice-President, Exploration)

A) Keep the senior officers of the company informed and up to date on the situation.

B) Act as the main company spokesperson for any "high profile" situation requiring a public spokesperson. Contact Communications for assistance with this duty.

C) Ensure that all the resources required to control and mitigate the situation are made available to the emergency teams.

NOTIFICATION - NEXT OF KIN

If a serious accident occurs it is most important that the next of kin of a deceased or seriously injured person be notified as early as possible.

Death should never be presumed: first aid must be administered until a doctor arrives and examines the person. Upon completion of medical report by a doctor, next of kin must be advised in person. The RCMP or police conduct next of kin notification. It is recommended that a Company representative be present with the authorities to provide additional family support.

For Petro-Canada personnel the Human Resources Department and the Drilling Manager will have responsibility for contacting next of kin. For contractor or service company personnel the local representative of that company will have responsibility for insuring that the company head office and the next of kin are notified.

MEDIA AND GENERAL PUBLIC

Preferably, all external reporting will be carried out with the assistance of Communications. The Senior On-Site Petro-Canada Representative may make brief statements of fact regarding the emergency after consulting with Communications. The Vice-President, Exploration and International will act as the main public spokesperson with the assistance of Communications.

STATUTORY REPORTS

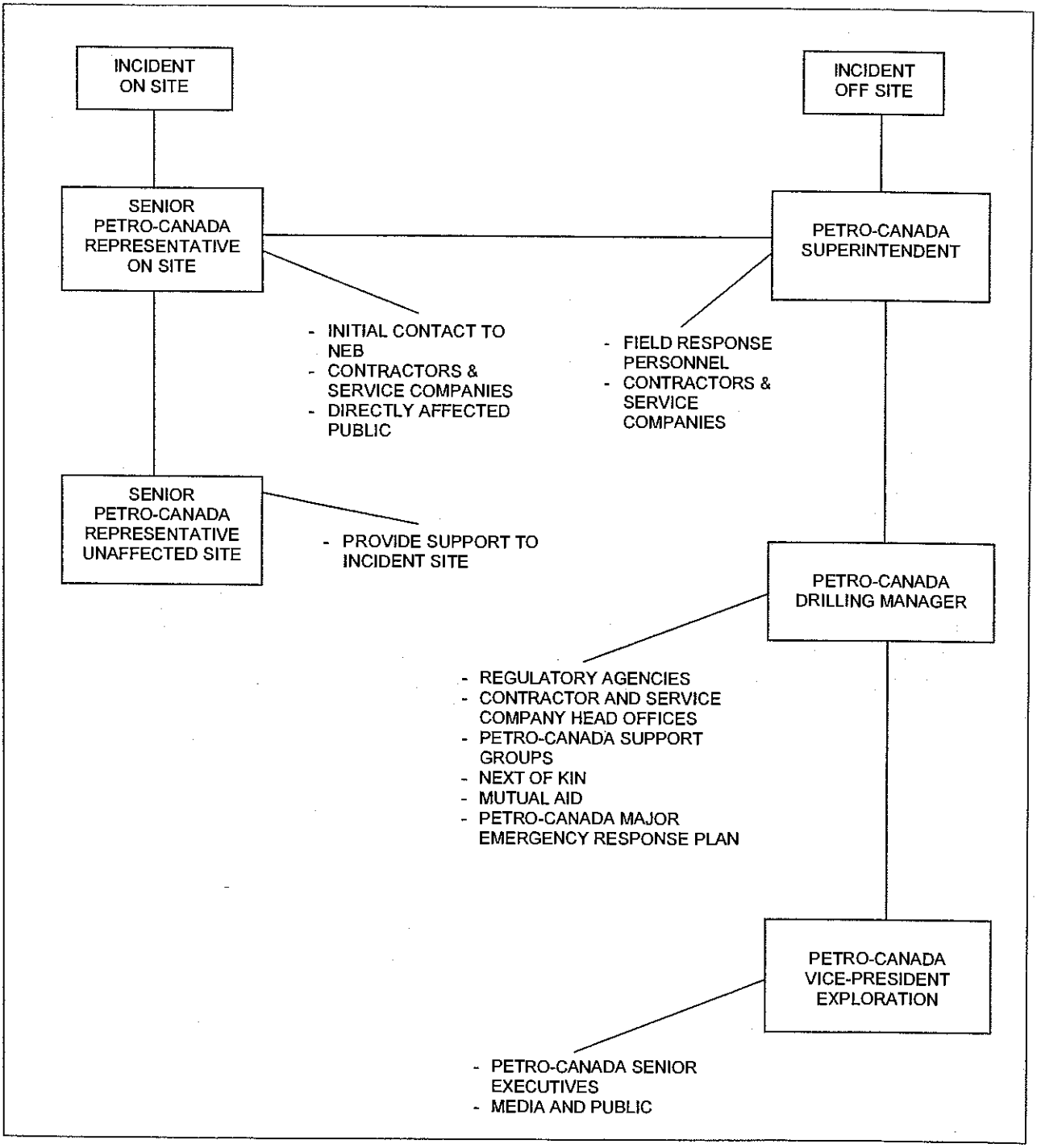
Where a written report is required under federal or provincial legislation only specific facts that describe the emergency should be disclosed. The report should not express an opinion as to how the incident occurred nor who was responsible for its occurrence, since a report is compellable in a court of law in the event of litigation.

In serious cases the report should be reviewed, prior to submitting the report, by the Legal Department.

PRIVILEGED REPORTS

A privileged report is not compellable in a court of law if it is prepared for the purpose of assisting the Legal Department in any existing or contemplated litigation. Emergency personnel, in consultation with the Legal Department, shall determine the need for a privileged report, and no other written report, other than reports made pursuant to a statute shall be prepared unless otherwise directed by the Legal Department.

EMERGENCY COMMUNICATIONS FLOWCHART



In response to an emergency the Petro-Canada Drilling & Completions Department will have up to four teams organized and ready to handle any situation. The exact make up of each team and which teams will respond to an emergency will be decided, initially, by the Senior Petro-Canada Representative On-Site and the Superintendent in charge of the operation.

The four teams and their make up for a maximum emergency (i.e. a major spill, major camp fire or a blow out which is a threat to the public) are outlined on the following chart. Duties of the team members are outlined in Section 5.

EMERGENCY RESPONSE TEAMS

DRILL SITE RESPONSE TEAM

- **Senior Petro-Canada Representative On Site**
- Other Petro-Canada Personnel
- Contractor Rig Manager
- Rig Crew
- Bear Monitor
- Service Personnel

SWIMMING POINT RESPONSE TEAM

- **Senior Petro-Canada Representative On Site**
- Camp Supervisor/Expeditor
- Construction Supervisor
- Transportation Supervisor
- Bear Monitor
- Base Camp Crew
- Construction Crew

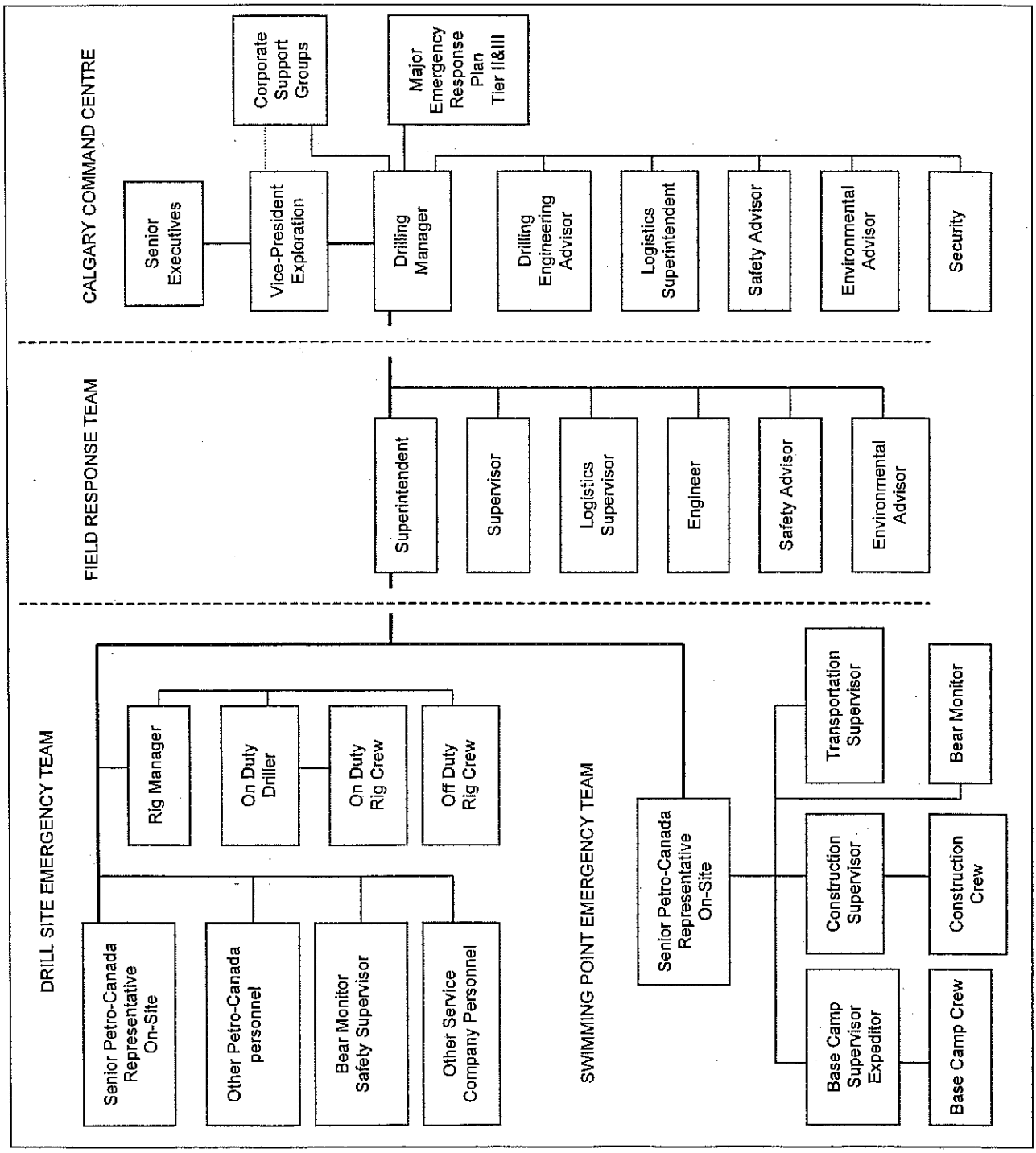
FIELD RESPONSE TEAM

- **Superintendent**
- Supervisor
- Logistics Supervisor
- Engineer
- Safety Advisor
- Environmental Advisor

CALGARY COMMAND CENTRE

- Vice-President Exploration
- **Drilling Manager**
- Supervisor Drilling Engineering
- Logistics Superintendent
- Safety Advisor
- Environmental Advisor
- Security (Telephone Co-ordinator)

MACKENZIE DELTA PROJECT EMERGENCY RESPONSE ORGANIZATION



CORPORATE SUPPORT

In addition to the Response Teams there are several Corporate Departments which can supply support to the Drilling & Completions Department.

