



NEBC Corporate

Emergency Response Plan

BC OGC 24 Hour Incident Reporting 1-800-663-3456
Enercapita 24 Hour Emergency Line: 866-556-7838



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December 6, 2022

Revision History

This Emergency Response Plan is effective December 6, 2023. The company's Emergency Response Program Coordinator is responsible for updating this plan annually or as required. Any errors or omissions in the plan should be brought to their attention.

Date of Update Inserted Into ERP:

Signature:

ERP Revision Due Date: December 2024				
Date of Revision	Date of Issue	Reason for Revision	Section	Affected Pages
December 6, 2023	December 6, 2023	Annual Update	Foreword	All
			Section 1: Initial Response	Five Step Initial Response Guide Incident Classification Matrix Internal Notification Flowchart External Notification Flowchart
			Section 2: Roles & Responsibilities	Command Staff Roles
			Section 4: Emergency Response Procedures	British Columbia Petroleum Industry Release Reporting Requirements
			Section 5: External Agencies	All
			Section 6: Forms	ICS 209
			Appendices	Appendix A Appendix F
			Area Specific	All
December 6, 2022	December 6, 2022	Annual Update	Foreword	All
			Section 1: Initial Response	Five Step Initial Response Guide Internal Emergency Notification Flowchart External Emergency Notification Flowchart
			Section 2: Roles & Responsibilities	Response Team Phone List
			Section 4: Emergency Response Procedures	Table of Contents Public Protection Measures Petroleum Release Reporting Requirements Chart Spill Response Section
			Section 5: External Agencies	All
			Area Specific	All

ERP Revision Due Date: December 2024

Date of Revision	Date of Issue	Reason for Revision	Section	Affected Pages
December 6, 2021	December 6, 2021	Annual Update	Foreword	All
			Section 1: Initial Response	Internal Emergency Notification Flowchart, External Emergency Notification Flowchart
			Section 2: Roles & Responsibilities	Response Team Phone List
			Section 4: Emergency Response Procedures	Petroleum Release Reporting Requirements Chart
			Section 5: External Agencies	All
			Section 6: Forms	A7 Stars Info Card
			Area Specific	All
December 11, 2020	December 11, 2020	Annual Update	Foreword	All
			Section 1: Initial Response	Internal Emergency Notification Flowchart, External Emergency Notification Flowchart
			Section 2: Roles & Responsibilities	Response Team Phone List
			Section 4: Emergency Response Procedures	Petroleum Release Reporting Requirements Chart
			Section 5: External Agencies	All
			Area Specific	All
January 07, 2020	January 07, 2020	Updated well EPZ	EPZ Tables	Boundary Lake North - Sweet Wells EPZ Table
December 19, 2019	December 19, 2019	New Emergency Response Plan	All	All

NEBC Boundary Lake ERP Distribution List

Manual #	Type	Res Info	Branch	Title / Agency	Name
Corporate					
50231	Binder	Full	Calgary	HSE Manager	Patrick Corbiell
50232	Digital	Full	Calgary	HSE Manager	Patrick Corbiell
62831	Binder	Full	Calgary	Emergency Operations Centre - Calgary Office	c/o Patrick Corbiell
84297	Binder	Full	Calgary	Safety Advisor	c/o Julie Kobylanski
62833	Binder	Full	Calgary	Field Superintendent	c/o Greg Shrode
62834	Binder	Full	Calgary	Worsley Foreman	c/o Chris Wurz
62835	Binder	Full	Calgary	Roland Janssen	c/o Roland Janssen
62836	Binder	Full	Calgary	Trevor Blake	c/o Trevor Blake

7 Hard Corporate Manuals

1 Digital Corporate Manuals

Field					
62837	Binder	Full	British Columbia	Boundary Lake Foreman	c/o Shaun Moskalyk
62838	Binder	Full	British Columbia	04-16 Battery (Copy #1)	c/o Shaun Moskalyk
62839	Binder	Full	British Columbia	04-16 Battery (Copy #2)	c/o Shaun Moskalyk
62840	Binder	Full	British Columbia	06-29-087-14W6M Plant	c/o Shaun Moskalyk
62841	Binder	Full	British Columbia	06-27-086-12W6M Plant	c/o Shaun Moskalyk
62843	Binder	Full	British Columbia	Spare ERP - Located at 10-10 Battery	c/o Shaun Moskalyk
82796	Binder	Full	British Columbia	Spare ERP	c/o Kevin Neudorf

7 Hard Field Manuals

0 Digital Field Manuals

External					
50233	Binder	Full	Calgary	Canada Energy Regulator (CER)	c/o Secretary of the Board
50234	Digital	Full	Calgary	Canada Energy Regulator (CER) - Digital	c/o Secretary of the Board
50235	Binder	Full	Fort. St. John	BC Energy Regulator (BCER)	Public Protection and Safety Group
50237	Digital	N/A	Prince George	Emergency Management BC	Heather MacRae
50238	Digital	N/A	Dawson Creek	Peace River Regional District	Sean Cairns
50239	Digital	N/A	Worsley	Clear Hills County	Audrey Bjorklund
50240	Digital	N/A	High Level	Alberta Health Services Z5 - North Zone	Shane Hussey
50241	Digital	N/A	Fairview	RCMP - Fairview	Greg Beach
50242	Binder	Full	Calgary	H2Safety Services Inc.	H2Safety Library

3 Hard External Manuals

6 Digital External Manuals

0 Environmental Emergency External Manuals

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Area Specific Information

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Section 1: Initial Response

A1 Initial Emergency Report Form

Five Step Initial Response Guide

Step 1 – Level of Emergency

Step 2 – Internal Notification

Step 3 – External Notification

Step 4 – Incident Briefing

Step 5 – Public Safety

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A1 Initial Emergency Report Form

First On-Scene Actions

Evacuate	<input type="checkbox"/> Get to a safe area immediately. <input type="checkbox"/> Move upwind if release is downwind of you. <input type="checkbox"/> Move crosswind if a release is upwind from you. <input type="checkbox"/> Move to higher ground if possible.
Alarm	<input type="checkbox"/> Call for help ("Man Down"). <input type="checkbox"/> Sound bell, horn or whistle, or call by radio. <input type="checkbox"/> For medical emergencies, call 911.
Assess	<input type="checkbox"/> Take head count, locate any casualties. Consider all of the hazards. <input type="checkbox"/> Fill out information below to complete assessment.
Protect	<input type="checkbox"/> Put on breathing apparatus before attempting rescue.
Rescue	<input type="checkbox"/> Remove victim to a safe area.
First Aid	<input type="checkbox"/> Follow the standard first aid protocols at worksite. (CPR, etc.)
Medical Aid	<input type="checkbox"/> Arrange transport of casualties to medical aid. <input type="checkbox"/> Provide information to Emergency Medical Services (EMS).

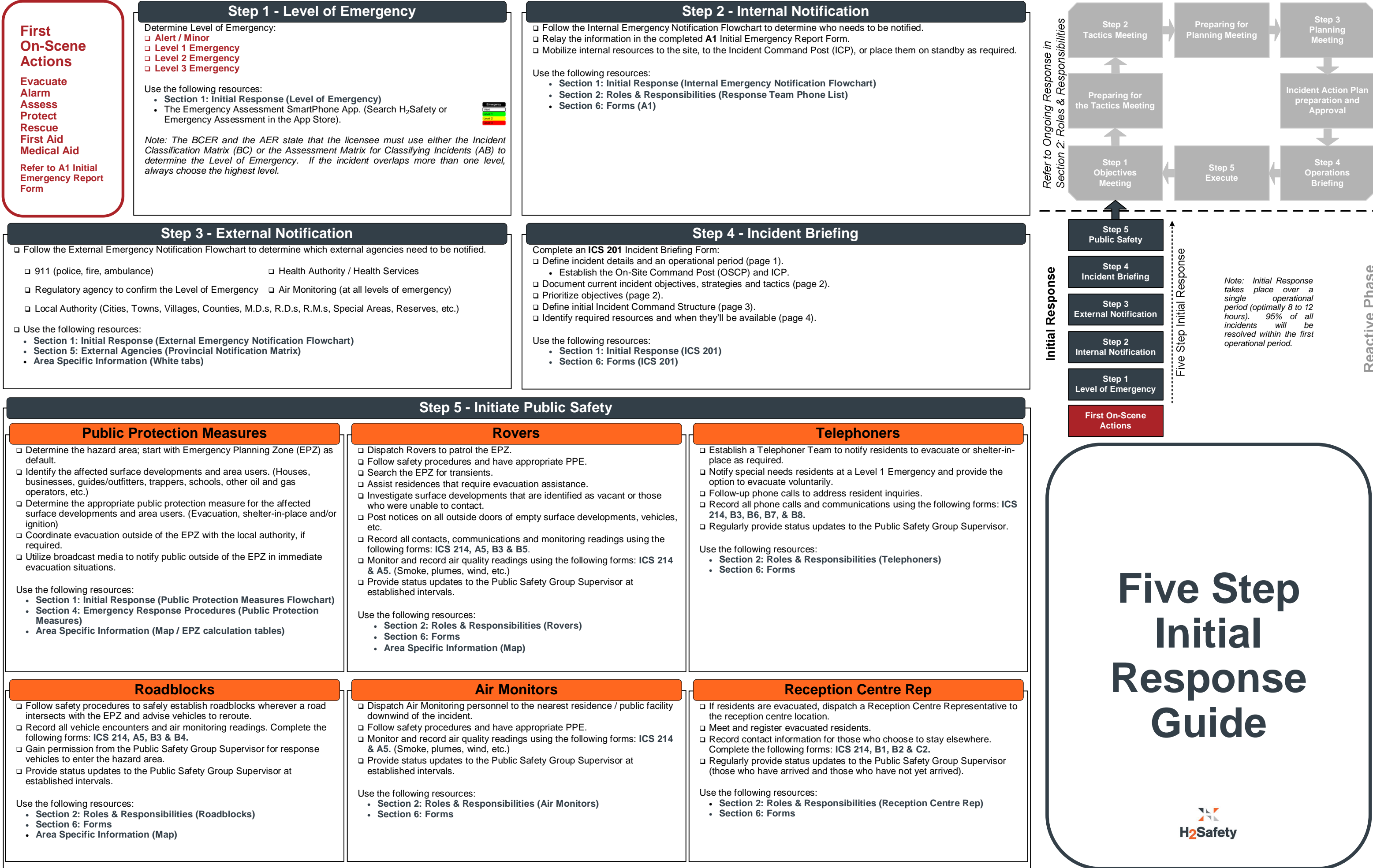
Incident Details <i>To be completed by the person involved or notified</i>				
Report taken by			Date / Time	
Name of person calling			Caller Telephone	
Incident Location (LSD / NTS)				
Event Summary				
Agencies Notified <input type="checkbox"/> Yes Who? <input type="checkbox"/> No				
Event Status <input type="checkbox"/> Incident contained or controlled <input type="checkbox"/> Intermittent control possible <input type="checkbox"/> Imminent control possible <input type="checkbox"/> Incident is uncontrolled				
Site Type <input type="checkbox"/> Well <input type="checkbox"/> Pipeline <input type="checkbox"/> Tank Farm/Storage <input type="checkbox"/> Battery/Plant/Facility <input type="checkbox"/> Other _____				
Incident Type <input type="checkbox"/> Sour Gas Release <input type="checkbox"/> Sweet Gas Release <input type="checkbox"/> Pipeline Break <input type="checkbox"/> Security (theft, threat, terrorism) <input type="checkbox"/> Loss of Containment <input type="checkbox"/> Fire/Explosion <input type="checkbox"/> Worker Injury/Fatality <input type="checkbox"/> Vehicle/Transportation <input type="checkbox"/> Liquid Spill <input type="checkbox"/> Other _____				

A1 Initial Emergency Report Form

Impacts			
Public Health and Safety	<input type="checkbox"/> Could be jeopardized <input type="checkbox"/> Is jeopardized		
Public Protection Measures Taken	<input type="checkbox"/> Notification <input type="checkbox"/> Evacuation <input type="checkbox"/> Shelter-in-place <input type="checkbox"/> Roadblocks		
Worker Injuries	<input type="checkbox"/> First Aid <input type="checkbox"/> Hospitalized <input type="checkbox"/> Fatality <input type="checkbox"/> Other _____		
Distance to nearest surface development	_____ km	Distance to nearest urban centre	_____ km
Details			
Release Impact	<input type="checkbox"/> On-Lease <input type="checkbox"/> Off-Lease Product _____		Amount _____
Gas Readings	H ₂ S _____ SO ₂ _____ LEL _____ Other _____		
Distance to nearest watercourse	_____ km	Weather Conditions	
Details			
Media Involvement?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Regulator Involvement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Public Affairs/Community Relations Issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Details			
Notes / Instructions Provided:			

Distribute this completed report to all Key Response Personnel

Note: Ensure the First On-Scene Actions have been completed before proceeding to the Five Step Initial Response Guide.





