



Keystone Pipeline System EMERGENCY RESPONSE PLAN



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DEPT. OF ENVIRONMENT &
NATURAL RESOURCES,
GROUND WATER PROGRAM



EMERGENCY RESPONSE PLAN

Keystone Pipeline System

Produced by:

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TransCanada Keystone Limited
Partnership

TC Oil Pipeline Operations Inc.
717 Texas Street
Houston, Texas 77002
800-830-9865

EMERGENCY RESPONSE PLAN

Keystone Pipeline System

Prepared for:

TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc.
717 Texas Street
Houston, Texas 77002

Prepared by:

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Executive Summary

The 3,456-kilometre (2,148-mile) Keystone Pipeline will transport crude oil from Hardisty, Alberta to U.S. Midwest markets at Wood River and Patoka, Illinois and eventually to Cushing, Oklahoma. The Canadian portion of the project involves the conversion of approximately 864 kilometres (537 miles) of existing Canadian Mainline pipeline facilities from natural gas to crude oil transmission service and construction of approximately 373 kilometres (232 miles) of pipeline, pump stations and terminal facilities at Hardisty, Alberta. The U.S. portion of the project includes construction of approximately 2,219 kilometres (1,379 miles) of pipeline and pump stations.

The Keystone Pipeline will have an initial nominal capacity of 435,000 barrels per day in late 2009 and will be expanded to a nominal capacity of 590,000 barrels per day in late 2010. Keystone has contracts with shippers totaling 495,000 barrels per day with an average term of 18 years.

A critical aspect of operating the Keystone Pipeline system is to have a comprehensive Emergency Response Program. A key component of the program includes having an Emergency Response Plan. The plan was prepared to achieve a number of goals: ensure regulatory compliance, appropriate for all key stakeholders including field operations, include all emergencies and response measures, timely internal and external notification procedures, and training requirements. In addition, the plan contains information related to worst case discharge, company owned equipment, environmental sensitivities, contract resources, and public officials, and tactical control plans.

The plan will be distributed to key internal and external stakeholders and delivered to TransCanada personnel through a secure internet portal hosted by TransCanada's emergency response provider and preparer of the plan. The plan has been submitted to the National Energy Board in Canada and the United States Department of Transportation's Pipeline and Hazardous Material safety Administration office. The plan will be updated when substantial changes are made or when deemed necessary by either of the agencies.

The Keystone Emergency Response Plan combined with a rigorous training program, retention of and access to the industry's most known response experts, and a state of the art pipeline integrity and maintenance program make emergency response for the Keystone Pipeline system a priority fully endorsed at all levels within TransCanada pipeline.

ACKNOWLEDGMENT AND PLAN APPROVAL

The information and procedures in this Plan must be treated as guidelines only. The user should determine to what extent it is practical and advisable to follow them. This decision may involve considerations not discussed in this Plan.

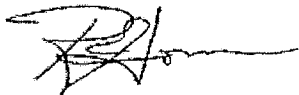
The information and procedures contained herein are considered to be accurate as of this date and are consistent with the National Contingency Plan (NCP) and applicable Area Contingency Plans (ACP) as detailed in Section 1.5.

CERTIFICATION OF QUALIFIED INDIVIDUAL AND ALTERNATE QUALIFIED INDIVIDUAL

TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc. hereby certifies that the individuals identified as Qualified Individual and Alternate Qualified Individual in this Plan have the full authority in accordance with the applicable United States Federal and State regulations and as detailed in this Plan to:

1. Activate and engage in contracting with oil spill removal organizations.
2. Act as a liaison with the pre-designated Federal On-Scene Coordinate (OSC), and
3. Obligate funds required to carry out response activities.

Plan Approved:



Vice President, Keystone Pipeline Project

Signature

Title

Robert Jones

10/14/2008

Name (please type or print)

Date

NOTE: O'Brien's Response Management Inc. provided consulting and plan development services in the preparation of this Plan utilizing data provided by the owner/operator. O'Brien's assumes no liability for injury, loss, or damage of any kind resulting directly or indirectly from the use of the regulatory interpretation, response planning, or information contained in this plan.

OPERATOR'S STATEMENT - SIGNIFICANT AND SUBSTANTIAL HARM AND CERTIFICATION OF RESPONSE RESOURCES

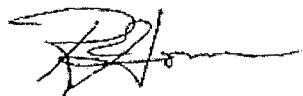
FACILITY NAME: Keystone Pipeline System

CORPORATE ADDRESS: 717 Texas Street
Houston, Texas 77002

- | | | |
|----|--|---------|
| 1. | Is the pipeline greater than 6 and 5/8 inches (168 mm) in outside nominal diameter, greater than 10 miles (16.1 km) in length? and | Yes✓ No |
| 2. | Has any line section experienced a release greater than 1,000 barrels (159 cubic meters) within the previous five years? or | Yes No✓ |
| 3. | Has any line section experienced two or more reportable releases, as defined in 49 CFR 195.50, within the previous five years? or | Yes No✓ |
| 4. | Does any line section contain any electric resistance welded pipe, manufactured prior to 1970 and operates at a maximum operating pressure established under 49 CFR 195.406 that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe? or | Yes No✓ |
| 5. | Is any line located within a 5-mile (8 km) radius of potentially affected public drinking water intakes and could reasonably be expected to reach public drinking water intakes? or | Yes✓ No |
| 6. | Is any line located within a 1-mile (1.6 km) radius of potentially affected environmentally sensitive areas and could reasonably be expected to reach these areas? | Yes✓ No |

Based on the U.S. DOT PHMSA criteria above, the Keystone Pipeline System is considered "Significant and Substantial Harm".

TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc. hereby certifies to the Pipeline and Hazardous Materials Safety Administration of the U.S. Department of Transportation that we have identified and ensured, by contract or by other means, the availability of personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge.



Vice President, Keystone Pipeline Project

Signature

Title

Robert Jones

10/14/2008

Name (please type or print)

Date

NOTE: It is the responsibility of the holder of this Plan to ensure that all changes and updates are made. The Plan Holder must:

- Remove and discard obsolete pages.
- Replace obsolete pages with the updated pages.

REVISION RECORD		
CHANGE DATE	AFFECTED PAGE NUMBER(S)	DESCRIPTION OF CHANGE(S)
January 2009	Entire Plan	Initial Submission

DISTRIBUTION LIST	
COPY NUMBER	PLAN HOLDER ¹
1	TransCanada Keystone Limited Partnership Vice President, Operations 450 1st Street SW Calgary, Alberta T2P 5H1
2	TransCanada Keystone Limited Partners Emergency Management Specialist 450 1st Street SW Calgary, Alberta T2P 5H1
3	TransCanada Keystone Limited Partners Emergency Operations Center 450 1st Street SW Calgary, Alberta T2P 5H1
4, 5	TransCanada Keystone Limited Partnership Operations Manager 450 1st Street SW Calgary, Alberta T2P 5H1
6	TransCanada Keystone Limited Partnership U.S. Region Office 717 Texas Street Houston, Texas 77002
7	TransCanada Keystone Limited Partnership Central Region Office 104 Teracon Place Winnipeg, Manitoba R2J 4G7
8, 9, 10	National Energy Board Secretary 444 Seventh Avenue SW Calgary, Alberta T2P 0X8
11, 12 (electronic)	Office of Pipeline Safety - PHMSA Melanie Barber U.S. Department of Transportation 1200 New Jersey Avenue, SE-E-22-321 Washington, District Of Columbia 20590
13	O'Briens Response Management ePlanPro Manager 6620 Cypresswood Drive, Suite 200 Spring, Texas 77379
14	TransCanada-Keystone Limited Partnership Emergency Preparedness Coordinator 104 Teracon Place Winnipeg, Manitoba R2J 4G7
15	TransCanada Keystone Limited Partnership Emergency Preparedness Coordinator 717 Texas Street Houston, Texas 77002

NOTE¹: The Distribution of this Plan is controlled by the Copy Number located on the front cover or CD label. The Plan Distribution Procedures provided in Section 1.3 and the Plan Review and Update Procedures provided in Section 1.4 should be followed when making any and all changes.

1.0 INTRODUCTION AND PLAN CONTENT

- 1.1 Plan Purpose/Objectives
- 1.2 Scope of Plan
- 1.3 Controlled Plan Distribution Procedures
- 1.4 Plan Review and Update Procedures

- 1.5 Regulatory Compliance

Figure 1.1 Facility Information

Figure 1.2 Piping System Overview

1.1 PLAN PURPOSE/OBJECTIVES

The purpose of this Emergency Response Plan (ERP) is to assist TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc. personnel in preparing for and responding quickly and safely to emergencies originating from the pipelines and associated facilities. The Plan provides techniques and guidelines for achieving an efficient, coordinated, and effective response to emergencies which may occur along the pipeline.

The specific objectives of the Plan are to:

- Establish Response Teams, assign individuals to fill the positions on the teams, and define the roles and responsibilities of team members.
- Define notification, activation, and mobilization procedures to be followed when a discharge occurs.
- Define organizational lines of responsibility to be adhered to during a response operation.
- Document equipment, manpower, and other resources available to assist with the response.
- Ensure compliance with Canadian Onshore Pipeline Regulations and the U.S. National Oil and Hazardous Substances Contingency Plan and associated Area Contingency Plan(s) for the area of operation.

1.2 SCOPE OF PLAN

This Plan has been developed in accordance with the regulation published in SOR/99-294, S. 32-34 – *Emergency Procedures Manual* and 49 CFR Part 194 - *Response Plans for Onshore Oil Pipelines*.

This Plan contains prioritized procedures for Company personnel to prevent or mitigate emergencies resulting from the operation of the pipeline. A description of the Pipeline's details is presented in Figure 1.1 with additional information provided in the sections, appendices and annexes.

1.3 CONTROLLED PLAN DISTRIBUTION PROCEDURES

Emergency Management Specialists responsible for maintenance and distribution of the Plan. Distribution will be handled in the following manner:

- Distribution of controlled Plans is determined by the copy number assigned to agency and designated corporate Plan Holders. A distribution list is included in the Foreword.
- Company personnel who may be called upon to provide assistance during discharge response activities will have access to a copy of the Plan for their use and training.
- Any person holding a controlled copy of the Plan shall ensure that the copy is transferred to their replacement in the event of reassignment or change in responsibility.
- Various regulatory agencies will also be distributed a controlled copy of the Plan. The list of agencies is detailed in the Distribution List located in the Foreword.

1.4 PLAN REVIEW AND UPDATE PROCEDURES

Review/Update

The Plan resides as a web-based document, which permits authorized Corporate and field staff access to make:

- Appropriate revisions as required by operational or organizational changes.
- Appropriate revisions as required by changes in the names and phone numbers detailed in Section 2.0.
- Appropriate revisions as required by improved procedures or deficiencies identified during response team tabletop exercises or actual emergency responses.

Incorporation of Plan Revisions

Email notification allows Authorized Plan Holders to update hard copy Plans as changes occur.

The Individual Plan Holder shall:

- Review and insert the revised pages into the Plan.
- Discard or archive the obsolete pages.

Agency Revision Requirements

Company shall revise and resubmit changes to the Canadian National Energy Board (CA NEB) and the U.S. DOT/PHMSA Pipeline Response Plans Officer within 30 days of each change that would substantially affect the implementation of the Response Plan. Additionally, the South Dakota Department of Environment and Natural Resources shall be notified within 30 days of any change. Examples of changes in operating conditions that would cause a significant change to the Plan include:

Requiring Changes

- An extension of the existing pipeline or construction of a new pipeline in a response zone not covered by the previously approved Plan.
- Relocation or replacement of portions of the pipeline, which in any way substantially affect the information included in this Plan, such as a change in the Worst Case Discharge volume.
- A change in the type of oil handled, stored, or transferred that materially alters the required response resources.
- A change in the name of the Oil Spill Removal Organization (OSRO).
- A material change in capabilities of the OSRO that provides equipment and personnel.
- A change in emergency response procedures.
- A change in the Qualified Individual.
- A change in the NCP or an ACP that has significant impact on the equipment appropriate for response activities.

- As a result of post incident or drill evaluations.

1.5 Regulatory Compliance

CA NEB and U.S. DOT/PHMSA must be provided such revisions. The Company must submit the U.S. DOT/PHMSA issued Facility Control Number with the changes (the PHMSA Control Number is listed in Figure 1.1). In addition to periodic updates, when applicable, the Facility will resubmit the Emergency Response Plan to U.S. DOT/PHMSA every five years from the last approval date of the Plan.

Except as provided above, amendments to the following do not require approval by U.S. DOT/PHMSA:

- Personnel and telephone number lists included in the Plan.
- OSRO(s) change which does not result in a material change in support capabilities.

The development, maintenance, and use of this Plan implements Company policy and addresses the following regulatory requirements and guidelines:

- National Energy Board Act: CA Onshore Pipeline Regulations, 1999, SOR/99-294 - S. 32-34.
- Federal Oil Pollution Act of 1990: U.S. DOT Final Rule for Transportation Related On-shore Facilities (49 CFR Part 194).

The response zones have been reviewed for consistency with the following plans:

- Canada - United States Joint Inland Pollution Contingency Plan - Annex II CANUSCENT
- U.S. National Oil and Hazardous Substances Contingency Plan (NCP)
- CA National Environmental Emergencies Contingency Plan
- U.S. EPA Region 8 Regional Contingency Plan
- U.S. EPA Region 7 Regional Contingency Plan
- Greater St. Louis Sub-Area Plan
- U.S. EPA Region 5 Oil and Hazardous Substances Integrated Contingency Plan

FIGURE 1.1

FACILITY INFORMATION

GENERAL INFORMATION							
Facility Name:	Keystone Pipeline System						
U.S. DOT/PHMSA Control:	TBD						
Owner Name:	(Canada)TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc. (U.S.)						
Address:	<table border="0"> <thead> <tr> <th><i>Physical Address</i></th> <th><i>Operators Address</i></th> </tr> </thead> <tbody> <tr> <td>717 Texas Street</td> <td>450 - 1st Street S.W.</td> </tr> <tr> <td>Houston, Texas 77002</td> <td>Calgary, Alberta T2P 5H1</td> </tr> </tbody> </table>	<i>Physical Address</i>	<i>Operators Address</i>	717 Texas Street	450 - 1st Street S.W.	Houston, Texas 77002	Calgary, Alberta T2P 5H1
<i>Physical Address</i>	<i>Operators Address</i>						
717 Texas Street	450 - 1st Street S.W.						
Houston, Texas 77002	Calgary, Alberta T2P 5H1						
Mainline Number:	(403) 920-6467(24 Hours)						
Contact Person:	Robert Jones Vice President, Keystone Pipeline Project						
Primary NAICS Code:	486910						
Determination of Significant and Substantial Harm (U.S. DOT PHMSA):	All Response Zones meet the criteria for "Significant and Substantial Harm."						
Operator Statement of (U.S.DOT PHMSA) "Significant and Substantial Harm":	It is the Company's goal to respond as quickly as possible to all uncontrolled releases of crude oil, regardless of the source point location along the system. Based upon this goal, and the overbreadth of the definitions provided in 49 CFR 194.103(c)(4) & (5), the Company is compelled to consider all the active line sections listed below in the Response Zone Annexes as capable of a release potentially causing "significant and substantial harm".						
PIPELINE LOCATION							
Provinces/States/Counties:	The System covers 4 specific Response Zones covering 3 Provinces, 6 States and 49 Counties specifically detailed in this Figure 1.1.						
Provinces Traversed:	Alberta, Saskatchewan, Manitoba						
States Traversed:	North Dakota, South Dakota, Nebraska, Kansas, Missouri, Illinois						
Pipeline System Overview Diagram:	<u>See Figure 1.2</u>						

PHYSICAL DESCRIPTION - PIPELINE

Response Zone(s):

- The Keystone Pipeline will transport crude oil from Hardisty, Alberta to U.S. Midwest markets at Wood River and Patoka, Illinois. The Canadian portion of the project involves the conversion of approximately 537 miles (864 km) of existing Canadian Mainline pipeline facilities from natural gas to crude oil transmission service and construction of approximately 232 miles (373 km) of pipeline, pump stations and terminal facilities at Hardisty, Alberta. The U.S. portion of the project includes construction of approximately 1,054 miles (2,219 km) of pipeline and pump stations.
- The Keystone Pipeline System is divided into 4 specific Pipeline Response Zones. The Response Zones are as follows (Specific information to Response Zones are provided later in the Response Zone Appendices):
 - Hardisty Pump Station/ Regina Pump Station
 - Regina Pump Station / Haskett Pump Station
 - North Dakota, South Dakota, Nebraska
 - Kansas, Missouri, Illinois

General:

- The Keystone Pipeline System includes pipeline sections of 30, 34 or 36-inch diameter as well as pump stations.
- This Plan is written in English and understood by personnel responsible for carrying out the Plan.

Pipeline Specifications:

- ***Products Type:***
- ***Pipe Detail:*** The pipeline system consists of several pipeline sections with the following diameters.

30 inch:	0 Km Point (KP) - 276 KP (Canada)
34 inch:	276 KP - 1140 KP (Canada)
36 inch:	1140 KP - 1150 KP (Canada, U.S.)
30 inch:	1150 KP - 1738 KP (U.S.)

RESPONSE ZONE INFORMATION

Response Resources:

Facility spill mitigation procedures and response guidelines are provided in Section 3.0 for discharges that could result from any of the following scenarios:

- Pipeline rupture/leak
- Explosion and/or fire
- Failure of facility piping
- Equipment failure (e.g. pumping system failure, relief valve failure, etc.)

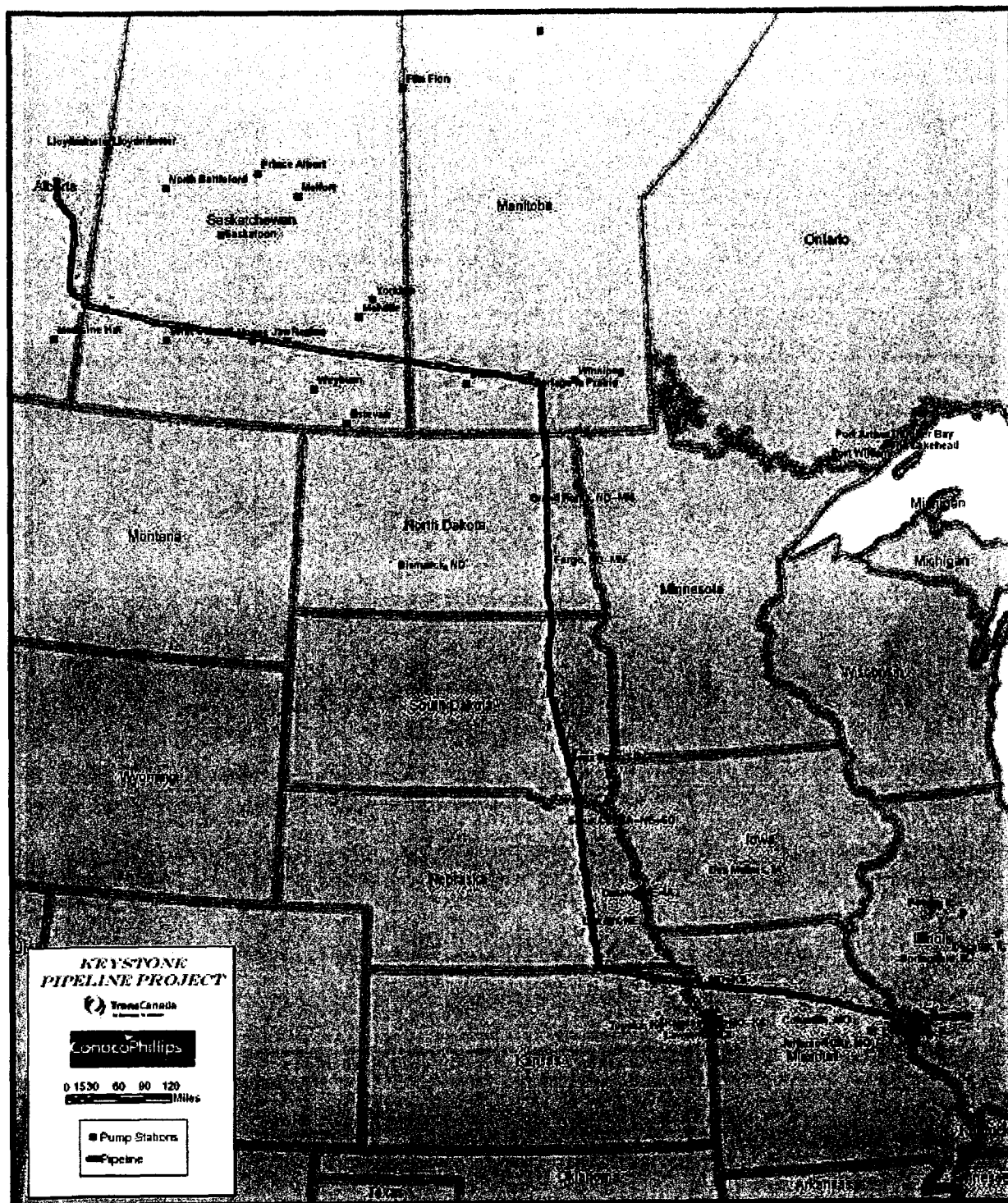
Response Zone	Discharge Scenario	Provinces / Counties Traversed	Planning Volume
Hardisty Pump Station/ Regina Pump Station	63346.00	Alberta, Saskatchewan, Western Saskatchewan, Eastern Alberta, Eastern Saskatchewan	41,504
Regina Pump Station / Haskett Pump Station	79861.00	Saskatchewan, Manitoba, Eastern Saskatchewan, Southwestern Manitoba, Western Saskatchewan	51,413
North Dakota, South Dakota, Nebraska	39722.00	Cavalier, Pembina, Walsh, Nelson, Steele, Barnes, Ransom, Sargent, Marshall, Day, Clark, Beadle, Kingsbury, Miner, Hanson, McCook, Hutchinson, Yankton, Cedar, Wayne, Stanton, Platte, Colfax, Butler, Seward, Jefferson, Saline, Gage	27,329
Kansas, Missouri, Illinois	34289.00	Marshall, Nemaha, Brown, Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain, Montgomery, Lincoln, St. Charles, Madison, Bond, Fayette, Marion, Doniphan	24,069

FIGURE 1.2
PIPING SYSTEM OVERVIEW



Figure 1.2 System Overview Map

Map Prepared By
Response Management Associates
(241) 320 9796



2.0 NOTIFICATION PROCEDURES

2.1 Internal Notifications

2.2 External Notifications

Figure 2.1 Internal Notification Sequence

Figure 2.2 Internal Notification References

Figure 2.3 Notification Data Sheet

Figure 2.4 External Notification Flowchart

Figure 2.5 External Notification References

Figure 2.6 Possible Command Post Locations

This Section is a guide for notification procedures that should be implemented immediately after discovering a discharge incident and, if possible, securing the source. Internal and external notifications are described separately for clarification purposes only. All notifications are of extreme importance and must be completed in a timely manner.

2.1 INTERNAL NOTIFICATION

The following internal notifications should be made for each emergency incident to the extent that the incident demands (telephone reference is provided in Figure 2.2). In no event shall notification be delayed because the immediate supervisor is inaccessible. Authorization is given to bypass management levels if necessary to provide timely notification to appropriate management. The typical internal notification responsibilities for each person potentially involved in the initial response are as follows:

Employee Discovering Discharge

- Immediately notify the Keystone Console (contact information is listed in Figure 2.2).
- Notify the local fire department, police department, and rescue, as needed.
- Notify the contracted Spill Management Team, the O' Briens Group at (985) 781-0804.
- **Notify the Spill Response Contractor, National Response Corporation at (800) 337-7455.**

Keystone Console

- Verify emergency.
- Immediately notify the Keystone Console Manager and Regional On-Call Manager.
- Notify the emergency response contractor if the employee that discovered the discharge has not already made the notification.
- Notify: U.S. National Response Center, the CA Transportation Safety Board National Response Center, CA National Energy Board, appropriate Federal agencies, County Emergency Management, Province/State Environmental Agency, and the Utilities One-Call, as needed (notification requirements and contact information are listed in Figure 2.5).

Calgary Emergency Operation Center Manager

- Determine whether emergency seems to meet "crisis" criteria. If yes, follow procedures outlined in Incident Management System Manual.
- Contact Corporate Security and Calgary Emergency Operations Center.
- Activate Corporate / Business support departments.
- Provide support to region.

Corporate Security

- Confirm emergency meets "crisis" criteria.
- Notify the Executive VP of Operations and Engineering.

Regional Emergency Operations Center

- Provide support to the on-scene personnel.
- Completes local notifications.
- Facilitates communication between Incident Command Corporate EOC.

Emergency Management Team

- Immediately notify the Emergency Operations Center Management Staff.

FIGURE 2.1
INTERNAL NOTIFICATION SEQUENCE

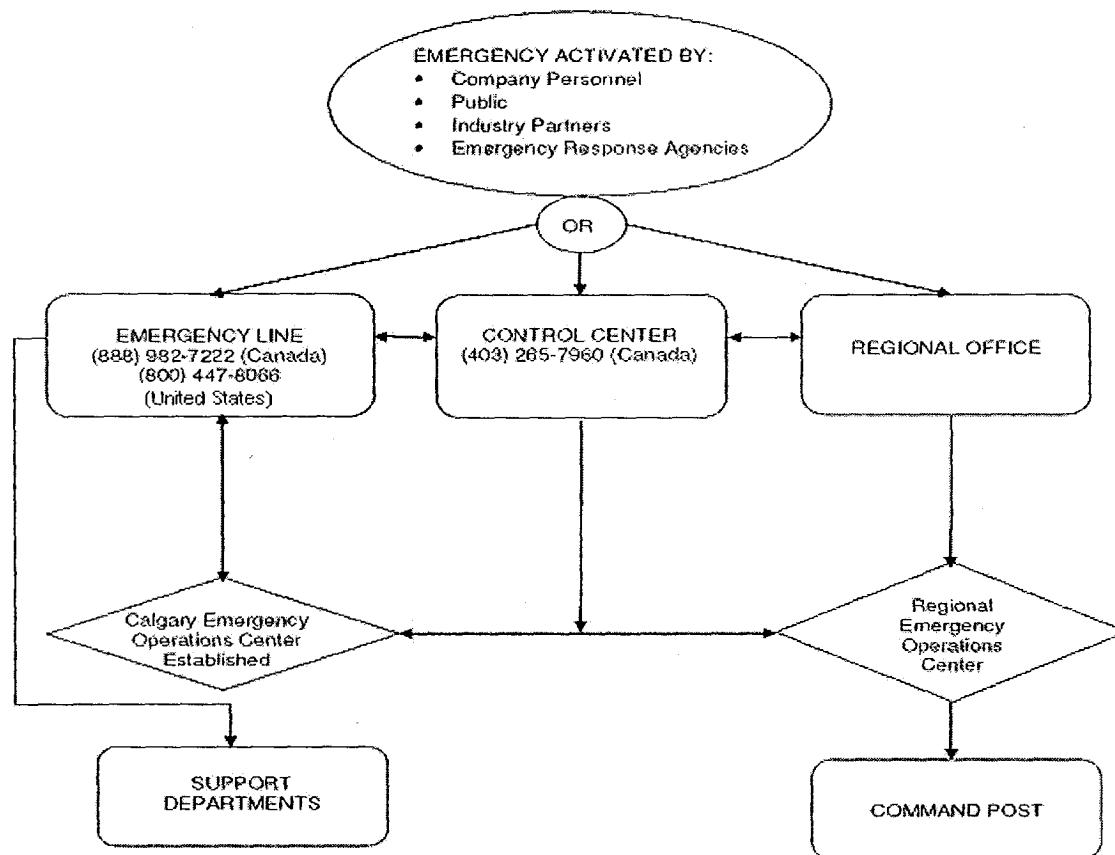


FIGURE 2.2

INTERNAL NOTIFICATION REFERENCES

CORPORATE RESPONSE PERSONNEL / OTHER COMPANY CONTACTS					
INTERNAL NOTIFICATIONS					
POSITION/TITLE	NAME	OFFICE	HOME	CELL	PAGER
Hardisty Pump Station/ Regina Pump Station					
Director, Central Region	Randall W. Schmidgalll	(204) 957-6832			
Regina Pump Station / Haskett Pump Station					
Director, Central Region	Randall W. Schmidgalll	(204) 957-6832			
North Dakota, South Dakota, Nebraska					
Operations Manager	Rodrick McGillivray	(605) 692-1415 X3311	(605) 692-4306	(605) 695-0214	
US Mechanic 4	Wayne Barreth	(406) 787-6372 ext. 26		(701) 770-6540	
Kansas, Missouri, Illinois					
Operations Manager	Rodrick McGillivray	(605) 692-1415 X3311	(605) 692-4306	(605) 695-0214	
US Mechanic 4	Wayne Barreth	(406) 787-6372 ext. 26		(701) 770-6540	

2.2 EXTERNAL NOTIFICATIONS

External notifications are those made to entities outside of the Company including Federal, Province/State and local regulatory agencies, as well as railroad and utility companies. These notifications include both verbal and written requirements.

Verbal Notification Requirements

Immediate internal notification is to be made in accordance with the Internal Notification Procedures found in Section 2.1 when a system operational failure or other type of incident occurs. This will allow immediate evaluation and classification of incidents and prompt immediate telephonic notification as detailed in Figure 2.4 and 2.5 to the Transportation Safety Board, National Response Center (NRC), Province/State agencies, local agencies, and other Federal agencies as required. The information found on the Notification Data Sheet, Figure 2.3, should be used to disseminate incident information to the appropriate agencies.

For the purpose of this procedure, immediate reporting means reporting the instant a person has knowledge of an actual or suspected leak, uncontrolled release of product, any unplanned spill or other pipeline system failure. Information that causes any employee to reasonably suspect a leak or uncontrolled release of product must be immediately reported, even when the actual existence or location of a leak or release cannot yet be confirmed.

Written Notification Requirements

In the United States, a written report is to be filed as soon as practical, but not later than 30 days after discovery of the incident to the Information Resources Manager, Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, US Department of Transportation. Information concerning the event shall be reported on Pipeline and Hazardous Materials Safety Administration Form 7000-1 on-line on the Pipeline and Hazardous Materials Safety Administration website via log-in. Paper reports are not required. This report is to be filed for all incidents reported telephonically and other incidents required to be reported in accordance with the criteria listed below.

The information required for completing the 30-day written report will be furnished by the Area Offices to the Department of Transportation Regulatory Compliance Department for submission to the Department of Transportation. Any subsequent or additional information that was not reported on the initial written report must be reported to the Department of Transportation Regulatory Compliance Department by the Area Office. This information will be utilized in filing a supplemental written report to the Department of Transportation as soon as possible, but no later than 30 days after its discovery.

In Canada, a detailed written incident report is required as soon as practicable.

Citation	Description
Extracts from Transportation Safety Board Regulations Sections 5(1) and 5 (5)	When a reportable pipeline accident or incident takes place, the operator and any employee of the operator having direct knowledge of the accident or incident shall report to the Board as soon as possible and by the quickest means available. Where any person mentioned above makes a report, no other person referred to is required to make such a report.
Transportation Safety Board Regulations Section 2(1)	A "reportable pipeline accident" is an accident resulting directly from the operation of a pipeline, where (a) a person sustains a serious injury or is killed as a result of being exposed to i. a fire, ignition or explosion, or ii. a commonly released from the pipeline, or (b) the pipeline i. sustains damage affecting the safe operation of the pipeline as a result of being contacted by another object or as a result of a disturbance of its supporting environment, ii. causes or sustains an explosion, or a fire or ignition that is not associated with normal operating circumstances, or iii. sustains damage resulting in the release of any commodity.
Transportation Safety Board Regulations Section 2(1)	A "reportable pipeline incident" means an incident resulting directly from the operation of a pipeline where (a) an uncontained and uncontrolled release of a commodity occurs, (b) the pipeline is operated beyond design limits, (c) the pipeline causes an obstruction to a ship or to a surface vehicle owing to a disturbance of its supporting environment, (d) any abnormality reduces the structural integrity of the pipeline below design limits, (e) any activity in the immediate vicinity of the pipeline poses a threat to the structural integrity of the pipeline, or (f) the pipeline, or a portion thereof, sustains a precautionary or emergency shut-down for reasons that relate to or create a hazard to the safe transportation of a commodity.

NOTE: Refer to Figure 2.5 for any additional Province/State written reporting requirements.

FIGURE 2.3

NOTIFICATION DATA SHEET		
Date: _____		Time: _____
INCIDENT DESCRIPTION		
Reporter's Full Name: _____	Position: _____	
Day Phone Number: _____	Evening Phone Number: _____	
Company: _____	Organization Type: _____	
Facility Address: _____	Owner's Address: _____	
Facility Latitude: _____	Facility Longitude: _____	
Spill Location: _____		
(if not at Facility) _____		
Responsible Party's Name: _____	Phone Number: _____	
Responsible Party's Address: _____		
Source and/or cause of discharge: _____		
Nearest City: _____		
County: _____	State: _____	Zip Code: _____
Section: _____	Township: _____	Range: _____
Distance from City: _____	Direction from City: _____	
Container Type: _____	Container Storage Capacity: _____	
Facility Oil Storage Capacity: _____		
Material: _____		
Total Quantity Released	Water Impact (YES or NO)	Quantity into Water
RESPONSE ACTION(S)		
Action(s) taken to Correct, Control, or Mitigate Incident: _____		
Number of Injuries: _____	Number of Deaths: _____	
Evacuation(s): _____	Number Evacuated: _____	
Damage Estimate: _____		
More information about impacted medium: _____		
Possible hazards to human health or the environment outside of the Facility: _____		
CALLER NOTIFICATIONS		
National Response Center (NRC): 1-800-424-8802		Transportation Safety Board: 819-997-7887
Additional Notifications (Circle all applicable): USCG NEP EPA Province		State Other
National Response Center		
Incident Assigned No. _____		
ADDITIONAL INFORMATION		
Any information about the incident not recorded elsewhere in this report including estimated quantity and disposition of recovered material: _____		
NOTE: DO NOT DELAY NOTIFICATION PENDING COLLECTION OF ALL INFORMATION.		

FIGURE 2.4

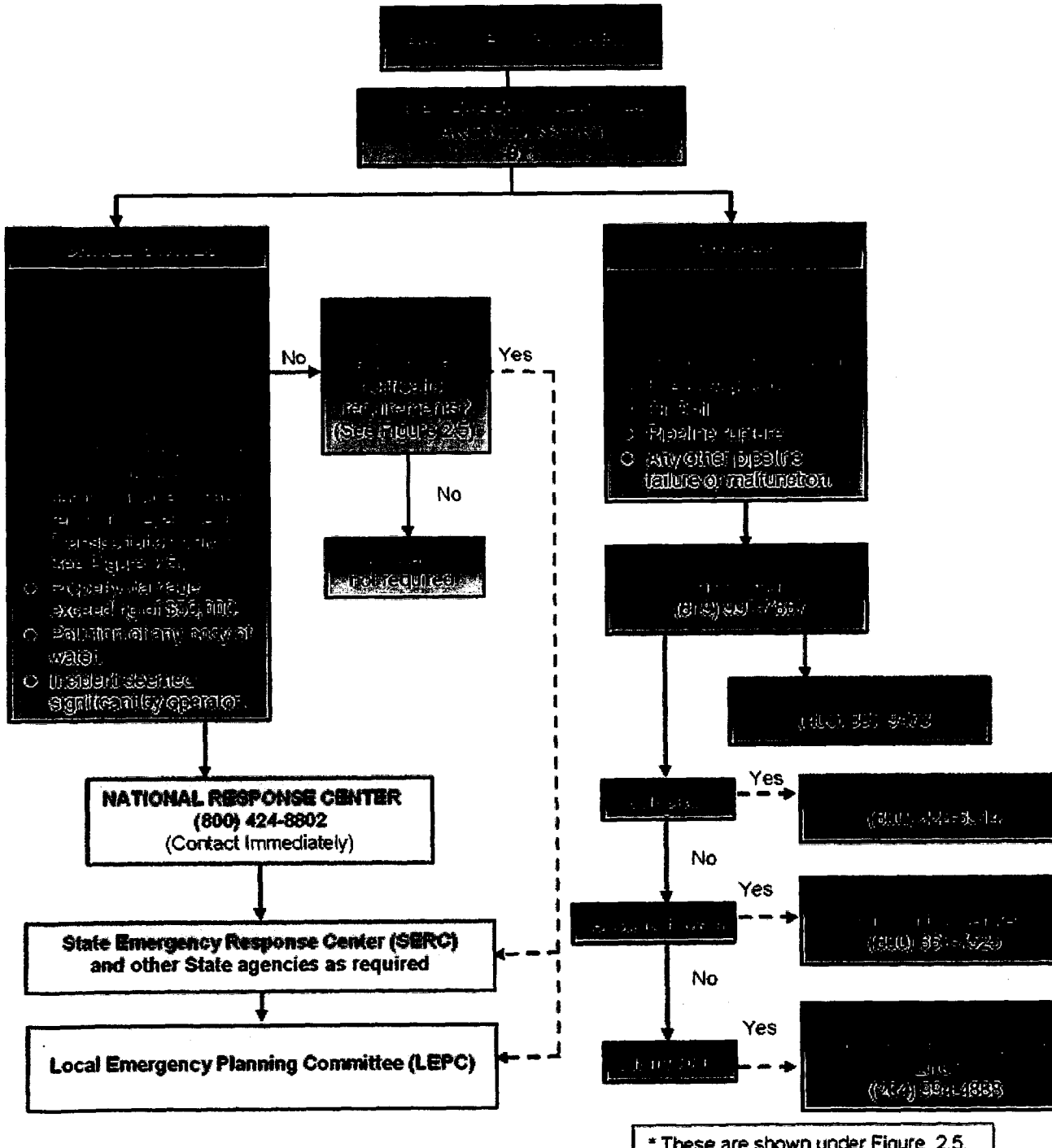


FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES

REQUIRED NOTIFICATIONS

Office of Pipeline Safety and Hazardous Materials (202) 366-4000
 U.S. Department of Transportation
 1200 New Jersey Avenue SE-E-22-321
 Washington, District Of Columbia 20590

REPORTING REQUIREMENTS

TYPE: In addition to the reporting of accidents to the NRC as noted below, a written accident report PHMSA Form 7000-1.

VERBAL: Call to the NRC meets the required verbal notification under DOT reporting requirement.

WRITTEN: Reported on PHMSA Form 7000-1 no later than 30 days, submit a report resulting from explosion/ fire/ hospitalization, death, property damage greater than \$50,000, or above reportable quantity.

NOTE:

National Response Center (NRC) (800) 424-8802
 c/o United States Coast Guard (CG-3RPF-2), 2100 2nd Street (202) 267-2675
 Southwest - Room 2111-BC (800) 337-7455
 Washington, District Of Columbia 20593-0001

REPORTING REQUIREMENTS

TYPE: Any oil discharge that has impacted or threatens to impact navigable waters or release of a hazardous substance in an amount equal to or greater than the reportable quantity (RQ).

VERBAL: Immediately.

WRITTEN: Not required.

NOTE:

Transportation Safety Board (TSB) of Canada (819) 997-7887
 200 Promenade du Portage, Place du Centre, 4th Floor (800) 387-3557
 Gatineau, Quebec K1K 0P8

REPORTING REQUIREMENTS

TYPE: All pipeline accidents with fatality or serious injury, fire or explosion, oil spill, pipeline rupture or any other pipeline failure or malfunction.

VERBAL: Immediately.

WRITTEN: Within 30 days.

NOTE:

Saskatchewan Environment and Resource Management (800) 667-7525
 Box 3003, 800 Central Avenue.
 Prince Albert, Saskatchewan S5V 6G1

REPORTING REQUIREMENTS

TYPE: Any oil spill to water or oil spill greater than or equal to 50 L. to land.

VERBAL: Immediately

WRITTEN: Within 7 days.

NOTE:

Alberta Environment (800) 222-6514
9915 -108 Street 10th Floor, Petroleum Plaza South Tower
Edmonton, Alberta T5K 2G8

REPORTING REQUIREMENTS

TYPE: All spills to water or exceeds a reportable quantity or emission level.
VERBAL: Immediately.
WRITTEN: Within 7 days.
NOTE:

Canadian National Energy Board (CA NEB) (403) 807-9473
444 Seventh Avenue SW (800) 899-1265
Calgary, Alberta T2P 0X8

REPORTING REQUIREMENTS

TYPE: All spills or discharges.
VERBAL: Immediately.
WRITTEN: As requested by the Agency.
NOTE:

Manitoba Conservation Environmental Emergency Line (204) 994-4888
Winnipeg, Manitoba

REPORTING REQUIREMENTS

TYPE: All spills or discharges.
VERBAL: Immediately.
WRITTEN: As requested by the Agency.
NOTE:

North Dakota Dept. of Health-Environmental Health (701) 328-5150
918 East Divide Avenue (701) 328-5210
Bismarck, North Dakota 58501-1947

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

North Dakota Industrial Commission (701) 328-8020
State Capitol, 14th Floor, 600 E. Boulevard Ave., Dept 405
Bismarck, North Dakota 58505-0840

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

South Dakota DENR, Div of Environmental Services (605) 773-3296
523 East Capitol Ave. (605) 773-3231
Pierre, South Dakota 57501-3182

REPORTING REQUIREMENTS

TYPE: Any Spill or discharge greater than reportable quantity.
VERBAL: Immediately.
WRITTEN: Within 30 days.
NOTE:

South Dakota DENR, Division of Oil and Gas (605) 394-2229
South Dakota

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

South Dakota Department of Environment and Natural (605) 773-6035
South Dakota

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

South Dakota Department of Transportation, RR (605) 773-3046
(605) 773-3921

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

South Dakota Department of Transportation, ROW (605) 773-3710
South Dakota (605) 773-4249

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

South Dakota Division of Emergency Management (605) 773-3231
South Dakota

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

South Dakota Public Utilities Commission
South Dakota

(605) 773-3201

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

Environmental Health Section, Div. of Water Quality
North Dakota

(701) 328-5253

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

Nebraska Emergency Management Agency
Lincoln, Nebraska

(402) 471-7176

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

Nebraska Game & Parks Commission
Lincoln, Nebraska

(402) 471-5423

(402) 271-5440

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

City of Fargo
Fargo, North Dakota

(701) 241-1310

REPORTING REQUIREMENTS

TYPE:
VERBAL: Courtesy Reporting
WRITTEN:
NOTE:

Tri-County Water District
North Dakota

(701) 345-8240

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Game & Fish, Conservation and Communication Divisi
North Dakota

(701) 328-6612

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Game, Fish and Parks
South Dakota

(605) 345-3381

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

U.S. Environmental Protection Agency Region 8
999 18th Street Suite 500
Denver, Colorado 80202-246

(303) 312-6312

REPORTING REQUIREMENTS

TYPE: Immediately for spills that impact or threaten navigable water or adjoining shoreline.

VERBAL: Notification to the EPA is typically accomplished by the call to the NRC.

WRITTEN: In accordance with the applicable SPCC regulations, within 60 days for a spill in excess of 1,000 gallons (24 Bbls) in a single event or two spill events within a twelve month period into or upon nav

NOTE: In accordance with the applicable SPCC regulations, within 60 days for a spill in excess of 1,000 gallons (24 Bbls) in a single event or two spill events within a twelve month period into or upon nav

Public Service Commission, Public Utilities Divisi
North Dakota

(701) 328-4077

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Department of Environmental Quality

(402) 471-2186

1200 N Street Suite 400 / PO Box 98922
Lincoln, Nebraska 68509-8922

(402) 471-4545

REPORTING REQUIREMENTS

TYPE: Any Discharge that leaves the Facility or threatens to impact navigable waters.

VERBAL: Immediately, but not longer than 30 minutes.

WRITTEN: As Requested by the Agency

NOTE:

Department of Natural Resources
Nebraska

(402) 494-2363

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

City of South Sioux
Nebraska

(402) 494-7517

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

North Dakota Division of Emergency Management
PO Box 5511
Bismarck, North Dakota 58506-5511

(701) 328-8100

REPORTING REQUIREMENTS

TYPE: Any spill or discharge above RQ.

VERBAL: Immediately.

WRITTEN: Within 30 days.

NOTE:

Environmental Protection Agency - IL Office
Illinois

(217) 524-3908

(217) 785-9250

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

U.S. Environmental Protection Agency Region 5
77 W. Jackson Blvd., 5th Floor
Chicago, Illinois 60604

(312) 353-2318

(312) 353-2000

REPORTING REQUIREMENTS

TYPE: Immediately for spills that impact or threaten navigable water or adjoining shoreline.

VERBAL: Notification to the EPA is typically accomplished by the call to the NRC.
WRITTEN: In accordance with the applicable SPCC regulations, within 60 days for a spill in excess of 1,000 gallons (24 Bbls) in a single event or two spill events within a twelve month period into or upon navi
NOTE: In accordance with the applicable SPCC regulations, within 60 days for a spill in excess of 1,000 gallons (24 Bbls) in a single event or two spill events within a twelve month period into or upon navi

New Madrid County Commission
New Madrid, Missouri

(573) 748-2524

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Nodaway County Commission
Maryville, Missouri

660-582-2251

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

U.S. Army Corps of Engineers, Missouri Office
Missouri

(573) 634-5667

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Taney County
Missouri

(417) 546-7200

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Kansas Dept. of Transportation
Dwight D. Eisenhower State Office Building, 700 S.W.
Harrison Street
Topeka, Kansas 66603-3754

(785) 296-3566

REPORTING REQUIREMENTS

TYPE: All spills or discharges.

VERBAL: Immediately.

WRITTEN: As requested by the Agency.

NOTE:

Vernon County Commission
Missouri

(417) 448-2500

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Missouri U.S. Fish and Wildlife Service
Columbia, Missouri

(573) 234-2132

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Illinois Department of Transportation (IDOT)
2300 S. Dirksen Parkway
Springfield, Illinois 62764

(217) 782-7820

REPORTING REQUIREMENTS

TYPE: All spills or discharges.

VERBAL: Immediately.

WRITTEN: As requested by the Agency.

NOTE: As requested by the Agency.

City of Troy
Troy, Missouri

(636) 528-4712 x.227

(636) 528-7562

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Missouri DNR, Environmental Improvement and Energy
PO Box 176
Jefferson City, Missouri 65102

(573) 751-4919

REPORTING REQUIREMENTS

TYPE: Any Spill or discharge that meets or exceeds the Federal reportable quantity.

VERBAL: Immediately, within 30 minutes

WRITTEN: As requested by Agency.

NOTE:

Hickory County Commission
Missouri

(417) 745-6450

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Illinois Department of Natural Resources (IDNR)
Illinois

(618) 462-1181

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Illinois Emergency Management Agency
110 East Adams
Springfield, Illinois 62701-1109

(800) 782-7860

(217) 782-7860

REPORTING REQUIREMENTS

TYPE: Any Discharge or sighting of oil, or hazardous substances exceeding a reportable quantity.

VERBAL: Immediately.

WRITTEN: As soon as practicable after the release.

NOTE:

Douglas County Commission
Missouri

(417) 683-4714

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

U.S. Corps of Engineers - Illinois
Illinois

(309) 794-5351

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Kansas Department of Health & Environment
Curtis State Office Building 1000 SW Jackson
Topeka, Kansas 66612

(785) 296-1679

REPORTING REQUIREMENTS

TYPE: All Spills that impact soil, surface water or groundwater.

VERBAL: Immediately, within one hour.
WRITTEN: As requested by Agency.
NOTE:

Kansas Dept. of Wildlife and Parks
Kansas

(620) 672-5911
(620) 672-0795

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

DeKalb County PWSD No 1
Missouri

(816) 393-5311

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Pike County Commission
Missouri

573-324-2412

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

McDonald County Commission
Missouri

(417) 223-4717

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

Polk County Commission
Missouri

(417) 326-4031

REPORTING REQUIREMENTS

TYPE:

VERBAL: Courtesy Reporting

WRITTEN:

NOTE:

ADDITIONAL RESPONSE RESOURCES

Planning and Incident Support

COMPANY	LOCATION	TELEPHONE
National Response Corporation	3500 Sunrise Hwy Ste. T103 Great River, New York 11739	(800) 899-4672
ENSR	Fort Collins, Colorado	(800) 722-2440
Western Canadian Spill Services	Calgary, Alberta	(403) 250-9606
Saskatchewan Co-op Area 1 Chairman	Saskatchewan	(780) 573-7350
Saskatchewan Co-op Area 1 Alt. Chairman	Saskatchewan	(306) 387-6449
Saskatchewan Co-op Area 2 Chairman	Box 1132 Kindersley, Saskatchewan S0L 1S0	(306) 968-2503
Saskatchewan Co-op Area 2 Co-Chairman	Box 5 Coleville, Saskatchewan S0L 0K0	(306) 965-2731
Saskatchewan Co-op Area 2 Custodian	Saskatchewan	(306) 834-7898
Saskatchewan Co-op Area 3 Chairperson	Saskatchewan	(306) 773-0234
Saskatchewan Co-op Area 3 Secretary	Saskatchewan	(306) 773-9381
Saskatchewan Co-op Area 3 Custodian	Saskatchewan	(306) 672-3723
Saskatchewan Co-op Area 4&5 Chair	Saskatchewan	(306) 842-1818
Saskatchewan Co-op Area 4&5 Vice-Chair	Saskatchewan	(306) 842-3088
Saskatchewan Co-op Area 6 Call-out	Saskatchewan	(306) 791-5058
O'Brien's Response Management Inc.	Spring, Texas	(281) 320-9796
Alberta Coop Area 2U Custodian	Hardisty, Alberta	(780) 888-3845
Alberta Coop Area 1S Equip. Custodian	Brooks, Alberta	(403) 362-6551
Albert Coop Area 1S Regional Custodian	Lethbridge, Alberta	(403) 329-0427
Euoway Industrial Svc Co. Ltd	Winnipeg, Manitoba	(204) 661-0500

FIGURE 2.6

POSSIBLE COMMAND POST LOCATIONS

TransCanada Command Posts			
Pump Station to Pump Station	Hotel Name	Contact Numbers	Size of conference Room
Hardisty PS/Lakesend PS	Lakeland Inn PO Box 1050 Stn Main Cold Lake, AB T9M 1P3, Canada	(780) 594-3311	Meeting Room accomodates 450 people
Lakesend PS/Monitor PS	La Biche Inn PO Box 321 Lac La Biche, AB T0A 2C0, Canada	(780) 623-4427	Meeting Room accomodates 30 people
Monitor PS/Oyen PS	Super 8 - Provost 3611 57th Avenue Provost, AB T0B 3S0, Canada	(780) 753-2255	Meeting Room accomodates 55 people
	Lucky Lake Hotel Main St Lucky Lake, SK S0L 1Z0, Canada	(306) 858-2008	Meeting Room accomodates 40 people
Oyen PS/Bindloss PS	None Available		
Bindloss PS/Cabri PS	Super 8 Motel Junction of Hwy 9 & 41 Oyen, AB T0J 2J0, Canada	(403) 664-3010	Meeting Room accomodates 65 people
	Swift Current Travelodge 605 North Service Road East Swift Current, SK S9H 3T8, Canada	(306) 773-3101	Meeting Room accomodates 20 people
Cabri PS/Herbert PS	Super 8 Motel 405n Service Rd E Swift Current, SK S9H 0A1, Canada	(306) 778-6088	Meeting Room accomodates 20 people
	Best Western Inn 105 George St W Swift Current, SK S9H 0K4, Canada	(306) 773-4660	Meeting Room accomodates 35 people
Herbert PS/Caron PS	Howard Johnson Inn - Swift Current 1150 South Service Road East Swift Current, SK S9H 3X6, Canada	(306) 773-2033	Meeting Room accomodates 55 people
	Days Inn Hwy 1 E Swift Current, SK S9H 3X6, Canada	(306) 773-4643	Meeting Room accomodates 250 people

TransCanada Command Posts			
Pump Station / Pump Station	Area Name	Contact Numbers	Size of Conference Room
Caron PS/Regina PS	Comfort Inn & Suites 155 Thatcher Drive W. Moose Jaw, SK S6J 1M1, Canada	(306) 692-2100	Meeting Room accomodates 40 people
	Hotel Saskatchewan Radisson Plaza 2125 Victoria Avenue Regina, SK S4P 0S3, Canada	(306) 522-7691	Meeting Room accomodates 100-800 people
Regina PS/Kendal PS	Best Western Seven Oaks Inn 777 Albert St Regina, SK S4R 2P6, Canada	(306) 757-0121	Meeting Room accomodates 150 people
	Holiday Inn Express Hotel & Suites Regina 1907 11th Avenue Regina, SK S4P 0J2, Canada	(877) 863-4780	Meeting Room accomodates 50 people
Kendal PS/Grenfell PS	Holiday Inn Hotel & Suites Regina 1800 Prince Of Wales Drive Regina, SK S4Z 1A4, Canada	(877) 863-4780	Meeting Room accomodates 80 people
	The Prince William Suites Hotel Box 1030 21 Mall Road, Melville, SK S0A 2P0, Canada	(306) 728-4546	Meeting Room accomodates 300 people
Grenfell PS/Moosomin PS	Katepwa Beach Resort Hotel Lebreton SK S0G 2Y0 Canada	(306) 332-4696	Meeting Room accomodates 30 people
	Whitewood Inn Hwy 1 & 9 Whitewood, SK S0G 5C0, Canada	(306) 735-2651	Meeting Room accomodates 250 people
Moosomin PS/Rapid City PS	The Russell Inn Hwy 16 & 83 MB R0J 1W0, Canada	(204) 773-2186	Meeting Room accomodates 150 people
	Royal Oak Inn & Suites Brandon 3130 Victoria Avenue Brandon, MB R7B 0N2, Canada	(204) 728-5775	Meeting Room accomodates 50 people

TransCanada Command Posts			
Pump Station / Pump Station	Site Name	Contact Numbers	Size of Conference Room
Rapid PS/Portage La Prairie PS	Canadian Inn 150 5th Street Brandon, MB R7A 3K4, Canada	(204) 727-6404	Meeting Room accomodates 200 people
	Super 8 Portage La Prairie MB Saskatchewan Avenue West Portage la Prairie, MB R1N, Canada	(204) 857-8883	Meeting Room accomodates 20 people
La Prairie PS/XCarman PS	Days Inn Highway 1 Quill Trail Portage la Prairie, MB R1N 3C3, Canada	(204) 857-9791	Meeting Room accomodates 50 people
	Days Inn & Suites-Winkler 395 Boundary Trail Winkler, MB R6W 4B1, Canada	(204) 325-8888	Meeting Room accomodates 40 people
Carman PS/Haskett PS	Super 8 Motel 400 Main St S MB R0G 1K0, Canada	(204) 746-6879	Meeting Room accomodates 30 people
	Heartland Inn 851 Main St Winkler, MB R6W 2L8, Canada	(204) 325-4381	Meeting Room accomodates 300 people
Haskett PS/Edinburg PS	Holiday Mountain Ski Resort & Golf Course Holiday Mountain La Riviere, MB R0G 1A0, Canada	(204) 242-2172	Meeting Room accomodates 70 people
	Cedar Inn Steak House & Motel 502 Division Ave S Cavalier, ND 58220	(701) 265-8341	Meeting Room accomodates 50 people
Edinburg PS/Niagara PS	Forestwood Inn 504 Sunset Ave Walhalla, ND 58282	(701) 549-2651	Meeting Room accomodates 30 people
	Holiday Inn Grand Forks 1210 N. 43rd St. Grand Forks, ND 58203	(877) 863-4780	Meeting Room accomodates 100 people
Niagara PS/Luverne PS	Holiday Inn Express Hotel & Suites Grand Forks 4051 32nd Ave South Grand Forks, ND 58201	(877) 863-4780	Meeting Room accomodates 30 people
	Quality Inn & Suites 507 25th St SW Jamestown, ND 58401	(701) 252-3611	Meeting Room accomodates 325 people

TransCanada Command Posts			
Pair Station to Pair Station	Fire Name	Contact Numbers	Size of Conference Room
Luverne PS/Fort Ransom PS	Governors Inn & Conference Center 2050 Governors Dr Cassellton, ND 58012	(701) 347-4524	Meeting Room accomodates 450 people
	Americ Inn 280 Wintershow Rd SW Valley City, ND 58072	(701) 845-5551	Meeting Room accomodates 60 people
Fort Ransom PS/Ludden PS	Holiday Inn Express Jamestown 803 20th St. S.W. Jamestown, ND 58401	(701) 251-2131	Meeting Room accomodates 25 people
	Ramada Aberdeen 2727 6th Avenue Se Aberdeen, SD 57401	(605) 225-3600	Meeting Room accomodates 25 people
Ludden PS/Ferney PS	Best Western-Ramkota Hotel 1400 8th Ave NW Aberdeen, SD 57401-2602	(605) 229-4040	Meeting Room accomodates 150 people
	Ramada 2727 6th Ave SE Aberdeen, SD 57401 US	605-225-3600	Meeting Room accomodates 400 people
Ferney PS/Carpenter PS	Holiday Inn Express Hotel & Suites Aberdeen 1330 1399 7th Ave SE Aberdeen, SD 57401	(877) 863-4780	Meeting Room accomodates 100 people
	Country Inn Suites Watertown Reviews 100 S Maple Watertown, SD 57201	(605) 886-8900	Meeting Room accomodates 70 people
Carpenter PS/Roswell PS	Best Western Of Huron 2000 Dakota Ave S Huron, SD 57350-4027	(605) 352-2000	Meeting Room accomodates 50 people
	Super Deluxe Inn & Suites 288 US Highway 14 W De Smet, SD 57231	(605) 854-9388	Meeting Room accomodates 100 people
Roswell PS/Freeman PS	Days Inn Mitchell 1506 South Burr St. Mitchell, SD 57301	(605) 996-6208	Meeting Room accomodates 50 people
	Best Western Ramkota Hotel Sioux Falls 3200 West Maple Street Sioux Falls, SD 57107	(605) 336-0650	Meeting Room accomodates 700-1500 people
Freeman PS/Hartington PS	Cameron Inn 131 E Main St Canistota, SD 57012	(605) 296-3555	Meeting Room accomodates 25 people
	Best Western Kelly Inn 1607 East Highway 50 Route Yankton, SD 57078	(605) 665-2906	Meeting Room accomodates 125 people

TransCanada Command Posts			
Pump Station/PS	Pump Station	Contact Numbers	Size of Conference Room
Hartington PS/Stanton PS	Holiday Inn Express Hotel & Suites Vermillion 1200 N. Dakota St. Vermillion, SD 57069	(877) 863-4780	Meeting Room accomodates 100 people
	Holiday Inn Express Hotel & Suites Norfolk 920 South 20th Street Norfolk, NE 68701	(877) 863-4780	Meeting Room accomodates 200 people
Stanton PS/David City PS	New World Inn & Conference Center 265 33rd Ave Columbus, NE 68601	(402) 564-1492	Meeting Room accomodates 1000 people
	Holiday Inn Express Hotel & Suites Columbus 524 E 23rd St Columbus, NE 68601	(877) 863-4780	Meeting Room accomodates 200 people
David City PS/Wilber PS	Sleep Inn & Suites 303 23rd St Columbus, NE 68601	(402) 562-5200	Meeting Room accomodates 35 people
	Holiday Inn Lincoln-Downtown 141 N. 9th St Lincoln, NE 68508	(877) 863-4780	Meeting Room accomodates 500-1000 people
Wilbur PS/Steele City PS	Embassy Suites Hotel Lincoln 1040 P Street Lincoln, NE 68508	(402) 474-1111	Meeting Room accomodates 500-1000 people
	Hotel Wilber 203 S Wilson St Wilber, NE 68465	(402) 821-2020	Meeting Room accomodates 30 people
Steele City (to State Line)	Travelers Lodge 3500 North 6th Street Beatrice, NE 68310	(402) 223-4074	Meeting Room accomodates 30 people
	Holiday Inn Express Hotel & Suites Beatrice 4005 N 6th Street Beatrice, NE 68310	(402) 228-7000	Meeting Room accomodates 350 people
State Line to Seneca	Hiawatha Lodge 101 Lodge Rd Hiawatha, KS 66434	(785) 742-7401	Meeting Room accomodates 50 people
	Oak Tree Inn 1127 Pony Express Hwy # A Marysville, KS 66508	(785) 562-1234	Meeting Room accomodates 40 people
Seneca PS/Severance PS	Marysville Surf Motel 2105 Center Street Marysville, KS 66508	(785) 562-2354	Meeting Room accomodates 30 people
	Big Lake Resort Big Lake State Park 200 Lake Shore Drive, Big Lake, MO 64437-4477	(660) 442-5432	Meeting Room accomodates 35, Can use dinning hall which adds an additional 100 people

TransCanada Command Posts			
Pump Station to Pump Station	Site Name	Contact Numbers	Size and Conference Room
Severance PS/Turney PS	Days Inn St. Joseph Frederick Ave. 4312 Frederick Ave. Saint Joseph, MO 64506	(816) 279-1671	Meeting Room accomodates 40 people
	Crowne Plaza Hotel Kansas City Downtown 1301 Wyandotte St. Kansas City, MO 64105	(888) 444-0401	Meeting Room accomodates 200-250 people
Turney PS/Tina PS	Radisson Hotel Kansas City Airport 11828 NW Plaza Cir Kansas City, MO 64153	(816) 464-2423	Meeting Rooms accomodates 200 people
	Comfort Inn 1803 Comfort Lane Cameron, MO 64429	(816) 632-5655	Meeting Room accomodates 30 people
Tina PS/Salisbury PS	Comfort Inn Marshall Station 1356 W. College Ave. Marshall, MO 65340	(660) 886-8080	Meeting Room accomodates 25 people
	Holiday Inn Express Hotel & Suites 1801 West Outer Road Moberly, MO 65270	(877) 863-4780	Meeting Room accomodates 30 people
Salisbury PS/Centralia PS	Holiday Inn Express 1801 West Outer Road Moberly, MO 65270		Meeting Room accomodates 30 people
	Country Inns & Suites 817 N Keene St Columbia, MO 65201	(573) 445-8585	Meeting Room accomodates 50 people
Centralia PS/Middletown PS	Holiday Inn Wentzville -O'Fallon 900 Corporate Parkway Wentzville, MO 63385	636 327-7001	5 Meeting Rooms Accommodates 10-250 people
	Days Inn Conference Center Columbia 1900 I-70 Drive SW I-70 & Stadium Blvd Columbia, MO, 65203 US	Phone: 573-445-8511 Fax: 573-445-7991	Accommodates 400 people
Middletown PS/Saint Paul PS	Comfort Inn 425 E. Veterans Memorial Pkw Warrenton, MO, US, 63383	(636) 456-6000 Fax: (636) 456- 3603	Meeting Room accomodates 25 people
	Comfort Inn & Suites - O'Fallon/St Charles 100 Comfort Inn Court O'Fallon, MO 63366	Tel: (636) 696- 8000/ Fax: (636) 696-8001	Meeting Romm acomodates 35 people

TransCanada Command Posts			
Pump Station to Pump Station	Hotel Name	Contact Numbers	Size of Conference Room
Saint Paul PS/Hartford PS	Holiday Inn Express St. Louis Airport - Riverport 13735 Riverport Drive St. Louis, MO 63043		Meeting 120 Classroom Style
	Best Western Airport Plaza Inn & Conf. Center 4530 N. Lindbergh Blvd. Bridgeton, MO 63044	314-731-3800	Accommodates 300 people
Hartford PS/Pierron PS	Mariners Village Resort 1 Resort Dr, Carlyle, IL	618-594-7666	
	Holiday Inn Express HIGHLAND 20 CENTRAL BLVD HIGHLAND, IL 62249		
Pierron PS/Patoka Terminal	Holiday Inn Express Hotel & Suites VANDALIA 21 MATTES AVENUE VANDALIA, IL 62471	877 410 6681 618- 283-0010 Phone 618-2830011 Fax	Meeting room
	Ramada Vandalia 2707 Veterans Ave. Vandalia, IL, 62471	618-283-1400 Phone 618-283- 1922 Fax	Meeting room (30 people)

3.0 RESPONSE ACTIONS

3.1 Initial Response Actions

Figure 3.1 Spill Classification

Initial Response

Line Break Or Leak

Fire

Severe Thunderstorm/Flash Flooding/Landslide

Tornadoes

Earthquake

Winter Storm

Volcanic Eruptions

Bomb Threat

3.2 Documentation of initial Response Actions

3.3 Oil Containment, Recovery and Disposal/Waste Management

Figure 3.2 Product Specific Response Considerations

3.4 Storage/Disposal

3.5 Sampling and Waste Analysis Procedures

3.6 Safety Awareness

3.7 Emergency Medical Treatment and First Aid

3.1 INITIAL RESPONSE ACTIONS

Initial response actions are those taken by local personnel immediately upon becoming aware of a discharge or emergency incident, before the Initial Response Team (described in Section 4.0) is formed and functioning. Timely implementation of these initial steps is of the utmost importance because they can greatly affect the overall response operation.

The pages that follow discuss initial response actions for a variety of emergencies that have the possibility of occurring. These emergencies are discussed in the order listed below:

- Initial Response
- Line Break or Leak
- Fire
- Severe Thunderstorm/Flash Flooding/Landslide
- Tornadoes
- Earthquake
- Winter Storm
- Volcanic Eruptions
- Bomb Threat
- Release to Ground Water
- Abnormal Operations

It is important to note that **these actions are intended only as guidelines**. The appropriate response to a particular incident may vary depending on the nature and severity of the incident and on other factors that are not readily addressed. Note, that **without exception, employees and public safety is first priority**.

The first Company person on scene will function as the Incident Commander (IC) until relieved by an authorized supervisor who will assume the IC position. Transfer of command will take place as more senior management respond to the incident. The role of IC will typically be assumed and retained by area management.

The person functioning as **Incident Commander** during the initial response period **has the authority to take the steps necessary to control the situation and must not be constrained by these general guidelines**.

INITIAL RESPONSE ACTIONS - SUMMARY
PERSONNEL AND PUBLIC SAFETY IS FIRST PRIORITY**RESPONSE TIMES***

US DOT Tier	1	2	3
High Volume Area	6 HR	30 HR	54 HR
All Other Areas	12 HR	36 HR	60 HR

CONTROL

- Eliminate sources of ignition
- Isolate the source of the discharge, minimize further flow

NOTIFY

- Make internal and external notifications
- Activate local Company personnel as necessary
- Activate response contractors and other external resources as necessary

CONTAIN

- Begin spill mitigation and response activities
- Monitor and control the containment and clean-up effort
- Protect the public and environmental sensitive areas

* Response resources and personnel available to respond within time specified after discovery of a worst case discharge per US DOT 49 CFR Part 194.115

In addition to the potential emergency events outlined in this Section, the Company has identified several "abnormal operations" that could be expected in the pipeline facilities. The Company has defined the events and established procedures to identify, eliminate or mitigate the threat of a worst case discharge due to these events. In compliance with 49 CFR 195.402(d), these procedures are defined in the Company's Operations Manual.

FIRST COMPANY PERSON NOTIFIED / ON SCENE

- Verify emergency exists.
- Follow the appropriate "***Specific Incident Response Checklist***" in Figure 3.1 and "***Product Specific Response Considerations***" in Figure 3.2.
- Notify the Keystone Console of the incident.
- Contact / Utilize local emergency services as necessary (police, fire, medical).

REGIONAL EMERGENCY OPERATION CENTER

- Ensure local emergency agencies have been contacted (police, fire, medical).
- Assign personnel immediately to the discharge site to assist with emergency response (QI) and spill containment.
- Activate additional company and response contractors to site as situation demands.
- Confirm safety aspects at site, including need for personal protective equipment, sources of ignition, and potential need for evacuation.
- Evaluate the severity, potential impact, safety concerns and response requirements based on the initial data provided by the first person on scene. Refer to the spill response evaluation Flowchart in this section.
- Perform notifications using Figure 2.1 as appropriate.

AREA MANAGEMENT - EMERGENCY SITE MANAGEMENT

- Proceed to spill site and coordinate response and clean-up operations.
- Assume the role of Incident Commander.
- Coordinate/perform activation of additional spill response contractors, as the situation demands (telephone reference is provided in Figure 2.5).
- Direct containment, dispersion, and/or clean-up operations in accordance with the "***Product Specific Response Considerations***" provided in Figure 3.2.
- Complete the "***Product Release Report***" provided in Appendix F.

LOCAL COMPANY PERSONNEL

- Assigned personnel will immediately respond to a discharge from the Pipeline or Facility, as the situation demands.
- Assist as directed at the spill site.

FIGURE 3.1

SPILL CLASSIFICATION**Spills/Releases to Environment:****Minor**

- A spill/release, onsite, that poses no adverse affect to the environment nor impact neither to a water body nor to groundwater. The spill may or may not be reportable to a regulatory agency.

Serious

- A spill/release, onsite or off-site/off-right-of-way, that poses an adverse affect to the environment but no impact to a water body nor to groundwater.

Major

- A spill/release, onsite or off-site/off ROW, that poses an adverse affect to the environment including an impact to a water body or to groundwater.

Critical

- Emergency response for containment or clean up is required. A spill/release, onsite or off-site/off ROW, that poses an adverse affect to teh environment including an impact to a water body or to groundwater.

Complaints - Health & Safety:**Minor**

- Unverified community complaint from a Landowner, Police, Fire, Municipality, or a Ministry.
- Verified employee complaint where an investigation is required to obtain resolution.

Serious

- Verified community complaint likely to cause danger/risk to the public, employees or TransCanada facilities.

Major

- Employee work refusal based on belief of unhealthy or unsafe work conditions.

Critical

- Regulatory body notified of employee complaint (by employee) and investigates employee work refusal.

SPECIFIC INCIDENT RESPONSE CHECKLIST

INITIAL RESPONSE

- Take appropriate personal protective measures.
- Secure site.
- Call for medical assistance if an injury has occurred.
- Notify Keystone Console and area management of the incident.
- Eliminate possible sources of ignition in the near vicinity of the spill.
- Take necessary fire response actions.
- Advise personnel or public in the area of any potential threat and/or initiate evacuation procedures.
- Identify/isolate the source and minimize the loss of product.
- Restrict access to the spill site and adjacent area as the situation demands. Take additional steps necessary to minimize any threat to health and safety.
- Verify the type of product and quantity released. (Material Safety Data Sheet(s) are provided in Appendix G).

All personnel are reminded that outsiders other than emergency services will not be allowed in the area during the time of an emergency and that statements issued to the media or other interested parties should be given by designated Company Management. Be courteous with media representatives and direct them to the designated spokesperson.