Corporate Security - (403) 296-3000

The 296-3000 number is Petro-Canada's prime emergency number. Security has emergency contact lists which they will use to contact the persons required to activate any of the Petro-Canada emergency response plans.

Security can contact Aviation and arrange for pilots and aircraft.

Security will supply personnel to secure the Calgary Command Centre (17 PCCW) and will arrange for special security services at the emergency site if required.

Aviation

(403) 296-1000 during business hours, outside business hours call Security at (403) 296-3000. Aviation will arrange for aircraft to fly emergency teams to the emergency area. Aviation should also be contacted if equipment such as helicopters or spotter planes are required at the emergency site.

CORPORATE SUPPORT (Continued)

Surface Land

Surface Land is responsible for negotiating land use agreements for all surface lands acquired by Petro-Canada Operations both in normal and emergency conditions.

Corporate Communications

All communications with the public or the media should be cleared through the Public Affairs Department and the Vice-President, Exploration before being released, (see Media and General Public in section 2). Communications will supply personnel to both the Calgary Command Centre and the emergency site if required.

Other departments which could supply assistance in an emergency include Materials Management, Risk Management, Legal, and Human Resources.

INJURY/FATALITY

IMMEDIATE EMERGENCY DUTIES

- Any person who discovers or witnesses an injury accident will immediately notify their supervisor, the medic and the Senior Petro-Canada Representative On-Site

- The Senior Petro-Canada Representative On-Site will:

- Initiate rescue and first aid activities

  - Be sure rescue and first aid personnel are aware of hazards such as, H_2S, fire/explosion, asphyxiation, falling, etc. and that they have the proper PPE to protect themselves.

  - Do not move seriously injured persons before medical aid arrives unless it is necessary to protect them from further harm.

  - Never assume an injured person is dead. Until a medical doctor has examined the injured person and declared him dead, first aid efforts must continue.

- Notify ambulance or other appropriate transportation and have them dispatched to the site.

  Note: A medic and ambulance will be located at both Swimming Point Base Camp and the Rig.

- Notify the local hospital and give them any available information. Update them if more information on injuries and condition of victims becomes available.

- If a fatality or serious injury has occurred, initiate notification of next of kin (see Notification - Next of Kin Section 2).

IMMEDIATE EMERGENCY DUTIES (continued)

- Notify Calgary office of situation and keep them up-to-date (see Section 2 - Reporting Procedures).
- Report the accident to the required regulatory authorities RCMP, NEB, etc.).
- If contractor or service company personnel are involved ensure that their office is informed.
- Isolate the area of the accident and leave the area undisturbed until investigations have been completed and approval has been given to resume operations.

  The Chief Conservation Officer from the NEB must give approval before restart of operation.

- Ensure that records are kept of all investigations, that the names and addresses of all witnesses are recorded and that all company and regulatory reports are completed and distributed.

VEHICLE ACCIDENT (Project Vehicles)

IMMEDIATE EMERGENCY DUTIES

- Notify Supervisor, Medic and Senior Petro-Canada Representative On-Site.
- Initiate rescue and first aid measures.
- Report accident to Petro-Canada Calgary office.
- Report accident to local authorities as required (RCMP).
- If a contractor or service company vehicle is involved ensure that their office is informed of the situation.
- Conduct investigation and complete all required company and government reports.

FIRE/EXPLOSION

IMMEDIATE EMERGENCY DUTIES

- Sound alarm (Rig Horn, Activate Camp Fire Alarm, other pre-arranged signal)
- Evacuate as necessary.
- Notify Supervisor, Medic and Senior Petro-Canada Representative On-Site.
- Direct all workers to report to mustering area (Site Office or Camp) and take personnel head count.
- Shut down all equipment and shut off fuel lines and electrical power at source.
- Establish search and rescue procedures.
- Ensure administration of first aid to injured personnel.
- Proceed with fire control.
- Only engage in fire fighting operations, after rescue operations are complete, if you are sure that the fire can be safely put out with the equipment and personnel available. If it is felt that the fire cannot be safely extinguished use the equipment and personnel available to keep the fire from spreading until additional equipment and personnel arrive.
- Call out specialised service companies as required.
- Notify Calgary office of the situation and keep them up-to-date.
- Notify the NEB as required by the Canada Oil & Gas Occupational Safety & Health Regulations.
- If contractor or service company equipment is involved, ensure that their office is informed.

- Establish controls to prevent secondary losses:
  - barricades
  - roped off area
  - security guards
- Identify clear and precise communications before returning to work.
- Post Event Planning
  - Survey damaged area to determine total damage.
  - Isolate damaged equipment.
  - Prevent further damage.
  - Erect temporary shelter if necessary.
  - Check integrity of equipment to be returned to operation (e.g. x-ray, ultrasonic, pressure testing, etc.).
  - Monitor equipment as per temporary conditions.
  - Prioritise equipment to be repaired.
- Investigate and record information for the preparation of necessary company and government reports.

UNCONTROLLED GAS RELEASE

This section of the plan is designed to deal with unplanned or uncontrolled releases of natural gas during well operations. It can be used for releases of sweet or sour (H_2S) gas.

Note: H_2S is not anticipated in the Mackenzie Delta Area.

PLAN IMPLEMENTATION PROCEDURES

The plan will be implemented using the following Emergency Levels. Normally these Levels will be implemented in sequence, however, if the initial problem is of a large magnitude the plan can be initiated at any level.

Emergency Level One (Potential Emergency):

Description

The H_2S formations are open to the wellbore and an abnormal drilling/completion problem has occurred that has the potential to lead to a well control problem. There is no immediate hazard to the public, as there is no release of gas or wellbore fluids, and on-site personnel and equipment can control the situation. The following conditions could constitute a Level 1 Emergency:

Drilling Operations:

- Continuous gas cut mud with uncontrolled lost circulation
- A significant well kick
- Inability to circulate
- Any abnormal drilling/completion problem with the potential to affect well control

Completion Operations:

- Inability to shut in the wellhead because of stuck wireline, endless tubing or tools straddling the master valves.
- Communication between the tubing and annulus, above the packer, when the well is not dead.
- H2S or abnormal amounts of soluble sulphides in the well control fluids.
- Any abnormal situation that could affect well control.

Response

- Alert the Response Team Members (Company, contract and NEB personnel) required to implement the plan.
- Initiate well control procedures.
- Establish an Emergency Zone (EZ) and inform all persons in the zone of the potential emergency situation.
- Alert and mobilise emergency support services and equipment as required.

Emergency Level Two (Emergency Situation):

Description

This level of alert includes any situation where there is a potential for off lease impact and usually requires some involvement from government agencies or other external services. Indications are that, while the problem will most likely be resolved in the short term, immediate action should be taken to protect personnel in the vicinity of the well. The following conditions could constitute a Level 2 Emergency:

Drilling Operations:

- Lost circulation with mud losses exceeding the mixing rate.
- Insufficient degasser capacity.
- Equipment malfunction that hinders well control while shutting in the well or circulating a kick.

Completion Operations:

- A wellhead leak below the master valves.
- Equipment malfunction that hinders well control while shutting in the well or circulating a kick.

Response

- Inform the Response Team Members previously contacted of the change to a Level 2 Emergency
- Remove non-essential personnel from the EZ
- Establish roadblocks to restrict access into the area.
- Establish air monitoring downwind of the site.
- Assemble the ignition equipment.

Emergency Level Three (Serious Emergency):

Description

Occurs when control of the well is lost and the situation poses an immediate hazard to personnel. The following conditions could constitute a Level 3 Emergency:

Drilling and Completion Operations:

- Inability to shut in the well. This may be caused by a malfunction of the BOP stack components, stabbing valve or by a flow through cracks, seals or gaskets below the effective BOP equipment.

Response

- Inform the Response Team Members of the change to a Level 3 Emergency.
- Perform surveys of the EZ to verify evacuations have been competed.
- Verify isolation of the EZ.
- Continue air monitoring downwind of the wellsite.
- **Ignite the flow if H_2S is present and the ignition criteria have been met.**

ISOLATION (ROADBLOCKS)

The hazard area is the area surrounding an H_2S release where a potential hazard to the public or project personnel exists. Isolating the area shall be accomplished by posting security sentries and establishing roadblocks.

Procedures

If a Level 2 Emergency is declared, a sentry shall be stationed at the wellsite entrance to restrict entry of unauthorized personnel. The Swimming Point Base Supervisor will place the Base Camp crew (designated roadblock personnel) on standby.

If the situation escalates to a Level 2 or 3 Emergency, designated roadblock personnel shall be mobilised to establish roadblocks to isolate the EZ/affected area.

The hazardous area resulting from a hydrogen sulphide release is dependent upon the nature of the release, the volume of the gas escaping and meteorological factors such as wind direction, wind speed and atmospheric stability.