Incident Classification Matrix

Instructions: Start at the top and continue down until you check off any one box in both consequence and probability to determine the incident classification. *This matrix is required as an attachment upon submission of an incident through the [Online Minor Incident Reporting System](#).*

Table 1. Consequence Ranking

Rank	Consequence (any one of the following)
4	<input type="checkbox"/> Major on site equipment or infrastructure loss <input type="checkbox"/> Major act of violence, sabotage, or terrorism which impacts permit holder assets <input type="checkbox"/> Reportable liquid spill beyond site, uncontained and affecting environment <input type="checkbox"/> Gas release beyond site affecting public safety
3	<input type="checkbox"/> Threats of violence, sabotage, or terrorism <input type="checkbox"/> Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property <input type="checkbox"/> HAZMAT worker exposure exceeding allowable <input type="checkbox"/> Major on site equipment failure
2	<input type="checkbox"/> Major on site equipment damage <input type="checkbox"/> A security breach that has potential to impact people, property or the environment <input type="checkbox"/> Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property
1	<input type="checkbox"/> Moderate on site equipment damage <input type="checkbox"/> A security breach that impacts oil and gas assets <input type="checkbox"/> Reportable liquid spill or gas release on location <input type="checkbox"/> **Occurrence of magnitude 4.0 or greater induced earthquake within 3 km of oil and gas operations or any earthquake which is felt on surface within a 3 km radius of oil and gas operations
0	<input type="checkbox"/> No consequential impacts

**** For this consequence criteria, a probability score of 2 or higher must be used.**

Table 2. Probability Ranking

Rank	Probability (any one of the following)
4	<input type="checkbox"/> Uncontrolled, with control unlikely in near term
3	<input type="checkbox"/> Escalation possible; under or imminent control
2	<input type="checkbox"/> Escalation unlikely; controlled or likely imminent control
1	<input type="checkbox"/> Escalation highly unlikely; controlled or imminent control
0	<input type="checkbox"/> Will not escalate; no hazard; no monitoring required

Table 3. Incident Risk Score and Classification

Consequence _____ + Probability _____ = Risk Score _____ (this must be completed)

Risk Score	Assessment Result
Minor (1-2)	Notification Only; permit holder must notify the BCER online within 24 hours using the Form A: Minor Incident Notification Form (https://bc-er.ca/node/11188) . In addition to Form A, spills must also be reported to EMCR.
Moderate (3-4)	Level-1 Emergency; immediate notification (call EMCR)
Major (5-6)	Level-2 Emergency; immediate notification (call EMCR)
Serious (7-8)	Level-3 Emergency; immediate notification (call EMCR)



The H2Safety Services Inc. Emergency Assessment Smart Phone app is the preferred method for determining the level of emergency. Search H2Safety or Emergency Assessment in the Apple or Android app store.

BCER Incident Classification Matrix			Probability				
			4	3	2	1	0
			Uncontrolled, with control unlikely in near term	Escalation possible; under or imminent control	Escalation unlikely; controlled or likely imminent control	Escalation highly unlikely; controlled or imminent control	Will not escalate; no hazard; no monitoring required
Consequence	4	<input type="checkbox"/> Major on site equipment or infrastructure loss <input type="checkbox"/> Major act of violence, sabotage, or terrorism which impacts permit holder assets <input type="checkbox"/> Reportable liquid spill beyond site, uncontained and affecting environment <input type="checkbox"/> Gas release beyond site affecting public safety	Level 3	Level 3	Level 2	Level 2	Level 1
	3	<input type="checkbox"/> Threats of violence, sabotage, or terrorism <input type="checkbox"/> Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property <input type="checkbox"/> HAZMAT worker exposure exceeding allowable <input type="checkbox"/> Major on site equipment failure	Level 3	Level 2	Level 2	Level 1	Level 1
	2	<input type="checkbox"/> Major on site equipment damage <input type="checkbox"/> A security breach that has potential to impact people, property or the environment <input type="checkbox"/> Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property	Level 2	Level 2	Level 1	Level 1	Minor Notification Form
	1	<input type="checkbox"/> Moderate on site equipment damage <input type="checkbox"/> A security breach that impacts oil and gas assets <input type="checkbox"/> Reportable liquid spill or gas release on location <input type="checkbox"/> ** Occurrence of magnitude 4.0 or greater induced earthquake within 3 km of oil and gas operations or any earthquake which is felt on surface within a 3 km radius of oil and gas operations	Level 2	Level 1	Level 1	Minor Notification Form	Minor Notification Form
	0	<input type="checkbox"/> No consequential impacts	Level 1	Level 1	Minor Notification Form	Minor Notification Form	No Notification Required
Minor Incidents <ul style="list-style-type: none"> The permit holder must report the minor incident to the BCER within 24 hours by electronic submission through the Online Minor Incident Reporting System, opened through KERMIT. If the minor incident involves a leak or a spill, EMCR must also be called at 1-800-663-3456 so that a Dangerous Goods Incident Report (DGIR) number may be issued. 			Escalating, Downgrading or Standing-Down of Emergency <ul style="list-style-type: none"> The BCER must be notified as soon as possible of any change to the emergency status. The permit holder must consult with the BCER for escalating, downgrading or the standing-down of an incident. 				
Level 1, 2, or 3 Emergency <ul style="list-style-type: none"> If the incident receives a score of Level 1, 2, or 3, it must be reported immediately (within 1 hour) to the BCERs incident reporting line (EMCR 1-800-663-3456). 			Permit Holders Post-Incident Report The Form D: Permit Holder Post Incident Report Form (https://bc-er.ca/node/5771) must be submitted by the permit holder to the BCER within 60 days for: <ol style="list-style-type: none"> Any Level 1, 2 or 3 emergency incident: complete Part A-P; or Any pipeline incident (including minor notification): complete Part A-U; or Upon request by the BCER This report and accompanying documentation can be found on the BCERs website under Emergency Response and Planning and must be emailed electronically to EMP@bc-er.ca .				

**** For this consequence criteria, a probability score of 2 or higher must be used.**

Spill Reporting Criteria

Where the permit holder holds or maintains rights, the permit holder must report to the BC Energy Regulator, all spills of materials as identified below:

- A spill or release of any amount of materials which impacts water ways
- Hydrocarbons; 100 litres where the hydrocarbon contains no toxic materials and does not impact water ways
- Produced/salt water; 200 litres where the fluid contains no toxic materials
- Fresh water; 10,000 litres
- Drilling or invert mud; 100 litres
- Sour Natural gas; 10 kg or 15 m³ by volume where operating pressure is >100 PSI
- Condensate; 100 litres
- Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsions, etc. which contain toxic substances; 25 litres

Please refer to the BC Environmental Management Act; [Spill Reporting Regulation](#), Schedule “Reporting Levels for Certain Substances” for determining reportable spillage amounts of other substances:

Other Reportable Incidents

The BCERs Incident Risk Classification Matrix is designed to assist permit holders in determining which incidents must be reported. However, some incidents, which do occur, may not meet the criteria outlined in the Incident Classification Matrix but still require notification to the BCER as a minor notification. These include the following:

- Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;
- Major damage to oil and gas roads or road structures;
- Drilling kicks when any one of the following occur:
 - pit gain of 3 m³ or greater
 - casing pressure 85% of MA
 - 50% out of hole when kicked
 - well taking fluid (LC)
 - associated spill
 - general situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc
- All pipeline incidents, such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations
- Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only

Sour Gas

When a sour gas product is released, any measurement of 10 ppm or greater measured at 1 metre from the source of the leak requires reporting as an incident.

Releases Near Airports

If the emergency involves the release of flammable vapour at the site of an oil and gas activity that is located within 2 kilometres of an airport, immediately notify the operator of the airport.

Oil and Gas Road Closures

In emergency situations, permit holders must phone the BCERs 24 hour Incident Reporting line to notify the BCER of needed emergency oil and gas road closures.

Special Sour Wells

During an emergency involving a special sour well, a permit holder must do all of the following:

1. Ensure that a person certified in accordance with subsection (4) is available and equipped to ignite the well within the time limits set out in the plan in respect of which the emergency planning zone was determined;
2. Ensure that a dual ignition system is on site during:
 - a. Drilling or completion operations, or
 - b. Workover operations being carried out at any time when the wellhead is not in place;
3. Ensure that a person authorized to ignite flammable liquids or ignitable vapours released from the well is on site.

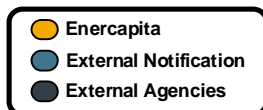
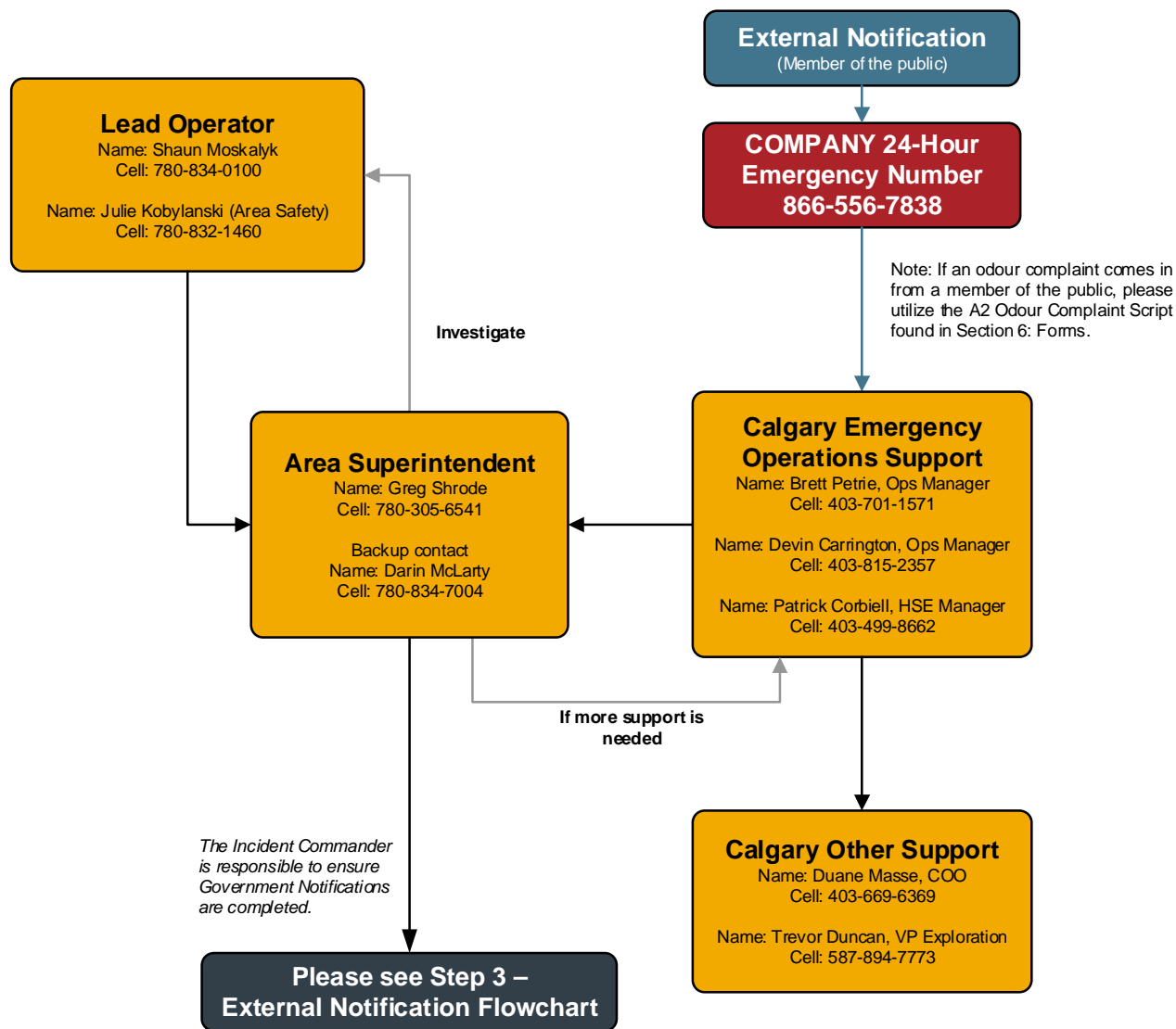
For the purposes of subsection (2), a sour well is special if either of the following applies:

1. The hydrogen sulphide release rate from the well is equal to or greater than 2.0 m³/s;
2. The hydrogen sulphide release rate from the well is less than 2.0 m³/s but greater than 0.5 m³/s and the well is located within a distance that is twice the hazard planning distance from the corporate boundaries of an urban centre.