LINE BREAK OR LEAK, SPECIFIC RESPONSE (Including Piping Rupture/ Leak Valve Rupture/Leak and Manifold Failure)

- Shut down Pipeline.
- Close upstream and downstream block valves.
- Mitigate spreading of the product, as the situation demands. See Release to Groundwater, Specific Response for more detailed information. Potential containment land-based strategies include:
 - Earthen dike/berm
 - Ditching
 - Spreading sorbent material over the spill
- Prevent the spill from entering the waterways, sewer, etc. to the greatest extent possible.
- Determine the direction and expected duration of spill movement. Refer to the maps in Section 6.0.
- Review the location of socio-economic and environmentally sensitive areas identified in Section 6.0 and the Area Contingency Plan (ACP). Determine which of these may be threatened by the spill and direct the response operation to these locations. Initiate protection and recovery actions.
- Response contractor under TransCanada direction utilizes Combustible Gas Indicator, Oxygen meter, proper colormetric indicator tubes and/or other air sampling measurements to assure that areas are safe to enter for continued response operations. Refer to Vapor Cloud Specific Response, later in this Figure, if flammable vapors are detected.
- Drain the line section, as the situation demands.
- Inform local operators of utilities such as the power company, telephone company, railway.
- Clean up spilled product to eliminate any possible environmental problems. Be alert for underground cables.
- Make all necessary repairs.
- Return the line to service when repairs are complete, if or when approved.
- Complete follow-up and written reporting, as the situation demands.

FIRES (MINOR, MAJOR, EXPLOSION) SPECIFIC RESPONSE

Be aware of Fire Weather conditions.

- Watch - Critical fire weather conditions are forecast to occur.
- Red Flag Warning - Critical Fire weather conditions are either occurring or will shortly.

INDIVIDUAL DISCOVERING THE FIRE - (All Employees)

Call the Local Emergency Response Agency (911).

Note: Pipeline right-of-ways are used by Firefighters as a fire break (barrier) to isolate fires and prevent them from growing in size. Right-of-ways are commonly used to access to fire areas. Many times Firefighters will need to increase the size of the cleared space over the Pipeline right-of-way to prevent the fire from leaping from tree top to tree top. To do this, heavy equipment may be used to quickly increase the amount of cleared space between the fire area and unignited forest. The following are steps to consider when working with the local authority on creating these fire breaks.

- Use your best judgment to ensure the safety of staff, fire ground workers and the public when determining if this activity is safe to perform;
- Call and confirm with Asset Reliability if this activity is safe and implement any instructions provided by Asset Reliability. Asset Reliability's role is to provide directions to protect the health and safety of those involved as well as pipeline integrity;
- Be physically on site to coordinate the activities related to any pipeline crossings;
- Stake the pipeline to identify the location of the pipe(s) in the right-of-way.
- First preference is to use already existing pipeline crossing areas;
- Gather the appropriate information to complete a formal pipeline crossing agreement. In Canada, send required information to the Land Department in Calgary.
- Notify Keystone Console and area management.
- Shut off pumps.
- Coordinate with the Keystone Console to close appropriate valves to isolate fire, if necessary.
- Isolate Pump Station from Mainline.
- Evacuate site as safety considerations dictates.
- Notify Keystone Console of evacuation route and final destination.
- Notify Keystone Console of safe arrival.
- Inspect pump station, equipment and controls after the fire is extinguished and safe to return.
- Evaluate pipeline, monitoring or control systems for evidence of heat damage.
- Notify engineering to conduct further investigation if damage is found.
- Make appropriate repairs and return Pipeline to service.

SEVERE THUNDERSTORM (Flash Flooding/Landslide) SPECIFIC RESPONSE

Thunderstorms are a year round occurrence with lightning a major threat. The potential of flash flooding is also possible when one area is affected for an extended period.

- Be aware of changing weather conditions.
 - Severe Thunderstorm Watch - Conditions are favorable to the development of thunderstorms.
 - Severe Thunderstorm Warning - A severe thunderstorm has been observed or is imminent.
 - Flash Flood Watch- Flash flooding is possible within 6 hours after heavy rains have ended.
 - Flash Flood Warning - Flash flooding is occurring or imminent.
- Terminate outdoor work when lightning is occurring and move to shelter.
- Avoid areas subject to sudden flooding until the thunderstorm passes.
- Evaluate the situation after weather event.
 - Does standing water prevent visual inspection?
 - Have flood waters damaged the Pipeline?
 - Have flood waters exposed buried piping?
 - Has soil shifted that could lead to a landslide?
- Initiate appropriate pipeline patrol by the most expedient means possible to determine extent of damage.
- Make all necessary repairs.

TORNADO/STRAIGHT LINE WINDS SPECIFIC RESPONSE

Although many disasters cannot be prevented or predicted, preparation can significantly reduce losses. In the event of a severe weather condition or a natural disaster, the Area Manager or assigned designee will be the Emergency Coordinator.

- **Be Aware of Changing Weather Conditions**

- Tornado watch - Conditions are right for the formation of a tornado.
- Tornado warning - A tornado has been sighted but is not in the area at this time.
- Tornado alert - A tornado has been sighted in the immediate area, take cover immediately.

- **If Severe Weather Conditions Threaten**

- Carry a battery operated portable radio and monitor conditions.
- If a tornado is observed and time permits, evacuate the area.
- If the tornado is approaching a pump station, notify the Keystone Console to remotely isolate the station.
- In vehicle, drive away from tornado at right angle. Get out of car and seek shelter if tornado cannot be avoided.
- If outdoors, shelter in ditch, excavation or other low spot and lie flat, face down.
- Make certain that all personnel are aware of the condition.
- Stay in shelter until conditions are safe.

- **Immediately After the Storm**

- Account for all personnel.
- Survey for damages.
- Initiate team for any repairs.
- Refer to this Plan for additional response guidance regarding fires, spills, etc., as needed.

EARTHQUAKE SPECIFIC RESPONSE

The actual movement of the ground in an earthquake is rarely the direct cause of death or injury. Most casualties result from falling objects and debris because the shocks can shake, damage or demolish buildings and other structures.

- **Stay calm. Don't panic.**
- If you are indoors, stay there. Do not run outside.
- If you are in a building, take cover under a heavy furniture or stand in an inside doorway away from windows. (A door frame or the inner core of a building is its strongest point and least likely to collapse.)
- Exit building as situation determines.
- If you are outside, stay there. Move away from buildings to avoid falling debris. Avoid damaged utility lines.
- If you are driving, stop quickly and stay in your car. If possible, do not stop on a bridge, overpass or where buildings can fall on you. Your car can provide protection from falling debris.
- Do not reenter damaged buildings. Walls may collapse after the original shaking has ceased.
- Evaluate the situation and initiate appropriate pipeline patrol by the most expedient means possible to determine extent of damage.
- Make all necessary repairs as resources and conditions allow.

SEVERE WINTER STORM SPECIFIC RESPONSE

- Be aware of Changing Weather Conditions
 - Winter Storm Watch - Conditions are expected but not imminent.
 - Winter Storm Warning - A significant winter storm is occurring, imminent, or likely.
 - Blizzard Warning - Winds at least 35 mph, blowing snow frequently reducing visibility to 0.25 miles or less, and dangerous wind chills are expected.
- Listen to local radio stations for weather advisory and road condition reports, carry a survival kit, and start the trip with a full tank of gasoline.
- Inspect pump station, equipment, and controls after storm for damage.
- Make any repairs as necessary.

VOLCANIC ERUPTIONS SPECIFIC RESPONSE

If a volcanic eruption ejects a large ash plume and the wind carries the ash to the pipeline facilities, this may cause a disruption of operations by making travel difficult or impossible due to reduced visibility.

- Begin gathering information from news media, field personnel, etc. to assess any ash cloud size, location, heading and speed as soon as news of an eruption breaks.
- Consider recalling crews prior to the expected arrival of the ash cloud while it is still clear to travel. If a crew is at a station when an ash fall begins, they should probably stay there for the duration and not travel until it is determined to be safe after the event.
- Advise contract aerial patrol service of the situation if contacted for the beginning of a pipeline patrol or if an aerial patrol is in progress.
- Inspect pump station, equipment and controls after eruption for damage.
- Make any repairs as necessary.

BOMB THREATS SPECIFIC RESPONSE

The following pages provide guidelines for actions to be taken in the event a bomb threat is received. A bomb threat to the pipeline system or personnel may present itself in any of several ways:

- Phone
- E-mail
- Fax
- Radio
- Mail
- Word-of-mouth
- Increase in the Homeland Defense Status

Other threats to pipeline system or personnel are often treated in the same manner as bomb threats. These may include:

- Terrorist threats
- Workplace violence threats
- General threat to an industry
- Civil disturbances

The following steps should be used as guidance when responding to the above situations. Actions during a real event will vary based on differences in circumstances, response activities, good judgment, etc.

PHONE / WRITTEN (Fax, Letter, Telegram) THREATS

Person Receiving the Call

- Immediately open the Bomb Threat form, (this should be kept next to the phone), so you can use it during the conversation with the individual making the bomb threat call. If possible, complete the form during the call.
- Remain calm and be engaging when talking to the caller.
- Keep the caller on the line as long as possible in order to obtain as much information as possible. Ask him/her to repeat the message. Try to write down every word spoken by the person. If you have a small hand-held tape recorder available, try to tape the conversation.
- If the caller does not indicate the location of the bomb or the time of detonation/attack, ask for this information.
- Inform the caller that the incident could result in death or serious injury to innocent people.
- Pay particular attention to background noises, such as motors, music, and any other noise that may give a clue as to the location of the caller.
- Listen closely to the voice (male, female), voice quality (calm, excited), accents, and speech impediments.

AFTER THE CALLER HANGS UP AND WRITTEN THREATS

- Immediately report the threat call to the Keystone Console or the Company person designated by

management to receive such information.

Pipelines and Pump Stations - Additional Guidance

- If the caller does not indicate the location of the bomb / substance or the time of possible detonation/attack, ask him / her for this information. Try to determine the Province / State, pipeline system, and specific location involved if possible.
- For offices and control center, inform the caller that the building/facility is occupied and the incident could result in death or serious injury to innocent people.
- For pipeline and pump stations, inform the caller that an incident could result in death of the innocent general public or significant environmental impact.

Area Manager/Designee

- Based upon discussion with Corporate Security, determine if the threat is credible. Then decide what actions to take, which can include:
 - Do Nothing
 - Attempt to determine which facility(s) are at risk
 - Stay and Search
 - Partial Evacuation or Internal Evacuation (offices or control center)
 - External Evacuation to an offsite Command Post (offices or control center)
- If a full or partial facility evacuation is necessary, activate Building Evacuation Plan immediately. When in doubt, evacuate. Encourage personnel to be vigilant for suspicious or out-of-place objects as they evacuate and leave their workstations.
- Initiate operations "shut down" procedures, as necessary.
- Secure the location and limit access to essential personnel only.
- Call the appropriate local and/or government agencies (fire, police, etc.) listed in Figure 2.5 and inform them of the threat and your Command Post location.
- Set up a Command Post at a pre-determined offsite location. Ensure you have:
 - Emergency Response Plan
 - Facility maps
 - Access keys
 - Cell Phones, Pagers & Radios
- Direct all members of the press to the designated spokesperson.

PIPELINES AND PUMP STATIONS SEARCH GUIDELINES

- Additional actions to consider taking upon credible threats against pipelines and pump stations:
 - Which if any system(s) should be shutdown
 - When any system(s) should be shutdown
- Survey from a distance with the aid of binoculars:
 - valves

- station piping
- Due to the expanse of Pipeline facilities, aircraft should be considered to aid in the surveying pipeline ROW.
- Notify the appropriate local and/or government agencies listed in Figure 2.5 upon discovery of suspicious or out-of-place object(s).

SUSPICIOUS MAIL / DELIVERED PACKAGES

- Frequently seen explosive devices have been incorporated, hidden, or camouflaged in letters, soft cover pocketbooks, hard cover books, manila envelopes, and cardboard boxes. While many are delivered by Canadian or U.S. mail, they may arrive by private courier or express service. Be alert to recognize suspicious-looking or unexpected items especially those that have:
 - Special handling marks (special delivery, air mail, registered, certified)
 - Restrictive markings (personal, confidential, addressee only)
 - Excessive postage
 - Handwritten or poorly typed address
 - Incorrect title, or title but no names
 - Misspelling of common words
 - Oily stains, discolorations, or odor
 - No return address
 - Excessive weight
 - Lopsided, uneven, or ridged envelope
 - Protruding wires or tin foil
 - Excessive securing material (tape, string, etc.)
 - Any evidence that the envelope has been opened and re-glued
 - Mail item from a new or strange source
- If you receive or find a suspicious-looking letter or package:
 - **DO NOT TRY TO OPEN IT.**
 - Isolate the area around the letter or package to the degree possible, and make emergency notifications as previously outlined, and evacuate personnel to a safe distance, as directed.
 - **DO NOT MOVE NOR HANDLE** unless absolutely necessary.
 - If opened, preserve, **BUT DO NOT TOUCH FURTHER** all original envelopes, twine, shipping documents, or packaging materials for evidence and release to the police as requested.
 - Report the call to the Regional Manager or their designee.

RELEASE TO GROUNDWATER SPECIFIED RESPONSE

- Evaluate the topography and evidence of surface contamination.
- Notify local public that may be impacted by potential groundwater contamination.
- Immediately retain an independent consultant with expertise in this area to evaluate impacts and remediation options.
- Procure appropriate equipment based on local geology and resources available.
- Dig intercept trench down gradient to release point.
- Line trench and stage vacuum truck to remove contaminated oil/water mixture.
- Excavate surface catchment up gradient to the intercept trench and near leading edge of visible contamination.
- Excavate until contaminated soil is completely removed and clean soil is encountered or conditions prohibit continued digging.
- Line the catchment to limit or prohibit further groundwater contamination.
- Move vacuum truck from intercept trench to catchment to recover oil and/or oily water.
- Line drop down area to stage contaminated soil as excavated.
- Segregate waste streams to minimize later disposal.
- Based on anticipated release, stage temporary storage and additional vacuum trucks to ensure recovery efforts continue without interruption.
- Begin in-situ treatment of subsoil.

Options for Long term Remediation

- Air sparging - inject air into contaminated soil/groundwater and use extraction pumps to remove contamination.
- Vacuum extraction - using suction pumps extract oil and contaminated groundwater for further treatment.
- Conventional pump and treat
- Bioslurping
- Excavation
- Enhanced biodegradation/bioremediation
- Chemical addition/oxidation

- Enlist additional experts, as appropriate, for continuing remediation.

ABNORMAL OPERATIONS SPECIFIC RESPONSE

- If operating design limits have been exceeded (increase or decrease pressure or flow) and no emergency condition exists, stop operations and immediately investigate the pipeline.
- Verify whether a true safety problem, equipment malfunction, or operator error is present. **Note: In all cases, safety to operations, the general public, and property will govern actions taken.**
- Make appropriate repairs before continuing operations. **Note: Corrective action will only be done by qualified personnel to perform the type of work involved.**
- Monitor affected systems until normal operations are resumed.
- Complete follow-up and written reporting, as the situation demands.

Note: It is the responsibility of the pipeline operator to carry out the response procedures abnormal pipeline operations as outlined in their respective Operations and Maintenance Manual.

3.2 DOCUMENTATION OF INITIAL RESPONSE ACTIONS

It is difficult, particularly during the first few minutes of an initial response operation, to think about the importance of documentation. A log should be maintained which documents the history of the events and communications that occur during the response. When recording this information, it is important to remember that the log may become instrumental in legal proceedings, therefore:

- Record only facts, do not speculate.
- Do not criticize the efforts and/or methods of other people/operations.
- Do not speculate on the cause of the spill.
- Do not skip lines between entries or make erasures. If an error is made, draw a line through it, add the correct entry above or below it, and initial the change.
- Record the recommendations, instructions, and actions taken by government/regulatory officials.
- Document conversations (telephone or in person) with government/regulatory officials.
- Request that government/regulatory officials document and sign their recommendations or orders (especially if company personnel do not agree with the suggestions, instructions, or actions).

3.3 OIL CONTAINMENT, RECOVERY AND DISPOSAL/WASTE MANAGEMENT

After initial response has been taken to stop further spillage and notifications made to the required agencies, the Company will begin spill containment, recovery, and disposal operations.

The Incident Commander will assess the size and hazards of the spill(see Figure 3.2). The type of product, the location of the spill, and the predicted movement of the spill will be considered.

Based on this assessment, additional clean-up personnel and equipment will be dispatched to the site and deployed to control and contain the spill. Boom may be deployed in waterways to contain the spill and to protect socio-economic and environmentally sensitive areas. Booms may also be used in waterways to deflect or guide the spill to locations where it can more effectively be cleaned up using skimmers, vacuum trucks, or sorbent material. Clean-up equipment and material will be used in the manner most effective for rapid and complete clean-up of all spilled product.

Response and clean-up will continue until all recoverable product is removed, the environment is returned to its pre-spill state, and the Unified Command of the Company Incident Commander and the Federal and/or State On-Scene Coordinators determine that further response and cleanup is no longer necessary.

FIGURE 3.2

FLAMMABLE LIQUIDS (Non-Polar/Water-Immiscible)	
The following information is intended to provide the initial responder(s) with data that may be useful in making quick decisions and executing prompt response actions. The information is intended for guideline purposes only.	
PRODUCTS: Crude Oil	
HAZARD IDENTIFICATION / RECOGNITION	
GUIDE NO. 128	DANGERS 1. HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. 2. Vapors may form explosive mixtures with air. 3. Vapors may travel to source of ignition and flash back. 4. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). 5. Vapor explosion hazard indoors, outdoors or in sewers. 6. Those substances designated with a "P" may polymerize explosively when heated or involved in a fire. 7. Runoff to sewer may create fire or explosion hazard. 8. Containers may explode when heated. 9. Many liquids are lighter than water. 10. Substance may be transported hot. 11. If molten aluminum is involved, refer to Emergency Response Guide No. 169.
	HEALTH 1. Move victim to fresh air. Call 911 or emergency medical service. 2. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. 3. Remove and isolate contaminated clothing and shoes. 4. In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. 5. Wash skin with soap and water. 6. Keep victim warm and quiet. 7. Ensure that medical personnel are aware of the material(s) involved, and take precautions.
PUBLIC SAFETY	
1. Isolate spill or leak area immediately for at least 50 meters (150 feet) in all directions. 2. Keep unauthorized personnel away. 3. Stay upwind. 4. Keep out of low areas. 5. Ventilate closed spaces before entering.	
EVACUATION	Large Spill 1. Consider initial downwind evacuation for at least 300 meters (1,000 feet). Fire 1. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.
Information provided by the Emergency Response Guidebook 2008.	

3.4 STORAGE/DISPOSAL

Strict rules designed to ensure safe and secure handling of waste materials govern the Company waste disposal activities. To ensure proper disposal of recovered oil and associated debris, the following guidelines should be considered:

- In the event of a product spill, Facilities have limited capacity to store recovered product and water. Separated product is pumped to frac tanks or to trucks to be carried to the Facility for processing.
- Oily debris will be segregated on site and containerized for temporary storage prior to disposal in accordance with hazardous waste regulations.
- Transportation of waste material will be performed in accordance with all applicable Federal and State Regulations.
- Waste associated with the spill will be disposed at sites that have the necessary permits to accept the type of waste to be discharged.

The Company's Community, Safety and Health Administration Department will coordinate activities and secure the necessary permits to ensure proper disposal or recycling of recovered product and debris.

3.5 SAMPLING AND WASTE ANALYSIS PROCEDURE

The Company's sampling and waste analysis practices are governed by the regulations for the applicable Province/State and Federal agency. These regulations outline methods and procedures for determining the chemical and physical characteristics of wastes generated by the Facility, including waste associated with spills, so that they may be properly stored, treated, or disposed.

3.6 SAFETY AWARENESS

It is the corporate policy of the Company to provide a safe workplace for all workers. All employees and contractors are responsible for maintaining the safety and health of all workers on the pipeline and the response operations.

Prior to engaging in any spill response activity:

- All employees/contractors must have received orientation from the Company Safety Plan.
- All U.S. contractor response personnel must be in compliance with Occupational Safety and Health Administration training requirements.
- All other personnel will have completed appropriate training for their position as outlined in Section 4.0.
- No employee/contractor shall engage in activities which place them at risk without the appropriate protective equipment and training.

Response Safety

All Company and contractor personnel are expected to comply with the Site Safety Plan for each spill incident.

- Any concern regarding health or safety issues should be immediately addressed.
- The First Responder must consider the spill site as dangerous and the local atmosphere

explosive until air monitoring procedures prove that the area is safe.

- The First Responder must exit the area against or across the wind, if possible, and must also evacuate others who are working in the area.
- All injuries, no matter how minor, must be reported to the Incident Commander in a timely manner.
- Prior to entering a spill area, a qualified person must perform an initial safety and health evaluation of the site.

Air Monitoring

A Safety Monitor shall be designated who is trained in the operation of air monitoring equipment. The Incident Commander must ensure that Safety Monitors are trained and that their equipment is maintained and ready for use.

- The air monitoring equipment shall be activated and checked at the location in which it is stored.
- Calibration of instruments should be performed before use.
- Air monitoring measurements which are to be made prior to entry into the spill area include:
 - Oxygen content
 - Lower Explosive Limit (LEL)
 - Benzene level
- Lower Explosive Limit readings above 10% require immediate evacuation of the area and elimination of ignition sources.
- Oxygen readings below 19.5% require the use of air supplied respiratory protection.
- After assuring that there are no hazards relating to explosion or oxygen depletion, sampling for benzene or total petroleum hydrocarbons shall dictate the appropriate respiratory devices to be used by persons entering the area.
- Hydrogen Sulfide is an extremely hazardous toxic compound that is present in most crude oils that are transported through the pipeline.

Passive air monitoring for Hydrogen Sulfide will be done by all personnel working on or near the pipeline and during any cleanup operation.

- Hydrogen Sulfide is characterized by a rotten egg smell.
- The gas causes rapid temporary paralysis of the olfactory system leading to the loss of the sense of smell.
- Permissible exposure limits in many countries is 10 ppm.
- Symptoms of exposure to Hydrogen Sulfide are:
 - 0-10 ppm causes irritation of the eyes, nose and throat
 - 10-50 ppm can cause headache, dizziness, nausea, vomiting and breathing difficulty
 - 50-100 ppm can cause severe respiratory irritation, shock, convulsions, coma and

even death.

- The Incident Commander is responsible for industrial hygiene monitoring in the post discovery period.

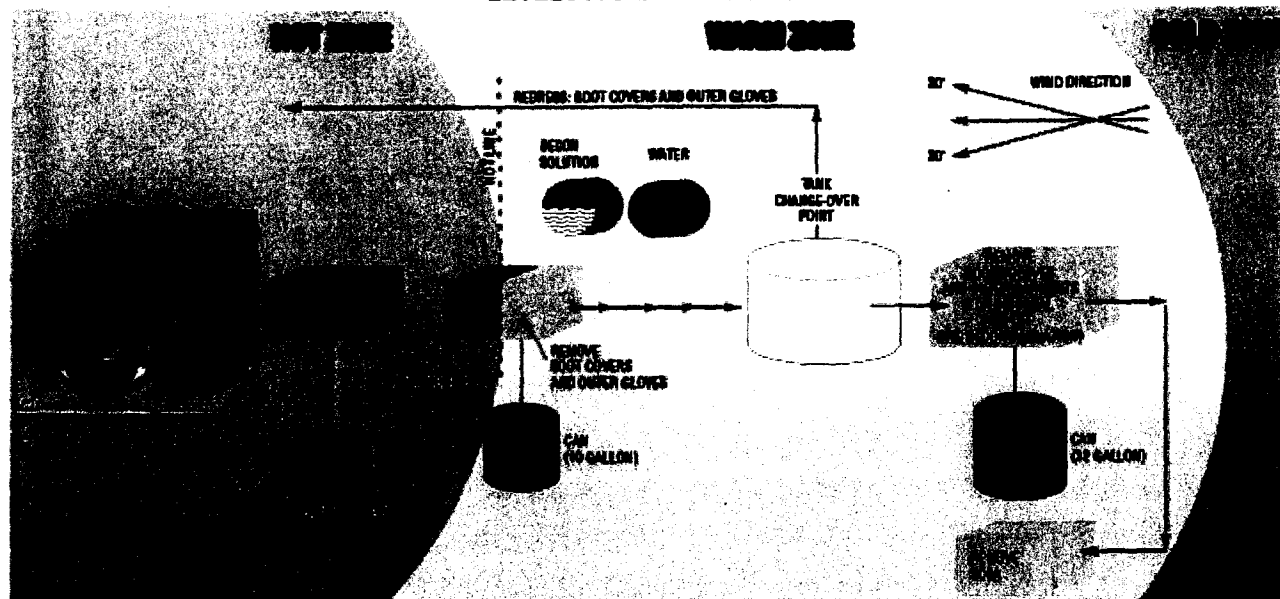
Decontamination

Through training programs, Facility personnel know and understand the importance of the removal of hazardous substances from their person if they are contaminated. Eyewash stations and safety showers provide a means to quickly remove gross contamination of harmful agents, including gasoline. Personnel must immediately shower and remove any clothing which is wet or otherwise contaminated. Showers in the change room are to be used for thorough cleansing. Persons should inspect themselves thoroughly before donning a fresh change of clothing.

Contaminated clothing should be properly disposed. Contaminated personal protective equipment must be washed and sanitized before re-using. The washing of contaminated equipment is performed in a "contained area" to assure that the disposal of the wash water can be handled properly.

Establishing "Exclusion - Hot", "Decontamination - Decon", and "Support - Safe" Zones are required to prevent the removal of contaminants from the contaminated area as well as unauthorized entry into contaminated areas.

- Regardless of the decontamination facilities available, all efforts to minimize personnel exposure should be taken.
- Decontamination facilities should be positioned prior to employee/ contractor entrance to areas where the potential for exposure to contamination exists. The appropriate Material Safety Data Sheets (MSDS) are available to aid health professionals treating the injured parties. Material Safety Data Sheets are located in Appendix G.
- Decontamination facilities should be designed to prevent further contamination of the environment and should have a temporary storage area for items that will be reused in the contaminated area.
- Particular attention should be paid to personal hygiene prior to eating, drinking, or smoking.

**MINIMUM DECONTAMINATION LAYOUT
LEVELS A & B PROTECTION**

Personal Protective Equipment (PPE)

The following represents OSHA/USEPA designated PPE levels for responding to emergencies, post emergency cleanup sites, and/or Temporary Storage and Disposal (TSD) sites. The responder's PPE should be chosen based on his/her level of training and assigned job duties.

Personal Protective Equipment (PPE)	
LEVEL A • Self Contained Breathing Apparatus (SCBA) (worn inside suit) • Encapsulated Chemical Protective Suit • Chemical Protective Gloves • Chemical Protective Boots • Hard Hat • Safety Toe Footwear • Safety Glasses	To be selected when the greatest level of skin, respiratory, and eye protection is required.
LEVEL B • SCBA (worn outside suit) • Chemical Protective Suit w/Hood • Chemical Protective Boots • Chemical Protective Gloves • Hard Hat • Safety Toe Footwear • Safety Glasses	To be selected when the highest level of respiratory protection is necessary but a lesser level of skin is needed.
LEVEL C • Air Purifying Respirator (APR) • APR a½ Face / Full Face • Hard Hat • Glasses (worn with a½ face APR) • Chemical Protective Boots • Chemical Protective Gloves • Chemical Protective Suit/Tyvek • Safety Toe Footwear • Safety Glasses	To be selected when the concentration and type of airborne substances is known and the criteria for using air purifying respirators are met.
MODIFIED LEVEL C Same as level C except no APR requirements.	To be selected when the concentration and type of airborne substances is known and the criteria for using air purifying respirators are met.
LEVEL D • Hard Hat • Safety Glasses • Work Uniform / Clothes • Leather Gloves • Safety Boots • Nomex (if required by the Company)	The atmosphere contains no known hazard and work functions preclude the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

3.7 EMERGENCY MEDICAL TREATMENT AND FIRST AID

Call 911 immediately. On-site emergency medical response requires the same rapid assessment of the patient as any other situation, but requires the responders to be aware of other considerations that may affect the way they handle the patient. These considerations include the following:

- The potential for contamination of the patient, responders, and equipment should be addressed. Responders should arrange to treat all patients **AFTER** the injured party has been decontaminated according to the Site Safety Plan.
- Site personnel should make the initial assessment of the patient and determine the severity of the injury/illness.
- If the treatment needed is critical care or "life saving" treatment, rapid decontamination of the injured/ill party should be started. Refer to the Site Safety Plan for steps to be taken in an "abbreviated" decontamination for medical treatment.
- **The need for full decontamination should be carefully weighed against the need for prompt medical treatment.**
- The ambulance responding to medical emergencies shall be contacted as soon as possible and instructed exactly where to respond when needed and the nature of the contaminant. Telephone reference is provided in Annexes.
- Material Safety Data Sheet information will be available from the Incident Commander and should be provided to medical personnel to alert them of decontamination requirements.
- Report all injuries, incidents or close calls.
- If emergency medical treatment is needed, the Incident Commander, or his designated representatives, will request assistance from trained medical personnel.

4.0 RESPONSE TEAMS

4.1 Introduction

4.2 Qualified Individual

4.3 Initial Response Team (IRT)

4.4 Regional Emergency Preparedness Team (REPT)

4.5 Incident Command System (ICS)

4.6 Unified Command

Figure 4.1 Incident Command System

4.7 ICS Roles and Responsibilities

Figure 4.2 Operational Period Planning Cycle

4.1 INTRODUCTION

This Section describes organizational features and duties of the local responders, the Regional Emergency Preparedness Team (EPT), and the broader Emergency Management Team (EMT) as defined in TransCanada's Incident Management System (IMS). The Incident Management System integrates Incident Management, Emergency Management and Crisis Management and is maintained separately.

The key to an effective emergency response is a rapid, coordinated, tiered response by the affected Facility, the Regional Emergency Operations Center, and the Corporate Emergency Operations Center, consistent with the magnitude of an incident.

First response to an incident at the Facility will be provided by the local responders. The Regional EOC will respond, to the degree necessary, to incidents exceeding local capability.

Our response teams will use the National Incident Management System (NIMS) Incident Command System (ICS) to manage the emergency response activities. Because Incident Commander System is a management tool that is readily adaptable to incidents of varying magnitude, it will typically be used for all emergency incidents. Staffing levels will be adjusted to meet specific response team needs based on incident size, severity, and type of emergency.

An explanation of Incident Commander System and the roles and responsibilities for primary members of the response teams are provided in Section 4.7 per CAN/CSA-2731-03. The USCG Incident Management Handbook (IMH) contains an in-depth description of all Incident Commander System positions, Incident Commander System development, response objectives and strategies, command responsibilities, Incident Commander System specific glossary/acronyms, resource typing, the Incident Action Plan process, and meetings. The IMH can be located on the USCG's Homeport Website.

4.2 QUALIFIED INDIVIDUAL

It is the responsibility of the Qualified Individual (QI) or his/her designee to coordinate with the Federal On-Scene Coordinator (FOSC) and State On-Scene Coordinator (SOSC) throughout the response, if applicable.

Vital duties of the Qualified Individual (QI) include:

- Notify all response personnel, as needed.
- Identify the character, exact source, amount, and extent of the release, as well as the other items needed for notification.
- Assess the interaction of the spilled substance with water and/or other substances stored at the Facility and notify response personnel at the scene of that assessment.
- Assess the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion).
- Assess and implement prompt removal actions to contain and remove the substance released.
- Coordinate rescue and response actions as previously arranged with all response personnel.

- Activate and engage in contracting with oil spill removal organizations.
- Use authority to immediately access Company funding to initiate cleanup activities.
- Direct cleanup activities until properly relieved of this responsibility.
- Arrangements will be made to ensure that the Qualified Individual (QI) or the Alternate Qualified Individual (AQI) is available on a 24-hour basis and is able to arrive at the Facility in a reasonable time.
- The AQI shall replace the QI in the event of his/her absence and have the same responsibilities and authority.

4.3 INITIAL RESPONSE TEAM (IRT)

The first Company person on scene will function as the Incident Commander and person-in-charge until relieved by an authorized supervisor who will then assume the position of Incident Commander (IC). Transfer of command will take place as more senior management contract support respond to the incident. For response operations within the control of the Initial Response Team, the role of IC will typically be assumed and retained by the Qualified Individual.

The number of positions/personnel required to staff the Initial Response Team will depend on the size and complexity of the incident. The duties of each position may be performed by the IC directly or delegated as the situation demands. The IC is always responsible for directing the response activities and will assume the duties of all the primary positions until the duties can be delegated to other qualified personnel.

A complete functional ICS organization is shown in Figure 4.1. The Initial Response Team should try to fill the necessary positions and request additional support from the Crisis Response Team to fill/back up all the positions as the incident may dictate. Detailed job descriptions of the primary response team positions are provided in Section 4.7.

4.4 REGIONAL EMERGENCY PREPAREDNESS TEAM (EPT)

The Emergency Preparedness Team (EPT) supports the Initial Response Team. The number of positions/personnel required to staff the EPT will depend on the size and complexity of the incident.

The Regional Emergency Preparedness Team is staffed by personnel from various Regional locations. The EPT provides necessary information to the appropriate Federal, State/Province, and Local authorities with designated response roles, including the National Response Center (NRC), the Canadian National Energy Board (NEB), if necessary, State Emergency Response Commission (SERC) Provincial Ministry, and local response agencies.

4.5 INCIDENT COMMAND SYSTEM (ICS)

The Incident Command System is intended to be used as an emergency management tool to aid in mitigating all types of emergency incidents. This system is readily adaptable to very small emergency incidents as well as more significant or complex emergencies. The Incident Command System utilizes the following criteria as key operational factors:

- Assigns overall authority to one individual
- Provides structured authority, roles and responsibilities during emergencies

- The system is simple and familiar, and is used routinely at a variety of incidents
- Communications are structured
- There is a structured system for response and assignment of resources
- The system provides for expansion, escalation, and transfer/transition of roles and responsibilities
- The system allows for "Unified Command" where agency involvement at the command level is required

Effective establishment and utilization of the Incident Command System during response to all types of emergencies can:

- Provide for increased safety
- Shorten emergency mitigation time by providing more effective and organized mitigation
- Cause increased confidence and support from local, State, Federal, and public sector emergency response personnel
- Provide a solid cornerstone for emergency planning efforts

Section 4.7 provides a comprehensive list of every response team member's duty assignment.

4.6 UNIFIED COMMAND

As a component of an Incident Commander System, the Unified Command (UC) is a structure that brings together the Incident Commanders of all major organizations involved in the incident to coordinate an effective response while still meeting their own responsibilities. The Unified Command links the organizations responding to the incident and provides a forum for the Responsible Party and responding agencies to make consensus decisions. Under the Unified Command, the various jurisdictions and/or agencies and responders may blend together throughout the organization to create an integrated response team. The Incident Commander System process requires the Unified Command to set clear objectives to guide the on-scene response resources.

Multiple jurisdictions may be involved in a response effort utilizing Unified Command. These jurisdictions could be represented by any combination of:

- Geographic boundaries
- Government levels
- Functional responsibilities
- Statutory responsibilities

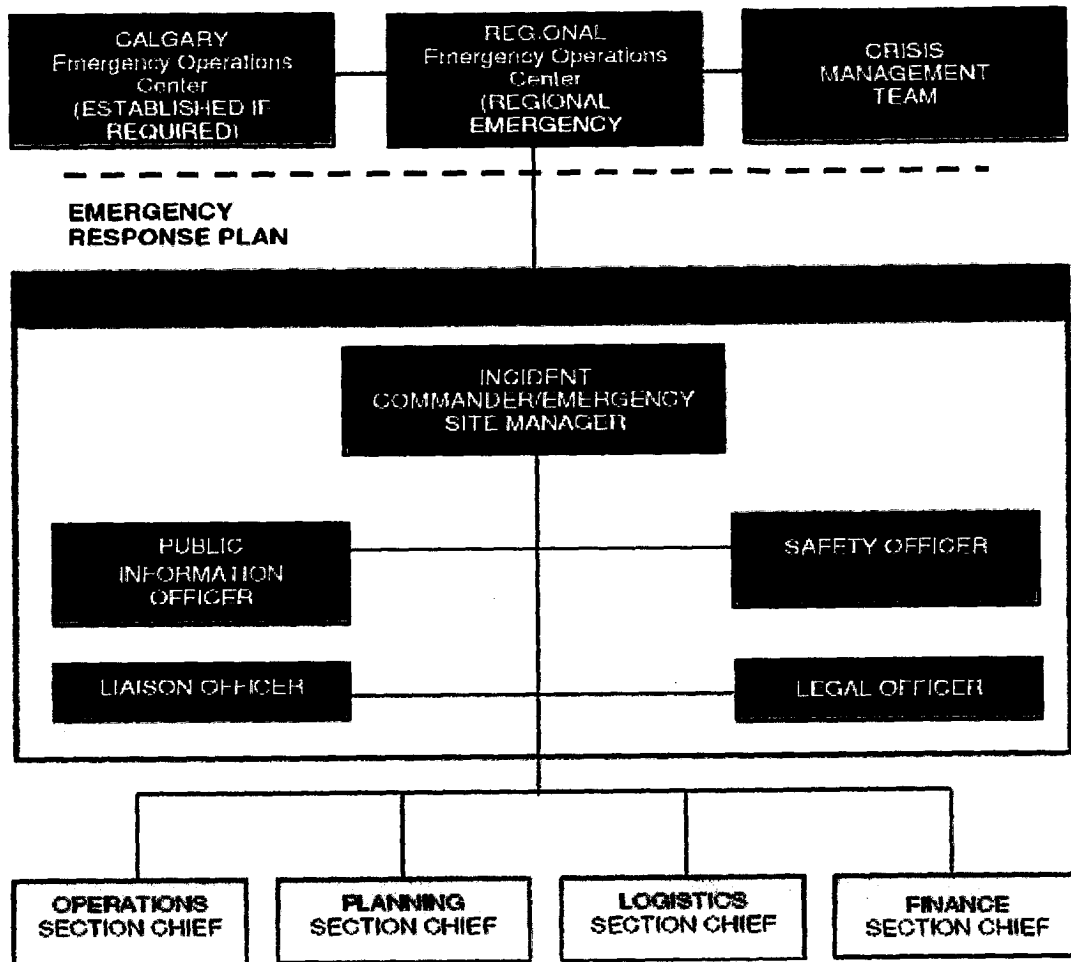
The participants of Unified Command for a specific incident will be determined taking into account the specifics of the incident and existing response plans and/or decisions reached during the initial meeting of the Unified Command. The Unified Command may change as an incident progresses, in order to account for changes in the situation.

The Unified Command is responsible for overall management of an incident. The Unified Command directs incident activities and approves and releases resources. The Unified Command structure is a vehicle for coordination, cooperation and communication which is essential to an effective response.

Unified Command representatives must be able to:

- Agree on common incident objectives and priorities
- Have the capability to sustain a 24-hour-7-day-per-week commitment to the incident
- Have the authority to commit agency or Company resources to the incident
- Have the authority to spend agency or Company funds
- Agree on an incident response organization
- Agree on the appropriate Command and General Staff assignments
- Commit to speak with "one voice" through the Public Information Officer or Joint Information Center
- Agree on logistical support procedures
- Agree on cost-sharing procedures

FIGURE 4.1

INCIDENT COMMAND SYSTEM**INCIDENT
MANAGEMENT SYSTEM**

4.7 ICS ROLES AND RESPONSIBILITIES

COMMON RESPONSIBILITIES

The following is a checklist applicable to all personnel in an Incident Commander System organization:

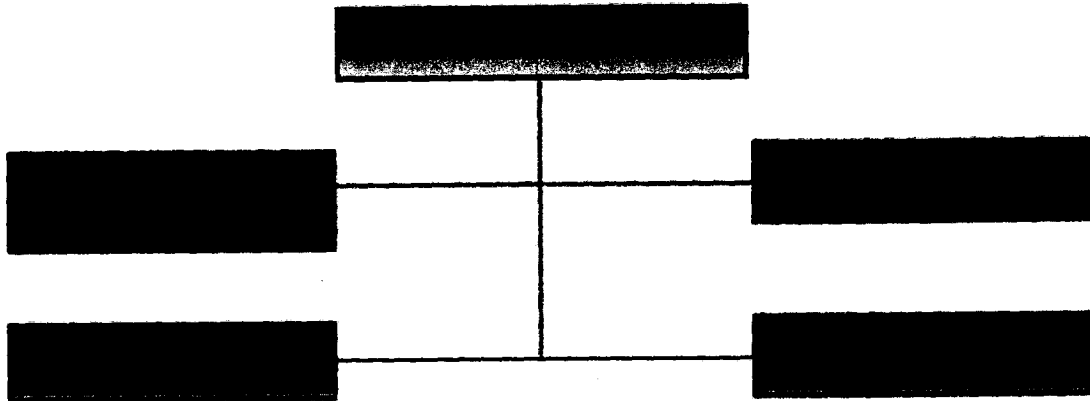
- Receive assignment, including:
 - Job assignment
 - Resource order number and request number
 - Reporting location
 - Reporting time
 - Travel instructions
 - Special communications instructions
- Upon arrival, check-in at designated check-in location.
- Receive briefing from immediate supervisor.
- Acquire work materials.
- Supervisors maintain accountability for assigned personnel.
- Organize and brief subordinates.
- Know your assigned radio frequency(s) and ensure communications equipment is operating properly.
- Use clear text and Incident Commander System terminology (no codes) in all communications.
- Complete forms and reports required of the assigned position and send to Documentation Unit.
- Maintain unit records, including Unit Log (ICS Form 214).
- Respond to demobilization orders and brief subordinates regarding demobilization.

UNIT LEADER RESPONSIBILITIES

In Incident Commander System, a Unit Leader's responsibilities are common to all units in all parts of the organization. Common responsibilities of Unit Leaders are listed below.

- Review common responsibilities.
- Receive briefing from Incident Commander, Section Chief or Branch Director, as appropriate.
- Participate in incident planning meetings, as required.
- Determine current status of unit activities.
- Order additional unit staff, as appropriate.
- Determine resource needs.
- Confirm dispatch and estimated time of arrival of staff and supplies.
- Assign specific duties to staff; supervise staff.
- Develop and implement accountability, safety and security measures for personnel and resources.
- Supervise demobilization of unit, including storage of supplies.
- Provide Supply Unit Leader with a list of supplies to be replenished.
- Maintain unit records, including Unit Log (ICS Form 214).

COMMAND



INCIDENT COMMANDER

- Assess the situation and/or obtain a briefing from the prior Incident Commander.
- Determine Incident Objectives and strategy.
- Establish the immediate priorities.
- Establish an Incident Command Post.
- Brief Command Staff and Section Chiefs.
- Review meetings and briefings.
- Establish an appropriate organization.
- Ensure planning meetings are scheduled as required. (Refer to Figure 4.3 "Operational Period Planning Cycle" for assistance.
- Approve and authorize the implementation of an Incident Action Plan.
- Ensure that adequate safety measures are in place.
- Coordinate activity for all Command and General Staff.
- Coordinate with key people and officials.
- Approve requests for additional resources or for the release of resources.
- Keep agency administrator informed of incident status.
- Approve the use of trainees, volunteers, and auxiliary personnel.
- Authorize release of information to the news media.
- Ensure incident Status Summary (ICS Form 209-CG) is completed and forwarded to appropriate higher authority.
- Order the demobilization of the incident when appropriate.
- Assign any of the Incident Commander roles and responsibilities to a Deputy Incident Commander as needed.

PUBLIC INFORMATION OFFICER

- Determine from the Incident Commander if there are any limits on information release.
- Develop material for use in media briefings.
- Obtain Incident Commander approval of media releases.
- Inform media and conduct media briefings.
- Arrange for tours and other interviews or briefings that may be required.
- Obtain media information that may be useful to incident planning.
- Maintain current information summaries and/or displays on the incident and provide information on the status of the incident to assigned personnel.

LIAISON OFFICER

- Be a contact point for Agency Representatives.
- Maintain a list of assisting and cooperating agencies and Agency Representatives. Monitor check-in sheets daily to ensure that all Agency Representatives are identified.
- Assist in establishing and coordinating interagency contacts.
- Keep agencies supporting the incident aware of incident status.
- Monitor incident operations to identify current or potential inter-organizational problems.
- Participate in planning meetings, providing current resource status, including limitations and capability of assisting agency resources.
- Coordinate response resource needs for Natural Resource Damage Assessment and Restoration (NRDAR) activities with the Operations during oil and HAZMAT responses.
- Coordinate response resource needs for incident investigation activities with the Operations.

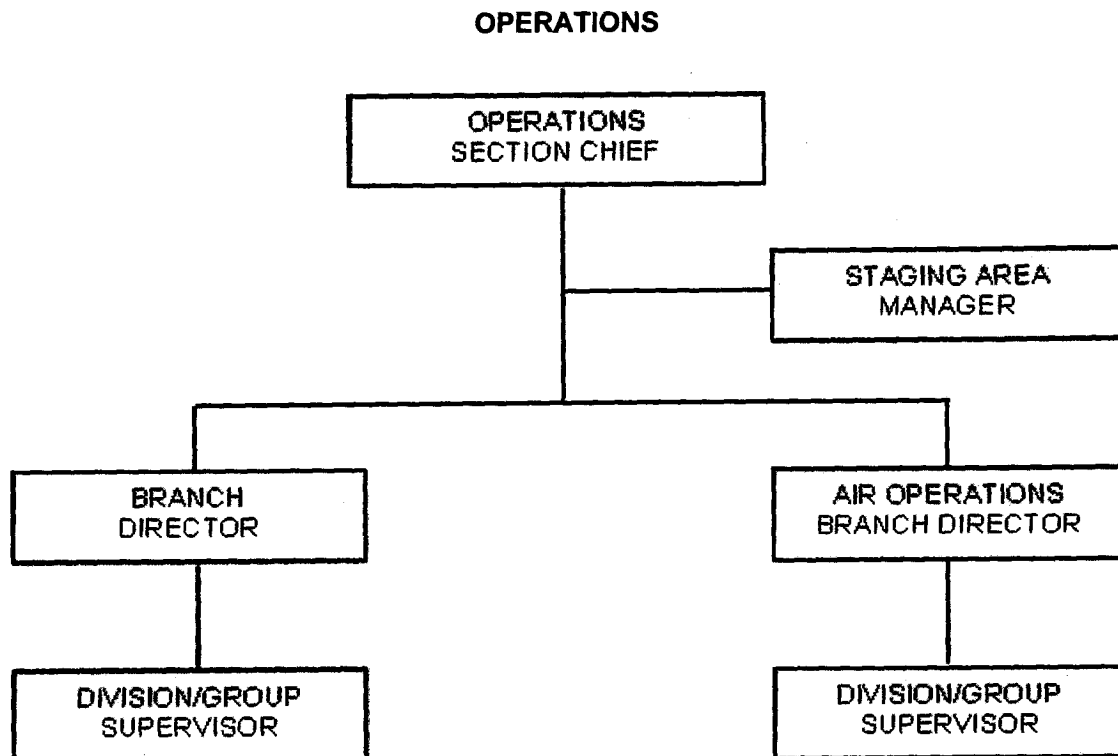
- Ensure that all required agency forms, reports and documents are completed prior to demobilization.
- Coordinate activities of visiting dignitaries.

SAFETY OFFICER

- Participate in planning meetings.
- Identify hazardous situations associated with the incident.
- Review the Incident Action Plan for safety implications.
- Exercise emergency authority to stop and prevent unsafe acts.
- Investigate accidents that have occurred within the incident area.
- Review and approve the medical plan.
- Develop the Site Safety Plan and publish Site Safety Plan summary (ICS Form 208) as required.

LEGAL OFFICER

- Participate in planning meetings, if requested.
- Advise on legal issues relating to in-situ burning, use of dispersants, and other alternative response technologies.
- Advise on legal issues relating to differences between Natural Resource Damage Assessment Restoration (NRDAR) and response activities.
- Advise on legal issues relating to investigations.
- Advise on legal issues relating to finance and claims.
- Advise on legal issues relating to response.



OPERATIONS SECTION GENERAL FUNCTIONS

- Responsible for managing tactical operations at the incident site directed toward reducing the immediate hazard, saving lives and property, establishing situational control, and restoring normal operations.
- Directs and coordinates all incident tactical operations.
- Executes the Incident Action Plan.

OPERATIONS SECTION CHIEF

- Develop operations portion of Incident Action Plan.
- Brief and assign Operations Section personnel in accordance with the Incident Action Plan.
- Supervise Operations Section.
- Determine need and request additional resources.
- Review suggested list of resources to be released and initiate recommendation for release of resources.
- Assemble and disassemble strike teams assigned to the Operations Section.
- Report information about special activities, events, and occurrences to the Incident Commander.
- Respond to resource requests in support of National Resource Damage Assessment and Restoration activities.

BRANCH DIRECTOR

- Develop with subordinates alternatives for Branch control operations.
- Attend planning meetings at the request of the Operations.
- Review Assignment List (ICS Form 204-CG) for Divisions/Groups within the Branch. Modify lists based on effectiveness of current operations.
- Assign specific work tasks to Division/Group Supervisors.
- Supervise Branch operations.
- Resolve logistic problems reported by subordinates.
- Report to Operations when: the Incident Action Plan is to be modified; additional resources are needed; surplus resources are available; or hazardous situations or significant events occur.
- Approve accident and medial reports originating within the Branch.

DIVISION/GROUP SUPERVISOR

- Implement Incident Action Plan for Division/Group.
- Provide the Incident Action Plan to Strike Team Leaders, when available.
- Identify increments assigned to the Division/Group.
- Review Division/Group assignments and incident activities with subordinates and assign tasks.
- Ensure that the Incident Commander and/or Resources Unit is advised of all changes in the status of resources assigned to the Division/Group.
- Coordinate activities with adjacent Division/Group.
- Determine need for assistance on assigned tasks.
- Submit situation and resources status information to the Branch Director or the Operations.
- Report hazardous situations, special occurrences, or significant events (e.g., accidents, sickness, discovery of unanticipated sensitive resources) to the immediate supervisor.
- Ensure that assigned personnel and equipment get to and from assignments in a timely and orderly manner.

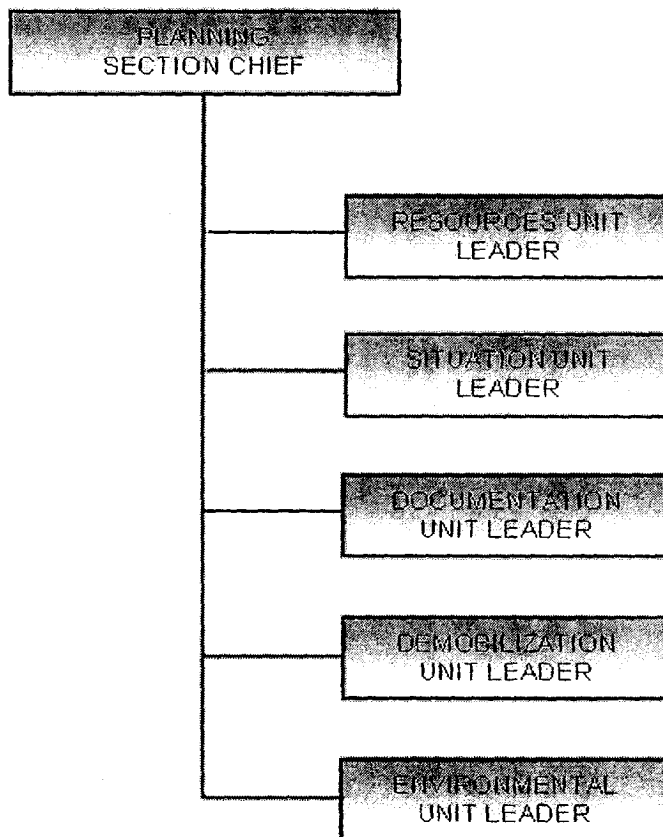
- Resolve logistics problems within the Division/Group.
- Participate in the development of Branch plans for the next operational period.

STAGING AREA MANAGER

- Establish Staging Area layout.
- Determine any support needs for equipment, feeding, sanitation and security.
- Establish check-in function as appropriate.
- Post areas for identification and traffic control.
- Request maintenance service for equipment at Staging Area as appropriate.
- Respond to request for resource assignments.
- Obtain and issue receipts for radio equipment and other supplies distributed and received at Staging Area.
- Determine required resource levels from the Operations.
- Advise the Operations when reserve levels reach minimums.
- Maintain and provide status to Resource Unit of all resources in Staging Area.
- Demobilize Staging Area in accordance with the Incident Demobilization Plan.

AIR OPERATIONS BRANCH DIRECTOR

- Organize preliminary air operations.
- Request declaration (or cancellation) of restricted air space
- Participate in preparation of the Incident Action Plan through the Operations. Insure that the air operations portion of the Incident Action Plan takes into consideration the Air Traffic Control requirements of assigned aircraft.
- Perform operational planning for air operations.
- Prepare and provide Air Operations Summary (ICS Form 220) to the Air Support Group and Fixed-Wing Bases.
- Determine coordination procedures for use by air organization with ground Branches, Divisions, or Groups.
- Coordinate with appropriate Operations Section personnel.
- Supervise all air operations activities associated with the incident.
- Evaluate helibase locations.
- Establish procedures for emergency reassignment of aircraft.
- Schedule approved flights of non-incident aircraft in the restricted air space area.
- Coordinate with the Operations Coordination Center (OCC) through normal channels on incident air operations activities.
- Inform the Air Tactical Group Supervisor of the air traffic situation external to the incident.
- Consider requests for non-tactical use of incident aircraft.
- Resolve conflicts concerning non-incident aircraft.
- Coordinate with Federal Aviation Administration.
- Update air operations plans.
- Report to the Operations on air operations activities.
- Report special incidents/accidents.
- Arrange for an accident investigation team when warranted.

PLANNING

PLANNING SECTION GENERAL FUNCTIONS

- Responsible for gathering, evaluating, and disseminating tactical information and intelligence critical to the incident.
- Maintaining incident documentation and providing documentation services.
- Preparing and documenting Incident Action Plans.
- Conducting long-range and/or contingency planning.
- Developing alternative strategies.
- Tracking resources assigned to the incident.
- Developing plans for waste disposal.
- Developing plans for demobilization.

PLANNING SECTION CHIEF

- Collect and process situation information about the incident.
- Supervise preparation of the Incident Action Plan.
- Provide input to the Incident Commander and the Operations in preparing the Incident Action Plan.
- Chair planning meetings and participate in other meetings as required. (Refer to Figure 4.5 "Operational Period Planning Cycle" for assistance.
- Reassign out-of-service personnel already on-site to Incident Commander System organizational positions as appropriate.
- Establish information requirements and reporting schedules for Planning Section Units (e.g., Resources, Situation Units).
- Determine the need for any specialized resources in support of the incident.
- If requested, assemble and disassemble Strike Teams and Task Forces not assigned to Operations.
- Establish special information collection activities as necessary (e.g., weather, environmental, toxics, etc.).
- Assemble information on alternative strategies.
- Provide periodic predictions on incident potential.
- Report any significant changes in incident status.
- Compile and display incident status information.
- Oversee preparation and implementation of the Incident Demobilization Plan.
- Incorporate plans (e.g., Traffic, Medical, Communications, Site Safety) into the Incident Action Plan.

RESOURCES UNIT LEADER

- Establish the check-in function at incident locations.
- Prepare Organization Assignment List (ICS Form 203-CG) and Incident Organization (ICS Form 207-CG).
- Prepare appropriate parts of Assignment List (ICS Form 204).
- Prepare and maintain the Incident Command Post display (to include organization chart and resource allocation and deployment).
- Maintain and post the current status and location of all resources.
- Maintain master roster of all resources checked in at the incident.

SITUATION UNIT LEADER

- Begin collection and analysis of incident data as soon as possible.
- Prepare, post, or disseminate resource and situation status information as required, including special requests.
- Prepare periodic predictions or as requested by the Planning Section Chief.
- Prepare the Incident Status Summary (ICS Form 209-CG).
- Provide photographic services and maps if required.

DOCUMENTATION UNIT LEADER

- Set up work area; begin organization of incident files.
- Establish duplication service; respond to requests.
- File all official forms and reports.
- Review records for accuracy and completeness; inform appropriate units of errors or omissions.
- Provide incident documentation as requested.
- Store files for post-incident use.

DEMOBILIZATION UNIT LEADER

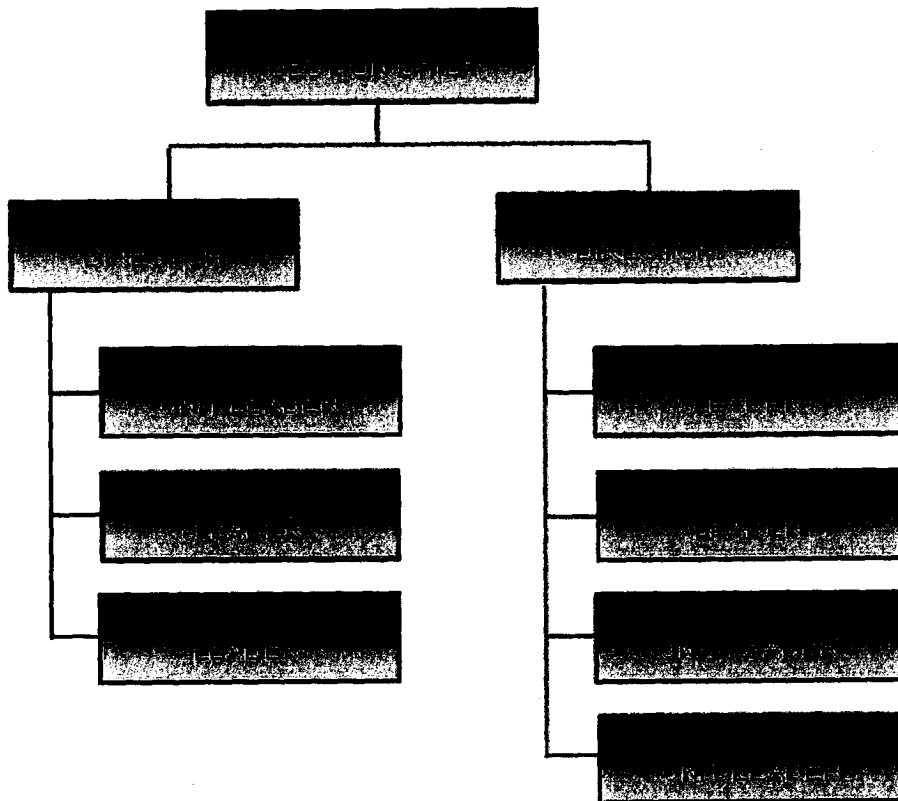
- Participate in planning meetings as required.
- Review incident resource records to determine the likely size and extent of demobilization effort.
- Based on the above analysis, add additional personnel, workspace, and supplies as needed.
- Coordinate demobilization with Agency Representatives.
- Monitor the on-going Operations Section resource needs.
- Identify surplus resources and probable release time.
- Develop incident check-out function for all units.
- Evaluate logistics and transportation capabilities to support demobilization.
- Establish communications with off-incident facilities, as necessary.
- Develop an Incident Demobilization Plan detailing specific responsibilities and release priorities and procedures.
- Prepare appropriate directories (e.g., maps, instructions, etc.) for inclusion in the demobilization plan.
- Distribute demobilization plan (on and off-site).
- Provide status reports to appropriate requestors.
- Ensure that all Sections/Units understand their specific demobilization responsibilities.
- Supervise execution of the Incident Demobilization Plan.
- Brief the Planning Section Chief on demobilization progress.

ENVIRONMENTAL UNIT LEADER

- Participate in Planning Section meetings.
- Identify sensitive areas and recommend response priorities.
- Following consultation with natural resource trustees, provide input on wildlife protection strategies (e.g., removing oiled carcasses, pre-emptive capture, hazing, and/or capture and treatment).
- Determine the extent, fate and effects of contamination.
- Acquire, distribute and provide analysis of weather forecasts.
- Monitor the environmental consequences of cleanup actions.

- Develop shoreline cleanup and assessment plans. Identify the need for, and prepare any special advisories or orders.
- Identify the need for, and obtain, permits, consultations, and other authorizations including Endangered Species Act (ESA) provisions.
- Following consultation with the Federal OnScene Commander's Historical/Cultural Resources Technical Specialist identify and develop plans for protection of affected historical/cultural resources.
- Evaluate the opportunities to use various response technologies.
- Develop disposal plans.
- Develop a plan for collecting, transporting, and analyzing samples.

LOGISTICS



LOGISTICS SECTION GENERAL FUNCTIONS

- Responsible for all support requirements needed to facilitate effective and efficient incident management, including ordering resources from off-incident locations.
- Ordering, obtaining, maintaining, and accounting for essential personnel, equipment, and supplies.
- Providing communication planning and resources.
- Setting up food services.
- Setting up and maintaining incident facilities.
- Providing support transportation.
- Providing medical services to incident personnel.

LOGISTICS SECTION CHIEF

- Plan the organization of the Logistics Section.
- Assign work locations and preliminary work tasks to Section personnel.
- Notify the Resources Unit of the Logistics Section units activated including names and locations of assigned personnel.
- Assemble and brief Branch Directors and Unit Leaders.
- Participate in preparation of the Incident Action Plan.
- Identify service and support requirements for planned and expected operations.
- Provide input to and review the Communications Plan, Medical Plan and Traffic Plan.
- Coordinate and process requests for additional resources.
- Review the Incident Action Plan and estimate Section needs for the next operational period.
- Advise on current service and support capabilities.
- Prepare service and support elements of the Incident Action Plan.
- Estimate future service and support requirements.
- Receive Incident Demobilization Plan from Planning Section.
- Recommend release of Unit resources in conformity with Incident Demobilization Plan.
- Ensure the general welfare and safety of Logistics Section personnel.

SERVICE BRANCH DIRECTOR

- Determine the level of service required to support operations.
- Confirm dispatch of Branch personnel.
- Participate in planning meetings of Logistics Section personnel.
- Review the Incident Action Plan.
- Organize and prepare assignments for Service Branch personnel.
- Coordinate activities of Branch Units.
- Inform the Logistics Section Chief of Branch activities.
- Resolve Service Branch problems.

COMMUNICATIONS UNIT LEADER

- Prepare and implement the Incident Radio Communications Plan (ICS Form 205-CG).
- Ensure the Incident Communications Center and the Message Center is established.
- Establish appropriate communications distribution/maintenance locations within the Base/Camp(s).
- Ensure communications systems are installed and tested.
- Ensure an equipment accountability system is established.

- Ensure personal portable radio equipment from cache is distributed per Incident Radio Communications Plan.
- Provide technical information as required on:
 - Adequacy of communications systems currently in operation.
 - Geographic limitation on communications systems.
 - Equipment capabilities/limitations.
 - Amount and types of equipment available.
 - Anticipated problems in the use of communications equipment.
- Supervise Communications Unit activities.
- Maintain records on all communications equipment as appropriate.
- Ensure equipment is tested and repaired.
- Recover equipment from Units being demobilized.

MEDICAL UNIT LEADER

- Participate in Logistics Section/Service Branch planning activities.
- Prepare the Medical Plan (ICS Form 206-CG).
- Prepare procedures for major medical emergency.
- Declare major emergency as appropriate.
- Respond to requests for medical aid, medical transportation, and medical supplies.
- Prepare and submit necessary documentation.

FOOD UNIT LEADER

- Determine food and water requirements.
- Determine the method of feeding to best fit each facility or situation.
- Obtain necessary equipment and supplies and establish cooking facilities.
- Ensure that well-balanced menus are provided.
- Order sufficient food and potable water from the Supply Unit.
- Maintain an inventory of food and water.
- Maintain food service areas, ensuring that all appropriate health and safety measures are being followed.
- Supervise caterers, cooks, and other Food Unit personnel as appropriate.

SUPPORT BRANCH DIRECTOR

- Determine initial support operations in coordination with the Logistic Section Chief and Service Branch Director.
- Prepare initial organization and assignments for support operations.
- Assemble and brief Support Branch personnel.
- Determine if assigned Branch resources are sufficient.
- Maintain surveillance of assigned units work progress and inform the Logistic Section Chief of their activities.
- Resolve problems associated with requests from the Operations Section.

SUPPLY UNIT LEADER

- Participate in Logistics Section/Support Branch planning activities.
- Determine the type and amount of supplies en route.
- Review the Incident Action Plan for information on operations of the Supply Unit.
- Develop and implement safety and security requirements.
- Order, receive, distribute, and store supplies and equipment.
- Receive and respond to requests for personnel, supplies, and equipment.
- Maintain an inventory of supplies and equipment.
- Service reusable equipment.
- Submit reports to the Support Branch Director.

FACILITY UNIT LEADER

- Review the Incident Action Plan.
- Participate in Logistics Section/Support Branch planning activities.
- Determine requirements for each facility, including the Incident Command Post (See Figure 2.6 for list of hotels).
- Prepare layouts of incident facilities.
- Notify Unit Leaders of facility layout.
- Activate incident facilities.
- Provide Base and Camp Managers and personnel to operate facilities.
- Provide sleeping facilities.
- Provide security services.
- Provide facility maintenance services (e.g., sanitation, lighting, clean up).
- Demobilize Base and Camp facilities.
- Maintain facility records.

GROUND SUPPORT UNIT LEADER

- Participate in Support Branch/Logistics Section planning activities.
- Develop and implement the Traffic Plan.
- Support out-of-service resources.
- Notify the Resources Unit of all status changes on support and transportation vehicles.
- Arrange for and activate fueling, maintenance, and repair of ground resources.
- Maintain Support Vehicle Inventory and transportation vehicles (ICS Form 218).
- Provide transportation services, in accordance with requests from the Logistics Section Chief or Support Branch Director.
- Collect information on rented equipment.
- Requisition maintenance and repair supplies (e.g., fuel, spare parts).
- Maintain incident roads.
- Submit reports to Support Branch Director as directed.

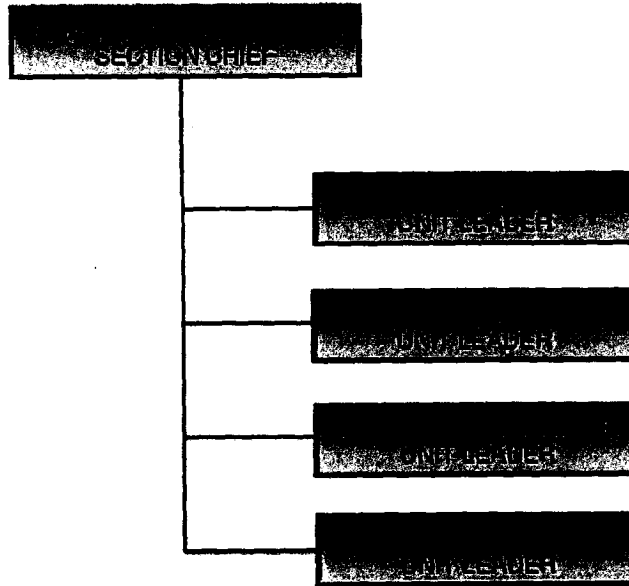
VESSEL SUPPORT UNIT LEADER

- Participate in Support Branch/Logistics Section planning activities.
- Coordinate development of the Vessel Routing Plan.
- Coordinate vessel transportation assignments with the Protection and Recovery Branch or other

sources of vessel transportation.

- Coordinate water-to-land transportation with the Ground Support Unit, as necessary.
- Maintain a prioritized list of transportation requirements that need to be scheduled with the transportation source.
- Support out-of-service vessel resources, as requested.
- Arrange for fueling, dockage, maintenance and repair of vessel resources, as requested.
- Maintain inventory of support and transportation vessels.

FINANCE/ADMINISTRATION



FINANCE/ADMINISTRATION SECTION GENERAL FUNCTIONS

- Responsible for all financial and cost analysis aspects of an incident. (Note: Not all incidents will require a separate Finance/Administration Section. In cases that require only one specific function (e.g., cost analysis), this service may be provided by a member of the Planning Section.)
- Administering any contract negotiation.
- Providing cost analysis as it pertains to the Incident Action Plan.
- Maintaining cost associated with the incident.
- Tracking personnel and equipment time.
- Addressing compensation for injury or damage to property issues.

FINANCE/ADMINISTRATION SECTION CHIEF

- Attend planning meetings as required.
- Manage all financial aspects of an incident.
- Provide financial and cost analysis information as requested.
- Gather pertinent information from briefings with responsible agencies.
- Develop an operating plan for the Finance/Administration Section; fill supply and support needs.
- Determine the need to set up and operate an incident commissary.
- Meet with assisting and cooperating agency representatives, as needed.
- Maintain daily contact with agency(s) administrative headquarters on Finance/ Administration matters.
- Ensure that all personnel time records are accurately completed and transmitted, according to policy.
- Provide financial input to demobilization planning.
- Ensure that all obligation documents initiated at the incident are properly prepared and completed.
- Brief administrative personnel on all incident-related financial issues needing attention or follow-up prior to leaving incident.

TIME UNIT LEADER

- Determine incident requirements for time recording function.
- Determine resource needs.
- Contact appropriate agency personnel/representatives.
- Ensure that daily personnel time recording documents are prepared and in compliance with policy.
- Establish time unit objectives.
- Maintain separate logs for overtime hours.
- Establish commissary operation on larger or long-term incidents as needed.
- Submit cost estimate data forms to the Cost Unit, as required.
- Maintain records security.
- Ensure that all records are current and complete prior to demobilization.
- Release time reports from assisting agency personnel to the respective Agency Representatives prior to demobilization.
- Brief the Finance/Administration Section Chief on current problems and recommendations, outstanding issues, and follow-up requirements.

PROCUREMENT UNIT LEADER

- Review incident needs and any special procedures with Unit Leaders, as needed.
- Coordinate with local jurisdiction on plans and supply sources.
- Obtain the Incident Procurement Plan.
- Prepare and authorize contracts and land-use agreements.
- Draft memoranda of understanding as necessary.
- Establish contracts and agreements with supply vendors.
- Provide for coordination between the Ordering Manager, agency dispatch, and all other procurement organizations supporting the incident.
- Ensure that a system is in place that meets agency property management requirements. Ensure proper accounting for all new property.
- Interpret contracts and agreements; resolve disputes within delegated authority.
- Coordinate with the Compensation/Claims Unit for processing claims.
- Coordinate use of impress funds, as required.
- Complete final processing of contracts and send documents for payment.
- Coordinate cost data in contracts with the Cost Unit Leader.
- Brief the Finance/Administration Section Chief on current problems and recommendations, outstanding issues, and follow-up requirements.