AIR MONITORING

Air quality monitoring for hydrogen sulphide (H_2S), and sulphur dioxide (SO_2), if ignition of the gas release has taken place, shall be conducted on the wellsite and throughout the Emergency Zone using handheld detectors and fixed sensors.

IGNITION

The Senior Petro-Canada Representative On-site has the authority to direct ignition of the release. If time permits, the decision will be made in consultation with Senior Company officials and the Government.

Ignition Criteria

A confirmed flow of H_2S gas will be ignited if the well is experiencing an uncontrolled flow of H_2S gas at surface and public safety cannot be assured because:

- Evacuation of the public within the EZ/affected area has not been accomplished

  And

- Air-monitoring data indicates H_2S levels in excess of 15 ppm for a 15-minute average or 20 ppm for a 3-minute average in unevacuated areas.

  Or

- Air monitoring is not taking place in the unevacuated area due to unforeseen circumstances such as bad weather or communications breakdown.

Ignition Procedure

Ignition of sour gas release should only take place once the criteria has been met, and not before all of the on-site personnel have been accounted for and have been safely relocated to an upwind area.

Two Ignition teams shall be formed as follows:

TEAM 1 (PRIMARY) - On-Duty Drilling Supervisor and Safety Supervisor
TEAM 2 (BACKUP) - Rig Manager and Driller

The following procedure is to be used as a guide for igniting the gas flow:

- Assemble equipment, and brief the ignition teams at an upwind safe area. Each person shall be wearing breathing apparatus, Fire Retardant Clothing, and ear

protection. They shall carry LEL & H_2S detector, and remain in visual contact with each other at all times.

- The backup team shall man the safety lines.
- Firing of the flare gun should be done from a prone position or from behind a protective object.
- Ignition shall be implemented from the maximum upwind range of the flare gun, which is 45-60 metres. Shells shall be shot towards the sour gas release in such a manner that ignition will occur at the furthest outside edge of the gas plume.
- Approach the gas flow from the upwind side checking that an explosive mixture does not exist in the immediate area.
- Fire the flare gun and ignite the gas flow when at the correct range.
- If possible, remain on standby at the ignition site to re-ignite the sour gas release, if required.
- Contact air-monitoring personnel with confirmation of ignition to ensure monitoring of SO_2 emissions is taking place.

RE-ENTRY PROCEDURE

After an emergency situation has been determined "under control" by Petro-Canada staff and appropriate government agencies, a decision will be made to resume work and allow the public to return to the emergency zone. The Petro-Canada Superintendent and the Drilling Manager, in consultation with government authorities, will collectively agree on safe levels of monitored air contaminants and ensure adequate and complete equipment repair has taken place before this decision is made.

MISSING OR OVERDUE PERSONNEL/VEHICLE, VESSEL OR AIRCRAFT

IMMEDIATE EMERGENCY DUTIES

- If employee or aircraft has failed to routinely "report-in" notify the immediate supervisor and Senior Petro-Canada Representative On-Site.
- Organise and dispatch search teams.
- Contact outside help if required RCMP, Search and Rescue).
- Search team should be prepared to discover possible accident victim:
  1) Upon discovery initiate rescue and administer first aid as required, and,
  2) Initiate medivac transportation if required.
- Notify Calgary office of situation and keep them up-to-date.
- Maintain contact with search and rescue team.
- Record information for preparation of reports.

Note: **A tracking system will be in place for all personnel and transportation working away from the main camps.**

HAZARDOUS MATERIAL RELEASES

SPILL CONTINGENCY PLAN

For any spill, the following steps should always be followed:

- Ensure that all personnel are safe. If any one is injured they should be evacuated to medical assistance.
- It is Petro-Canada's Senior On-Site Representative's responsibility to call-out additional help and inform the Superintendent of the event.
- All spills should be reported immediately to the NWT 24-Hour Spill Report Line (see section 6 for telephone numbers). Paper copy of report should be faxed to the Spill Line and to the Chief Conservation Officer in the NEB offices in Calgary.
- First responders should be aware of spilt material's properties and required safety procedures. MSDS for commonly used materials are available On-Site and electronically.
- The source of the spill should be shut off and isolated. The spill should be contained as quickly as possible.
- For spills larger than 100 litres at the landing strip or on ice roads, the large spill response equipment kit should be called out. The spill response materials include power generators and lights, which will be needed at the site.

For specific spills the following should be used:

Equipment Through Ice

During travel on ice roads a small risk of vehicles falling through ice exists. Procedures for testing ice will be in place to minimize the risk. Should a vehicle penetrate the ice:

- Safety of personnel on ice is of primary importance. An ice monitor should be appointed.
- An event report should be created for any instance where equipment goes through ice. In the unlikely event that any fuel is spilt during the recovery of the vehicle, it should also be reported as a spill.
- Primary means of spill recovery is through the use of a vacuum truck. Prior to using the vacuum truck, ice safety should be ascertained.

Spills to Snow and Ice

- The predominate risk for spilled product will be during the winter months. This season has the highest level of activity.
- Winter spills present a lower risk of environmental damage than do spills during other seasons. Snow makes an excellent absorbent and the frozen ground acts to prevent downward movement of contaminate. Ice and frozen tundra can provide a solid base to operate heavy equipment from (which would not otherwise be available during spring and summer). Source 1997 Spill Containment and Clean Up GNWT
- When examining the spill site to determine extent of cleanup, in winter the following relationship might be used: 1:1 ratio for barrels spilt to square metre of spill area (200 litres to 1 square meter).
- For spills that are not witnessed, staining on snow or ice provides a useful indicator of the spill extent. Snow around the spill stain should be probed for diesel under the snow cover.

Snow

For spills in snow, after the source is controlled:

- Use shovels or front end loader to build a berm to halt flow of liquids (shovels are available at spill kits well site and Swimming point). Avoid damage to underlying tundra.

- For large spills, tarps should be used to line the face of the berm (tarps are available at spill kits in Swimming Point and the well site).

- Contaminated snow should be excavated to open 1 cubic metre totes (or empty barrels). Totes and barrels are available at Swimming Point and at the well site. When full the containers should be relocated to Swimming Point. The snow will likely dilute the diesel below the dangerous goods flash point. However, prior to shipping, an analytical test of flash point must be completed and reviewed with GNWT Transportation to determine if a hazardous waste manifest is required. If a hazardous waste manifest is not required, a Petro-Canada manifest should be used to track the wastes.

- For large spills, a dump truck and loader may be used to clean-up contaminated snow. Contaminated snow should be taken to Inuvik for containment in tanks. Care should be used that the loader does not scrape the tundra. Use hand shovel to scrape snow from ground to protect tundra.

- Sorbents should be used on free liquids. Also, sorbent should be used if all spilt material cannot be cleaned entirely. Sorbent materials are available in Swimming Point, and at the well site.

- Contaminated sorbents should be placed in totes and moved under Petro-Canada manifest to Swimming Point for further handling.

Ice

For spills on ice, after the source is controlled:

- An experienced Ice Monitor must be first appointed to ensure that all personnel are safe during spill recovery operations.
- A spill to ice will likely occur on the ice roads. Spill response equipment should be sourced from Swimming Point or the well site.
- Any free fluids should be absorbed with snow or sorbent materials available in spill kits.
- Contaminated sorbents should be placed in totes and moved under Petro-Canada manifest to Swimming Point for further treatment and/ or transport for appropriate disposal.
- An alternate means of stopping the flow of a spill is to use a chainsaw to cut a shallow intercept channel into the ice.
- Ice that has absorbed spilt materials should be removed to secure storage. If left in place, spilt materials will contaminate flowing water in spring.

Spills to flowing water or standing water (Winter Environment)

In the of loss of containment of spilled product and the hydrocarbons reaching open water in winter the spill response shall have a primary goal of safety of personnel on thin ice. The second objective is to prevent oil migration under ice. In the event of lost containment to open water in an ice environment:

- An experienced Ice Monitor must be first appointed to ensure that all personnel are safe during spill recovery operations.
- For minor fuel leaks use absorbent pads to differentially absorb oil from water.

- For larger spills absorbent rope boom should be laid against the ice. When safe to do so, fire the spill. Use of fire is the most environmentally friendly technique in this situation.

- In the event of hydrocarbons under ice a technique, known as ice slotting can be used. Chain saws are used to cut slots in the ice downstream. As oil accumulates either fire the oil or use a skimmer at the slot with a vacuum truck at a safe distance to recover hydrocarbons.

Damaged Containers

- Aviation fuel, lubricants, and other chemicals are stored on the drill site and support locations, like the airstrip and may also be transported on support vehicles. To prevent spills barrels should be stored in secondary containment wherever possible.

- Empty drums should be stored at an angle on their sides, so that precipitation does not enter them.

- A container may become damaged by falling off a vehicle or by other mechanical damage. The contents of any damaged drum should be transferred immediately to another container. If contaminates have entered fluid, barrel will be considered a waste.

- For helicopter fuel that is spilt while the helicopter is on duty for Petro-Canada, it is Petro-Canada's responsibility to ensure that the spill is reported. If the helicopter company is reporting the incident, a copy of the report should be filed with Petro-Canada.

- Damaged empty containers must be triple rinsed prior to disposal at a landfill. Preferred disposal is through metal recycling.

- Empty drums may fall under TDG, depending on original contents. Check supplier labels first prior to returning drums or sending them for disposal.

Drilling Mud or Additive Spill

In the event of a drilling mud or additive spill the following steps should be taken:

- If solid, spill should be mechanically recovered. Materials should be evaluated for reuse.
- If in liquid form, rope absorbent should be placed to limit spill travel, if required.
- Once contained, wait for mud to solidify. Mechanically remove. In spring, mud may not solidify and a bell hole would be dug. The mud would be pumped to containment.