For the purposes of subsection (2) (a), the person must have vapour plume ignition certificate issued by a training association.

Note: Refer to the Petroleum Industry Spill / Release Reporting Requirements in **Section 4: Emergency Response Procedures** for further spill reporting criteria and the Government Notification Matrix in **Section 5: External Agencies** for other reportable incidents.

Internal Emergency Notification Flowchart

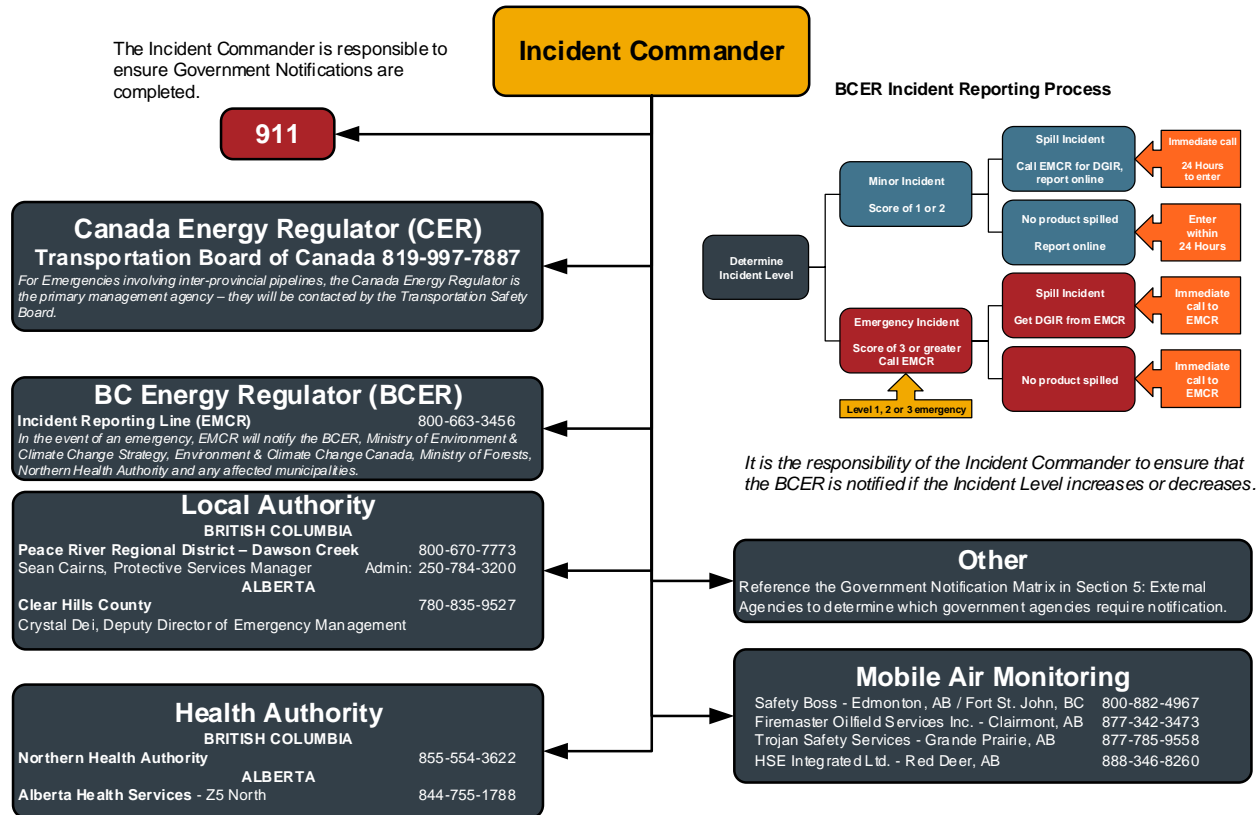


Note: After Initial Notifications are complete, please reference Step 4 – Incident Briefing and begin building the initial Organizational Structure (pg 3) within the ICS 201 Incident Briefing form.

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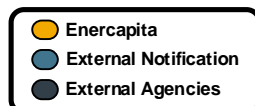
External Emergency Notification Flowchart

Prior to commencing contact of the agencies below, make sure a completed A1 Initial Emergency Report Form is available and at hand for reference.



Refer to Section 5: External Agencies for the Government Notification Matrix, Provincial Lead and Supporting Agencies and Federal Agencies required to be contacted or notified.

Refer to Area Specific Information for a listing of contacts for government agencies and support services.



Note: After Initial Notifications are complete, please reference Step 4 – Incident Briefing and begin building the initial Organizational Structure (pg 3) within the ICS 201 Incident Briefing form.

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Current and Planned Objectives:	
Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property	
1. Ensure Safety of Citizens and Response Personnel: <input type="checkbox"/> 1a. Identify hazard(s) of released product. <input type="checkbox"/> 1b. Establish site control (hot zone, warm zone, cold zone, & security). <input type="checkbox"/> 1c. Establish an Emergency Response Zone and Initiate Public Safety Actions. <input type="checkbox"/> 1d. Consider evacuations if needed. <input type="checkbox"/> 1e. Establish aircraft restrictions. <input type="checkbox"/> 1f. Monitor air in impacted areas <input type="checkbox"/> 1g. Develop site safety plan for personnel and ensure safety briefings are conducted.	4. Minimize Economic Impacts: <input type="checkbox"/> 4a. Consider tourism and local economic impacts. <input type="checkbox"/> 4b. Protect public and private assets, as resources permit. <input type="checkbox"/> 4c. Establish damage claims process. 5. Keep Stakeholders and Public Informed of Response Activities: <input type="checkbox"/> 5a. Provide forum to obtain stakeholder input and concerns. <input type="checkbox"/> 5b. Provide stakeholders with details of response actions. <input type="checkbox"/> 5c. Identify stakeholder concerns and issues, and address as practical. <input type="checkbox"/> 5d. Provide timely safety announcements. <input type="checkbox"/> 5e. Conduct regular news briefings. <input type="checkbox"/> 5f. Conduct public meetings, as appropriate.
2. Control the Source of the Release: <input type="checkbox"/> 2a. Complete emergency shutdown. <input type="checkbox"/> 2b. Conduct firefighting. <input type="checkbox"/> 2c. Initiate temporary repairs.	
3. Manage a Coordinated Response Effort: <input type="checkbox"/> 3a. Complete or confirm notifications. <input type="checkbox"/> 3b. Establish a unified command organization and facilities (command post, etc.). <input type="checkbox"/> 3c. Ensure mobilization and tracking of resources and account for personnel and equipment. <input type="checkbox"/> 3d. Complete documentation.	
Current and Planned Actions, Strategies and Tactics:	
Time:	Actions:
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	

Current Organizational Structure: (draw in current response structure)*

*** This is a condensed Organizational Chart to account for all currently responding personnel during the Initial Response.**

```

graph TD
    IC[Incident Commander] --- IO[Information Officer]
    IC --- LO[Liaison Officer]
    IC --- SO[Safety Officer]
    IC --- OSGS[On-Site Group Supervisor]
    IC --- PSGS[Public Safety Group Supervisor]
    IC --- DOC[Documentation]
    OSGS --- SS[SITE SAFETY]
    OSGS --- C[Control]
    OSGS --- CO[Containment]
    OSGS --- O1[Other]
    OSGS --- O2[Other]
    OSGS --- O3[Other]
    PSGS --- AM[Air Monitors]
    PSGS --- RB[Roadblocks]
    PSGS --- RO[Rovers]
    PSGS --- TEL[Telephoners]
    PSGS --- RCR[Reception Centre Representative]
    PSGS --- O4[Other]
  
```

Incident Commander
Name _____
Number _____

Information Officer
Name _____
Number _____

Liaison Officer
Name _____
Number _____

Safety Officer
Name _____
Number _____

On-Site Group Supervisor
Name _____
Number _____

Public Safety Group Supervisor
Name _____
Number _____

Documentation
Name _____
Number _____

SITE SAFETY
Name _____
Number _____

Control
Name _____
Number _____

Containment
Name _____
Number _____

Other
Name _____
Number _____

Other
Name _____
Number _____

Other
Name _____
Number _____

Air Monitors
Name _____
Number _____

Roadblocks
Name _____
Number _____

Rovers
Name _____
Number _____

Telephoners
Name _____
Number _____

Reception Centre Representative
Name _____
Number _____

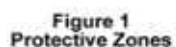
Other
Name _____
Number _____

Note: Refer to ICS 207 Incident Organization Chart in Section 6: Forms (Blue Tab) for full command structure.

ENERCAPITA

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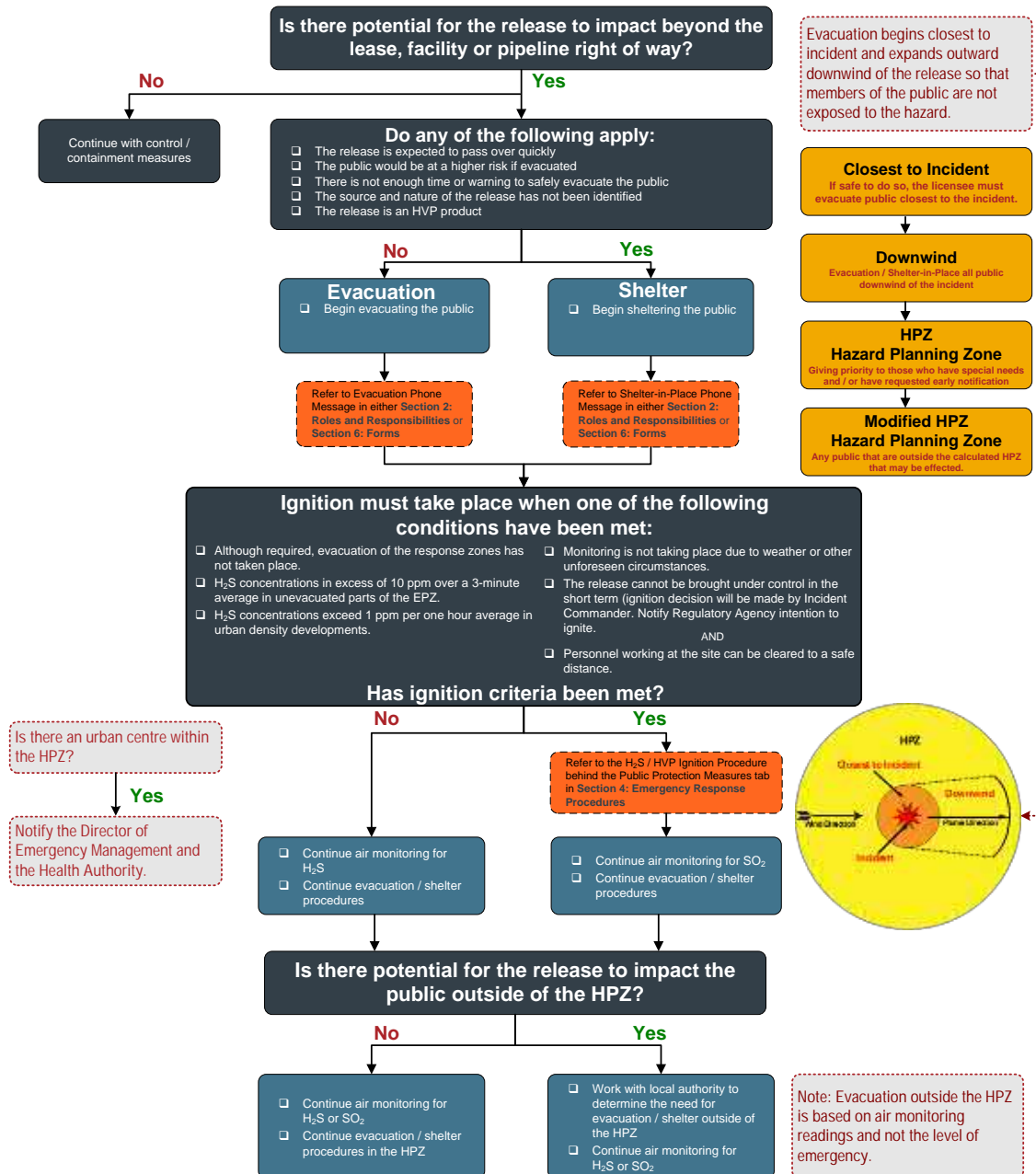
Site Safety and Hazard Control Analysis	
Site Control	
1. Is Site Control set-up? <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Is there an On-Scene Command Post? <input type="checkbox"/> Yes <input type="checkbox"/> No If so, where?
3. Have all personnel been accounted for? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	Injuries: _____ Unaccounted: _____ Fatalities: _____ Trapped: _____
4. Are observers involved or rescue attempts planned? Observers: <input type="checkbox"/> Yes <input type="checkbox"/> No Rescuers: <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Are Decon areas setup? <input type="checkbox"/> Yes <input type="checkbox"/> No If so, where?
Hazard Identification, immediate signs of: (if yes, explain in remarks)	
1. Electrical line(s) down or overhead? <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Unidentified liquid or solid products visible? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Wind direction across incident: <input type="checkbox"/> Towards your position Wind Speed: <input type="checkbox"/> Away from your position	4. Is a safe approach possible? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Odours or smells? <input type="checkbox"/> Yes <input type="checkbox"/> No	6. Vapours visible? <input type="checkbox"/> Yes <input type="checkbox"/> No
7. Holes, ditches, fast water, cliffs, etc. nearby? <input type="checkbox"/> Yes <input type="checkbox"/> No	8. Fire, sparks, sources of ignition nearby? <input type="checkbox"/> Yes <input type="checkbox"/> No
9. Is local traffic a potential problem? <input type="checkbox"/> Yes <input type="checkbox"/> No	10. Product placards, colour codes visible? <input type="checkbox"/> Yes <input type="checkbox"/> No
11. Other Hazards? <input type="checkbox"/> Yes <input type="checkbox"/> No	12. As you approach the scene from the upwind side, do you note a change in the status of any of the above? <input type="checkbox"/> Yes <input type="checkbox"/> No
13. Remarks:	
Hazard Mitigation: have you determined the necessity for any of the following?	
1. Entry Objectives:	
2. Warning sign(s), barriers, colour codes in place? <input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Hazardous material being monitored? <input type="checkbox"/> Yes <input type="checkbox"/> No 3a. Sampling equipment: 3b. Sampling location(s): 3c. Sampling frequency: 3d. Peak reading: 3e. Personal exposure monitoring:	
4. Protective gear / level: 4b. Respirators 4d. Boots:	4a. Gloves: 4c. Clothing: 4e. Chemical cartridge change frequency:
5. Decon 5a. Instructions: 5b. Decon equipment and materials:	
6. Emergency escape route established? <input type="checkbox"/> Yes <input type="checkbox"/> No Route?	
7. Field responders briefed on hazards? <input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Remarks:	
Protective Zones: record initial control perimeters (see Figure 1)	