COMPENSATION/CLAIMS UNIT LEADER

- Establish contact with the incident Security Officer and Liason Officer (or Agency Representatives if no Liason Officer is assigned).
- Determine the need for Compensation for Injury and Claims Specialists and order personnel as needed.
- Establish a Compensation for Injury work area within or as close as possible to the Medical Unit.
- Review Medical Plan (ICS Form 206-CG).
- Ensure that Compensation/Claims Specialists have adequate workspace and supplies.
- Review and coordinate procedures for handling claims with the Procurement Unit.
- Brief the Compensation/Claims Specialists on incident activity.
- Periodically review logs and forms produced by the Compensation/Claims Specialists to ensure that they are complete, entries are timely and accurate and that they are in compliance with agency requirements and policies.
- Ensure that all Compensation for Injury and Claims logs and forms are complete and routed appropriately for post-incident processing prior to demobilization.
- Keep the Finance/Administration Section Chief briefed on Unit status and activity.
- Demobilize unit in accordance with the Incident Demobilization Plan.

COST UNIT LEADER

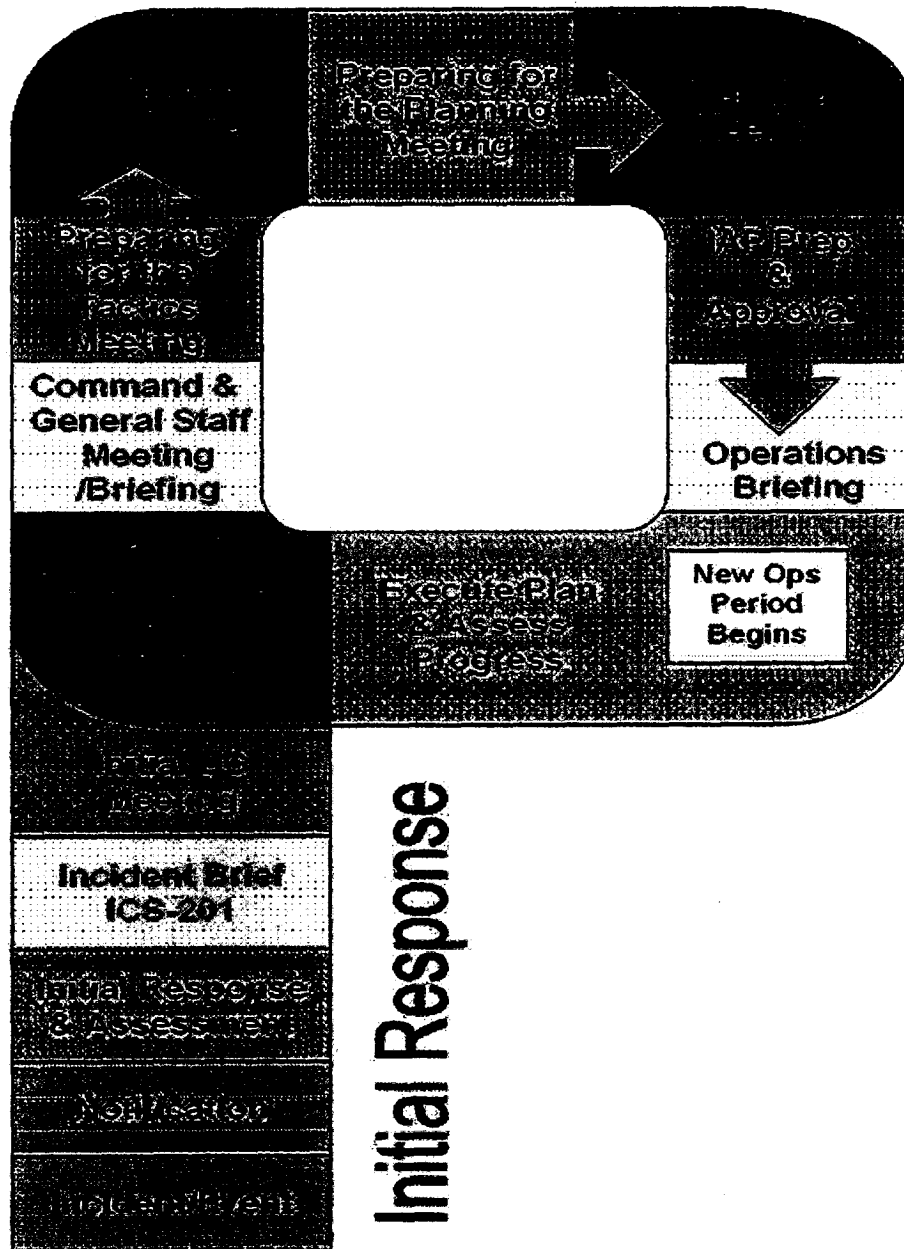
- Coordinate cost reporting procedures.
- Collect and record all cost data.
- Develop incident cost summaries.
- Prepare resources-use cost estimates for the Planning Section.
- Make cost-saving recommendations to the Finance/Administration Section Chief.
- Ensure all cost documents are accurately prepared.
- Maintain cumulative incident cost records.
- Complete all records prior to demobilization.

- Provide reports to the Finance/Administration Section Chief.

FIGURE 4.2

UNITED STATES COAST GUARD
Operations Period Planning

The Operational Planning "P"



5.0 RESPONSE PLANNING

5.1 Incident Action Plan

5.2 Site Safety Plan

5.1 INCIDENT ACTION PLAN

Emergency response activities are planned and coordinated through the use of an Incident Action Plan (IAP), which is developed for each Operational Period of a response by the Initial Response Team. For small responses, an ICS 201 may be used as the Incident Action Plan and, for all incidents, the ICS 201 will serve as the initial Incident Action Plan.

For larger or more complex incidents, a more complete Incident Action Plan will be necessary. These Incident Action Plans are generally created through the completion and compilation of several standard Incident Command System forms. These forms include, but are not limited to:

ICS FORM NUMBER	FORM TITLE	PREPARED BY
IAP Cover Sheet	ICS IAP Cover Sheet	Planning Section - Situation Unit Leader
201-CG	Incident Briefing	Command Section - Initial Response Incident Commander
202-CG	Incident Objectives	Planning Section - Planning Section Chief
203-CG	Organization Assignment List	Planning Section - Resources Unit Leader
204-CG	Assignment List	Operations Section - Chief & Resources Unit Leader
204a-CG	Assignment List Attachment	Operations Section - Chief & Resources Unit Leader
205-CG	Incident Radio Communication Plan	Logistics Section - Communication Unit Leader
205a-CG	Communications List	Logistics Section - Communication Unit Leader
206-CG	Medical Plan	Logistics Section - Medical Unit Leader
207-CG	Incident Organization	Planning Section - Resources Unit Leader
209-CG	Incident Status Summary	Command Section - Incident Commander
211-CG	Check-In List	
213-RR CG	Resource Request Message	
214-CG	Unit Log	Planning Section - Situation Unit Leader
215-CG	Operational Planning Worksheet	
215A-CG	Incident Action Plan Safety Analysis	
218	Support Vehicle Inventory	Logistics Section - Ground Support Unit Leader
220-CG	Air Operations Summary	Operations Section - Air Operations Branch Director
230-CG	Daily Meeting Schedule	
232-CG	Resources at Risk Summary	Planning Section - Situation Unit Leader
232a-CG	ACP Site Index	
233-CG	Incident Open Action Tracker	
234-CG	Work Analysis Matrix	
235-CG	Facility Needs Assessment Worksheet	

	Site Safety Plan	Command Section - Safety Officer
	Employee Certification Page	
	Media Statement	

Depending on the nature and severity of the emergency, additional documents may be included in the Incident Action Plan. These may include:

- Sensitivity Maps (Provided in Section 6)
- Waste Management and Disposal Plans (Provided in Appendix E)
- Plans for use of Alternative Technologies (Dispersant/In-situ Burning/ Bioremediation)
- Security Plans
- Decontamination Plans
- Traffic Plans

5.2 SITE SAFETY PLAN

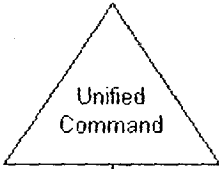
Site Safety Plans (SSPs) are required by United States Occupational Safety and Health Administration (29 CFR 1910.120(b)(4)) for all hazardous waste operations. The Site Safety Plan should address all on-site operations and hazardous as well as on-site emergency procedures.

The Site Safety Plan is typically prepared by the Safety Officer and approved by the Incident Commander. All personnel must be familiar with the contents of the Site Safety Plan and the Site Safety Plan must be updated as conditions, operations and hazards associated with the response change.

1. Incident Name [REDACTED]	2. Operational Period to be covered by IAP (Date/Time) From: [REDACTED] To: [REDACTED]	IAP COVER SHEET
3. Approved by:		
FDSC [REDACTED]		
SOSC [REDACTED]		
RPIC [REDACTED]		
[REDACTED]		
[REDACTED]		
INCIDENT ACTION PLAN		
The items checked below are included in this Incident Action Plan:		
☒ ICS 202-OS (Response Objectives)		
☒ ICS 203-OS (Organization List) – OR – ICS 207-OS (Organization Chart)		
☒ ICS 204-OSs (Assignment Lists) One Copy each of any ICS 204-OS attachments:		
☒ Map		
☒ Weather forecast		
☒ Tides		
☒ Shoreline Cleanup Assessment Team Report for location		
☒ Previous day's progress, problems for location		
☒ ICS 205-OS (Communications List)		
☒ ICS 206-OS (Medical Plan)		
☒ [REDACTED]		
☒ [REDACTED]		
☒ [REDACTED]		
☒ [REDACTED]		
☒ [REDACTED]		
☒ [REDACTED]		
☒ [REDACTED]		
4. Prepared by: [REDACTED] Date/Time [REDACTED]		
IAP COVER SHEET		
June 2000		

1. Incident Name [REDACTED]	2. Prepared by: (name) [REDACTED] Date: [REDACTED] Time: [REDACTED]	INCIDENT BRIEFING ICS 201-CG
3. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, overflight results, trajectories, impacted shorelines, or other graphics depicting situational and response status) [REDACTED]		
4. Current Situation: [REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		

[illegible]

1. Incident Name 	2. Prepared by: (name) Date: Time:	INCIDENT BRIEFING ICS 201-CG
3. Current Organization  Unified Command FOSC SOSC RPIC — Safety Officer — Liaison Officer — Information Officer Operations Section Planning Section Logistics Section Finance Section Div./Group Div./Group Div./Group Div./Group		

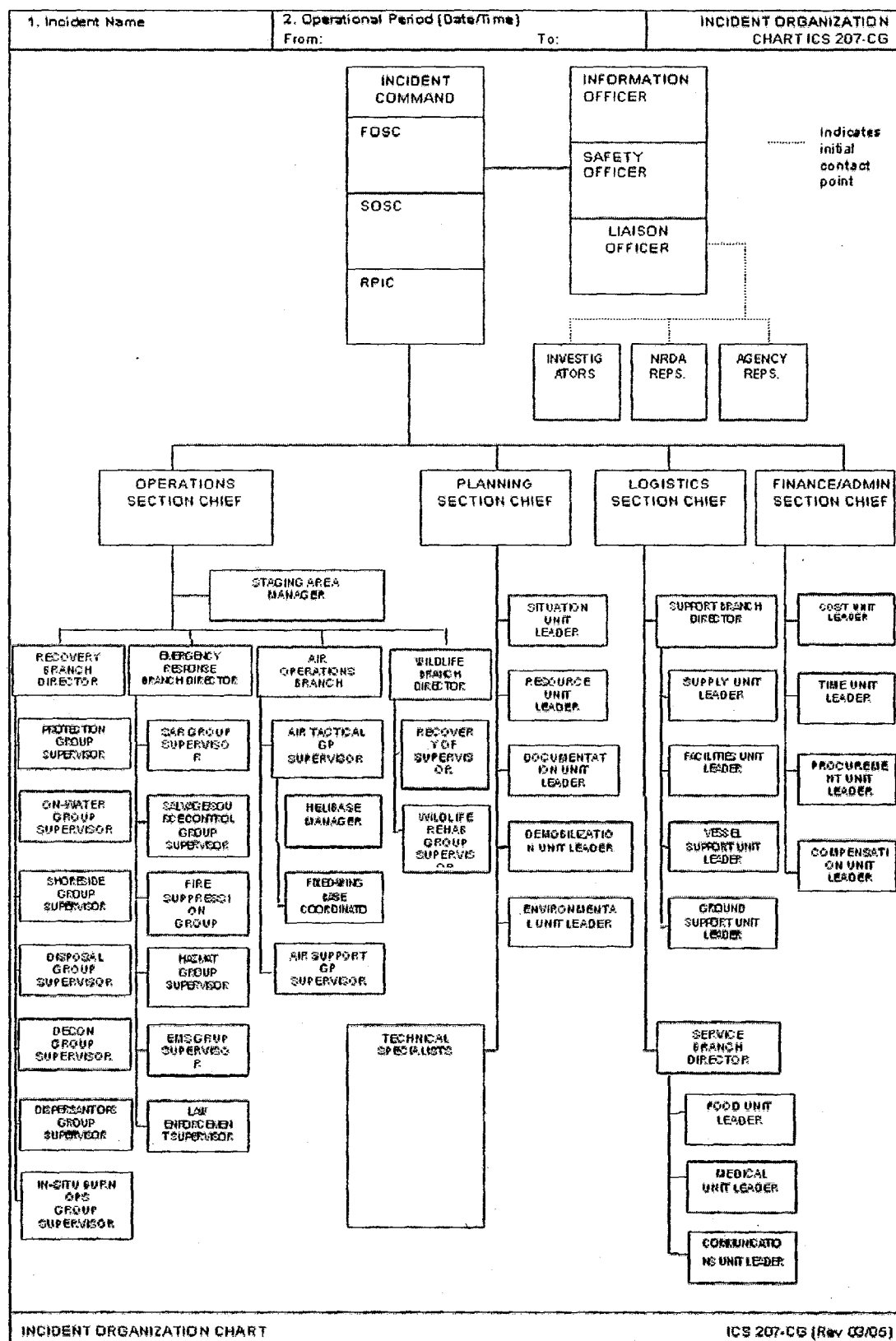
[illegible]

1. Incident Name [REDACTED]	2. Operational Period (Date/Time) From: [REDACTED] To: [REDACTED]	INCIDENT OBJECTIVES ICS 202-CG
3. Objective(s) [REDACTED]		
4. Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions) [REDACTED]		
Approved Site Safety Plan Located at: [REDACTED]		
5. Prepared by: (Planning Section Chief) [REDACTED]		Date/Time [REDACTED]

1. Incident Name [Redacted]		2. Operational Period (Date/Time) From: [Redacted] To: [Redacted]		ORGANIZATION ASSIGNMENT LIST ICS 203-CG																																																																																
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NRC Incident No. # _____

[illegible]



SITE SAFETY PLAN

I. General

☐ Pump Station ☐ Pipeline Spill ☐ Spill to Water ☐ Excavation ☐ Other: _____

Location: _____

Work to be performed: _____

Issuing Date: _____ Time: _____
 Temperature: _____ ° Wind Direction: _____
 Humidity: _____

II. Hazards to be Evaluated

Y		N		Y		N		Y		N	
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Oxygen Deficient/Enriched				Ingestion / Skin Absorption				Crude Oil			
Flammable Atmosphere (Explosion Fire)				Frostbite				Other* ()			
Toxic Atmosphere: _____				Chemical/MSDS # _____ (Must be attached)							
Boat Operations				Physical Hazard _____							
Confined Space				Traffic _____							
				Vapor Cloud _____							

III. Testing & Monitoring (Check required items)

Tests are to be performed in the order listed.

ACCEPTABLE ENTRY CONDITIONS

Y	N	Continuous	Frequency	19.5 - 23.0% in air	< 19.5% or > 23.0% in air	< 16.0 or > 23.5% in air
☐	☐	☐ Y ☐ N	every _____	19.5 - 23.0% in air	< 19.5% or > 23.0% in air	< 16.0 or > 23.5% in air
☐	☐	☐ Y ☐ N	every _____	< 10% in air	≥ 10.0 but < 20.0% in air	≥ 20.0% in air
☐	☐	☐ Y ☐ N	every _____	< 10 ppm	≥ 10 but < 100 ppm	≥ 100 ppm
☐	☐	☐ Y ☐ N	every _____	< 5 ppm	≥ 5 but < 10 ppm	≥ 10 ppm
☐	☐	☐ Y ☐ N	every _____	< 300 ppm	≥ 300 but < 750 ppm	≥ 750 ppm
☐	☐	☐ Y ☐ N	every _____			

IV. Required Personal Protective Equipment (Check for required use)

General	Eye Prot.	Respiratory Prot.	Hearing Prot.	Gloves	Footwear	Clothing
☐ Hard Hat	☐ Safety Glasses	☐ SCBA/Air Line w/Escape	☐ Ear Plugs	☐ Leather	☐ Steel-toes	☐ FR Coveralls
☐ Safety Harness	☐ Goggles	☐ Air Line	☐ Ear Muffs	☐ Rubber	☐ Rubber	☐ Tyvek
☐ PFD	☐ Face-shield	☐ Air Purifying (Full Mask)	☐ Combination	☐ Nitrile	☐ Hip-boots	☐ Coated Tyvek
	☐ Tinted Lens	Cartridge Type: ☐ OV ☐ Hepa-0/VV		☐ PVC		☐ Saranex

Any other special PPE: _____

V. Emergency Information and Rescue Services

Emergency Contact Person: _____ Contact by: _____
 Fire Department: _____ Contact by: _____
 Ambulance: _____ Contact by: _____
 Hospital: _____ Contact by: _____
 Rescue Services: _____ Contact by: _____
 (if not provided by above)

VI. Required Safety & Rescue Equipment (on site)

☐ Lights	☐ Fall Protection	☐ First Aid Kit	☐ Drinking Water	☐ Fire Extinguisher	☐ Tripod	☐ Other:
☐ Ladder	☐ Retrieval Lines	☐ Resuscitator	☐ Communication Method			

VII. Comments or Special Work Procedures**VIII. Report All Injuries Immediately****IX. Control Measures**

Isolation & Lockout (identify items to be locked out)	Ventilation ☐ Natural ☐ Mechanical
- Establish Work Zones when completed ☐ Hot Zone = Red Ribbon ☐ Warm Zone = Yellow Ribbon ☐ Cold Zone = Blue Ribbon	- Continuous ☐ No ☐ Yes - Flagman / Watchman ☐ - Confined Space – Safety Watch ☐ (See Exhibit "B" for Permit) - Evacuation Routes – (Identify on Map) ☐ Air Horn – Emergency ☐ Primary Route ☐ Secondary Route

[illegible]

Equipment:

Type: _____

Mfger: _____

Calibration / Expiration: _____

Type: _____

Mfgr:

Calibration / Expiration: _____

NRC Incident No. #

[illegible]

ICS 214-CG (Rev 6/05)

NAC Incident No. #

[illegible]

UNIT LOG

ICS 214-CG (Rev 6/05)

6.0 SPILL IMPACT CONSIDERATIONS

6.1 Critical Areas to Protect

6.2 Environmental/Socio-Economic Sensitivities

6.3 Fisheries and Wildlife Protection

6.4 Staging Areas

6.5 Containment and Recovery of Spilled Product

Figure 6.1 On-Water Response Flowchart

6.6 Vulnerability Analysis

6.7 Alternative Response Strategies

Figure 6.2 Environmental Sensitivity Maps

Figure 6.3 Endangered/Threatened Species Listing

Figure 6.4 Aquifers

Figure 6.5 Affected HCA/Environmental

6.1 CRITICAL AREAS TO PROTECT

The critical areas to protect are classified as high, moderate, and low sensitivity to oil for non-coastal/inland environments. The Federal, Province/State, and Local authorities will further clarify these categories at the time of the response. The categories are defined as follows:

HIGH SENSITIVITY

- Areas which are high in productivity, abundant in many species, extremely sensitive, difficult to rehabilitate, or inhabited by threatened/endangered species.
- Areas which consist of forested areas, brush/grassy areas, wooded lake areas, freshwater marshes, wildlife sanctuaries/refuges, and vegetated river/stream banks.

MODERATE SENSITIVITY

- Areas of moderate productivity, somewhat resistant to the effects of oiling.
- Areas which consist of degraded marsh habitat, clay/silt banks with vegetated margins, and gravel/cobble beaches.

LOW SENSITIVITY

- Areas of low productivity, man-made structures, and/or high energy.
- Areas which consist of gravel, sand, or clay material, barren/rocky riverbanks and lake edges, man-made structures, and concrete/compacted earthen drainage ditches.

6.2 ENVIRONMENTAL/SOCIO-ECONOMIC SENSITIVITIES

Environmental/Socio-economic sensitivities are of extreme importance when planning a response effort. The health and safety of the public and the environment, as well as the protection of the various socio-economic sensitivities, must be promptly addressed in order to mitigate the extent of damage and minimize the cost of the clean-up effort.

It is important to protect archeological sites and heritage resources (e.g. National Parks, National Marine Conservation Areas, and National Historic Sites). Impacted archeological sites or heritage resources of an area need to be identified and the likely impacts that result from the activities should be addressed. Specific consideration should be given to access to, and general use and disturbance of areas. The assessment should consider both direct and indirect impacts, cultural protocols and strategies for minimizing impacts. Consultation with local indigenous communities should occur as part of the planning process.

The Company will explore, where appropriate, equivalent environmental protection systems, methods, devices, or technologies that maintain or may be less damaging to the character of heritage resources or archeological sites. If a release from the pipeline impacts a heritage resource, the Company will respond as outlined in Section 3.0, report to the appropriate authority prescribed by law, cleanup and restore the area as required by regulation, and conduct such sampling, analyses, or associated monitoring during and after restoration.

All environmental/socio-economic sensitivities are worthy of protection, but must be prioritized

during a response effort. When making decisions on which areas to designate as collection areas and which to protect, the following sources may be consulted:

- Canadian Wildlife Services, U.S. Fish and Wildlife Service and related province/ state agencies
- Applicable Area Contingency Plans
- Other industry and private experts

The environmental and socio-economic sensitivities in the vicinity of the Pipeline have been broken down into specific categories and identified in this Section. To further clarify the location of the sensitive areas of concern, references to published Area Contingency Plans and Environmental Sensitivity Maps are also provided in this section.

6.3 FISHERIES AND WILDLIFE PROTECTION

The Company will work with Federal, Province/State, and local agency personnel to provide labor and transportation to retrieve, clean, and rehabilitate birds and wildlife affected by an oil spill, as necessary. Oversight of the Company's wildlife preservation activities and coordination with Federal, Province/State, and Local agencies during an oil spill is the responsibility of the Incident Commander.

Protecting fish habitat (e.g. spawning and rearing grounds) is important to both consumers and commercial fisheries. Beyond typical response strategies, other options could include moving floating facilities, temporarily sinking facilities using cages designed for this purpose, temporary suspension of water intakes, or closing sluice gates to isolate the facilities from contamination.

Special consideration should be given to the protection and rehabilitation of endangered species and other wildlife and their habitat in the event of an oil spill and subsequent response. Jurisdictional authorities should be notified and worked with closely on all response/clean-up actions related to wildlife protection and rehabilitation. Laws with significant penalties are in place to ensure appropriate protection of these species.

Wildlife Rescue

The Company will work with Federal, Province/State, and Local agency personnel to provide labor and transportation to retrieve, clean, and rehabilitate wildlife affected by an oil spill, as the situation demands.

The following are items which should be considered for wildlife rescue and rehabilitation during a spill response:

- Bird relocation can be accomplished using a variety of deterrents, encouraging birds to avoid areas of spilled oil. Bird relocation can be accomplished by utilizing deterrent methods including:
 - Use of visual stimuli, such as inflatable bodies, owls, stationary figures, or helium balloons, etc.
 - Use of auditory stimuli, such as propane cannons, recorded sounds, or shell crackers.
 - Use of herding with aircraft, boats, vehicles, or people (as appropriate). Use of capture and relocation.

Search and Rescue - Points to consider

- **The Company's involvement should be limited to offering assistance as needed or requested by the agencies.**
- **Prior to initiating any organized search and rescue plan, authorization must be obtained from the appropriate Federal/State agency.**
- **Initial search and rescue efforts, if needed, should be left up to the appropriate agencies.** They have the personnel, equipment, and training to immediately begin capturing contaminated wildlife.
- With or without authorization, it must be anticipated that volunteer citizens will aid distressed/contaminated wildlife on their own. It is important to communicate that it may be illegal to handle wildlife without express authority from appropriate agencies. Provisions should be made to support an appropriate rehabilitator; however, **no support should be given to any unauthorized volunteer rescue efforts.**
- The regulatory agencies and response personnel should be provided the name and location of a qualified rehabilitator in the event contaminated wildlife is captured.
- Resources and contacts that can assist with wildlife rescue and rehabilitation are provided in Section 2.0. This list includes:
 - Outside rehabilitation organizations
 - Local regulatory agencies
 - Other resources

6.4 STAGING AREAS

When establishing personnel and equipment staging areas for a response to a Pipeline discharge, the following criteria should be evaluated:

- Access to waterborne equipment launching facilities and/or land equipment.
- Access to open space for staging/deployment of heavy equipment and personnel.
- Access to public services utilities (electricity, potable water, public phone, restroom and washroom facilities, etc.).
- Access to the environmental and socio-economically sensitive areas which are projected for impact.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT

General descriptions of various specific response techniques that may be applied during a response effort are discussed below. Company responders are free to use all or any combination of these methods as incident conditions require, provided they meet the appropriate safety standards and other requirements relative to the situation encountered. Data was obtained from reports, manuals and pamphlets prepared by the American Petroleum Institute, Environmental Protection Agency, and the United States Coast Guard. The most effective cleanup of a product spill will result from an integrated combination of clean-up methods. Each operation should complement and assist related operations and not merely transfer spillage problems to areas where they could be more difficult to handle.

The spill should be assessed as soon as possible to determine the source, extent and location of travel. Terrain and other physical conditions downgradient of the spill site will determine the methods of control at a point in advance of the moving product. Often, the bulk of a spill can be contained at a single location or a few key locations in the immediate vicinity of the source point. When possible, the execution of this type of initial containment strategy helps confine a spill to a relatively limited area.

Spill on Land (Soil Surfaces)

• Containment Methods

Product can be trapped in ditches and gullies by earth dams. Where excavating machinery is available, dams can be bulldozed to contain lakes of product. Dams, small and large, should be effectively employed to protect priority areas such as inlets to drains, sewers, ducts and watercourses. These can be constructed of earth, sandbags, absorbents, planks or any other effective method. If time does not permit a large dam, many small ones can be made, each one holding a portion of the spill as it advances. The terrain will dictate the placement of the dams. If the spill is minor, natural dams or earth absorption will usually stop the product before it advances a significant distance. Cleanup is the main concern in such situations.

In situations where vapors from a spill present a clear and present danger to property or life (possible ignition because of passing automobiles, nearby houses, or work vehicles approaching the area), spraying the surface of the spill with dispersant will greatly reduce the release of additional vapors from the product. This method is especially adapted to gasoline spills on soil surfaces.

• Removal Methods

The recovery and removal of free product from soil surfaces is a difficult job. The best approaches at present seem to be:

- Removal with suction equipment to tank truck if concentrated in volumes large enough to be picked up. Channels can be formed to drain pools of product into storage pits. The suction equipment can then be used.
- Small pockets may have to be dipped up by hand.
- If practicable after removal of the bulk of the spill, controlled burning presents the possibility of a fast, simple, and inexpensive method of destruction of the remainder of the product. If all other options have been

executed and the site is still unsafe for further activity because explosive vapors persist, the vapors may need to be intentionally ignited to prevent an accumulation sufficient to become an explosive mixture, provided the other requirements of these guidelines for controlled burning are met.

Intentional ignition to remove released product should be utilized only if all of the following conditions are met:

- Other steps and procedures have been executed and a determination has been made that this is the safest remaining method of control.
- Intentional burning will not unduly damage pipelines, adjacent property, or the environment.
- Controlled burning is permitted by government authorities. Local government authorities to be contacted may include city council, county board of commissioners, city or county fire chiefs, the county forestry commission or fire tower, and the local environmental protection agency. In seeking permission from these authorities, be prepared to convince them that adequate safety precautions have been and will be taken during the operation.
- Controlled burning is conducted with the consent of local land owners.
- Safety must always be a prime consideration when considering controlled burning of product. Sparks and heat radiation from large fires can start secondary fires and strong winds make fire control difficult. There must be no danger of the fire spreading beyond control limits. All persons must be at a safe distance from the edge of the inflammable area. Remember that all burning must be controlled burning.

Spill on Lake or Pond (Calm or Slow-Moving Water)

• Containment Methods

A lake or pond offers the best conditions for removal of product from water. Although the removal is no easy task, the lake or pond presents the favorable conditions of low or no current and low or no waves.

The movement of product on a lake or pond is influenced mainly by wind. The product will tend to concentrate on one shore, bank or inlet. Booms should be set up immediately to hold the product in the confined area in the event of a change in wind direction.

If the spill does not concentrate itself on or near a shore (no wind effect), then a sweeping action using boats and floating booms will be necessary.

The essential requirement for this operation is that it be done very slowly. The booms should be moved at not more than 40 feet per minute. Once the slick is moved to a more convenient location (near shore), the normal operations of removal should begin.

If the slick is small and thin (rainbow effect) and not near the shoreline, an absorbent boom instead of a regular boom should be used to sweep the area

very slowly and absorb the slick. The product may not have to be moved to the shoreline. See Figure 6.1 for on-water recovery decision tree.

- **Removal Methods**

If the Containment slick is thick enough, regular suction equipment may be used first; however, in most instances, a floating skimmer should be used.

If the floating skimmer starts picking up excess water (slick becomes thin), drawing the boom closer to the bank as product is removed will also keep film of product thicker. However, when the slick becomes too thin, the skimmer should be stopped and an absorbent applied (with a boat if necessary) to remove the final amounts. The floating skimmer (if speed is a must) or hand skimmers (if water is shallow enough) or both can be used to pick up the product-soaked absorbent. Before pumping the product-soaked absorbent with a floating skimmer, ensure that the absorbent in question can be pumped and will not harm the pump. Several types are nonabrasive to pump internals. If the floating skimmer is used first, the product-soaked absorbent/water mixture should be pumped into a tank truck.

A better method of retrieving the product-soaked absorbent is to draw it in as close to the shore as possible with the booms used to confine the product initially. The absorbent can then be hand skimmed from the water surface and placed in drums, on plastic sheets or in lined roll-off boxes. It should then be disposed of by acceptable means.

The final rainbow on the surface can be removed with additions of more absorbent.

Spill on Small to Medium Size Streams (Fast-Flowing Creeks)

- **Containment Methods**

The techniques used for product containment on fast-flowing shallow streams are quite different from the ones used on lakes, ponds, or other still bodies of water. The containment and removal processes require a calm stretch of water to allow the product to separate onto the surface of the water. If a calm stretch of water does not exist naturally, a deep slow-moving area should be created by damming. The dam can be constructed by using sandbags, planks or earth. If a dam is required, it should be situated at an accessible point where the stream has high enough banks. The dam should be constructed soundly and reinforced to support the product and water pressure.

- **Underflow dam** - The underflow dam is one method that can be used, especially on small creeks. The water is released at the bottom, of the dam using a pipe or pipes which are laid during construction of the dam. The flow rate through the pipe must be sufficient to keep the dam from overflowing. One method is to lay the pipe at an angle through the dam (while dam is being constructed) so that the height of the downstream end of the pipe will determine the height the water will rise behind the dam.
- **Overflow dam** - Another method of containment is the overflow type dam. The dam is constructed so that water flows over the dam, but a deep

pool is created which slows the surface velocity of the water. Therefore, the condition of a calm stretch of water is met. The overflow dam may be used where larger flow rates (medium size creeks) of water are involved

With this type dam, a separate barrier (floating or stationary boom) must be placed across the pool created by the dam. The separate barrier arrests the surface layer of product. At the same time, the water is flowing under the barrier and over the top of the dam. The barrier should be placed at an angle of 45 % across the pool to decrease the effective water velocity beneath it. Also, it helps to concentrate the product at the bank and not all along the barrier. A second barrier should be placed approximately 10 to 15 feet downstream of the first one as a secondary back-up.

The stationary boom type barrier should be made of wood planks or other suitable material. The stationary boom should be soundly constructed and sealed against the bank. The ends of the planks can be buried in the banks of the stream and timber stakes driven into the stream bed for support as needed. The necessary length of the boom will be approximately 1-1/2 times the width of the waterway.

The plank boom should extend six to eight inches deep into the water and about two inches or higher above the water level. If the increase in velocity under the stationary boom is causing release of trapped product, it should be moved upward slightly. At no time should barrier be immersed more than 20% of the depth of the pool at the barrier location; that is, if the pool created by damming is three feet deep, do not exceed an immersion depth of seven inches with the barrier at the position the barrier is installed.

Another method used with the underflow dam is having the pipe or pipes sized to carry only a portion of the flow needed. The pipe would be placed at the bottom of the dam and level with the creek bed. The remaining flow of the creek could be siphoned or preferably pumped around the dam from a point away from the dam and from the deepest portion of the pool. The pumping or siphoning can be controlled to maintain the desired water level at the dam. The key is the removal of water through or around the dam at the lowest point in the basin. This prevents the oil from escaping with the released water.

A floating boom can be used in place of the stationary type if the created pool's size (bank to bank) and depth will permit. Since changing the depth and/or length of a standard floating boom in a small stream is difficult, the use of the separation of product and water. The advantages of using a floating boom are the speed of deployment and the fact that there is not need for additional support as with the stationary boom.

- Multiple Impoundments - Since emergency built dams (either underflow or overflow) are seldom perfect, a series of dams is usually required. The first one or two will trap the bulk and the ones that are downstream will trap the last traces of product. Precautions should be taken to ensure that the foundations of emergency dams are not washed away by the released water. If earth is used to construct an overflow dam, a layer of earth-filled bags should be placed on top of the dam so erosion will not

take place. See Figure 6.1 for on-water recovery decision tree.

- **Removal Methods**

Once the containment dams are constructed, the problem of removal of the product from the water surface should be the prime consideration. The removal must be continuous or else build-up of product behind the dams or booms might lead to product escaping the traps.

The type of removal procedures used depends largely on the amount of product being trapped in a given span of time, if the amount of product moving down the stream is of sufficient quantity, the first dam or fixed boom would quite possibly trap enough for the floating skimmer to work efficiently. The skimmer will pump the product and possibly some water to a tank truck or other holding tank. Separated water may be released from the bottom of the tank truck if it becomes necessary. The absorbents could then be used at downstream dams or booms. It is inadvisable to place an absorbent in the stream prior to or at the first dam in anticipation of the arriving product. Let the product accumulate at the first dam and use the floating skimmer to recover the product.

Disposal of gross amount of product-soaked absorbent would not then be a problem. Follow directions on use of each absorbent. Some are designed to be placed on water before product arrives; others are intended only to be placed on the product after it accumulates on the water. Plastic sheets should be used to place the product-soaked absorbent on as it is hand skimmed from the water. Alternatively, the material may be placed in drums or lined roll-off boxes.

The containment and removal of spilled product on small to medium fast-flowing streams might require a combination of underflow or overflow dams, fixed booms, skimmers, and absorbents, to ensure a complete cleanup.

Spill on Large Streams and Rivers

- **Containment Methods**

The containment techniques differ considerably on large streams and rivers versus small streams. First, the smooth calm area of water necessary for product-water separation must be found along the stream or river rather than making one as with small streams. Floating booms (rather than fixed booms or dams) must be used to trap the surfaced product.

Local conditions of current and wind must be considered when selecting the site for the boom. A point with a low water velocity near the bank, sufficient depth to operate the product removal equipment, and good access are required. The fact that wind may tend to concentrate the product against one bank must be considered. A smooth, undisturbed area of water is required immediately upstream of the boom to ensure that the product has opportunity to separate out onto the surface. The boom should be positioned where the current is at a minimum. It is more effective to boom at a wide, slow position than on a narrow, fast stretch of water.

If the boom are positioned straight across a river or stream, at right angles to

the flow, surface water tends to dive beneath the barrier (boom) when current velocities exceed about $\frac{1}{2}$ knot (0.8 ft./sec.). However, if the current of the entire river is $\frac{1}{2}$ knot or less, then a boom can be positioned straight across the river or large stream, but angled slightly in relation of the banks. By placing the boom at an angle to the banks, product on the surface is diverted along the boom to the side of the river.

The current velocity is usually much slower near the river bank than in the center and the product will move along the boom toward the bank for removal. A water-tight seal between the bank and the boom is essential. A secondary boom should be set up immediately downstream of the first one to capture the amounts that escape the upstream boom. A boom can be employed parallel to the river flow at the bank to form the seal with the booms used to trap the product.

Where the current velocity of the chosen site exceeds $\frac{1}{2}$ knot, the boom should be positioned in two smooth curves from a point of maximum velocity (usually the center of the river) to both banks. However, this double-boom required product to be removed from both sides of the river. To determine the appropriate angle of boom placement and support (mooring) needed to hold the booms in position, the current velocity should be measured by timing a floating object which is 80% submerged over a distance of 100 feet. A time of 60 seconds over this distance indicates a water current of approximately 1 knot.

For currents from 1 to 2.5 knots (1.7 to 4.2 ft./sec.), the more the boom will have to be angled acute to the bank. The length of the boom will have to be such to reach the center of the river. For currents between $\frac{1}{2}$ and 1 knot (0.8 and 1.7 ft./sec.), the angle of employment can be enlarged.

The major load on the boom is taken by the terminal moorings, particularly the one in the center of the river. However, intermediate moorings are also required both to maintain the smooth curve of the boom to prevent breaking of the boom and to assist with preventing skirt deflection. The intermediate moorings are preferably positioned every 25 feet and must be adjusted to avoid the formation of indentations in the boom profile. These trap product in pockets, prevent its deflection to the bank, and also encourage diving currents. The moorings' ropes should be five times the water depth.

In certain situations, it might be advantageous to position booms to deflect the approaching spilled product to a slower moving area. Naturally, additional booms would have to be positioned around this slower moving area prior to deflecting the product to the area. This approach has been used along river which has lagoons, etc., with a very low current action. The recovery would take place in the lagoons and not along the river bank. See Figure 6.1 for on-water recovery decision tree.

• Removal Methods

The product collected upstream of the floating booms in a large stream or river should be removed from the water surface as it accumulates. Regular suction equipment, a floating skimmer, and/or absorbents (including absorbent booms) should be used to remove the product as appropriate to the quantity being trapped in a given span of time. If the amount moving down the stream is of

sufficient quantity, the primary floating boom would possibly trap enough for the floating skimmer to work efficiently. The skimmer will pump the product and some water to a tank truck or other holding tank.

The absorbents would then be used upstream of the secondary boom to absorb the underflow from the primary boom. An absorbent boom can also be placed between the primary and secondary booms to help the other absorbents control the underflow from the primary boom.

It is best to hand skim the saturated absorbents and place on plastic sheets. However, if the absorbent used can be pumped after product absorption and speed of removal is a necessity, the floating skimmer can be used to remove the product-soaked absorbent.

The disadvantage of pumping the product-soaked absorbent to a truck is the volume that will accumulate (skimmer will pump excess water) and the disposal problems associated with the large water/product-soaked absorbent mixture.

Spill on Stream which Flows into Lake or Pond

In certain locations where streams (small and large ones) flow into lakes or ponds at relatively short distances, it is conceivable that a spill could reach the lake before containment and recovery operations are set up. If time permits for containment operations to be set up on the stream in question, it then would be handled as described above depending upon the stream size involved.

However, if product in the stream is near the lake site or if product is flowing into the lake with a significant amount yet to arrive, a different containment should be employed.

• Containment Methods

Product on a stream flowing into a lake should be boomed as close to the entrance as possible. The boom should be positioned on the lake at an angle to the residential stream current so as to direct the surface water to a slower moving area. The area where the product is being deflected should be enclosed by booms to contain it. An additional boom for sweeping the product to the bank will be required. This area of containment should not have a current velocity of more than 1/2 knot (0.8 ft./sec.), preferably less. See Figure 6.1 for on-water recovery decision tree.

• Removal Methods

The removal of product from the lake or pond's surface would be handled as described earlier.

For sizable releases, collected product will usually be pumped into tank trucks and transported to a storage facility. Tank trucks are available at several locations throughout.

Spill in Urban Areas

Oil spills in urban areas can greatly impact recreational use, human health, wildlife habitat(s), and potential beach or park closures. Manmade structures along waterways require unique protection strategies. Manmade structures could include vertical shore protection structures such as seawalls, piers, and bulkheads, as well as riprap revetments and groins, breakwaters, and jetties. Vertical structures can be constructed of concrete, wood, and corrugated metal. They usually extend below the water surface, although seawalls can have beaches or riprap in front of them. These structures are very common along developed shores, particularly in harbors, marinas, and residential areas. The range in degree of exposure to waves and currents varies widely, from very low in dead-end canals, to very high on offshore breakwaters. Boat wakes can generate wave energy in otherwise sheltered areas. Maintaining shipping or other kinds of vessel traffic through navigation channels or waterways during a spill response is a difficult consideration because there is usually economic and political pressure to re-establish normal operations as soon as possible. This consideration extends to vehicular traffic through urban areas. Deploying booms and skimmers or constructing recovery sites can conflict with such traffic for several days. Also, passage of deep-draft vessels through the waterway can suddenly change water level and flow or create wakes, causing booms to fail. For these reasons, recovery efforts must be coordinated through the Unified Command to ensure the cooperation of all parties involved.

- **Containment Methods**

Containment techniques in an urban area depend greatly on the ability to deploy equipment due to obstacles presented by the urban area. Most booming and containment techniques will work with slight modifications such as direct anchoring instead of the use of booming buoys. Often, debris and other obstacles cause gaps in containment or clog up the flow of oil in diversion booming. Vessel traffic can also cause containment to fail, due to splash over from vessel wakes.

- **Removal Methods**

Normal recovery techniques work when recovering oil in an urban area. However, recovery can be hampered by several situations. Floating debris clogging skimming equipment is the main cause for low recovery rates. Another problem for recovery in an urban area is lack of storage space. Often traffic problems or lack of access prevent storage equipment such as frac tanks and vacuum trucks from approaching the recovery zone.

Spill Under Ice

- **Containment Methods**

The traditional strategy for dealing with oil under the ice in a river or lake is to cut a slot to aid in recovery. Ice slots can be cut using chain saws, handsaws, ice augers or some form of trencher. Another effective variation of this technique is the diversionary plywood barrier method which is also discussed below. See Figure 6.1 for on-water decision tree.

- **Removal Methods**

Ice slotting is a very basic technique used to gain access to oil trapped beneath

the ice. In ice slotting, a J shaped outline is sketched into the ice at a 30 degree angle to the current. The slight J hook or curve is necessary at the upstream side to provide flow towards the recovery area. In general, the slot width should be 1.5 times the thickness of the ice. Remember, a block of ice is heavy and the width of the slot must be taken into consideration so it can be safely removed or pushed under if the water beneath the ice is sufficiently deep. The length of the slot will be determined by the width of the river and strategy.

This technique is a successful strategy to implement. However, there are a few pit falls to be aware of. First, responders will fatigue rapidly if required to cut the slot or slots by hand using a chain saw or hand held saw. This can present a problem if there are not a sufficient number of Hazmat technicians available. Secondly, when cutting with chain saws, large volumes of water are kicked up by the moving chain onto the responder. This is a safety problem when the responders get wet in extreme cold weather conditions. Wearing rain gear however can reduce this problem.

A second technique is to slot the ice and use plywood to help divert oil beneath the ice to a recovery area. This technique is called the diversionary plywood barrier method. In this technique, a narrow slot is made through the ice and 4' x 8' sheets of plywood or equivalent are dropped into the slot to create a barrier and force the oil to follow along it to the collection area. This is the same principal employed when using floating boom.

The slot can be cut or drilled depending on the equipment available at the time of the response. If drilling is required, a gas powered ice auger can be used. In this scenario a series of 8" or 10" holes are drilled next to each other in the J pattern.

A chain saw can be used to connect the holes if an ice bridge exists between two auger holes. After the ice auguring is complete, plywood can be dropped into the augured slot.

Again, river ice is dirty and chipper blades on the augers may only last long enough to complete a single auger hole. This technique requires a large inventory of chipper blades. Extra auger flights can be used, which reduces down time to change blades. A real plus to slotting the ice with an ice auger is the limited exposure of responders to water. The water is generally restricted to the area around the responder's feet.

If an ice auger is not available, a chain saw can be used to cut a narrow slot. After the slot has been cut and ice removed, plywood can be inserted. When using a chainsaw that makes a 3/8" cut, a 1/8"-1/4" plywood or outdoor siding can be inserted into the slot and effectively be used to create the barrier. Again, the down side when using a large chain saws is fatigue and splash from water being kicked up by the chain. However, this problem is not as bad as cutting large slots as described above. Since only a single slot is made, the number of responders can be reduced and extra personal protective equipment in the form of rain gear can be used to minimize the water splash.

Spill on Ice

When managing an oil spill on ice special consideration must be given to several safety factors. Thickness of the ice and general accessibility of equipment must be

considered when planning for on-ice recovery. Ice that is too thin to safely traverse or broken ice may prevent active recovery.

- **Containment Methods**

For ice-covered on-land or on-water spills, snow or earthen berms may be constructed to contain oil around the leak, if terrain permits. Dikes filled with sorbent materials may be used on spills in smaller streams to create a manmade dam to prevent the further migration of the oil.

Oil may become encapsulated due to melting and refreezing of the ice. Oil may then be more difficult to access and remove. See Figure 6.1 for on-water recovery decision tree.

- **Removal Methods**

Generally, on-ice recovery consists of the manual removal of the product from the spill site. If conditions permit, vacuum trucks or suction pumps may be used to remove pools of oil that may have collected. Often, product removal will be done by hand using brooms, shovels and rakes. Manually moving the oil/snow mixture into piles for collection where it is either vacuum or manually collected into storage containers.

Spill in Wetland Areas

Wetlands, which include upland and inland marshes, swamps and bogs, are highly sensitive to spills because they collect run-off from surrounding environments, and because they are home to many commercially and ecologically important species. Wetlands are very susceptible to damage and are a high priority to protect. Precautions should be taken so that the recovery effort does not cause more damage than that caused by the release.

- **Containment Methods**

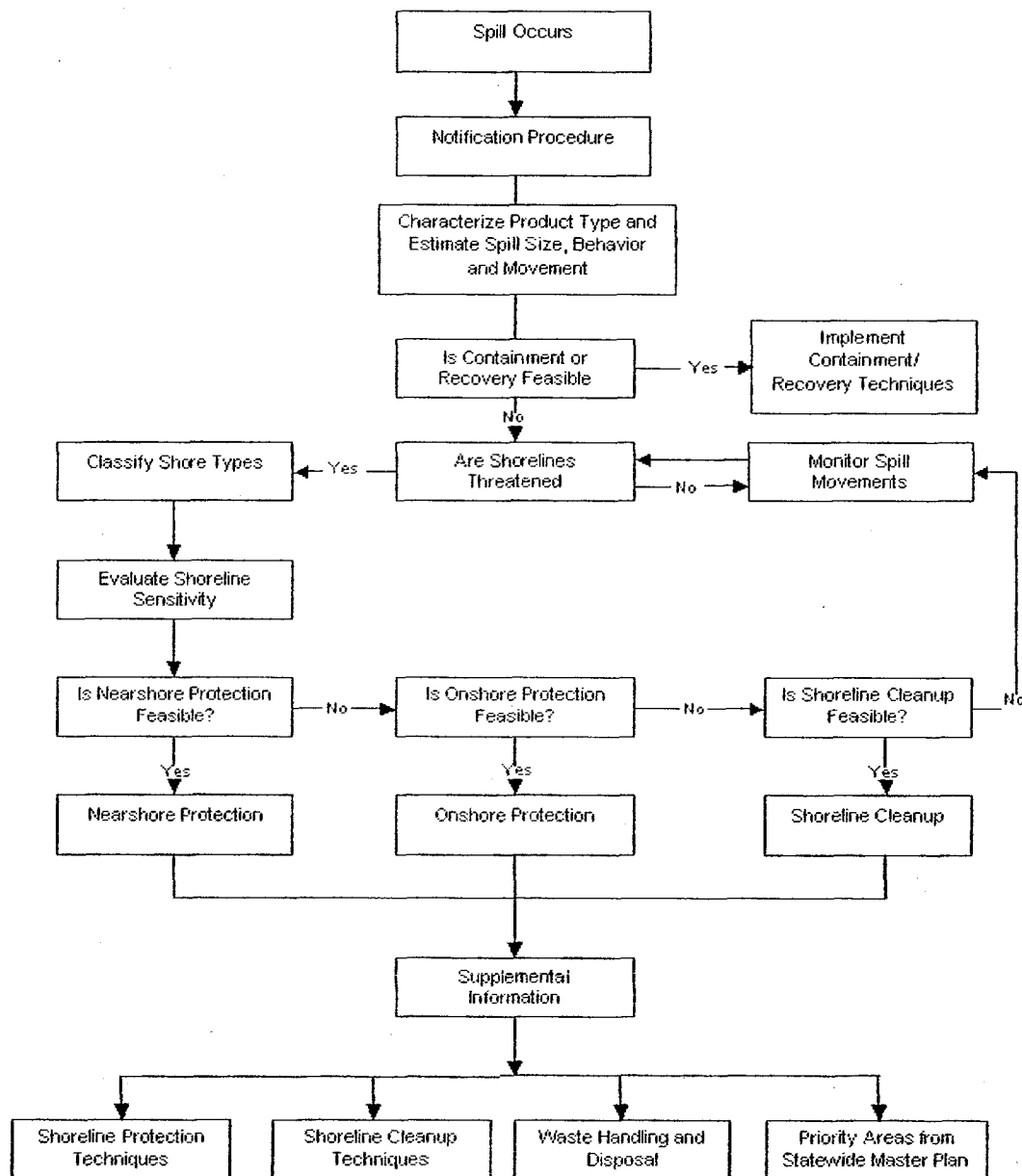
Containment booms can be strategically deployed to contain or divert the product into recovery areas where skimmers and vacuums can be used to remove the product. Berms can also be built to contain or divert the product. Consideration must be given to the damage that can be caused by holding the product in the wetland areas. Often, allowing the product to flow to natural collection areas and possibly assisting the flow by the use of high volume low pressure water pumps may be the best course of action.

- **Removal Methods**

Skimmers and vacuums can be deployed to recover contained oil. Other acceptable response techniques might include bioremediation, sorbents and in-situ burning. The use of heavy equipment is often not practical because of the damage it can cause to plant and animal life. During recovery, specially designed flat bottom shallow draft vessels and the use of plywood or boards may be used to reduce the damage caused by recovery personnel. If the water table is high and the oil will not permeate the soil, shallow trenches may be dug to collect oil for removal.

The Unified Command must balance the need to remove the product with the damage caused by active removal. Considerations for long term passive recovery should be considered.

FIGURE 6.1
ON-WATER RESPONSE FLOWCHART



6.6 VULNERABILITY ANALYSIS

The thorough examination of published Area Contingency Plans (ACPs) was conducted to identify sensitive areas in all the response zones.

The Environmental Sensitivity Maps located in Figure 6.2 identify sensitive areas along the Pipeline. The appropriate Area Contingency Plan maps are also included to provide more detailed information on sensitivities and possible potential response options.

6.7 ALTERNATIVE RESPONSE STRATEGIES

There are no pre-approved response options for inland spills within the United States. Any plans to use dispersants or in situ burn by the Company will be submitted to the Federal On-Scene Coordinator for Regional Response Team approval prior to such action being taken.

IN SITU BURNING

When considering the use of in situ burning the following considerations should be evaluated. In most cases, an agency application with further considerations will need to be completed before burning will be approved by the agency.

Size, Nature, and Product Spilled

- Flammability of the product. (Will the product burn?)
- Location of spill. (Distance and direction to nearest human use areas.)
- Volume of product released.
- Estimate of the surface area covered by the spill.
- How long has oil been exposed?
- Will burning cause more hazardous by-products?

Weather and Forecast

- Current weather conditions. (Rain / Heat)
- Wind speed and direction.
- 24 hour forecast.
- 48 hour forecast.

Evaluate the Response Operations

- Is there time enough to conduct burning?
- Is safety equipment available?
- Is adequate personnel available for monitoring / emergency response?
- Is mechanical recovery more intrusive than burning?

Habitats Impacted and Resources at Risk

- Have local agency / Officials been contacted.
 - Public Health
 - Land Owner / Manager
 - Local Fire Management (Fire Marshall)
 - Historic Property Specialist
 - Province / State Resource Agency
 - Aboriginal / Native American interests
- What is / will be the impact to surface water intakes and wells.

- Are endangered habitats / endangered species present?
- Is area used by Migratory Animals?
- What wildlife is present?

Burn Plan

- How much of the oil is expected to burn?
- How long will it be expected to burn?
- How will burn be ignited?
- How will burn be extinguished?
- How will burned oil residue be collected?
- What are the monitoring protocols?

DISPERSANT USE

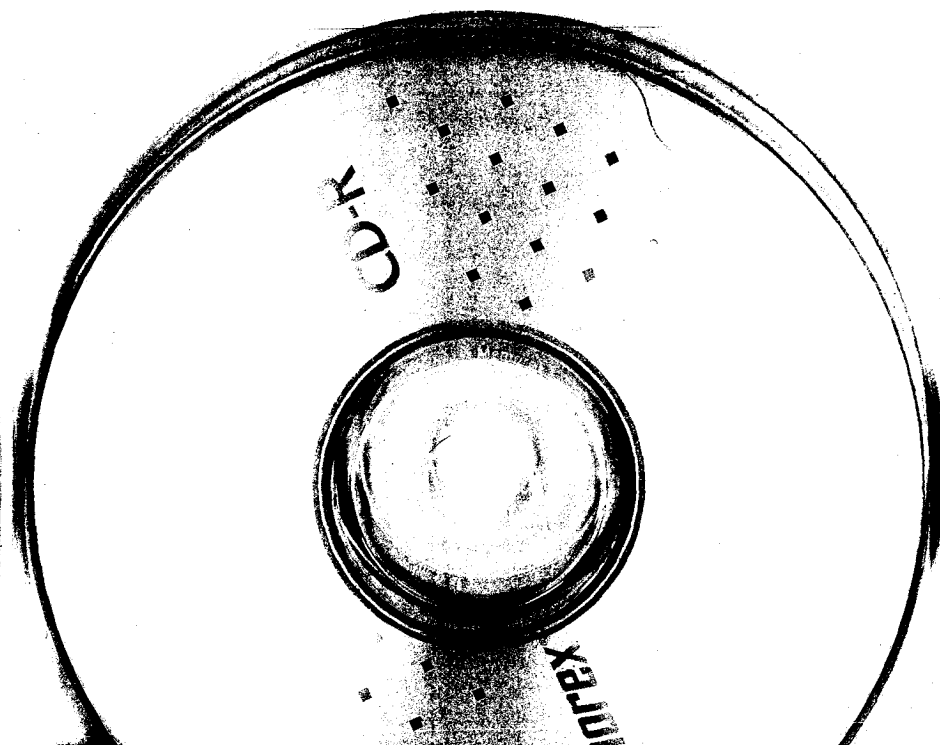
Dispersants are not commonly used on inland spills. Working closely with Federal, Province / State and local agencies will be necessary for gaining approval to use dispersants. Since dispersants do not eliminate the oil, only break up and spread the oil throughout the water column, it is important to look at the total effect the oil will have on the environment while considering the use of dispersants.

FIGURE 6.2 ENVIRONMENTAL SENSITIVITY MAPS

Remember these maps are to be utilized as guidelines only. During a real response effort Federal, Province/State, and local agencies should be contacted to provide further assistance in the proper identification and protection of the various environmental and socio-economic sensitive areas

Canada ESM Map 1
Canada ESM Map 2
Canada ESM Map 3
Canada ESM Map 4
Canada ESM Map 5
Canada ESM Map 6
Canada ESM Map 7
Canada ESM Map 8
Canada ESM Map 9
Canada ESM Map 10
Canada ESM Map 11
Canada ESM Map 12
Canada ESM Map 13
Canada ESM Map 14
Canada ESM Map 15
Canada ESM Map 16
Canada ESM Map 17
Canada ESM Map 18
Canada ESM Map 19
Canada ESM Map 20
Canada ESM Map 21
Canada ESM Map 22
Canada ESM Map 23
Canada ESM Map 24
Canada ESM Map 25
Canada ESM Map 26
Canada ESM Map 27
Canada ESM Map 28
US ESM Map 1
US ESM Map 2
US ESM Map 3
US ESM Map 4
US ESM Map 5
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US ESM Map 27
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US ESM Map 29
US ESM Map 30
US ESM Map 31
US ESM Map 32
US ESM Map 33
US ESM Map 34
US ESM Map 35
US ESM Map 36
US ESM Map 37
US ESM Map 38
USL Index Map
USL Map 2
USL Map 3
USL Map 3C1
USL Map 3D1
USL Map 3D2
USL Map 3D3
USL Map 3D4
USL Map 5P51
USL Map 5P53
USL Map 5P54
USL Map 5P62
USL Map 6
USL Map 6P61
USL Map 8
USL Map 9
USL Map 10
USL Map 11
USL Map 12
USL Map 12A2
USL Map 12A3
USL Map 12C2
USL Map 12D2
USL Map 13
USL Map 18
USL Map 19
USL Map 24



TransCanada Keystone Limited Partnership Response Management Associates, Inc
TC Oil Pipeline Operations Inc. 6620 Cypresswood Drive,
Keystone Pipeline System Suite 200
Emergency Response Plan Spring, TX 77379
Environmental Sensitivity Maps 281-320-9796
October 2008 www.rmaworld.com

FIGURE 6.3

ENDANGERED/THREATENED SPECIES LISTING

Canada

Common Name	Scientific Name
Animals	
Burrowing Owl	<i>Athene cunicularia</i>
Olive-backed Pocket Mouse	<i>Perognathus fasciatus</i>
Long-billed Curlew	<i>Numenius americanus</i>
Short-eared Owl	<i>Asio flammeus</i>
Northern Leopard Frog	<i>Rana pipiens</i>
Sprague's Pipit	<i>Anthus spragueii</i>
Plants	
Bushy cinquefoil	<i>Potentilla paradoxa</i>
Chaffweed	<i>Anagallis minima</i>
Common tickseed	<i>Coreopsis tinctoria</i>
Dillen's wood sorrel	<i>Oxalis dillenii</i>
Endolepis	<i>Atriplex suckleyi</i>
Few-flowered aster	<i>Aster pauciflorus</i>
Few-flowered salt-meadow grass	<i>Torreyochloa pallida var pauciflora</i>
Lance-leaved loosestrife	<i>Lysimachia hybrida</i>
Little-seed rice grass	<i>Oryzopsis micrantha</i>
Low townsendia	<i>Townsendia exscapa</i>
Nevada rush	<i>Juncus nevadensis</i>
Pale blue-eyed grass	<i>Sisyrinchium septentrionale</i>
Rush-pink	<i>Stephanomeria runcinata</i>
Salt-marsh sand spurry	<i>Spergularia salina</i>
Short-stalk mouse-ear chickweed	<i>Cerastium brachypodium</i>
Shrubby evening-primrose	<i>Calylophus serrulatus</i>
American pellitory	<i>Parietaria pensylvanica</i>
American lopseed	<i>Phryma leptostachya</i>
Fox sedge	<i>Fox sedge</i>
Honewort	<i>Cryptotaenia canadensis</i>
Rice cutgrass	<i>Leersia oryzoides</i>
Yellow water crowfoot	<i>Ranunculus flabellaris</i>
Other	
None Listed	

Illinois

Common Name	Scientific Name
Animals	
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Indiana Bat	<i>Myotis sodalis</i>
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>
Eastern Massasauga	<i>Sistrurus catenatus catenatus</i>

Western Sand Darter	<i>Ammocrypta clarum</i>
Kirtland's Snake	<i>Clonophis kirtlandi</i>
Least Bittern	<i>Lxobrychus exilis</i>
Greater Prairie Chicken	<i>Tympanuchus cupido</i>
Barn Owl	<i>Tyto alba</i>
Lake Sturgeon	<i>Acipenser fulvescens</i>
Timber Rattlesnake	<i>Crotalus horridus</i>
Little Blue Heron	<i>Egretta caerulea</i>
Butterfly	<i>Ellipsaria lineolata</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Common Moorhen	<i>Gallinula chloropus</i>
Bigeye Shiner	<i>Notropis boops</i>
Yellow-crowned Night Heron	<i>Nyctanassa violacea</i>
Illinois Chorus Frog	<i>Pseudacris streckeri</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>
Royal Catchfly	<i>Silene regia</i>
Lined Snake	<i>Tropidoclonion lineatum</i>
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>
Henslow's Sparrow <i>Ammodramus henslowii</i>	<i>Ammodramus henslowii</i>
Short-eared Owl	<i>Asio flammeus</i>
Upland Sandpiper	<i>Bartramia longicauda</i>
Northern Harrier	<i>Circus cyaneus</i>
King Rail	<i>Rallus elegans</i>
Barn Owl	<i>Tyto alba</i>
Plants	
Prairie Rose Gentian	<i>Sabatia campestris</i>
Ear-leaved Foxglove	<i>Tomanthera auriculata</i>
Sedge	<i>Carex bromoides</i>
Fibrous-rooted Sedge	<i>Carex communis</i>
Drooping Sedge	<i>Carex prasina</i>
Blazing Star	<i>Liatris scariosa</i> var. <i>nieuwlandii</i>
Prairie Rose Gentian	<i>Sabatia campestris</i>
Grass-leaved Lily	<i>Stenanthium gramineum</i>
Ear-leaved Foxglove	<i>Tomanthera auriculata</i>
Spring Ladies' Tresses	<i>Spiranthes vernalis</i>
Prairie Spiderwort	<i>Tradescantia bracteata</i>
Decurrent False Aster	<i>Boltonia decurrens</i>
Other	
None Listed	

Kansas

Common Name	Scientific Name
Animals	
American Burying Beetle	<i>Nicrophorus americanus</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Eastern Spotted Skunk	<i>Spilogale putorius</i>
Eskimo Curlew	<i>Numenius borealis</i>
Least Tern	<i>Sterna antillarum</i>

Peregrine Falcon	<i>Falco peregrinus</i>
Piping Plover	<i>Charadrius melodus</i>
Snowy Plover	<i>Charadrius alexandrinus</i>
Western Silvery Minnow	<i>Hybognathus argyritis</i>
Chestnut Lamprey	<i>Ichthyomyzon castaneus</i>
Flathead Chub	<i>Platygobio gracilis</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>
Sicklefin Chub	<i>Macrhybopsis meeki</i>
Silver Chub	<i>Macrhybopsis storeriana</i>
Silverband Shiner	<i>Notropis shumardi</i>
Smooth Earth Snake	<i>Virginia valeriae</i>
Sturgeon Chub	<i>Macrhybopsis gelida</i>
Topeka Shiner	<i>Notropis topeka</i>
Whooping Crane	<i>Grus americana</i>
Sharp Hornsnail	<i>Pleurocera acuta</i>
Arkansas Darter	<i>Etheostoma cragini</i>
Arkansas River Shiner	<i>Notropis girardi</i>
Arkansas River Speckled Chub	<i>Macrhybopsis tetranema</i>
Flutedshell Mussel	<i>Lasmigona costata</i>
Plants	
None Listed	
Other	
None Listed	

Missouri

Common Name	Scientific Name
Animals	
Indiana Bat	<i>Myotis sodalis</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>
Interior Least Tern	<i>Sterna antillarum athalassos</i>
Eastern Massasauga	<i>Sistrurus catenatus catenatus</i>
Spectaclecase	<i>Cumberlandia monodonta</i>
Plants	
Running Buffalo Clover	<i>Trifolium stoloniferum</i>
Decurrent False Aster	<i>Boltonia decurrens</i>
Other	
None Listed	

North Dakota

Common Name	Scientific Name
Animals	
Horned Grebe	<i>Podiceps auritus</i>
American White Pelican	<i>Pelecanus erythrorhynchos</i>
American Bittern	<i>Botaurus lentiginosus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>

Ferruginous Hawk	<i>Buteo regalis</i>
Yellow Rail	<i>Coturnicops noveboracensis</i>
Willet	<i>Catoptrophorus semipalmatus</i>
Upland Sandpiper	<i>Bartramia longicauda</i>
Long-billed Curlew	<i>Numenius americanus</i>
Marbled Godwit	<i>Limosa fedoa</i>
Wilson's Phalarope	<i>Phalaropus tricolor</i>
Franklin's Gull	<i>Larus pipixcan</i>
Black Tern	<i>Chlidonias niger</i>
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
Sprague's Pipit	<i>Anthus spragueii</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Baird's Sparrow	<i>Ammodramus bairdii</i>
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsonii</i>
Lark Bunting	<i>Calamospiza melanocorys</i>
Chestnut-collared Longspur	<i>Calcarius ornatus</i>
Canadian Toad	<i>Bufo hemiophrys</i>
Plains Spadefoot	<i>Spea bombifrons</i>
Smooth Green Snake	<i>Lioclorophis vernalis</i>
Western Hognose Snake	<i>Heterodon nasicus</i>
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>
Sturgeon Chub	<i>Macrhybopsis gelida</i>
Sicklefin Chub	<i>Macrhybopsis meeki</i>
Pearl Dace	<i>Margariscus margarita</i>
Blue Sucker	<i>Cycleptus elongatus</i>
Northern Pintail	<i>Anas acuta</i>
Canvasback	<i>Aythya valisineria</i>
Redhead	<i>Aythya americana</i>
Northern Harrier	<i>Circus cyaneus</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Prairie Falcon	<i>Falco mexicanus</i>
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>
Greater Prairie Chicken	<i>Tympanuchus cupido</i>
Greater Sage-grouse	<i>Centrocercus urophasianus</i>
Piping Plover	<i>Charadrius melodus</i>
American Avocet	<i>Recurvirostra americana</i>
Least Tern	<i>Sterna antillarum</i>
Short-eared Owl	<i>Asio flammeus</i>
Burrowing Owl	<i>Athene cunicularia</i>
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Sedge Wren	<i>Cistothorus platensis</i>
Dickcissel	<i>Spiza americana</i>
Le Conte's Sparrow	<i>Ammodramus leconteii</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Common Snapping Turtle	<i>Chelydra serpentina</i>
Short-horned Lizard	<i>Phrynosoma douglasi</i>
Northern Redbelly Snake	<i>Storeria occipitomaculata</i>
Pygmy Shrew	<i>Sorex hoyi</i>
Richardson's Ground Squirrel	<i>Spermophilus richardsonii</i>
Swift Fox	<i>Vulpes velox</i>

River Otter	<i>Lutra canadensis</i>
Black-footed Ferret	<i>Mustela nigripes</i>
Paddlefish	<i>Polyodon spathula</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>
Silver Chub	<i>Macrhybopsis storeriana</i>
Northern Redbelly Dace	<i>Phoxinus eos</i>
Flathead Chub	<i>Platygobio gracilis</i>
Trout-perch	<i>Percopsis omiscomaycus</i>
Threeidge	<i>Amblema plicata</i>
Wabash Pigtoe	<i>Fusconaia flava</i>
Mapleleaf	<i>Quadrula quadrula</i>
Black Sandshell	<i>Ligumia recta</i>
Creek Heelsplitter	<i>Lasmigona compressa</i>
Pink Heelsplitter	<i>Potamilus alatus</i>
Whooping Crane	<i>Grus americana</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Brewer's Sparrow	<i>Spizella breweri</i>
McCown's Longspur	<i>Calcarius mccownii</i>
Smooth Softshell Turtle	<i>Apalone mutica</i>
False Map Turtle	<i>Graptemys pseudogeographica</i>
Northern Prairie Skink	<i>Eumeces septentrionalis</i>
Northern Sagebrush Lizard	<i>Sceloporus graciosus</i>
Arctic Shrew	<i>Sorex arcticus</i>
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>
Long-eared Myotis	<i>Myotis evotis</i>
Long-legged Myotis	<i>Myotis volans</i>
Plains Pocket Mouse	<i>Perognathus flavescens</i>
Hispid Pocket Mouse	<i>Chaetodipus hispidus</i>
Sagebrush Vole	<i>Lemmyscus curtatus</i>
Eastern Spotted Skunk	<i>Spilogale putoris</i>
Gray Wolf	<i>Canis lupis</i>
Chestnut Lamprey	<i>Ichthyomyzon castaneus</i>
Silver Lamprey	<i>Ichthyomyzon unicuspis</i>
Central Stoneroller	<i>Campostoma anomalum</i>
Hornyhead Chub	<i>Nocomis biguttatus</i>
Pugnose Shiner	<i>Notropis anogenus</i>
Blacknose Shiner	<i>Notropis heterolepis</i>
Rosyface Shiner	<i>Notropis rubellus</i>
Finescale Dace	<i>Phoxinus neogaeus</i>
Yellow Bullhead	<i>Ameiurus natalis</i>
Flathead Catfish	<i>Pylodictis olivaris</i>
Logperch	<i>Percina caprodes</i>
River Darter	<i>Percina shumardi</i>
Pink Papershell	<i>Potamilus ohioensis</i>
Plants	
None Listed	
Other	
None Listed	

Nebraska

Common Name	Scientific Name
Animals	
Eskimo Curlew	<i>Numenius borealis</i>
Whooping Crane	<i>Grus americana</i>
Interior Least Tern	<i>Sterna antillarum athalassos</i>
Bald Eagle	<i>Haliaeetus leucophalus</i>
Piping Plover	<i>Charadrius melodus</i>
Mountain Plover	<i>Charadrius montanus</i>
Black-footed Ferret	<i>Mustela nigripes</i>
Swift Fox	<i>Vulpes velox</i>
River Otter	<i>Lutra canadensis</i>
Southern Flying Squirrel	<i>Glaucomys volans</i>
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>
Topeka Shiner	<i>Notropis topeka</i>
Sturgeon chub	<i>Macrhybopsis gelida</i>
Blacknose shiner	<i>Notropis heteropsis</i>
Lake sturgeon	<i>Acipenser fulvescens</i>
Northern Redbelly Dace	<i>Phoxinus eos</i>
Finescale Dace	<i>Phoxinus neogaeus</i>
American Burying Beetle	<i>Nicrophorus americanus</i>
Massasauga	<i>Sistrurus catenatus</i>
Scaleshell Mussel	<i>Leptodea leptodon</i>
Plants	
Hayden's (blowout) penstemon	<i>Penstemon haydenii</i>
Colorado Butterfly Plant	<i>Gaura neomexicana coloradensis</i>
Saltwort	<i>Salicornia rubra</i>
Western Prairie Fringed Orchid	<i>Platanthera praeclara</i>
Ute Lady's Tresses	<i>Spiranthes diluvialis</i>
Ginseng	<i>Panax quinquefolium</i>
Small White Lady's Slipper	<i>Cypripedium candidum</i>
Other	
None Listed	

South Dakota

Common Name	Scientific Name
Animals	
American Burying Beetle	<i>Nicrophorus americanus</i>
Scaleshell	<i>Leptodea leptodon</i>
Higgins Eye	<i>Lampsilis higginsii</i>
Dakota Skipper	<i>Hesperia dacotae</i>
Banded Killifish	<i>Fundulus diaphanus</i>
Blacknose Shiner	<i>Notropis heterolepis</i>
Finescale Dace	<i>Phoxinus neogaeus</i>
Longnose Sucker	<i>Catostomus catostomus</i>
Northern Redbelly Dace	<i>Phoxinus eos</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>

Pearl Dace	<i>Margariscus margarita</i>
Sicklefin Chub	<i>Macrhybopsis meeki</i>
Sturgeon Chub	<i>Macrhybopsis gelida</i>
Topeka Shiner	<i>Notropis topeka</i>
Eastern Hognose Snake	<i>Heterodon platirhinos</i>
False Map Turtle	<i>Graptemys pseudogeographica</i>
Lined Snake	<i>Tropidoclonion lineatum</i>
American Dipper	<i>Cinclus mexicanus</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Eskimo Curlew	<i>Numenius borealis</i>
Interior Least Tern	<i>Sterna antillarum athalassos</i>
Osprey	<i>Pandion haliaetus</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Piping Plover	<i>Charadrius melodus</i>
Whooping Crane	<i>Grus americana</i>
Black-footed Ferret	<i>Mustela nigripes</i>
Gray Wolf	<i>Canis lupus</i>
River Otter	<i>Lontra canadensis</i>
Swift Fox	<i>Vulpes velox</i>
Western Prairie Fringed Orchid	<i>Platanthera praeclara</i>
Plants	
None Listed	
Other	
None Listed	

Note: Country and Province information is maintained separately from the plan for emergency responder use.