Container, Truck or Tank Overflows

A fuel spill while transferring fuel from storage to tank to vehicle or from a tanker truck to the tanks, is the most likely type of spill to occur. Prevention is important. Consider:

- Using drip trays under the main fuel connections
- Using sorbent pads under fuel transfer operations
- Maintain constant attention during fuel transfer operations
- Understand tank gauging operations prior to transfer of fuel
- Ensure fuel truck has a small pail of absorbents and scoop type shovel

Spill Reporting Requirements

- All spills and gas releases must be reported to the NWT 24-Hour Spill Report Line. The spill should be reported immediately. The NWT Territories Spill Report should be completed and faxed to the NWT 24-Hour Spill Line within that same period (Contact numbers provided in Section 6). If some information is unavailable, like cause, send the form anyway. Provide faxed updates, as information becomes available.

- The National Energy Board is the lead agency for spills occurring at petroleum industry sites. See Section 6 for contact numbers for NEB's Environmental Assessment Officer for spills.

- For all other spills a call must also be made to the NEB Environmental Assessment Officer within 24 hours.

- While the NEB is the lead agency, other agencies like Department of Fisheries & Oceans may become involved. The NWT 24-Hour Spill Report Line will forward copies of the spill report to these agencies, you may decide to provide courtesy copies directly.

- All spills should also be reported into Petro-Canada's event reporting system. Information may be entered directly from the NWT Spill Report into the system, or you may elect to send the Spill Report to the EH&S department for entry.

- The NEB leaves all spill events open until environmental impact has been resolved.

Waste Management of Residual Materials

Waste manifests can be found at Swimming Point and at the well operations sites.

- Used oil is considered a hazardous waste. However, if shipped to a used oil recycler in the NWT, it does not need a federal waste manifest, but does require a Petro-Canada waste manifest for tracking (Verbal confirmation – Donald Helfrick, Hazardous Waste Specialist, GNWT).
- If used oil is shipped to Edmonton for recovery, a federal waste manifest is required.
- Used lube oil filters should also be treated as a hazardous waste and shipped, using a federal waste manifest, to Edmonton on a back haul for recycling.
- Spent batteries are considered a hazardous waste. A federal manifest should be used when transporting batteries. Batteries can be taken to Inuvik landfill for deposit at recycling depot or on a backhaul to Edmonton.
- Spent glycol is not considered a hazardous waste. However, a Petro-Canada manifest should be issued to transport spent glycol. The best waste disposal is to ship to Edmonton for recycling.
- Diesel fuel mixed with spill materials will be considered a hazardous waste. Because of contaminates, it will not be possible to reuse as fuel without conditioning. Several facilities exist in Alberta that condition diesel.
- Contaminated fuels are likely considered hazardous and should be shipped using a federal manifest.
- Domestic wastes should be incinerated using the camp incinerator.
- Petro-Canada standards require all waste receivers used by Petro-Canada to be audited. Check the approved list for current status. If your intended waste receiver is not on the list, call the Environment, Health and Safety Department to arrange an audit prior to shipping wastes.

PROCEDURES - CHEMICALS

- Refer to the Emergency Response Guide for Dangerous Goods, Canutec Current Edition and the MSDS (Material Safety Data Sheets).

- Chemical spills of significant volume, that would require emergency response procedure as outlined in the Liquid Hydrocarbon Spills Section would include:

1) Acids
2) Glycol
3) Drilling fluids
4) Brine water.

FACILITY DESCRIPTIONS

SWIMMING POINT

- The fuel storage system at Swimming Point will consist of two 159 m^3 diesel fuel tanks, two 64 m^3 jet B tanks and one 64 m^3 gasoline tank along with associated pumps and piping. The tanks will be located in a lined berm system with at least the capacity of the largest tank plus 10% (175 m^3 bermed capacity).

- During the summer of 2001, the storage capacity at Swimming Point was expanded with four additional 500 M^3 tanks for diesel. The tanks are located in a bermed compound of similar design to the existing tank farm having a secondary containment capacity equal to 110% of the largest tank (550 m^3 bermed capacity).

- Additionally Swimming Point periodically holds the tanks and fuel destined for the drilling and completions rig sites on a temporary basis. These will be contained in a lined berm system with at least the capacity of 110% of largest tank.

DRILLING RIG AND COMPLETIONS RIG

- Four 64 m^3 tanks for diesel fuel storage will be located in a lined berm engineered system with a minimum capacity of 70 m^3 (largest tank plus 10% of volume). Eight additional 159 m^3 storage tanks will be located in a lined corrugated steel berm with a minimum capacity of 110% of the largest tank (175 m^3 bermed capacity).

- The surface mud system on the rig will consist of three open-top tanks with a total capacity of 310 m^3. A sump will be located near the tanks to contain any discharge from the drilling mud system. The main section of the well will be drilled with a 4% KCl polymer mud system.

DANGEROUS ANIMAL ENCOUNTERS

IMMEDIATE EMERGENCY DUTIES

- Encounters with large animals, which are a danger or interfering with operations, are to be reported immediately to the supervisor.

- The Bear Monitor will be mobilised to the incident site to deal with the situation.
  Note: Bear Monitors will be located at the Swimming Point Base Camp and at the well site camp.

- Project personnel will not attempt to deal with any dangerous animal encounters on their own.

EXTREME WEATHER

- No personnel will leave either main camp without checking the weather forecast to ensure that they can safely complete their trip.
- There will be a tracking system in place to monitor all personnel working away from the base camps.
- All transportation will be equipped with emergency survival gear, VHF radios and mobile phones.

SECURITY BREACHES

IMMEDIATE EMERGENCY DUTIES

There are several events which would be considered to be under the category of security problems. Some of the more likely ones are:

1. Theft
2. Vandalism
3. Unauthorized persons (trespassing)
4. Bomb Threats
5. Extortion Attempts

In all cases, except minor events under 1, 2 and 3 above, Field Personnel should not try to handle the situation on their own.

- First contact should be made with Local police.
- Contact management in Calgary and pass all information to them and to Corporate Security (296-3000).
- Co-operate with and assist the local authorities as required.
- Keep Calgary management and Corporate Security informed of developments.
- Keep record of events.

Note: **For more serious events Corporate Security may dispatch assistance to the site or arrange for help.**

PROCEDURES - BOMBS/PHONE CALLS

Threatening Contacts (Bomb Threats)

Note: This is a procedure for handling threatening telephone calls which suggest bombs or other such devices may have been placed on Petro-Canada property. It covers what to do in case of such threats from the standpoint of communications, search and disposition.

- If a bomb threat call is received every effort should be made to elicit as much information as possible and relay this promptly to the Senior Petro-Canada Representative On-Site.

- The Senior Petro-Canada Representative On-Site will contact the Superintendent. A decision on whether or not to evacuate and/or close down a building or operation will be made by the Superintendent in consultation with management and security contacts. This will be done with regard to the nature of the threatening call and an appraisal of the personnel and physical situation at the site.

- An immediate search of the suspected area or areas will be ordered by the Senior Petro-Canada Representative On-Site to be carried out with the co-ordination of management.

- If a suspicious device is located, a minimum evacuation distance of 100 metres will be established. The device will not be touched and outside experts will be brought in to properly dispose of it. Continue the search and do not assume that there is only one device.

- In the event that evacuation becomes advisable, remain calm and when evacuating, remove personal property such as brief cases, lunch containers, and purses to reduce confusion during search.

- If the result of the search is negative, based on confidence in the search, time lapsed and history of any previous calls, the Superintendent and Senior Petro-Canada Representative On-Site may decide to reoccupy and resume normal operations, assuming an evacuation had been made.

- Whether or not public information is released will be determined by Management in Calgary. Such information, if released, would be handled by the Communications Department.

Receiving Threatening Phone Calls

- If you receive a threatening phone call, listen carefully, be calm and courteous and do not interrupt the caller. When the caller has completed his initial message, try to draw the caller into giving as much specific information as possible. Write down all that is said as accurately and completely as possible.

- Pay particular attention to the voice of the caller. If someone else is nearby when the call is received, motion with hand signals for the other person to also listen to the call.

- Notify the Senior Petro-Canada Representative On-Site as promptly as possible, giving him the written record of the call and remain available to provide additional information about the call if required.

PROCEDURES - THEFT

- The unauthorized removal of equipment, tools, materials, product or other Company property is considered theft. All employees are requested to maintain an awareness of the actions of non-regular personnel on Company sites to reduce or eliminate the loss of Company property.

- Any employee suspecting theft of Company property should immediately notify his supervisor who will in turn contact the Senior Petro-Canada Representative On-Site. The Senior Representative On-Site, in consultation with the Superintendent and Corporate Security, will determine if law enforcement agencies are to be notified.

PROCEDURES - UNAUTHORIZED PERSONS

If unknown or unauthorized persons are observed on a Petro-Canada well site the following procedures should be adhered to in approaching individuals.

- When approaching the unknown person, ask for his name, what he is doing on Petro-Canada property, and if he has permission to be On-Site. If he states he has permission, inquire from whom in order that you may verify the authority granted. Individuals visiting workers at P-C operating sites are restricted to the camp area only for short visits. Extended stays are not allowed.

- If the individual is found to be unauthorized, ask him to leave the site immediately, escort him off the site and report the incident to the Senior Petro-Canada Representative On-Site.

- If the unauthorized person refuses to leave or acts in a belligerent manner, advise him that assistance for his removal will be sought from local law enforcement officers and then retreat to a safe area. Do not get drawn into physical conflict.

- From a safe distance, continue to monitor the activities of the unauthorized person and report the incident to the Senior Petro-Canada Representative On-Site. The Senior Petro-Canada Representative On-Site will dispatch additional backup personnel to the scene and contact the local police for assistance.

THIRD PARTY EMERGENCIES

IMMEDIATE EMERGENCY DUTIES - THIRD PARTY EMERGENCIES

Duties outlined in this section should follow the basic procedures outlined in the manual:

Injury/Fatality
Vehicle Accident
Fire Explosion
Uncontrolled Gas Release
(Sweet/Sour/N.G.L.)
Missing or Overdue
Personnel/Vehicle or Aircraft
Hazardous Material Releases
Security Breaches

- Where Petro-Canada has a legal duty to respond, it shall respond immediately in accordance with Petro-Canada emergency plans to the extent required by law.
- Where Petro-Canada has no legal duty to respond, but whenever public perception of the name of Petro-Canada is involved in any way, and prompt response is not forthcoming from others, Petro-Canada will respond to the extent required to control and contain the emergency and eliminate danger to the public.
- When Petro-Canada has no association with the emergency, Petro-Canada will respond when requested by government authority, the public or industry without prejudice.
- All emergencies will be reported internally and externally in accordance with procedures set out in this manual.