1. Is there a Hot Zone established?
☐ Yes
☐ No
 If so, Where?
-
2. Is there a Warm Zone established?
☐ Yes
☐ No
 If so, Where?
-
3. Is there a Cold Zone established?
☐ Yes
☐ No
 If so, Where?
-
4. Remarks: (Include any information on evacuation route, etc.)

5. Include any site sketches or photos of the protective zones (if available).

Public Protection Measures Flowchart



Notification and Evacuation Requirements Outside of the HPZ

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H₂S and SO₂. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

H ₂ S Requirements		SO ₂ Requirements	
1-10 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S or SO ₂ must be notified.	1-5 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S or SO ₂ must be notified.
10 ppm and above (1-hour average)	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.	5 ppm and above	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.
Note: H ₂ S Evacuation Level – when downwind monitoring at the nearest unevacuated residence, outside the Hazard Planning Zone, indicates a level of 10 ppm, evacuation procedures will be initiated if safe to do so.			

Revised March 2019

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Section 2: Roles and Responsibilities

Field Response Team

Key Response Personnel

General Safety Equipment and Resource Lists

Operator, Truck & Other Safety Equipment

Field Response Team – Command Staff

Command Staff Roles Chart

Field Response Team – General Staff

Operations Section Roles Chart

Planning Section Roles Chart

Logistics Section Roles Chart

Finance / Admin. Section Roles Chart

Field Response Team – Public Safety Staff

Public Safety Roles Chart

Air Monitors Module

Reception Centre Rep Module

Roadblocks Module

Rovers Module

Telephoners Module

Ongoing Response

Planning “P”

Five Step Ongoing Response Guide

Objectives Meeting

Tactics Meeting

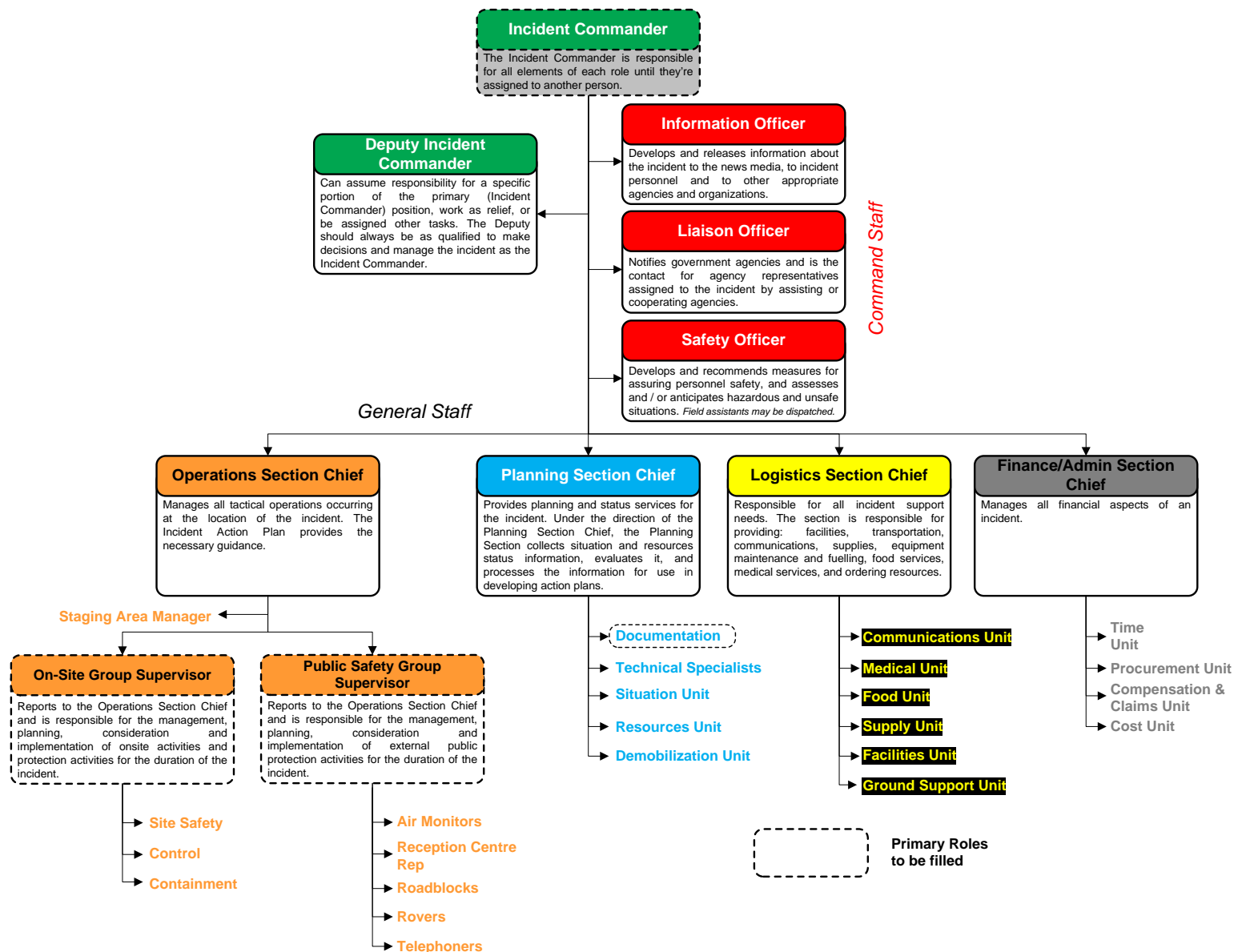
Planning Meeting

Operations Briefing

Response Teams Phone List

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Field Response Team



Section 2: Roles and Responsibilities

Key Response Personnel

The following individuals are likely to fill the key response roles identified:

Command Staff	Incident Commander	Area Foreman Lead Operator (Alternate Incident Commander)
On-Site	On-Site Group Supervisor	Lead Operators Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.
	Trained in Ignition (H₂S & HVP)	Area Foreman / Lead Operator
Public Safety	Public Safety Group Supervisor	Lead Operator Area Foreman (Alternate)
	Air Monitors / Roadblock / Rovers	Area Operators / Third-Party Service Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.
	Telephoners	Calgary Support
	Reception Centre Representative	Area Operators / Calgary Support Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.

Please refer to the **Response Teams Phone List (Yellow tabs)** or **Area Specific Information (White tabs)** for the full list of personnel and their contact information.

General Safety Equipment and Resource Lists

Operator, Truck & Other Safety Equipment

Each operator is required to drive a suitable vehicle (4x4 truck) for their service areas and should carry the following equipment: 20-30lb fire extinguisher, vehicle emergency roadside kit, cell phone and a 4 head monitor.

Refer to **Area Specific Information Section (white tabs)** for further details on specific air monitoring equipment, back-up communication methods, ignition and roadblock kit contents as well as their locations, specialty fire-fighting equipment and/or service companies and their contact information for if the aforementioned equipment is not available.