FIGURE 6.4

AQUIFERS		
NAME	COUNTY/STATE	PROVINCE
Johsborough Valley & Empress	-----	SK
Buried Sand Gravel		
Swift Current Valley	-----	SK
Graveborough Valley	-----	SK
Neidpath Valley	-----	SK
Condie Moraine	-----	SK
Great Sand Hills	-----	SK
Upper Foral Formation Sands and Gravels	-----	SK
Empress Buried Valley Group	-----	SK
Aquifers and Interglacial Aquifers		SK
Judith River Formation		SK
Winkler	-----	MB
Pembina River	Cavalier & Pembina, ND	-----
Icelandic	Cavalier, Pembina, ND	-----
Pembina Delta	Cavalier, Pembina, ND	-----
Edinburgd	Pembina & Walsh, ND	-----
Eliot	Ransom, ND	-----
Englevale	Sargent, ND	-----
Spiritwood A.D. System	Sargent, ND	-----
Brampton	Sargent, ND	-----
High Plains	Nebraska	-----
Lower Cretaceous	Marshall, Kansas	-----
Ozark Plateaus	Missouri	-----
Missippian	Madison, Illinois	-----

FIGURE 6.5

US ENVIRONMENTAL SENSITIVE AREAS			
USATD	TYPE	ORGANIZATION	Map Sheet
1	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
4	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
44	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
46	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
51	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
53	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
57	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
234	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
256	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
261	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
262	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
267	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
268	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
269	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
270	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
271	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
272	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
273	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
280	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
310	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
319	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
320	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
328	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
329	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
330	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
348	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
351	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
356	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
357	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
358	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
359	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
360	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
361	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
369	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
398	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
405	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
406	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 16
423	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
424	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
425	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
426	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
427	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
452	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
470	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
471	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
472	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
473	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
474	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
500	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
552	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 15

564	ECO	South Dakota Natural Heritage Database	U.S. Map sheet 13
8	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
23	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
219	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
224	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
282	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
283	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
421	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
422	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
583	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 24
584	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 24
622	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
623	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
658	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
659	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
660	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
668	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
698	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
785	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
786	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
793	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
829	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
830	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
831	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
839	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 16
915	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 18
924	ECO	Nebraska Natural Heritage Program	U.S. Map sheet 19
569	ECO	North Dakota Natural Heritage Program	U.S. Map sheet 7
2	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
3	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
8	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
12	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
13	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
21	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
22	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
83	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 36
85	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
86	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
87	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
404	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
656	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
657	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
658	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
659	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
660	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
730	ECO	Missouri Natural Heritage Program	U.S. Map sheet 31
731	ECO	Missouri Natural Heritage Program	U.S. Map sheet 32
738	ECO	Missouri Natural Heritage Program	U.S. Map sheet 28
739	ECO	Missouri Natural Heritage Program	U.S. Map sheet 28
747	ECO	Missouri Natural Heritage Program	U.S. Map sheet 32
748	ECO	Missouri Natural Heritage Program	U.S. Map sheet 32
755	ECO	Missouri Natural Heritage Program	U.S. Map sheet 32

768	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
778	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
779	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
781	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
782	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
786	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
787	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
791	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
908	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 35
910	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 35
913	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 35
917	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
923	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
1060	ECO	Missouri Natural Heritage Program	U.S. Map sheet 32
1064	ECO	Missouri Natural Heritage Program	U.S. Map sheet 28
1178	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
1180	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
1181	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
1183	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
1184	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
1	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
2	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
4	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
7	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
164	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 24
187	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 24
194	ECO	Kansas Natural Heritage Inventory	U.S. Map sheet 27
265	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
266	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
268	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
269	ECO	Missouri Natural Heritage Program	U.S. Map sheet 27
32	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 36
43	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
44	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
49	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
162	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
171	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
172	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
173	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
174	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
175	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
198	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 35
210	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 35
232	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 35
240	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
241	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
242	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
243	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
311	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 38
461	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 38
484	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 38
506	ECO	Illinois Natural Heritage Database Program	U.S. Map sheet 38

555	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
561	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
563	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
564	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
565	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36
566	ECO	Missouri Natural Heritage Program	U.S. Map sheet 36

US HIGH POPULATED AREAS				
FEA ID	NAME	COUNTY NAME	STATE NAME	Map Sheet
737	St. Joseph, MO-KS	Buchanan	Missouri	U.S. Map Sheet 27
887	Alton, IL	Madison	Illinois	U.S. Map Sheet 36
888	St. Louis, MO-IL	Madison	Illinois	U.S. Map Sheet 36

US POPULATED AREAS				
FEA ID	NAME	COUNTY NAME	STATE NAME	Map Sheet
4048	Yankton	Yankton	South Dakota	U.S. Map Sheet 16
4150	Roswell	Miner	South Dakota	U.S. Map Sheet 13
4204	Iroquois	Kingsbury	South Dakota	U.S. Map Sheet 12
4220	Menno	Hutchinson	South Dakota	U.S. Map Sheet 15
4323	Raymond	Clark	South Dakota	U.S. Map Sheet 11
9956	Hoskins	Wayne	Nebraska	U.S. Map Sheet 18
9957	Sholes	Wayne	Nebraska	U.S. Map Sheet 17
10011	Seward	Seward	Nebraska	U.S. Map Sheet 21
10369	Leigh	Colfax	Nebraska	U.S. Map Sheet 19
10405	Randolph	Cedar	Nebraska	U.S. Map Sheet 17
10429	Garrison	Butler	Nebraska	U.S. Map Sheet 20
10526	Larkin	Walsh	North Dakota	U.S. Map Sheet 3
10639	Walhalla	Pembina	North Dakota	U.S. Map Sheet 1
12318	Renick	Randolph	Missouri	U.S. Map Sheet 32
12480	Middletown	Montgomery	Missouri	U.S. Map Sheet 34
12556	Cave	Lincoln	Missouri	U.S. Map Sheet 34
12560	Moscow Mills	Lincoln	Missouri	U.S. Map Sheet 35
12561	Old Monroe	Lincoln	Missouri	U.S. Map Sheet 35
12563	Troy	Lincoln	Missouri	U.S. Map Sheet 34
12832	Gower	Clinton	Missouri	U.S. Map Sheet 28
12836	Plattsburg	Clinton	Missouri	U.S. Map Sheet 28
12877	Brunswick	Chariton	Missouri	U.S. Map Sheet 30
12880	Keytesville	Chariton	Missouri	U.S. Map Sheet 31
12952	Cowgill	Caldwell	Missouri	U.S. Map Sheet 29
12955	Kingston	Caldwell	Missouri	U.S. Map Sheet 29
12961	Agency	Buchanan	Missouri	U.S. Map Sheet 27
12965	Gower	Buchanan	Missouri	U.S. Map Sheet 28
16649	Severance	Doniphan	Kansas	U.S. Map Sheet 26
16754	Robinson	Brown	Kansas	U.S. Map Sheet 26
17901	Vernon	Marion	Illinois	U.S. Map Sheet 38
18793	Keyesport	Bond	Illinois	U.S. Map Sheet 38
18797	Pierron	Bond	Illinois	U.S. Map Sheet 37
18798	Pocahontas	Bond	Illinois	U.S. Map Sheet 37

US DAMS				
DAM NAME	COUNTY	RIVER	STATE	Map Sheet
UNNAMED	DONIPHAN	TR-MISSOURI RIVER	KS	U.S. Map Sheet 27
KSNONAME 4213	DONIPHAN	TR BRUSH CREEK	KS	U.S. Map Sheet 27
UPPER TURTLE R.FLD.RET.#2	GRAND FORKS	SKUNK COULEE	ND	U.S. Map Sheet 3

US LAKES		
NAME	State	Map Sheet
Lake Ashtabula	ND	U.S. Map Sheet 5
Lone Tree Lake	ND	U.S. Map Sheet 7
Carlyle Lake	IL	U.S. Map Sheet 38

US RIVERS & STREAMS			
FEATURE	NAME	STATE	Map Sheet
Stream	Pembina River	ND	U.S. Map Sheet 1
Stream	Tongue River	ND	U.S. Map Sheet 2
Stream	Carl Creek	ND	U.S. Map Sheet 2
Stream	North Branch Park River	ND	U.S. Map Sheet 2
Stream	Middle Branch Park River	ND	U.S. Map Sheet 2
Stream	South Branch Park River	ND	U.S. Map Sheet 2
Stream	North Branch Forest River	ND	U.S. Map Sheet 3
Stream		ND	U.S. Map Sheet 3
Stream	Middle Branch Forest River	ND	U.S. Map Sheet 3
Stream	South Branch Forest River	ND	U.S. Map Sheet 3
Stream Intermittent	Skunk Coulee	ND	U.S. Map Sheet 3
Stream Intermittent	North Branch Turtle River	ND	U.S. Map Sheet 3
Stream Intermittent	Goose Creek	ND	U.S. Map Sheet 4
Stream	Goose River	ND	U.S. Map Sheet 4
Stream	Shoeyenne River	ND	U.S. Map Sheet 7
Stream Intermittent	Crow Creek	SD	U.S. Map Sheet 9
Stream Intermittent		SD	U.S. Map Sheet 9
Stream Intermittent	Antelope Creek	SD	U.S. Map Sheet 9
Stream Intermittent		SD	U.S. Map Sheet 10
Stream	Mud Creek	SD	U.S. Map Sheet 10
Stream Intermittent	Foster Creek	SD	U.S. Map Sheet 11
Stream Intermittent		SD	U.S. Map Sheet 11
Stream Intermittent	Pearl Creek	SD	U.S. Map Sheet 12
Stream Intermittent	South Pearl Creek	SD	U.S. Map Sheet 12
Stream Intermittent		SD	U.S. Map Sheet 12
Stream Intermittent	West Redstone Creek	SD	U.S. Map Sheet 12
Stream Intermittent	Redstone Creek	SD	U.S. Map Sheet 13
Stream Intermittent	Jim Creek	SD	U.S. Map Sheet 13
Stream Intermittent	Rock Creek	SD	U.S. Map Sheet 13
Stream Intermittent	Wolf Creek	SD	U.S. Map Sheet 14
Stream	James River	SD	U.S. Map Sheet 15
Stream Intermittent	Beaver Creek	SD	U.S. Map Sheet 16
Stream	James River	SD	U.S. Map Sheet 16
Stream	West Bow Creek	NE	U.S. Map Sheet 16
Stream	Bow Creek	NE	U.S. Map Sheet 17
Stream	Middle Logan Creek	NE	U.S. Map Sheet 17
Stream	Dog Creek	NE	U.S. Map Sheet 17
Stream	Elk Horn River	NE	U.S. Map Sheet 18
Stream	Elk Horn River	NE	U.S. Map Sheet 18
Stream	Union Creek	NE	U.S. Map Sheet 18
Stream	West Fork Maple Creek	NE	U.S. Map Sheet 19
Stream	Shell Creek	NE	U.S. Map Sheet 19
Stream	Lost Creek	NE	U.S. Map Sheet 19
Stream	North Branch Big Blue River	NE	U.S. Map Sheet 20
Stream	Big Blue River	NE	U.S. Map Sheet 20
Stream	Lincoln Creek	NE	U.S. Map Sheet 21
Stream	West Fork Big Blue River	NE	U.S. Map Sheet 21
Stream	Turkey Creek	NE	U.S. Map Sheet 21
Stream	Swan Creek	NE	U.S. Map Sheet 22
Stream Intermittent	Cub Creek	NE	U.S. Map Sheet 22
Stream Intermittent	Big Indian Creek	NE	U.S. Map Sheet 23
Stream	Big Indian Creek	NE	U.S. Map Sheet 23
Stream	Little Blue River	NE	U.S. Map Sheet 23
Stream	Little Blue River	KS	U.S. Map Sheet 23
Stream	Big Blue River	KS	U.S. Map Sheet 24
Stream	Horseshoe Creek	KS	U.S. Map Sheet 24
Stream	Walnut Creek	KS	U.S. Map Sheet 26

Stream	Wolf River	KS	U.S. Map Sheet 26
Stream	Robidoux Creek	KS	U.S. Map Sheet 24
Stream	Delaware River	KS	U.S. Map Sheet 25
Stream/Intermittent	Craig Creek	KS	U.S. Map Sheet 25
Stream	South Fork Big Nemaha River	KS	U.S. Map Sheet 25
Stream	Shoal Creek	MO	U.S. Map Sheet 29
Stream	Independence Creek	KS	U.S. Map Sheet 28
Stream	Shoal Creek	MO	U.S. Map Sheet 28
Stream	Castile Creek	MO	U.S. Map Sheet 28
Stream	Platte River	MO	U.S. Map Sheet 27
Stream	Mud Creek	MO	U.S. Map Sheet 29
Stream	Grand River	MO	U.S. Map Sheet 30
Stream	Big Creek	MO	U.S. Map Sheet 30
Stream	Grand River	MO	U.S. Map Sheet 30
Stream	Chariton River	MO	U.S. Map Sheet 31
Stream	Mussel Fork	MO	U.S. Map Sheet 31
Stream	Little Platte River	MO	U.S. Map Sheet 28
Stream	Chariton River	MO	U.S. Map Sheet 31
Stream	Turkey Creek	MO	U.S. Map Sheet 29
Stream	Coon Creek	MO	U.S. Map Sheet 32
Stream	Reese Fork	MO	U.S. Map Sheet 32
Stream	Middle Fork Little Chariton River	MO	U.S. Map Sheet 31
Stream	East Fork Little Chariton River	MO	U.S. Map Sheet 31
Stream	Old Channel Chariton River	MO	U.S. Map Sheet 31
Stream	Saling Creek	MO	U.S. Map Sheet 32
Stream	Youngs Creek	MO	U.S. Map Sheet 32
Stream	Long Branch	MO	U.S. Map Sheet 32
Stream	South Fork Salt River	MO	U.S. Map Sheet 33
Stream	Littleby Creek	MO	U.S. Map Sheet 33
Stream	West Fork Cuivre River	MO	U.S. Map Sheet 33
Stream	West Fork Cuivre River	MO	U.S. Map Sheet 34
Stream	West Fork Cuivre River	MO	U.S. Map Sheet 34
Stream	Cuivre Slough	MO	U.S. Map Sheet 35
Stream	Elkhorn Creek	MO	U.S. Map Sheet 34
Stream	Brick House Slough	MO	U.S. Map Sheet 36
Stream	Cuivre River	MO	U.S. Map Sheet 35
Stream	Cuivre River	MO	U.S. Map Sheet 35
Stream	Dardenne Creek	MO	U.S. Map Sheet 35
Dam	Lock and Dam Number 26	MO	U.S. Map Sheet 36
Stream		MO	U.S. Map Sheet 35
Stream	Cora Island Chute	MO	U.S. Map Sheet 36
Stream	Big Creek	MO	U.S. Map Sheet 35
Stream	Cahokia Creek	IL	U.S. Map Sheet 36
Stream	Indian Creek	IL	U.S. Map Sheet 36
Stream	Cahokia Creek	IL	U.S. Map Sheet 36
Stream	Peruque Creek	MO	U.S. Map Sheet 36
Dam	Dam Number 27	MO	U.S. Map Sheet 36
Stream	North Fork Kaskaskia Creek	IL	U.S. Map Sheet 36
Stream	Dardenne Creek	MO	U.S. Map Sheet 35
Stream	East Fork Silver Creek	IL	U.S. Map Sheet 37
Stream	Silver Creek	IL	U.S. Map Sheet 37
Stream	Beaver Creek	IL	U.S. Map Sheet 37
Stream	Shoal Creek	IL	U.S. Map Sheet 37
Stream	Sugar Creek	IL	U.S. Map Sheet 37

ALBERTA, CANADA SENSITIVITY AREAS			
OBJECT ID	STATION NAME	SIGNIFICANCE	Map Sheet
389	Silver Heights (wetlands only)	2	Ca. Map Sheet 2
395	Ribstone Creek - Nose Hill	3	Ca. Map Sheet 2
405	Neutral Hills	3	Ca. Map Sheet 2
413	Middle Lakes	2	Ca. Map Sheet 2
421	Gooseberry Lake	3	Ca. Map Sheet 3
433	Grassy Island Native Prairie	2	Ca. Map Sheet 3
440	Muddy Buttes	3	Ca. Map Sheet 3
449	Muddy Buttes Badlands	3	Ca. Map Sheet 3
450	Grassy Island Native Prairie	2	Ca. Map Sheet 3
460	Sounding Creek Native Prairie	3	Ca. Map Sheet 4
479	Alkali Creek Moraine	3	Ca. Map Sheet 5
493	Red Deer River - Alkali Creek/Dune Point	3	Ca. Map Sheet 5
501	Remount	2	Ca. Map Sheet 6
504	South Saskatchewan Canyon	2	Ca. Map Sheet 7

CANADIAN WILDLIFE		
WOP ID	OBSERVATION	Map Sheet
Alb06WOP1	Plains Spadefoot Toad	Ca. Map Sheet 6
Alb06WOP3	Plains Spadefoot Toad	Ca. Map Sheet 6
Alb06WOP5	Plains Spadefoot Toad & Great Plains To	Ca. Map Sheet 6
Alb06WOP12	Loggerhead Shrike nest	Ca. Map Sheet 6
Alb06WOP13	Loggerhead Shrike nest	Ca. Map Sheet 6
Alb07WOP3	Northern Leopard Frog (wetland)	Ca. Map Sheet 6
Alb07WOP4	Potential Amphian Breeding Wetland	Ca. Map Sheet 6
Alb07WOP6	Unidentified	Ca. Map Sheet 2
Alb07WOP7	Raptor sp.	Ca. Map Sheet 3
Alb07WOP9	Raptor sp.	Ca. Map Sheet 3
Alb07WOP10	Burrowing Owl	Ca. Map Sheet 6
Alb07WOP11	Sharp-tailed Grouse	Ca. Map Sheet 4
Man06WOP2	Northern Leopard Frog	Ca. Map Sheet 28
Man06WOP3	Northern Leopard Frog	Ca. Map Sheet 28

CANADIAN POPULATED AREAS				
PLACE ID	PROV. / TERR.	GEONAME	CONTR.	Map Sheet
581	Manitoba	Reinland	Unincorporated area	Ca. Map Sheet 28
611	Manitoba	Brookdale	Unincorporated area	Ca. Map Sheet 23
1230	Saskatchewan	Caronport	Village	Ca. Map Sheet 13
2459	Manitoba	Miniota	Unincorporated area	Ca. Map Sheet 21

CANADIAN MANUFACTURING WATERWELLS				
Well ID	Owner	Geology	Well Use	Map Sheet
110879	G NEUFELD	SAND AND GRAVEL	PRODUCTION	Ca. Map Sheet 26
120590	T BARBER	SAND AND GRAVEL	PRODUCTION	Ca. Map Sheet 26
120592	UNKNOWN	SAND AND GRAVEL	PRODUCTION	Ca. Map Sheet 26
120639	UNKNOWN	SHALE	PRODUCTION	Ca. Map Sheet 26
120885	UNKNOWN	SAND AND GRAVEL	PRODUCTION	Ca. Map Sheet 26
120887	S MOFFAT	LIMESTONE OR DOLOMITE	PRODUCTION	Ca. Map Sheet 26
160562	ROBINSON	SAND AND GRAVEL	PRODUCTION	Ca. Map Sheet 27
160584	ROBINSON & MCCLOMNEL	SAND AND GRAVEL	PRODUCTION	Ca. Map Sheet 27
181435	UNKNOWN	SHALE	PRODUCTION	Ca. Map Sheet 25
210553	J SWANTON	SAND AND GRAVEL	PRODUCTION	Ca. Map Sheet 27

CANADIAN MUNICIPAL WELLS			
WELL USE	WELL USE	Well ID	Map Sheet
Municipal	Water Test Hole	7403	Ca. Map Sheet 17
Municipal	Water Test Hole	26975	Ca. Map Sheet 13
Municipal	Withdrawal	28444	Ca. Map Sheet 10
Municipal	Water Test Hole	28445	Ca. Map Sheet 10
Municipal	Water Test Hole	28446	Ca. Map Sheet 10
Municipal	Water Test Hole	28447	Ca. Map Sheet 10
Municipal	Water Test Hole	28448	Ca. Map Sheet 10
Municipal	Withdrawal	28449	Ca. Map Sheet 10
Municipal	Water Test Hole	28450	Ca. Map Sheet 10
Municipal	Observation	28451	Ca. Map Sheet 10
Municipal	Water Test Hole	28452	Ca. Map Sheet 10
Municipal	Withdrawal	28453	Ca. Map Sheet 10
Municipal	Observation	28454	Ca. Map Sheet 10
Municipal	Water Test Hole	31129	Ca. Map Sheet 7
Municipal	Withdrawal	77323	Ca. Map Sheet 10

CANADIAN LAKES		
NAME	LAKE ID	Map Sheet
Chaplin Lake	Chaplin Lake (ID956)	Ca. Map Sheet 12

CANADIAN RIVERS & STREAMS	
NAME	Map Sheet
Battle River	Ca. Map Sheet 1
Battle River	Ca. Map Sheet 1
Ribstone Creek	Ca. Map Sheet 2
Monitor Creek	Ca. Map Sheet 3
Sounding Creek	Ca. Map Sheet 4
Alkali Creek	Ca. Map Sheet 5
Alkali Creek	Ca. Map Sheet 5
Red Deer River	Ca. Map Sheet 6
South Saskatchewan River	Ca. Map Sheet 7
Miry Creek	Ca. Map Sheet 9
Thunder Creek	Ca. Map Sheet 13
9737107	Ca. Map Sheet 13
Thunder Creek	Ca. Map Sheet 13
Swift Current Creek	Ca. Map Sheet 11
Moose Jaw River	Ca. Map Sheet 14
Wascona Creek	Ca. Map Sheet 15
Thunder Creek	Ca. Map Sheet 13
10656107	Ca. Map Sheet 15
Pipestone Creek	Ca. Map Sheet 18
11701107	Ca. Map Sheet 20
Pipestone Creek	Ca. Map Sheet 18
11948107	Ca. Map Sheet 19
Arrow River	Ca. Map Sheet 21
12233107	Ca. Map Sheet 21
Assiniboine River	Ca. Map Sheet 21
Boggy Creek	Ca. Map Sheet 23
12527107	Ca. Map Sheet 21
Little Saskatchewan River	Ca. Map Sheet 22
12569107	Ca. Map Sheet 21
Oak River	Ca. Map Sheet 22
Whitemud River	Ca. Map Sheet 23
13019107	Ca. Map Sheet 24
18199107	Ca. Map Sheet 24
12959107	Ca. Map Sheet 22
Assiniboine River	Ca. Map Sheet 25
Assiniboine River	Ca. Map Sheet 25
13416107	Ca. Map Sheet 25
13333107	Ca. Map Sheet 24
13577107	Ca. Map Sheet 25
13379107	Ca. Map Sheet 23
13826107	Ca. Map Sheet 25
Assiniboine River	Ca. Map Sheet 25
Boyne River	Ca. Map Sheet 27
Boyne River	Ca. Map Sheet 27
Boyne River	Ca. Map Sheet 27
14914107	Ca. Map Sheet 27
14990107	Ca. Map Sheet 27
15172107	Ca. Map Sheet 27
15266107	Ca. Map Sheet 27
15321107	Ca. Map Sheet 27

15329107	Ca. Map Sheet 27
15606107	Ca. Map Sheet 28
15601107	Ca. Map Sheet 27
15776107	Ca. Map Sheet 28
15867107	Ca. Map Sheet 28
16006107	Ca. Map Sheet 28
16034107	Ca. Map Sheet 28

APPENDIX A

RESPONSE EQUIPMENT/RESOURCES

A.1 Company Owned Response Equipment

A.2 Other Company Resources

A.3 Contract Resources

A.4 Cooperative/Mutual Aid Resources

A.5 Volunteers

A.6 Communications

Figure A.1 Company Owned Spill Response Equipment

Figure A.2 Response Resources

Figure A.3 USCG OSRO Classifications

Figure A.4 Coop Agreements/OSRO Contracts

RESPONSE EQUIPMENT/RESOURCES

A.1 COMPANY OWNED RESPONSE EQUIPMENT

The Company owns and operates oil spill response equipment contained within response trailers staged throughout the pipeline system. This equipment is maintained according to manufacture's recommendations by Company and/or contracted personnel. An equipment summary detailing locations, type and amount stored in the response trailers is listed in Figure A.1. The Company also has contracts in place with Oil Spill Removal Organizations and other clean-up contractors that are capable of responding to all discharges along the Pipeline. Figure A.2 lists the contracted Oil Spill Removal Organizations.

The Qualified Individual has the authority to activate other private contractors, experts, and consultants as the situation demands.

All Pipeline personnel who might be involved in an oil spill have been informed that detergents or other surfactants are prohibited from being used on an oil spill in the water and that dispersants can only be used with the approval of the Canadian Regional Environmental Emergency Team (REET) or US Regional Response Team, the interagency group composed of Federal and State agency representatives that coordinates oil spill response.

A.2 OTHER COMPANY RESOURCES

Additional Company spill response equipment and manpower resources are not available to supplement the response operation; however, third party contractors will be activated on an as needed basis.

A.3 CONTRACT RESOURCES

The resources will be secured from a Company approved contractor. Management will typically handle notification/implementation of these resources. Figure A.2 provides a quick reference to the Oil Spill Removal Organizations and details their response capability and estimated response times. **Telephone reference is provided in Figure 2.5.** (Note: The Company will ensure that each OSRO has a comprehensive maintenance program and applicable training / drills programs in place at contract renewal.)

A.4 COOPERATIVE/MUTUAL AID RESOURCES

The Company is a member of the following Oil Spill Cooperatives or mutual aid groups:

- Western Canadian Spill Services Ltd.
- Alberta - Area U and S Oil Spill Cooperatives
- Saskatchewan - Area 3, 6, and 4 & 5 Oil Spill Cooperatives

A.5 VOLUNTEERS

Volunteers will not be utilized by the Company for the response operations. In the U.S., all volunteers will be referred to the Federal Regional Response Team.

A.6 COMMUNICATIONS

Effective and efficient communications systems are essential for emergency response at every level. The communications system will be utilized to gather information and current status reports as well as to provide coordination and direction to widely separated work groups involved in search, containment/diversion, repair, traffic control, public control or evacuation, and restoration.

The Company's overall Emergency Notification Chart (Figure 2.2) indicates individuals within the Company and governmental agencies who must be contacted in the event of an emergency.

Notification information for the Qualified Individuals, Alternate Qualified Individuals, emergency response contractors, and governmental agencies is located in Section 2.0 and the Response Zone Annexes.

Lines of communication between the Incident Commander, local personnel, and contractors are demonstrated in the organization charts provided in Figures 4.1 and 4.2. Communication of the overall spill response operation between the Company and the responsible government agencies will occur between the Incident Commander and the Federal On-Scene Coordinator.

Central Communications System

Prearranged communication channels are of the utmost importance in dealing with Company emergencies. The notification procedures and telephone contacts documented in Section 2.0 will be reviewed in accordance with the earlier documented updating procedures. The predetermined communications channels include the following:

- A list of emergency telephone numbers for internal management and emergency response personnel (Figures 2.2 and 2.5).
- A list of emergency telephone numbers for various external resources such as the Fire Departments, Public Officials and local agencies is provided in the Annexes.
- A list of emergency telephone numbers for contract response resources (Figure 2.5).

Communications Equipment

Field communications during a spill response will be handled via radios, telephones, cellular phones, fax machines, and computers and will be maintained by Company personnel. In the event of a Worst Case Discharge, field communications will be enhanced with contract resources as the situation demands.

Communications Type

Voice communications may be conducted over the public telephone system or Company provided two-way radio equipment.

Radios - Hand-held and vehicle-mounted radio sets are the most effective means of communication for the field response operation. The units are battery operated, multi-channelled, and have a typical range that will cover the area of the response operation. Additional radio sets and battery packs/charges will be necessary in the event of a prolonged response operation.

Telephone (Conventional) - Conventional land line telephones are the most effective means of communication for regulatory and advisory notifications during a spill response operation. Additional telephone lines can be installed in the event of a prolonged response operation. All major facilities have access to standard telephone service.

Cellular - Cellular telephones are useful during spill events giving the user the ability to travel while using the communication system.

FAX Machines - FAX machines allow for a rapid transfer of information/documentation

such as status reports/updates, written notifications, and purchase orders. All administrative office have facsimile machines.

Computers - Computers are commonly used in networks which allow access to various other locations and company personnel. Computers also speed the consolidation of information and preparation of a written report.

FIGURE A.1

COMPANY OWNED SPILL RESPONSE EQUIPMENT

COMPANY OWNED RESPONSE EQUIPMENT	
SPILL RESPONSE TRAINERS (ONE PER RESPONSE ZONE)	
Description	Quantity
Response boat 18.5 foot work boat with a 90 HP "jet"	1
Jon boat 14 foot Safety boat with a 9.9 hp	1
34 ft Equipment trailer with 6 ft office includes equipment shelving, heat lights, power awning, rear ramp door and 1 side door. Roof rack for storage of the 14' boat and 500ft boom.	1
River Boom 6" x 6'River Boom 6" x 6'	500 ft
Portable dam 50 ft	1
Diesel /hydraulic Skimming System with diesel power transfer pump and hoses	1
Sorbent pads	5 bales
Sorbent boom	5 bales
500 gallon portable tank.	1
2,000 gallon portable tank	1
Winter equipment(e.g. Chain saws, chains, pry bars, ropes,ice,augers)	varies

FIGURE A.2

RESPONSE RESOURCES

Zone : Hardisty Pump Station/ Regina Pump Station

COOPERATIVES

Western Canadian Spill Services Ltd.

Albert - Area U and S Oil Spill Cooperatives

Saskatchewan - Area 3 and 6 Oil Spill Cooperatives

Zone : Regina Pump Station / Haskett Pump Station

COOPERATIVES

Western Canadian Spill Services Ltd.

Saskatchewan - Area 6 and 4 & 5 Oil Spill Cooperatives

Zone : North Dakota, South Dakota, Nebraska

Area : North Dakota, South Dakota, Nebraska						
OSRO Name	Contract Number	Environment Type	Facility Classification Level			
			M1	M2	M3	M4
National Response Corporation	TBD	River/Canal	X	X	X	X
		Inland	X	X	X	X
		Open Ocean	X	X	X	X
		OffShore	X	X	X	X
		Near Shore	X	X	X	X
		Great Lakes				

Zone : Kansas, Missouri, Illinois

Area : Kansas, Missouri, Illinois						
OSRO Name	Contact Number	Environment Type	Facility Classification Level			
			W1	W2	W3	W4
National Response Corporation	TBD	River/Canal	X	X	X	X
		Inland	X	X	X	X
		Open Ocean	X	X	X	X
		OffShore	X	X	X	X
		Near Shore	X	X	X	X
		Great Lakes				

FIGURE A.3**USCG OSRO CLASSIFICATIONS**

The USCG has classified OSROs according to their response capabilities, within each Captain of the Port (COTP) zone, for vessels and for facilities in four types of environments. Response capabilities are rated MM, W1, W2, or W3 as described below

MINIMUM EQUIPMENT REQUIREMENTS FOR OSRO CLASSIFICATION				
Classification	Resource Quantity Guidelines		Maximum Party Response Times	Maximum Vessel Response Times
Rivers/Canals				
MM	Protective Boom: 4,000*ft EDRC;; 1,200 bbls TSC: 2,400 bbls	High Volume Ports: 6 hours Other Ports: 12 hours	High Volume Ports: 12 hours Other Ports: 24 hours	
W1	Protective Boom: 25,000*ft EDRC;; 1,875 bbls TSC: 3,750 bbls	High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours	
W2	Protective Boom: 25,000*ft EDRC;; 3,750 bbls TSC: 7,500 bbls	High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours	
W3	Protective Boom: 25,000*ft EDRC;; 7,500 bbls TSC: 15,000 bbls	High Volume Ports: 54 hours Other Ports: 60 hours	High Volume Ports: 60 hours Other Ports: 72 hours	
Great Lakes				
MM	Protective Boom: 6,000*ft EDRC;; 1,250 bbls TSC: 2,500 bbls	All Ports: 6 hours	All Ports: 12 hours	
W1	Protective Boom: 30,000*ft EDRC;; 6,250 bbls TSC: 12,500 bbls	High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours	
W2	Protective Boom: 30,000*ft EDRC;; 12,500 bbls TSC: 25,000 bbls	All Ports: 36 hours	All Ports: 42 hours	
W3	Protective Boom: 30,000*ft EDRC;; 25,000 bbls TSC: 50,000 bbls	All Ports: 60 hours	All Ports: 66 hours	

MINIMUM EQUIPMENT REQUIREMENTS FOR OSRO CLASSIFICATION					
Classification	Resource Quantity Surge Lines		Maximum Facility Response Times		Maximum Vessel Response Times
Inland					
MM	Protective Boom: 6,000*ft EDRC;; 1,200 bbls TSC: 2,400 bbls		High Volume Ports: 6 hours Other Ports: 12 hours	High Volume Ports: 12 hours Other Ports: 24 hours	
W1	Protective Boom: 30,000*ft EDRC;; 12,500 bbls TSC: 25,500 bbls		High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours	
W2	Protective Boom: 25,000*ft EDRC;; 12,500 bbls TSC: 25,500 bbls		High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours	
W3	Protective Boom: 25,000*ft EDRC;; 50,500 bbls TSC: 100,500 bbls		High Volume Ports: 54 hours Other Ports: 60 hours	High Volume Ports: 60 hours Other Ports: 72 hours	
Great Lakes					
MM	Protective Boom: 8,000*ft EDRC;; 1,200 bbls TSC: 2,400 bbls		High Volume Ports: 6 hours Other Location: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours	
W1	Protective Boom: 30,000*ft EDRC;; 12,500 bbls TSC: 25,500 bbls		High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours	
W2	Protective Boom: 30,000*ft EDRC;; 25,500 bbls TSC: 50,500 bbls		High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours	
W3	Protective Boom: 30,000*ft EDRC;; 50,000 bbls TSC: 100,000 bbls		High Volume Ports: 54 hours Other Location: 60 hours (for open ocean, plus travel time from shore)	High Volume Ports: 60 hours Other Location: 72 hours (for open ocean, plus travel time from shore)	

MINIMUM EQUIPMENT REQUIREMENTS FOR OSRO CLASSIFICATION				
Classification	Resource Quantity Guidelines		Maximum Facility Response Times	Maximum Vessel Response Times
Offshore				
MM	Protective Boom: 6,000*ft EDRC: 1,200 bbls TSC: 2,400 bbls		High Volume Ports: 6 hours Other Ports: 12 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W1	Protective Boom: 15,000*ft EDRC: 12,500 bbls TSC: 25,500 bbls		High Volume Ports: 24hours Other Ports: 48hours	High Volume Ports: 24 hours Other Ports: 48 hours
W2	Protective Boom: 15,000*ft EDRC: 25,000 bbls TSC: 50,000 bbls		High Volume Ports: 30hours Other Ports: 36hours	High Volume Ports: 36hours Other Ports: 48hours
W3	Protective Boom: 15,000*ft EDRC: 50,000 bbls TSC: 100,000 bbls		High Volume Ports: 54hours Other Ports: 60hours	High Volume Ports: 60hours Other Ports: 72hours
Open Ocean				
MM	Protective Boom: 0*ft EDRC: 1,200 bbls TSC: 2,400 bbls		High Volume Ports: 6hours Other Ports: 12hours	High Volume Ports: 12hours Other Ports: 24hours
W1	Protective Boom: 0*ft EDRC: 12,500 bbls TSC: 25,000 bbls		High Volume Ports: 6hours Other Ports: 12hours	High Volume Ports: 12hours Other Ports: 24hours
W2	Protective Boom: 0*ft EDRC: 25,000 bbls TSC: 50,000 bbls		High Volume Ports: 30hours Other Ports: 36hours	High Volume Ports: 36hours Other Ports: 48hours
W3	Protective Boom: 0*ft EDRC: 50,000 bbls TSC: 100,000 bbls		High Volume Ports: 54hours Other Ports: 60hours	High Volume Ports: 60hours Other Ports: 72hours
1. Rivers/canals include bodies of water, including the Intracoastal Waterway and other bodies artificially created for navigation, confined within an inland area and having a project depth of 12 feet (3.66 meters). 2. EDRC stands for "effective daily recovery capacity," or the calculated recovery capacity of oil recovery devices determined by using a formula that takes into account limiting factors such as daylight, weather, sea state, and emulsified oil in the recovered material. 3. TSC stands for "temporary storage capacity," meaning sufficient storage capacity equal to twice the EDRC of an OSRO. Temporary storage may include inflatable bladders, rubber barges, certified barge capacity, or other temporary storage that can be utilized on scene at a spill response and which is designed and intended for the storage of flammable or combustible liquids. It does not include vessels or barges of opportunity for which no pre-arrangements have been made. Fixed shore-based storage capacity, ensured available by contract or other means, will be acceptable.				
* In addition, 1,000 feet of containment boom plus 300 feet per skimming system.				

FIGURE A.4

AGREEMENTS/CONTRACTS

[Click to view the file - NRC Packet_23_1_2009_14_31_34.pdf](#)

[Click to view the file - WCSS Packet_29_11_2008_10_23_9.pdf](#)

[Click to view the file - Alberta Area 2U Packet_29_11_2008_10_27_35.pdf](#)

[Click to view the file - Alberta Area 1S Packet_29_11_2008_10_28_3.pdf](#)

[Click to view the file - Sask Area 3 Packet_29_11_2008_10_28_27.pdf](#)

[Click to view the file - Sask Area 6 Packet_29_11_2008_10_29_12.pdf](#)

[Click to view the file - Sask Area 4and5 Packet_29_11_2008_10_29_50.pdf](#)

Decision Summary (DS-244)



To:	Richard Prior	Date:	October 14, 2008
From:	John Hayes	Location:	Calgary, Alberta
Subject:	NRC OSRO Resource Retainer		

Decision Proposed (\$125,000 per Annum(U.S. Currency) for 3 years)

Your approval is requested for funds related to emergency response planning and preparedness. As a matter of risk mitigation and regulatory compliance, it is proposed to enter into a contractual retainer to address a number of emergency response functions during operations. This amount falls within the existing capital expenditures for emergency response for 2009.

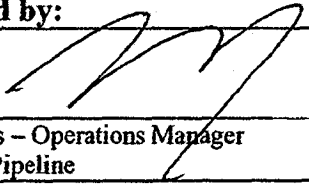
Background

National Response Corporation (NRC) will provide Keystone with Oil Spill Response Organization (OSRO) resources. Specifically, NRC will be the overall coordinating company that has the ability to safely respond to spill related incidents along the pipeline. NRC ensures spill readiness which included supplier subcontracts, training, workshops and overall spill site coordination. NRC has the proven ability to handle spills of all sizes and is approved by the United States Coastguard.

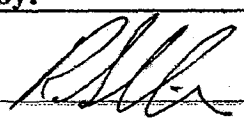
NRC has its own equipment, spill managers and a network of related industries to ensure Keystone is prepared to respond efficiently and effectively. The retention of a contractor is mandatory for Keystone to meet regulatory requirements. Having a retainer guarantees Keystone the resources when most needed.

The contract should start on January 1, 2009 and will form part of the existing Emergency Response Plan for 2009. This type of contract was not contemplated in the original Emergency Response budget of 3MM, but is part of the overall plan. The first year will be absorbed by the existing budget and for future years, these costs should be part of a field operations budget.

Requested by:

 John Hayes – Operations Manager Keystone Pipeline	14 October 2008 Date
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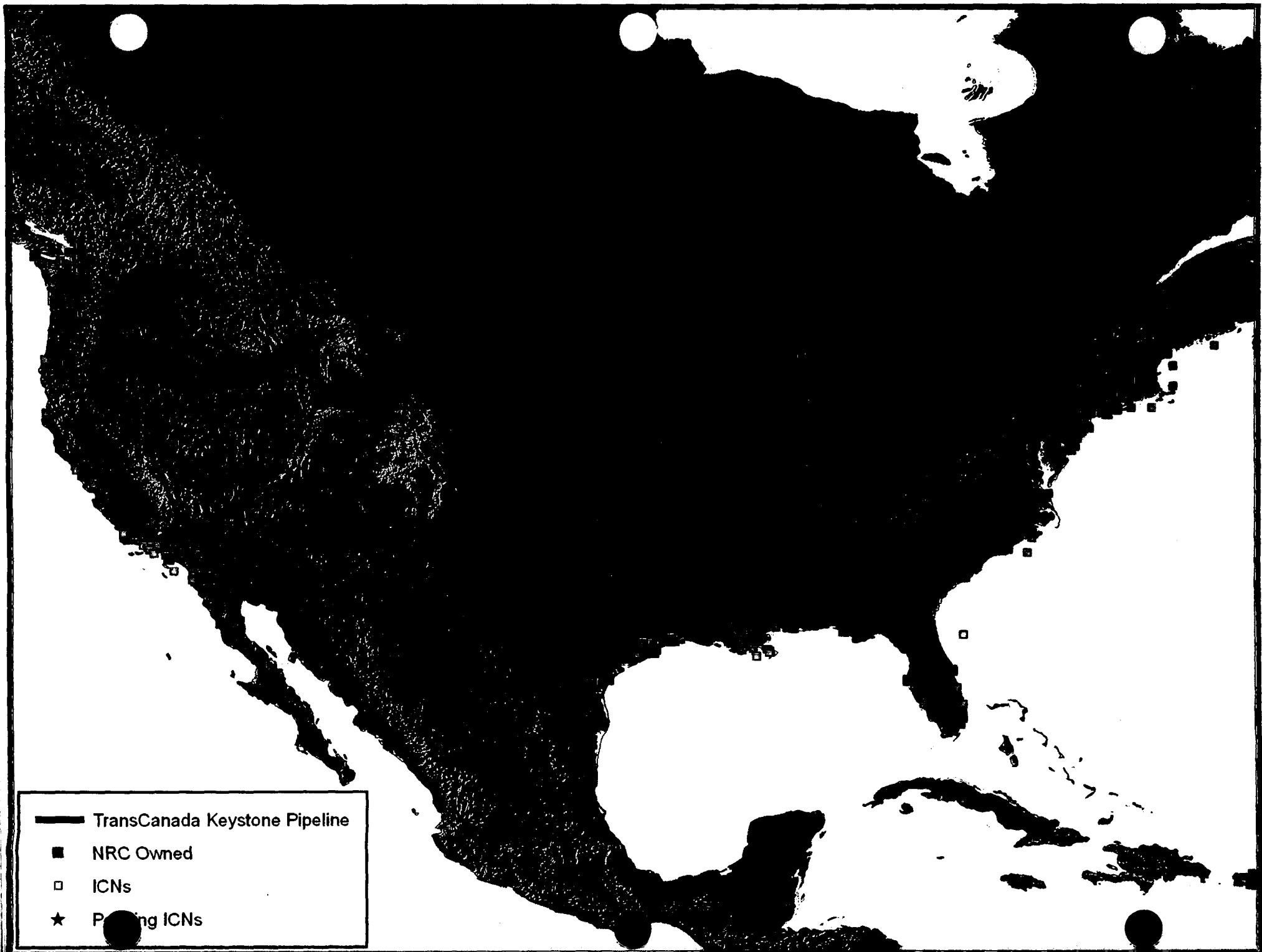
Approved by:

 Rob Sillner Integration Manager, Keystone Pipeline	14 October 2008 Date
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National Response Corporation, Inc.

National Response Corporation, Inc. is an Oil Spill Response Organization contracted to conduct oil recovery for TransCanada Keystone Limited Partnership and TC Oil Pipeline Operations, Inc. National Response Corporation uses a network of associated cleanup contractors throughout North America and the world. National Response Corporation has been certified by the United States Coast Guard, as described in the Emergency Response Manual, to respond to releases along the length of the Pipeline.

For further information about National Response Corporation and a list of response equipment you can visit their website at <http://www.nrcc.com>.



Oil Spill Cooperative Agreement

TransCanada Keystone Limited Partnership has agreed and intends to join the Oil Spill Cooperative organizations in all areas which its pipeline crosses. Currently, the pipeline is not in operation, therefore the contracts / agreements are not in place. When contracts / agreements are completed they will replace this page of this document and will be made available for inspection.

Western Canadian Spill Services Ltd

Western Canadian Spill Services Ltd. is the spill preparedness organization of the upstream petroleum industry in North East British Columbia, Alberta and Cooperative VR1 that extends into Saskatchewan. The purpose of Western Canadian Spill Services is to maintain an effective spill response capability for the upstream petroleum industry in Western Canada and to provide information and education on spill issues including spill prevention.

Through an agreement between Western Canadian Spill Services and the Canadian Petroleum Products Institute the members of the Western Canadian Spill Services in good standing can have access to the equipment owned by Canadian Petroleum Products Institute.

In Manitoba, the Western Canadian Spill Services contracts with Euroway Industrial Service Company Ltd, to store and maintain response equipment available for use by members of the Western Canadian Spill Services. Euroway is located in Winnipeg, Manitoba.

For further information about Western Canadian Spill Services and a list of response equipment you can visit their website at <http://www.wcss.ab.ca>. Information on the Canadian Petroleum Products Institute can be found at their website www.cppei.ca.

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
Athabasca	Basic	Volunteer Fire Dept. (Town)	Fire Chief Denis Mathieu	4707-50 Street T9S 3A3	780 675-2200 (emerg.) 780 675-2569 (fire hall)	780 675-2200 (emerg.) 780 689-9024 (DM cell)	780 675-2569 (fax) 780 675-6350 (DM workP)
Banff	Basic	Fire Department	Deputy Jim Watt	201 Beaver Street PO Box 1260 T0L 0C0	403 760-5955 (onduty cell) 403 762-1250 (JW)	911 (fire dept.)	403 762-1261 jim.watt@banff.ca
Calgary	Basic	ECL Transportation	Bruce Thomson & Gail Sharko	7100 44 St SE T2C 2V7 (Gail) 5366-55 Street SE T2C 3G9 (trailer)	403 720-1000	403 720-1000	403 720-5060 gsharko@eclgroup.com bthomson@eclgroup.com
Edmonton	Basic	ECL Transportation	Randy Johnston & Gail Sharko (Calgary)	1810 66 Ave T6P 1M4	780 464-3200	780 464-3200	780 463-1133 gsharko@eclgroup.com rjohnston@eclgroup.com
Edson	Basic	Fire Department	Chief Allan Schram	6 Avenue & 49 Street Box 6300 T7E 1T7	780 723-3178 780 723-4401 (AS)	780 723 3137 (emerg.)	403 723-3508 alans@townofedson.ca civiccentre@townofedson.ca
Ft. McMurray	CPPI Basic WCSS Equip. OSCAR, Skid Unit, Work Boat, Boom Vane	Eveready Industrial (TriVax Enterprises)	Brent Bakke	230A MacKay Crescent T9H 5C6	780 743-0222 780 598-3427 (BB)	780 743-0222 780 598-3427 (BB)	780 791-3242 bbakke@evereadyindustrial.com
Grande Prairie	Basic	Fire Department (cheque NOT to City)	Deputy Chief Harvey Pearson Dennis Driver, Stn. Captain	8111 Resources Road T8V 7Y2	780 538-0393 780 538-0381 (HP)	780 538-0393 (fire dept.)	780 538-0395 hpearson@cityofgp.com ddriver@cityofgp.com
Hanna	Basic	Volunteer Fire Dept.	Chief David Mohl	201 1 Ave East Box 430 T0J 1P0	403 854-4433 (town)	403 854-9090 (fire dept.)	403 854-2772 hannfire@telus.net
High Level	Basic	Fire Department	Chief Rod Schmidt	10201-100 Ave T0H 1Z0 (FD) 9813 102 St T0H 1Z0 (town)	780 926-3141 (24 hrs.) 780 926-3192	780 926-3141 (24 hr. emerg.)	780 926-2058 780 926-7609 780 926-2033 rschmidt@highlevel.ca
Lethbridge	WCSS Equip. Muskrat, mini OSCAR, work boat	Mid-West Pump (90) Ltd.	Gerry Colburn Ed Carpenter	311 33 St N T1H 3Z6	403 329-0427 (24 hrs.)	403 329-0427 (24 hrs.)	403 327-4660 gcolburn@mid-westgroup.com
Medicine Hat	Basic	Fire Department	Chief Garry Mauch Deputy Allan Guest Randy Stotz	440 Maple Ave SE T1A 7S3	403 529-8282	403 529-8282	403 526-1352 aligue@medicinehat.ca ransto@medicinehat.ca
Viking	Basic	Fire Department	Chief Ken Ruzicka	4920-53 Avenue T0B 4N0	780 336-5406 (cell)	780 336-5406 (24 hrs. - cell)	780 336-2669 vikfire@telusplanet.net

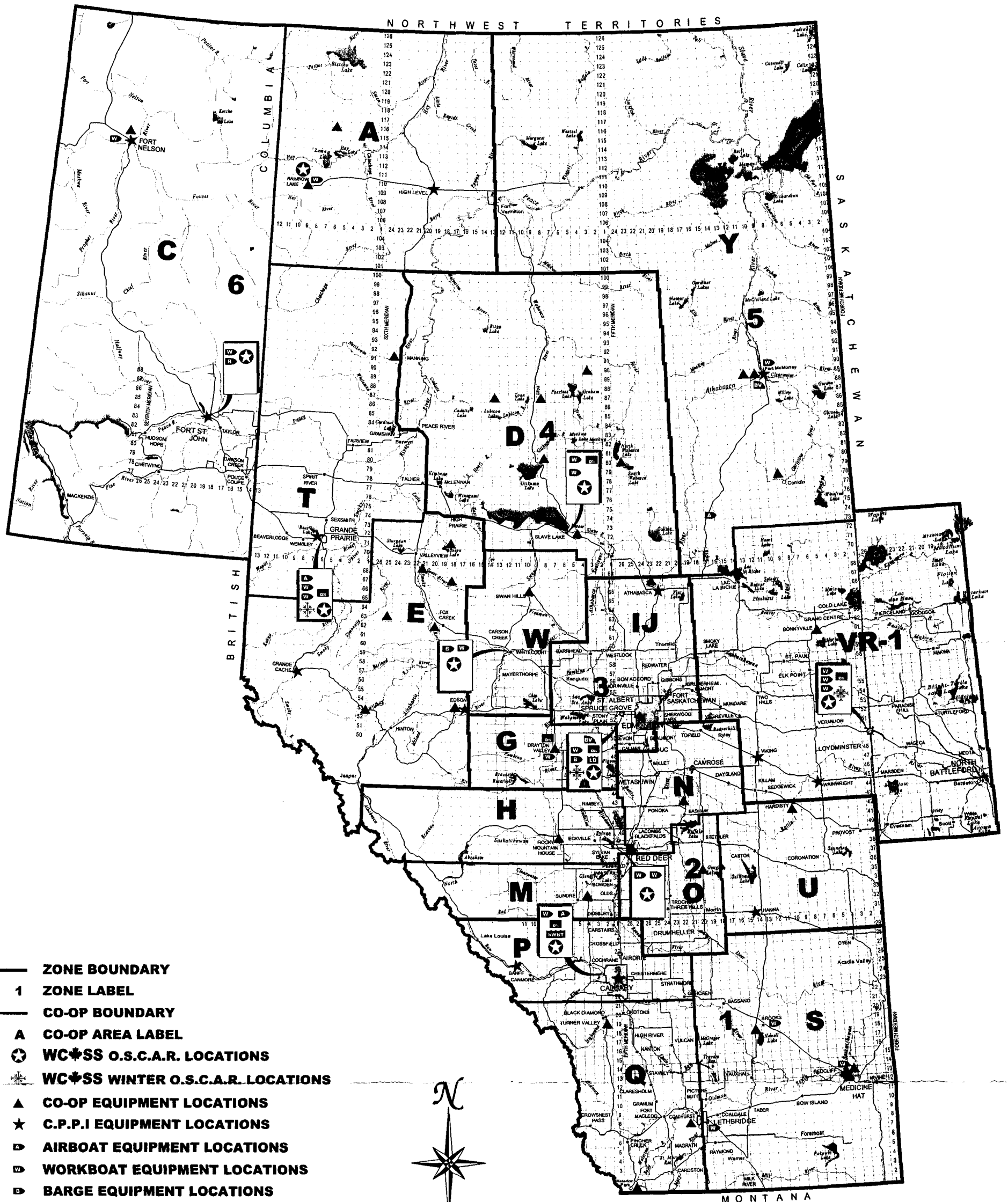
* WCSS - Western Canadian Spill Services
(see www.wcss.ab.ca for additional locations of WCSS equipment)

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

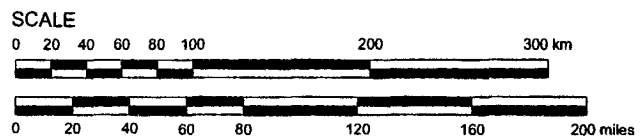
	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
Burns Lake	Basic	Lyle Sande Agencies (Chevron)	Lyle Sande Kristi McCrindle	65 Railway Ave. PO Box 619 V0J 1E0	250 692-3511	250 692-5721 (KM)	250 692-3702	burns_lake_agency@telus.net
Campbell River	Basic	K&S Petroleum Ltd. (Chevron)	Kerry Coulson	4700 Orange Point Road PO Box 968 V9W 6Y4	250 286-1136	250 729-5533 (KC-cell)	250 286-1335	campbell_river_agency@telus.net
Castlegar	Basic	Fire Department	Chief Gerry Rempel & Ast Chief Tony Cooper	2161 6 Ave V1N 3B2	250 365-3355 250 365-3266 (GR)	250 365-3355 (emerg.)	250 365-4810	grempe@castlegar.ca
Cranbrook	Basic	Jepson Petroleum Ltd (Petro-Canada)	Mgr. Chris Jepson & Dave Schmideder	1814 Theatre Road V1C 7G1	250 426-6669	250 426-2551	250 426-4064	sandra@jepsonpetro.com
Creston	Basic	R A Glennon Petroleum (Shell)	Robert Smith Randy Glennon Stacey Ostendorf	1411 Northwest Blvd RR 6 V0B 1G6	250 428-7131	250 428-4553 (RS) 250 866-5782 (SO)	250 428-7133	stacey.ostendorf@bluewaveenergy.ca
Ft. Nelson	Basic	Fire Department	Chief Dennis Muise Asst. Chief James Childs	5404 48 Ave Bag 399 V0C 1R0	250 774-3955	250 774-3955 (24 hr. emerg.)	250 774-2845	dmuise@northernrockies.org jchilds@northernrockies.org
Ft. St. John	Basic	Fire Department	Dep Chief Fred Burrows Chief Jeff Lambert Doreen Holmes	9407-100 Avenue V1J 6W1 10631-100 Street V1J 3Z5 (Town Office)	250 785-4333	250 261-6417 (emerg.)	250 785-0080	fburrows@fortstjohn.ca jlambert@fortstjohn.ca
Golden	Basic	Fire Department	Chief Shawn Tomash	1107-11 Avenue S. P.O. Box 350 V0A 1H0	250 344-6401	250 832-3132 250 344-8264 (ST cell)	250 344-5761	goldfire@town.golden.bc.ca
Kamloops	Basic	Petro-Canada Terminal	Stephen Demianiuk Rick Geier	2955 Tranquille Rd V2B 7W2	250 376-3334	250 376-3334 (answer service)	250 376-5522	sdemiani@petro-canada.ca geier@petro-canada.ca
Kelowna	Basic	Fire Department	Eileen Davies	2255 Enterprise Way V1Y 8B8	250 860-6419	250 860-6419	250 862-3571	edavies@kelowna.ca
Nanaimo	Basic	Nanaimo Fire Rescue	Deputy Chief Bob Simpson	Trailer: Fire Stn #2 2499 Dorman Road V9S 5T3 / 200, 575 Fitzwilliam St V9R 3B2 (BS)	250 755-4569 (24 hr.) 250 755-4556 (BS)	250 755-4569 (24 hr.)	250 753-5480	bob.simpson@nanaimo.ca
Prince George	Basic	Husky Energy Refinery	Greg Primus Bill Fraser	2542 Pulp Mill Rd PO Box 1390 V2L 4V4	250 960-2500 250 960-2523 (BF)	250 960-2500 (switchboard)	250 562-5725	greg.primus@huskyenergy.ca bill.fraser@huskyenergy.ca
Revelstoke	Basic	Big Eddy Fuel (Shell)	Peter Humphries	733 South Highway 23 Box 1740 V0E 2S0	250 837-3214	250 837-5223 (PH res.)	250 837-7082	hwy23@telus.net P06049a@mkting.ca
Surrey (Cloverdale)	Basic	D.W.P. Distributors Limited (Chevron)	Bill Poppy	5504 176 Street Surrey, BC V3S 4C3	604 576-2961	604 856-7879 (BP)	604 576-9317	cloverdale_agency@telus.net
Terrace	Basic	Fire Department	Chief Peter Weeber	3, 3215 Eby Street V8G 2X8	250 638-4734 (24hr.) 250 638-4742 (PW)	250 638-4734 or 250 638-8121 (24 hr.) 250 615-9112 (PW cell)	250 635-4933	pweeber@terrace.ca

* WCSS - Western Canadian Spill Services
(see www.wcss.ab.ca for additional locations of WCSS equipment)

WCSS OIL SPILL COOPERATIVE BOUNDARIES 2008



- ZONE BOUNDARY
- 1 ZONE LABEL
- CO-OP BOUNDARY
- A CO-OP AREA LABEL
- ★ WCSS O.S.C.A.R. LOCATIONS
- ✱ WCSS WINTER O.S.C.A.R. LOCATIONS
- ▲ CO-OP EQUIPMENT LOCATIONS
- ★ C.P.P.I. EQUIPMENT LOCATIONS
- AIRBOAT EQUIPMENT LOCATIONS
- ◀ WORKBOAT EQUIPMENT LOCATIONS
- ▢ BARGE EQUIPMENT LOCATIONS
- ▣ DRUM SKIMMER EQUIPMENT LOCATIONS
- ▤ BOOM VANE EQUIPMENT LOCATIONS
- ▥ SHALLOW WATER BOOM TRAILER LOCATIONS
- ▧ LAKE BOOM EQUIPMENT LOCATIONS
- ▨ INCINERATOR EQUIPMENT LOCATIONS



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TEL. (403) 346-7555
FAX. (403) 346-7530
E-MAIL: abadata@abacusdatagraphs.com

REV.#5 APRIL 2008

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

Alberia	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	Email
Athabasca	Basic	Volunteer Fire Dept. (Town)	Fire Chief Denis Mathieu	4707-50 Street T9S 3A3	780 675-2200 (emerg.) 780 675-2569 (fire hall)	780 675-2200 (emerg.) 780 689-9024 (DM cell)	780 675-2569 (fax) 780 675-6350 (DM workP)	
Banff	Basic	Fire Department	Deputy Jim Watt	201 Beaver Street PO Box 1260 T0L 0C0	403 760-5955 (onduty cell) 403 762-1250 (JW)	911 (fire dept.)	403 762-1261	jim.watt@banff.ca
Calgary	Basic	ECL Transportation	Bruce Thomson & Gail Sharko	7100 44 St SE T2C 2V7 (Gail) 5366-55 Street SE T2C 3G9 (trailer)	403 720-1000	403 720-1000	403 720-5060	gsharko@eclgroup.com bthomson@eclgroup.com
Edmonton	Basic	ECL Transport	Randy Johnston & Gail Sharko (Calgary)	1810 66 Ave T6P 1M4	780 464-3200	780 464-3200	780 463-1133	gsharko@eclgroup.com rjohnston@eclgroup.com
Edson	Basic	Fire Department	Chief Alan Schram	6 Avenue & 49 Street Box 6300 T7E 1T7	780 723-3178 780 723-4401 (AS)	780 723 3137 (emerg.)	403 723-3508	alans@townofedson.ca civiccentre@townofedson.ca
Ft. McMurray	CPPI Basic WCSS Equip. OSCAR, and Unit, Work Boat, Boom	Eveready Industrial (TriVax Enterprises)	Brent Bakke	230A MacKay Crescent T9H 5C6	780 743-0222 780 598-3427 (BB)	780 743-0222 780 598-3427 (BB)	780 791-3242	bbakke@evereadyindustrial.com
Grande Prairie	Basic	Fire Department (cheque NOT to City)	Deputy Chief Harvey Pearson Dennis Driver, Stn. Captain	8111 Resources Road T8V 7Y2	780 538-0393 780 538-0381 (HP)	780 538-0393 (fire dept.)	780 538-0395	hpearson@cityofgp.com ddriver@cityofgp.com
Hanna	Basic	Volunteer Fire Dept.	Chief David Mohl	201 1 Ave East Box 430 T0J 1P0	403 854-4433 (town)	403 854-9090 (fire dept.)	403 854-2772	hannfire@telus.net
High Level	Basic	Fire Department	Chief Rod Schmidt	10201-100 Ave T0H 1Z0 (FD) 9813 102 St T0H 1Z0 (town)	780 926-3141 (24 hrs.) 780 926-3192	780 926-3141 (24 hr. emerg.)	780 926-2058 780 926-7609 780 926-2033	rschmidt@highlevel.ca
Lethbridge	WCSS Equip. Muskrat, mini OSCAR, work boat	Mid-West Pump (90) Ltd.	Gerry Colburn Ed Carpenter	311 33 St N T1H 3Z6	403 329-0427 (24 hrs.)	403 329-0427 (24 hrs.)	403 327-4660	gcolburn@mid-westgroup.com
Medicine Hat	Basic	Fire Department	Chief Garry Mauch Deputy Allan Guest Randy Stotz	440 Maple Ave SE T1A 7S3	403 529-8282	403 529-8282	403 526-1352	allgue@medicinehat.ca ransto@medicinehat.ca
Viking	Basic	Fire Department	Chief Ken Ruzicka	4920-53 Avenue T0B 4N0	780 336-5406 (cell)	780 336-5406 (24 hrs. - cell)	780 336-2669	vikfire@telusplanet.net

* WCSS - Western Canadian Spill Services
(see www.wcss.ab.ca for additional locations of WCSS equipment)

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
Burns Lake	Basic	Lyle Sande Agencies (Chevron)	Lyle Sande Kristi McCrindle	65 Railway Ave. PO Box 619 V0J 1E0	250 692-3511	250 692-5721 (KM)	250 692-3702	burns_lake_agency@telus.net
Campbell River	Basic	K&S Petroleum Ltd. (Chevron)	Kerry Coulson	4700 Orange Point Road PO Box 968 V9W 6Y4	250 286-1136	250 729-5533 (KC-cell)	250 286-1335	campbell_river_agency@telus.net
Castlegar	Basic	Fire Department	Chief Gerry Rempel & Ast Chief Tony Cooper	2161 6 Ave V1N 3B2	250 365-3355 250 365-3266 (GR)	250 365-3355 (emerg.)	250 365-4810	grempel@castlegar.ca
Cranbrook	Basic	Jepson Petroleum Ltd (Petro-Canada)	Mgr. Chris Jepson & Dave Schmideder	1814 Theatre Road V1C 7G1	250 426-6669	250 426-2551	250 426-4064	sandra@jepsonpetro.com
Creston	Basic	R A Glennon Petroleum (Shell)	Robert Smith Randy Glennon Stacey Ostendorf	1411 Northwest Blvd RR 6 V0B 1G6	250 428-7131	250 428-4553 (RS) 250 866-5782 (SO)	250 428-7133	stacey.ostendorf@bluewaveenergy.ca
Ft. Nelson	Basic	Fire Department	Chief Dennis Muise Asst. Chief James Childs	5404 48 Ave Bag 399 V0C 1R0	250 774-3955	250 774-3955 (24 hr. emerg.)	250 774-2845	dmuise@northernrockies.org jchilds@northernrockies.org
Ft. St. John	Basic	Fire Department	Dep Chief Fred Burrows Chief Jeff Lambert Doreen Holmes	9407-100 Avenue V1J 6W1 10631-100 Street V1J 3Z5 (Town Office)	250 785-4333	250 261-6417 (emerg.)	250 785-0080	fburrows@fortstjohn.ca jlambert@fortstjohn.ca
Golden	Basic	Fire Department	Chief Shawn Tomash	1107-11 Avenue S. P.O. Box 350 V0A 1H0	250 344-6401	250 832-3132 250 344-8264 (ST cell)	250 344-5761	goldfire@town.golden.bc.ca
Kamloops	Basic	Petro-Canada Terminal	Stephen Demianiuk Rick Geier	2955 Tranquille Rd V2B 7W2	250 376-3334	250 376-3334 (answer service)	250 376-5522	sdemiani@petro-canada.ca geier@petro-canada.ca
Kelowna	Basic	Fire Department	Eileen Davies	2255 Enterprise Way V1Y 8B8	250 860-6419	250 860-6419	250 862-3571	edavies@kelowna.ca
Nanaimo	Basic	Nanaimo Fire Rescue	Deputy Chief Bob Simpson	Trailer: Fire Stn #2 2499 Dorman Road V9S 5T3 / 200, 575 Fitzwilliam St V9R 3B2 (BS)	250 755-4569 (24 hr.) 250 755-4556 (BS)	250 755-4569 (24 hr.)	250 753-5480	bob.simpson@nanaimo.ca
Prince George	Basic	Husky Energy Refinery	Greg Primus Bill Fraser	2542 Pulp Mill Rd PO Box 1390 V2L 4V4	250 960-2500 250 960-2523 (BF)	250 960-2500 (switchboard)	250 562-5725	greg.primus@huskyenergy.ca bill.fraser@huskyenergy.ca
Revelstoke	Basic	Big Eddy Fuel (Shell)	Peter Humphries	733 South Highway 23 Box 1740 V0E 2S0	250 837-3214	250 837-5223 (PH res.)	250 837-7082	hwy23@telus.net P06049a@mktng.ca
Surrey (Cloverdale)	Basic	D.W.P. Distributors Limited (Chevron)	Bill Poppy	5504 176 Street Surrey, BC V3S 4C3	604 576-2961	604 856-7879 (BP)	604 576-9317	cloverdale_agency@telus.net
Terrace	Basic	Fire Department	Chief Peter Weeber	3, 3215 Eby Street V8G 2X8	250 638-4734 (24hr.) 250 638-4742 (PW)	250 638-4734 or 250 638-8121 (24 hr.) 250 615-9112 (PW cell)	250 635-4933	pweeber@terrace.ca

* WCSS - Western Canadian Spill Services
(see www.wcss.ab.ca for additional locations of WCSS equipment)

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

EC	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
Valemount	Basic	Fire Department	Chief Rick LaLonde, Hugh Miller, Dep. & Donovan Gee, Dep.	1380 5 Avenue Box 727 V0E 2Z0	250 566-9800 Firehall 250 566-9131 250 566-4435 Village Office	250 566-9847 (RL res.) 250 566-4855 (HM res.) 250 566-4590 (DG res.)	250 566-9890 Village Office 250 566-9132	rickvval@telus.net
Williams Lake	Basic	TaGerra Holdings Ltd. (Chevron)	Tammi Caferra Linda Dudoski	101 25 Hodgson Road V2G 3P5	250 392-4224	250 398-5463 250 305-8673 (cell-TC) 250 398-7401 (LD)	250 392-6525	williams_lake_agency@telus.net

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

Manitoba	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
Brandon	Basic	Fire Department	A/Lt. Donald Matthews	Trailer @ Fire Stn #2 637 Princess Avenue R7A 0P2 (DM)	204 729-2420 204 729-2400 (DM)	204 729-2400	204 729-8970	d.matthews@brandon.ca
Dauphin	Basic	Brendonn Holdings Ltd. (Petro-Canada)	Mike Gawaziuk	Hwy. 5A West PO Box 607 R7N 2V4	204 638-4401	204 672-0093 (MG cell)	204 638-4350	brendonn@mts.net
Swan River	Basic	Doak's Fuel Service (Imperial Oil)	Dale Macooh Troy Carter	PO Box 695 523-3 Avenue S R0L 1Z0	204 734-9364	204 281-1091 (TC cell)	204 734-2272	doakssr@mts.net
The Pas (Town)	Basic	Fire Department	Deputy Chief Richard Paetzold Chief Ron Bourquin	81 Edwards Ave PO Box 870 R9A 1K8	204 627-1122 204 627-1121 (RP)	204 623-3100 (emerg.) 204 623-0585 (cell) 204 623-0720 (RP)	204 623-5506	richardp@townofthepas.ca (RP)
Thompson	Basic	Doak's Fuel Service (Imperial Oil)	Rob Bilawka	CN Grounds-Station Rd PO Box 309 R8N 1N1	204 677-2150	204 677-2150	204 778-4474	doaks3@mts.net
Winnipeg	CPPI Basic WCSS Equip. OSCAR, 2 Jet Boats	Euroway Industrial Service Co. Ltd.	Gary Mittermayr	245 Transport Road Box 4, Group 582, RR 5 R2C 2Z2	204 661-0500	204 661-0500	204 661-3933	info@eurowayindustrial.com

* WCSS - Western Canadian Spill Services
(see www.wcss.ab.ca for additional locations of WCSS equipment)

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

Saskatchewan	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
La Ronge	Basic	Fire Department	Chief Ron Pratt	1222 Hildebrand Drive PO Box 5680 S0J 1L0	306 425-3230	306 425-3111 (emerg.)	306 425-3883	laronge.fire@sasktel.net
North Battleford	Basic	Fire Department	Chief Mike Saunders Deputy Bryan Beach	902 104 Street PO Box 460 S9A 2Y6	306 445-1770 306 445-1779 (MS) 306 445-1778 (BB)	306 445-1770 (24 hr phone)	306 445-1785	msaunders@cityofnb.ca bbeach@cityofnb.ca
Prince Albert	Basic	Marsollier Petroleum Ltd. (Esso)	Kelly Bartel & Curtis Parent	1100 6 Ave E S6V 2J9	306 764-4228	306 763-1773 (KB) 306 922-4294 (CP)	306 764-4003	marsollier.pa@sasktel.net
Regina	Basic	Envirotec Services Inc.	Lyle Clouatre (Daniel Guskjolen looks after trailer - 99 Andre Ave, Regina S4T 7N1)	804-46 Street East Saskatoon S7K 3V7 Trailer: 1910 Winnipeg Street N., Regina	1-877-244-9500 (24 hr.) 306 721-9500 (SB)	1-877-244-9500 (24 hr.) 306 533-0336 (DG cell)	306 244-9501 (LC) 306 543-2984 (DG)	lclouatre@envirotec.ca dguskjolen@envirotec.ca
Saskatoon	Basic	Fire Department	Chief Gary Kobussen (admin office) Jim Wood (AO) (Captain Jerry Unser looks after trailer)	125 Idylwyld Dr S S7M 1L4 (admin offices) Trailer: Fire Hall 7 3550 Wanuskewin Road Saskatoon	306 975-2520	306 975-2528 (GK) 306 220-2776 (JW) 306 975-2520 (JU)	306 975-2589	gary.kobussen@saskatoon.ca jerry.unser@saskatoon.ca
Swift Current	Basic	Fire Department	Chief Bob Rindahl Cathie Werbowetsky	236 Chaplin Street E S9H 5B2	306 778-2760 306 778-2795 (BR) 306 778-2760 (CW)	306 778-2761 (BR)	306 778-9191	b.rindahl@swiftcurrent.ca c.werbowetsky@swiftcurrent.ca
Weyburn	Basic	Fire Department	Chief Denis Pilon & Asst Murray Sabados	55-16 Street NE PO Box 370 S4H 2K6	306 848-3240	306 848-3240	306 842-2001	dpilon@weyburn.ca
Yorkton	Basic	Brendonn Holdings Ltd. (Petro-Canada)	Tony Ripa & R Kuschak	24 Broadway Street W S3N 0L4	306 783-4567	306 783-2396	306 783-5700	brendonn.tony@sasktel.net

* WCSS - Western Canadian Spill Services
(see www.wcss.ab.ca for additional locations of WCSS equipment)

CPPI/WCSS* Environmental Protection Unit (EPU) Custodian Information

NWT	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
Hay River	Basic	Matonabee Petroleum Ltd. (Petro-Canada)	Bill Wright	43064 MacKenzie Highway X0E 0R9	867 874-2215 867 874-2594	867 874-2215 (emerg.)	867 874-3346	bill@ssimicro.com
Yellowknife	Basic	Matonabee Petroleum Ltd. (Petro-Canada)	Shawn Delaney Dalyn Chan	117 Kamlake Road Box 2697 X1A 2R1	867 873-4001	867 873-4001	867 873-9460	shawn@matonabee.com
Yukon	CPPI Equip.	Custodian	Contact	Address	Phone	Night Phone	Fax	E-mail
Whitehorse	Basic	Dall Contracting Ltd. (Petro-Canada)	Mike Baldwin	110 Galena Rd Y1A 2W6	867 667-6431	867 667-6431 (answer service)	867 667-6704	mike.baldwin@northwestel.net

* WCSS - Western Canadian Spill Services
(see www.wcss.ab.ca for additional locations of WCSS equipment)

Oil Spill Cooperative Agreement

TransCanada Keystone Limited Partnership has agreed and intends to join the Oil Spill Cooperative organizations in all areas which its pipeline crosses. Currently, the pipeline is not in operation, therefore the contracts / agreements are not in place. When contracts / agreements are completed they will replace this page of this document and will be made available for inspection.