EMERGENCY RESPONSE TEAM DUTIES

TEAM	POSITION	ALTERNATE
DRILL SITE	**SERVICE COMPANY PERSONNEL**	

DUTIES

For All Emergencies

1) Notify immediate supervisor and Senior Petro-Canada Representative On-Site.

2) If necessary shut down operation.

3) Ensure personnel are clear of emergency area (use breathing apparatus or other PPE if necessary).

4) Follow instructions of Supervisor and the Senior Petro-Canada Representative On-Site.

Safety Supervisor
For All Emergencies

1) Act as rescue team leader for on-site emergencies.

2) Act as lease security co-ordinator.

Bear Monitor
Dangerous Animal Encounters

1) Act as team leader to deal with all animal contacts.

TEAM	POSITION	ALTERNATE
DRILL SITE	**DRILLING OR WELL SERVICING CREW**	

DUTIES

For All Emergencies

1) Notify immediate supervisor and Senior Petro-Canada Representative On-Site.

2) If necessary shut down operation and secure well.

3) Ensure personnel are clear of emergency area (use breathing apparatus or other PPE if necessary).

4) Follow instructions of Supervisor and the Senior Petro-Canada Representative On-Site.

5) Control access to the area of the event until it has been investigated and it has been declared safe to re-enter the area.

Injury/Fatality

1) Initiate rescue and first aid activities, including mobilizing first aid attendant.

2) Isolate and control access to the area of the accident.

Vehicle Accident

1) Participate in search and rescue team as directed.

Fire Explosion

1) Deploy as fire fighting first response team.

Drilling Crew Duties (continued)

Uncontrolled Gas Release

1) On duty crew initiate well control actions.

2) Off duty crew; resting or on stand-by as required.

Hazardous Materials Release

1) Control source of spill.

2) Contain and recover spilled material.

TEAM	POSITION	ALTERNATE
DRILL SITE	**Rig Manager**	On-Duty Driller Off-Duty Driller

Duties

For All Emergencies

1) Notify Senior Petro-Canada Representative On-Site and immediate supervisor of situation and actions taken.

2) Assign drilling crews to duties as required.

3) Assist in the call-out and direction of required emergency men and equipment.

4) Ensure drilling crews are adequately trained to undertake emergency duties.

5) Ensure that events involving his own personnel are properly reported to Petro-Canada and regulatory authorities.

TEAM	POSITION	ALTERNATE
DRILL SITE	**Senior Petro-Canada Representative On-Site**	Opposite shift Supervisor

DUTIES

For All Emergencies

1) Report emergency to Superintendent and decide on initial response requirements. Contact Swimming Point for support.

2) Report the situation to the NEB.

3) Take charge of all communications and general organization of company and contractor personnel in the area. Activate Swimming Point P-C Supervisor to assist with logistics requirements including the deployment of personnel.

4) For all on-site emergencies, establish control of the affected area and maintain security.

5) Keep company officials up-to-date on activities and changes in the area of the emergency.

6) Ensure that an accurate written account is kept of all events and activities related to the emergency.

7) For all on-site events ensure that proper re-entry procedures are established and followed to prevent further loss after the emergency is under control.

8) Participate in event investigations and reviews.

9) Ensure that all company and government reports are completed and delivered on a timely basis. Co-ordinate this activity with the Drilling Superintendent.

10) Act as company spokesperson at the lease with assistance from the Public Affairs department.

Senior Petro-Canada Representative On-Site Duties (continued)

11) Provide support to emergency teams at Swimming Point as required.

Injury/Fatality

1) Arrange search and rescue and first aid activities.

2) Arrange for transportation of injured to hospital.

3) Contact receiving hospital and keep them informed of the situation until casualties arrive.

4) Contact NEB, (and RCMP for fatalities) (see section 4.0, Code 1).

5) If Petro-Canada personnel are involved, initiate notification of next of kin through the Drilling Manager (section 2.0).

6) If contractor or service company personnel are involved, contact their local office and have them notify next of kin.

7) Ensure that the site of the accident is not disturbed until government (NEB Chief Conservation Officer) and company officials give clearance to resume operations.

Vehicle Accident

1) Contact RCMP and inform them of the accident.

Fire/Explosion

1) Arrange search and rescue activities.

2) Arrange fire control activities.

3) Contact service companies for assistance as required.

Senior Petro-Canada Representative On-Site Duties (continued)

Uncontrolled Gas Release

1) Decide on initial alert stage (section 4.0).

2) Evacuate unnecessary personnel from the lease area.

3) Inform NEB of situation.

4) Arrange roadblock crews and downwind monitoring crews as required by emergency stage.

5) Call-out service companies and contractors as required to handle the emergency.

6) Evacuate and isolate hazard areas as defined by downwind monitoring.

7) Evaluate the need to ignite the gas release using criteria set out in section 4.0, page 9. If circumstances permit, consult with Petro-Canada Head Office and NEB before igniting the well.

8) Lead well ignition team if this action is required.

9) Arrange for relief crews where emergency is likely to last for more than 12 hours.

10) Lead well control team.

Missing Personnel, Vehicle or Aircraft

1) Inform RCMP. Also inform search and rescue for missing aircraft.

2) Supply search and rescue personnel as required by Superintendent.

Senior Petro-Canada Representative On-Site Duties (continued)

Hazardous Material Release

1) Ensure that all persons involved are aware of the properties and dangers of the spill material.

2) Assign personnel to shut off the source of the spill and to isolate and contain the spill.

3) Call-out service companies and contractors as required to contain and clean up the spill.

Dangerous Animal Encounters

1) Dispatch Bear Monitor to site and provide support as required.

Security Breaches

1) Inform RCMP and Petro-Canada Corporate Security of the situation and keep them up-to-date.

2) Follow guidelines in section 4.0.

TEAM	POSITION	ALTERNATE
SWIMMING POINT	**BASE CAMP CREW**	

DUTIES

For All Emergencies

1) Notify immediate supervisor and Senior Petro-Canada Representative On-Site.

2) Ensure personnel are clear of emergency area.

3) Follow instructions of Supervisor and the Senior Petro-Canada Representative On-Site.

4) Control access to the area of the event until it has been investigated and it has been declared safe to re-enter the area.

Injury/Fatality

1) Initiate Rescue and First Aid Activities.

2) Isolate and control access to the area of the accident.

Vehicle Accident

1) Act as search and rescue team.

Fire Explosion

1) Act as fire fighting first response team.

Hazardous Materials Release

1) Control source of spill and act as initial response team to isolate and control spill.

TEAM	POSITION	ALTERNATE
SWIMMING POINT	**CAMP SUPERVISOR**	

Duties

For All Emergencies

1) Notify Senior Petro-Canada Representative On-Site and immediate supervisor of situation and actions taken.

2) Assign crews to duties as required.

3) Assist in the call-out and direction of required emergency men and equipment.

4) Ensure crews are adequately trained to undertake emergency duties.

5) Ensure that events involving his own personnel are properly reported to Petro-Canada and regulatory authorities.

TEAM	POSITION	ALTERNATE
SWIMMING POINT	**Senior Petro-Canada Representative On-Site**	Camp Supervisor Construction Supervisor

DUTIES

For All Emergencies

1) Report emergency to Superintendent and decide on initial response requirements. Contact Rig Site for support.

2) Make an initial report to the NEB of the situation.

3) Take charge of all communications and general organization of company and contractor personnel in the area.

4) For all on-site emergencies, establish control of the affected area and maintain security.

5) Keep company officials up-to-date on activities and changes in the area of the emergency.

6) Ensure that an accurate written account is kept of all events and activities related to the emergency.

7) For all on-site events ensure that proper re-entry procedures are established and followed to prevent further loss after the emergency is under control.

8) Participate in event investigations and reviews.

9) Ensure that all company and government reports are completed and delivered on a timely basis. Co-ordinate this activity with the Logistics Superintendent.

10) Act as company spokesperson at the lease with assistance from the Public Affairs department.

Senior Petro-Canada Representative On-Site Duties (continued)

11) Provide support to emergency teams at the Rig Site as required.

Injury/Fatality

1) Arrange search and rescue and first aid activities.

2) Arrange for transportation of injured to hospital.

3) Contact receiving hospital and keep them informed of the situation until casualties arrive.

4) Contact NEB (and RCMP for fatalities) (see section 4.0, Code 1).

5) If Petro-Canada personnel are involved, initiate notification of next of kin through the Drilling Manager (section 2.0).

6) If contractor or service company personnel are involved, contact their local office and have them notify next of kin.

7) Ensure that the site of the accident is not disturbed until government (NEB Chief Conservation Officer) and company officials give clearance to resume operations.

Vehicle Accident

1) Contact RCMP and inform them of the accident.

Fire/Explosion

1) Arrange search and rescue activities.

2) Arrange fire control activities.

3) Contact service companies for assistance as required.

Senior Petro-Canada Representative On-Site Duties (continued)

Missing Personnel, Vehicle or Aircraft

1) Inform RCMP. Also inform search and rescue for missing aircraft.

2) Supply search and rescue personnel as required by Superintendent.

Hazardous Material Release

1) Ensure that all persons involved are aware of the properties and dangers of the spill material.

2) Assign personnel to shut off the source of the spill and to isolate and contain the spill.

3) Call-out service companies and contractors as required to contain and clean up the spill.

Dangerous Animal Encounters

2) Dispatch Bear Monitor to site and provide support as required.

Security Breaches

1) Inform RCMP and Petro-Canada Corporate Security of the situation and keep them up-to-date.

2) Follow guidelines in section 4.0.