Command Staff Roles				
Incident Commander	Deputy Incident Commander	Information Officer	Liaison Officer	Safety Officer
<p>The Incident Commander is in charge of overall management of the incident and must be fully qualified to manage the incident. As incidents grow in size or complexity, a more highly qualified Incident Commander may be assigned by the company.</p> <p><i>Note: The highest ranking authority arriving at the site of the incident (first on-scene) becomes the Incident Commander and establishes command and control. The first on-scene will remain the Incident Commander until there is formal transfer of command to a more senior company employee and / or qualified personnel.</i></p> <p>Initial Response - *Refer to the 5 Step Initial Response Guide in Section 1: Initial Response*</p> <p>Step 1: Level of Emergency</p> <div><div><div>Emergency</div><div>Alert</div><div>Level 2</div><div>Level 3</div></div><div><div></div><div></div><div></div><div></div></div></div> <ul style="list-style-type: none"><input type="checkbox"/> If necessary, investigate and confirm the emergency. If the incident involves a release of sour product, the investigation should be conducted in teams of two. Take appropriate safety precautions (PPE, SCBA, etc.). Ensure personal safety at all times.<input type="checkbox"/> Determine the Level of Emergency using the BCER Incident Classification Matrix for BC or AER's Assessment Matrix for Classifying Incidents for all other provinces (e.g. Alert/Minor, Level 1, 2, 3) found in Section 1: Initial Response or using the Emergency Assessment SmartPhone App. (Search H₂Safety or Emergency Assessment in the App Store). <p>Step 2: Internal Notification</p> <ul style="list-style-type: none"><input type="checkbox"/> Follow the Internal Emergency Notification Flowchart outlined in Section 1: Initial Response to contact required field resources. Refer to the Section 2: Roles and Responsibilities / Response Team Phone List. Relay the information from the A1 Initial Notification Form. Mobilize internal resources to the site, to the Incident Command Post (ICP) or place them on standby as required.<input type="checkbox"/> Contact required company resources and communicate the level of emergency. Refer to Section 2: Roles and Responsibilities / Response Team Phone List. <p>Step 3: External Notification</p> <ul style="list-style-type: none"><input type="checkbox"/> Follow the External Emergency Notification Flowchart in Section 1: Initial Response for communication structure and the Provincial Notification Matrix in Section 5: External Agencies to determine which external agencies need to be notified. Reference Section 5: External Agencies and the Area Specific Information for the location of the incident. <p>Step 4: Incident Briefing</p> <div><div><div><div><input type="checkbox"/> The following positions are always filled regardless of the size of the incident: Incident Commander, On-Site Group Supervisor and Documentation.</div><div><input type="checkbox"/> Assess the situation, identify the incident source, and consider how to stop the source. Carry out a site assessment that includes the following: identify hazardous materials, evaluate risk to workers and the public, determine the potential for the incident to escalate, identify safety concerns, determine which other company's facilities are involved.</div><div><input type="checkbox"/> Detail and prioritize the objectives for the next operational period taking into consideration the priorities of (1) Life Safety, (2) Incident Stabilization, (3) Property & Environment using the ICS 201 Incident Briefing Form.</div><div><input type="checkbox"/> Assign other positions as required to meet the identified objectives. Review and complete the ICS 207 Incident Organization Chart in Section 6: Forms. Depending on the scale of emergency, all positions may not be assigned. The Incident Commander assumes responsibility for all unassigned roles until personnel have been assigned to them.</div><div><input type="checkbox"/> Conduct a role review with each of the positions above to ensure they clearly understand their roles and responsibilities.</div><div><input type="checkbox"/> Develop detailed plans of action (strategies) to achieve the objectives and determine what tactics and resources are required to implement the strategies (oil spill services, safety services, etc.).</div><div><input type="checkbox"/> Activate the Incident Command Post (ICP). Refer to the Appendices for Incident Command Post activation guidelines.</div><div><input type="checkbox"/> Ensure the Planning Section posts and updates the status board with incident details.</div></div><div><div>Form ICS 201</div><div>Form ICS 207</div></div></div><p>Step 5: Public Safety</p><ul style="list-style-type: none"><input type="checkbox"/> Determine the size of the Emergency Planning and Response Zones around the incident. Refer to the EPZ calculation tables and map in Area Specific Information.<input type="checkbox"/> Use the Public Protection Measures Flowchart located in Section 1: Initial Response to assist with determining if evacuation / shelter / ignition are required.<input type="checkbox"/> Ensure the affected public are contacted and advised to shelter or evacuate as required.<input type="checkbox"/> Establish Air Monitoring, Reception Centre Representatives, Roadblocks, Rovers, and Telephoners as required.<p>Ongoing Response - *Refer to the Five Step Ongoing Response Guide in Section 2: Ongoing Response*</p><ul style="list-style-type: none"><input type="checkbox"/> Establish a method to track responders and resources to ensure they are accounted for at all times.<input type="checkbox"/> Monitor implementation of IAP and revise as the situation dictates. Prepare for next operational period.<input type="checkbox"/> Support the Operations Section Chief in the preparation of an incident control and containment action plan.<input type="checkbox"/> Ensure each section chief has adequate staff, is not violating span of control and clearly understands the roles and responsibilities.<input type="checkbox"/> Conduct frequent Command Staff and General Staff meetings.<input type="checkbox"/> If transfer of command occurs, an incident status briefing must take place. Provide all documentation and review situation status, objectives and priorities, current organization and resources, facilities, communications plan, concerns and introductions to staff.<input type="checkbox"/> As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the Incident Commander and the applicable government regulator.<input type="checkbox"/> The Demobilization Unit will develop and implement objectives/strategies for demobilization.</div>	<p>The Deputy Incident Commander may assume responsibility for a specific portion of the primary position, work as relief, or be assigned other tasks. The Deputy should always be as qualified to make decisions and manage the incident as the Incident Commander.</p> <ul style="list-style-type: none"><input type="checkbox"/> If no scribe has been assigned to the Incident Commander, support the Incident Commander by documenting details of the emergency, focusing on activities and decisions made.<input type="checkbox"/> Record, update and maintain a chronological summary of the incident including:<ul style="list-style-type: none"><input type="checkbox"/> Names of personnel in each assigned position and their location<input type="checkbox"/> Control and containment measures<input type="checkbox"/> Environmental monitoring information<input type="checkbox"/> Injuries / deaths / missing persons<input type="checkbox"/> Phone calls<input type="checkbox"/> Actions and decisions<input type="checkbox"/> Status of the public protection actions<input type="checkbox"/> Manage the flow of traffic to and communication with the Incident Commander so that he can focus on managing the incident.<input type="checkbox"/> Conduct status update meetings.<input type="checkbox"/> Provide status to head office.<input type="checkbox"/> Deal with some day-to-day decision making.<input type="checkbox"/> Assume duties of the Incident Commander, if required.<input type="checkbox"/> Maintain communication with the Incident Commander. <div><div>Important</div><div><p>Prior to beginning any activities, each person in a role must:</p><ul style="list-style-type: none"><input type="checkbox"/> Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the Incident Commander.<p>Throughout the duration of the incident, each person in a role must:</p><ul style="list-style-type: none"><input type="checkbox"/> Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms.<p>After the incident is over, each person in a role must:</p><ul style="list-style-type: none"><input type="checkbox"/> Assist with post-incident activities.<p>All forms referenced can be found in Section 6: Forms</p></div></div>	<p>The Information Officer is responsible for developing and releasing information about the incident to the news media, to incident personnel and to other appropriate agencies and organizations.</p> <ul style="list-style-type: none"><input type="checkbox"/> Receive incident briefing from the Incident Commander before contacting external agencies.<input type="checkbox"/> Prepare regular status updates that will be provided to internal company personnel to keep them apprised of the situation.<input type="checkbox"/> Identify and document any media involvement that has already taken place<input type="checkbox"/> If the media statement hasn't yet been prepared ensure that the generic media statement from the ERP is communicated and being used in the field.<input type="checkbox"/> Assist head office with the preparation of a preliminary media statement if required using the Preliminary Media Statement form.<input type="checkbox"/> Document all communications with the media using the Media Contact Log.<input type="checkbox"/> Develop a detailed media strategy for the incident.<input type="checkbox"/> Designate and prepare media briefing rooms away from the Incident Command Post.<input type="checkbox"/> Organize tours and photo opportunities if required.<input type="checkbox"/> Maintain communication with the Incident Commander.<input type="checkbox"/> Media releases must be coordinated with applicable regulatory agency.<input type="checkbox"/> If necessary, coordinate with and use broadcast media to notify residents in the hazard area.<input type="checkbox"/> Work with Communications / Media to develop a communications plan that includes establishing protocols for responders and all company personnel as required to ensure incident information remains confidential (i.e. restriction on cell phone usage for photography, social media, speaking to the media, etc.).	<p>The Liaison Officer is responsible for notifying government agencies and is the contact for agency representatives assigned to the incident by assisting or cooperating agencies.</p> <div><div><div><div><input type="checkbox"/> Complete Regulatory First Call Communication Form.</div><div>Form A3</div></div><div><div><input type="checkbox"/> Refer to Section 5: External Agencies for the Government Notification Matrix. Notify as soon as possible and provide status updates at agreed upon intervals to:<ul style="list-style-type: none"><input type="checkbox"/> Government regulator<input type="checkbox"/> Local authorities (counties, cities, towns, MDs, RDs, First Nations Reserves, etc.)<input type="checkbox"/> Health authority<input type="checkbox"/> Environment<input type="checkbox"/> Provincial emergency management organization<input type="checkbox"/> Other agencies</div><div><div><input type="checkbox"/> Keep track of all government correspondence using the Government Agency Contact Log.</div><div>Form C3</div></div><div><div><input type="checkbox"/> Obtain cooperating and assisting agency information that includes: contact information, radio frequencies, cooperative agreements, equipment type, number of personnel, condition of equipment and personnel, agency constraints, etc.</div><div><input type="checkbox"/> Conduct appropriate periodic briefings to keep agencies informed of planning actions.</div><div><input type="checkbox"/> Coordinate with any government agency representatives attending the ICP or REOC.</div><div><input type="checkbox"/> Coordinate with mutual aid groups.</div></div></div></div></div>	<p>The Safety Officer develops and recommends measures for assuring personnel safety, and assesses and / or anticipates hazardous and unsafe situations.</p> <ul style="list-style-type: none"><input type="checkbox"/> Ensure the site is evacuated if unsafe.<input type="checkbox"/> Initiate rescue plans if safe to do so.<input type="checkbox"/> Review the Incident Action Plan to identify and correct any potential occupational and health hazards.<input type="checkbox"/> Ensure work / rest guidelines are followed.<input type="checkbox"/> Continuously monitor workers for exposure to ensure they are wearing the required PPE.<input type="checkbox"/> Take appropriate action to mitigate or eliminate unsafe conditions, operations, or hazards.<input type="checkbox"/> Immediately stop any unsafe practices.<input type="checkbox"/> Conduct a general inspection of the facilities, food services and sanitation services soon after they become operational and follow up on a periodic basis throughout the incident for compliance to all health and safety standards. Provide a report of deficiencies.<input type="checkbox"/> Document both safe and unsafe acts, corrective actions taken on the scene, accidents or injuries, and ways to improve safety on future incidents.<input type="checkbox"/> Investigate accidents that have occurred within the incident area.<input type="checkbox"/> Identify “Hot Zone” and declare when responders may enter it.<input type="checkbox"/> Ensure that responders inside the “Hot Zone” are accounted for and initiate search if required.<input type="checkbox"/> Prepare a site-specific health and safety plan.
All team members are located at the Incident Command Post (ICP), unless otherwise noted.				

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up:** Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

General Staff Roles – Operations Section

Operations Section Chief	On-Site Group Supervisor	Staging Area Manager	Site safety	Control	Containment
<p>The Operations Section Chief is responsible for managing all tactical operations occurring at the location of the incident. The Incident Action Plan provides the necessary guidance. The need to expand the Operations Section is generally dictated by the number of tactical resources involved and is influenced by span of control considerations.</p>	<p>On-Site Group Supervisor is responsible for coordinating all activities of Control, Containment and Site Safety at the scene of the emergency / incident.</p>	<p>The Staging Area Manager is responsible for managing all activities within a Staging Area.</p>	<p>Site Safety is responsible for responder safety and safety advice at all times at the scene of the emergency / incident.</p>	<p>Control is responsible for implementing measures designed to bring the incident under control or stop the incident.</p>	<p>Containment is responsible for implementing measures designed to reduce the impact of the incident on and prevent the spread of the incident to the surrounding areas.</p>
<ul style="list-style-type: none">❑ Identify and confirm communication links.❑ Ensure the On-Site Command Post (OSCP) is established.❑ Manage the following positions, as required: On-Site Group Supervisor, Public Safety Group Supervisor.❑ In conjunction with the Incident Commander, the Planning Section Chief, and the Public Safety Group Supervisor, develop and implement an Incident Action Plan (IAP)❑ Ensure responder safety at all times.❑ Oversee control / containment procedures; ensure the hazard is isolated.❑ Determine the current and potential environmental impact of product released, response activities, or waste disposal.❑ Ensure that all environmental laws and regulations are complied with during emergency response operations.❑ Provide technical advice to Incident Commander to determine public protection measures.❑ Assess the requirements for on-site safety supervision, personnel, equipment, and other contract services. Coordinate with Logistics to obtain equipment and resources.❑ Assist the On-Site Group Supervisor in determining whether ignition is appropriate. If at all possible, input is to be obtained from the Incident Commander and the applicable government regulator.❑ Maintain continuous communications with the Incident Commander.	<ul style="list-style-type: none">❑ Ensure all personnel are accounted for. Release nonessential personnel from the site❑ Oversee and maintain control of all on-site personnel.❑ Establish On-Site Command Post (OSCP).❑ Obtain incident briefing and environmental impact information.❑ Coordinate activities of Staging Area Manager, Site Safety, Control and Containment.❑ Report air monitoring to Incident Commander (third party and regulatory).❑ Call police, fire and ambulance as needed.❑ Coordinate with ambulance / fire / RCMP / regulatory agencies / spill co-ops.❑ Conduct meetings with on-site personnel to review action plans, communication and safety.❑ Request additional resources needed to implement on-site response actions.❑ Supervise the execution of the on-site response actions.❑ The On-Site Group Supervisor has the authority to ignite the release if ignition criteria are met. If at all possible, the On-Site Group Supervisor must consult with higher authority individuals within the company (ideally the Operations Section Chief, Incident Commander, etc.) and the applicable government regulator before making the decision to ignite a release. Refer to Section 4: Emergency Response Procedures.	<ul style="list-style-type: none">❑ Establish a staging area near the incident site and outside of the EPZ. When choosing a site for the staging area ensure the following conditions are met:<ul style="list-style-type: none">❑ Adequate sized site that is stable and level with suitable access roads❑ No entry problems such as narrow approach ways, gates, power lines, buried pipelines, etc.❑ Approval has been received from landowner❑ Reception of communication equipment is adequate❑ Erect staging area information and directional signs to the staging area, if required.❑ Flag the perimeter of the staging area.❑ Obtain an office trailer and emergency lighting, if required.❑ Coordinate traffic and maintain a log of personnel and services dispatched to, or arriving from the site of the emergency. Communicate this information to the Logistics Section Chief.❑ Respond to Operations Section Chief or Incident Commander requests for resources.❑ Confirm all workers have required training before they are dispatched to the incident.❑ Maintain and provide status to the Planning Section of all resources in Staging Area.❑ Demobilize or move Staging Area as required.	<ul style="list-style-type: none">❑ Assess hazards & potential risks e.g. fire/explosion, toxicity, oxygen deficiency, ignition sources, access/egress.❑ Ensure responder safety at all times.❑ Ensure that on-site personnel are taking appropriate safety actions: PPE, SCBA / SABA, Safe Work Procedures, proper grounding / bonding procedures, work in teams, etc.❑ Ensure workers that show signs of stress, fatigue, and other symptoms are demobilized and sent for treatment if necessary.❑ Maintain records of all injuries and on-site medical treatments.❑ Conduct responder safety orientations.❑ Monitor activities and conduct a head count on a regular basis.❑ Continually evaluate risks and stop unsafe activities immediately.❑ Recommend alternatives for activities that are considered to be unsafe.	<ul style="list-style-type: none">❑ Assist with the development of control procedures.❑ Identify immediate response tactics (i.e. offensive / defensive response tactics). Only when safety is assured, take immediate operational actions to bring the incident under control (i.e. shut down, isolate, de-pressure, etc.).❑ Provide or seek technical / engineering advice around all control-related issues.❑ Inform Operations Section Chief of any interactions with regulatory agencies or environmental personnel.	<ul style="list-style-type: none">❑ Assist with the development of containment procedures.❑ Identify immediate response tactics (i.e. offensive / defensive response tactics). Only when safety is assured, take actions to contain the incident so as to prevent the incident from spreading offsite and to reduce the impact on the public, sensitive terrain, watercourses, etc.❑ Provide or seek technical / engineering advice around all containment-related issues.❑ Secure the scene and restrict access to essential and authorized personnel only.❑ Inform Operations Section Chief of any interactions with regulatory agencies or environmental personnel.❑ Coordinate oil spill cooperative activities (booms, dams, etc.).
<div><div>Important</div><p>Prior to beginning any activities, each person in a role must:</p><ul style="list-style-type: none">❑ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the Incident Commander.<p>Throughout the duration of the incident, each person in a role must:</p><ul style="list-style-type: none">❑ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms.<p>After the incident is over, each person in a role must:</p><ul style="list-style-type: none">❑ Assist with post-incident activities.<p>All forms referenced can be found in Section 6: Forms</p></div>					
Located at the Incident Command Post (ICP)	Located at the On-Site Command Post (OSCP)	Located at the Staging Area	Located at the On-Site Command Post (OSCP)	Located at the On-Site Command Post (OSCP)	Located at the On-Site Command Post (OSCP)