Albert Area 2U Oil Spill Cooperative

The Province of Alberta is divided into 6 oil spill cooperative zones. Each zone is then divided into areas. The designation 2U means area U of zone 2. The TransCanada Keystone Pipeline system begins and travels south through this area. The cooperative is run by a managing committee with custodians who are responsible for storage and maintenance of the response equipment.

Through the preceding agreement TransCanada Keystone Pipeline system will have the ability to use the cooperatives equipment, if available, during an incident.

The equipment list, contact information and maps are included in this document.

Zone 2 - Coop Area U

COOP Custodian

Greg Schmidt/Trevor

Bitzer

Greg's Contracting Services Ltd. Box 29 4616A 47 Street

Ph : (780) 888-3845

After Hours: Max Devey

(780) 209-7363

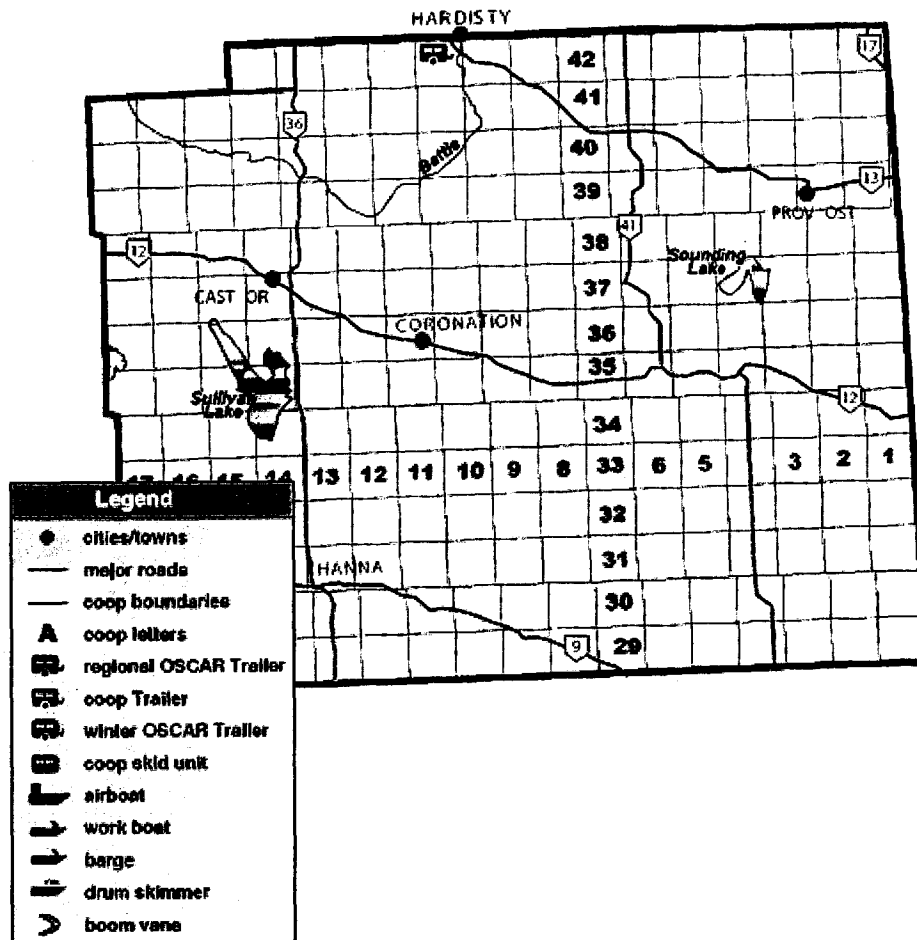
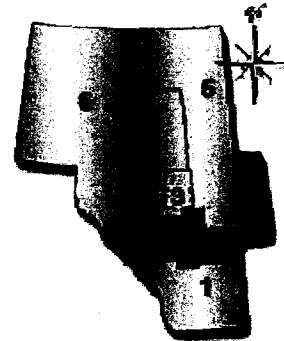
Equipment Location

Greg's Contracting Services

Hardisty, AB T0B 1V0

Equipment Summary

- OSCAR Trailer



Oil Spill Cooperative Agreement

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Albert Area 1S Oil Spill Cooperative

The Province of Alberta is divided into 6 oil spill cooperative zones. Each zone is then divided into areas. The designation 1S means area S of zone 1. The TransCanada Keystone Pipeline system traverses the north east corner of this area. The cooperative is run by a managing committee with custodians who are responsible for storage and maintenance of the response equipment.

Through the preceding agreement TransCanada Keystone Pipeline system will have the ability to use the cooperatives equipment, if available, during an incident.

The equipment list, contact information and maps are included in this document.

Zone 1 - Coop Area S

Regional Custodian

Adrian Equipment Location

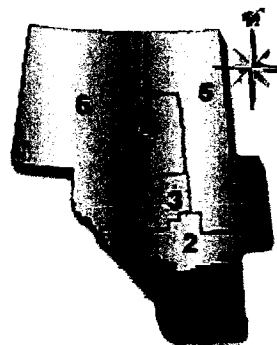
Schuurman Lethbridge

Mid-West

Pumps (90) Equipment Summary
Ltd.

- Ph: (403) 329-0427 • Mini-OSCAR
 (3/4-ton truck with 2 5/16" ball
24-HR:(403) hitch)
329-0427 • Muskrat
Fax: (403) (1/2-ton truck with 2" ball hitch)
327-4660 • Marathon Workboat (1/2-ton with
 2" ball hitch)

Ed Carpenter



Coop Equipment Location

Custodian NE 34-18-15 W4M Brooks, AB

Mike Wenner Equipment Summary

P&H Oilfield

- Maintenance • 45' Trailer (Tractor Truck)
24-HR Ph: • Muskrat Workboat
(403) 362- (1/2-ton with 2" ball hitch)
6551

Fax: (403)

Directions

362-0107

Cell: (403)

793-1420

From Brooks, take Castle Road heading west towards Hwy 36 for 5 kms. Yard is located on south side of road, or Junction of Hwy 1 and Hwy 36. Head south of Hwy 36 until you reach Castle Road, yard is located on south side.

Equipment Location

Mike Wenner 15-7-13-5-W4 Enerplus site North of
P&H Oilfield Medicine Hat, AB

Maintenance

24-HR Ph:

(403) 362-

6551

Fax: (403)

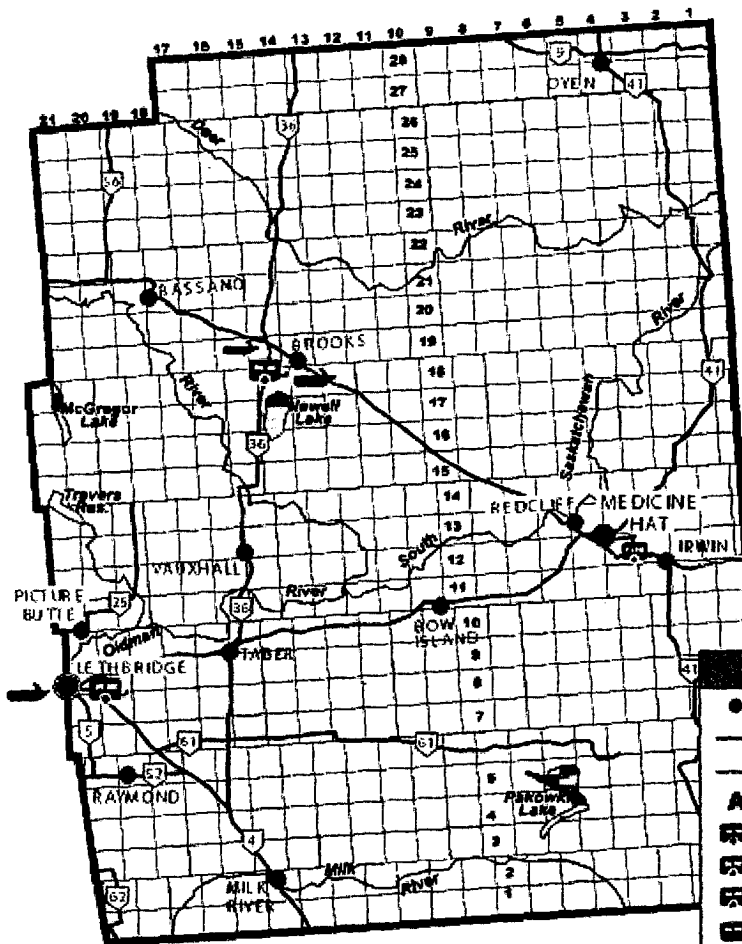
362-0107

Cell: (403)

793-1420

Equipment Summary

- C-Can Skid Unit (Bed Truck)



Oil Spill Cooperative Agreement

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Saskatchewan Area 3 Oil Spill Cooperative

The Province of Saskatchewan is divided into 5 oil spill cooperative areas. The TransCanada Keystone Pipeline travels from west to east through area 3. The cooperative is run by a steering committee with custodians who are responsible for storage and maintenance of the response equipment.

Through the preceding agreement TransCanada Keystone Pipeline system will have the ability to use the cooperatives equipment, if available, during an incident.

The equipment list, contact information and maps are included in this document.

AREA 3 Emergency Response Unit



Trailer Location:

06-08-011-18w3 Bench Oil Battery – Husky Energy Inc.

Steering Committee:

Title	Name	Office	Phone
CHAIRMAN:	Gilbert Cadrain	Husky Energy Inc.	773-0234 741-8922
SECRETARY:	Gary Hammer	Plains Marketing	773-9381
TREASURER:	Gerry Zinger	Focus Energy	741-6778
COMMITTEE:	Ron Dolter	S.I.R.	778-8252
	Darcy Thoreson	Equipment Custodian	672-3723
	Dave Knipfel	Husky Energy	741-2772
	Jeff Seffern	Talisman Energy Inc.	297-2601
	Rob Forester	Crescent Point	626-3557
	Tim Stevenson	Penn West	672-3875
	Blake Bartsness	Acclaim Energy	

Boundry Map:



AREA 3 ENVIRONMENTAL RESPONSE TRAILER UNIT

Working equipment is stored in a 8' x 28' tandem axle
+ pinde hitch.

- PERSONAL SAFETY
- PUBLIC SAFETY
- PROPERTY
- ENVIRONMENTAL

2. ASSESS THE SPILL OCCURRENCE:

- ASSESS AND REPORT SOURCE
- ASSESS AND REPORT SPILL TYPE
 - OIL
 - SALT WATER
 - CHEMICAL
- ASSESS AND REPORT SPILL SIZE
- ASSESS SPILL AND REPORT FLOW DIRECTION AND FURTHER CONTAMINATION

3. NOTIFY IMMEDIATE SUPERVISOR:

- IDENTIFY LOCATION OF SPILL
- NOTE TIME SPILL DISCOVERED
- NOTE ADVERSE WEATHER CONDITIONS

- WEATHER
- TERRAIN
- DOWNSTREAM WATER USERS

- POTENTIAL TO STOP FLOW FROM SOURCE
- POTENTIAL TO CONTAIN SPILL FLOW
- COMMUNICATE ON SITE RESPONSE ACTION PLAN

SPILL REPORTED ? IMMEDIATE SUPERVISOR IS NOW THE INTERIM ON-SCENE COMMANDER.

1. ACTIVATE OIL SPILL CONTINGENCY PLAN

- SET THE RESPONSE UNIT INTO MOTION
- ESTABLISH THE ON-SCENE COMMANDER

AREA 3 MOBILIZATION TO SPILL SITE ? ON-SCENE COMMANDER

1. ESTABLISH AND MAINTAIN COMPLETE CONTROL OF THE OPERATION:

- SET UP A COMMAND POST FOR OPERATIONS
- DISPATCH FIELD STAFF TO SPILL SITE TO VERIFY THE SPILL LOCATION, THE EXTENT OF THE SPILL AND PROCEED WITH SHUT-IN PROCEDURES
- MOBILIZE THE AREA 3 EQUIPMENT ?(COMBINATION # 1, 2, 3, 4.)
- CALL KEY PERSONNEL AND REGULATORY AGENCIES
- ORGANIZE AND ACTIVATE CONTINGENCY PLAN AS PER AREA 3 SPILL CONTINGENCY MANUAL FOR CONTAINMENT AND CLEANUP OF SPILL.

EMERGENCY RESPONSE TELEPHONE NUMBERS

EMERGENCY 911

COMPANY	CONTACT	PHONE
Ambulance (non-emergency)	Swift Current Cabri Gull Lake Shaunavon	(306)773-2666 (306)587-2552 (306)672-4704 (306)297-2644
Air Ambulance	Saskatoon (Information)	1-888-782-8247 (306)933-5255
Fire Department (non-emergency)	Swift Current Cabri Shaunavon (Kevin) Gull Lake	(306)778-2760 (306)587-2200 (306)297-2424 (306)297-3870 hor (306)672-3200
Hospitals	Cabri Health Centre Gull Lake Health Centre S. C. Union Hospital Shaunavon Union Hospital	Cabri Gull Lake Swift Current Shaunavon (306)587-2623 (306)672-4700 (306)778-9400 (306)297-2644
Royal Canadian Mounted Police	Swift Current Gull Lake Shaunavon Cabri	(306)778-5550 (306)672-3140 (306)297-5550 (306)587-2667
Saskatchewan Power Corporation Elec. Swift Current	Emergencies 24 Hour	310-2220 1-888-757-6937
Gas	Swift Current Shaunavon Cabri	24 Hour 24 Hour 24 Hour (306)773-9098 1-888-757-6937 1-888-757-6937

Website Address for Spill Cooperatives:

www.area3eru.com
<http://areatwo.sasktelhosting.net/>
<http://www.saskoilspill.com/>
<http://www.saskoilspill.com/main.htm>
<http://www.area6sask.com/>

INITIAL SPILL REPOSE FLOW CHART

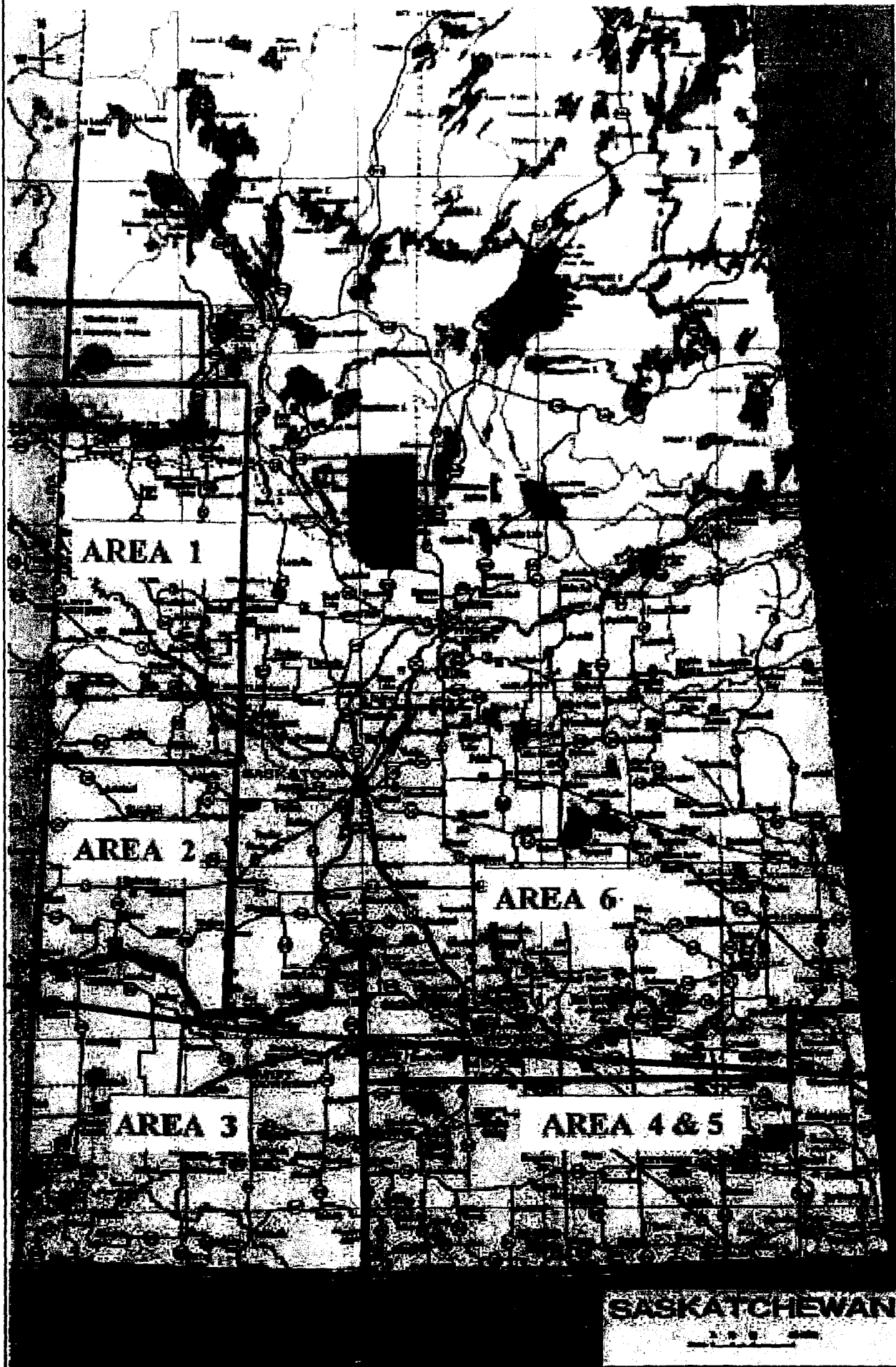
SPILL OBSERVED ? RESPONSE

1. ASSESS THE SPILL OCCURRENCE:

- ASSESS IMMEDIATE HAZARDS TO:

SASK. AREA SPILL CO-OPS BOUNDARIES

April 28, 2005



Oil Spill Cooperative Agreement

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Saskatchewan Area 4&5 Oil Spill Cooperative

The Province of Saskatchewan is divided into 5 oil spill cooperative areas. The TransCanada Keystone Pipeline travels from west to east through a small area in the north-east corner of area 4&5. The cooperative is run by a steering committee with custodians who are responsible for storage and maintenance of the response equipment.

Through the preceding agreement TransCanada Keystone Pipeline system will have the ability to use the cooperatives equipment, if available, during an incident.

The equipment location, contact information and Saskatchewan area map are included in this document.

EQUIPMENT LOCATION	DATE LAST REVISED: 08-Feb-26
OIL SPILL CONTINGENCY AREA 4&5 FIRST RESPONSE FOR EQUIPMENT/TRAILER AND LOCATION	

OIL SPILL FIRST RESPONSE

Phone: **(306) 634-6277** to notify the Oil Spill Contingency that you will need the trailer and to make arrangements to pick up the trailer.

EQUIPMENT LOCATION

Oil spill equipment is stored in a 32 foot trailer.

TRAILER LOCATION

Redigo Construction Company Limited
44 Hwy 39 East
Estevan, Saskatchewan

DRIVER QUALIFICATION AND VEHICLE RATING REQUIREMENTS

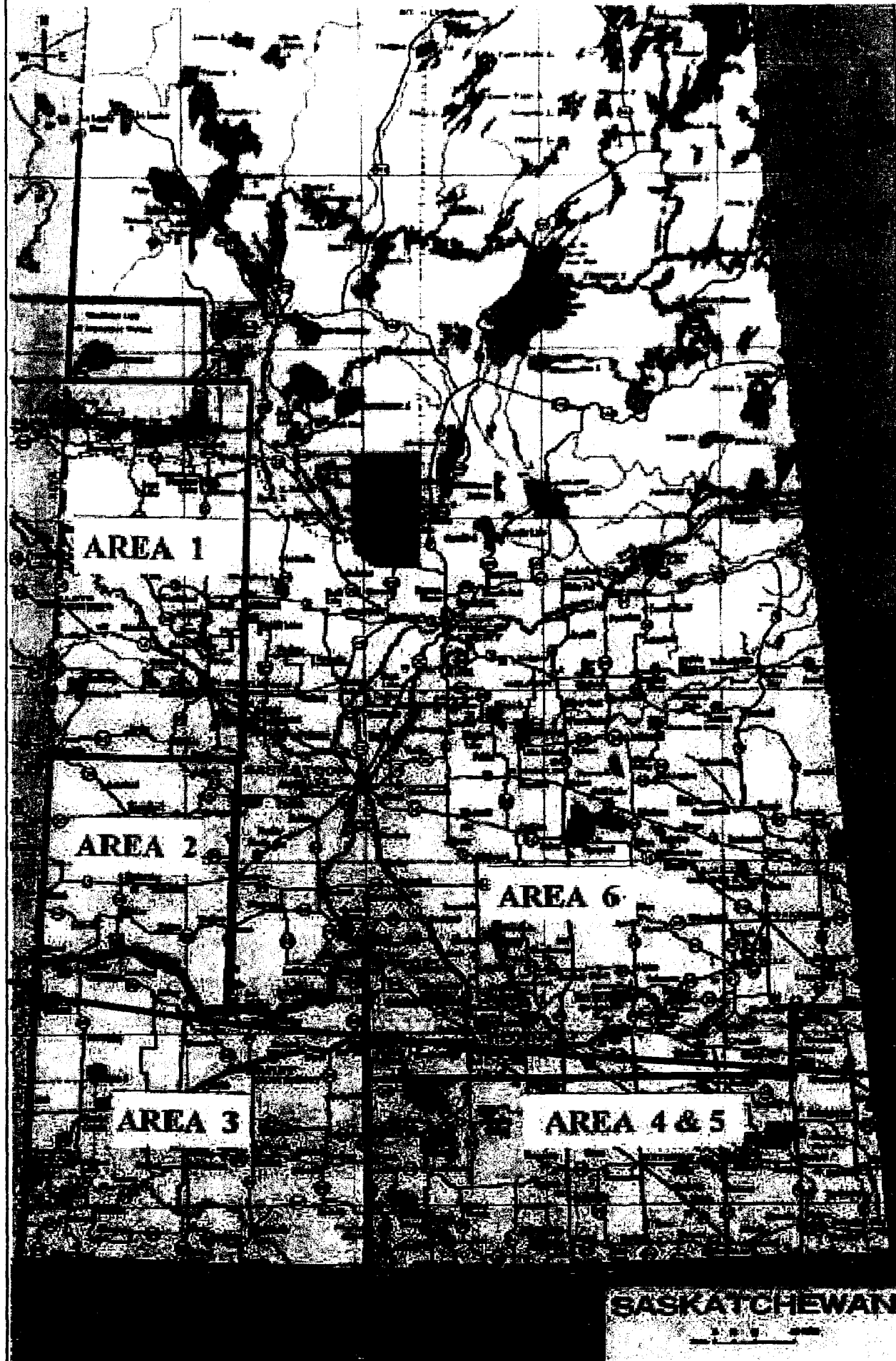
As the trailer is greater than 10,000 lb (actual weight approx. 13,000 lb), drivers must possess a minimum of a Class 1G license, as per SGI requirements. Also, vehicles must be rated accordingly. Below is a list of contractors with qualified drivers and vehicles. Any other contractors with qualified drivers and vehicles may also be used to mobilize and de-mobilize the trailer.

Murray Towing and Boosting Service, Estevan 306-637-2007
Carson Welding & Maintenance, Lampman -306-487-2281
Jerry Mainil Limited, Weyburn- 306-842-5412

The ball for the hitch is located just inside the side door.

SASK. AREA SPILL CO-OPS BOUNDARIES

April 28, 2005



Oil Spill Cooperative Agreement

TransCanada Keystone Limited Partnership has agreed and intends to join the Oil Spill Cooperative organizations in all areas which its pipeline crosses. Currently, the pipeline is not in operation, therefore the contracts / agreements are not in place. When contracts / agreements are completed they will replace this page of this document and will be made available for inspection.

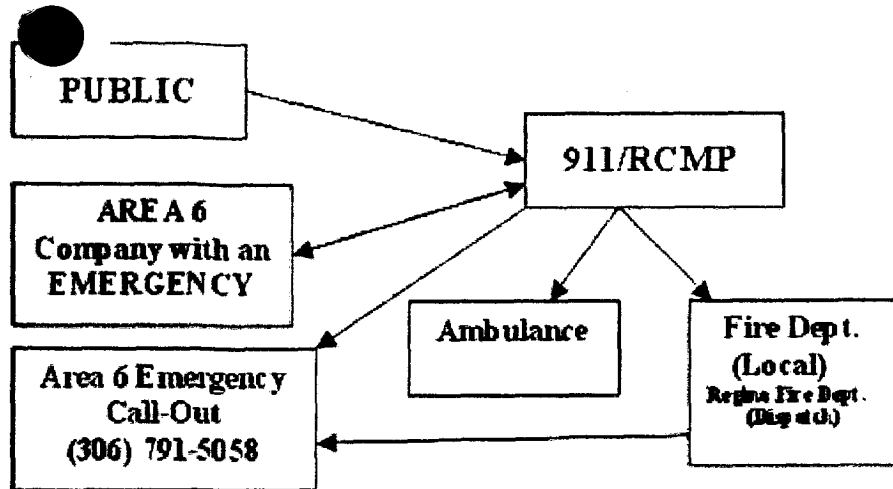
Saskatchewan Area 6 Oil Spill Cooperative

The Province of Saskatchewan is divided into 5 oil spill cooperative areas. The TransCanada Keystone Pipeline travels from west to east through the southernmost part of area 6. The cooperative is comprised of several oil companies in the area who designate their company owned response equipment to be available to other members of the area cooperative for use during an incident.

Through the preceding agreement TransCanada Keystone Pipeline system will have the ability to use the cooperatives equipment, if available, during an incident.

Contact information and Saskatchewan area map are included in this document.

AREA 6 EMERGENCY RESPONSE CO-OP CALL-OUT CHART & INSTRUCTIONS (May 2008)



MEMBER INSTRUCTIONS

***** THE "FIRST" COMPANY TO RECEIVE A CALL or have a PIPELINE EMERGENCY shall contact the AREA 6 EMERGENCY CALL-OUT and announce the following summary message:**

"(your company) is calling on behalf of the Area 6 Emergency Response Co-op.

There is a "pipeline emergency" at the following (location).

The company involved is (state name if known) or (state unknown).

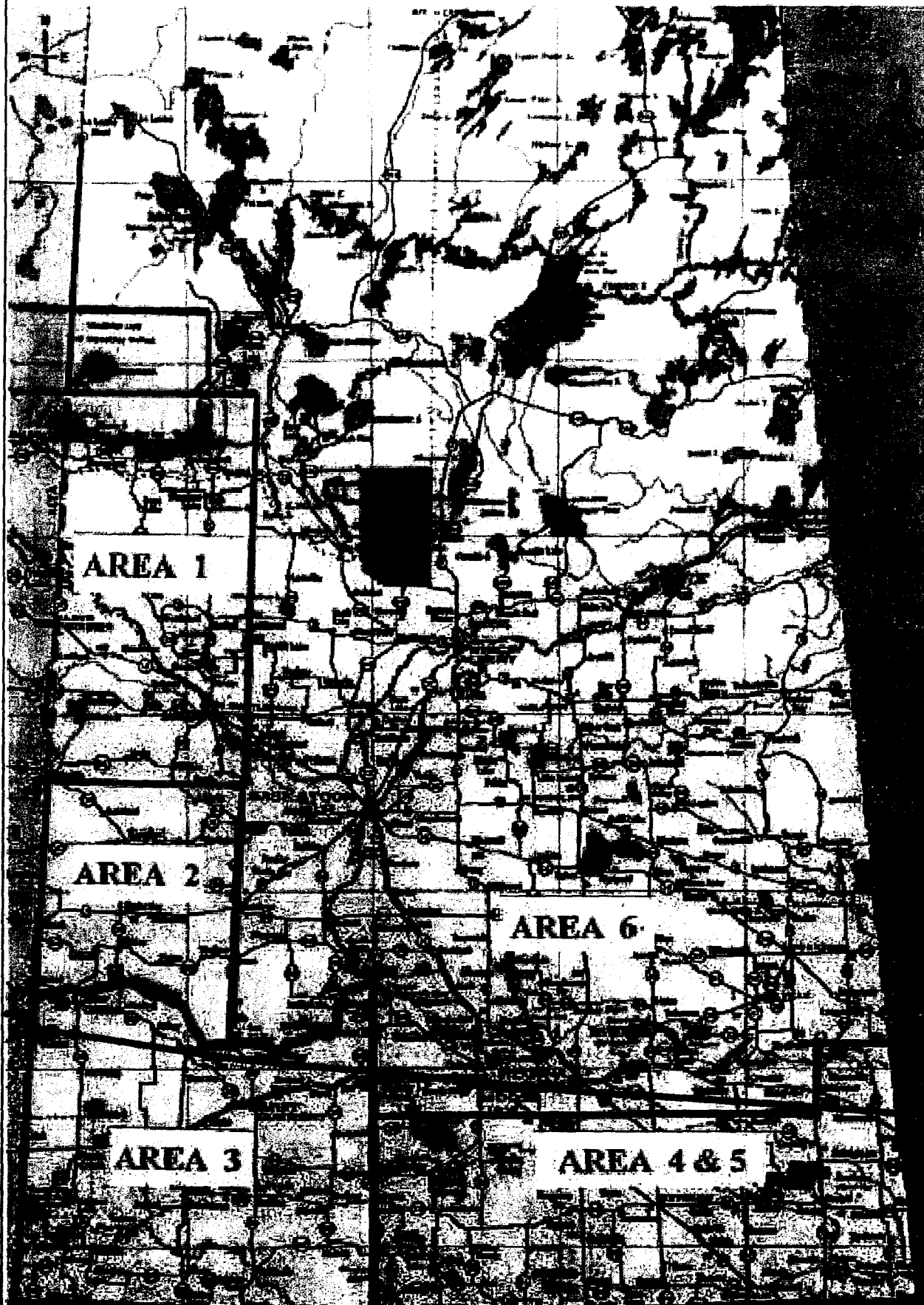
Please "ACTIVATE" the Area 6 Emergency Response Co-op's "Call-Down Procedure".

SPECIAL INSTRUCTIONS: Please state if you are requesting assistance or this is for notification purposes only. Also if you require equipment, manpower or any special requests or instructions.

**Alliance Pipeline
1-800-884 8811
Kinder Morgan (Cochin)
1-800-265 6000
Co-op Refineries
721 5372
Pra Energy
1-403-838-3764
Imperial Oil
(24/7) (306) 757 4342
Enbridge Pipelines
1-877-420 8800
Moose Jaw Asphalt
1-306-691 7800 (ext. 0)
Petro Canada
(Saskatoon)
1-306-382 1455 (ext. 0)
Plains Midstream
1-866-875 2554
SaskEnergy/TransGas
(306) 777 9800**

SASK. AREA SPILL CO-OPS BOUNDARIES

April 28, 2005



SASKATCHEWAN

APPENDIX B

WORST CASE DISCHARGE ANALYSIS AND SCENARIOS

Introduction

Hardisty Pump Station/ Regina Pump Station

Worst Case Discharge
Planning Volume Calculations

Regina Pump Station / Haskett Pump Station

Worst Case Discharge
Planning Volume Calculations

North Dakota, South Dakota, Nebraska

Worst Case Discharge
Planning Volume Calculations

Kansas, Missouri, Illinois

Worst Case Discharge
Planning Volume Calculations

INTRODUCTION

This Appendix identifies potential causes for oil discharges and discusses the response efforts that are necessary for successful mitigation. Included in this Appendix are hypothetical scenarios for various types of spills that have the potential to occur along the system. It is anticipated that the Company will respond to spills in a consistent manner regardless of the location. Therefore, the guidelines discussed in this appendix will apply to all spills whenever possible.

United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration Discharge Volume Calculation

- **Worst Case Discharge**

The largest volume (Bbls) of the following:

- *Pipeline's maximum release time (hrs), plus the maximum shutdown response time (hrs), multiplied by the maximum flow rate (bph), plus the largest line drainage volume after shutdown of the line section.*

--OR--

- *Largest foreseeable discharge for the line section is based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective action or preventive action taken.*

--OR--

- *Capacity of the single largest breakout tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system.*

Scenario Types

The occurrence of a Worst Case Discharge (WCD) could be the result of any number of scenarios along the pipeline system including:

- Piping rupture.
- Piping leak, under pressure and not under pressure.
- Explosion or fire.
- Equipment failure (e.g. pumping system failure, relief valve failure, or other general equipment relevant to operational activities associated with internal or external facility transfers).

The response actions to each of these scenarios are outlined in Section 3.1 and Figure 3.1. The response resources are identified in a quick reference format in Figure 2.5. Pipeline response personnel list/telephone numbers and other internal/external resources telephone numbers are detailed in Figures 2.2 and 2.5.

RESPONSE CAPABILITY SCENARIOS**Hardisty Pump Station/ Regina Pump Station****Pipeline Worst Case Discharge = 41,504 Bbls****Description**

The pipeline-based Worst Case Discharge is projected as a scenario 9,300 feet upstream of Valve KP 641.1.

Volume

Worst Case = (Initial Line Fill Volume - Pumping Rate Volume) x 0.60 = Barrels
= (63346.00 - 8740.00) x 0.60 = 32763.6 Bbls
= Adjusted Line Volume + Pumping Rate Volume
= 32763.6 + 8740.00 = 41,504 Bbls

The Worst Case Discharge for this response zone was calculated electronically using elevation data, pipeline statistics, and designed operational levels. The first calculation completed was the volume released prior to the shutdown of the pipeline system. This volume is noted as "Pumping Rate Volume" and is equal to 8,740 barrels. Using the designed operational levels, the pumping rate volume is calculated by taking the pumping rate of 662,400 barrels per day and multiplying by the shutdown time of 19 minutes. The 19 minutes of shutdown time consists of 10 minutes of evaluation time, where the controllers decide that there is a problem and the line needs to be shut down, 9 minutes of pump station shutdown, which must be completed in a certain order to prevent damage to the system. To ensure that the volume is not underestimated, the 19 minutes of shutdown time is multiplied by the full pumping rate, 460 barrels per minute, even though, as pump stations are shut down the rate will decrease throughout the 9 minutes of shutdown.

The second calculated number is the amount of drain down. These calculations were done at 100 foot increments throughout the length of the pipeline. This drain down volume is calculated using electronic elevation data and assumes a complete break in the pipeline. The computer program used develops elevation profiles of the pipeline and provides the volume of a release at each 100 foot point taking into account the large elevation changes in the pipeline. The combination of the pumping rate volume and the drain down volume provides the "Initial Line Fill Volume".

In the Initial Line Fill Volume calculation the program only accounts for large elevation changes. In such, long flat portions that have smaller hills and valleys are calculated as draining fully, when common sense and subject matter studies, such as the California State Fire Marshall report of March 1993, have proven that these smaller elevation changes will prevent much of these areas from draining. Therefore, the worst case discharge has been calculated above reducing the line drainage component to 60% of the computer generated amount.

Response Requirement

The Company has identified sufficient response resources, by contract or other approved means, to respond to a Worst Case Discharge to the maximum extent practicable. These response resources include:

- Resources capable of arriving at the staging area within the applicable response tier requirements for non-high volume areas (Tier 1 = 12 hours; Tier 2 = 36 hours; Tier 3 = 60 hours).
- Resources capable of oil recovery in inclement weather conditions (i.e. heavy rain, snow, ice).

Notes

- Contracted and Company owned equipment and manpower resources are detailed in Figure 2.5 and Appendix A.
- Telephone references are provided in Figures 2.2 and 2.5.

Breakout Tanks

There are no breakout tanks in the Response Zone.

Volume

If the Response Zone had breakout tank(s), a worst case discharge scenario involving breakout tankage uses the single largest volume tank in the response zone, adjusted for the size of the secondary containment system.

Hardisty Pump Station/ Regina Pump Station

RESPONSE PLANNING VOLUME CALCULATIONS

Location Data			
Location Type			Inland/Near Shore
Port Type			Non-High Volume
WCD Product Type			Crude Oil
Product Group			3
Pipeline and Hazardous Materials Safety Administration WCD Volume (bbls)			41,504
Discharge Volumes/Calculations			
Worst Case Discharge - Based on Pipeline and Hazardous Materials Safety Administration criteria (bbls)			41,504
Selected Calculation Factors (Based on USCG Tables)			
Removal Capacity Planning Volume - Percent Natural Dissipation			30%
Removal Capacity Planning Volume - Percent Recovered Floating Oil			50%
Removal Capacity Planning Volume - Percent Oil Onshore			50%
Emulsification Factor			2
Tier 1 - On Water Oil Recovery Resource Mobilization Factor			15%
Tier 2 - On Water Oil Recovery Resource Mobilization Factor			25%
Tier 3 - On Water Oil Recovery Resource Mobilization Factor			40%
Response Planning Volume Calculation			
On-Water Recovery Volume (bbls)			20,752
Shoreline Recovery Volume (bbls)			20,752
Shoreline Cleanup Volume (bbls)			41,504
	Tier 1	Tier 2	Tier 3
On-Water Recovery Cpcty (bbls/day)	2,260	3,390	4,520
Shallow Water Resp Cpblty (bbls/day)	2,260	3,390	4,520
Storage Capacity (bbls/day)	2,260	3,390	4,520
On-Water Response Caps (bbls/day)	12,500	25,000	50,000
Additional Response Req'd (bbls/day)	0	0	0
Response Time (hrs)	12	36	60

RESPONSE CAPABILITY SCENARIOS**Regina Pump Station / Haskett Pump Station****Pipeline Worst Case Discharge = 51,413 Bbls****Description**

The pipeline-based Worst Case Discharge is projected as a scenario 2,000 feet downstream of Valve KP 1138.1.

Volume

Worst Case = (Initial Line Fill Volume - Pumping Rate Volume) x 0.60 = Barrels
= (79861.00 - 8740.00) x 0.60 = 42672.6 Bbls
= Adjusted Line Volume + Pumping Rate Volume
= 42672.6 + 8740.00 = 51,413 Bbls

The Worst Case Discharge for this response zone was calculated electronically using elevation data, pipeline statistics, and designed operational levels. The first calculation completed was the volume released prior to the shutdown of the pipeline system. This volume is noted as "Pumping Rate Volume" and is equal to 8,740 barrels. Using the designed operational levels, the pumping rate volume is calculated by taking the pumping rate of 662,400 barrels per day and multiplying by the shutdown time of 19 minutes. The 19 minutes of shutdown time consists of 10 minutes of evaluation time, where the controllers decide that there is a problem and the line needs to be shut down, 9 minutes of pump station shutdown, which must be completed in a certain order to prevent damage to the system. To ensure that the volume is not underestimated, the 19 minutes of shutdown time is multiplied by the full pumping rate, 460 barrels per minute, even though, as pump stations are shut down the rate will decrease throughout the 9 minutes of shutdown.

The second calculated number is the amount of drain down. These calculations were done at 100 foot increments throughout the length of the pipeline. This drain down volume is calculated using electronic elevation data and assumes a complete break in the pipeline. The computer program used develops elevation profiles of the pipeline and provides the volume of a release at each 100 foot point taking into account the large elevation changes in the pipeline. The combination of the pumping rate volume and the drain down volume provides the "Initial Line Fill Volume".

In the Initial Line Fill Volume calculation the program only accounts for large elevation changes. In such, long flat portions that have smaller hills and valleys are calculated as draining fully, when common sense and subject matter studies, such as the California State Fire Marshall report of March 1993, have proven that these smaller elevation changes will prevent much of these areas from draining. Therefore, the worst case discharge has been calculated above reducing the line drainage component to 60% of the computer generated amount.

Response Requirement

The Company has identified sufficient response resources, by contract or other approved means, to respond to a Worst Case Discharge to the maximum extent practicable. These response resources include:

- Resources capable of arriving at the staging area within the applicable response tier requirements for non-high volume areas (Tier 1 = 12 hours; Tier 2 = 36 hours; Tier 3 = 60 hours).
- Resources capable of oil recovery in inclement weather conditions (i.e. heavy rain, snow, ice).

Notes

- Contracted and Company owned equipment and manpower resources are detailed in Figure 2.5 and Appendix A.
- Telephone references are provided in Figures 2.2 and 2.5.

Breakout Tanks

There are no breakout tanks in the Response Zone.

Volume

If the Response Zone had breakout tank(s), a worst case discharge scenario involving breakout tankage uses the single largest volume tank in the response zone, adjusted for the size of the secondary containment system.

Regina Pump Station / Haskett Pump Station
RESPONSE PLANNING VOLUME CALCULATIONS

Location Data			
Location Type			Inland/Near Shore
Port Type			Non-High Volume
WCD Product Type			Crude Oil
Product Group			3
Pipeline and Hazardous Materials Safety Administration WCD Volume (bbls)			51,413
Discharge Volumes/Calculations			
Worst Case Discharge - Based on Pipeline and Hazardous Materials Safety Administration criteria (bbls)			51,413
Selected Calculation Factors (Based on USCG Tables)			
Removal Capacity Planning Volume - Percent Natural Dissipation			30%
Removal Capacity Planning Volume - Percent Recovered Floating Oil			50%
Removal Capacity Planning Volume - Percent Oil Onshore			50%
Emulsification Factor			2
Tier 1 - On Water Oil Recovery Resource Mobilization Factor			15%
Tier 2 - On Water Oil Recovery Resource Mobilization Factor			25%
Tier 3 - On Water Oil Recovery Resource Mobilization Factor			40%
Response Planning Volume Calculations			
On-Water Recovery Volume (bbls)			25,706
Shoreline Recovery Volume (bbls)			25,706
Shoreline Cleanup Volume (bbls)			51,412
	Tier 1	Tier 2	Tier 3
On-Water Recovery Cpcty (bbls/day)			
Shallow Water Resp Cpblty (bbls/day)			
Storage Capacity (bbls/day)			
On-Water Response Caps (bbls/day)	12,500	25,000	50,000
Additional Response Req'd (bbls/day)	0	0	0
Response Time (hrs)	12	36	60

RESPONSE CAPABILITY SCENARIOS**North Dakota, South Dakota, Nebraska****Pipeline Worst Case Discharge = 27,329 Bbls****Description**

The pipeline-based Worst Case Discharge is projected as a scenario 29,400 feet downstream of Valve MP 432.4.

Volume

Worst Case = (Initial Line Fill Volume - Pumping Rate Volume) x 0.60 = Barrels
= (39722.00 - 8740.00) x 0.60 = 18589.2 Bbls
= Adjusted Line Volume + Pumping Rate Volume
= 18589.2 + 8740.00 = 27,329 Bbls

The Worst Case Discharge for this response zone was calculated electronically using elevation data, pipeline statistics, and designed operational levels. The first calculation completed was the volume released prior to the shutdown of the pipeline system. This volume is noted as "Pumping Rate Volume" and is equal to 8,740 barrels. Using the designed operational levels, the pumping rate volume is calculated by taking the pumping rate of 662,400 barrels per day and multiplying by the shutdown time of 19 minutes. The 19 minutes of shutdown time consists of 10 minutes of evaluation time, where the controllers decide that there is a problem and the line needs to be shut down, 9 minutes of pump station shutdown, which must be completed in a certain order to prevent damage to the system. To ensure that the volume is not underestimated, the 19 minutes of shutdown time is multiplied by the full pumping rate, 460 barrels per minute, even though, as pump stations are shut down the rate will decrease throughout the 9 minutes of shutdown.

The second calculated number is the amount of drain down. These calculations were done at 100 foot increments throughout the length of the pipeline. This drain down volume is calculated using electronic elevation data and assumes a complete break in the pipeline. The computer program used develops elevation profiles of the pipeline and provides the volume of a release at each 100 foot point taking into account the large elevation changes in the pipeline. The combination of the pumping rate volume and the drain down volume provides the "Initial Line Fill Volume".

In the Initial Line Fill Volume calculation the program only accounts for large elevation changes. In such, long flat portions that have smaller hills and valleys are calculated as draining fully, when common sense and subject matter studies, such as the California State Fire Marshall report of March 1993, have proven that these smaller elevation changes will prevent much of these areas from draining. Therefore, the worst case discharge has been calculated above reducing the line drainage component to 60% of the computer generated amount.

Response Requirement

The Company has identified sufficient response resources, by contract or other approved means, to respond to a Worst Case Discharge to the maximum extent practicable. These response resources include:

- Resources capable of arriving at the staging area within the applicable response tier requirements for non-high volume areas (Tier 1 = 12 hours; Tier 2 = 36 hours; Tier 3 = 60 hours).
- Resources capable of oil recovery in inclement weather conditions (i.e. heavy rain, snow, ice).

Notes

- Contracted and Company owned equipment and manpower resources are detailed in Figure 2.5 and Appendix A.
- Telephone references are provided in Figures 2.2 and 2.5.

Breakout Tanks

There are no breakout tanks in the Response Zone.

Volume

If the Response Zone had breakout tank(s), a worst case discharge scenario involving breakout tankage uses the single largest volume tank in the response zone, adjusted for the size of the secondary containment system.

North Dakota, South Dakota, Nebraska

RESPONSE PLANNING VOLUME CALCULATIONS

Location Data			
Location Type			Inland/Near Shore
Port Type			Non-High Volume
WCD Product Type			Crude Oil
Product Group			3
Pipeline and Hazardous Materials Safety Administration WCD Volume (bbls)			27,329
Discharge Volumes/Calculations			
Worst Case Discharge - Based on Pipeline and Hazardous Materials Safety Administration criteria (bbls)			27,329
Selected Calculation Factors (Based on USCG Tables)			
Removal Capacity Planning Volume - Percent Natural Dissipation			30%
Removal Capacity Planning Volume - Percent Recovered Floating Oil			50%
Removal Capacity Planning Volume - Percent Oil Onshore			50%
Emulsification Factor			2
Tier 1 - On Water Oil Recovery Resource Mobilization Factor			15%
Tier 2 - On Water Oil Recovery Resource Mobilization Factor			25%
Tier 3 - On Water Oil Recovery Resource Mobilization Factor			40%
Response Planning Volume Calculations			
On-Water Recovery Volume (bbls)			13,665
Shoreline Recovery Volume (bbls)			13,665
Shoreline Cleanup Volume (bbls)			27,330
	Tier 1	Tier 2	Tier 3
On-Water Recovery Cpcty (bbls/day)	12,099	25,000	50,000
Shallow Water Resp Cpblty (bbls/day)	12,099	25,000	50,000
Storage Capacity (bbls/day)	12,099	25,000	50,000
On-Water Response Caps (bbls/day)	12,500	25,000	50,000
Additional Response Req'd (bbls/day)	0	0	0
Response Time (hrs)	12	36	60

RESPONSE CAPABILITY SCENARIOS

Kansas, Missouri, Illinois

Pipeline Worst Case Discharge = 24,069 Bbls**Description**

The pipeline-based Worst Case Discharge is projected as a scenario 35,100 feet upstream of Valve MP 1003.3.

Volume

Worst Case = (Initial Line Fill Volume - Pumping Rate Volume) x 0.60 = Barrels
= (34289.00 - 8740.00) x 0.60 = 15329.4 Bbls
= Adjusted Line Volume + Pumping Rate Volume
= 15329.4 + 8740.00 = 24,069 Bbls

The Worst Case Discharge for this response zone was calculated electronically using elevation data, pipeline statistics, and designed operational levels. The first calculation completed was the volume released prior to the shutdown of the pipeline system. This volume is noted as "Pumping Rate Volume" and is equal to 8,740 barrels. Using the designed operational levels, the pumping rate volume is calculated by taking the pumping rate of 662,400 barrels per day and multiplying by the shutdown time of 19 minutes. The 19 minutes of shutdown time consists of 10 minutes of evaluation time, where the controllers decide that there is a problem and the line needs to be shut down, 9 minutes of pump station shutdown, which must be completed in a certain order to prevent damage to the system. To ensure that the volume is not underestimated, the 19 minutes of shutdown time is multiplied by the full pumping rate, 460 barrels per minute, even though, as pump stations are shut down the rate will decrease throughout the 9 minutes of shutdown.

The second calculated number is the amount of drain down. These calculations were done at 100 foot increments throughout the length of the pipeline. This drain down volume is calculated using electronic elevation data and assumes a complete break in the pipeline. The computer program used develops elevation profiles of the pipeline and provides the volume of a release at each 100 foot point taking into account the large elevation changes in the pipeline. The combination of the pumping rate volume and the drain down volume provides the "Initial Line Fill Volume".

In the Initial Line Fill Volume calculation the program only accounts for large elevation changes. In such, long flat portions that have smaller hills and valleys are calculated as draining fully, when common sense and subject matter studies, such as the California State Fire Marshall report of March 1993, have proven that these smaller elevation changes will prevent much of these areas from draining. Therefore, the worst case discharge has been calculated above reducing the line drainage component to 60% of the computer generated amount.

Response Requirement

The Company has identified sufficient response resources, by contract or other approved means, to respond to a Worst Case Discharge to the maximum extent practicable. These response resources include:

- Resources capable of arriving at the staging area within the applicable response tier requirements for non-high volume areas (Tier 1 = 12 hours; Tier 2 = 36 hours; Tier 3 = 60 hours).
- Resources capable of oil recovery in inclement weather conditions (i.e. heavy rain, snow, ice).

Notes

- Contracted and Company owned equipment and manpower resources are detailed in Figure 2.5 and Appendix A.
- Telephone references are provided in Figures 2.2 and 2.5.

Breakout Tanks

There are no breakout tanks in the Response Zone.

Volume

If the Response Zone had breakout tank(s), a worst case discharge scenario involving breakout tankage uses the single largest volume tank in the response zone, adjusted for the size of the secondary containment system.

Kansas, Missouri, Illinois

RESPONSE PLANNING VOLUME CALCULATIONS

Location Data			
Location Type			Inland/Near Shore
Port Type			High Volume
WCD Product Type			Crude Oil
Product Group			3
Pipeline and Hazardous Materials Safety Administration WCD Volume (bbls)			24,069
Discharge Volumes/Calculations			
Worst Case Discharge - Based on Pipeline and Hazardous Materials Safety Administration criteria (bbls)			24,069
Selected Calculation Factors (Based on USCG Tables)			
Removal Capacity Planning Volume - Percent Natural Dissipation			30%
Removal Capacity Planning Volume - Percent Recovered Floating Oil			50%
Removal Capacity Planning Volume - Percent Oil Onshore			50%
Emulsification Factor			2
Tier 1 - On Water Oil Recovery Resource Mobilization Factor			15%
Tier 2 - On Water Oil Recovery Resource Mobilization Factor			25%
Tier 3 - On Water Oil Recovery Resource Mobilization Factor			40%
Response Planning Volume Calculation			
On-Water Recovery Volume (bbls)			12,035
Shoreline Recovery Volume (bbls)			12,035
Shoreline Cleanup Volume (bbls)			24,070
	Tier 1	Tier 2	Tier 3
On-Water Recovery Cpcty (bbls/day)			
Shallow Water Resp Cpblty (bbls/day)			
Storage Capacity (bbls/day)			
On-Water Response Caps (bbls/day)	12,500	25,000	50,000
Additional Response Req'd (bbls/day)	0	0	0
Response Time (hrs)	6	30	54

APPENDIX C

EMERGENCY PRE-PLANNING

- C.1 Release Detection
- C. 2 Leak Detection Systems
- C. 3 Discharge Prevention Systems

EMERGENCY PRE-PLANNING

Leak detection and discharge prevention is accomplished through safe operating procedures and maintenance procedures outlined in the Company Operations and Maintenance (O&M) Manual. The Company Operations and Maintenance Manual is designed to meet the requirements found in Statutory Orders and Regulations /99-294 S27, National Energy Board, Operation and Maintenance Manuals, and Title 49, US Code of Federal Regulations, Part 195, Transportation of Hazardous Liquids by Pipeline.

C.1 RELEASE DETECTION

- The Keystone Console and Company Field Employees are responsible for ensuring the integrity of facilities and detecting releases.
- There are four primary types of indications that a release may be occurring:
 - An unexplained hydraulic upset condition observed in the Pipeline system operating data.
 - A consistent unexplainable Pipeline system shortage occurring over several check time periods.
 - An alarm from a Supervisory Control and Data Acquisition-based leak detection system.
 - A report of a direct observation of a release or released product received from an employee or the public.
- All indications, including supposedly direct observation, are subject to confirmation; however, the Company policy is to shut down if any doubt exists as to the integrity of the Pipeline system. The simultaneous occurrence of two or more of the indicators above greatly increases the probability that the Pipeline system has lost integrity.
- Specific guidance for response to abnormal operating conditions and determining the location of a suspected pipeline release may be found in the Company's Operations and Maintenance Manual, maintained separately.
- A form for recording conversations with an observer who reports an emergency is located in Appendix F of this Plan. Copies of this form should be kept readily accessible at telephones.
- Routine actions to be taken by Company Field Employees to ensure facility integrity and detect releases are listed as follows:
 - Keystone Console Monitors Pressures using Supervisory Control and Data Acquisition
 - Routine Station/ROW Checks Performed
 - Routine Aerial Surveillance
 - 24 Hour Emergency Reporting Phone Number Monitored

C.2 LEAK DETECTION SYSTEMS

Leak detection systems utilized along the Pipeline include:

- System-level indication is accomplished through usage of a Supervisory Control and Data Acquisition (SCADA) system. This system is capable of monitoring flow rates, pressure, metering information (delivery / receipt volumes), temperature, and valve

positions. The Supervisory Control and Data Acquisition system is monitored on a 24-hour per day basis by both the centralized Pipeline Control Center and Secondary Control points.

The location of a spill caused by a catastrophic break, which may be indicative of a Worst Case Discharge, can be inferred by Supervisory Control and Data Acquisition personnel down to a Pipeline section between operating pump stations. This inference is based upon rapid and abrupt changes in operating conditions.

C.3 DISCHARGE PREVENTION SYSTEMS

Pipeline pump stations are designed in a manner that maximizes the containment of leaks on-site and deters the migration of leaks off-site. Discharge prevention is accomplished through the following measures:

- Pipelines and related structures have grounding systems to reduce the possibility of accidental ignition due to lightning.
- Discharge prevention is also accomplished through the use of general housekeeping procedures and leak inspection system

APPENDIX D

TRAINING AND DRILLS

D.1 Response Team Training

Emergency Response Plan Review

Hazardous Waste Operations and Emergency Response (29 CFR 1910.120)

Incident Command System

Training Records Maintenance

Contractor Training

Training Qualifications

D. 2 Response Team Exercises

Quarterly QI Notification Exercise

Annual Equipment Deployment Exercise

Annual Response Team Tabletop Exercise

Government-Initiated Unannounced Exercise

Area Exercises

Exercise Documentation

D. 3 Purpose of Review and Evaluation

Outline of Review

Detection

Notification

Assessment/Evaluation

Mobilization

Response - Strategy

Response - Resources Used

Response - Effectiveness

Command Structure

Measurement

Government Relations

Public Relations

D.1 RESPONSE TEAM TRAINING

The Company provides training related to discharge prevention, testing and response, including measures to repair Pipeline ruptures and mitigate discharges. The training methods address oil discharges from the Pipeline from several perspectives: human health and safety, rupture control and repair operations, pollution control, and overall (crisis) management of the emergency.

The competency of each training program is closely monitored by the Training Section through observation of and/or participation in actual training sessions.

Through the various training methods described below the Company's training program is intended to ensure the following results:

That all personnel know:

- Their responsibilities under the Plan.
- The name, address and procedures for contacting the operator on a 24-hour basis.
- The name of and procedures for contacting the Qualified Individual on a 24-hour basis.

That all reporting personnel know:

- The Pipelines and Response Zone details for the affected area (Response Zones Annexes).
- The telephone number of the Federal Provincial/State and local agencies and other required notifications (Section 2.0).
- The notification process. (Section 2.0).

That all response personnel know:

- The characteristics and hazards of the oil discharged (Section 3.0 and Appendix G - MSDS).
- The conditions that is likely to worsen emergencies, including the consequences of pipeline malfunctions, and the appropriate corrective actions.
- The steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity or environmental damage (Section 3.0).
- The proper firefighting procedures and use of equipment, fire suits, and breathing apparatus (Section 3.0). Only trained persons will be utilized. Company personnel are only trained on the use of handheld Ansul 30# fire extinguisher units for small incipient fires.

Emergency Response Plan Review

All Response Team Members should review their Emergency Response Plan whenever their job position or responsibilities change under the Plan. A copy of this Plan will be available at all times to Team Members.

HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (29 CFR 1910.120)

Federal and State regulations require that Response Team Members maintain up-to-date Hazardous Waste Operations and Emergency Response training necessary to function in their assigned positions. At a minimum, team members will receive "First Responder Awareness Level" training. All personnel responding to an incident must satisfy the applicable Hazardous Waste Operations and Emergency Response training requirements of 29 CFR 1910.120.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE TRAINING REQUIREMENTS

Responder Classification	Required Training Hours	Refresher
29CFR 1910.120(g) Emergency Response		
First Responder - Awareness Level	2-4 hrs demonstration of competency	same
First Responder - Operations Level	8 hrs	8 hrs
Hazardous Materials Technician	24 hrs plus competency	8 hrs
Hazardous Materials Specialist	24 hrs plus competency in specialized areas	8 hrs
Incident Commander	24 hrs plus competency	
29CFR 1910.120(c) Clean Up Sites		
General Site Workers	40 hrs / 3 days on the job training	8 hrs
Occasional Workers (Limited Tasks)	24 hrs / 1 day on the job training	8 hrs
General Site Workers (Low Hazard)	24 hrs / 1 day on the job training	8 hrs
Supervisors	8 hrs supervisor training	8 hrs
* Previous work experience and/or training certified as equivalent by employer.		

Incident Command System

Response Team Members will receive Incident Command System training and may also receive supplemental training in other related general topics.

Training Records Maintenance

Emergency response training records are maintained at the Company's office. Training records for response personnel will be maintained for as long as personnel have duties in this Emergency Response Plan.

Contractor Training

The Company also recognizes that contract personnel must also have sufficient training to respond emergency response situations. The Company communicates this training need to its key contractors during contract negotiations and often specifically spells out this requirement in its contracts. The Company also tends to use well-known spill response contractors whose reputation and experience levels help ensure personnel who respond will be trained to appropriate levels.

Training Qualifications

As no formalized method of certifying training instructors has been provided by Occupational Safety and Health Administration, the Company ensures the competency of its instructors and training organizations by selecting trainers and/or organizations with professional reputations and extensive hands-on and classroom experience in their subject matter. The Company personnel with responsibility to coordinate the training program also conduct periodic informal audits of training courses selected for the Company training program to ensure their suitability for the program.

D.2 RESPONSE TEAM EXERCISES

Spill Management Team members, government agencies, contractors, and other resources must participate in response exercises required by Federal, State, or local regulations and as detailed in the "National Preparedness for Response Exercise Program (PREP) Guidelines." The Company (through the Community, Safety and Environment Department) will conduct announced drills to maintain compliance, and each plan-holder must participate in at least one exercise annually. The following table lists the triennial exercise cycle for facilities (see National Preparedness for Response Exercise Program Guidelines for full details).

TRIENNIAL CYCLE		
Total Number	Frequency	Exercise Type/Description
12	Quarterly	Qualified Individual Notification Exercise
3	Annually	Equipment Deployment Exercise (<i>Facility-owned equipment</i>)
3	Annual	Response Team Tabletop Exercise
3	Annual	Equipment Deployment Exercise (<i>facilities with Oil Spill Removal Organization-owned equipment</i>)
3	3 per Triennial Cycle	Unannounced Exercise (<i>not a separate exercise</i>) Actual response can be considered as an unannounced exercise. Credit can also be given for unannounced equipment deployment and Response Team tabletop exercises.
NOTES: 1) All Emergency Response Plan components must be exercised at least once in the Cycle.		

Quarterly QI Notification Exercise

- **Scope:** Exercise communication between Pipeline personnel and the Qualified Individual(s) and/or designated alternate(s). At least once each year, one of the notification exercises should be conducted during non-business hours.
- **Objective:** Contact must be made with a Qualified Individual or designated alternate, as identified in the Plan.
- **General:** All personnel receiving notification shall respond to the notification and verify their receipt of the notification. Personnel who do not respond should be contacted to determine whether or not they received the notification.

Annual Equipment Deployment Exercise (for operator and/or Oil Spill Removal Organization equipment)

- **Scope:** Demonstrate ability to deploy spill response equipment identified in the Emergency Response Plan.

May consist entirely of operator owned equipment, or a combination of OSRO and operator equipment.

The number of equipment deployment exercises conducted should be such that equipment and personnel assigned to each Response Zone are exercised at least one a year. If the same personnel and equipment respond to multiple zones, they need only exercise once per year. If different personnel and equipment respond to various Response Zones, each must participate in an annual equipment deployment exercise.

- **Objective:** Demonstrate personnel's ability to deploy and operate response equipment. Ensure that the response equipment is in proper working order.
- **General:** The Facility may take credit for actual equipment deployment to a spill, or for training sessions, as long as the activities are properly documented.

Annual Response Team Tabletop Exercise

- **Scope:** Exercise the response team's organization, communication, and decision-making in managing a spill response. Each team identified within the Plan must conduct an annual Response Team Tabletop Exercise.
- **Objective:** Exercise the response team in a review of the following:
 - Knowledge of the Plan.
 - Proper notifications.
 - Communications system.
 - Ability to access an OSRO.
 - Coordination of internal spill response personnel.
 - Review of the transition from a initial team to a regional team.
 - Ability to effectively coordinate response activity with the National Response System (NRS) Infrastructure.
 - Ability to access information in the Area Contingency Plan.

- **General:** A minimum of one Response Team Tabletop Exercise in a triennial cycle will involve a Worst Case Discharge scenario.

Government-Initiated Unannounced Exercise

- **Scope:** Demonstrate ability to respond to a Worst Case Discharge spill event.
- **Objectives:** Designated Emergency Response Team Members should demonstrate adequate knowledge of their Emergency Response Plan and the ability to organize, communicate, coordinate, and respond in accordance with that Plan.
- **General:** Maximum of 20 unannounced Pipeline and Hazardous Materials Safety Administration exercises conducted annually for the pipeline industry as a whole. A single owner or operator will not be required to participate in a PHMSA-initiated unannounced exercise if they have already participated in one within the previous 36 months.

Area Exercises

- **Objective:** The purpose of the area exercise is to exercise the entire response community in a particular area. An area is defined as that geographic area for which a separate and distinct Area Contingency Plan has been prepared, as described in Oil Pollution Act 90. The response community includes the Federal, State, and local government and industry. The area exercises are designed to exercise the government and industry interface for spill response.
- **General:** The goal is to ensure that all areas of the country are exercised triennially. All of the area exercises will be developed by an exercise design team. The exercise design team is comprised of representatives from the Federal, State, and local government and industry. A lead plan holder would lead each area exercise. The lead plan holder is the organization (government or industry) that holds the primary plan that is exercised in the area exercise. The lead plan holder would have the final word on designing the scope and scenario of the exercise.

Exercise Documentation

- All exercises should be documented and maintained at the Company office; documentation should specify:
 - The type of exercise;
 - Date and time of the exercise;
 - A description of the exercise;
 - The objectives met in the exercise;
 - The components of the response plan exercised; and
 - Lessons learned.
- Exercise documentation should be kept on file for the required length of time depending on the regulating agency (three (3) years for the U.S. Coast Guard and five (5) years for the Pipeline and Hazardous Materials Safety Administration and the U.S. Environmental Protection Agency).

D.3

PURPOSE OF REVIEW AND EVALUATION

This Section provides procedures and information useful to responders for post incident/exercise review and evaluation. Post incident/exercise reviews should be conducted in a timely manner following an incident/exercise. The Plan should be evaluated to determine its usefulness during the incident/exercise and appropriate revisions should be made. All incident/exercise documentation should be included in the Plan evaluation process.

Outline of Review

Given below are items a team composed of outside people knowledgeable in spill response and key members of the response teams should examine. These questions are intended as guidelines only; many other questions are likely to be appropriate at each stage of a critique.

- **Detection**

Was the spill detected promptly?
How was it detected? By whom?
Could it have been detected earlier? How?
Are any instruments or procedures available to consider which might aid in spill detection?

- **Notification**

Were proper procedures followed in notifying government agencies? Were notifications prompt?
Was management notified promptly/response appropriate?
Was the Pipeline owner/operator notified promptly? If so, why, how, and who? If not, why not?

- **Assessment/Evaluation**

Was the magnitude of the problem assessed correctly at the start?
What means were used for this assessment?
Are any guides or aids needed to assist spill evaluation?
What sources of information were available on winds and on water currents?
Is our information adequate?
Was this information useful (and used) for spill trajectory forecasts? Were such forecasts realistic?
Do we have adequate information on product properties?
Do we need additional information on changes of product properties with time, i.e., as a result of weathering and other processes?

- **Mobilization**

What steps were taken to mobilize spill countermeasures?
What resources were used?
Was mobilization prompt?
Could it have been speeded up or should it have been?
What about mobilization of manpower resources?
Was the local spill cooperative used appropriately?
How could this be improved?
Was it appropriate to mobilize the Pipeline owner/operator resources and was this promptly initiated?
What other resources are available and have they been identified and used adequately?

- **Response - Strategy**

Is there an adequate Spill Response Plan for the location?
Is it flexible enough to cope with unexpected spill events?
Does the Plan include clear understanding of local environmental sensitivities?
What was the initial strategy for response to this spill?
Is this strategy defined in the Spill Plan?
How did the strategy evolve and change during this spill and how were these changes implemented?
What caused such changes?
Are there improvements needed? More training?

- **Response - Resources Used**

What resources were mobilized?
How were they mobilized?
How did resource utilization change with time? Why?
Were resources used effectively?

- Contractors
- Government agencies
- Company resources
- Cooperatives
- Volunteers
- Consultants
- Other (e.g., bird rescue centers)

What changes would have been useful?
Do we have adequate knowledge of resource availability?
Do we have adequate knowledge of waste disposal capabilities?

- **Response - Effectiveness**

Was containment effective and prompt?
How could it have been improved?
Should the location or the local cooperative have additional resources for containment?
Was recovery effective and prompt?
How could it have been improved?
Should the location or the local cooperative have additional resources for recovery of spilled product?
Was contaminated equipment disposed promptly and safely?
Was there adequate in-house product separation, recovery, and disposal?
How could it have been improved?
Was there adequate outside disposal resources available?

- **Command Structure**

Who was initially in charge of spill response?
What sort of organization was initially set up?
How did this change with time? - Why?
What changes would have been useful?
Was there adequate surveillance?
Should there be any changes?
Were communications adequate?
What improvements are needed? Hardware, procedures, etc.
Was support from financial services adequate? Prompt?
Should there be any changes?
Is more planning needed?
Should financial procedures be developed to handle such incidents?

- **Measurement**

Was there adequate measurement or estimation of the volume of product spilled?
Was there adequate measurement or estimation of the volume of product recovered?
Was there adequate measurement or estimation of the volume of product disposed?
Should better measurement procedures be developed for either phase of operations?
If so, what would be appropriate and acceptable?