TEAM	POSITION	ALTERNATE
Field Response	**Superintendent**	Supervisor

DUTIES

For All Emergencies

1) Receive call regarding the emergency and consult with the Senior Petro-Canada Representative On-Site to decide on initial response level and required resources.

2) Report emergency to Drilling Manager

3) Mobilize Field Response Team Members as required.

4) If required, proceed to emergency site and take command of the field operations. If not required to go to the field, assist Drilling Manager with his duties.

5) Lead incident investigation team.

Injury/Fatality

1) Ensure prompt reporting of serious accidents and accidents with serious potential to NEB Chief Conservation Officer (section 4.0).

Superintendent Duties (continued)

Missing Personnel/Vehicle or Aircraft

1) Organize and dispatch search teams. Maintain contact with search teams and coordinate their activities.

Hazardous Material Releases

1) Call-out additional spill response materials if required.

Security Breaches

1) Contact Corporate Security and co-ordinate all activities through them.

TEAM	POSITION	ALTERNATE
Calgary Command	**Drilling Manager**	Vice-President Exploration Superintendent

DUTIES

For All Emergencies

1) Report emergency to the Vice-President, Exploration and International.

2) Contact all Calgary based personnel and activate the Calgary Command Centre if required.

3) Arrange air or other appropriate transportation for the field response team if required.

4) Contact the NEB and keep them up-to-date on the situation. Ensure that all required reports are produced on a timely basis. Co-ordinate this activity with the on-site supervisors.

5) Contact other Petro-Canada departments for support as required.

6) Contact other companies and mutual aid groups for any outside assistance required.

7) Contact contractor or service company head offices if any of their personnel or equipment are involved in the emergency.

8) Assist and support the field response and on-site teams as required.

9) Inform the Major Emergency Team (MET) Incident Commander and co-ordinate activation of the Major Emergency Response Plan if required.

Drilling Manager Duties (continued)

Injury/Fatality

1) If Petro-Canada personnel are involved, initiate and carry out notification of next of kin (section 2.0). If contractor or service company personnel are involved, ensure that the contractor has carried out proper notification.

2) For Petro-Canada personnel, ensure that next of kin are assisted in any way possible to deal with the situation.

Uncontrolled Gas Release

1) If the on-site team has time to inform the Calgary Command Centre team the Drilling Manager will make the final decision on igniting the well if it is deemed necessary.

TEAM	POSITION	ALTERNATE
Calgary Command Team	**Vice President, Exploration International**	

DUTIES

For All Emergencies

1) Inform the senior officers of the company and keep them up-to-date on the situation.

2) Act as the main company spokesperson for any "high profile" situation.

3) Ensure that all the company resources required to control and mitigate the emergency are available to emergency teams.

PETRO-CANADA

MACKENZIE DELTA PROJECT EMERGENCY RESPONSE PLAN

SECTION 6.0 TELEPHONE CONTACTS

CALGARY DRILLING & COMPLETIONS EMERGENCY CONTACT LIST

24 HOUR COMPLETIONS FAX:296-4642
24 HOUR COMPLETIONS FAX:296-7446 (Logs Only)
MODEM PHONE: 264-6584

24 HOUR DRLG. & GEOLOGY FAX: 296-3740
24 HOUR DRLG. & GEOLOGY FAX: 296-5073
24 HOUR GEOLOGY OPS.FAX: (Logs Only)296-8260

24 HOUR EMERGENCY # SECURITY: 296-3000

MACKENZIE DELTA SITE CONTACTS:

TITLE	NAME	Satellite #	Micro wave #	Fax #
Swimming Point Logistics	Wray Adams	403-204-1192	867-678-8002	867-678-8033
Swimming Point Logistics	Alistair Sim	403-204-1203	867-678-8003	867-678-8033
Aviation		403-204-1205	867-678-8009	
Radio Room/ Medic			867-678-8000	
Arctic Oil & Gas, Swimming Point Base Camp	Base Manager		867-678-8001	867-678-8034
Lead Drilling Supervisor				
Geology line				
Akita/ Equtak #60 Rig Mngr				

CALGARY DRILLING & COMPLETIONS SUPPORT TEAM:

TITLE	NAME	OFFICE #	HOME #	CELLULAR
V.P. Exploration	Francois Langlois	6-6592	282-8709	512-9671 C
Drilling Group Leader	Peter Haverson	6-3163	202-6678	651-8930 C
Lead Drilling Superintendent	Bill Roeske	6-6795 6-3011Rig	239-1625	651-8932 C
Drilling Superintendent	Spike Leriger	6-6801 6-3016 Rig	948-7027	540-8434 C
Engineering Advisor	Jack Kercher	6-6818	289-3343	860-9187 C
Project Engineering Leader	Bruce Barrie	6-4081	241-1228	
Logistics Superintendent	Don Thompson	6-6799	281-3684	860-9186 C

CALGARY DRILLING & COMPLETIONS SUPPORT TEAM continued:

TITLE	NAME	OFFICE #	HOME #	CELLULAR
Lead Completions Superintendent	Art Congdon	6-6812 6-3021 Rig	293-4790	651-8935 C
Completions Superintendent	Allan Reid	6-6811 6-3013 Rig	239-6759	651-8933 C
Completions Programmer	Dustin Brodner	6-4539	242-6359	651-3386 C
Production Engineer	Dennis Campbell	6-6747	275-4793	650-6503 C
Geological Operations	Larry Krusel	6-8211	215-7126	540-1401 C
Environmental	Tim Taylor	6-7770	281-4919	816-2679 C
Safety	Wally Shtand	6-3627	246-1304	615-2210 C
Community Relations	John Hunt	6-5309	241-9774	860-3072 C
Land & Regulatory Affairs	John Kerkhoven	6-6345		
Finance & Accounting	Mike Scott	6-5512		
Supply Chain Mgmt.	Jim Huddy	6-3280	329-8241	

ALLIANCE CONTRACTOR EMERGENCY CONTACT LIST

TITLE	NAME	OFFICE #	HOME #	CELLULAR
Akita Drilling	Rob Hunt	292-7979	239-9419	
BJ Services Canada	Don Shuell	6-3177	640-1400	
MI Drilling Fluids	Ismael Musa	6-5797	209-1850	804-0359 C
Schlumberger				
Baker Hughes				
Summit	Keith Dow	232-6066		
Stream Flo	Bill Karran	269-5531		

PROJECT CONTRACTOR CONTACTS

Company	Contact	Location	Number
Key Safety & Blowout Control	Dispatch	Red Deer	1-866-347-3911
Canadian Helicopters	Dispatch	Inuvik	(867) 777-2424
Aklak Air	Dispatch	Inuvik	(867) 777-3777
Akita Drilling Rig #60	Doug Kennedy	Nisku	(780) 955-8746
Bonus Well Servicing Rig #7	Tom Farwell	Red Deer	(403) 347-3737
Arctic Oil & Gas Services	Jim Guthrie	Inuvik	(867) 777-8701
MacKenzie Delta Integrated Oilfield Services (MDIOS)	Russell Newmark	Tuktoyaktuk	(867)-977-2280
Rigstar Communications	Scott Smith	Calgary	(403) 243-0600
New North Networks	Tom Zubko	Inuvik	(867) 777-2111

EXTERNAL AGENCY EMERGENCY CONTACTS

Agency	Location	Number
RCMP	Inuvik Tuktoyaktuk	(867) 777-2935 (867) 977-2351
Ambulance	Inuvik	(867) 777-4444
Hospital	Inuvik Switchboard Fax	(867) 777-2955 (867) 777-8000 (867) 777-8062
Fire Department	Inuvik Tuktoyaktuk	(867) 777-5555 (24hr.)1-800-661-0800 (867) 977-2222
Air Search & Rescue	NWT	1-800-267-7270
NWT 24-Hour Spill Report Line	Yellowknife	See next page
NEB	Calgary	See next page

National Energy Board Regulatory Contacts

NAME	POSITION	NUMBERS
NEB	Calgary Main Switchboard	(403) 292-4800 Fax: (403) 292-5876 Fax: (403) 292-5875
NWT 24-Hour Spill Report Line	**Yellowknife**	**(867) 920-8130** **Fax: (867) 873-6924**
Rick Fisher	Drilling Specialist	Bus: (403) 299-2798 Res: (403) 220-0893 Rfisher@neb-one.gc.ca
Rick Turner	Operations Inspector (Occupational Safety & Health)	Bus: (403) 299-3868 Res: (403) 257-0840 Rturner@neb-one.gc.ca
Chris Knoechel	Petroleum Engineering Specialist	Bus: (403) 299-3866 Res: (403) 241-0047 Cknoechel@neb-one.gc.ca
Andrew Graw	Drilling Engineering Specialist	Bus: (403) 299-2790 Res: (403) 547-3073 Agraw@neb-one.gc.ca
John Korec	Environmental Assessment Officer (Spills)	Bus: (403) 292-6614 Fax: (403) 292-5876 or Fax: (403) 292-5875 Res: (403) 275-6256 Cell: (403) 370-6256 Jkorec@neb-one.gc.ca
Laura Van Ham	Environmental Specialist	Bus: (403) 299-2769 Res: (403) 208-0267 Lvanham@neb-one.gc.ca
Terry Baker	Chief Conservation Officer	Bus: (403) 299-2792 Res: (403) 239-5032 Tbaker@neb-one.gc.ca
John McCarthy	Chief Safety Officer	Bus: (403) 299-2766 Res: (403) 240-2354 Jmccarthy@neb-one.gc.ca

Hazardous occurrences (as prescribed under Section XVI of the *Canada Oil and Gas Occupational Safety and Health Regulations)* are to be reported to the N.E.B. immediately. The N.E.B. also requires immediate notification of any accident or incident requiring medivac.