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up:** Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

General Staff Roles – Planning Section

Planning Section Chief	Documentation Unit	Technical Specialists Unit	Situation Unit	Resources Unit	Demobilization Unit
<p>The Planning Section Chief is responsible for providing planning and status services for the incident. Under the direction of the Planning Section Chief, the Planning Section collects situation and resources status information, evaluates it, and processes the information for use in developing action plans. Dissemination of information can be in the form of the Incident Action Plan, formal briefings, or through map and status board displays.</p>	<p>The Documentation Unit is responsible for the maintenance of accurate, up-to-date incident files. Duplication services will also be provided by the Documentation Unit.</p>	<p>Certain incidents or events may require the use of Technical Specialists who have specialized knowledge and expertise. Technical Specialists may function within the Planning Section, or be assigned wherever their services are required.</p>	<p>The collection, processing, and organization of all incident information. The Situation Unit may prepare future projections of incident growth, maps, and intelligence information.</p>	<p>The Resources Unit is responsible for maintaining the status of all assigned resources at an incident.</p>	<p>The Demobilization Unit is responsible for developing the Incident Demobilization Plan.</p>
<ul style="list-style-type: none"> Identify and confirm communication links. Assign personnel to assume the following positions, as required: Documentation, Technical, Situation, Resources, and Demobilization. Assist with setup of the Incident Command Post. Review the details of the incident and support the Incident Commander with the development of a preliminary response strategy. Identify the need for technical specialists. Collect and analyze information on the current situation, prepare situation displays and situation summaries, and develop maps and projections. Establish special information collection activities as necessary, e.g., weather, environmental, toxics, etc. Provide technical support to the Incident Commander and work with Incident Commander to develop the Incident Action Plan (IAP). Review any changes to the Incident Action Plan (IAP) to ensure consistency. Assemble information on alternative strategies. Coordinate with Logistics to determine current available resources and resource availability for future plans of action. Establish reporting schedules. Conduct long-range and / or contingency planning. Develop plans for demobilization. Maintain continuous communications with the Incident Commander. <div> <div>Form ICS 202</div> <div>Form ICS 214</div> <div>Form ICS 215</div> <div>Form ICS 215a</div> <div>Form ICS 230</div> </div>	<ul style="list-style-type: none"> Document the Incident Action Plan (IAP) strategies using the ICS 201 Incident Briefing Form provided in Section 1: Initial Response or Section 6: Forms and disseminate them to all key responders. <div>Form ICS 201</div> <ul style="list-style-type: none"> Be prepared to document the Incident Commander's status update meetings using whiteboards, PC or Action Logs. <div>Form ICS 214</div> Ensure consistent documentation. Ensure timely dissemination of all documentation. Participate in planning meetings, capturing key information, decisions made, commitments and status. Collect documentation from response team members and maintain a consistent system for organizing the data. <ul style="list-style-type: none"> Records must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time. Establish duplication services. Incident files will be stored for legal, analytical, and historical purposes. Post and maintain all Emergency Status Boards and other laminated charts in the Incident Command Post. <div> <div>Form ICS 201</div> <div>Form ICS 214</div> <div>Form ICS 231</div> <div>Form ICS 233</div> </div>	<ul style="list-style-type: none"> Determine what technical support is available now and in the future. Work with Logistics to determine the key locations for the required technical support and appropriate time to acquire. Gather data (weather, etc.) and forecast changes considering incident potential and develop new or modified response strategies. As required, obtain plume dispersion modelling. 	<ul style="list-style-type: none"> Collect and evaluate information to establish an accurate picture of the situation and creates a detailed summary. Use this information to create maps and projections. Prepare, post, or disseminate resources and situation status information as required, including special requests. Provide photographic services and maps if required. <div> <div>Form ICS 201</div> <div>Form ICS 209</div> <div>Form ICS 214</div> </div>	<ul style="list-style-type: none"> Monitor the status and location of all incident resources / personnel responding to the incident. Oversee the check-in of all resources. Maintenance of a master list of all resources, e.g., key supervisory personnel, primary and support resources, etc. May assist in preparing the written Incident Action Plan. Maintain and post the current status and location of all resources. <div> <div>Form ICS 203</div> <div>Form ICS 204</div> <div>Form ICS 207</div> <div>Form ICS 211</div> <div>Form ICS 214</div> </div>	<ul style="list-style-type: none"> Prepare plan for the demobilization of all personnel and equipment upon resolution of the incident. Ensure resources in available status are still required. Identify surplus resources and probably release time. Debrief non-required resources and dismiss resources being demobilized. Coordinate demobilization with agency representatives. Develop incident check-out function for all units. Ensure the demobilization process is organized, safe and cost effective. <div> <div>Form ICS 214</div> <div>Form ICS 221</div> </div>
<div> <div>Important</div> <div> <p>Prior to beginning any activities, each person in a role must:</p> <ul style="list-style-type: none"> Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the Incident Commander. <p>Throughout the duration of the incident, each person in a role must:</p> <ul style="list-style-type: none"> Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms. <p>After the incident is over, each person in a role must:</p> <ul style="list-style-type: none"> Assist with post-incident activities. <p>All forms referenced can be found in Section 6: Forms</p> </div> </div>					

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Revised October 2018

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up:** Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

General Staff Roles – Logistics Section

Logistics Section Chief	Communications Unit	Medical unit	Food Unit	Supply Unit	Facilities Unit	Ground Support Unit
All incident support needs are provided by the Logistics Section. The section is responsible for providing: facilities, transportation, communications, supplies, equipment maintenance and fuelling, food services, medical services, and ordering resources. Six units may be established within the Logistics Section and the Logistics Section Chief will determine the need to activate or deactivate a unit. If a unit is not activated, responsibility for that unit's duties will remain with the Logistics Section Chief .	The Communications Unit is responsible for developing plans for the use of incident communications equipment and facilities; installing and testing of communications equipment; supervision of the Incident Communications Centre, if established; and the distribution and maintenance of communications equipment.	The Medical Unit is responsible for all medical services for incident assigned personnel. The unit will develop procedures for managing major medical emergencies; and provide medical aid. <i>Note: Medical assistance to the public or victims of the emergency is an operational function.</i>	Responsible for supplying the food needs for the entire incident, including all remote locations, (e.g., Camps, Staging Areas), as well as providing food for personnel unable to leave tactical field assignments. The Food Unit interacts with the Facilities Unit for location of fixed-feeding site; the Supply Unit for food ordering; and the Ground Support Unit for transporting food.	The Supply Unit is responsible for ordering, receiving, processing, and storing all incident-related resources.	The Facilities Unit is responsible for set-up, maintenance, and demobilization of all incident support facilities except staging areas. The Facilities Unit will also provide security services to the incident as needed.	The Ground Support Unit is primarily responsible for the maintenance, services, and fuelling of all mobile equipment and vehicles, with the exception of aviation resources. The unit also has responsibility for the ground transportation of personnel, supplies, and equipment.
<ul style="list-style-type: none">❑ Identify and confirm communication links.❑ Assign personnel as required.❑ List and obtain all immediate resources requested by the Incident Commander or Operations Section Chief.❑ Identify anticipated and known incident service and support requirements.❑ Maintain continuous communications with the Incident Commander.❑ Develop plans to move required resources to site.❑ Confirm spending authorities with the Finance / Admin Section.❑ Mobilize resources.❑ Move required resources to site.❑ Coordinate spending with the Finance / Admin Section Chief.	<ul style="list-style-type: none">❑ Establish the communications plan for the use of incident communications equipment and facilities.❑ Install, test, distribute, and maintain all communications equipment.❑ Advise on communications capabilities and limitations.❑ Establish telephone, communication links, and public address systems.❑ Establish clear and widespread communication throughout the incident.	<ul style="list-style-type: none">❑ Arrange and provide response personnel with first aid and minor medical services.❑ Develop Incident Medical Plan.❑ Develop procedures for handling serious injuries of responder personnel.❑ Provide medical aid to personnel.❑ Assist the Finance / Administration Section with processing injury-related claims. <i>Note: Provision of medical assistance to the public or victims of the emergency is an operational function and would be done by the Operations Section Medical Unit. If there is a requirement for victims of an incident the local public ambulance service is most often utilized.</i>	<ul style="list-style-type: none">❑ Responsible for supplying the food needs for the entire incident, including all remote locations (e.g., Camps, Staging Areas), as well as providing food for personnel unable to leave tactical field assignments.❑ Works with the Planning Section - Resources Unit to anticipate the numbers of personnel to be fed and develop plans for supplying food to all incident areas.❑ Interacts with the Facilities Unit for location of fixed-feeding site; the Supply Unit for food ordering; and the Ground and Air Support Units for transporting food.❑ Obtain necessary equipment and supplies and establish cooking facilities.❑ Order sufficient food and potable water from the Supply Unit.❑ Maintain inventory of food and water.❑ Maintain food services areas, ensuring that all appropriate health and safety measures and being followed.❑ Supervise caterers, cooks, and other Food Unit personnel as appropriate.	<ul style="list-style-type: none">❑ Order, receive, distribute and track all incident equipment and supplies.❑ Ordered all off-incident resources including: tactical and support resources (including personnel), all expendable and non-expendable support supplies.❑ Management of tool operations, including the storage, disbursement, and service of all tools and portable non-expendable equipment.	<ul style="list-style-type: none">❑ Set-up, maintain, and demobilize incident support facilities with the exception of staging areas.❑ Facilities may include: Incident Command Post, Incident Base, Camps, and other facilities within the incident area to be used for feeding, sleeping and sanitation services.❑ Prepare layout of facilities; inform appropriate unit leaders.❑ Will provide security services to the incident as needed.❑ Contact local law enforcement agencies as required.❑ Investigate and document all complaints and suspicious occurrences.❑ Ensure strict compliance with applicable safety regulations.❑ Provide facility maintenance services, e.g., sanitation, lighting, etc.❑ Demobilize base and camp facilities.	<ul style="list-style-type: none">❑ Responsible for the maintenance, service and fuelling of all mobile equipment and vehicles, with the exception of aviation resources.❑ Coordinates the transportation of all personnel, supplies, and equipment.❑ Update the Resources Unit with the status (location and capability) of transportation vehicles.❑ Develop the Incident Traffic Plan as required.
<div><div>Important Prior to beginning any activities, each person in a role must:<ul style="list-style-type: none">❑ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the Incident Commander.Throughout the duration of the incident, each person in a role must:<ul style="list-style-type: none">❑ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms.After the incident is over, each person in a role must:<ul style="list-style-type: none">❑ Assist with post-incident activities.<p>All forms referenced can be found in Section 6: Forms</p></div></div>						