- **Government Relations**

What are the roles and effects of the various government agencies which were involved?
Was there a single focal point among the government agencies for contact?
Should there have been better focus of communications to the agencies?
Were government agencies adequately informed at all stages?
Were too many agencies involved?
Are any changes needed in procedures to manage government relations?
Examples of affected U.S. agencies (there may be others):

- U.S. Coast Guard
- Environmental Protection Agency
- National Oceanic and Atmospheric Administration
- Dept of Fish and Wildlife
- State Parks
- Harbors and Marinas
- States
- Cities
- Counties

Was there adequate agreement with the government agencies on disposal methods?
Was there adequate agreement with the government agencies on criteria for cleanup?
How was this agreement developed?
Were we too agreeable with the agencies in accepting their requests for specific action items (e.g., degree of cleanup)?
Should there be advance planning of criteria for cleanup, aimed at specific local environmentally sensitive areas? (Such criteria should probably also be designed for different types of product.)

- **Public Relations**

How were relations with the media handled?

What problems were encountered?

Are improvements needed?

How could public outcry have been reduced? Was it serious?

Would it be useful to undertake a public information effort to "educate" reporters about product and effects to it if spilled?

These areas should be investigated shortly after the incident to assure that actions taken are fresh in peoples' minds.

APPENDIX E

DISPOSAL PLAN

E.1 Overview

E. 2 Waste Classification

E. 3 Waste Handling

E. 4 Waste Storage

E. 5 Waste Disposal

Figure E. 1 Temporary Storage Methods

Figure E. 2 Oily Waste Separation and Disposal Methods

E.1 OVERVIEW

A major oil spill response would generate significant quantities of waste materials ranging from oily debris and sorbent materials to sanitation water and used batteries. All these wastes need to be classified and segregated (i.e., oily, liquid, etc.), transported from the site, and treated and/or disposed at approved disposal sites. Each of these activities demands that certain health and safety precautions be taken, which are strictly controlled by Federal and State Laws and Regulations. This Section provides an overview of the applicable State Regulations governing waste disposal, and a discussion of various waste classification, handling, transfer, storage, and disposal techniques. It is the responsibility of the Environmental Unit to manage waste disposal needs during an oil spill cleanup.

E.2 WASTE CLASSIFICATION

Oily- Liquid Wastes

Oily liquid wastes (i.e., oily water and emulsions) that would be handled, stored, and disposed during response operations are very similar to those handled during routine storage and transfer operations. The largest volume of oily liquid wastes would be produced by recovery operations (e.g., through the use of vacuum devices or skimmers). In addition, oily water and emulsions would be generated by vehicle operations (e.g., spent motor oils, lubricants, etc.), and equipment cleaning operations.

Non-Oily - Liquid Wastes

Response operations would also produce considerable quantities of non-oily liquid wastes. Water and other non-oily liquid wastes would be generated by the storage area and stormwater collection systems, equipment cleaning (i.e., water contaminated with cleaning agents), and office and field operations (i.e., sewage, construction activities).

Solid Wastes

A solid waste is defined as any discarded material provided that it is not specifically excluded under the regulations. These exclusions cover materials such as domestic sewage and mixtures of sewage discharged through a sewer system or industrial wastewater point source discharges.

A discarded material is any material which is abandoned (disposed, burned or incinerated) or accumulated, stored or treated prior to being abandoned. A discarded material is also any material recycled or any material considered inherently wastelike. Recycled material is considered solid waste when used in a manner constituting disposal, placed on land or burned for energy recovery.

A solid waste may be considered a hazardous waste. A solid waste, as defined above, may be a hazardous waste if it is not excluded from regulation and is either a listed hazardous waste or exhibits the characteristics of a hazardous waste. A solid waste exhibits the characteristics of a hazardous waste if it exceeds the thresholds established in determining the following:

1. ignitability
2. corrosivity
3. reactivity

4. toxicity

A solid waste may also become a hazardous waste if it is mixed with a listed hazardous waste or, in the case of any other waste (including mixtures), when the waste exhibits any of the characteristics identified above.

Oily - Solid / Semi-Solid Wastes

Oily solid/semi-solid wastes that would be generated by containment and recovery operations include damaged or worn-out booms, disposable/soiled equipment, used sorbent materials, saturated soils, contaminated beach sediments, driftwood, and other debris.

Non-Oily - Solid / Semi-Solid Wastes

Non-oily solid/semi-solid wastes would be generated by emergency construction operations (e.g., scrap, wood, pipe, and wiring) and office and field operations (i.e., refuse). Vessel, vehicle, and aircraft operations also produce solid wastes.

E.3 WASTE HANDLING

A primary concern in the handling of recovered oil and oily debris is contaminating unaffected areas or recontaminating already cleaned areas. Oily wastes generated during the response operations would need to be separated by type and transferred to temporary storage areas and/or transported to incineration or disposal sites. Proper handling of oil and oily wastes is imperative to ensure personnel health and safety.

Safety Considerations

Care shall be taken to avoid or minimize direct contact with oily wastes. All personnel handling or coming into contact with oily wastes shall wear protective clothing. A barrier cream can be applied prior to putting on gloves to further reduce the possibility of oily waste absorption. Safety goggles shall be worn by personnel involved in waste handling activities where splashing might occur. Any portion of the skin exposed to oily waste should be washed with soap and water as soon as possible. Decontamination zones should be set up during response operations to ensure personnel are treated for oil exposure.

Wastes Transfer

During response operations, it may be necessary to transfer recovered oil and oily debris from one point to another several times before the oil and oily debris are ultimately recycled, incinerated or disposed at an appropriate disposal site. Depending on the location of response operations, any or all of the following transfer operations may occur:

- From portable or vessel-mounted skimmers into flexible bladder tanks, storage tanks of the skimming vessel itself, or a barge.
- Directly into the storage tank of a vacuum device.
- From a skimming vessel or flexible bladder to a barge.
- From a vacuum device storage tank to a barge.
- From a barge to a tank truck.
- From a tank truck to a processing system (e.g., oil/water separator).
- From a processing system to a recovery system and/or incinerator.
- Directly into impermeable bags that, in turn, are placed in impermeable containers.
- From containers to trucks.

There are four general classes of transfer systems that may be employed to affect oily waste transfer operations:

- **Pumps:** Rotary pumps, such as centrifugal pumps, may be used when transferring large volumes of oil, but they may not be appropriate for pumping mixtures of oil and water. The extreme shearing action of centrifugal pumps tends to emulsify oil and water, thereby increasing the viscosity of the mixture and causing low, inefficient transfer rates. The resultant emulsion would also be more difficult to separate into oil and water fractions. Lobe or "positive displacement" pumps work well on heavy, viscous oils, and do not emulsify the oil/water mixture. Double-acting piston and double acting diaphragm pumps are reciprocating pumps that may also be used to pump oily wastes.
- **Vacuum Systems:** A vacuum truck may be used to transfer viscous oils but they usually pick up a very high water/oil ratio.
- **Belt/Screw Conveyors:** Conveyors may be used to transfer oily wastes containing a large amount of debris. These systems can transfer weathered debris laden oil either horizontally or vertically for short distances (i.e., 10 feet) but are bulky and difficult to set up and operate.
- **Wheeled Vehicles:** Wheeled vehicles may be used to transfer liquid wastes or oily debris to storage or disposal sites. These vehicles have a limited transfer volume (i.e., 100 barrels) and require good site access.

E.4 WASTE STORAGE

Interim storage of recovered oil, oily and non-oily waste would be considered to be an available means of holding the wastes until a final management method is selected. In addition, the segregation of wastes according to type would facilitate the appropriate method of disposal. The storage method used would depend upon:

- The type and volume of material to be stored.
- The duration of storage.
- Access.

During an oil spill incident, the volume of oil that can be recovered and dealt with effectively depends upon the available storage capacity. Typical short-term storage options are summarized in Figure E-1. The majority of these options can be used either onshore or offshore.

If storage containers such as bags or drums are used, the container must be clearly marked with the proper Canadian Transport Dangerous Goods/United States Department of Transportation marking to indicate the type of material/waste contained and/or the ultimate disposal option.

Fuel barges may be the best option for temporary storage of oil recovered in open waters and frac tanks for inland spills. Depending on size, these vessels may be able to hold up to 6,000 barrels of oil and water and frac tanks may hold up to 500-550 barrels. The barge deck can be used as a platform for operating oil spill clean-up equipment and storing containment boom.

Steel or rubber tanks can be used to store oil recovered near the shoreline. To facilitate offloading, demulsifiers may be used to break emulsions prior to placing the recovered substance into the barges or storage tanks.

Use of any site for storage is dependent on the approval of the local authorities. The

following elements affect the choice of a potential storage site:

- Geology.
- Ground water.
- Soil.
- Flooding.
- Surface water.
- Slope.
- Covered material.
- Capacity.
- Climatic factors.
- Land use.
- Toxic air emissions.
- Security.
- Access.
- Public contact.

E.5 WASTE DISPOSAL

Techniques for Disposal of Recovered Oil

Recovery, reuse, and recycling are the best choices for remediation of a spill, thereby reducing the amount of oily debris to be bermed onsite or disposed of at a solid waste landfill. Treatment is the next best alternative, but incineration and burning for energy recovery have more options within the state. There are some limitations and considerations in incinerating for disposal. Environmental quality of incineration varies with the type and age of the facility. Therefore, when incineration becomes an option during an event, local air quality authorities would be contacted for advice about efficiency and emissions of facilities within their authority. Approval of the local air authorities is a requirement for any incineration option. Landfilling is the last option. Final disposal at a solid or dangerous waste landfill is the least environmentally sound method of dealing with a waste problem such as oily debris.

Note: Prior to the disposal of ANY waste products, the Incident Commander or his designee must contact the Keystone / TransCanada Community, Safety and Environmental Department to receive direction and guidance on the proper disposal methods and procedures.

During an oil spill incident, the Company would consult with the proper regulating agency to identify the acceptable disposal methods and sites appropriately authorized to receive such wastes. The Company maintains a list of approved disposal sites that satisfy local, Province/State, and Federal Regulations and Company requirements. This identification of suitable waste treatment and disposal sites would be prepared by the Environmental Unit in the form of an Incident Disposal Plan which must be authorized by the U.S. Coast Guard and/or the Environmental Protection Agency or National Energy Board. An Incident Disposal Plan would include predesignated interim storage sites, segregation strategies, methods of treatment and disposal for various types of debris, and the locations/contacts of all treatment and disposal site selections. Onsite treatment/disposal is preferred.

In order to obtain the best overall Incident Disposal Plan, a combination of methods should be used. There is no template or combination of methods that can be used in every spill situation. Each incident should be reviewed carefully to ensure that an appropriate combination of disposal methods is employed.

The different types of wastes generated during response operations would require different disposal methods. To facilitate the disposal of wastes, they should be separated by type for temporary storage, transport and disposal. Figure E-2 lists some of the options that would be available to segregate oily wastes. The figure also depicts methods that may be employed to separate free and/or emulsified water from the oily liquid waste.

The following is a brief discussion of some disposal techniques available for recovered oil and oily debris.

Recycling

This technique entails removing water from the oil and blending the oil with uncontaminated oil. Recovered oil can be shipped to refineries provided that it is exempt from hazardous waste regulations. There it can be treated to remove water and debris, and then blended and sold as a commercial product.

The Company's designated Disposal Specialist is responsible for ensuring that all waste materials be disposed at an internally approved disposal site.

Incineration

This technique entails the complete destruction of the recovered oil by high temperature thermal oxidation reactions. There are licensed incineration facilities as well as portable incinerators that may be brought to a spill site. Incineration may require the approval of the local Air Pollution Control Authority. Factors to consider when selecting an appropriate site for onsite incineration would include:

- Proximity to recovery locations.
- Access to recovery locations.
- Adequate fire control.
- Approval of the local air pollution control authorities.

In Situ Burning / Open Burning

Burning techniques entail igniting oil or oiled debris and allowing it to burn under ambient conditions. These disposal techniques are subject to restrictions and permit requirements established by federal, province/state and local laws. They would not be used to burn Polychlorinated biphenyls, waste oil containing more than 1,000 parts per million of halogenated solvents, or other substances regulated by the Environmental Protection Agency or Environment Canada. Permission for *in situ* burning may be difficult to obtain when the burn takes place near populated areas.

As a general rule, *in situ* burning would be appropriate only when atmospheric conditions will allow the smoke to rise several hundred feet and rapidly dissipate. Smoke from

burning oil will normally rise until its temperature drops to equal the ambient temperature. Afterwards, it will travel in a horizontal direction under the influence of prevailing winds.

Landfill Disposal

This technique entails burying the recovered oil in an approved landfill in accordance with regulatory procedures. Landfill disposal of free liquids is prohibited by Federal Law in the United States.

With local health department approval, non-burnable debris which consists of oiled plastics, gravel and oiled seaweed, kelp, and other organic material may be transported to a licensed, lined, approved municipal or private landfill and disposed of in accordance with the landfill guidelines and regulations. Landfill designation would be planned only for those wastes that have been found to be unacceptable by each of the other disposal options (e.g., waste reduction, recycling, energy recovery). Wastes would be disposed only at Company-approved disposal facilities. The Disposal Specialist is responsible for ensuring that all waste materials are disposed at a Company internally approved disposal site. Disposal at a non-approved facility would require approval by the Disposal Specialist prior to sending any waste to such a facility.

FIGURE E-1

TEMPORARY STORAGE METHODS

CONTAINER	ONSHORE	OFFSHORE	SOLIDS	LIQUIDS	NOTES
Barrels	x	x	x	x	May require handling devices. Covered and clearly marked.
Tank Trucks	x	x		x	Consider road access. Barge-mounted offshore.
Dump/Flat Bed Trucks-Roll-offs	x		x		May require impermeable liner and cover. Consider flammability of vapors at mufflers.
Barges		x	x	x	Liquids only in tanks. Consider venting of tanks.
Oil Storage Tanks	x	x		x	Consider problems of large volumes of water in oil.
Bladders	x	x		x	May require special hoses or pumps for oil transfer.
Frac Tanks	x			x	Consider road access.

FIGURE E-2

OILY WASTE SEPARATION AND DISPOSAL METHODS

TYPE OF MATERIAL	SEPARATION METHODS	DISPOSAL METHODS
LIQUIDS		
Non-emulsified oils	Gravity separation of free water	Incineration Use of recovered oil as refinery/production facility feedstock
Emulsified oils	Emulsion broken to release water by: • heat treatment • emulsion breaking chemicals • mixing with sand • centrifuge • filter/belt press	Use of recovered oil as refinery/production facility feedstock
SOLIDS		
Oil mixed with sand and soil	Collection of liquid oil leaching from sand during temporary storage Extraction of oil from sand by washing with water or solvent Removal of solid oils by sieving	Incineration Use of recovered oil as refinery/production facility feedstock Direct disposal Stabilization with inorganic material Degradation through land farming or composting
Oil mixed with cobbles or pebbles	Screening Collection of liquid oil leaching from materials during temporary storage Extraction of oil from materials by washing with water or solvent	Incineration Direct Disposal Use of recovered oil as refinery/production facility feedstock
Oil mixed with wood and sorbents	Screening Collection of liquid oil leaching from debris during temporary storage Flushing of oil from debris with water	Incineration Direct disposal Degradation through land farming or composting for oil mixed with seaweed or natural sorbents

APPENDIX F

MISCELLANEOUS FORMS

Forms and Exercise Documentation File Maintenance Procedures

- Forms and exercise documentation records should be maintained in a separate file in the Facility's office filing system.
- These files must be available for presentation upon request by regulatory agency personnel.

Detailed Incident Report

[Click to view the file - Detailed Incident Report_30_10_2008_9_7_35.pdf](#)



Appendix 1 DETAILED INCIDENT REPORT

Type or print in black pen

1

Board Use Only

NEB Incident No. _____ Date Received _____ NEB Investigator _____

Investigator's Comments _____

Secretary
National Energy Board
444 Seventh Avenue S.W.
Calgary, Alberta T2P 0X8 • Fax: (403) 292-5503

PART A - OPERATOR INFORMATION

Name of Company _____

Address of Company _____

Pipeline Name _____

PART B - TIME, WEATHER AND LOCATION OF INCIDENT

Date (month) _____ (day) _____ (year) _____

Hour (24 hour system & time zone) _____

Weather temperature: _____ OC precipitation: _____ windspeed & direction: _____

CSA Class Location ☐ 1 ☐ 2 ☐ 3 ☐ 4

Location (provide specific location using a chainage description (MLV, kmP), land survey description or prominent landmarks)

PART C - ORIGIN OF SPILL/RELEASE

Facility Involved:

☐ Line Pipe ☐ Tank Farm ☐ Pump Station ☐ Compressor Station ☐ Regulator/Meter Station ☐ Gas Plant

☐ Other Related Facility (specify) _____

Equipment Involved:

☐ Pipe ☐ Valve ☐ Pressure relief device ☐ Fitting ☐ Compressor ☐ Pump ☐ Pressure vessel ☐ Tank

☐ Instrumentation

☐ Other (specify) _____

PART D - SPILLS AND RELEASES (Report LVP and HVP spills only if in excess of 1.5 m³)

☐ Gas ☐ LVP ☐ HVP ☐ Toxic Substance

Name of product/substance _____

Volume spilled/released _____ m³ Volume recovered _____ m³

Was there a fire? ☐ Yes ☐ No

Was there an explosion? ☐ Yes ☐ No

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PART E - IMMEDIATE CAUSE FOR INCIDENTS ON OPERATING PIPELINES (<i>Immediate Cause: means unsafe acts or unsafe conditions</i>)	
☐ Failed pipe ☐ Failed weld ☐ Corrosion Refer to Part G	☐ Operator personnel error ☐ External loading or natural forces Refer to Part H ☐ Equipment malfunction/failure Refer to Part I
PART F - LINE PIPE DATA	
Type of Failure _____ Nominal Diameter (mm) _____ Wall Thickness (mm) _____ Date of Manufacture _____ Weld Process _____ SMYS (MPa) _____ Pipe Specification ☐ Z 245 ☐ Other (specify) _____ Pipe Location: ☐ Below Ground ☐ Above Ground Maximum Operating Pressure (kPa) _____ Pressure at Time of Incident (kPa) _____ Latest Pressure Test Date _____ Maximum Test Pressure (kPa) _____ Test Duration (hrs) _____	
PART G - CORROSION FAILURES	
Corrosion location: ☐ Internal ☐ External Type of Corrosion (specify) _____ Type of Coating _____	Circumferential Position Looking Downstream (mark an X)
PART H - FAILURES DUE TO EXTERNAL LOAD OR NATURAL FORCES	
☐ Damage by operator or its contractor ☐ Other (specify) _____ Name or Contractor/Other Party _____ Address _____ Telephone () _____ Name of Representative _____	
PART I - EQUIPMENT MALFUNCTION/FAILURE	
Equipment _____ Manufacturer _____ Model# _____ Year Equipment Installed _____ Year Equipment Manufactured _____	
PART J - ESTIMATE OF TOTAL INCIDENT COST (including repair, cleanup and restoration)	
\$ _____	
PART K - REPAIR DESCRIPTION (<i>Description of all repairs to the pipeline made necessary by the incident and date of return to service of the pipeline</i>)	
_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	

PART L - INJURY AND FATALITY DESCRIPTIONS ☐ Number of Fatalities ☐ Number of Serious Injuries		Serious Injury - includes an injury that results in: fracture of a major bone, amputation of a body part, loss of sight - one or both eyes, internal haemorrhage, third degree burns, unconsciousness, or loss of a body part or function of a body part
NAME	AFFILIATION	FATALITY OR INJURY DESCRIPTION AND CURRENT PATIENT CONDITION
	☐ Company Employee ☐ Contractor Public	
	☐ Company Employee ☐ Contractor Public	
	☐ Company Employee ☐ Contractor Public	
	☐ Company Employee ☐ Contractor Public	
	☐ Company Employee ☐ Contractor Public	
	☐ Company Employee ☐ Contractor Public	
	☐ Company Employee ☐ Contractor Public	
	☐ Company Employee ☐ Contractor Public	

PART M - IMMEDIATE INCIDENT CAUSE OF SERIOUS INJURY/FATALITY *(Immediate Cause - means unsafe acts and conditions)*

☐ Defective/inadequate safety devices, tools or equipment
☐ Improper loading or placement
☐ Congested work area/disorderly workplace

☐ Improper operation of safety devices, tools or equipment
☐ Hazardous environment (gases, dust, smoke, fumes or vapours)
☐ Other (specify) _____

PART N - NARRATIVE OF INCIDENT

Provide a complete description of the incident, including events leading up to, and following the incident. Also include additional information as specified in the guidelines to section 52 of the Onshore Pipeline Regulations. Attach any additional information that may supplement the narrative such as 1) drawing of the incident site 2) photographs 3) schematics 4) maps 5) reports (metalurgical, NDT, inspection, pressure test, etc.) Attach additional sheets of narrative as required.

PART O - WITNESS INFORMATION		
NAME _____	TELEPHONE NO. () _____	
_____	() _____	
_____	() _____	
_____	() _____	
_____	() _____	
PART P - BASIC CAUSES OF INCIDENT (Identify all basic causes contributing to the incident. Basic Cause - means the real or root causes of why the unsafe acts and unsafe conditions as described in the immediate cause occurred. Several Basic Causes may be assigned for one incident.)		
☐ Inadequate training	☐ Inadequate work standards or procedures	☐ Inadequate materials, tools or equipment
☐ Inadequate design/maintenance	☐ Non-compliance with work standards or procedures	
☐ Other (specify) _____		
Additional comments on selected basic cause: _____		

PART Q - CORRECTIVE ACTIONS TAKEN TO PREVENT SIMILAR INCIDENTS (If no corrective action taken, state reasons why)		

PART R - NAME OF PERSON CONDUCTING A COMPANY INCIDENT INVESTIGATION		
Name _____		
Title _____		
Telephone () _____ Fax () _____		
PART S - NAMES OF OTHER AGENCIES INVESTIGATING INCIDENT		
Agency _____	Agency _____	
Telephone _____	Telephone _____	
Contact Name _____	Contact Name _____	
Agency _____	Agency _____	
Telephone _____	Telephone _____	
Contact Name _____	Contact Name _____	
PART T - NAME AND TITLE OF COMPANY REPRESENTATIVE FILING REPORT		
Name _____	Signature _____	
Title _____		
Telephone () _____ Fax () _____ Date (time) _____ (month) _____ (day) _____ (year) _____		

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F 7000-1

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U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

ACCIDENT REPORT – HAZARDOUS LIQUID PIPELINE SYSTEMS

Report Date: _____

No. _____

(DOT Use Only)

INSTRUCTIONS

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the Office Of Pipeline Safety Web Page at <http://ops.dot.gov>.

PART A – GENERAL REPORT INFORMATION

Check: ☐ Original Report ☐ Supplemental Report ☐ Final Report

1. a. Operator's OPS 5-digit Identification Number (if known) _____
- b. If Operator does not own the pipeline, enter Owner's OPS 5-digit Identification Number (if known) _____
- c. Name of Operator _____
- d. Operator street address _____
- e. Operator address _____
City, County, State and Zip Code

IMPORTANT: IF THE SPILL IS SMALL, THAT IS, THE AMOUNT IS AT LEAST 5 GALLONS BUT IS LESS THAN 5 BARRELS, COMPLETE THIS PAGE ONLY, UNLESS THE SPILL IS TO WATER AS DESCRIBED IN 49 CFR §195.52(A)(4) OR IS OTHERWISE REPORTABLE UNDER §195.50 AS REVISED IN CY 2001.

2. Time and date of the accident
_____/_____/_____
hr. month day year

3. Location of accident
(If offshore, do not complete a through d. See Part C.1)
a. Latitude: _____ Longitude: _____
(if not available, see instructions for how to provide specific location)

b. _____
City, and County or Parish

c. _____
State and Zip Code

- d. Mile post/valve station ☐ or survey station no. ☐
(whichever gives more accurate location)

4. Telephone report
_____/_____/_____
NRC Report Number month day year

5. Losses (Estimated)

Public/Community Losses reimbursed by operator:

Public/private property damage \$ _____
Cost of emergency response phase \$ _____
Cost of environmental remediation \$ _____
Other Costs \$ _____
(describe) _____

Operator Losses:

Value of product lost \$ _____
Value of operator property damage \$ _____
Other Costs \$ _____
(describe) _____
Total Costs \$ _____

6. Commodity Spilled ☐ Yes ☐ No
(If Yes, complete Parts a through c where applicable)

- a. Name of commodity spilled _____
- b. Classification of commodity spilled:
☐ HVLs /other flammable or toxic fluid which is a gas at ambient conditions
☐ CO₂ or other non-flammable, non-toxic fluid which is a gas at ambient conditions
☐ Gasoline, diesel, fuel oil or other petroleum product which is a liquid at ambient conditions
☐ Crude oil

c. Estimated amount of commodity involved:

- ☐ Barrels
☐ Gallons (check only if spill is less than one barrel)

Amounts:

Spilled: _____

Recovered: _____

CAUSES FOR SMALL SPILLS ONLY (Gallons or fewer) (For large spills [5 barrels or greater] see Part H)

- ☐ Corrosion ☐ Natural Forces ☐ Excavation Damage ☐ Other Outside Force Damage
☐ Material and/or Weld Failures ☐ Equipment ☐ Incorrect Operation ☐ Other

PART B – PREPARER AND AUTHORIZED SIGNATURE

(type or print) Preparer's Name and Title _____

Area Code and Telephone Number _____

Preparer's E-mail Address _____

Area Code and Facsimile Number _____

Authorized Signature _____

(type or print) Name and Title _____

Date _____

Area Code and Telephone Number _____

Form PHMSA F 7000-1 (01-2001)

Page 1 of 4

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PART C - ORIGIN OF THE ACCIDENT (Check all that apply)**1. Additional location information**

- a. Line segment name or ID _____
b. Accident on Federal land other than Outer Continental Shelf ☐ Yes ☐ No
c. Is pipeline interstate? ☐ Yes ☐ No

Offshore: ☐ Yes ☐ No (complete d if offshore)

d. Area _____ Block # _____
State / / or Outer Continental Shelf ☐

2. Location of system involved (check all that apply)

- ☐ Operator's Property
☐ Pipeline Right of Way
☐ High Consequence Area (HCA)
Describe HCA _____

3. Part of system involved in accident

- ☐ Above Ground Storage Tank
☐ Cavern or other below ground storage facility
☐ Pump/meter station; terminal/tank farm piping and equipment, including sumps
☐ Other Specify: _____

- ☐ Onshore pipeline, including valve sites
☐ Offshore pipeline, including platforms

If failure occurred on pipeline, complete items d - g:

4. Failure occurred on

- ☐ Body of Pipe ☐ Pipe Seam ☐ Scraper Trap
☐ Pump ☐ Sump ☐ Joint
☐ Component ☐ Valve ☐ Metering Facility
☐ Repair Sleeve ☐ Welded Fitting ☐ Bolted Fitting
☐ Girth Weld

Other (specify) _____

Year the component that failed was installed: / / **5. Maximum operating pressure (MOP)**

- a. Estimated pressure at point and time of accident: _____ PSIG
b. MOP at time of accident: _____ PSIG
c. Did an overpressurization occur relating to the accident?
☐ Yes ☐ No

a. Type of leak or rupture

- ☐ Leak: ☐ Pinhole ☐ Connection Failure (complete sec. H5)
☐ Puncture, diameter (inches) _____
☐ Rupture: ☐ Circumferential - Separation
☐ Longitudinal - Tear/Crack, length (inches) _____
Propagation Length, total, both sides (feet) _____
ON/A
☐ Other _____

b. Type of block valve used for isolation of immediate section:

- Upstream: ☐ Manual ☐ Automatic ☐ Remote Control
☐ Check Valve
Downstream: ☐ Manual ☐ Automatic ☐ Remote Control
☐ Check Valve

c. Length of segment isolated _____ ft

d. Distance between valves _____ ft

e. Is segment configured for internal inspection tools? ☐ Yes ☐ Nof. Had there been an in-line inspection device run at the point of failure? ☐ Yes ☐ No ☐ Don't Know☐ Not Possible due to physical constraints in the system**g. If Yes, type of device run (check all that apply)**

- ☐ High Resolution Magnetic Flux tool Year run: _____
☐ Low Resolution Magnetic Flux tool Year run: _____
☐ UT tool Year run: _____
☐ Geometry tool Year run: _____
☐ Caliper tool Year run: _____
☐ Crack tool Year run: _____
☐ Hard Spot tool Year run: _____
☐ Other tool Year run: _____

PART D - MATERIAL SPECIFICATION

1. Nominal pipe size (NPS) / / in.
2. Wall thickness / / in.
3. Specification _____ SMYS / / / / /
4. Seam type _____
5. Valve type _____
6. Manufactured by _____ in year / /

PART E - ENVIRONMENT

1. Area of accident ☐ In open ditch
☐ Under pavement ☐ Above ground
☐ Underground ☐ Under water
☐ Inside/under building ☐ Other _____
2. Depth of cover: _____ inches

PART F - CONSEQUENCES**1. Consequences (check and complete all that apply)**

a. **injuries**
Number of operator employees:
Contractor employees working for operator:
General public:
Totals:

- b. Was pipeline/segment shutdown due to leak? ☐ Yes ☐ No
If Yes, how long? _____ days _____ hours _____ minutes

- c. Product ignited ☐ Yes ☐ No d. Explosion ☐ Yes ☐ No
e. ☐ Evacuation (general public only) / / / people
Reason for Evacuation:
☐ Precautionary by company
☐ Evacuation required or initiated by public official
f. Elapsed time until area was made safe: _____ hr. _____ min.

2. Environmental Impact

- a. Wildlife Impact: Fish/aquatic ☐ Yes ☐ No
Birds ☐ Yes ☐ No
Terrestrial ☐ Yes ☐ No
b. Soil Contamination ☐ Yes ☐ No
If Yes, estimated number of cubic yards: _____
c. Long term impact assessment performed: ☐ Yes ☐ No
d. Anticipated remediation ☐ Yes ☐ No
If Yes, check all that apply: ☐ Surface water ☐ Groundwater ☐ Soil ☐ Vegetation ☐ Wildlife

- e. Water Contamination: ☐ Yes ☐ No (If Yes, provide the following)
Amount in water _____ barrels
Ocean/Seawater ☐ No ☐ Yes
Surface ☐ No ☐ Yes
Groundwater ☐ No ☐ Yes
Drinking water ☐ No ☐ Yes (If Yes, check below.)
☐ Private well ☐ Public water intake

PART G - LEAK DETECTION INFORMATION

1. Computer based leak detection capability in place? ☐ Yes ☐ No
2. Was the release initially detected by? (check one): ☐ CPM/SCADA-based system with leak detection
☐ Static shut-in test or other pressure or leak test
☐ Local operating personnel, procedures or equipment
☐ Remote operating personnel, including controllers
☐ Air patrol or ground surveillance
☐ A third party ☐ Other (specify) _____
3. Estimated leak duration days _____ hours _____

PART H - APPARENT CAUSE

Important: There are 25 numbered causes in this Part H. Check the box corresponding to the primary cause of the accident. Check one circle in each of the supplemental categories corresponding to the cause you indicate. See the instructions for guidance.

H1 - CORROSION1. ☐ External Corrosion2. ☐ Internal Corrosion

(Complete items a - e where applicable.)

a. Pipe Coating

- ☐ Bare
☐ Coated

b. Visual Examination

- ☐ Localized Pitting
☐ General Corrosion
☐ Other _____

c. Cause of Corrosion

- ☐ Galvanic ☐ Atmospheric
☐ Stray Current ☐ Microbiological
☐ Cathodic Protection Disrupted
☐ Stress Corrosion Cracking
☐ Selective Seam Corrosion
☐ Other _____

d. Was corroded part of pipeline considered to be under cathodic protection prior to discovering accident?

- ☐ No ☐ Yes, Year Protection Started: ____/____/____

e. Was pipe previously damaged in the area of corrosion?

- ☐ No ☐ Yes ⇒ Estimated time prior to accident: ____/____/____ years ____/____/____ months Unknown ☐

H2 - NATURAL FORCES

3. ☐ Earth Movement ⇒ ☐ Earthquake ☐ Subsidence ☐ Landslide ☐ Other _____
4. ☐ Lightning
5. ☐ Heavy Rains/Floods ⇒ ☐ Washouts ☐ Flotation ☐ Mudslide ☐ Scouring ☐ Other _____
6. ☐ Temperature ⇒ ☐ Thermal stress ☐ Frost heave ☐ Frozen components ☐ Other _____
7. ☐ High Winds

H3 - EXCAVATION DAMAGE

8. ☐ Operator Excavation Damage (including their contractors/Not Third Party)
9. ☐ Third Party (complete a-f)
- a. Excavator group
☐ General Public ☐ Government ☐ Excavator other than Operator/subcontractor
- b. Type: ☐ Road Work ☐ Pipeline ☐ Water ☐ Electric ☐ Sewer ☐ Phone/Cable
☐ Landowner-not farming related ☐ Farming ☐ Railroad
☐ Other liquid or gas transmission pipeline operator or their contractor
☐ Nautical Operations ☐ Other _____
- c. Excavation was: ☐ Open Trench ☐ Sub-strata (boring, directional drilling, etc...)
- d. Excavation was an ongoing activity (Month or longer) ☐ Yes ☐ No If Yes, Date of last contact ____/____/____
- e. Did operator get prior notification of excavation activity?
☐ Yes; Date received: ____/____/____ mo. ____/____/____ day ____/____/____ yr. ☐ No
Notification received from: ☐ One Call System ☐ Excavator ☐ Contractor ☐ Landowner
- f. Was pipeline marked as result of location request for excavation? ☐ No ☐ Yes (If Yes, check applicable items i - iv)
- i. Temporary markings: ☐ Flags ☐ Stakes ☐ Paint
- ii. Permanent markings: ☐
- iii. Marks were (check one): ☐ Accurate ☐ Not Accurate
- iv. Were marks made within required time? ☐ Yes ☐ No

H4 - OTHER OUTSIDE FORCE DAMAGE

10. ☐ Fire/Explosion as primary cause of failure ⇒ Fire/Explosion cause: ☐ Man made ☐ Natural
11. ☐ Car, truck or other vehicle not relating to excavation activity damaging pipe
12. ☐ Rupture of Previously Damaged Pipe
13. ☐ Vandalism

H5 - MATERIAL AND/OR WELD FAILURES**Material**

14. ☐ Body of Pipe ⇒ ☐ Dent ☐ Gouge ☐ Bend ☐ Arc Burn ☐ Other _____
15. ☐ Component ⇒ ☐ Valve ☐ Fitting ☐ Vessel ☐ Extruded Outlet ☐ Other _____
16. ☐ Joint ⇒ ☐ Gasket ☐ O-Ring ☐ Threads ☐ Other _____

Weld

17. ☐ Butt ⇒ ☐ Pipe ☐ Fabrication ☐ Other _____
18. ☐ Fillet ⇒ ☐ Branch ☐ Hot Tap ☐ Fitting ☐ Repair Sleeve ☐ Other _____
19. ☐ Pipe Seam ⇒ ☐ LF ERW ☐ DSAW ☐ Seamless ☐ Flash Weld ☐ Other _____
- ☐ HF ERW ☐ SAW ☐ Spiral ☐ Other _____

Complete a-g if you indicate **any** cause in part H5.

**a. Type of failure:**

- ☐ Construction Defect ⇒ ☐ Poor Workmanship ☐ Procedure not followed ☐ Poor Construction Procedures
- ☐ Material Defect

b. Was failure due to pipe damage sustained in transportation to the construction or fabrication site? ☐ Yes ☐ No

c. Was part which leaked pressure tested before accident occurred? ☐ Yes, complete d-g ☐ No

d. Date of test: ____/____/____ yr. ____/____/____ mo. ____/____/____ day

e. Test medium: ☐ Water ☐ Inert Gas ☐ Other _____

f. Time held at test pressure: ____/____/____ hr.

g. Estimated test pressure at point of accident: _____ PSIG

H6 - EQUIPMENT

20. ☐ Malfunction of Control/Relief Equipment ⇒ ☐ Control valve ☐ Instrumentation ☐ SCADA ☐ Communications
- ☐ Block valve ☐ Relief valve ☐ Power failure ☐ Other _____
21. ☐ Threads Stripped, Broken Pipe Coupling ⇒ ☐ Nipples ☐ Valve Threads ☐ Dresser Couplings ☐ Other _____
22. ☐ Seal Failure ⇒ ☐ Gasket ☐ O-Ring ☐ Seal/Pump Packing ☐ Other _____

H7 - INCORRECT OPERATION**23. ☐ Incorrect Operation**

- a. Type: ☐ Inadequate Procedures ☐ Inadequate Safety Practices ☐ Failure to Follow Procedures
- ☐ Other _____

b. Number of employees involved who failed a post-accident test: drug test: ____/____/____ alcohol test ____/____/____

H8 - OTHER

24. ☐ Miscellaneous, describe: _____
25. ☐ Unknown
- ☐ Investigation Complete ☐ Still Under Investigation (submit a supplemental report when investigation is complete)

PART II - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT (Attach additional sheets as necessary)

Preliminary Incident Report

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The environmental impact of this gas release is related to greenhouse gas emissions to atmosphere. This incident resulted in a maximum emission of _____ kt of methane which corresponds to _____ kt of CO₂ equivalents. The gas released from this incident will be included in our annual green house gas emission report to Statistics Canada.

Aside: Following is the formula for calculating kilotonnes of methane and kilotonnes of CO₂:

$$\frac{10^3 \text{ m}^3 \times 0.71}{1000} = \text{kt Methane}$$

$$\text{kt Methane} \times 21 = \text{kt CO}_2 \text{ equivalents}$$

- (d) identify any unsafe acts or conditions contributing to or causing the incident;
- (e) provide details on any emergency response,
- (f) state any corrective actions taken or planned to be taken to minimize the effects of the incident.

Yours very truly,
TransCanada PipeLines Ltd.

Original signed

R.P. Lancée, P. Eng.
Senior Regulatory Compliance Specialist

cc: (appropriate Regional Director)
(appropriate Compliance Manager)
(appropriate Area Manager)

J. Baggs	(all reports)
K. Black	(all reports)
D. King	(all reports)
B. McConaghy	(if safety, health or environment related)
G. Scaman	(all reports)
J. Scott	(Legal review)
D. Wishart	(all reports)

Incident & Issue Tracking No. _____

Detailed Incident Report

[Click to view the file - Detailed Incident Report 22_1 2009 13 31 48.pdf](#)



TransCanada
In business to deliver

date

Transportation Safety Board of Canada
Place du Centre, 4th Floor
200 Promenade du Portage
Hull, Québec
K1A 1K8

Attention: Mr. Larry Gales, P. Eng.

Dear Sir:

Re: Detailed Incident Report involving event type on the TransCanada PipeLines Limited ("TransCanada") Canadian Mainline, Station/MLV Location, near Town, Province, on date of occurrence

The following is TransCanada's Detailed Incident Report, in accordance with the requirements of Section 52 of the National Energy Board's Onshore Pipeline Regulations, 1999 and Section 5 of the Transportation Safety Board Regulations.

Board Staff Member Mr. (name) was notified of the event type on date of occurrence. The Preliminary Incident Report was filed with the Board on date.

- a) provide any details regarding the failure mechanism and detailed analysis of the failed component (if necessary);
- (b) identify the underlying causes of the incident;
- (c) update the progress of any corrective actions taken or planned to be taken to minimize the effects of the incident;
- (d) state any actions taken or planned to be taken to prevent a similar incident.

Yours very truly,
TransCanada PipeLines Limited

Original signed

R.P. Lancée, P. Eng.
Senior Regulatory Compliance Specialist

cc: (appropriate Regional Director)
(appropriate Compliance Manager)
(appropriate Area Manager)

J. Baggs	(all reports)
K. Black	(all reports)
D. King	(all reports)
B. McConaghy	(if safety, health or environment related)
G. Scaman	(all reports)
J. Scott	(legal review)
D. Wishart	(all reports)

Incident & Issue Tracking No. _____

Unauthorized Activity

[Click to view the file - Unauthorized Activity 22_1_2009_13_32_24.pdf](#)



TransCanada

In business to deliver

450 - 1st Street S.W.
Calgary, Alberta, Canada T2P 5H1
tel 403.920-7069
fax 403.920-2319
E-mail roel_lancee@transcanada.com

Date

National Energy Board
444 Seventh Avenue S.W.
Calgary, Alberta
T2P 0X8

Attention: Ms. Claudine Dutil-Berry, Secretary

Dear Madame:

Re: Unauthorized event type at TransCanada PipeLines Limited ("TransCanada") Canadian Mainline Station/MLV Location, near Town, Province, on date of occurrence

TransCanada PipeLines Limited ("TransCanada") files this Incident Report to report unauthorized mechanical excavation activities pursuant to the reporting requirements of Section 13 of the National Energy Board's Pipeline Crossing Regulations Part II.

Board Staff Member _____ was initially notified of the unauthorized _____ on date of notification.

- a.) Date of Occurrence
- b.) Location of occurrence (Legal Land Description, MLV, mileage post, etc)
- c.) Indicate whether the activity involved mechanical excavation
- d.) Location of pipeline markers with respect to the unauthorized activity
- e.) Indicate whether a permit was issued by pipeline company (yes or no)
- f.) Name of landowner or facility owner, address and contact information (phone, fax, e-mail if applicable)

- g.) Name of excavator or contractor, address and contact information (phone, fax, e-mail if applicable)
- h.) Name of Pipeline company representative dealing with violation and contact information (phone, fax, e-mail if applicable)
- i.) Concerns the pipeline company may have regarding the safety of the pipeline as a result of the construction or installation or of the excavation
- j.) Any action the company intends to take or has taken

Mr. _____ met with Mr. _____ on date and discussed the requirements of notifying Info-Excavation prior to undertaking any mechanical excavation activities within the province and of having a Company Representative present to locate the pipeline and monitor the excavation when excavating on or within 30-metres of the TQM pipeline Right-of-Way. Mr. _____ provided Mr. _____ with a copy of the Integrated Public Awareness Package to remind him of their discussions.

Yours very truly,
TransCanada PipeLines Limited

R.P. Lancée, P. Eng.
Senior Regulatory Compliance Specialist

cc: (appropriate Regional Director)
(appropriate Compliance Manager)
(appropriate Area Manager)
(appropriate Land Representative)
J. Baggs
K. Black
D. King
B. McConaghy
G. Scaman
J. Scott
D. Wishart

cc: S. Berthelet National Energy Board

Incident & Issue Tracking No. _____

South Dakota Supplemental Emergency Response and Equipment Statement

[Click to view the file - Sup for SD 19 10 2009 15 3 53.pdf](#)

1.1 SUPPLEMENTAL EMERGENCY RESPONSE AND EQUIPEMENT

The purpose of this is to fulfill the South Dakota Department of Environment and Natural Resources request for additional information regarding TransCanada – Keystone Pipeline's ability to respond to a spill specifically in South Dakota

- Detail description of company owned assets is found in appropriately marked Appendix A: RESPONSE EQUIPMENT/RESOURCES. Additional information is linked to Appendix F. The trailer for the Keystone Response Zone 3, North Dakota, South Dakota, and Nebraska is appropriately located in Yankton, South Dakota.
- Keystone Pipeline's primary contractor, National Response Corporation, is strategically aligned with Coteau Environmental based in Watertown, SD. Currently, no other National Response Corporation assets or Sub-Contractors reside inside of South Dakota borders.
- Keystone Pipeline fully expects to have the required assets for a spill within the four (4) hour time frame previously stated in the Response Plan.

1.1 SUPPLEMENTAL EMERGENCY RESPONSE AND EQUIPEMENT

The purpose of this is to fulfill the South Dakota Department of Environment and Natural Resources request for additional information regarding TransCanada – Keystone Pipeline's ability to respond to a spill specifically in South Dakota

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APPENDIX G

MATERIAL SAFETY DATA SHEET(S)

TransCanada Keystone Oil Pipeline Typical Crude Oil MSDS



1. Product and Company Identification

Product Name: Typical Crude Oil
Synonyms: Not Available
Intended Use: Chemical feedstock
Chemical Family: Blend of Heavy Petroleum Crude, Medium Sweet Crude and Synthetic Crude
Supplier: TransCanada Keystone Pipeline LP
 450 - First Street S.W.,
 P.O. Box 1000, Station M Calgary, Alberta, CANADA, T2P 4K6
Emergency Phone: 1-800-982-7222 (24 Hour) CANADA
 1-800-477-8066 (24 Hour) USA

2. Composition/Information on Ingredients

Hazardous Ingredients:

Name	CAS#	TWA (ppm)	TWA (Mg/M ³)	Exposure Limits		CEIL (ppm)	CEIL (Mg/M ³)	% by Weight
				STEL (ppm)	STEL (Mg/M ³)			
Crude Oil (Hydrocarbon C5 and C6 Rich)	8002-05-09	100	n/a	n/a	n/a	n/a	n/a	100
Hydrogen Sulfide	7783-06-04	10	14	15	21	20	28	<0.5
Benzene	71-43-2		3.2		16			0.1-1
Toluene	108-88-3	50	188					1-5
Xylene	1330-20-7							

Toxicity values of the hazardous ingredients

Crude oil (Hydrocarbons C5 and C6 Rich) LD50: 4,300 mg/Kg (Rat). LC50: Not available.

Hydrogen Sulphide (H₂S) LC50 Inhalation Mouse = 673 ppm 1 hour, LC50 Inhalation Rat = 444 ppm for 4 hours

Benzene, LD50 Oral rat = 930-5600 mg/Kg, LC50 Inhalation rat = 13,700 ppm for 4 hrs.

Xylene, LD50 Oral rat = 4300 mg/Kg, LC50 Inhalation rat = 6700 ppm for 4 hrs. LD50 Dermal rabbit >2000 mg/Kg.

Toluene, LD50 Oral rat = 5000 mg/Kg, LC50 Inhalation rat = 8000 ppm for 4 hrs. LD50 Dermal rabbit = 14000 mg/Kg.

November 2007

TransCanada Keystone Oil Pipeline – Typical Crude Oil MSDS

3. First Aid Measures

Eye: Flush eyes for at least 15 minutes with clean water. Patch lightly, allowing drainage. Seek medical attention.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water. Seek medical attention if irritation develops.

Inhalation (Breathing): Protect rescuer. Move exposed person to fresh air. If breathing has stopped apply artificial respiration. Seek medical attention.

Ingestion (Swallowing): If swallowed, do not induce vomiting or give liquids. Seek immediate medical attention.

4. Protective Clothing

Respiratory: Respiratory protection may be required in poorly ventilated areas. Properly fitted air purifying masks equipped with organic vapour filters will provide protection at low concentrations. Air supplied respirators or positive pressure self contained breathing apparatus is required when atmospheric concentrations of hydrocarbon vapours are likely to exceed 10X the occupational exposure limit or when high concentrations of H₂S may be present.

Skin: Impervious gloves and clothing should be worn as appropriate to protect against skin contact. Neoprene or nitrile material is suggested.

Eye: Non-vented chemical goggles to prevent eye irritation from the solvent vapours.

Other: As required by the situation according to your companies policies and procedures. Contact your supervisor for direction.

5. Physical Data

Appearance:	Black Brown
Physical State:	Liquid
Odour:	Petroleum Odor
Vapor Pressure (mm Hg):	Not Available
Vapor Density:	Not Available
Boiling Point/Range:	100°C - 1000°C
Freezing/Melting Point:	Not Available
Solubility in Water:	Not Available
Specific Gravity:	0.97-0.98 (Water = 1)
Percent Volatile:	100 vol. %
pH (1% soln/water)	Not Applicable
Odor Threshold	0.13 ppm H ₂ S
Freezing Point	Not Available
Molecular Weight	Not Applicable
Melting Point	Not available
Density	Not Available
Evaporation Rate (nButAc=1):	Not Available

November 2007

TransCanada Keystone Oil Pipeline - Typical Crude Oil MSDS

6. Stability and Reactivity

Stability: This product is stable

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide and irritant fumes and gases including sulphur oxides, nitrogen oxides and aldehydes.

Hazardous Polymerization: Will not occur

Materials to Avoid (Incompatible Materials): Strong acids, strong oxidizers, chlorine

7. Toxicological Information

Routes of entry: Ingestion, inhalation, eye contact, skin contact.

TLV: TLV-TWA: 100 PPM (525 mg/m³) for standard solvent from ACGIH.

Hydrogen Sulfide:

TWA: 10ppm, 14 mg/m³ ACGIH

STEL 2.5 ppm STEL ACGIH

CEILING: 20 ppm, 28 mg/m³ Alberta OEL

Consult local authorities for acceptable exposure limits. Consult local authorities for acceptable exposure limits.

Benzene, TWA: (1ppm 3.2 mg/m³) STEL: 5.0 ppm (16 mg/m³) from Alberta OEL'S SKIN

ACGIH (TLV) (United States) TWA 0.5 ppm, STEL 2.5 ppm (SKIN)

Toxicity to animals: Hydrocarbons C5 and C6 Rich

LD50: Not available

LC50: Not available

Hydrogen Sulphide (H₂S)

LC50 Inhalation Mouse = 673 ppm 1 hour

LC50 Inhalation RAT = 444ppm for 4 hours

Remark: No additional remark

Chronic effects: This product may contain benzene. Benzene has been classified by the international agency for research on cancer as a group 1 product indicating sufficient evidence of carcinogenicity. Studies exist which report a link to crude oil and reproductive effects including fetal tumors and menstrual disorders. This product contains small quantities of xylene. High exposure to xylene has fetotoxic effects in animal studies. This product contains small quantities of polycyclic aromatic hydrocarbons. Prolonged contact with these compounds has been associated with the induction of skin and lung tumours.
Remark: No additional remark

Acute effects: Sensitizing Capability: No effects known. Irritancy: Skin, eye and upper respiratory tract irritant.

Ingestion: Pulmonary aspiration hazard if swallowed and vomiting occurs.

Skin: Prolonged skin contact can cause defatting of the skin resulting in dry cracked skin and dermatitis.

Eyes: Eye contact with product or product vapours may result in eye irritation.

Inhalation: May cause headache, dizziness, loss of appetite and loss of consciousness. Product vapours are irritating to the respiratory tract.

Remark: This product contains small quantities of hydrogen sulphide (H₂S) gas which may collect in confined spaces. Acute effects vary with concentration of H₂S released from mild eye, nose and throat irritation at approximately 100 ppm to sudden unconsciousness or death at 500 ppm.

Synergistic: Not available

November 2007

TransCanada Keystone Oil Pipeline – Typical Crude Oil MSDS

8. Fire and Explosion

Auto-ignition temperature: Not available

Flash points: CLOSED CUP: -40°C (-40°F)

Flammable Limits: Not available

Extinguishing Media: Use DRY chemicals, CO₂, or foam to extinguish fire. Water may not be an effective medium to extinguish fire. Cool contained vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special fire fighting procedures: Use supplied air or self contained breathing apparatus (SCBA) for large fires or for fires in enclosed areas.

Flammability: Highly flammable liquid. Released vapours may form flammable/explosive mixtures at or above the flash point. Vapours may travel considerable distances to ignition sources and cause a flash fire. All storage containers and pumping equipment must be grounded.

Risks of explosion: This material is sensitive to static discharge. This product is not sensitive to mechanical impact.

9. Preventative Measures

Waste Disposal: Dispose of in accordance with all federal, provincial and local regulations.

Storage: Keep away from all ignition sources. Maintain temperature below the flash point. Head spaces in storage containers may contain hydrocarbon vapours and toxic hydrogen sulphide gas.

Ventilation: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Spill and Leak: Evacuate unnecessary personnel. Eliminate all ignition sources. Be alert to the potential for the presence of hydrogen sulphide gas and don appropriate protective equipment. Stop leak if safe to do so. Contain spill and absorb with inert absorbent. Large spills should be removed with explosion proof vacuum equipment. Large pools may be covered with foam to prevent vapour evolution. Comply with federal, provincial, and local requirements for spill notification.

10. Classification/Regulatory Information

TDG road/rail: TDG CLASS 3: Flammable liquid with a flash point less than or equal to 60.5°C (140.9°F).
Closed cup test method.



PIN: 1267 - PETROLEUM CRUDE OIL

WHMIS: WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).



Other: This product is on the Domestic Substances List (DSL). TSCA (Toxic Substance Control Act): This product is listed on the TSCA Inventory.

Refer to federal, state, and local legislation for further requirements.

November 2007

4

APPENDIX H

BASICS OF OIL SPILL RESPONSE

- H.1 Dikes, Berms and Dams
Figure H.1 Culvert Blocking
- H.2 Deflection Boom
Figure H.2 Deflective Booming Technique(Single Boom method)
Figure H.3 Deflective Booming Technique(Single Boom method)
Figure H.4 Deflective Booming Technique(Cascade method)
- H.3 Containment Boom
Figure H.5 Containment Booming (Catenary method)
- H.4 Diversion Boom
Figure H.6 Open Chevron Boom Technique
Figure H.7 Closed Chevron Boom Technique
- H.5 Shoreline Recovery
- H.6 Ice Operations
Figure H.8 Ice Slotting Technique
Figure H.9 Deflective Board Recovery Strategy
Figure H.10 Close up view of Deflective Board

H.1 DIKES, BERMS AND DAMS

Dikes, berms, and dams are land-based tactics, with the objective of containing spilled oil and limiting spreading of oil slicks, thus minimizing impacts to the environment. Dikes, berms and dams are embankment structures built-up from the existing terrain, placed to contain and accumulate oil for recovery. These barriers can serve to:

- Contain and stabilize a contaminated area.
- Contain or divert oil on water or oil that has potential to migrate.
- Create cells for recovery.
- Use natural depressions to act as containment areas for recovery.

The tactic may be deployed in association with a recovery tactic, such as Shoreline Recovery or On-land Recovery. Dikes, berms, and dams are most effective when placed before oil arrives. Dikes, berms, and dams can also be used to exclude oil from a sensitive area, which is covered in the Beach Berms and Exclusion Dams tactic. The tactic can also be used in conjunction with an excavation tactic to enhance containment volumes (see Pits, Trenches, and Slots).

The general strategy is to:

1. Identify the location and trajectory of the spill or potential spill.
2. Plan a deployment configuration that best supports the operating environment and available resources.
3. Mobilize to the location and deploy response resources.
4. Construct the containment structure and ensure it does not leak.
5. Consider the need to remove any water-bottom that may collect beneath the oil inside the structure.
6. Monitor the containment structure on an appropriate basis.
7. If oil collects in the structure, utilize an appropriate recovery system for removal.

Tactic Description

This tactic involves building an embankment perpendicular to the flow of the oil slick or around a contaminated area. Dike, berm, and dam structures can be constructed with a wide variety of materials including: soil, gravel, snow, sand bags, oil boom, timbers and logs. Selection of the construction material depends on the operating environment, location, available materials, and whether the structure is to be temporary or permanent. The containment area should be lined with an impermeable membrane, such as plastic sheeting, to keep oil and oily water from leaking or migrating into the soil. The structure may include a method to regulate flow, such as a weir or spill way. Dikes, berms, and dams can be built by manual labor or with earth-moving equipment depending on the location and available resources.

Deployment Configurations

BERMS

A containment berm can be constructed of available materials such as earth, gravel, or snow. Use earth-moving equipment or manual labor to construct the berm. Form the materials into a horseshoe shape ahead of the flow of oil. Use plastic sheeting to line the walls of a soil berm to prevent oil penetration. Sandbags filled with sand or other heavy material also make excellent containment barriers.

DAMS

An underflow dam can be used when there is too much water flow to allow for a complete blockage of a drainage channel. The dam is built of earth, gravel, or other barriers such as sandbags or plywood sheets. Wherever possible, line the upstream side of the dam with plastic sheeting to prevent erosion and penetration of oil into the dam material.

Underflow dams use inclined culverts or pipes to move water downstream while leaving the spill contained behind the dam. The capacity of the pipe(s) should exceed the stream flow rate. It may be necessary to use pumps to remove water behind a dike. Valves or culvert plugs can also be used to control flow rate.

Pipes must be placed on the upstream side of the dam, with the elevated end on the downstream side. Make sure that the upstream end of the pipe is submerged and below the oil/water interface. The height of the elevated downstream end of the pipe will determine the water level behind the dam.

EXISTING ROADS

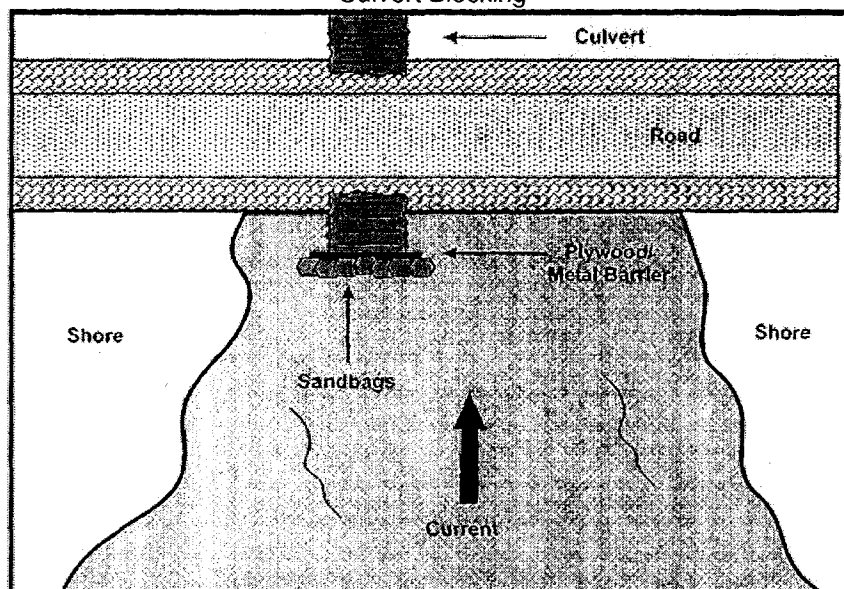
Roadways that are built up above the terrain can be used as dikes. However, road construction usually allows for natural drainage through culverts or bridges. These drainage structures must be controlled to turn the road into a barrier.

CULVERT BLOCKING

A culvert can be blocked using sheet metal, plywood barriers, or inflatable culvert plugs. Use a full block only when the culvert will be blocked for the entire cleanup operation, if the oil floating on the water will not contaminate additional soil or tundra, and if blocking the water flow will not threaten the road. Otherwise, an adjustable weir or culvert plug should be used.

Plywood and/or sandbags can also be used as culvert blocks, but are more labor-intensive and pose a higher potential for injury. A wood block may require a headwall with kickers oriented to support the boards or plywood. Place the blocking materials over the upstream end of the culvert. Plastic sheeting over the outside of the block will prevent oil penetration.

FIGURE H.1
Culvert Blocking



EARTH MOVING EQUIPMENT

A bulldozer, road grader, or front-end loader drives around the spill with its blade angled towards the spill, pushing earth or snow into a berm. Once the perimeter has been covered with an initial berm, shore-up areas as necessary.

SNOW

Because of the absorbent quality of snow, it makes an excellent berm for both containment and recovery. A snow berm can be strengthened by spraying it with a fine water mist that forms an ice layer on top of the snow. A snow berm is built around the areas of heaviest oiling to contain oil or diesel spilled to tundra and/or ice in winter.

MESH FENCE

Plastic mesh fencing may be used to quickly construct an underflow dam system. The mesh fencing is placed across the drainage and held in place with stakes. Absorbent boom, oil boom, plywood, or even dry dead grass can be placed on the upstream side of the fencing. Running water will find its way under the barrier fence, but oil floating on top of the water will be trapped. The advantages of this system are that it is lightweight and mobile.

H.2 DEFLECTION BOOM

Objective & Strategy

The objective is to direct spilled oil away from a location to be protected or simply to change the course of the slick. "Deflection" is used to describe the tactic where oil is redirected away from an area but not recovered.

Tactic Description

The boom is placed at an optimum angle to the oil trajectory, using the movement of the current to carry oil along the boom and then releasing it into the current again with a new trajectory. The angle is chosen to prevent oil from entraining beneath the boom skirt. Boom may be held in place by anchors, vessels, or a boom control device.

Deflection Boom may be used to temporarily avoid impacts to a sensitive area, but there is no recovery associated with the tactic, thus no oil is removed from the environment.

The general strategy is to:

1. Identify the location and trajectory of the spill or potential spill.
2. Identify, prioritize, and select sensitive areas to be protected from impact.
3. Select a deployment configuration that best supports the operating environment and available resources.
4. Mobilize to the location and deploy the tactic.
5. Place boom using secured anchor systems, mooring points, vessels, boom control devices, etc.
6. Monitor and adjust the boom on an appropriate basis.

BOOM ANGLE

Select the appropriate boom angle to keep oil from entraining under the boom. Where currents exceed 3 knots the boom must be almost parallel to the current to prevent entrainment. In currents exceeding 3 knots, a cascade of boom arrays may be used; the first boom array will slow the velocity of the slick allowing subsequent arrays to deflect the oil.

ANCHOR SYSTEMS

Boom is secured in place using standard anchoring systems. Anchor sizes vary depending on the boom type and the operating equipment.

DEPLOYMENT CONFIGURATIONS

Single Boom

Boom is deployed from a site at an optimum angle to the current and anchored to deflect the oil away from a location. Figures H.2 and H.3 illustrate two single boom deflection techniques.

FIGURE H.3
Deflective Booming Technique (Single Boom Method)

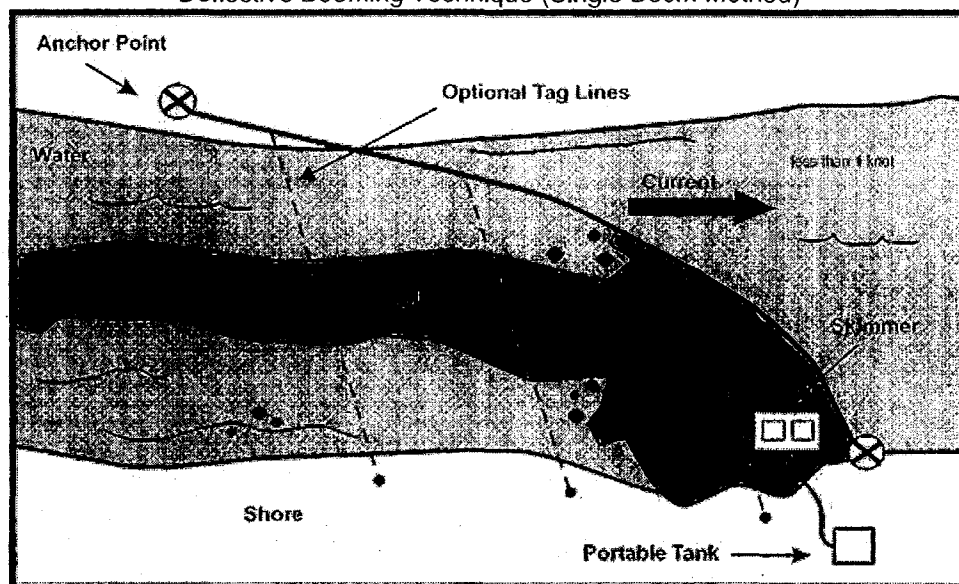
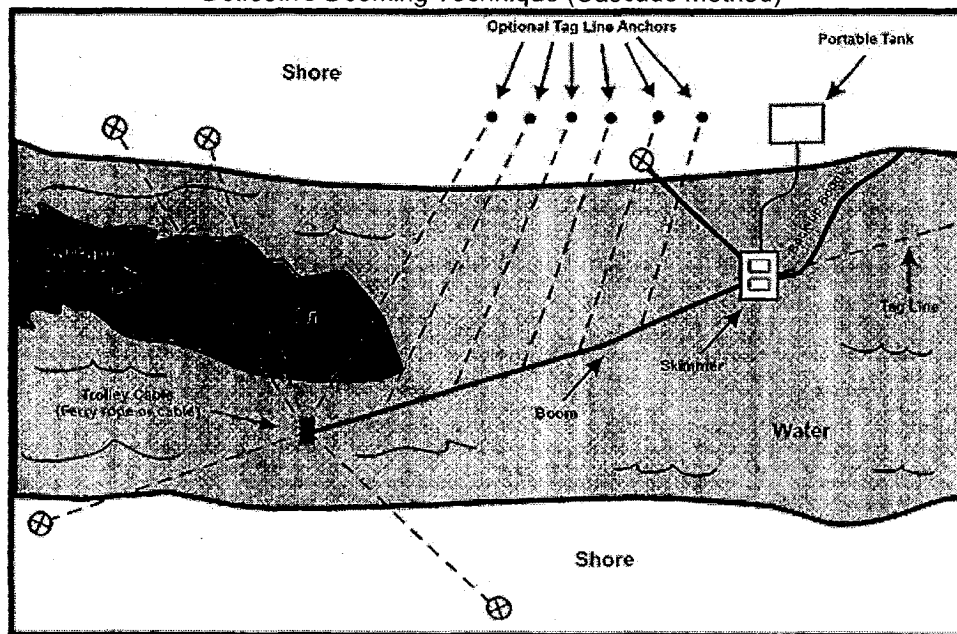


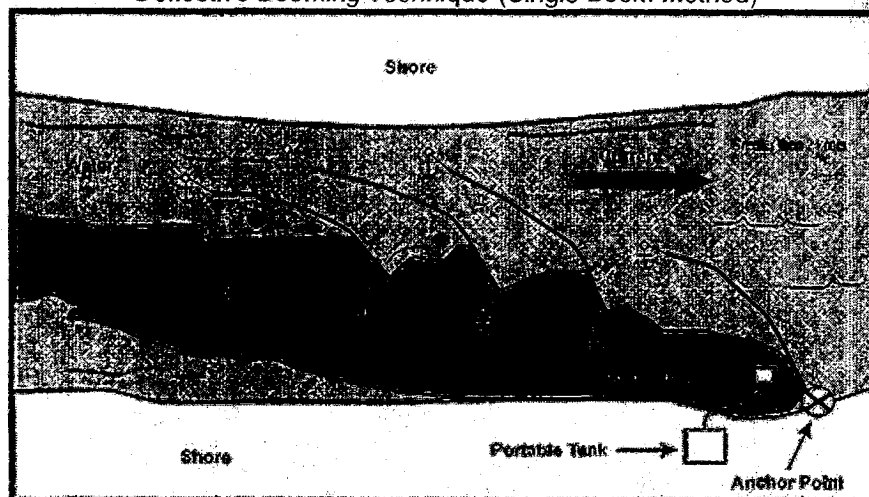
FIGURE H.4
Deflective Booming Technique (Cascade Method)



Cascade

Several booms are deployed in a cascade configuration when a single boom cannot be used because of fast current or because it is necessary to leave openings in the boom for vessel traffic, etc. This configuration can be used in strong currents where it may be impossible to effectively deploy one continuous section of boom. Shorter sections of boom used in a cascade deployment are easier to handle in faster water, thereby increasing efficiency. Additional equipment may be required to set and maintain this system as compared to the single boom configuration.

FIGURE H.2
Deflective Booming Technique (Single Boom Method)



H.3 CONTAINMENT BOOM

Objective & Strategy

Containment booming is a fixed-boom tactic. The objective is to corral spilled oil on the water, usually near the source, thus minimizing spreading and impacts to the environment. It is usually deployed with Shoreline Recovery.

This tactic can be deployed for oil spill migrating downstream or downhill to water or through water.

The general strategy is to:

1. Identify the location and trajectory of the spill or potential spill.
2. Select a deployment configuration that best supports the operating environment and available resources.
3. Mobilize to the location and deploy the tactic.
4. Place boom, using secure anchor system or mooring points.
5. Monitor the boom on an appropriate basis.
6. If oil collects in the boom, utilize an appropriate recovery tactic to remove it.

Tactic Description

Containment boom systems are comprised of the appropriate oil boom for containment and concentration, and anchoring systems to hold the boom in place.

Containment boom systems are not recommended for the fast water environment because of the high probability of fixed-boom failure and the difficulty of anchoring in this environment.

Containment boom systems are not recommended for the broken ice environment, because of the high probability of fixed-boom failure and loss due to ice encounters.

Anchoring systems are often deployed first and then the boom is set from one anchor to the adjacent anchor. Boom can be placed from shoreline to shoreline.

A second layer of containment boom, outside the primary boom, has two advantages:

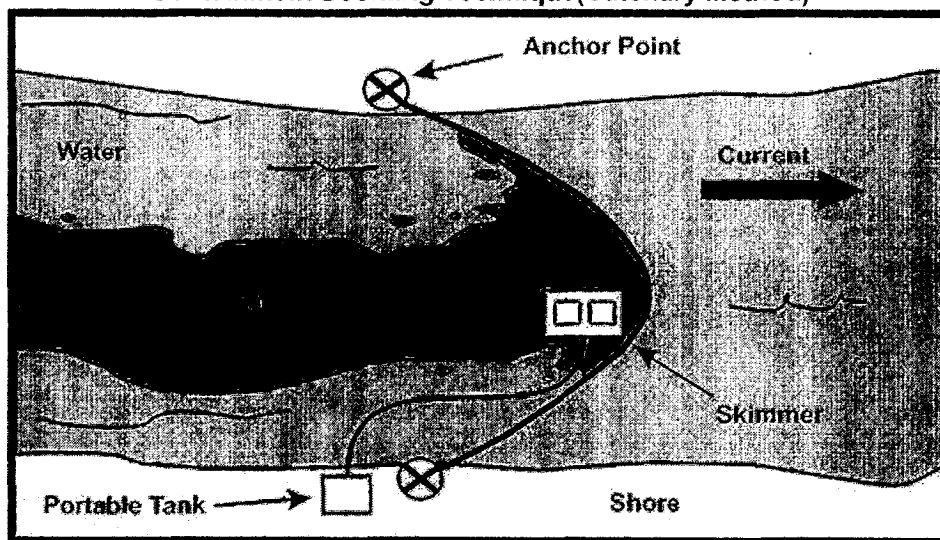
1. It breaks the sea chop and reduces its impact on the primary boom,
2. It may capture oil that has escaped if the primary boom fails.

Figure H.5 illustrates a simple containment booming technique.

Deployment Considerations

- It is often advisable to "line" the containment boom with sorbent materials (passive recovery) to recover the sheen and reduce decontamination costs.
- If the oil slick is moving, due to wind or current, consider containment at the source and ahead of the leading edge.
- If spill is moving in excess of 1 knot consider the Diversion Boom Tactic.
- Anchor systems must be selected based on the maximum stress that might be expected to occur on the boom array, considering stronger currents and winds than when the anchor is set.
- Site conditions will influence deployment configuration options.
- Combinations of Containment Boom and Diversion Boom tactics are often used together to optimize success.

FIGURE H.5
Containment Booming Technique(Catenary Method)



H.4 DIVERSION BOOM

Objective & Strategy

The objective is to redirect the spilled oil from one location or direction of travel to a specific site for recovery. For the purposes of maintaining consistent and clear terms, diversion is always associated with oil recovery, in contrast with the term deflection, which is used to describe the tactic where oil is redirected away from an area but not recovered.