NWT GOVERNMENT

Agency	Contact	Location	Number
Occupational Health & Safety (OHS) as well as Worker's Compensation Board (WCB)	Switchboard	Yellowknife	1-800-661-0792
Environmental Protection	Ken Hall Manager	Yellowknife	(867) 920-6476
Minerals Oil & Gas	Doug Mathews Director	Yellowknife	(867) 920-3214
Resources Wildlife & Economic Development	Ron Morrison Regional Superintendent	Inuvik	(867) 777-7286

FEDERAL GOVERNMENT

Agency	Contact	Location	Number
Indian Northern Affairs Canada (INAC)	Rudy Cockney District Manager	Inuvik	(867) 777-3361
INAC	Rob Walker Resources Management Officer	Inuvik	(867) 777-3361
Environment Canada	Magnus Bourque Hazardous Materials Officer	Yellowknife	(867) 669-4729

EQUIPMENT LISTS EMERGENCY RESPONSE (WELL CONTROL)

Key Safety and Blowout Control – Response Apparatus, On call Basis

Description	Quantity
Fire Truck Pumper Units	2/1
Command Escort Unit	1
Blowout Tool Unit	1
Escort Emergency Response Unit	1
Service Vehicle	1
Breathing Air Protection Trailer	1
Paramedic Ambulance Service	1
Road Block Personnel	As required
Tank Truck Service	4
Vacuum Truck Service	1

Other Equipment (first 24 hours)

Description	Quantity
Camp/Accommodation facilities	60 men
Water Tank trucks	4
400 BBL Water storage tanks c/w timbers	10
Tank suction manifold	1
Well site office shacks	5
Generator	6
Portable light towers	6
Hot oiler unit	1
Boiler (100 HP minimum)	1
Dozer, D9 Ripper/D8 Winch	2 each
Trakhoe 245	1
Welding Trucks	4
Building material: Steel, Sheet metal, etc.	As required
Crane Rough Terrain, 25 ton	1
Fuel Bulk truck	1
Surface control equipment	As required
Crane, Track, 250 Ton	1

SURVIVAL KITS

Personal Arctic Emergency Kit

These items to be in a sealed case

Item	Number	Remarks
Candles	6x8 hrs.	
Candle holder	1	
Mylar blankets	3	Large space blankets
Aluminum foil	1 roll	
Tent	1	Small 2man popup in bag
Matches, windproof	2 packages	In waterproof case
Flint and striker	1	
First aid kit	1	#1 kit in soft case
Flares & mini gun	3 flares	
Signal Mirror	1	
Whistle	1	
Chemical lights	5	
Aluminum pot	1	Small
Cups	2	
Spoons	2	
Knife	1	
Snare wire	25 feet	
Parachute cord	25 feet	
Toilet paper	1 roll	
Food pack	2000 calories	4 freeze dried food, 10 pkgs. Coffee, 20 pkgs. Tea, 20 pkgs. Coffee mate, 20 pkgs. Sugar, 10 pkgs. Hot chocolate, 10 pkgs. Salt.
Playing Cards	1 deck	

SURVIVAL KITS (continued)

Vehicle Emergency Equipment

To be contained in vehicle tool box

Item	Number	Remarks
First aid kit	1	Number 1 kit in hard case
Road flares	1 set	Reflector type, triangles
Fire extinguisher	1	10lb BC, low temperature type
Jumper cables	1 set	At least 12 feet long
Tow strap	1	25 –30 ft, chains hooks and clevis separate
Rope	25 feet	Small, nylon
Flat mouthed shovel	1	
Gasoline antifreeze	3 bottles	
Axe	1	Medium size
Saw	1	Small fold up Swede saw
Hand tools	1 kit	Multi driver, lineman pliers, 12" crescent wrench, claw hammer
Flash light	1	

Notes:

In addition to the equipment in this kit all vehicles must have an appropriate jack and wheel wrench.

Small 2 wheel drive vehicles and all large trucks should also carry tire chains.

SPILL CLEAN UP KITS

The spill kit provisions are currently under review and are expected to be more comprehensive by January 2002.

Fuel Barge - Small Spill Response	*Comments*
Placed at barge	For cleaning up small spills at fuel transfer site.
Aluminum shovel (scoop)	
Sorbent – loose (5 gallon pail)	
I Cubic metre tote	

Notes:

Drill Rig - Small Spill Response	*Comments*
Small truck based	For use during drilling operations at drill site
6 Aluminum shovels (scoop)	
Large impervious tarp	For temporary storage of waste
Sorbent – socks (2 bale/bbl)	
Sorbent – pad (4 bale/bbl)	
Sorbent – loose (3 bale/bbl)	
I Cubic metre tote	
Documentation Kit	

Notes:

- **Sorbents** should ideally be stored in barrels for protection. In event of emergency the barrels can be used as waste bins. If sorbents are not stored in barrels an equivalent volume of empty containers should be provided.

SPILL CLEAN UP KITS (continued)

Swimming Point - Winter based major spill response	*Comments*
Large truck based	For responding to a larger spill in winter
12 Aluminum shovels (scoop)	
Chain saw (18")	
Portable lights (See light kit list)	
3 Portable generators	
Fuel in CSA approved portable containers	
Safety kit (equipment as listed below)	
Sorbent – socks (15 bale /bbl)	
Sorbent – pad (25 bale /bbl)	
Sorbent – loose (10 bale/bbl)	
Two - I Cubic metre totes	
2 Pick axes	
4 Large impervious tarps	
Tool box	
5 Boxes of XXL Disposable coveralls	
Documentation kit	
5 Boxes of vitron or nitrile gloves (winter lining)	
Diesel Herman Nelson heater	
Lubes	

Notes:

- **Fuel** - predominant fuel type is diesel in drilling operations. Portable equipment should be powered whereever feasible by diesel engines. Consideration in selection needs to be given to start-ability in cold temperatures.
- **Tool Box** should include: 3/8 socket set, crescent wrench (8" and 10"), multi-tip screwdriver , pliers, utility knife, wire cutters flat file, hack saw, claw hammer, ball peen hammer, chainsaw file and screwdriver, pipe wrench (18", 24"), tin snips, allen wrench set, duct tape, tie wire, electrical tape.

Summer Spill Kit

Equipment	Comments/Quantity
Response Boat	20 foot, front bow loader, twin inboard jet engines, 175 hp each engine, tow point, davit and extra passenger seat, depth sounder and GPS, full safety kit
Boat Trailer	Tandem axle
River spill boom	1000 feet of 8 inch skirted boom
Skimmer modular disc	Complete with 3 interchangeable heads and hoses and pump. Diesel driven power pack.
Boomvane	1 kit for launching boom from shore
Support equipment	I kit of ropes, anchors and lines for use with boom and boom vane
Seacan	40 foot container for summer equipment

Revision 1

SECTION 8.0 TRAINING 2002-08

Petro-Canada's spill training program consists of:

- All workers on site must receive an orientation to Petro-Canada Drilling and to the work site. This orientation includes reference to spill reporting, emergency response and emergency response structure and emergency response equipment
- Spill reporting is reviewed with all subcontractors during the pre-job meeting.
- Petro-Canada s Arctic Winter Response course including exercises is to be presented to supervisors working on the Mackenzie Delta Drilling Program.
- Petro-Canada's Arctic Summer Response course including exercise is required for the Swimming Point Response Team. The course includes boat handling, boom deployment and shore based boom deployment.
- Within the Tier II Emergency Response team, in addition to spill training, members are required to have Incident Command System training. Many members of this team are also experienced in dealing with spills in cold climates.

HAZARDOUS OCCURRENCE INVESTIGATION REPORT
N.W.T. SPILL REPORT
TELEPHONE/EVACUATION CONTACT LOG
H_2S/SO_2 DETECTION RECORD
ROADBLOCK CONTROL LOG
EVACUATION CENTRE REGISTRATION LOG
INCIDENT/EVENT LOG
FLOAT PLAN (Vessel Trip)

SCHEDULE I
(SUBECTION 16.4(3))

HAZARDOUS OCCURRENCE
INVESTIGATION REPORT

TYPE OF OCCURRENCE

- ☐ Fire / Explosion
- ☐ Death
- ☐ Disabling Injury
- ☐ Emergency Procedure
- ☐ Other _____ Specify

Department File No./No de dossier du ministère

Regional Office/Bureau régional

Employer ID No./Numéro d'identification de l'employer

Employer Name and Mailing Address	Telephone Number	Operator
	Supervisors Name	
	Witnesses	
Site of Hazardous Occurrence	Weather	
ID of Drilling Rig, Drilling Unit, Production Facility, or Support Craft		Date and Time of Hazardous Occurrence

Description of what happened

Description and estimated cost of property damage	Operation in Progress	
Injured Emplyee's Name	Age	Occupation
		Years of experience in occupation
Description of Injury	Sex	Nationality
	Education	Direct cause of Injury

Was training in accident prevention given to injured emplo

Yes ☐ no ☐ Specify

Direct causes of Hazardous Occurrence

Corrective action and d

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Title

Safety & He

Title

Name of person representi

Title

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SCHEDULE I
(SUBECTION 16.4(3))

HAZARDOUS OCCURRENCE
INVESTIGATION REPORT

TYPE OF OCCURRENCE

☐ Fire / Explosion ☐ Death
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☐ Other _____
Specify

Department File No./No de dossier du ministère

Regional Office/Bureau régional

Employer ID No./Numéro d'identification de l'employer

Employer Name and Mailing Address	Telephone Number	Operator
	Supervisors Name	
	Witnesses	
Site of Hazardous Occurrence	Weather	
ID of Drilling Rig, Drilling Unit, Production Facility, or Support Craft	Date and Time of Hazardous Occurrence	

Description of what happened

Description and estimated cost of property damage	Operation in Progress	
Injured Emplyee's Name	Age	Occupation
		Years of experience in occupation
Description of Injury	Sex	Nationality
	Education	Direct cause of Injury

Was training in accident prevention given to Injured employee in relation to duties preformed at the time of the hazardous occurrence?