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Revised October 2018

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General Staff Roles – Finance / Admin Section

Finance / Admin Section Chief	Time Unit	Procurement Unit	Compensation & Claims Unit	Cost Unit
<p>The Finance / Administration Section Chief is responsible for managing all financial aspects of an incident. The Finance / Administration Section Chief will determine the need to activate or deactivate a unit.</p>	<p>The Time Unit is responsible for ensuring the accurate recording of daily personnel time, compliance with specific agency time recording policies and managing commissary operations if established at the incident.</p>	<p>All financial matters pertaining to vendor contracts, leases and fiscal agreements are managed by the Procurement Unit. The unit is also responsible for maintaining equipment time records. The Procurement Unit establishes local sources for equipment and supplies; manages all equipment rental agreements; and processes all rental and supply fiscal document billing invoices.</p>	<p>This unit oversees the completion of all forms required by workers' compensation and local agencies. A file of injuries and illnesses associated with the incident will also be maintained and all witness statement will be obtained in writing. Close coordination with the medical Unit is essential. The Compensation & Claims Unit is also responsible for investigating all claims involving property associated with or involved in the incident.</p>	<p>The Cost Unit provides all incident cost analysis. It ensures the proper identification of all equipment and personnel requiring payment; records all cost data; analyzes and prepares estimates of incident costs; and maintains accurate records of incident costs.</p>
<div><ul style="list-style-type: none">❑ Identify and confirm communication links.❑ Assign personnel to assume the following positions, as required: Time Unit, Procurement Unit, Compensation & Claims Unit, and Cost Unit.❑ Review legal issues with the Incident Commander.❑ Maintain continuous communications with the Incident Commander.❑ Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up.❑ Manage all financial aspects of an incident.</div>	<div><ul style="list-style-type: none">❑ Record daily personnel time, ensure compliance with specific agency time recording policies, and manage commissary operations if established at the incident.❑ Submit cost estimate data forms to Cost Unit as required.❑ Ensure that all records are current and complete prior to demobilization.</div>	<div><ul style="list-style-type: none">❑ Manage finances relating to vendor contracts, leases and fiscal agreements.❑ Maintain equipment time records.❑ Establish local sources for equipment and supplies. Coordinate with local jurisdiction on plans and supply sources.❑ Manage all equipment rental agreements. Establish contracts and agreement with supply vendors.❑ Processes all rental and supply fiscal document billing invoices.❑ Prepare and authorize contracts and land use agreements, as needed.</div>	<div><ul style="list-style-type: none">❑ Handle all matters relating to compensation for injury or property damage due to the incident.❑ Oversees the completion of all forms required by workers' compensation and local agencies.❑ Maintain a file with all the injuries and illnesses associated with the incident.❑ Obtain witness statements in writing.❑ Investigate all claims involving property associated with or involved in the incident.❑ Ensure the completion of a Resident Compensation Log for any out-of-pocket expenses incurred by evacuees.❑ All claims must be submitted to the Finance and Legal departments for processing and disbursement of funds.<ul style="list-style-type: none">❑ If applicable, Finance and Legal will deal with insurers as well as any other extraneous circumstances (affected parties want more, etc.).</div> <div><div>Form B2</div></div>	<div><ul style="list-style-type: none">❑ Collect and evaluate cost data to establish an accurate picture of the incident costs.❑ Create cost summaries, cost estimates, and cost saving recommendations.❑ Prepare resources-use cost estimates for the Planning Section.❑ Identify all equipment and personnel requiring payment.</div>

Important

Prior to beginning any activities, each person in a role must:

- ❑ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the **Incident Commander**.

Throughout the duration of the incident, each person in a role must:

- ❑ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in **Section 6: Forms**.

After the incident is over, each person in a role must:

- ❑ Assist with post-incident activities.

All forms referenced can be found in Section 6: Forms

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. **Emergency Follow-up:** Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

Operations Section - Public Safety Roles

[illegible]

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Overview

H₂S, SO₂, LEL or other toxic substance concentrations will be monitored continuously during the incident response. It is crucial that **Air Monitors** continuously update the **Public Safety Group Supervisor** with monitored results. If air monitoring readings show high levels of H₂S, SO₂, or LEL the **Public Safety Group Supervisor** may need to initiate evacuation / shelter of additional residences, change the location of the roadblocks, or ignite the release.

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Air Monitor Roles

- ❑ Obtain and check equipment and information (maps, forms, communications, reports, monitors, safety, and breathing equipment).
- ❑ Confirm communication links.
- ❑ Monitor closest downwind public location or residence.
- ❑ Monitor environment for adverse effects.
- ❑ Record all readings on the Air Monitoring Log provided.
- ❑ Report all readings at established intervals to the **Public Safety Group Supervisor**.
- ❑ For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching the following levels: 10% LEL or 10 ppm H₂S.
- ❑ Prepare Mobile Monitoring Plan.
- ❑ Document activities using the ICS 214 Activity Log.
- ❑ Assist with post-incident activities.
- ❑ Monitor H₂S and LEL concentrations along the edge of the EPZ to determine if sheltering and/or evacuation criteria has been met beyond the EPZ.

Form

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Form

ICS 214

- ☐ Obtain and check equipment and information (maps, forms, communications, reports, monitors, safety, and breathing equipment).
- ☐ Confirm communication links.
- ☐ Monitor closest downwind public location or residence.
- ☐ Monitor environment for adverse effects.
- ☐ Record all readings on the Air Monitoring Log provided.
- ☐ Report all readings at established intervals to the **Public Safety Group Supervisor**.
- ☐ For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching the following levels: 10% LEL or 10 ppm H₂S.
- ☐ Prepare Mobile Monitoring Plan.
- ☐ Document activities using the ICS 214 Activity Log.
- ☐ Assist with post-incident activities.
- ☐ Monitor H₂S and LEL concentrations along the edge of the EPZ to determine if sheltering and/or evacuation criteria has been met beyond the EPZ.

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Air Monitoring Equipment

Air monitoring equipment is used to:

- Track the plume.
- Determine if ignition criteria are met.
- Determine whether evacuation and / or shelter-in-place criteria have been met.
- Assist in determining when the emergency can be downgraded.
- Determine roadblock locations.
- Determine concentrations in areas being evacuated to ensure that evacuation is safe.

Air monitoring equipment is used to:

- Track the plume.
- Determine if ignition criteria are met.
- Determine whether evacuation and / or shelter-in-place criteria have been met.
- Assist in determining when the emergency can be downgraded.
- Determine roadblock locations.
- Determine concentrations in areas being evacuated to ensure that evacuation is safe.

Tips

- ❑ **Air monitors** should be dispatched at a Level 1 Emergency.
- ❑ Ensure all equipment is operational and the appropriate documentation is available to verify testing and calibration requirements.
- ❑ Use the buddy system where possible.
- ❑ Breathing apparatus – be prepared to don apparatus quickly.
- ❑ Ensure all personnel have a personal gas monitor.
- ❑ Speed and direction of wind may vary, therefore, be prepared to track gas plume.
- ❑ Record all information:
 - Concentrations in ppm or ppb
 - Location and time of readings
 - Wind speed and direction

- ❑ **Air monitors** should be dispatched at a Level 1 Emergency.
- ❑ Ensure all equipment is operational and the appropriate documentation is available to verify testing and calibration requirements.
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 - Concentrations in ppm or ppb
 - Location and time of readings
 - Wind speed and direction

Regulatory Requirements

<p>Sour Gas Release – Mannned Operations</p> <ul style="list-style-type: none">• Critical / Special Sour Wells & EPZ includes a portion of urban density development or urban centre:<ul style="list-style-type: none">• Must be minimum of two mobile air monitors: one to monitor the boundary of the urban density development or urban centre and the other to track the plume. <p>The licensee must also:</p> <ul style="list-style-type: none">• Ensure that one unit is in the area during drilling and / or completion, testing, and workover operations in potentially critical sour zones.• Ensure that the other unit is dispatched if it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.• Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel time is to the well site. <p>• Critical / Special Sour Wells whose EPZ does not include a portion of an urban density development or urban centre and for all noncritical sour wells:</p> <p>The licensee must:</p> <ul style="list-style-type: none">• Dispatch a mobile air quality monitoring unit(s) when it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.• Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel time is to the well site. <p>Downgrading Level of Emergency</p> <ul style="list-style-type: none">• The decision to downgrade an incident will be based on the air monitoring results.	<p>Sour Gas Release – Unmanned Operations</p> <ul style="list-style-type: none">• If notified of a release by an alarm or by a reported odour, the licensee must investigate the source of the release and send out Air Monitors upon confirmation of the release location. <p>Air quality monitoring occurs downwind, with priority being directed to the nearest unevacuated residence or area where people may be present.</p> <p>The licensee is expected to provide monitored H₂S and SO₂ information on a regular basis throughout a sour gas emergency to the relevant government regulator, environmental agency, health authority, local authorities, and on request to the public.</p> <p>HVP Product Release</p> <ul style="list-style-type: none">• Monitoring may occur downwind or upwind depending on how the plume is tracking, with priority being directed to the nearest unevacuated residence or areas where people may be present.• The licensee is expected to provide monitored HVP product LEL information on a regular basis throughout the emergency to the relevant government regulator, environmental agency, health authority, local authorities, and on request to the public.
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- **Critical / Special Sour Wells & EPZ includes** a portion of urban density development or urban centre:
 - Must be minimum of two mobile air monitors: one to monitor the boundary of the urban density development or urban centre and the other to track the plume.

The licensee must also:

- Ensure that one unit is in the area during drilling and / or completion, testing, and workover operations in potentially critical sour zones.
- Ensure that the other unit is dispatched if it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.
- Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel time is to the well site.

- The licensee must:

- Dispatch a mobile air quality monitoring unit(s) when it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.

- ### Downgrading Level of Emergency

- The decision to downgrade an incident will be based on the air monitoring results.

- If notified of a release by an alarm or by a reported odour, the licensee must investigate the source of the release and send out **Air Monitors** upon confirmation of the release location.

The licensee is expected to provide monitored H₂S and SO₂ information on a regular basis throughout a sour gas emergency to the relevant government regulator, environmental agency, health authority, local authorities, and on request to the public.

- Monitoring may occur downwind or upwind depending on how the plume is tracking, with priority being directed to the nearest unevacuated residence or areas where people may be present.

- The licensee is expected to provide monitored HVP product LEL information on a regular basis throughout the emergency to the relevant government regulator, environmental agency, health authority, local authorities, and on request to the public.

Air Monitoring Log - Example										
Time	Location of Samples	H ₂ S (ppm)	LEL (%)	O ₂ (%)	SO ₂ (ppm)	Other	Temp (°C)	Wind Conditions *		Comments
								From	Speed (km/hr)	
19:06	12-05-13-16 W5M	5	4		10		19	NW	12	Picked up 5 ppm reading upon entering lease access. Contacted control room at plant.
19:15	12-05-13-16 W5M	6	7		12		18	NW	11	H ₂ S reading increased 1 ppm at the access point.
19:25	12-05-13-16 W5M	6	7		12		17	NW	11	No change in readings. Wind and temperature is down.

* Estimate meteorological conditions where accurate readings are not available.

[illegible]

* Estimate meteorological conditions where accurate readings are not available.

1. Choosing a Position

1. Using your map and the current wind conditions, travel downwind, with priority being directed to the nearest unevacuated residence or area where people may be present.
2. Confirm the location with the **Public Safety Group Supervisor** and make sure you have a safe route to the assigned location that does not cross the hazardous area.