Tactic Description

The Diversion Boom tactic is for water-born spills where there is some current, usually from 0.5 to 3.0 knots. The boom is placed at an optimum angle to the oil trajectory, using the movement of the current to carry oil along the boom to a recovery location. The angle is chosen to prevent oil from entraining beneath the boom skirt. Oil can be diverted to a shoreline or away from a shoreline or shoal waters. This tactic is always associated with a Shoreline Recovery. Figures H.6 and H.7 illustrate two diversionary booming techniques. These techniques are the Open Chevron and the Closed Chevron technique respectively.

FIGURE H.6
Open Chevron Booming Technique

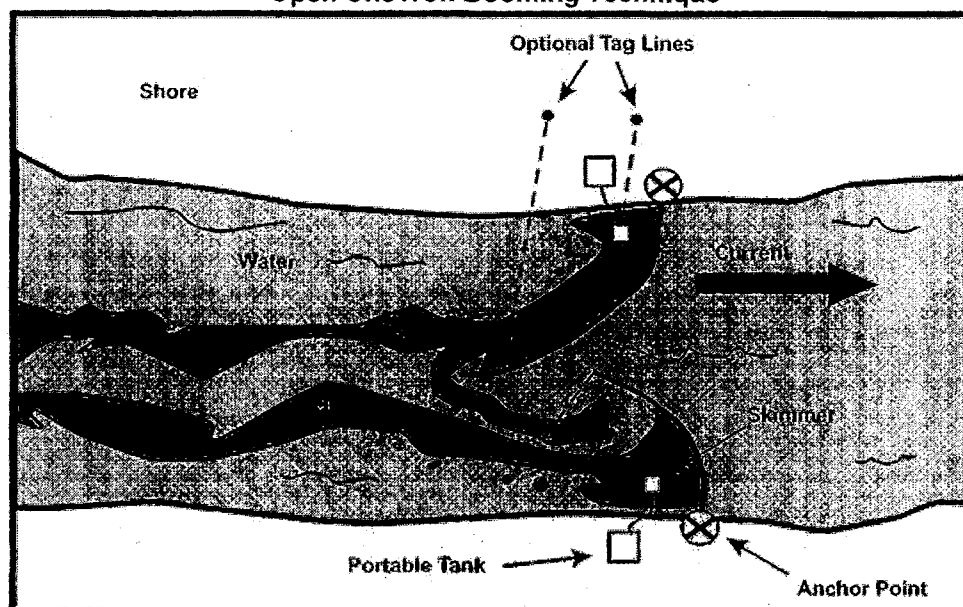
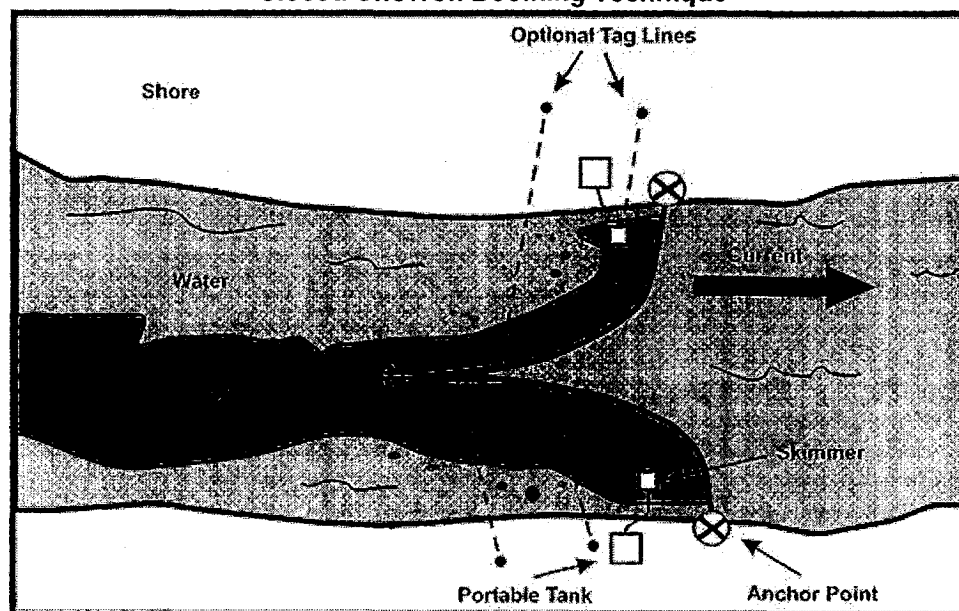


FIGURE H.7
Closed Chevron Booming Technique



ANCHOR SYSTEMS

Boom is secured in place using standard anchoring systems. Anchor sizes vary depending on the boom type and the operating environment.

Boom Angle

Select the appropriate boom angle to keep oil from entraining under the boom. Note that the angle relative to the current decreases rapidly as the current increases. Where currents exceed 3 knots the boom must be almost parallel to the current to prevent entrainment. In currents exceeding 3 knots, a cascade of boom arrays may be used; the first boom array will slow the velocity of the slick allowing subsequent arrays to deflect the oil.

Single Boom

A basic diversion technique is to divert oil from a current to a recovery site along a shoreline. The recovery site is chosen where there is minimal current and a suitable recovery system can be deployed. The boom is then anchored at the site and deployed at an optimum angle to the current and secured/anchored to divert the oil to the shoreline for recovery.

H.5 SHORELINE RECOVERY

Objective & Strategy

The objective is to remove spilled oil that has been diverted to a designated recovery site accessible from the shore.

Shoreline Recovery is usually deployed as part of another tactic, such as Diversion Boom strategy. When deployed in conjunction with another tactic, fewer personnel may be required.

The general strategy is to:

1. Identify the primary recovery site.
2. Assess site conditions and access routes.
3. Determine the appropriate recovery and storage systems based on oil type, access, and deployment restrictions.
4. Mobilize and deploy equipment to recover and temporarily store the oil from the recovery site.
5. Take precautions to minimize contamination of the shoreline at the collection site.
6. Man and monitor the system as appropriate.
7. Store and transfer recovered oil and oily water according to an approved waste management plan.

Tactic Description

Shoreline recovery systems can be deployed from land access routes (beaches, all-terrain vehicles), or water access. Access to the recovery site and the oil type will influence/dictate the options of equipment to be used.

SKIMMING SYSTEMS

Shoreline recovery requires at least one portable skimming system to remove spilled oil. The typical portable skimming system includes:

- Skimmer with pump and power pack
- Hose (suction and discharge with fittings)
- Oil transfer and decanting pump(s)
- Repair kit (tools and extra parts)

There are many models of skimmers to choose from, but they all fall into three types:

- **Weir skimmers** draw liquid from the surface by creating a sump in the water into which oil and water pour. The captured liquid is pumped from the sump to storage. Weir skimmers can recover oil at high rates, but they can also recover more water than oil, especially when the oil is in thin layers on the surface of the water. This creates the need to separate the water from the oil and decant it back into the environment. Otherwise, the recovered water takes available storage volume. Weir skimmers are best employed where oil has been concentrated into thick pools or where there are very large volumes of oil and recovered liquid storage capacity.
- **Oleophilic skimmers** pick up oil that adheres to a collection surface, leaving most of the water behind. The oil is then scraped from the collection surface and pumped to a storage device. Oleophilic skimmers do not recover oil as fast as weir skimmers, but they have the advantage of recovering very little water. Oleophilic skimmers may be used where oil is very thin on the surface. Oleophilic skimmers are a good choice where liquid storage capacity is limited.
- **Suction skimmers** use a vacuum to lift oil from the surface of the water. These skimmers require a vacuum pump or air conveyor system. Like weir skimmers, suction skimmers may also collect large amounts of water if not properly operated. Most suction skimmers are truck mounted and work best at sites with road access.

Primary Oil Storage Devices

Primary oil storage devices for shoreline recovery can be portable tanks, bladders, or truck-mounted tanks on the shoreline. If access is not restricted, larger systems can be used and deployed by heavy lifting equipment. If the site is accessible by road, vacuum trucks may be used for oil recovery, storage, and transport.

Recovery Location

Selection of a shoreline recovery location is critical to the success of this tactic. A recovery site should be in calm water with minimal currents. The site must have enough level ground to set up and operate a power pack and portable tanks. Sites with road access are preferred, but if not available, the site must have some other suitable access. Shelter, food and water for the response crew must also be considered in selecting a site.

H.6 ICE OPERATIONS

Objective & Strategy

Much like that of diversion booming, the objective is to redirect the spilled oil from one location or direction of travel to a specific site for recovery. With a layer of ice preventing the use of booming equipment, other response strategies must be employed.

Tactic Description

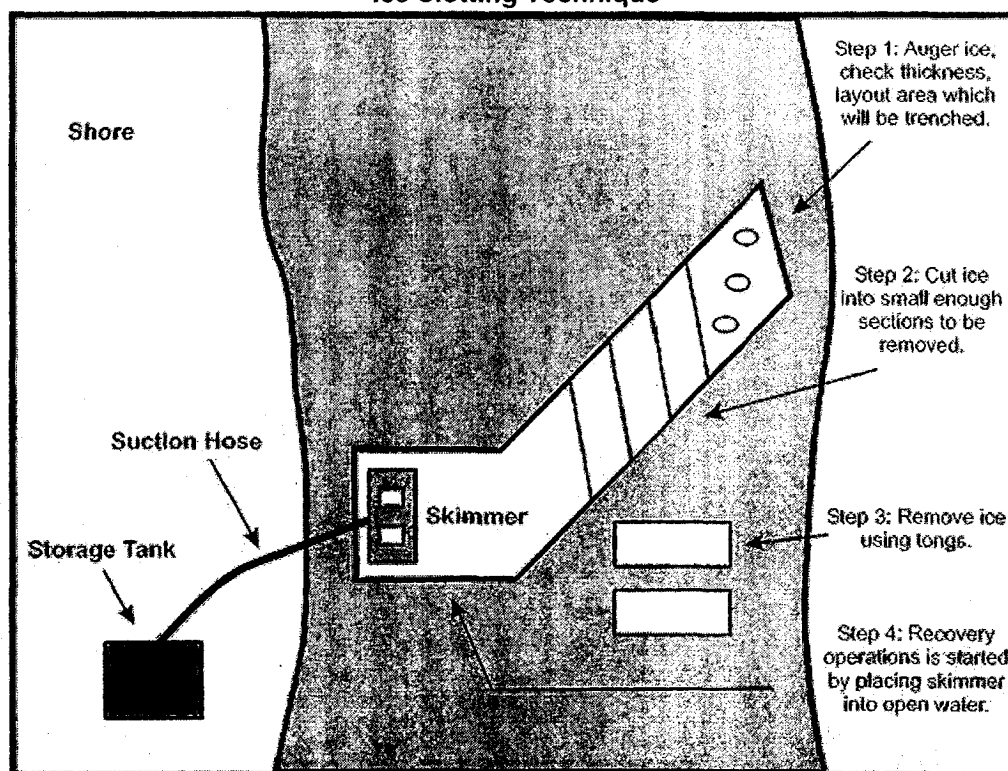
ICE SLOTTING

Ice slotting (Figure H.8) may be used in cases where the ice is thick enough to support the response equipment and personnel. Consideration for the weakening and cracking of the ice must be taken when conducting ice slotting operations.

Slotting Angle

The slot should be angled at approximately 30 degrees to the river's edge. The slotting needs to be wide enough to place a skimming system into the water to recover the oil. The lead end of the slot should have a slight curve which parallels the river current to allow the current to push the oil towards the recovery area.

FIGURE H.8
Ice Slotting Technique



DEFLECTION BOARDS

In place of using booming equipment it may be possible to use flat boards, such as plywood, to divert the oil under the ice into a recovery area, which has been cut out. To use this form of diversion, the depth of the water under the ice and the speed of the current ice must be considered. The angle in which the boards are placed is derived much like that of deflection booming. In any current above 3 knots, a series of cascading boards should be considered. Also, the depth of the water must be considered. The stronger the current the deeper the boards must be placed to prevent entrainment. If the water is not deep enough to place the boards to prevent entrainment, ice slotting methods may be required. Figure H.9 illustrates the overall method of using deflective boards. Figure H.10 illustrates a close up of the deflective board response method.

FIGURE H.9
Deflective Boards Recovery Strategy

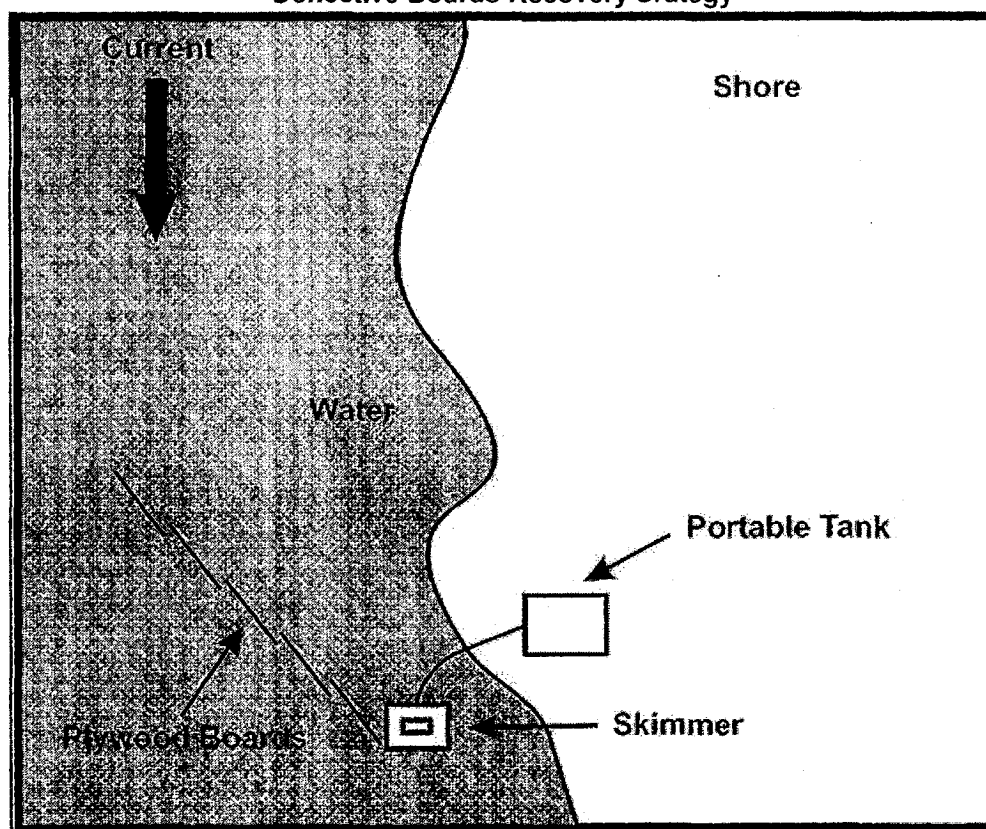
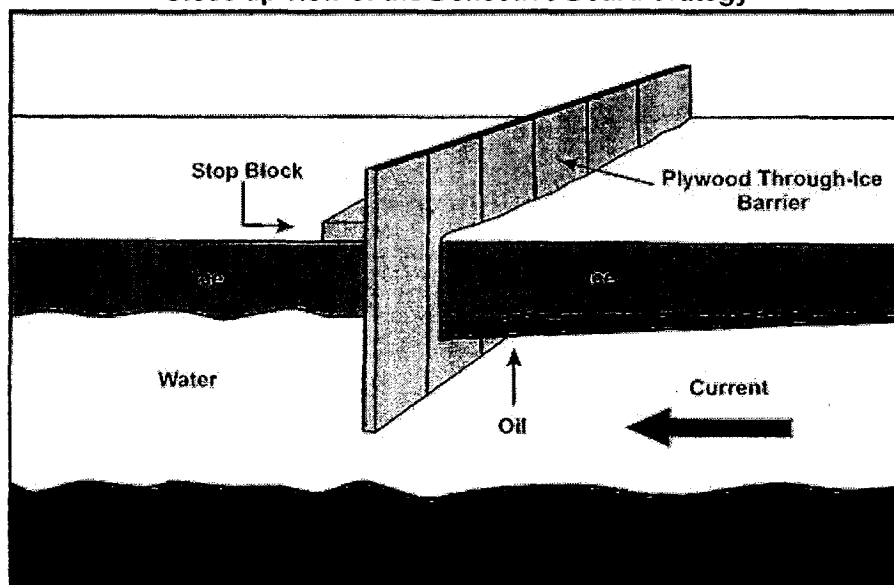


FIGURE H.10
Close up view of the Deflective Board Strategy



APPENDIX I

MEDIA RELATIONS

- I.1 Introduction
- I.2 Dealing with Agencies, the Media and the Public
- I.3 The Public Wants to Know
- I.4 Target Audiences
- I.5 Media Statements
- I.6 Holding Statements
- I.7 Media Advisories
- I.8 Press Releases
- I.9 New Conferences
- I.10 Media Center
- I.11 Post Incident Public Affairs

Figure I.1 Media Holding Statement

Figure I.2 Procedures and Considerations

Figure I.3 Layout for Press Conference

I.1 INTRODUCTION

Goals:

- Provide a coordinated communications response to ensure appropriate information is disseminated in an accurate and timely manner
- Communicate concisely the nature of the emergency, the steps being taken to address it and the effectiveness of those measures
- Control the communications environment as much as possible in an effort to protect the reputation of the Company

I.2 DEALING WITH AGENCIES, THE MEDIA AND THE PUBLIC

Only official Company spokespersons are authorized to release incident information. Receptionists and others may receive calls or be required to take messages. They should take the following information from each caller and pass the details to the Public Information Officer as soon as possible.

- Name
- Media outlet-publication, TV/radio station and market they are serving
- Time of call
- Nature of request
- Phone and fax number(s)
- E-mail address

Deadline

The Company's goal is to prioritize and return media calls as soon as possible knowing that a reporter working on a breaking news story will attempt to fill the information void. The Company will want to be the ones to fill that void. It may not be possible to return all phone calls. Reporters might also be directed to other sources such as our website or instructed to call back at a specific time.

Objectives During Emergencies

- Provide as much relevant information as possible about how the Company is responding to the incident to build and maintain stakeholder and media trust
- Present an accurate, compassionate and up-to-date account of the crisis
- Balance the resolution of the technical emergency while managing human issues

- Maintain an accurate record of what is happening and actions being taken to respond to the crisis
- Present a positive and accurate perception of the Company
- Identify factual and interpretative errors and develop a strategy to respond
- Bring positive developments to the forefront quickly
- Prepare spokespersons to deliver the message
- Communicate the policies, attitudes and actions of the Company to convey that the organization has a plan in place to deal with the crisis
- Maintain credibility in the communication process by ensuring consistency in the message and the information being disseminated

I.3 THE PUBLIC WANTS TO KNOW

- Does the Company care?
- Does the Company have a plan in place?
- Is Company's priority to keep people and the environment safe?
- Is the Company doing everything possible to address the situation?

It is the job of the Public Information Officer or Company spokesperson to convey to the audiences and to assist Executive Management to convey that the answer to all these questions is a resounding **"Absolutely."**

I.4 TARGET AUDIENCES

Each emergency is unique and requires careful judgment to determine which audiences to target and which audiences have priority. Given the media's pervasive and **instant** capability to relay information and impact public opinion, it is clearly the key audience for Company's communications strategy and actions.

The following list indicates the audiences who should be considered when developing the key messages that will be communicated by the media.

Internal

- Employees and Employees' families
- Affiliated Companies/Businesses

External (Local, Regional, National, and International)

- Media
- Environmental Community
- Impacted Communities/General Public
- Contractors
- Site Investigators
- Industry Associations
- Elected Officials
- Vendors
- Shareholders
- Securities Exchanges
- Analysts
- Neighboring Businesses
- Regulators
- Governmental Entities
- General Public
- Bankers

When responding, always prepare for the worst possible scenario. It is important to recognize that no two incidents will be the same. The Company must remain flexible and adapt a response to meet the unique characteristics of the current situation.

I.5 MEDIA STATEMENTS

Three types of media statements for communicating information can be generated:

1. **Holding Statement**
2. **Media Advisory**
3. **Press Release**

I.6 HOLDING STATEMENTS

A holding statement should be prepared **immediately** to reduce media frustration and quickly establish a channel of communication. Immediate action will help to fill the information void with accurate details. The holding statement is the response to any inquiries made to the Company prior to a press release being issued. The holding statement should contain the following:

- Nature of incident
- Time and date of incident
- Location of incident
- Impact of the incident (e.g., any people involved? Injuries? Damage?)
- Report fatalities only if cleared by the Public Information Officer and Legal and only after the family has been notified.

- It is OK to say "no information is available" on any given topic if the information is not yet known
- Status of emergency crews – en route or on the scene
- "The Company's trained emergency response teams are supporting rescue units. The Company's teams are trained to deal with incidents of this nature."
- "It is just too early to tell what caused this incident. There will be a thorough investigation."
- When to expect an update

Not Release

Fatalities unless cleared by the Public Information Officer and Legal Officer
Names of injured or deceased
Nature of injuries
Any Company communication or Company record
Any opinion as to the cause of the incident
Hazardous Materials involved

Holding Statement Template

DATE: (YY/MM/DD) _____ TIME: _____ ☐ AM☐ PM

MY NAME IS: _____ MY JOB TITLE IS: _____

This is the information I can give you so far:

At (time) _____ ☐ AM ☐ PM, on _____

(date), a(n) (fire, explosion, gas release, spill – specify) occurred at (Company's name) _____'s _____ location, located _____ kilometers (east/west/north/south) _____ of (nearest town or city) _____.

Presently, (number of personnel) _____ Company employees or Contract personnel, are (O.K., not injured, are being treated for injuries, etc. – specify).

Notes: The names and condition of the injured can only be released after they have been released by the proper authorities.

The (plant / pipeline / office, etc. – specify) _____

_____ has been shut down and isolated.

Company staff have activated the Emergency Response Plan and are directing emergency response procedures to protect the Public, our employees and the environment.

The cause of the (fire, explosion, gas release, spill, etc. – specify) _____ is not yet known and no estimate of damage is available. Further information will be released as it becomes available.

1.7 MEDIA ADVISORIES

A media advisory should be issued immediately after the holding statement has been finalized. Essentially, the holding statement is the media advisory; the only difference is that the media advisory is issued externally. The Public Information Officer has overall responsibility for ensuring this advisory is issued externally.

1.8 PRESS RELEASES

Press releases should be prepared for distribution by the Public Information Officer as soon possible, preferably within an hour of the incident. Subsequent news releases should be issued as new information becomes available.

They should include the following details:

- Time, date and location of the release
- Spokesperson name and contact number
- Summary of holding statement information
- Current status of the incident
- Status of the investigation
- Concern for public health and safety, safety of responders and environmental impact
- Involvement of authorities and outside responders
- Time of next update or news conference, if warranted
- Refer to media specific web site, if available

Consider using other tools for the media when appropriate:

- Fact Sheets
- Backgrounders
- Visuals (e.g., maps, etc.)

1.9 NEWS CONFERENCES

A number of factors will determine the need for a news conference, including:

- The level of media interest the story has generated;
- The need to make technical experts available to journalists to explain complex details such as nature of a substance released, environmental impact, public health threats, etc.;
- A significant change in the status of the situation; or
- The investigation is complete and the results are ready for release.

Strategy

- If possible, hold press conferences at a location removed from Company property
- Give media some type of guideline for the timing (i.e., there will NOT be a briefing before a given time)
- Determine who will open the news conference and what the ground rules will be (e.g., time limits, etc.)
- Determine who will make statements and whether there will be a question period
- It is appropriate to outline the ground rules for those attending the press conference before the conference formally begins
- Prepare opening statement and review potential questions with key spokesperson. Any new information released during the press conference should be cleared with the Public Information Officer.

Note: Media should never be left unattended on Company property. If necessary, arrange for media escorts. Also, arrange for any Security personnel or law enforcement as deemed necessary.

News Conference Checklist

- Check with Public Information Officer (and spokesperson) to select the best time for the conference. (Arrange for Technical Advisor to be present.) Keep in mind demands of the news cycle. Late morning and early afternoon are typically best for electronic media. Late afternoon will better serve the print media and might facilitate a "live shot" by electronic media
- Stage the conference at a local hotel or hall. Keep in mind accommodations for cameras, reporters, technical staff, parking for live or satellite trucks and cable run for television crews

- Distribute media advisory of time and location, including directions and parking information
- Compile list of media who have indicated they will attend. If possible, determine if there is a particular area of interest
- Invite outside officials, as appropriate
- Compile background information that may serve as a resource for reporters

I.10 MEDIA CENTER

The need to establish a media center will be determined by the Public Information Officer. The level of media interest in the story will be a key factor in determining if a media center is needed.

If a media center is established appropriate news organizations will be notified by way of fax and e-mail distribution. Access to the media center should be confined only to credentialed "working press." Arrange for Security personnel or law enforcement as deemed necessary.

Media Center Checklist

- Work Tables and Chairs
- External telephone lines (might not be possible if center is located in the field)
- Radio
- Television/VCR
- Podium with microphone and audio distribution (mult box)
- Extension cords
- Blank audio and videotapes
- Copier/Fax machine
- Laptop computer and printer
- If the center is in the field, you might need a generator to provide power
- Car battery adapter for PC
- Cell phone car adapter
- Power generator (if remote location)

Supplies

- The Company letterhead
- Pens and pencils
- Background material
- Past press releases
- Fact sheets
- Maps
- Refreshments

I.11 POST INCIDENT PUBLIC AFFAIRS

Once the incident is concluded, the Public Information Officer should prepare one final press release, possibly in the form of a chronology, to describe the incident and the subsequent response. The media may also be looking for any follow-up information as to the cause of the incident, people involved, long term effects on the company, costs associated with the incident, etc. These requests will have to be considered on a case-by-case basis. All releases should be reviewed by the Legal Officer and approved by the Incident Commander (or a higher authority) prior to being released.

FIGURE I.1

MEDIA HOLDING STATEMENT

The following statement is an example of how to address reporters when you need more time to gather facts before speaking to them.

Open:

Hi _____, I'm _____, and I am the spokesperson for _____.

I am in the process of gathering more facts for you regarding _____.

I know you want accurate information, so I will need _____ (how much time) to get these facts confirmed.

Basic Facts: (If confirmed)

I can tell you... Who: (Background -- optional at this point)

When:

Where:

What:

Priority:

"A preliminary investigation into the _____ has already begun. That is all the information I have for you at this time.

Holding Statement:

We could meet back here (or via phone) at _____ o'clock.

Meantime, let me get your business card, cell phone, etc...

Questions & Offers: (Optional)

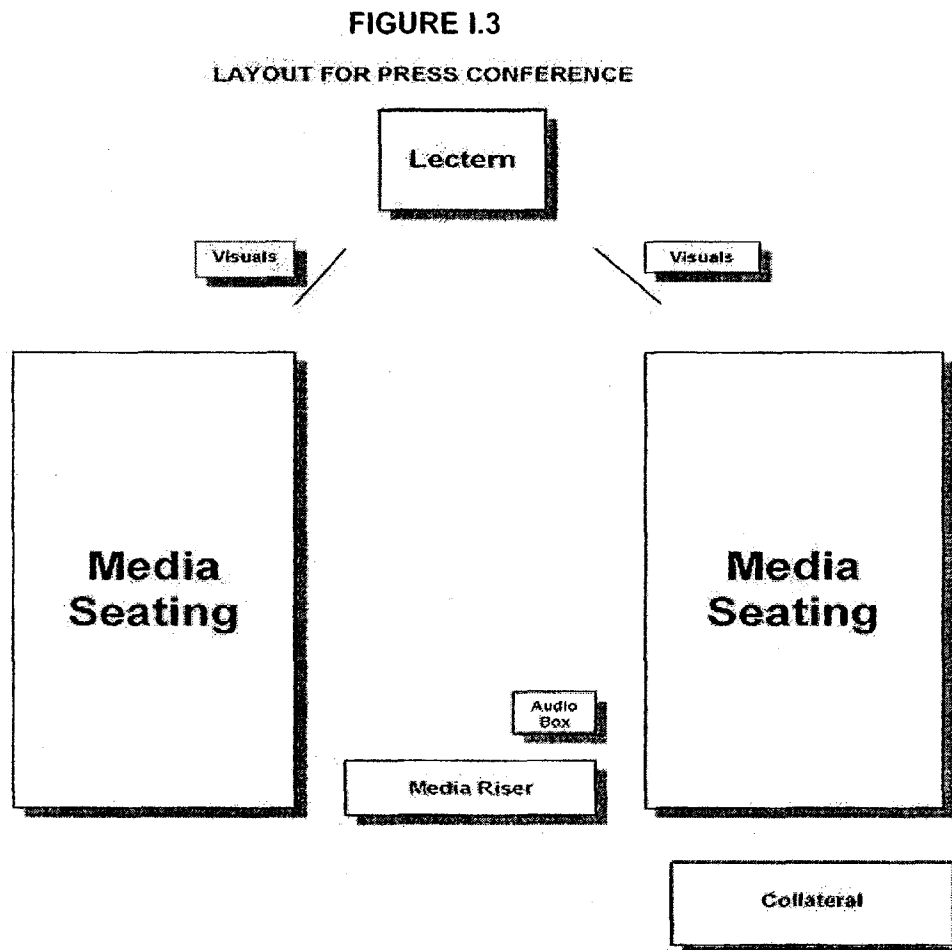
What is your deadline?

I can give you our web address for more information on our Company.

I can provide our public affairs contact and number (or provide your business card):

FIGURE I.2

PROCEDURES AND CONSIDERATIONS	
Identify Your Audience • Employees • Clients • Local Media • National / International Media • Special Interest Groups • Stakeholders • Agencies / Public Officials • Industry Associations • Suppliers • Competitors	Identify Key Message(s) • People / Safety • Environment • Property • Potential Impacts of Incident • Basis for Company's Position / Action(s) • Business Continuity
Prepare Official Company Statement • Facility / Personnel Fact Sheet(s) • Issues Applicable to Identified Audience • No Speculation of Any Kind • Confidentiality Issues • Express Care and Concern • Do Not Accept Liability or Offer Compensation • Include Photos / Video • Must be Reviewed and Approved by Incident Commander and Legal Officer	Identify Communications Methods • Media Advisory • Toll-free Telephone • Web-Site • Press Release • Telephone Interviews • Personal Interviews • Press Briefings (Alone or Jointly?) • Holding Statement
Determine Support Requirements • Personnel • Equipment • Physical Space • Photos, Videos, Charts, Graphs, Maps	Determine Frequency of Communications • Times per Shift • Daily • Corporate IC's Discretion • Maintain Awareness of Audience Deadlines / Schedules • Obtain Corporate IC's Approval
Identify Spokesperson(s) if Applicable • Ensure Understanding of Incident • Ensure Familiarity With Expected Audience • Ensure Understanding of Confidentiality / Privacy Issues • Brief on Anticipated Questions and Answers • Ensure Equal Treatment of All Audience Members • Establish Conference Duration • Do Not Underestimate the Impact of Television Reports • Coordinate Responses if Joint Conference • Be Positive • Be Supportive of Agencies, Investigators, and Responders	Monitor Audience Reaction to and Perception of Message • Hostile Press • Special Interest Groups • Public Outrage or Increased Demands • Attempts to Place Blame • Distribution of Disinformation
Revise/Update Message • Answer Earlier Questions • Provide Additional Facts • Address Previous and New Concerns • Adjust Position as suitable or Necessary but Do Not Appear to "Flip-Flop" or Waiver • Maintain Awareness of Audience Deadlines / Schedules • Must be Reviewed and Approved by Incident Commander and Legal Officer	



REGULATORY CROSS REFERENCE

DOT/PHMSA 49 CFR Part 194 Cross Reference

ONSHORE PIPELINE REGULATION, 1999 SOR/99-294

Annex A to Can/CSA-Z-731-03

DOT/PHMSA 49 CFR PART 194		
§ 194.105	BRIEF DESCRIPTION	LOCATION in PLAN
(a)	... determine the worst case discharge ... provide methodology, including calculations, used to arrive at the volume.	App B
(b)	The worst case discharge is the largest volume, in barrels, of the following:	----
(b)(1)	... maximum release time in hours, plus the maximum shutdown response time in hours, multiplied by the maximum flow rate expressed in barrels per hour, plus the largest line drainage volume after shutdown of the line section (s) ...; or	App B
(b)(2)	The largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels, based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective or preventative action taken; or	App B
(b)(3)	If the response zone contains one or more breakout tanks, the capacity of the single largest tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system, expressed in barrels.	App B
(b)(4)	Operators may claim prevention credits for breakout tank secondary containment and other specific spill prevention measures as follows:...	App B
§ 194.107	BRIEF DESCRIPTION	LOCATION in PLAN
(a)	Each response plan must plan for resources for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge.	App A
(b)	An operator must certify in the plan ... reviewed NCP and each applicable ACP...	Foreword
(b)(1)	As a minimum to be consistent with the NCP as a facility response plan must:	----
(b)(1)(i)	Demonstrate an operator's clear understanding of the function of the Federal response structure...	§ 4.0
(b)(1)(ii)	Establish provisions to ensure the protection of safety at the response site; and	§ 4.0 (Command), § 5.0
(b)(1)(iii)	Identify the procedures to obtain any required Federal and State permissions for using alternative response strategies such as in-situ burning and dispersants...	§ 6.7, App. E
(b)(2)	As a minimum, to be consistent with the applicable ACP the plan must:	----
(b)(2)(i)	Address the removal of a worst case discharge and the mitigation or prevention of a substantial threat of a worst case discharge;	§ 3, App B
(b)(2)(ii)	Identify environmentally and economically sensitive areas;	§ 6.0
(b)(2)(iii)	Describe the responsibilities of the operator and of Federal, State and local agencies in removing a discharge and in mitigating or preventing a substantial threat of a discharge; and	§ 4.0
(b)(2)(iv)	Establish the procedures for obtaining an expedited decision on use of dispersants or other chemicals.	§ 6.8
(c)	Each response plan must include:	----
(c)(1)	A core plan consisting of ...	----
(c)(1)(i)	An information summary as required in § 194.113,	Fig 1.1
(c)(1)(ii)	Immediate notification procedures,	§ 2.0

(c)(1)(iii)	Spill detection and mitigation procedures,	§ 3.0
(c)(1)(iv)	The name, address, and telephone number of the oil spill response organization, if appropriate,	Fig 2.5, App A
(c)(1)(v)	Response activities and response resources,	§ 3.0, App A
(c)(1)(vi)	Names and telephone numbers of Federal, State, and local agencies which the operator expects to have pollution control responsibilities or support,	Fig 2.5
(c)(1)(vii)	Training procedures,	App D
BRIEF DESCRIPTION		LOCATION IN PLAN
(c)(1)(viii)	Equipment testing,	App D.2
(c)(1)(ix)	Drill program - an operator will satisfy the requirement for a drill program by following the National Preparedness for Response Exercise Program (PREP) guidelines. An operator choosing not to follow PREP guidelines must have a drill program that is equivalent to PREP. The operator must describe the drill program in the response plan and OPS will determine if the program is equivalent to PREP.	App D.2
(c)(1)(x)	Plan review and update procedures;	§ 1.4
(c)(2)	An appendix for each response zone that includes the information required in paragraph (c)(1)(i)-(ix) of this section and the worst case discharge calculations that are specific to that response zone. An operator submitting a response plan for a single response zone does not need to have a core plan and a response zone appendix. The operator of a single response zone onshore pipeline shall have a single summary in the plan that contains the required information in § 194.113.7; and.	Annexes
(c)(3)	A description of the operator's response management system including the functional areas of finance, logistics, operations, planning, and command. The plan must demonstrate that the operator's response management system uses common terminology and has a manageable span of control, a clearly defined chain of command, and sufficient trained personnel to fill each position.	§ 4.0
BRIEF DESCRIPTION		LOCATION IN PLAN
(a)	Each operator shall maintain relevant portions of its response plan at the operator's headquarters and at other locations from which response activities may be conducted, for example, in field offices, supervisor's vehicles, or spill response trailers.	Foreword Distribution List
(b)	Each operator shall provide a copy of its response plan to each qualified individual	Foreword Distribution List
BRIEF DESCRIPTION		LOCATION IN PLAN
(a)	The information summary for the core plan, required by § 194.107, must include:	---
(a)(1)	The name and address of the operator.	Fig 1.1
(a)(2)	For each response zone which contains one or more line sections that meet the criteria for determining significant and substantial harm as described in § 194.103, a listing and description of the response zones, including county(s) and state(s).	Fig 1.1, Response Zone Annexes
(b)	The information summary for the response zone appendix, required in § 194.107, must include:	---
(b)(1)	The information summary for the core plan.	Fig 1.1
(b)(2)	The names or titles and 24-hour telephone numbers of the qualified individual(s) and at least one alternate qualified individual(s);	Fig 1.1, Fig 2.2

(b)(3)	The description of the response zone, including county(s) and state(s), for those zones in which a worst case discharge could cause substantial harm to the environment.	Fig 1.1, Response Zone Annexes
(b)(4)	A list of line sections for each pipeline contained in the response zone, identified by milepost or survey station number, or other operator designation.	Fig 1.1
(b)(5)	The basis for the operator's determination of significant and substantial harm.	Foreword
(b)(6)	The type of oil and volume of the worst case discharge.	App B
§ 194.115 BRIEF DESCRIPTION		LOCATION in PLAN
(a)	Each operator shall identify and ensure, by contract or other approved means, the resources necessary to remove, to the maximum extent practicable, a worst case discharge and to mitigate or prevent a substantial threat of a worst case discharge.	App A
(b)	An operator shall identify in the response plan the response resources which are available to respond within the time specified, after discovery of a worst case discharge, or to mitigate the substantial threat of such a discharge.	App A
§ 194.117 BRIEF DESCRIPTION		LOCATION in PLAN
(a)	Each operator shall conduct training to ensure that:	----
(a)(1)	All personnel know --	----
(a)(1)(i)	Their responsibilities under the response plan	
(a)(1)(ii)	The name and address of, and the procedure for contacting, the operator on a 24-hour basis	§ 4.0
(a)(1)(iii)	The name of, and procedures for contacting, the qualified individual on a 24-hour basis	§ 2.0, Fig 2.2
(a)(2)	Reporting personnel know --	----
(a)(2)(i)	The content of the information summary of the response plan.	Fig 1.1
(a)(2)(ii)	The toll-free telephone number of the National Response Center	Fig 2.5
(a)(2)(iii)	The notification process	§ 2.0, Fig 2.5
(a)(3)	Personnel engaged in response activities know --	----
(a)(3)(i)	The characteristics and hazards of the oil discharged	Fig 3.2, App G
(a)(3)(ii)	The conditions that are likely to worsen emergencies, including the consequences of facility malfunctions or failures, and the appropriate corrective actions.	§ 3.0
(a)(3)(iii)	The steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity, or environmental damage	§ 3.0
(a)(3)(iv)	The proper firefighting procedures and use of equipment, fire suits, and breathing apparatus	§ 3.0
(b)	Each operator shall maintain a training record for each individual that has been trained as required by this section. These records must be maintained in the following manner as long as the individual is assigned duties under the response plan	App D.1
(b)(1)	Records for operator personnel must be maintained at the operator's headquarters	App D.1
(b)(2)	Records for personnel engaged in response, other than operator personnel, shall be maintained as determined by the operator.	App D.1
(b)(3)	Nothing in this section relieves an operator from the responsibility to ensure that all response personnel are trained to meet the OSHA standards for emergency response operations in 29 CFR 1910.120 ...	App D.1

§ 192.119	BRIEF DESCRIPTION	LOCATION in PLAN
(a)	Each owner shall submit two copies...	Distribution
(b)	...PHMSA will notify the operator of any alleged deficiencies...	----
(c)	The operator...may petition PHMSA for reconsideration within 30 days...	----
(d)	...PHMSA will approve the Response Plan...	----
(e)	...The operator may submit a certification to PHMSA...that the operator has obtained, through contract or other approved means, the necessary private personnel and equipment to record, to the maximum extent practicable, to a worst case discharge...	Foreword (Operator's Statement)
(f)	...PHMSA may require an operator to provide a copy of the response plan to the OSC...	----
§ 192.121	BRIEF DESCRIPTION	LOCATION in PLAN
(a)	Each operator shall update its response plan to address new or different operating conditions or information. In addition, each operator shall review its response plan in full at least every 5 years from the date of the last submission or the last approval as follows:	§ 1.4
(a)(1)	For substantial harm plans, an operator shall resubmit every 5 years from the last approval date.	§ 1.4
(a)(2)	For significant and substantial harm plans, an operator shall resubmit every 5 years from the last approval date.	§ 1.4
(b)	If a new or different operating condition or information would substantially affect the implementation of a response plan, the operator must immediately modify its response plan to address such a change...	§ 1.4
(b)(1)	An extension of the existing pipeline or construction of a new pipeline in a response zone not covered by the previously approved plan;	§ 1.4
(b)(2)	Relocation or replacement of the pipeline in a way that substantially affects the information included in the response plan, such as a change to the worst case discharge volume;	§ 1.4
(b)(3)	The type of oil transported, if the type affects the required response resources, such as a change from crude oil to gasoline;	§ 1.4
(b)(4)	The name of the spill removal organization;	§ 1.4
(b)(5)	Emergency response procedures;	§ 1.4
(b)(6)	The qualified individual;	§ 1.4
(b)(7)	A change in the NCP or an ACP that has significant impact on the equipment appropriate for response activities; and	§ 1.4
(b)(8)	Any other information relating to circumstances that may affect full implementation of the plan.	§ 1.4
(c)	If PHMSA determines that a change to a response plan does not meet the requirements of this part, PHMSA will notify the operator of any alleged deficiencies, and provide operator...opportunity to correct deficiencies.	----
(d)	An operator who disagrees with a determination that proposed revisions to a plan are deficient may petition PHMSA for reconsideration, within 30 days from the date of receipt of PHMSA's notice...	----

SOR/99-294		
§ 32.3(1)	BRIEF DESCRIPTION	LOCATION IN PLAN
----	Directions for Use of Manual;	§ 1.0
----	Emergency Preparedness and Response Policy;	§ 3.0
----	Description of Initial Responses to Incident Calls;	§ 3.1
----	Management of Threat Information;	§ 3.1
----	Definitions and Levels of Emergencies;	§ 3.1
----	Corporate and Operational Chains of Command;	§ 4.0
----	Internal and External Contact Lists;	Fig. 2.2, 2.5
----	External Communication Information (e.g. media outlets);	
----	Description of General and Site Specific Emergency Response Procedures;	§ 3.0
----	Roles and Responsibilities (e.g. checklist of duties);	§ 4.0
----	Site-Specific Emergency Information (e.g. control points);	
----	Lists of Persons in Emergency Planning Zones (or on separate file);	Fig. 2.2
----	Environmental or Other Areas Requiring Special Consideration or Protection;	§ 6.0
----	Detailed Product Information (e.g. MSDS);	App. G
----	Description and Location of Response Equipment;	App. A
----	Internal and External Reporting Requirements;	§ 2.0
----	Area Maps;	Fig. 1.2
----	Training Requirements;	App. D
----	Role of Government Departments;	§ 4.6
----	Manual Updating Procedure and Schedule;	§ 1.4
----	Forms and Records; and	App. F
----	Manual Distribution List.	Foreword

ANNEX A TO CAN/CSA-Z731-03	
SAMPLE TABLE OF CONTENTS FOR AN EMERGENCY PREPAREDNESS MANUAL	
REFERENCE	LOCATION
1 Administration	-----
1.1 Emergency Preparedness Policy	Sec. 1.1
1.2 Purpose of This Manual	Sec. 1.2
1.3 Distribution of This Manual	Foreword, Sec. 1.3
1.4 Definitions	Glossary of Terms/Acronyms
2 Organization of Emergency Areas	Annexes
3 Roles and Responsibilities	Sec. 4.0
4 Communications	App. A.6
5 Emergency Response	-----
5.1 Emergencies Caused by Human Activity	Fig. 3.1
5.2 Natural Disasters	Fig. 3.1
6 Emergency Resources	-----
6.1 Contact List	Fig 2.2, 2.5
6.2 Personnel/Equipment	App. A
7 Training	-----
7.1 Employees	App. D.1
7.2 Contractors	App. D.1
7.3 Training Drills	App. D.2
8 Checklists	App. F
8.1 Role Checklists	App. F
8.2 Equipment Checklists	App. F

GLOSSARY OF TERMS AND ACRONYMS

Glossary

Acronyms

GLOSSARY OF TERMS

This glossary contains definitions of terms that will be used frequently during the course of response operations.

Activate: The process of mobilizing personnel and/or equipment within the response organization to engage in response operations.

Activator: An individual in the response organization whose responsibilities include notifying other individuals or groups within the organization to mobilize personnel and/or equipment.

Adverse Weather: The weather conditions that will be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height, ice, temperature, weather - related visibility, and currents within the Captain of the Port (COTP) zone in which the systems or equipment are intended to function.

Agency Representative: Individual assigned to an incident from an agency who has been delegated full authority to make decisions on all matters affecting that agency's participation in response operations.

Area Committee: As defined by Sections 311(a)(18) and (j)(4) of CWA, as amended by OPA, means the entity appointed by the President consisting of members from Federal, State, and local agencies with responsibilities that include preparing an Area Contingency Plan for the area designated by the President. The Area Committee may include ex-officio (i.e., non-voting) members (e.g., industry and local interest groups).

Area Contingency Plan: As defined by Sections 311(a)(19) and (j)(4) of CWA, as amended by OPA, means the plan prepared by an Area Committee, that in conjunction with the NCP, shall address the removal of a discharge including a worst-case discharge and the mitigation or prevention of a substantial threat of such a discharge from a vessel, offshore facility, or onshore facility operating in or near an area designated by the President.

Average Most Probable Discharge : A discharge of the lesser of 50 barrels or 1% of the volume of the worst case discharge.

AWAY Team: A predesignated team from various departments in Houston, is responsible for arriving at the scene of an oil spill incident as soon as possible to provide both immediate and longer-term management of the field activities.

Barrel (bbl): Measure of space occupied by 42 U.S. gallons at 60 degrees Fahrenheit.

Bioremediation Agents: Means microbiological cultures, enzyme additives, or nutrient additives that are deliberately introduced into an oil discharge and that will significantly increase the rate of biodegradation to mitigate the effects of the discharge.

Boom: A piece of equipment or a strategy used to either contain free floating oil to a confined area or protect an uncontaminated area from intrusion by oil.

Booming Strategies: Strategic techniques which identify the location and quantity of boom required to protect certain areas. These techniques are generated by identifying a potential spill source and assuming certain conditions which would affect spill movement on water.

Bulk: Material that is stored or transported in a loose, unpackaged liquid, powder, or granular form capable of being conveyed by a pipe, bucket, chute, or belt system.

Chemical Agents: Means those elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, concentrate, congeal, entrap, fix, make the pollutant mass more rigid or viscous, or otherwise facilitate the mitigation of deleterious effects or the removal of the oil pollutant from the water. Chemical agents include biological additives, dispersants, sinking agents, miscellaneous oil spill control agents, and burning agents, but do not include solvents.

Clean-up Contractor: Persons contracted to undertake a response action to clean up a spill.

Cleanup: For the purposes of this document, cleanup refers to the removal and/or treatment of oil, hazardous substances, and/or the waste or contaminated materials generated by the incident. Cleanup includes restoration of the site and its natural resources.

Coastal Waters: For the purpose of classifying the size of discharges, means the waters of the coastal zone except for the Great Lakes and specified ports and harbors on inland rivers.

Coastal Zone: As defined for the purpose of the NCP, means all United States waters subject to the tide, United States waters of the Great Lakes, specified ports and harbors on inland rivers, waters of the contiguous zone, other waters of the high seas subject to the NCP, and the land surface or land substrata, ground waters, and ambient air proximal to those waters. The term coastal zone delineates an area of federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in federal regional contingency plans.

Coast Guard District Response Ground (DRG): As provided for by CWA sections 311(a)(20) and (j)(3), means the entity established by the Secretary of the department in which the USCG is operating within each USCG district and shall consist of: the combined USCG personnel and equipment, including firefighting equipment, of each port within the district; allitional prepositioned response equipment; and a district response advisory team.

Command: The act of controlling manpower and equipment resources by virtue of explicit or delegated authority.

Command Post: A site located at a safe distance form the spill site where response decisions are made, equipment and manpower deployed, and communications hanuled. The Incident Commander and the On-Scene Coordinators may direct the on-scene response from this location.

Communications Equipment: Equipment that will be utilized during response operations to maintain communication between the Company employees, contractors, Federal/State/Local agencies. (Radio/ telephone equipment and links)

Containment Boom: A flotation/freeboard device, made with a skirt/curtain, longitudinal strength member, and ballast unit/weight designed to entrap and contain the product for recovery.

Contingency Plan: A document used by (1) federal, state, and local agencies to guide their planning and response procedures regarding spills of oil, hazardous substances, or other emergencies; (2) a document used by industry as a response plan to spills of oil, hazardous substances, or other emergencies occurring upon their vessels or at their facilities.

Contract or Other Approved Means: For OPA 90, a written contract with a response contractor; certification by the facility owner or operator that personnel and equipment are owned, operated, or under the direct control of the facility, and available within the stipulated times; active membership in a local or regional oil spill removal organization; and/or the facility?s own equipment.

Critical Areas to Monitor : Areas which if impacted by spilled oil may result in threats to public safety or health.

Cultural Resources: Current, historic, prehistoric and archaeological resources which include deposits, structures, ruins, sites, buildings, graves, artifacts, fossils, or other objects of antiquity which provide information pertaining to the historical or prehistorical culture of people in the state as well as to the natural history of the state.

Damage Assessment: The process of determining and measuring damages and injury to the human environment and natural resources, including cultural resources. Damages include differences between the conditions and use of natural resources and the human environment that would have occurred without the incident, and the conditions and use that ensued following the incident. Damage assessment includes planning for restoration and determining the costs of restoration.

Decontamination: The removal of hazardous substances from personnel and their equipment necessary to prevent adverse health.

effects.

Discharge: Any spilling, leaking, pumping, pouring, emitting, emptying, or dumping.

Dispersants: Means those chemical agents that emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column.

Diversion Boom: A floatation/freeboard device, made with a skirt/curtain, longitudinal strength member, and ballast unit/weight designed to deflect or divert the product towards a pick up point, or away from certain areas.

Drinking Water Supply: As defined by Section 101(7) of CERCLA, means any raw or finished water source that is or may be used by a public water system (as defined in the Safe Drinking Water Act) or as drinking water by one or more individuals.

EM: Emergency Management. Serves as the focal point for senior management support of an incident.

Economically Sensitive Areas: Those areas of explicit economic importance to the public that due to their proximity to potential spill sources may require special protection and include, but are not limited to: potable and industrial water intakes; locks and dams; and public and private marinas.

Emergency Management : The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation.

Emergency Service: Those activities provided by state and local government to prepare for and carry out any activity to prevent, minimize, respond to, or recover from an emergency.

Environmentally Sensitive Areas: Streams and water bodies, aquifer recharge zones, springs, wetlands, agricultural areas, bird rookeries, endangered or threatened species (flora and fauna) habitat, wildlife preserves or conservation areas, parks, beaches, dunes, or any other area protected or managed for its natural resource value.

Facility: Either an onshore facility or an offshore facility and includes, but is not limited to structures, equipment, and appurtenances thereto, used or capable of being used to transfer oil to or from a vessel or a public vessel. A facility includes federal, state, municipal, and private facilities.

Facility Operator: The person who owns, operates, or is responsible for the operation of the facility.

Federal Fund: The spill liability trust fund established under OPA.

Federal Regional Response Team: The federal response organization (consisting of representatives from selected federal and state agencies) which acts as a regional body responsible for planning and preparedness before an oil spill occurs and providing advice to the FOSC in the event of a major or substantial spill.

Federal Response Plan (FRP): Means the agreement signed by 25 federal departments and agencies in April 1987 and developed under the authorities of the Earthquake Hazards Reduction Act of 1977 and the Disaster Relief Act of 1974, as amended by the Stafford Disaster Relief Act of 1988.

First Responders, First Response Agency: A public health or safety agency (e.g., fire service or police department) charged with responding to a spill during the emergency phase and alleviating immediate danger to human life, health, safety, or property.

Handle: To transfer, transport, pump, treat, process, store, dispose of, drill for, or produce.

Harmful Quantity Of Oil: The presence of oil from an unauthorized discharge in a quantity sufficient either to create a visible film or

sheen upon or discoloration of the surface of the water or a shoreline, tidal flat, beach, or marsh, or to cause a sludge or emulsion to be deposited beneath the surface of the water or on a shoreline, tidal flat, beach, or marsh.

Hazardous Material: Any nonradioactive solid, liquid, or gaseous substance which, when uncontrolled, may be harmful to humans, animals, or the environment. Including but not limited to substances otherwise defined as hazardous wastes, dangerous wastes, extremely hazardous wastes, oil, or pollutants.

Hazardous Substance: Any substance designed as such by the Administrator of the EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act; regulated pursuant to Section 311 of the Federal Water Pollution Control Act, or discharged by the SERC.

Hazardous Waste: Any solid waste identified or listed as a hazardous waste by the Administrator of the EPA pursuant to the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C., Section 6901, et seq as amended. The EPA Administrator has identified the characteristics of hazardous wastes and listed certain wastes as hazardous in Title 40 of the Code of Federal Regulations, Part 261, Subparts C and D respectively.

HAZMAT: Hazardous materials or hazardous substances, exposure to which may result in adverse effects on health or safety of employees.

HAZWOPER: Hazardous Waste Operations and Emergency Response Regulations published by OSHA to cover worker safety and health aspects of response operations.

Heat Stress: Dangerous physical condition caused by over exposure to extremely high temperatures.

Hypothermia: Dangerous physical condition caused by over exposure to freezing temperatures.

Incident: Any event that results in a spill or release of oil or hazardous materials. Action by emergency service personnel may be required to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Briefing Meeting: Held to develop a comprehensive, accurate, and up-to-date understanding of the incident, nature of status of control operations, and nature and status of response operations; ensure the adequacy of control and response operations; begin to organize control and response operations; and prepare for interactions with outside world.

Incident Command Post (ICP): That location at which all primary command functions are executed.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, with responsibility for the management of assigned resources at an incident.

Incident Commander (IC): The one individual in charge at any given time of an incident. The Incident Commander will be responsible for establishing a unified command with all on-scene coordinators.

Indian Tribe: As defined in OPA section 1001, means any Indian tribe, band, nation, or other organized group or community, but not including any Alaska Native regional or village corporation, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians and has governmental authority over lands belonging to or controlled by the Tribe.

Initial Cleanup: Remedial action at a site to eliminate acute hazards associated with a spill. An initial clean-up action is implemented at a site when a spill of material is an actual or potentially imminent threat to public health or the environment, or difficulty of cleanup increases significantly without timely remedial action. All sites must be evaluated to determine whether initial cleanup is total cleanup, however, this will not be possible in all cases due to site conditions (i.e., a site where overland transport or flooding may occur).

Initial Notification: The process of notifying necessary the Company personnel and Federal/ State/Local agencies that a spill has occurred, including all pertinent available information surrounding the incident.

Initial Response Actions: The immediate actions that are to be taken by the spill observer after detection of a spill.

Inland Area: The area shoreward of the boundary lines defined in 46 CFR part 7, except that in the Gulf of Mexico, it means the area shoreward of the lines of demarcation (COLREG lines) as defined in §80.740 through 80.850 of this chapter. The inland area does not include the Great Lakes.

Inland Waters: State waters not considered coastal waters; lakes, rivers, ponds, streams, underground water, et. al.

Inland Zone: Means the environment inland of the coastal zone excluding the Great Lakes, and specified ports and harbors on inland rivers. The term inland zone delineates an area of federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in federal regional contingency plans.

Interim Storage Site: A site used to temporarily store recovered oil or oily waste until the recovered oil or oily waste is disposed of at a permanent disposal site. Interim storage sites include trucks, barges, and other vehicles, used to store waste until the transport begins.

Lead Agency: The government agency that assumes the lead for directing response activities.

Lead Federal Agency: The agency which coordinates the federal response to incident on navigable waters. The lead federal agencies are:

- **U.S. Coast Guard:** Oil and chemically hazardous materials incidents on navigable waters.
- **Environmental Protection Agency:** Oil and chemically hazardous materials incidents on inland waters.

Lead State Agency: The agency which coordinates state support to federal and/or local governments or assumes the lead in the absence of federal response.

Loading: Transfer from Facility to vehicle.

Local Emergency Planning Committee (LEPC): A group of local representatives appointed by the State Emergency Response Commission (SERC) to prepare a comprehensive emergency plan for the local emergency planning district, as required by the Emergency Planning and Community Right-to-know Act (EPCRA).

Local Response Team: Designated Facility individuals who will fulfill the roles determined in the oil spill response plan in the event of an oil or hazardous substance spill. They will supervise and control all response and clean-up operations.

Lower Explosive Limit: Air measurement utilized to determine the lowest concentration of vapors that support combustion. This measurement must be made prior to entry into a spill area.

Marinas: Small harbors with docks, services, etc. for pleasure craft.

Medium Discharge: Means a discharge greater than 2,100 gallons (50 Bbls) and less than or equal to 36,000 gallons (85+ Bbls) or 10% of the capacity of the largest tank, whichever is less and not to exceed the WCD.

National Contingency Plan: The plan prepared under the Federal Water Pollution Control Act (33 United State Code §1321 et seq) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 United State Code § 9601 et seq), as

revised from time to time.

National Pollution Funds Center (NPFC): Means the entity established by the Secretary of Transportation whose function is the administration of the Oil Spill Liability Trust Fund (OSLTF). Among the NPFC's duties are: providing appropriate access to the OSLTF for federal agencies and states for removal actions and for federal trustees to initiate the assessment of natural resource damages; providing appropriate access to the OSLTF for claims; and coordinating cost recovery efforts.

National Response System (NRS): Is the mechanism for coordinating response actions by all levels of government in support of the OSC. The NRS is composed of the NRT, RRTs, OSC, Area Committees, and Special Teams and related support entities.

National Strike Force (NSF): Is a special team established by the USCG, including the three USCG Strike Teams, the Public Information Assist Team (PIAT), and the National Strike Force Coordination Center. The NSF is available to assist OSCs in their preparedness and response duties.

National Strike Force Coordination Center (NSFCC): Authorized as the National Response Unit by CWA section 311(a)(23) and (j) (2), means the entity established by the Secretary of the department in which the USCG is operating at Elizabeth City, North Carolina, with responsibilities that include administration of the USCG Strike Teams, maintenance of response equipment inventories and logistic networks, and conducting a national exercise program.

Natural Resource: Land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to or otherwise controlled by the state, federal government, private parties, or a municipality.

Navigable Waters: As defined by 40 CFR 110.1 means the waters of the United States, including the territorial seas. The term includes:

All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

Interstate waters, including interstate wetlands;

All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

- that are or could be used by interstate or foreign travelers for recreational or other purposes;
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; and
- that are used or could be used for industrial purposes by industries in interstate commerce.

All impoundments of waters otherwise defined as navigable waters under this section;

Tributaries of waters identified in paragraphs (a) through (d) of this definition, including adjacent wetlands; and

Wetlands adjacent to waters identified in paragraphs (a) through (e) of this definition: Provided, that waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act jurisdiction remains with EPA.

Nearshore Area: For OPA 90, the area extending seaward 12 miles from the boundary lines defined in 46 CFR Part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area extending seaward 12 miles from the line of demarcation defined in §80.740 -

80.850 of title 33 of the CFR.

Non-persistent or Group I Oil: A petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions:

1. At least 50% of which by volume, distill at a temperature of 340 degrees C (645 degrees F);
2. At least 95% of which volume, distill at a temperature of 370 degrees C (700 degrees F).

Ocean: The open ocean, offshore area, and nearshore area as defined in this subpart.

Offshore area: The area up to 38 nautical miles seaward of the outer boundary of the nearshore area.

Oil or Oils: Naturally occurring liquid hydrocarbons at atmospheric temperature and pressure coming from the earth, including condensate and natural gasoline, and any fractionation thereof, including, but not limited to, crude oil, petroleum gasoline, fuel oil, diesel oil, oil sludge, oil refuse, and oil mixed with wastes other than dredged spoil. Oil does not include any substance listed in Table 302.4 of 40 CFR Part 302 adopted August 14, 1989, under Section 101(14) of the federal comprehensive environmental response, compensation, and liability act of 1980, as amended by P. L. 99-499.

Oil Spill Liability Trust Fund: Means the fund established under section 9509 of the Internal Revenue Code of 1986 (26 U.S.C. 9509).

Oily Waste: Product contaminated waste resulting from a spill or spill response operations.

On-Scene Coordinator (OSC): Means the federal official predesignated by the EPA or the USCG to coordinate and direct response under subpart D.

On-site: Means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a response action.

Open Ocean: means the area from 38 nautical miles seaward of the outer boundary of the nearshore area, to the seaward boundary of the exclusive economic zone.

Owner or Operator: Any person, individual, partnership, corporation, association, governmental unit, or public or private organization of any character.

Persistent Oil: A petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. For the purposes of this Appendix, persistent oils are further classified based on specific gravity as follows:

1. Group II specific gravity less than .85
2. Group III specific gravity between .85 and less than .95
3. Group IV specific gravity .95 and including 1.0
4. Group V specific gravity greater than 1.0

Plan Holder: The plan holder is the industry transportation related facility for which a response plan is required by federal regulation to be submitted by a vessel or facility's owner or operator.

Post Emergency Response: The portion of a response performed after the immediate threat of a release has been stabilized or eliminated and cleanup of the sites has begun.

Post Emergency: The phase of response operations conducted after the immediate threat of the release has been stabilized, and cleanup operations have begun.

Primary Response Contractors or Contractors: An individual, company, or cooperative that has contracted directly with the plan holder to provide equipment and/or personnel for the containment or cleanup of spilled oil.

Qualified Individual (QI): That person or entity who has authority to activate a spill cleanup contractors, act as liaison with the "On-Scene Coordinator" and obligate funds required to effectuate response activities.

Recreation Areas: Publicly accessible locations where social/sporting events take place.

Regional Response Team (RRT): The Federal response organization (consisting of representatives from selected Federal and State agencies) which acts as a regional body responsible for overall planning and preparedness for oil and hazardous materials releases and for providing advice to the OSC in the event of a major or substantial spill.

Remove or Removal: As defined by section 311(a)(8) of the CWA, refers to containment and removal of oil or hazardous substances from the water and shorelines or the taking of such other actions as may be necessary to minimize or mitigate damage to the public health or welfare (including, but not limited to, fish, shellfish, wildlife, public and private property, and shorelines and beaches) or to the environment. For the purpose of the NCP, the term also includes monitoring of action to remove discharge.

Response Activities: The containment and removal of oil from the water and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to public health or welfare, or the environment.

Response Contractors: Persons/companies contracted to undertake a response action to contain and/or clean up a spill.

Response Guidelines: Guidelines for initial response that are based on the type of product involved in the spill, these guidelines are utilized to determine clean-up methods and equipment.

Response Plan: A practical manual used by industry for responding to a spill. Its features include: (1) identifying the notifications sequence, responsibilities, response techniques, etc. in a easy to use format; (2) using decision trees, flowcharts, and checklists to insure the proper response for spills with varying characteristics; and (3) segregating information needed during the response from data required by regulatory agencies to prevent confusion during a spill incident.

Response Resources: All personnel and major items of equipment available, or potentially available, for assignment to incident tasks on which status is maintained.

Responsible Party: Any person, owner/operator, or facility that has control over an oil or hazardous substance immediately before entry of the oil or hazardous substance into the atmosphere or in or upon the water, surface, or subsurface land of the state.

Response Priorities: Mechanism used to maximize the effective use of manpower and equipment resources based upon their availability during an operational period.

Response Resources: All personnel and major items of equipment available, or potentially available, for assignment to incident tasks on which status is maintained.

Restoration: The actions involved in returning a site to its former condition.

Rivers and Canals: A body of water confined within the inland area that has a project depth of 12 feet or less, including the Intracoastal Waterway and other waterways artificially created for navigation.

Securing the Source: Steps that must be taken to stop discharge of oil at the source of the spill.

Sinking Agents: Means those alitives applied to oil discharges to sink floating pollutants below the water surface.

Site Characterization: An evaluation of a cleanup site to determine the appropriate safety and health procedures needed to protect employees from identified hazards.

Site Conditions: Details of the area surrounding the facility, including shoreline descriptions, typical weather conditions, socioeconomic breakdowns, etc.

Site Safety and Health Plan: A site specific plan developed at the time of an incident that addresses:

- Safety and health hazard analysis for each operation.
- Personal protective equipment to be used.
- Training requirements for site workers.
- Medical surveillance requirements.
- Air monitoring requirements.
- Site control measures.
- Decontamination procedures.
- Emergency response procedures.
- Confined space entry procedures.

Site Security and Control: Steps that must be taken to provide safeguards needed to protect personnel and property, as well as the general public, to ensure an efficient clean-up operation.

Skimmers: Mechanical devices used to skim the surface of the water and recover floating oil. Skimmers fall into four basic categories (suction heads, floating weirs, oleophilic surface units, and hydrodynamic devices) which vary in efficiency depending on the type of oil and size of spill.

Snare Boom: Oil will adhere to the material of which this boom is made of and thus collect it.

Sorbents: Materials ranging from natural products to synthetic polymeric foams placed in confined areas to soak up small quantities of oil. Sorbents are very effective in protecting walkways, boat decks, working areas, and previously uncontaminated or cleaned areas.

Spill: An unauthorized discharge of oil or hazardous substance into the waters of the state.

Spill Observer: The first Facility individual who discovers a spill. This individual must function as the first responder and person-in-charge until relieved by an authorized supervisor.

Spill of National Significance (SONS): Means a spill which due to its severity, size, location, actual or potential impact on the public health and welfare or the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of federal, state, local, and responsible party resources to contain and cleanup the discharge.

Spill Management Team: The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation.

Spill Response: All actions taken in responding to spills of oil and hazardous materials, e.g.: receiving and making notifications; information gathering and technical advisory phone calls; preparation for and travel to and from spill sites; direction of clean-up activities; damage assessments; report writing, enforcement investigations and actions; cost recovery; and program development.

Spill Response Personnel: Federal, state, local agency, and industry personnel responsible for participating in or otherwise involved

in spill response. All spill response personnel will be pre-approved on a list maintained in each region.

Staging Areas: Designated areas near the spill site accessible for gathering and deploying equipment and/or personnel.

State Emergency Response Commission(SERC): A group of officials appointed by the Governor to implement the provisions of Title III of the Federal Superfund Amendments and Re-authorization Act of 1986 (SARA). The SERC approves the State Oil and Hazardous Substance Discharge Prevention and Contingency Plan and Local Emergency Response Plans.

Surface Collecting Agents: Means those chemical agents that form a surface film to control the layer thickness of oil.

Surface Washing Agent: Is any product that removes oil from solid surfaces, such as beaches and rocks, through a detergency mechanism and does not involve dispersing or solubilizing the oil into the water column.

Tanker: A self-propelled tank vessel constructed or adapted primarily to carry or hazardous material in bulk in the cargo spaces.

Tidal Current Tables: Tables which contain the predicted times and heights of the high and low waters for each day of the year for designated areas.

Trajectory Analysis: Estimates made concerning spill size, location, and movement through aerial surveillance or computer models.

Transfer: Any movement of oil to, from, or within a vessel by means of pumping, gravitation, or displacement.

Trustee: Means an official of a federal natural resources management agency designated in subpart G of the NCP or a designated state official or Indian tribe or, in the case of discharges covered by the OPA, a foreign government official, who may pursue claims for damages under section 1006 of the OPA.

Underwriter: An insurer, a surety company, a guarantor, or any other person, other than an owner or operator of a vessel or facility, that undertakes to pay all or part of the liability of an owner or operator.

Unified Command: The method by which local, state, and federal agencies and the responsible party will work with the Incident Commander to:

- Determine their roles and responsibilities for a given incident.
- Determine their overall objectives for management of an incident.
- Select a strategy to achieve agreed-upon objectives.
- Deploy resources to achieve agreed-upon objectives.

Unified or Coordinated Command Meeting: Held to obtain agreement on strategic objectives and response priorities; review tactical strategies; engage in joint planning, integrate response operations; maximize use of resources; and minimize resolve conflicts.

Volunteers: An individual who donates their services or time without receiving monetary compensation.

Waste: Oil or contaminated soil, debris, and other substances removed from coastal waters and adjacent waters, shorelines, estuaries, tidal flats, beaches, or marshes in response to an unauthorized discharge. Waste means any solid, liquid, or other material intended to be disposed of or discarded and generated as a result of an unauthorized discharge of oil. Waste does not include substances intended to be recycled if they are in fact recycled within 90 days of their generation or if they are brought to a recycling facility within that time.

Waters of the United States: See **Navigable Waters** in this Glossary.

Wetlands: Those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds (40 CFR 112.2(y)).

Wilulife Rescue: Efforts made in conjunction with Federal and State agencies to retrieve, clean, and rehabilitate birds and wilulife affected by an oil spill.

Worst Case Discharge: The largest foreseeable discharge under adverse weather conditions. For facilities located above the high water line of coastal waters, a worst case discharge includes those weather conditions most likely to cause oil discharged from the facility to enter coastal waters.