Yes ☐ **no** ☐ **Specify**

Direct causes of Hazardous Occurrence

Corrective action and da

Su
Title

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Title

Name of person represent

Title

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N.W.T. SPILL REPORT

(Oil, Gas, Hazardous Chemicals or other Materials)

24-Hour Report Line
Phone (867) 920-8130
Fax (867) 873-6924

A Report date and time	B Date and time of spill (if Known)	C ☐ Original report ☐ Update no._____	Spill number

D Location and map coordinates (if known) and direction (if moving)

E Party responsible for spill

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)

G Cause of spill

H Is spill terminated ☐ Yes ☐ no	I If spill is continuing, give estimated rate	J Is further spillage possible? ☐ yes ☐ no	K Extent of contaminated area

L Factors affecting spill or recovery (weather conditions, terrain, snow cover, etc.)	M Containment (natural depression, dykes etc.)

N Action, if any, taken or proposed to contain recover, clean up or dispose of product(s) and contaminated materials

O Do you require assistance? describe: ☐ no ☐ yes	P Possible hazards to persons, property, or environment; eg: fire drinking water, fish or wild life

Q Comments and/or recommendations

FOR SPILL LINE USE ONLY

Lead Agency

Spill significance

Lead Agency contact and time

.....

.....

.....

Is file now closed? ☐ yes ☐ no

Reported by	Position, Employer, Location	Telephone
Reported to	**Position, Employer, Location**	**Telephone**

NWT 1752/1295

N.W.T. SPILL REPORT

(Oil, Gas, Hazardous Chemicals or other Materials)

24-Hour Report Line
Phone (867) 920-8130
Fax (867) 873-6924

A Report date and time	B Date and time of spill (if Known)	C ☐ Original report ☐ Update no._____	Spill number

D Location and map coordinates (if known) and direction (if moving)

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N Action, if any, taken or proposed to contain recover, clean up or dispose of product(s) and contaminated materials

O Do you require assistance? ☐ no ☐ yes describe:	P Possible hazards to persons, property, or environment; eg: fire drinking water, fish or wild life

Q Comments and/or recommendations

FOR SPILL LINE USE ONLY

Lead Agency

Spill significance

Lead Agency contact and time

.....

.....

.....

Is file now closed? ☐ yes ☐ no

Reported by	Position, Employer, Location	Telephone
Reported to	**Position, Employer, Location**	**Telephone**

N.W.T. SPILL REPORT

(Oil, Gas, Hazardous Chemicals or other Materials)

24-Hour Report Line
Phone (867) 920-8130
Fax (867) 873-6924

A Report date and time	B Date and time of spill (if Known)	C ☐ Original report ☐ Update no._____	Spill number

D Location and map coordinates (if known) and direction (if moving)

E Party responsible for spill

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)

G Cause of spill

H Is spill terminated ☐ Yes ☐ no	I If spill is continuing, give estimated rate	J Is further spillage possible? ☐ yes ☐ no	K Extent of contaminated area

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N Action, if any, taken or proposed to contain recover, clean up or dispose of product(s) and contaminated materials

O Do you require assistance? describe: ☐ no ☐ yes	P Possible hazards to persons, property, or environment; eg: fire drinking water, fish or wild life

Q Comments and/or recommendations

FOR SPILL LINE USE ONLY

Lead Agency

Spill significance

Lead Agency contact and time

.....

.....

.....

Is file now closed? ☐ yes ☐ no

Reported by	Position, Employer, Location	Telephone
Reported to	Position, Employer, Location	Telephone

NWT 1752/1295

TELEPHONE/EVACUATION CONTACT LOG

NAME (LIST ALL NAMES IN PARTY)	MAP NO.	CONTACT TIME	ASSISTANCE OR TRANSPORTATION REQUIRED	REMARKS (PARTICULARLY CONTACT INFO. IF NOT GOING TO THE EVACUATION CENTRE

H_2S/SO_2 DETECTION RECORD

Prepared By:	Date:

Time	H_2S/SO_2 Reading ppm	Weather and Wind Contitions			Location of Reading
		Temperature °C	Direction	Speed (km/hr)	

H_2S/SO_2 DETECTION RECORD

Prepared By:	Date:

Time	H_2S/SO_2 Reading ppm	Weather and Wind Contitions			Location of Reading
		Temperature °C	Direction	Speed (km/hr)	

ROAD BLOCK CONTROL LOG

Prepared By:			Date:		
Vehicle Type & License No.	**Name of Driver**	**Number of Passengers**	**Time Entering EPZ**	**Time Exiting EPZ**	**Remarks**

Note: Instruct all residents exiting the EPZ to check in at the Evacuation Centre

EVACUATION CENTRE REGISTRATION LOG

Prepared By:			Date:	
Name (List all names in Party	Map No.	Check In Time	Location & Telephone Number Where They Can Be Reached	Remarks

INCIDENT/EVENT LOG

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:	Date

INCIDENT/EVENT LOG

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:	Date

INCIDENT/EVENT LOG

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:	Date

INCIDENT/EVENT LOG

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

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Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

Prepared By:		Date	
Time	**Company or Agency**	**Name**	**Telephone Number**
Notes:			

INCIDENT/EVENT LOG

Prepared By:		Date	
Time	Company or Agency	Name	Telephone Number
Notes:			

Prepared By:		Date	
Time	Company or Agency	Name	Telephone Number
Notes:			

Prepared By:		Date	
Time	Company or Agency	Name	Telephone Number
Notes:			

Prepared By:		Date	
Time	Company or Agency	Name	Telephone Number
Notes:			

PETRO-CANADA Oil and Gas

Float Plan (To be filed with Swimming Point Medic)

Time:	Date:

Route	Location	Estimated Time of Arrival
Leaving From		
Destination		
Return		

Vessel	Vessel	Registration	Max Capacity
	Petro-Canada Environmental Response Jet Boat		
	Hovercraft		

Crew	
Operator Name	
Passengers	

Fuel on Board	Litres
Jet Boat (6 hours on full tank)	
Hovercraft (3 hours on full tank)	

Checklist	
Bag phone	
Hand held radio	
Charts	
Comfort bag	

Emergency Contacts

Search and Rescue	**1-800-567-5111**
RCMP	**867-777-2935**
Petro-Canada Swimming Point	**867-678-8000**
Petro-Canada 24 Hour Emergency	**403-296-3000**

Mackenzie Delta

July 16, 20002
Waste Management Plan

PETRO-CANADA ®

Waste Description	TDG Classification	Documents Required	Treatment	Disposal Method	Approved* Waste Receivers	Limits
Contaminated snow (Diesel or glycol)	Unlikely to require TDG classification, unless saturated with diesel fuel.	Petro-Canada manifest	Water Eater Wastewater Evapourator	Residual waste should be contained in a barrel or cube for disposal.	Newalta (Zama or Fort St. John)	Treatment limited to small spills and cleanup. Can only process 10-14 gallons per hour. Residuals still require disposal.
Contaminated Soil (Diesel Fuel)	Unlikely to require TDG classification, unless saturated with diesel fuel.	Petro-Canada manifest	Biotreatment	Soils should be contained in a cube or 30 yard container for disposal at an Alberta or BC licensed facility	Newalta (Fort St. John)	
Used Oil	Leachable Toxic Waste (L17), NA9500	Federal Manifest required	Combustion in an appliance for non-residential heating or recycling	Contain and ship	Newalta (Zama or Fort St. John)	
Used Oil Filters	Leachable Toxic Waste (L17), NA9500	Federal Manifest required	Drain liquids from filters	Contain and ship	Newalta or RBWilliams	
Frac Fluids	Waste Petroleum Crude Oil (FX2), UN1267	Federal Manifest required		Fluids shipped for hydrocarbon recovery.	Newalta (Fort St. John)	
Domestic Waste	Non-hazardous	N/A	N/A	Camp incinerator	Allen's	Ash to be disposed of at the Inuvik landfill. No liquids should be present in ash. Ash should be documented using Petro-Canada manifest
Inhibited well fluids	Waste Diesel (Inhibited well fluids), UN1202	Federal manifest required		Fluids shipped for hydrocarbon recovery.	Newalta (Fort St. John)	.

Mackenzie Delta

July 16, 20002
Waste Management Plan

PETRO-CANADA ®

Waste Description	TDG Classification	Documents Required	Treatment	Disposal Method	Approved* Waste Receivers	Limits
Scrap Metal	Not regulated	Petro-Canada manifest recommended	Segregate from domestic waste	Recycled, in segregated drilling waste bins	Allen's	N/A
Drilling Muds	Not regulated	Full documentation of tests and location	N/A	Permitted drilling sump, or temporary storage	N/A	Per permit limits
Well Workover Fluids - Acids	For unmeutralized acids - Corrosive Liquids (nos technical name) UN 1760, Class 8	Federal Manifest	Neutralize	Disposal Well approved for workover fluids	Newalta (Fort St. John, Zama)	
Kitchen Grease	Non-hazardous	Petro-Canada manifest		Contain and ship	Allen's	?
Used Antifreeze	Leachable Toxic Waste (L17), NA9500	Federal Manifest required	Recycle	Contain and ship	Newalta or RBWilliams	
Oil Rags/Sorbants	Waste soldis containing flammable liquids, UN3175, Class 4.2	Federal Manifest required		Contain and ship	Newalta or RBWilliams	
Mixed Plastic	Not regulated	Petro-Canada manifest recommended	Incinerate or landfill recommended		Newalta or RBWilliams	

Mackenzie Delta

July 16, 20002
Waste Management Plan

PETRO-CANADA ®

Waste Description	TDG Classification	Documents Required	Treatment	Disposal Method	Approved* Waste Receivers	Limits
Sewage	Not regulated	Petro-Canada manifest recommended for all offsite transfers	Treat and discharge per permitted conditions.	Treater	Emergency disposal to sump when not meeting parameters. Last contingency is remove sewage to Inuvik. Arrangements must be made prior to shipment.	
Batteries	Batteries, wet filled with acid, UN 2794, Class 8	Federal Manifest required	Recycle	Contain and ship	Badger to Hazco	

Notes:

All waste receivers must be approved by their jurisdiction to take wastes being sent
All waste receivers must be on approved list and have been audited by Petro-Canada or its agents
All subcontractors must be approved as well
Waste receivers must document all waste shipments on behalf of Petro-Canada