ACRONYMS

AMIO	- Alien Migration Interdiction Operation
AQI	- Alternate Qualified Individual
AM	- Ante Meridiem
ACP	- Area Contingency Plan
ACP	- Area Contingency Plans
Avg.	- Average
bbl/hr	- Barrel per Hour
Br	- Branch
BLM	- Bureau of Land Management
CANUSCENT	- Canada - United States Joint Inland Pollution Contingency Plan - Annex II
CA	- Canada
CA NEB	- Canadian National Energy Board
COTP	- Captain of the Port
Ctr.	- Center
CAS Number	- Chemical Abstracts Service
CST	- Civil Support Team
CG	- Coast Guard
CFR	- Code of Federal Regulations
Cont'd	- Continued
CMT	- Crisis Management Team
DOA	- Dead on Arrival
Dept.	- Department
JOD	- Department of Defense
DENR	- Department of Environment and Natural Resources
DHS	- Department of Homeland Security
DOI	- Department of Interior
DNR	- Department of Natural Resources
DOT	- Department of Transportation
D.C.	- District of Columbia
Div.	- Division
DOCL	- Documentation Unit Leader
EMS	- Emergency Management System
EM	- Emergency Manager
EOC	- Emergency Operations Center
ESA	- Endangered Species Act
EET	- Environmental Emergency Team
EDRC	- Estimated Daily Recovery Capability
ETA	- Estimated Time of Arrival
etc.	- Et Cetera
exempli gratia e.g.	- For Example
FAA	- Federal Aviation Administration
FBI	- Federal Bureau of Investigation
FOSC	- Federal On-Scene Coordinator
Ft./Sec.	- Feet/Second
FIR	- Field Investigation Report

FR	- Fire Retardant
FWD	- Forward
Freq.	- Frequency
GRP	- Group
Gru Sups.	- Group Supervisors
HAZMAT	- Hazardous Material
HAZWOPER	- Hazardous Waste Operations and Emergency Response Standard
HVAC	- Heating, Ventilating, and Air Conditioning
HEPA OVW	- High Efficiency Particle Air Device
HF ERW	- High Frequency Electric-Resistance Weld
HLS	- Homeland Security
Hrs.	- Hours
ID NO.	- Identification Number
IL	- Illinois
IDNR	- Illinois Department of Natural Resources
IAW	- In Accordance With
IAP	- Incident Action Plan
ICS	- Incident Command System
ICS	- Incident Command System
IC	- Incident Commander
IMH	- Incident Management Handbook
IMS	- Incident Management System
Info.	- Information
KS	- Kansas
KM	- Kilometer
KP	- Kilometer Point
LE	- Law Enforcement
LO	- Liaison Officer
LPG	- Liquefied Petroleum Gas
LEPC	- Local Emergency Planning Committee
LRT	- Local Response Team
LSC	- Logistics Section Chief
LF ERW	- Low Frequency Electric-Resistance Weld
LEL	- Lower Explosive Limit
MO	- Missouri
MSDS	- Material Safety Data Sheets
MEDEVAC'D	- Medical Evacuation
NCP	- National Contingency Plan
NE	- Nebraska
NEECP (CA)	- National Environmental Emergencies Contingency Plan
NFPA	- National Fire Protection Association
NIMS	- National Incident Management System
ND	- North Dakota
NOAA	- National Oceanographic Atmospheric Administration
NCP (U.S.)	- National Oil and Hazardous Substances Contingency Plan
NRC	- National Response Center
NRDAR	- Natural Resource Damage Assessment and Restoration

N	- No
NW	- North West
N/A	- Not Available
OSHA	- Occupational Safety & Health Administration
OSRO	- Oil Spill Removal Organization
OSRP	- Oil Spill Response Plan
OSRV	- Oil Spill Response Vessel
OSC	- On-Scene Coordinate
OSC	- Operation Section Chief
OP	- Operational Period
Op.	- Operations
OPS	- Operations
O&M	- Operations and Maintenance
OCC	- Operations Coordination Center
OV	- Organic Vapor
PPM	- Parts Per Million
PFD	- Personal Floatation Device
PPE	- Personal Protective Equipment
PHMSA	- Pipeline and Hazardous Materials Safety Administration
PSC	- Planning Section Chief
PSC	- Planning Section Chief
POC	- Point of Contact
PVC	- Polyvinyl Chloride
P.M.	- Post Meridiem
PREP	- Preparedness for Response Exercise Program
Prot.	- Protection
PWSD	- Public Water Supply District
QI	- Qualified Individual
RPT	- Regional Preparedness Team
Req.	- Required
RCRA	- Resource Conservation and Recovery Act
RESL	- Resource Leader
RMA	- Response Management Associates, Inc
RP	- Responsible Party
RPIC	- Responsible Party Incident Commander
Rev.	- Revision
R/W	- Right-of-Way
RWD	- Rural Water District
SAR	- Search and Rescue
SART	- Search and Rescue Transporter
SD	- South Dakota
SI	- Security Incident
SO	- Security Officer
SCBA	- Self Contained Breathing Apparatus
SSPs	- Site Safety Plans
SITL	- Situation Unit Leader
Spec.	- Special

SPCC	- Spill Prevention, Control, and Countermeasure
SORS	- Spilled oil Recovery System
Sq. Ft.	- Square Foot
STAM	- Staging Area Manager
SERC	- State Emergency Response Center
SERC	- State Emergency Response Commission
SOSC	- State On-Scene Coordinator
SOR	- Statutory Orders and Regulations
SCADA	- Supervisory Control and Data Acquisition
TOC	- Table of Contents
TC	- TC Oil Pipeline Operations Inc.
TSD	- Temporary Storage and Disposal
TSC	- Temporary Storage Capacity
TGLO	- Texas General Land Office
id est, I.E.	- That is
TBA	- To be Assigned
TSB	- Transportation Safety Board
UC	- Unified Command
UN Number	- United Nations
US	- United States
USCG	- United States Coast Guard
EPA	- US Environmental Protection Agency
USN	- US Navy Supervisor Salvage
Vsl.	- Vessel
VOSS	- Vessel of Opportunity Skimmer System
VOC	- Volatile Organic Compound
Vol.	- Volume
W	- West
WCD	- Worst Case Discharge
Y	- Yes

RESPONSE ZONE INFORMATION

Hardisty Pump Station/ Regina Pump Station

RESPONSE ZONE CONTACT INFORMATION

Owner Name: TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc.

Addresses: Physical Address
717 Texas Street
Houston, Texas 77002

24 Hour Emergency Contact Phone Numbers: 1-800-830-9865 (24 Hours)

Telephone/Fax: Telephone references, including 24 hour numbers, for the Facility, Owner, and Qualified Individual/Alternate Qualified Individual are provided in Figure 2.2.

Provinces/States Traversed: Alberta, Saskatchewan

Areas/Counties Traversed: Western Saskatchewan, Eastern Alberta

INFORMATION SUMMARY

Determination of Significant and Substantial Harm (United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration):

This Response Zone has been determined to meet the significant and substantial harm classification because at least one (1) line section within the response zone has met at least one of the criteria listed in 49CFR194.103(c)(1).

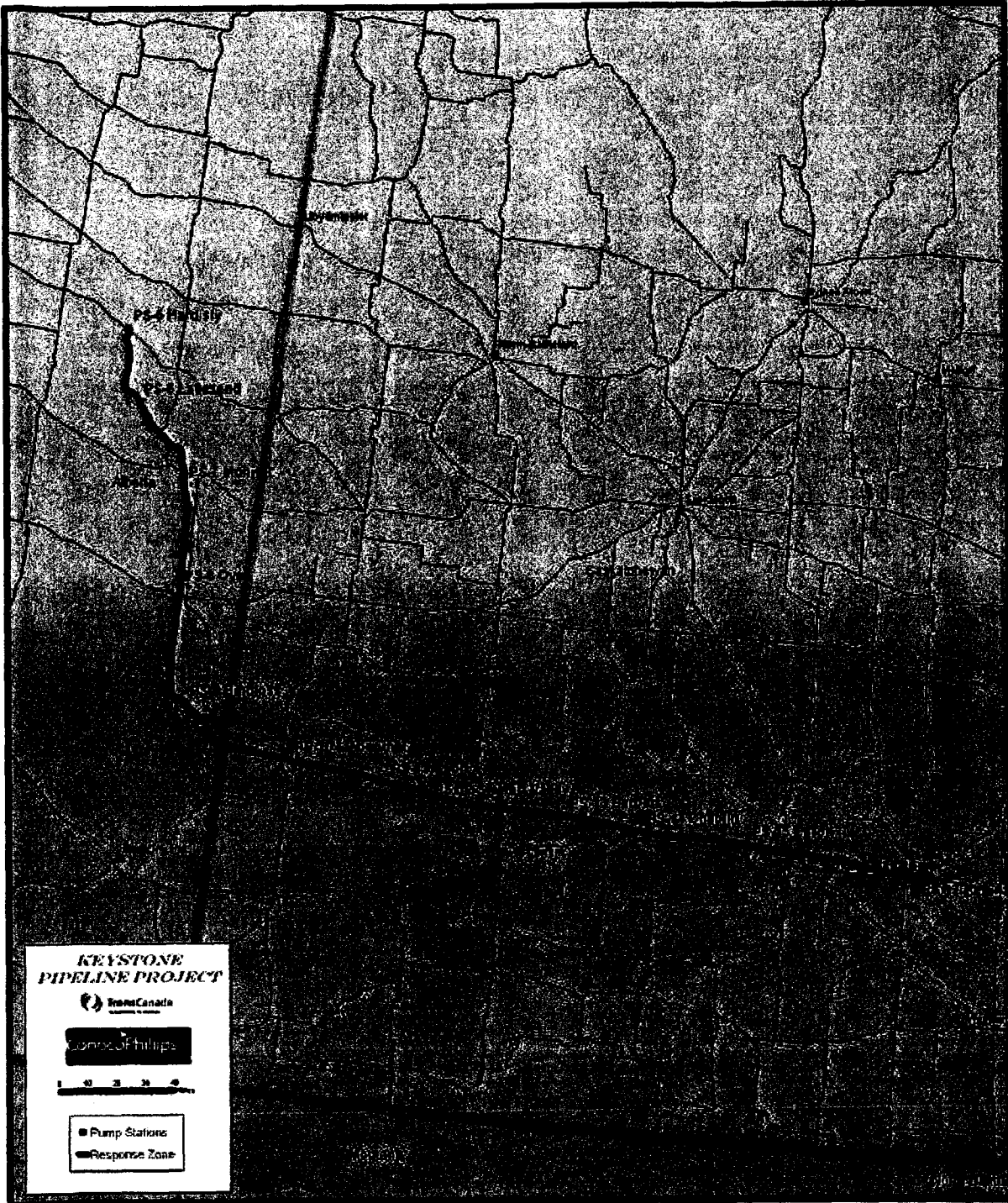
Worst Case Discharge (Refer to Appendix B for calculations):

- **Potential Oil Group:** 3
- **United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration Planning Volume:** 41,504 Bbls



Response Zone Layout Map **Hardisty PS to Regina PS**

Map Prepared By
 Response Management Associates
 (201) 320 9796



RESPONSE ZONE COMPANY CONTACTS				
POSITION/TITLE	NAME	OFFICE	HOME	CELL

Area: Hardisty Pump Station / Regina Pump Station

Qualified Individuals:

Qualified Individuals			
NAME	OFFICE	HOME	CELL
Randall W. Schmidgall	(204) 957-6832		
John Hayes	(403) 920-6467		(403) 461-9245

Alternate Qualified Individuals:

Alternate Qualified Individuals			
NAME	OFFICE	HOME	CELL

Pipeline Specifications:

The tables below list the pipeline facilities within the East Response Zone Response Zone.

Pipeline Specifications			
Location	Type of Oil	State	Region
Hardisty PS / Lakesend PS	Crude Oil	Alberta	Eastern Alberta
Lakesend PS / Monitor PS	Crude Oil	Alberta	Eastern Alberta
Monitor PS / Oyen PS	Crude Oil	Alberta	Eastern Alberta
Oyen PS / Bindloss PS	Crude Oil	Alberta	Eastern Alberta
Bindloss PS / Cabri PS	Crude Oil	Alberta	Eastern Alberta
Cabri PS / Herbert PS	Crude Oil	Saskatchewan	Western Saskatchewan
Herbert PS / Caron PS	Crude Oil	Saskatchewan	Western Saskatchewan
Caron PS / Regina PS	Crude Oil	Saskatchewan	Western Saskatchewan

Company Owned Response Equipment:

Response Equipment		
NAME	LOCATION	DESCRIPTION
Equipment Response Trailer		See Equipment List - Appendix A

Breakout Tanks:

Breakout Tanks			
FACILITY NAME	TANK NUMBER	CAPACITY (BBS)	TYPE OF OIL

EXTERNAL NOTIFICATION REFERENCES

Alberta

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	OFFICE / ALTERNATE
Eastern Alberta		
Oyen Fire Department	Oyen, Alberta	911
Oyen RCMP Detachment	Oyen, Alberta	(403) 664-3505/3883
Palliser Regional EMS - Medicine Hat	Medicine Hat, Alberta	(403) 529-8800
Ralston Fire Department	Ralston, Alberta	(403) 544-4448
Special Areas No. 3 Fire Department (Youngstown)	Youngstown, Alberta	(403) 779-3733
Empress Ambulance Services (Alberta Medivac)	Oyen, Alberta	(403) 664-2456
Empress Fire Department	Empress, Alberta	(403) 565-3746
Etzikom Fire Department	Bow Island, Alberta	(403) 545-2424
Acadia Valley Fire Department	Acadia Valley, Alberta	(403) 972-3808
Walsh Fire Department	Walsh, Alberta	(403) 937-3936
Redcliff Disaster Services	Redcliff, Alberta	(403) 548-3618
Redcliff Fire Department	Redcliff, Alberta	(403) 548-3425
Schuler Fire Department	Schuler, Alberta	(403) 526-2888
Seven Persons Fire Department	Seven Persons, Alberta	(403) 832-3750
Hilda Fire Department	Hilda, Alberta	(403) 838-2510
Irvine Fire Department	Irvine, Alberta	(403) 529-8285
Jenner Fire Department	Jenner, Alberta	(403) 898-2204
Medicine Hat Disaster Services	Medicine Hat, Alberta	(403) 529-8450

EXTERNAL NOTIFICATION REFERENCES Saskatchewan

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	OFFICE / ALTERNATE
Western Saskatchewan		
Bindloss Fire Department	Bindloss, Alberta	(403) 379-2278
Bow Island Fire Department	Bow Island, Alberta	(403) 545-2424
Pense Fire Department	Pense, Saskatchewan	(306) 345-2302
Piapot Fire Department	Piapot, Saskatchewan	(306) 558-2022/2011
Shaunavon RCMP Detachment	Shaunavon, Saskatchewan	(306) 297-5555
Fox Valley Fire Department	Fox Valley, Saskatchewan	(306) 666-2151
Frontier Ambulance Services	Frontier, Saskatchewan	(306) 296-4554
Frontier Fire Department	Frontier, Saskatchewan	(306) 296-4554/4778
Stewart Valley Fire Department	Stewart Valley, Saskatchewan	(306) 778-2105/2152
Swift Current Ambulance Services	Swift Current, Saskatchewan	(306) 773-2666
Swift Current Fire Department	Swift Current, Saskatchewan	(306) 778-2760
Swift Current RCMP Detachment	Swift Current, Saskatchewan	(306) 778-5550
Cereal Fire Department	Cereal, Alberta	(403) 326-2195
CFB Suffield Military Police Detachment	Ralston, Alberta	(403) 544-4303/4506
Chaplin Fire Department	Chaplin, Saskatchewan	(306) 395-2561/2598
Val Marie Ambulance Services	Val Marie, Saskatchewan	(306) 298-4911
Val Marie Fire Department	Val Marie, Saskatchewan	(306) 298-2012/2022
Abbey Fire Department	Abbey, Alberta	(306) 689-2933
Central Butte Ambulance Services	Central Butte, Saskatchewan	(306) 694-2111/4610
Climax Fire Department	Climax, Saskatchewan	(306) 293-2131
Caronport Fire Department	Caronport, Saskatchewan	(306) 756-3253

Moose Jaw Ambulance Services	Moose Jaw, Saskatchewan	(306) 694-2151
Moose Jaw EMO Services	Moose Jaw, Saskatchewan	(306) 693-9700
Maple Creek RCMP Detachment	Maple Creek, Saskatchewan	(306) 662-5550
Moose Jaw Fire Department	Moose Jaw, Saskatchewan	(306) 692-2792
Moose Jaw RCMP Detachment	Moose Jaw, Saskatchewan	(306) 691-4670
Morse Fire Department	Morse, Saskatchewan	(306) 629-3282
Morse RCMP Detachment	Morse, Saskatchewan	(306) 629-4100
Gull Lake Ambulance Services	Gull Lake, Saskatchewan	(306) 672-4704
Gull Lake EMO Services	Gull Lake, Saskatchewan	(306) 672-4704
Gull Lake Fire Department	Gull Lake, Saskatchewan	(306) 672-4273
City of Regina - Emergency Planning	Regina, Saskatchewan	(306) 777-7886
RCMP - Gull Lake Community Detachment	Swift Current, Saskatchewan	(306) 672-3140
Regina City Police Department	Regina, Saskatchewan	(306) 777-6500
Regina EMS - Ambulance	Regina, Saskatchewan	(306) 766-7007
Regina Fire Department	Regina, Saskatchewan	(306) 777-7829/7830
Rural Municipality of Riverside No.168 Fire Depart	Pennant, Saskatchewan	(306) 626-3255
Maple Creek EMO Services	Maple Creek, Saskatchewan	(306) 662-2244
Sceptre Fire Department	Sceptre, Saskatchewan	(306) 623-4244
Herbert Fire Department	Herbert, Saskatchewan	(306) 784-2400
Burstall Ambulance Services	Burstall, Saskatchewan	(306) 679-2271
Burstall EMO Services	Burstall, Saskatchewan	(306) 679-2000
Burstall Fire Department	Burstall, Saskatchewan	(306) 679-2108/2215
Cabri Ambulance Services	Cabri, Saskatchewan	(306) 587-2547
Cabri Fire Department	Cabri, Saskatchewan	(306) 587-2500
Cabri RCMP Detachment	Cabri, Saskatchewan	(306) 587-6400
Eastend Fire Department	Eastend, Saskatchewan	(306) 295-3634

Elkwater Fire Department	Elkwater, Alberta	(403) 893-2005
Shaunavon Ambulance Services	Shaunavon, Saskatchewan	(306) 297-2644
Shaunavon EMO Services	Shaunavon, Saskatchewan	(306) 297-9381
Shaunavon Fire Department	Shaunavon, Saskatchewan	(306) 297-4131
Kipling Fire Department	Kipling, Saskatchewan	(306) 736-8461
Leader Ambulance Services	Leader, Saskatchewan	(306) 628-3828
Leader EMO Services	Leader, Saskatchewan	(306) 628-3868
Leader Fire Department	Leader, Saskatchewan	(306) 628-3868
Leader RCMP Detachment	Leader, Saskatchewan	(306) 628-4600
Regina RCMP Detachment	Regina, Saskatchewan	(306) 780-5560
Richmond Ambulance Services	Leader, Saskatchewan	(306) 679-7182
RM of Moose Jaw EMO Services	Moose Jaw, Saskatchewan	(306) 692-3446
RM of Wheatland EMO Services	Mortlach, Saskatchewan	(306) 355-2233
Medicine Hat Police Service	Medicine Hat, Alberta	(403) 529-8400
Maple Creek Ambulance	Maple Creek, Saskatchewan	(306) 662-2611
Medicine Hat Fire Department	Medicine Hat, Alberta	(403) 529-8282

RESPONSE ZONE INFORMATION

Regina Pump Station / Haskett Pump Station

RESPONSE ZONE CONTACT INFORMATION

Owner Name: TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc.

Addresses: Physical Address
717 Texas Street
Houston, Texas 77002

24 Hour Emergency Contact Phone Numbers: 1-800-830-9865 (24 Hours)

Telephone/Fax: Telephone references, including 24 hour numbers, for the Facility, Owner, and Qualified Individual/Alternate Qualified Individual are provided in Figure 2.2.

Provinces/States Traversed: Saskatchewan, Manitoba

Areas/Counties Traversed: Eastern Saskatchewan, Southwestern Manitoba

INFORMATION SUMMARY

Determination of Significant and Substantial Harm (United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration):

This Response Zone has been determined to meet the significant and substantial harm classification because at least one (1) line section within the response zone has met at least one of the criteria listed in 49CFR194.103(c)(1).

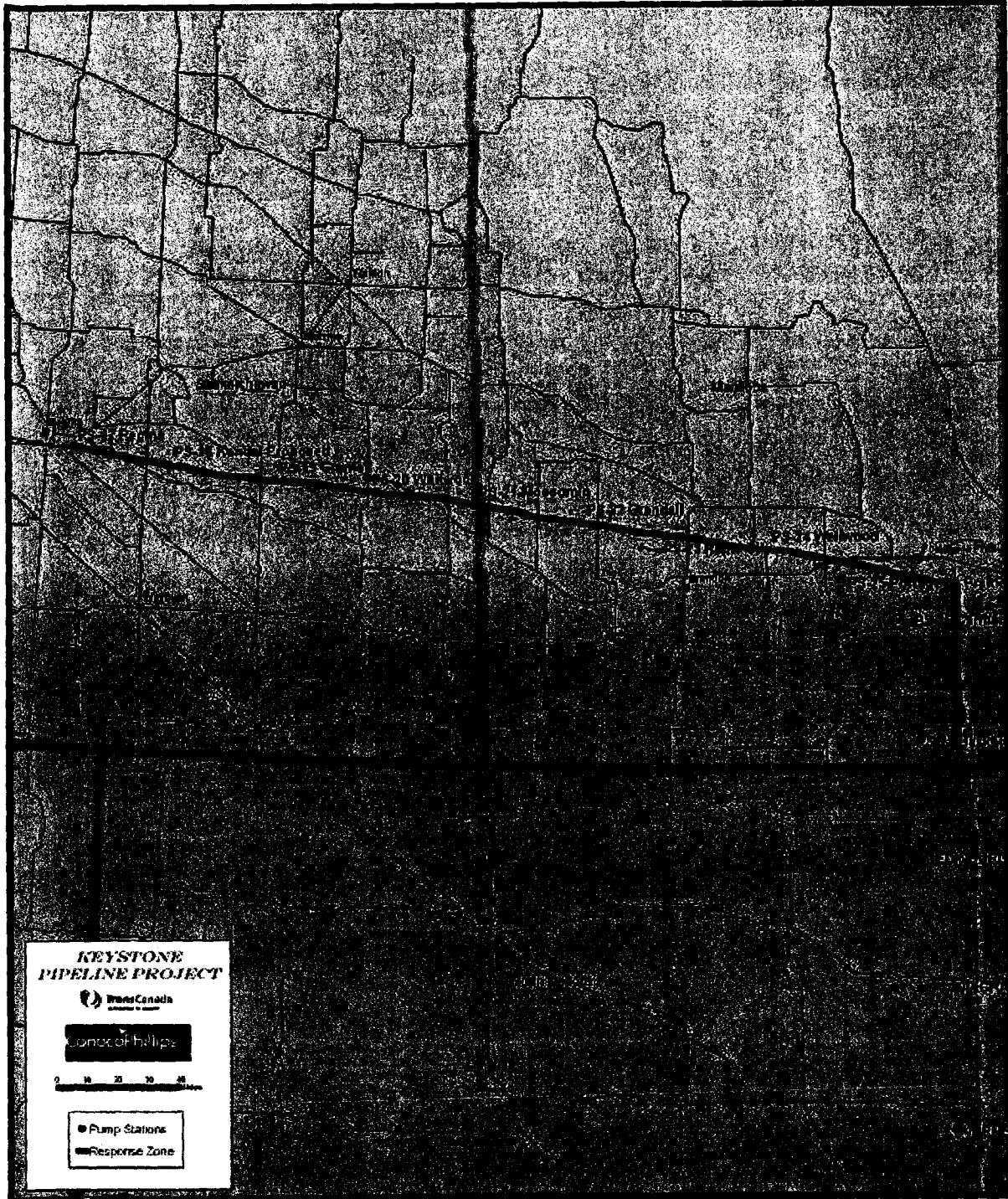
Worst Case Discharge (Refer to Appendix B for calculations):

- **Potential Oil Group:** 3
- **United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration Planning Volume:** 51,413 Bbls



Response Zone Layout Map Regina PS to Haskett PS

Map Prepared By
Response Management Associates
(204) 320 9796



RESPONSE ZONE COMPANY CONTACTS				
POSITION/TITLE	NAME	OFFICE	HOME	CELL

Area: Regina Pump Station / Haskett Pump Station

Qualified Individuals:

Qualified Individuals			
NAME	OFFICE	HOME	CELL
Randall W. Schmidgall	(204) 957-6832		
John Hayes	(403) 920-6467		(403) 461-9245

Alternate Qualified Individuals:

Alternate Qualified Individuals			
NAME	OFFICE	HOME	CELL

Pipeline Specifications:

The tables below list the pipeline facilities within the East Response Zone Response Zone.

Pipeline Specifications			
Location	Type of Oil	State	County
Regina PS / Kendal PS	Crude Oil	Saskatchewan	Eastern Saskatchewan
Kendal PS / Grenfell PS	Crude Oil	Saskatchewan	Eastern Saskatchewan
Grenfell PS / Moosomin PS	Crude Oil	Saskatchewan	Eastern Saskatchewan
Moosomin PS / Rapid City PS	Crude Oil	Manitoba	Southwestern Manitoba
Rapid PS / Portage La Prairie PS	Crude Oil	Manitoba	Southwestern Manitoba
Portage La Prairie PS / Carman PS	Crude Oil	Manitoba	Southwestern Manitoba
Carman PS / Haskett PS	Crude Oil	Manitoba	Southwestern Manitoba

Company Owned Response Equipment:

Response Equipment		
NAME	LOCATION	DESCRIPTION
Equipment Response Trailer		See Equipment List - Appendix A

Breakout Tanks:

Breakout Tanks			
AGENCY NAME	TANK NUMBER	CAPACITY (BOS)	TYPE OF OIL

EXTERNAL NOTIFICATION REFERENCES Saskatchewan

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	PHONE / FAX
Eastern Saskatchewan		
Val Marie Fire Department	Val Marie, Saskatchewan	(306) 298-2012/2022
Balgonie Fire Department	Balgonie, Saskatchewan	(306) 771-2206
Montmartre Fire Department	Montmartre, Saskatchewan	(306) 424-2040
Montmartre RCMP Detachment	Montmartre, Saskatchewan	(306) 424-6400
Moosomin Ambulance Services	Moosomin, Saskatchewan	(306) 435-2962
Moosomin Fire Department	Moosomin, Saskatchewan	(306) 435-2105
Moosomin RCMP Detachment	Moosomin, Saskatchewan	(306) 435-3361
Carry The Kettle Fire Department	Sintaluta, Saskatchewan	(306) 727-2135
White City Fire Department	White City, Saskatchewan	(306) 781-2303
Whitewood Fire Department	Whitewood, Saskatchewan	(306) 735-2331
Wolseley Fire Department	Wolseley, Saskatchewan	(306) 698-2288
Grenfell Fire Department	Grenfell, Saskatchewan	(306) 697-2217
City of Regina - Emergency Planning	Regina, Saskatchewan	(306) 777-7886
Regina City Police Department	Regina, Saskatchewan	(306) 777-6500
Regina EMS - Ambulance	Regina, Saskatchewan	(306) 766-7007
Regina Fire Department	Regina, Saskatchewan	(306) 777-7829/7830
Indian Head RCMP Detachment	Indian Head, Saskatchewan	(306) 695-5200
Indian Head Fire Department	Indian Head, Saskatchewan	(306) 695-3887
Glenavon Fire Department	Glenavon, Saskatchewan	(306) 429-2220
Grenfell Ambulance Services	Grenfell, Saskatchewan	(306) 697-2707
Kipling Ambulance Service	Kipling, Saskatchewan	(306) 736-2553

Kipling RCMP Detachment	Kipling, Saskatchewan	(306) 736-6400
Regina RCMP Detachment	Regina, Saskatchewan	(306) 780-5560

EXTERNAL NOTIFICATION REFERENCES

Manitoba

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	OFFICE / ALTERNATE
Southwestern Manitoba		
Brandon Ambulance	Brandon, Manitoba	(204) 729-2400/2406
North Eastman Health Association Inc	Pinawa, Manitoba	(204) 753-2015
Oak Bank RCMP Detachment	Oak Bank, Manitoba	(204) 444-3847
Oak River Fire Department	Oak River, Manitoba	(204) 566-2126
Shoal Lake RCMP Detachment	Shoal Lake, Manitoba	(204) 759-2390
Souris RCMP Detachment	Souris, Manitoba	(204) 483-2854
South Eastman Health/EMS	Ste. Anne, Manitoba	(204) 935-2730
Emerson Fire Department	Emerson, Manitoba	(204) 373-2335/2414
Emerson RCMP	Emerson, Manitoba	(204) 373-2505
Falcon / Whiteshell Fire Department	Falcon Lake, Manitoba	(204) 349-8772
Steinbach Ambulance Services	Steinbach, Manitoba	(204) 346-6411
Steinbach Fire Department	Steinbach, Manitoba	(204) 326-1109/9877
Steinbach RCMP Detachment	Steinbach, Manitoba	(204) 326-1234/4452
City of Brandon Emergency Management Services	Brandon, Manitoba	(204) 729-2239
St. Pierre-Jolys Fire Department	St. Pierre-Jolys, Manitoba	(204) 433-7117
St. Pierre-Jolys RCMP Detachment	St. Pierre-Jolys, Manitoba	(204) 433-7908
Ste. Anne Fire Department	Ste. Anne, Manitoba	(204) 422-9110
Ste. Anne Police Service	Ste. Anne, Manitoba	(204) 422-8209
Austin Fire Department	Austin, Manitoba	(204) 637-2169
McAuley Fire Department	McAuley, Manitoba	(204) 722-2211

Broadview Fire Department	Broadview, Saskatchewan	(306) 696-2533
Broadview RCMP Detachment	Broadview, Saskatchewan	(306) 696-5200
MacGregor Fire Department	MacGregor, Manitoba	(204) 685-2161
MacGregor RCMP	Portage la Prairie, Manitoba	(204) 857-4445
Morris RCMP Detachment	Morris, Manitoba	(204) 746-2323
Cartier Ambulance	Elie, Manitoba	(204) 353-4161
Cartier Fire Department	Elie, Manitoba	(204) 353-2214/2424
Virden & Wallace Fire Department	Virden, Manitoba	(204) 748-1304
Virden Ambulance Services	Virden, Manitoba	(204) 748-4332
Virden RCMP Detachment	Virden, Manitoba	(204) 748-2046
Whitemouth Ambulance Services	Whitemouth, Manitoba	(204) 348-7700
Whitemouth Fire Department	Whitemouth, Manitoba	(204) 348-7911
Winnipeg Fire Paramedic Service	Winnipeg, Manitoba	(204) 986-6380
Winnipeg Police Service	Winnipeg, Manitoba	(204) 986-6222
Winnipeg RCMP Detachment	Winnipeg, Manitoba	(204) 983-5420
Hadashville Ambulance Services	Hadashville, Manitoba	(204) 426-5328
MacDonald Ambulance Services	Oak Bluff, Manitoba	(204) 837-3332
Rapid City EMO	Rapid City, Manitoba	(204) 826-2679
Rapid City Fire Department	Rapid City, Manitoba	(204) 826-2652/2679
Sanford Fire Department	Sanford, Manitoba	(204) 736-2255
St. Malo Fire Department	St. Malo, Manitoba	(204) 347-5246/
St. Pierre-Jolys Ambulance Service	St. Pierre-Jolys, Manitoba	(204) 433-7701
Hamiota - Ambulance EMS	Hamiota, Manitoba	(204) 764-4207
Gladstone RCMP Detachment	Gladstone, Manitoba	(204) 385-3035
Hamiota Fire Department	Hamiota, Manitoba	(204) 764-3050/3055
Hamiota RCMP Detachment	Hamiota, Manitoba	(204) 759-2704/2732

Headingley Fire Department	Headingley, Manitoba	(204) 837-5766
Headingley RCMP Detachment	Headingley, Manitoba	(204) 888-0358
Headingley Traffic Services	Winnipeg, Manitoba	(204) 984-6911
Ile des Chenes Ambulance Services	St. Pierre-Jolys, Manitoba	(204) 433-3330
Brandon Fire Department	Brandon, Manitoba	(204) 729-2400/2406
Brandon RCMP Detachment	Brandon, Manitoba	(204) 726-7500/7522
Carberry - Assiniboine EMS	Carberry, Manitoba	(204) 834-3548
Carberry Ambulance Services	Carberry, Manitoba	(204) 834-3548
Carberry Fire Department	Carberry, Manitoba	(204) 834-2212
Carberry RCMP Detachment	Carberry, Manitoba	(204) 834-2905
Miniota Fire Department	Miniota, Manitoba	(204) 567-3683/3813
Minnedosa Ambulance Services	Minnedosa, Manitoba	(204) 867-5555
Minnedosa EMO Services	Minnedosa, Manitoba	(204) 867-5273
Minnedosa Fire Department	Minnedosa, Manitoba	(204) 867-2727
Minnedosa RCMP Detachment	Minnedosa, Manitoba	(204) 867-2916
Emerson Ambulance Department	Emerson, Manitoba	(204) 373-2002
Neepawa Ambulance Services	Neepawa, Manitoba	(204) 476-7840
Neepawa Fire Department	Neepawa, Manitoba	(204) 476-7654
Neepawa RCMP Detachment	Neepawa, Manitoba	(204) 476-7340
Portage la Prairie Ambulance Central Region Health	Portage la Prairie, Manitoba	(204) 857-5444
Portage la Prairie Fire Department	Portage la Prairie, Manitoba	(204) 239-5154
Portage la Prairie RCMP Detachment	Portage la Prairie, Manitoba	(204) 857-8767/4445
RM of Reynolds Fire Department	Hadashville, Manitoba	(204) 426-2265/2266
Richer Fire Department	Richer, Manitoba	(204) 422-5929
Ritchot Fire Department	Ile Des Chenes, Manitoba	(204) 981-6782
Rivers Ambulance Services	Rivers, Manitoba	(204) 328-6201

Rivers Fire Department	Rivers, Manitoba	(204) 328-7437/7930
Rivers Police Services	Rivers, Manitoba	(204) 328-7430
RM of Tache Fire Department	Lorette, Manitoba	(204) 878-9977
MacGregor Ambulance Services	MacGregor, Manitoba	(204) 685-2161
Dominion City Fire Department	Dominion City, Manitoba	(204) 427-2628

RESPONSE ZONE INFORMATION

North Dakota, South Dakota, Nebraska

RESPONSE ZONE CONTACT INFORMATION

Owner Name: TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc.

Addresses: Physical Address
717 Texas Street
Houston, Texas 77002

24 Hour Emergency Contact Phone Numbers: 1-800-830-9865 (24 Hours)

Telephone/Fax: Telephone references, including 24 hour numbers, for the Facility, Owner, and Qualified Individual/Alternate Qualified Individual are provided in Figure 2.2.

Provinces/States Traversed: North Dakota, South Dakota, Nebraska

Areas/Counties Traversed: Cavalier, Pembina, Walsh, Nelson, Steele, Barnes, Ransom, Sargent, Marshall, Day, Clark, Beadle, Kingsbury, Miner, Hanson, McCook, Hutchinson, Yankton, Cedar, Wayne, Stanton, Platte, Colfax, Butler, Seward, Jefferson, Saline, Gage

INFORMATION SUMMARY

Determination of Significant and Substantial Harm (United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration):

This Response Zone has been determined to meet the significant and substantial harm classification because at least one (1) line section within the response zone has met at least one of the criteria listed in 49CFR194.103(c)(1).

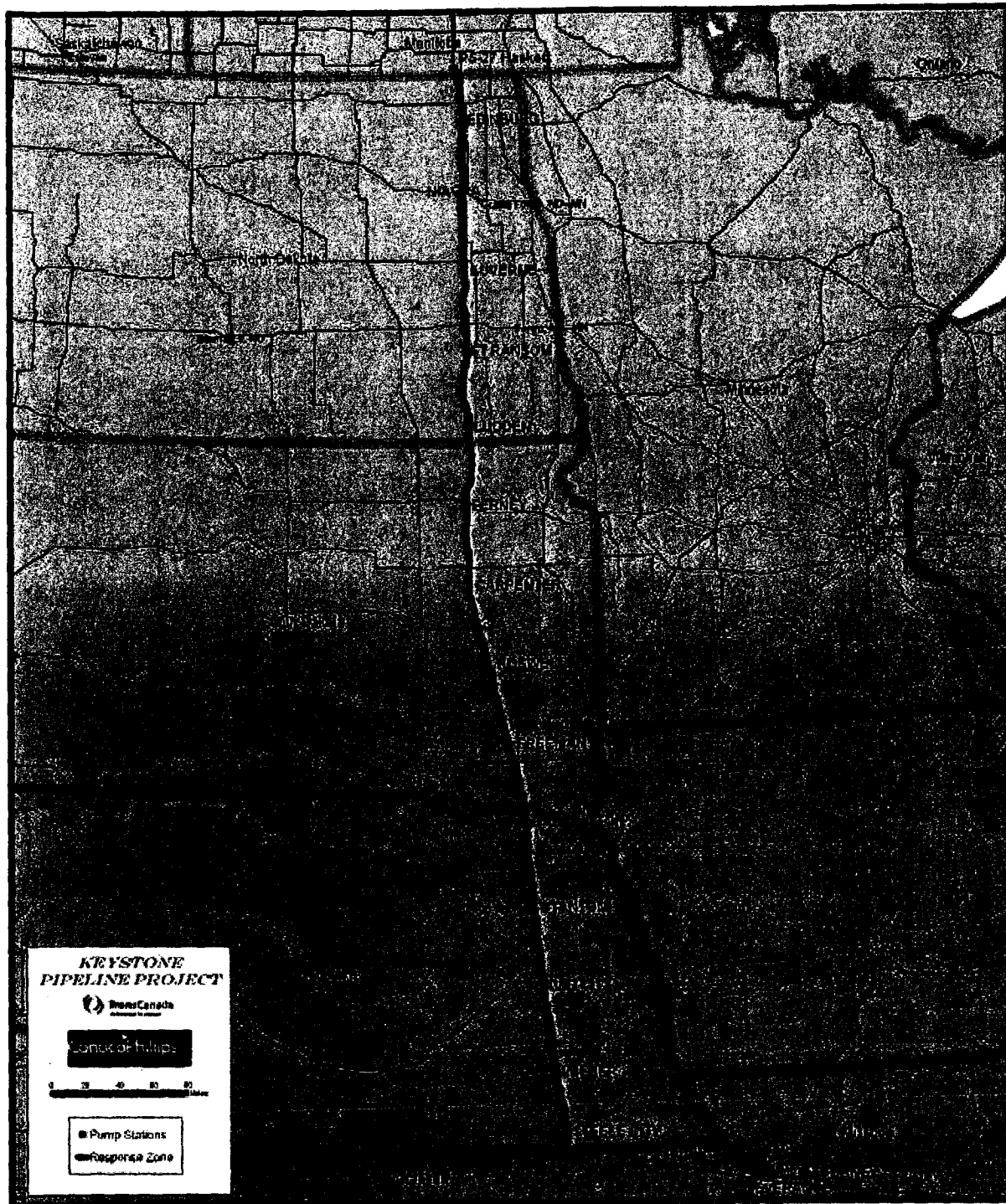
Worst Case Discharge (Refer to Appendix B for calculations):

- **Potential Oil Group:** 3
- **United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration Planning Volume:** 27,329 Bbls



Response Zone Layout Map North Dakota, South Dakota, Nebraska

Map Prepared By
Response Management Associates
(281) 320 9794



RESPONSE ZONE COMPANY CONTACTS				
POSITION/TITLE	NAME	OFFICE	HOME	CELL

Area: North Dakota, South Dakota, Nebraska

Qualified Individuals:

Qualified Individuals			
NAME	OFFICE	HOME	CELL
Rodrick McGillivray	(605) 692-1415 X3311	(605) 692-4306	(605) 695-0214
Wayne Barreth	(406) 787-6372 ext. 26		(701) 770-6540
John Hayes	(403) 920-6467		(403) 461-9245

Alternate Qualified Individuals:

Alternate Qualified Individuals			
NAME	OFFICE	HOME	CELL

Pipeline Specifications:

The tables below list the pipeline facilities within the East Response Zone Response Zone.

Pipeline Specifications			
Location	Type of Oil	State	County
US-CAN Border / Edinburg PS	Crude Oil	North Dakota	Cavalier, Pembina, Walsh
Edinburg PS / Niagara PS	Crude Oil	North Dakota	Walsh, Nelson
Niagara PS / Luverne PS	Crude Oil	North Dakota	Nelson, Steele
Luverne PS / Fort Ransom PS	Crude Oil	North Dakota	Steele, Barnes, Ransom
Fort Ransom PS / Ludden PS	Crude Oil	North Dakota	Ransom, Sargent
Ludden PS / Ferney PS	Crude Oil	North Dakota, South Dakota	Sargent, Marshall, Day
Ferney PS / Carpenter PS	Crude Oil	South Dakota	Day, Clark
Carpenter PS / Roswell PS	Crude Oil	South Dakota	Clark, Beadle, Kingsbury, Miner
Roswell PS / Freeman PS	Crude Oil	South Dakota	Miner, Hanson, McCook, Hutchinson
Freeman PS / Hartington PS	Cude Oil	Nebraska, South Dakota	Hutchinson, Yankton, Cedar

Hartington PS / Stanton PS	Crude Oil	Nebraska	Cedar, Wayne, Stanton
Stanton PS / David City PS	Crude Oil	Nebraska	Stanton, Platte, Colfax, Butler
David City PS / Wilber PS	Crude Oil	Nebraska	Butler, Seward, Saline
Wilber PS/Steele City PS	Crude Oil	Nebraska	Saline, Jefferson
Steele City / State Line	Crude Oil	Nebraska	Jefferson, Gage

Company Owned Response Equipment:

Response Equipment		
NAME	LOCATION	DESCRIPTION
Equipment Responses Trailer		See Equipment List - Appendix A

Breakout Tanks:

Breakout Tanks			
FACILITY NAME	TANK NUMBER	CAPACITY (Bbls)	TYPE OF OIL

EXTERNAL NOTIFICATION REFERENCES

Nebraska

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	OFFICE ALTERNATE
Cedar		
Cedar County	Hartington, Nebraska	(402) 254-7411
Cedar County (LEPC)	Hartington, Nebraska	(402) 254-7411
Cedar County Sheriff & Emergency Mgmt.	Hartington, Nebraska	(402) 254-6884
City of Hartington	Hartington, Nebraska	(402) 254-6353
Wayne		
City of Wayne	Wayne, Nebraska	(402) 375-1733
Wayne County (LEPC)	Wayne, Nebraska	(402) 833-5190
City of Wayne Fire Department	Wayne, Nebraska	(402) 375-1122
City of Wayne Electric Distribution Department	Wayne, Nebraska	(402) 375-2896
City of Wayne Police Department	Wayne, Nebraska	(402) 375-2626
City of Wayne Public Works Department	Wayne, Nebraska	(402) 375-1300
City of Wayne Water Department	Wayne, Nebraska	(402) 375-5250
Stanton		
Stanton County LEPC	Stanton, Nebraska	(402) 439-2631
Stanton County Sheriff	Stanton, Nebraska	(402) 439-2212
City of Stanton	Stanton, Nebraska	(402) 439-2119
Village of Pilger	Stanton, Nebraska	(402) 396-3563
Platte		
Platte County LEPC	Columbus, Nebraska	(402) 564-1206
Platte County Sheriff	Columbus, Nebraska	(402) 564-3229
City of Columbus	Columbus, Nebraska	(402) 562-4224
Colfax		

Colfax County	Schuyler, Nebraska	(402) 352-8502
Colfax County LEPC	Schuyler, Nebraska	(402) 352-8522
Colfax County Sheriff	Schuyler, Nebraska	(402) 352-8526
Village of Leigh	Leigh, Nebraska	(402) 487-3303
Village of Richland	Richland, Nebraska	(402) 564-0609
City of Schuyler Schools	Schuyler, Nebraska	(402) 352-3527
Butler		
David City Electric & Light Department	David City, Nebraska	(402) 367-3197
David City Park & Auditorium Department	David City, Nebraska	(402) 367-3914
David City Police Department	David City, Nebraska	(402) 367-3133
David City Power Plant	David City, Nebraska	(402) 367-3138
David City Water & Sewer Department	David City, Nebraska	(402) 367-3132
Butler County First Responder / Sheriff	David City, Nebraska	(402) 367-7400
Butler County LEPC	David City, Nebraska	(402) 367-3125
Seward		
Village of Bee	Bee, Nebraska	(402) 643-6247
Village of Goehner	Goehner, Nebraska	(402) 534-4311
Village of Staplehurst	Staplehurst, Nebraska	(402) 535-2507
City of Milford	Milford, Nebraska	(402) 761-3247
City of Seward	Seward, Nebraska	(402) 643-2928
City of Seward Electric Department	Seward, Nebraska	(402) 643-3151
City of Seward Fire Department	Seward, Nebraska	(402) 643-6088
City of Seward Police Department	Seward, Nebraska	(402) 643-2759
City of Seward Sheriff	Seward, Nebraska	(402) 643-2359
City of Seward Water Department	Seward, Nebraska	(402) 643-3433
Seward County	Seward, Nebraska	(402) 643-6262
Seward County LEPC	Seward, Nebraska	(402) 643-4722

Jefferson		
Village of Diller	Diller, Nebraska	(402) 793-5991
City of Fairbury	Fairbury, Nebraska	(402) 729-2476
Jefferson Co. Emergency Management Agency/Planning	Fairbury, Nebraska	(402) 729-3602
Jefferson County LEPC	Fairbury, Nebraska	(402) 729-3602
Jefferson County Sheriff	Fairbury, Nebraska	(402) 729-2284
Village of Plymouth	Plymouth Village, Nebraska	(402) 656-3132
Saline		
City of Wilber	Wilber, Nebraska	(402) 821-2320
City of Wilber Fire Department	Wilber, Nebraska	(402) 821-2647
City of Wilber Police Department	Wilber, Nebraska	(402) 821-2201
Village of Dorchester	Dorchester, Nebraska	(402) 946-3201
Village of Swanton	Swanton, Nebraska	(402) 448-2285
Saline County	Wilber, Nebraska	(402) 826-2363
Saline County LEPC	Wilber, Nebraska	(402) 821-3010
Saline County Sheriff	Wilber, Nebraska	(402) 821-2111
Gage		
Gage County LEPC	Beatrice, Nebraska	(402) 223-1305
Gage County Sheriff / First Responder	Beatrice, Nebraska	(402) 223-1382

EXTERNAL NOTIFICATION REFERENCES**North Dakota****OTHER POTENTIAL REQUIRED NOTIFICATIONS****DIAL 911** for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	OFFICE ALTERNATE
Cavalier		
Fremont Township	Walhalla, North Dakota	(701) 549-2748
Cavalier County Fire Department	Langdon, North Dakota	(701) 256-3911
Cavalier County LEPC	Langdon, North Dakota	(701) 256-3911
Cavalier County Water Resource	Langdon, North Dakota	(701) 256-2220
Cavalier County	Langdon, North Dakota	(701) 256-2229
Pembina		
Pembina County	Cavalier, North Dakota	(701) 265-4231
Pembina County LEPC	Cavalier, North Dakota	(701) 265-4849
Pembina County Water Resource Board	Cavalier, North Dakota	(701) 265-4511
City of Cavalier	Cavalier, North Dakota	(701) 265-8800
City of Walhalla	Walhalla, North Dakota	(701) 549-3176
Drayton, North Dakota	Drayton, North Dakota	(701) 265-4231
Walsh		
Norton Township	Fordville, North Dakota	(701) 593-6249
Town of Norton	Park River, North Dakota	(701) 331-0810
Vesta Township	Adams, North Dakota	(701) 944-2790
Walsh County LEPC	Grafton, North Dakota	(701) 352-2311
City of Grafton	Grafton, North Dakota	(701) 352-1561
City of Minto	Minto, North Dakota	(701) 248-3480
City of Park River	Park River, North Dakota	(701) 284-6426
City of Lankin	Lankin, North Dakota	(701) 593-6322

Golden Township	Park River, North Dakota	(701) 284-6846
Nelson		
Nelson County Fire Department	Lakota, North Dakota	(701) 247-2474
Nelson County First Responder	Lakota, North Dakota	(701) 247-2474
Petersburg Township, Nelson County	Petersburg, North Dakota	(701) 345-6134
Adler Township, Nelson County	Petersburg, North Dakota	(701) 345-8287
Nelson County	Lakota, North Dakota	(701) 247-2463
Dodds Township, Nelson County	Lakota, North Dakota	(701) 247-2279
Michigan City	Michigan, North Dakota	(701) 259-2553
Steele		
Steele County LEPC	Finley, North Dakota	(701) 524-2742
Steele County	Finley, North Dakota	(701) 945-2572
City of Finley	Finley, North Dakota	(701) 352-1651
Barnes		
Township of Baldwin	Hope, North Dakota	(701) 945-2436
Township of Cuba	Valley City, North Dakota	(701) 845-0533
Valley City	Valley City, North Dakota	(701) 845-1700 ext. 17
Barnes County	Sanborn, North Dakota	(701) 646-6983
Barnes County Emergency Manager (LEPC)	Valley City, North Dakota	(701) 845-8510
Township of Alta	Valley City, North Dakota	(701) 845-2744
Township of Grand Prairie	Valley City, North Dakota	(701) 845-2544
Township of Nollimier	Valley City, North Dakota	(701) 845-3835
Township of Norma	Oriska, North Dakota	(701) 924-8629
Ransom		
City of Lisbon	Lisbon, North Dakota	(701) 683-4472 - Rvrsd Bldg Ctr
Ransom County LEPC	Lisbon, North Dakota	(701) 683-5823, x125
Sargent		
Southwest Township	Forman, North Dakota	(701) 724-3452

Verner Township	Oakes, North Dakota	(701) 742-3711
Verner Township	Gwinner, North Dakota	(701) 753-7161
City of Forman	Forman, North Dakota	(701) 724-3673
Sargent County First Responder	Forman, North Dakota	(701) 724-3302
Sargent County LEPC	Forman, North Dakota	(701) 724-6241, x113
Jackson Township	Forman, North Dakota	(701) 724-3420
Denver Township	Gwinner, North Dakota	(701) 753-7671

EXTERNAL NOTIFICATION REFERENCES

South Dakota

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	PHONE NUMBER
Marshall		
City of Britton, South Dakota	Britton, South Dakota	(605) 448-5721
BDM Rural Water System, Inc.	Britton, South Dakota	(605) 448-5417
Marshall County LEPC	Britton, South Dakota	(605) 448-2401
Marshall County South Dakota	Britton, South Dakota	(605) 448-2116
Mc Cook Co., SD County Emergency Management	Britton, South Dakota	(605) 425-2791
Day		
City of Webster, South Dakota	Webster, South Dakota	(605) 345-3241
Day County, South Dakota LEPC	Webster, South Dakota	(605) 345-9500
Clark		
City of Clark, South Dakota	Clark, South Dakota	(605) 532-3512
Clark County, South Dakota	Clark, South Dakota	(605) 532-5921
Clark County, South Dakota LEPC	Clark, South Dakota	(605) 532-5953
Beadle		
Beadle County, South Dakota	Huron, South Dakota	(605) 352-5010
Beadle County, South Dakota LEPC	Huron, South Dakota	(605) 353-8421
City of Huron, South Dakota	Huron, South Dakota	(605) 353-8500
Kingsbury		
City of De Smet, South Dakota	De Smet, South Dakota	(605) 854-3731
Kingsbury County Fire Department / First Responder	De Smet, South Dakota	(605) 854-3832
Kingsbury County, South Dakota	De Smet, South Dakota	(605) 854-3832
Kingsbury County, South Dakota LEPC	De Smet, South Dakota	(605) 854-3711

Miner		
Miner County Fire Department / First Responder	Howard, South Dakota	(605) 772-4671
Miner County, South Dakota LEPC	Howard, South Dakota	(605) 772-4533
Hanson		
Spring Lake Township	Canova, South Dakota	(605) 523-2546
Hanson County, South Dakota	Alexandria, South Dakota	(605) 239-4717
Hanson County Fire Department	Alexandria, South Dakota	(605) 239-4717
Hanson County, South Dakota LEPC	Alexandria, South Dakota	(605) 239-4218
Edgerton Township	Alexandria, South Dakota	(605) 239-4361
McCook		
McCook County, South Dakota LEPC	Salem, South Dakota	(605) 425-2466
McCook Co., SD County Emergency Management	Salem, South Dakota	(605) 425-2791
Hutchinson		
Pleasant Township	Bridgewater, South Dakota	(605) 449-4669
Valley Township	Menno, South Dakota	(605) 387-5480
Molan Township	Menno, South Dakota	(605) 387-5250
City of Olivet	Olivet, South Dakota	(605) 387-5596
Hutchinson County, South Dakota	Menno, South Dakota	(605) 387-4217
Hutchinson County, South Dakota LEPC	Menno, South Dakota	(605) 387-5104
Grandview Township	Freeman, South Dakota	(605) 925-4142
Yankton		
Utica Township	Utica, South Dakota	(605) 665-1341
City of Yankton Fire Department	Yankton, South Dakota	(605) 668-5210
City of Yankton, Department of Public Works	Yankton, South Dakota	(605) 668-5251
City of Yankton, South Dakota	Yankton, South Dakota	(605) 668-5210
Yankton County, South Dakota	Yankton, South Dakota	(605) 668-3567
Yankton County LEPC	Yankton, South Dakota	(605) 668-5289

Yankton County Fire Department	Yankton, South Dakota	(605) 668-3567
Jamesville Township	Jamesville, South Dakota	(605) 387-5756
Mission Hill Township	Mission Hill, South Dakota	(605) 665-7592

RESPONSE ZONE INFORMATION

Kansas, Missouri, Illinois

RESPONSE ZONE CONTACT INFORMATION

Owner Name: TransCanada Keystone Limited Partnership / TC Oil Pipeline Operations, Inc.

Addresses: Physical Address
717 Texas Street
Houston, Texas 77002

24 Hour Emergency Contact Phone Numbers: 1-800-830-9865 (24 Hours)

Telephone/Fax: Telephone references, including 24 hour numbers, for the Facility, Owner, and Qualified Individual/Alternate Qualified Individual are provided in Figure 2.2.

Provinces/States Traversed: Kansas, Missouri, Illinois

Areas/Counties Traversed: Marshall, Nemaha, Brown, Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain, Montgomery, Lincoln, St. Charles, Madison, Bond, Fayette, Marion, Doniphan

INFORMATION SUMMARY

Determination of Significant and Substantial Harm (United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration):

This Response Zone has been determined to meet the significant and substantial harm classification because at least one (1) line section within the response zone has met at least one of the criteria listed in 49CFR194.103(c)(1).

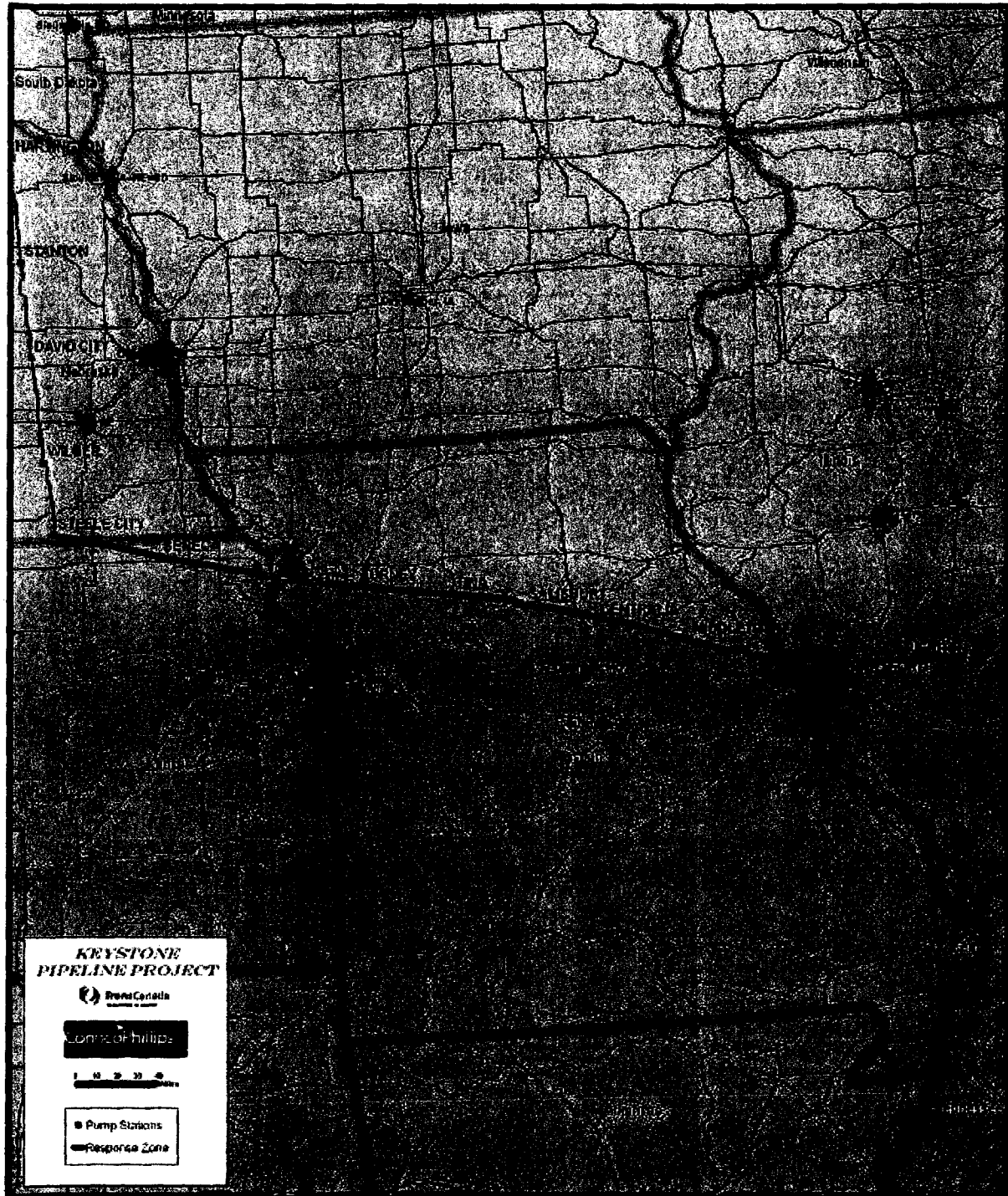
Worst Case Discharge (Refer to Appendix B for calculations):

- Potential Oil Group: 3
- United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration Planning Volume: 24,069 Bbls



Response Zone Layout Map Kansas, Missouri, Illinois

Map Prepared By
Response Management Associates
(211) 220 9794



RESPONSE ZONE COMPANY CONTACTS				
POSITION/TITLE	NAME	OFFICE	HOME	CELL

Area: Kansas, Missouri, Illinois

Qualified Individuals:

Qualified Individuals			
NAME	OFFICE	HOME	CELL
Rodrick McGillivray	(605) 692-1415 X3311	(605) 692-4306	(605) 695-0214
Wayne Barreth	(406) 787-6372 ext. 26		(701) 770-6540
John Hayes	(403) 920-6467		(403) 461-9245

Alternate Qualified Individuals:

Alternate Qualified Individuals			
NAME	OFFICE	HOME	CELL

Pipeline Specifications:

The tables below list the pipeline facilities within the East Response Zone Response Zone.

Pipeline Specifications			
Location	Product	State	County
State Line / Seneca PS	Crude Oil	Kansas	Marshall, Nemaha
Seneca PS / Severance PS	Crude Oil	Kansas	Nemaha, Brown, Doniphan
Severance PS / Turney PS	Crude Oil	Kansas, Missouri	Doniphan, Buchanan, Clinton
Turney PS / Tina PS	Crude Oil	Missouri	Clinton, Caldwell, Carroll
Tina PS / Salisbury PS	Crude Oil	Missouri	Carroll, Chariton
Salisbury PS / Centralia PS	Crude Oil	Missouri	Chariton, Randolph, Audrain
Centralia PS / Middletown PS	Crude Oil	Missouri	Audrain, Montgomery
Middletown PS / Saint Paul PS	Crude Oil	Missouri	Montgomery, Lincoln
Saint Paul PS / Hartford PS	Crude Oil	Illinois, Missouri	Lincoln, St. Charles, Madison
Hartford PS / Patoka Terminal	Crude Oil	Illinois	Madison, Bond, Fayette, Marion

Company Owned Response Equipment:

Response Equipment		
NAME	LOCATION	DESCRIPTION
Equipment Response Trailer		See Equipment List - Appendix A

Breakout Tanks:

Breakout Tanks			
FACILITY NAME	TANK NUMBER	CAPACITY (Bbls)	TYPE (OIL)

EXTERNAL NOTIFICATION REFERENCES

Illinois

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	PHONE / ALTERNATE
Madison		
City of Edwardsville	Edwardsville, Illinois	(618) 692 7520
City of Edwardsville Fire Department	Edwardsville, Illinois	(618) 692-7541
City of Edwardsville, Illinois Public Works	Edwardsville, Illinois	(618) 692-7535
City of Wood River Fire Department	Wood River, Illinois	(618) 251-3100
Madison County	Edwardsville, Illinois	(618) 692-4482
Madison County (LEPC)	Edwardsville, Illinois	(618) 296 4482
Madison Co. IL Emergency Svcs. and Disaster Agency	Edwardsville, Illinois	(618) 692-0537
City of Highland Fire Department	Highland, Illinois	(618) 654-5901
Madison Co. Ambulance (Fire Dept) First Respons	Edwardsville, Illinois	(618) 692-4433
Bond		
Bond County (LEPC)	Greenville, Illinois	(618) 644-1442
Bond County First Responder (Fire Department)	Greenville, Illinois	(618) 664-2151
Bond Co. IL Emergency Svcs. and Disaster Agency	Greenville, Illinois	(618) 644-1442
City of Greenville	Greenville, Illinois	(618) 664-1644
City of Greenville Public Works Department	Greenville, Illinois	(618) 664-1644
Village of Pocahontas	Pocahontas, Illinois	(618) 669-2431
Fayette		
Fayette County	Vandalia, Illinois	(618) 283-5000
Fayette County (LEPC)	Vandalia, Illinois	(618) 283-4292
Fayette County Ambulance / First Responder	Vandalia, Illinois	(618) 283-2141

City of Alton Fire Department	Alton, Illinois	(618) 463-3565
City of Vandalia, Illinois	Vandalia, Illinois	(618) 283-1196
City of Vandalia Public Works Department	Vandalia, Illinois	(618) 283-1296
Marion		
Army Corps of Engineers - St. Louis District	Illinois	(314) 331-8583
City of Patoka	Patoka, Illinois	(618) 432-5855
City of Salem Marion County	Salem, Illinois	(618) 548-2222
Marion County (LEPC)	Salem, Illinois	(618) 548-2600
Marion Co. Ambulance (Fire Dept) / First Response	Salem, Illinois	(618) 548-2141
Marion County Department of Environmental Quality	Salem, Illinois	(618) 692-0537

EXTERNAL NOTIFICATION REFERENCES**Kansas****OTHER POTENTIAL REQUIRED NOTIFICATIONS****DIAL 911** for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	OFFICE / ALTERNATE
Marshall		
City of Axtell	Axtell, Kansas	(785) 736-2834
City of Beattie	Beattie, Kansas	(785) 353-2527
City of Summerfield	Summerfield, Kansas	(785) 244-6531
Marshall County LEPC First Responder	Marysville, Kansas	(785) 562-3141
Marshall County Public Works Department	Marysville, Kansas	(785) 562-5349
Nemaha		
Nemaha Co. Emergency Management / First Responder	Seneca, Kansas	(785) 336-2135
City of Oneida Sewerage Department	Oneida, Kansas	(785) 336-3038
City of Seneca	Seneca, Kansas	(785) 336-2747
Brown		
Padonia Township	Hiawatha, Kansas	(785) 742-2777
Walnut Township	Walnut, Kansas	(785) 467-3250
Mission Township	Hiawatha, Kansas	(785) 474-3564
Brown County Fire Department	Hiawatha, Kansas	(785) 742-7125
City of Hiawatha	Hiawatha, Kansas	(785) 742-2967
Morrill Township	Morrill, Kansas	(785) 459-2277
City of Fairview	Fairview, Kansas	(785) 467-3521
City of Hamlin	Hamlin, Kansas	(785) 742-2995
City of Robinson	Robinson, Kansas	(785) 544-7766
Irving Township	Hiawatha, Kansas	(785) 544-6691
Brown County LEPC	Hiawatha, Kansas	(785) 547-3415

Powhattan Township	Powhattan, Kansas	(785) 467-3520
Robinson Township	Robinson, Kansas	(785) 544-6831
Doniphan		
City of Denton	Denton, Kansas	(785) 359-6952
City of Denton Fire Department	Denton, Kansas	(785) 359-6641
Wayne Township	Troy, Kansas	(785) 985-2400
Wold River Township	Severance, Kansas	(785) 442-3775
City of Troy	Troy, Kansas	(785) 985-2101
City of Severance	Severance, Kansas	(785) 359-6589
Independence Township	Independence, Kansas	(785) 988-4425
Doniphan Co. Emergency Management / Zoning Dept.	Troy, Kansas	(785) 985-2229
Doniphan County Fire District No. 1	Wathena, Kansas	(785) 989-3265
Doniphan County Fire District No. 2	Highland, Kansas	(785) 359-6699
Doniphan County Fire District No. 3	Denton, Kansas	(785) 359-6715
Doniphan County Fire District No. 4	Elwood, Kansas	(913) 365-8697
Doniphan County Fire District No. 5	Troy, Kansas	(785) 985-2145
Union Township	Denton, Kansas	

EXTERNAL NOTIFICATION REFERENCES

Missouri

OTHER POTENTIAL REQUIRED NOTIFICATIONS

DIAL 911 for all Police, Fire and Ambulance Services.

* Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification.

AGENCY	LOCATION	OFFICE ALTERNATE
Buchanan		
South Buchanan Fire District, Buchanan County	Faucett, Missouri	(816) 253-9018
Sugar Lake Fire District, Buchanan County	Rushville, Missouri	(913) 367-2655
Maxwell Heights Fire District, Buchanan County	St. Joseph, Missouri	(816) 233-4160
Colony Fire District	St. Joseph, Missouri	(816) 232-5307
Village of Agency Clerk	Agency, Missouri	(816) 253-9176
Village of Dekalb Clerk	Amity, Missouri	(816) 685-3305
Village of Lewis & Clark Clerk	Lewis & Clark, Missouri	(816) 579-5737
City of St Joseph Council	St Joseph, Missouri	(816) 271-4640
City of St Joseph LEPC	St Joseph, Missouri	(816) 271-4603
Rushville Fire District, Buchanan County	Rushville, Missouri	(816) 688-7900
San Antonio Fire District, Buchanan County	San Antonio, Missouri	(816) 232-1664
Buchanan County LEPC	St. Joseph, Missouri	(816) 271-1574
Easton Fire District, Buchanan County	Easton, Missouri	(816) 262-7057
Edgerton Fire District, Buchanan County	Edgerton, Missouri	(816) 790-3362
Dearborn Fire District, Buchanan County	Dearborn, Missouri	(816) 992-8919
City of Gower Clerk	Gower, Missouri	
Clinton		
Osborne Fire District	Osborne, Missouri	(816) 675-2549
Plattsburg City Hall	Plattsburg, Missouri	(816) 539-2148
Plattsburg Fire District	Plattsburg, Missouri	(816) 539-3017

Stewartsville Fire District	Stewartsville, Missouri	(816) 669-3387
City of Cameron	Cameron, Missouri	(816) 632-2177
City of Cameron Fire Department	Cameron, Missouri	(816) 632-2345
City of Cameron Police Department / First Responder	Cameron, Missouri	(816) 632-6521
City of Cameron Public Works Department	Cameron, Missouri	(816) 632-2177
City of Cameron Water and Electric Department	Cameron, Missouri	(816) 632-2177
Clinton County PWSD No 1	Plattsburg, Missouri	(816) 370-2528
Clinton County PWSD No 4	Plattsburg, Missouri	(816) 580-7211
Village of Turney	Turney, Missouri	(816) 664-2009
City of Lathrop	Lathrop, Missouri	(816) 740-4251
Lathrop Fire District	Lathrop, Missouri	(816) 740-3218
Caldwell		
Cowgill No 1 Water District	Cowgill, Missouri	(660) 255-4421
Caldwell County	Kingston, Missouri	(816) 586-2571
Grant Township	Livonia, Missouri	(660) 354-2337
Rockford Township	Polo, Missouri	
Carroll		
Norborne Fire Protection District	Norborne, Missouri	(660) 594-3505
North Central Fire Protection District	Bogard, Missouri	(660) 731-5371
Stet Fire Protection District	Norborne, Missouri	(660) 484-3179
City of Carrollton	Carrollton, Missouri	(660) 542-1414
Carroll County	Carrollton, Missouri	(660) 542-0615
Carroll County Fire Protection District No. 1	Carrollton, Missouri	(660) 542-2178
Hale Fire Protection District	Hale, Missouri	(660) 565-2212
Charlton		
Charlton County, Missouri LEPC/First Responder	Keytesville, Missouri	(660) 288-3277

Chariton County, Missouri	Keytesville, Missouri	(660) 288-3200
City of Keytesville, Missouri	Keytesville, Missouri	(660) 288-3745
City of Salisbury, Missouri	Salisbury, Missouri	(660) 388-6197
Randolph		
Randolph County County Government	Huntsville, Missouri	(660) 277-4714
City of Huntsville, Missouri	Huntsville, Missouri	(660) 277-3110
City of Moberly, Missouri Public Works	Moberly, Missouri	(660) 269-8705
Randolph County LEPC	Huntsville, Missouri	(573) 564-2283
Audrain		
Audrain County, Missouri	Mexico, Missouri	(573) 473-5822
Audrain County, Missouri LEPC	Mexico, Missouri	(660) 582-8183
City of Mexico, Missouri	Mexico, Missouri	(573) 581-2100
Montgomery		
Montgomery County	Montgomery City, Missouri	(573) 564-8084
Montgomery County LEPC	Montgomery City, Missouri	(573) 564-2283
City of Montgomery, Missouri	Montgomery City, Missouri	(573) 564-3160
Lincoln		
Lincoln County Fire Protection District	Troy, Missouri	(636) 528-8567
Lincoln County, Missouri	Troy, Missouri	(636) 528-6300
Lincoln County, Missouri LEPC	Troy, Missouri	(636) 528-6182
St. Charles		
O'Fallon Fire Protection District	O'Fallon, Missouri	(636) 272-3493
O'Fallon Township	O'Fallon, Missouri	(636) 978-4144
Dardenne Prairie Township	O'Fallon, Missouri	(636) 300-0014
Central County Fire & Rescue	St. Peters, Missouri	(636) 970-9700
Wentzville Fire Protection District	Wentzville, Missouri	(636) 327-6239
Wentzville Township	Wentzville, Missouri	(636) 332-5101
City of O'Fallon, Missouri	O'Fallon, Missouri	(636) 379-5500

City of St. Charles City/Municipal Government	St. Charles City, Missouri	(636) 949-3260
City of St. Charles Fire Department	St. Charles, Missouri	(636) 949-3250
City of St. Peters, Missouri	St. Peters, Missouri	(636) 477-9920
St. Charles County Government	St. Charles, Missouri	(636) 949-7455
St. Charles County First Responder	St. Charles, Missouri	(636) 949-1818
St. Charles County LEPC	St. Charles, Missouri	(636) 949-3023

Tactical Control Plans

**TransCanada Keystone Limited Partnership
TC Oil Pipeline Operations Inc.
Keystone Pipeline System
Emergency Response Plan
Tactical Control Plans**

October 2008

Response Management Associates, Inc.
6620 Cypresswood Drive,
Suite 200
Spring, TX 77379
281-320-9796
www.rmaworld.com