1. Using your map and the current wind conditions, travel downwind, with priority being directed to the nearest unevacuated residence or area where people may be present.
2. Confirm the location with the **Public Safety Group Supervisor** and make sure you have a safe route to the assigned location that does not cross the hazardous area.

2. Record Information

Record information on the following forms located within this Section

- ☐ Air Monitoring Log
- ☐ ICS 214 Activity Log

Form
A5

Form
ICS
214

Record information on the following forms located within this Section

- ☐ Air Monitoring Log
☐ ICS 214 Activity Log

Form
A5

Reporting and Contacts

Air Monitors report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre

Location: _____

Phone Number: _____

Wind Direction: _____

Air Monitors report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre

Location: _____

Phone Number: _____

Wind Direction: _____

A5 Air Monitoring Log

Date: _____	Responder Name: _____
Page _____ of _____	Responder Position: _____

[illegible]

ICS 214 Activity Log

[illegible]

Overview

In the event of an emergency in which residents need to be evacuated, a Reception Centre must be established to receive and register the evacuees. A **Reception Centre Representative** is assigned to manage / coordinate activities at the Reception Centre. The **Reception Centre Representative** continuously updates the **Public Safety Group Supervisor** with a list of those who have, and have not, checked in at the Reception Centre.

Reception Centre Rep Roles

- Confirm Reception Centre is available for use.
- Establish Reception Centre.
- Confirm communication links.
- Receive evacuees and maintain a Reception Centre Registration Log. Form B1
- Arrange for food and accommodations for the evacuees.
- Provide evacuees with a place to request counselling services, if required.
- Record and follow up on all evacuees who choose to make their own accommodation arrangements. Form B2
- Arrange for temporary care of livestock (if possible) and the security of evacuated property.
- Establish and oversee compensation administration activities at the reception centre.
- Reimburse evacuees for their immediate out-of-pocket expenses and log details on a Resident Compensation Log.
- Where possible, provide evacuees with information regarding their property, livestock, and the incident.
- Forward all media and incident inquiries to the **Information Officer**. Form C2
- Report all names of evacuees who have registered at the Reception Centre to the **Public Safety Group Supervisor**.
- Document activities using the ICS 214 Activity Log. Form ICS 214
- Assist with post-incident activities.
- Confirm information to be released to public with the **Information Officer**.
- Address resident concerns and forward them to the **Public Safety Group Supervisor**.

1.

Choosing a Reception Centre

- Reception Centres are usually located in schools, hotels / motels, or community halls.
- It may be useful to coordinate the location of the Reception Centre with the local authority (city, town, county, M.D., etc.).
- See Area Specific Information (white tabs) for pre-identified Reception Centres in your area.

A Reception Centre should:

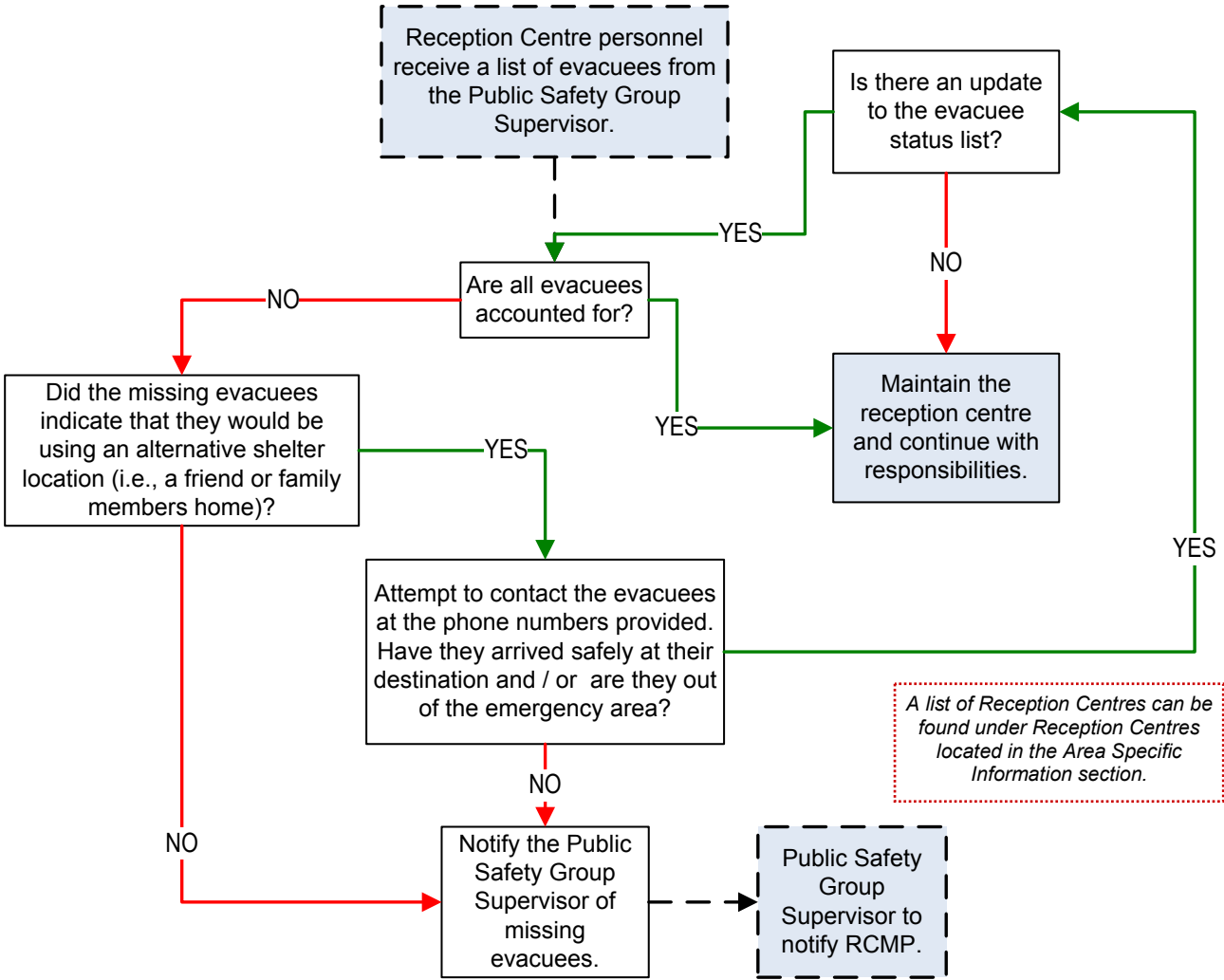
- Have a conference room of some type where a large number of people can gather.
- Have conferencing services including fax machine, internet access, and phone access.
- Be large enough to house all of the evacuees.
- Be outside of the hazard area.
- Allow residents to evacuate to the Reception Centre without travelling through the hazard area.
- Allow pets.

Tips

- Ensure you have enough staff to handle the needs of all of the evacuees.
- Allow evacuees to vent their emotions.
- Do not make any promises that cannot be kept.
- Attempt to reunite families as quickly as possible.
- Document the details of anyone who may have trouble coping with the incident so that they can be given proper psychological support.
- Monitor whether residents that have been contacted by the **Telephoners, Rovers, and Roadblock** personnel have checked in at the Reception Centre.

2.

Reception Centre Feedback Loop



Reception Centre Registration Log - Example Form B1

Resident ID	Name (List all names in party)		# of Occupants	Number Arrived	Arrival Time	Depart Time	Destination Phon # (Where they can be reached)	Comments
	First	Last						
G124-A	John	Doe	2	2	19:06	19:21	555-555-5555	John and his wife arrived safely then left to stay at a friend's house in Red Deer.
H131-B	Jane	Doe	3	3	19:12	19:28	555-555-5555	Jane and her 2 children arrived safely then left to stay with her mother in Bentley.
F122-A	James	Doe	5	3	19:20		555-555-5555	James, his wife and 1 child arrived safely. The other two children are away on a school trip. They will stay at the reception centre for the night.

Media Statement

Refer all media inquiries to the Media Representative in Calgary. However, if they insist on a statement, please use the following:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Note: See Section 3.0 Communication & Media for more information on media.

3.

Record Information

- Record information on the following forms located within this Section:
- Reception Centre Registration Log
 - Resident Compensation Log
 - ICS 214 Activity Log Form ICS 214
 - Media Contact Log Form B1, Form B2, Form C2

Reporting and Contacts

Reception Centre Reps report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre

Location: _____

Phone Number: _____

Wind Direction: _____

B1 Reception Centre Registration Log

Date: _____ Responder Name: _____

Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

[illegible]

B2 Resident Compensation Log

Resident's Name:	Home Address:	Home Telephone #:	Location of Land (LSD):
		Business Telephone #:	
Number of Residents Evacuated:	Evacuated to:	Telephone # While Evacuated:	

No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details of Expense
Total Reported Expenses									

Approved By: _____ Date: _____

ICS 214 Activity Log

Incident Name:

Date / Time Initiated:

Prepared by:	Position / Title:
--------------	-------------------

Personnel Assigned

Name	ICS Position	Location

Activity Log

[illegible]

Overview

In the event of an emergency, roadblock locations and road detours will be established. The company will initially establish and maintain roadblocks until relieved by highway maintenance contractors or the RCMP. **Roadblock** personnel will be assigned in teams of two, one member to stop approaching traffic, the other will record the information gathered and relay to The Public Safety Group Supervisor. The **Public Safety Group Supervisor** must be continuously updated by **Roadblock** personnel so that all vehicles entering and exiting the EPZ are accounted for.

Roadblock Personnel Roles

- ☐ In conjunction with the **Public Safety Group Supervisor**, determine the need for and location of roadblocks.
- ☐ Pickup and check roadblock kits.
- ☐ Proceed to roadblock locations.
- ☐ Confirm communication links and establish communication interval times.
- ☐ Establish roadblocks to secure the EPZ.
- ☐ Follow the scripts and procedures in the ERP.
- ☐ Knowledge and ability to communicate safest route away from hazard.
- ☐ Monitor area for H₂S and / or LEL with personal monitors and document readings on the Air Monitoring Log. Form A5
- ☐ Report all reading changes / increases to the **Public Safety Group Supervisor**.
- ☐ For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching 10% LEL and / or 10 ppm H₂S.
- ☐ Move location of Roadblock immediately if readings are approaching 10% LEL and / or 10 ppm H₂S.
- ☐ Record all incoming and outgoing traffic, personnel, and equipment on the Roadblock Log. Form B4
- ☐ Forward information given to you by people passing through your location to the **Public Safety Group Supervisor**. Form ICS 214
- ☐ Document activities using the ICS 214 Activity Log.
- ☐ Maintain communication with the **Public Safety Group Supervisor**.
- ☐ Maintain roadblock locations. Do not leave until requested to do so by the **Public Safety Group Supervisor** or until relieved by other **Roadblock** personnel.
- ☐ Assist with post-incident activities.

Roadblock Kit Contents - Sample

- The roadblock kit may contain the following items:
- Recommended**
- ☐ Direct communication capability (radio, cell phone, etc.)
 - ☐ ERP maps and roadblock forms
 - ☐ Flashlight and batteries
 - ☐ High visibility / reflective vests
 - ☐ Orange traffic cones / reflectors
 - ☐ Pens and / or pencils
 - ☐ Personal Air Monitoring Device (H₂S, CO, O₂, LEL)
 - ☐ Portable rotating emergency light
 - ☐ SCBA
 - ☐ Hand-held stop sign with reflective tape
 - ☐ Waterproof bag
- Optional**
- ☐ Caution tape
 - ☐ Rain suit
 - ☐ Road barrier

Tips

- ☐ When talking to motorists at the roadblock, **ONLY** provide them with the information as directed by the **Public Safety Group Supervisor**.
- ☐ Ask for identification prior to granting access.
- ☐ You do not have the legal authority to restrict access to the area without an order from the relevant authority. Report any person who chooses to proceed, without permission, through the roadblock.
- ☐ Check with the motorists and ensure all members of their residence are accounted for and documented on the Resident Contact Log. Report any resident that is left behind in the EPZ. Form B3
- ☐ The roadblock should be setup to allow optimal visibility and sufficient distance for traffic to come to a safe and complete stop.
- ☐ **Roadblock** personnel should be highly visible on the side of the road and have an escape route in case of an emergency.
- ☐ **DO NOT** leave your position until you are directed to do so.

Choosing a Roadblock

1.

- Roadblocks should be established:
- ☐ Approximately where the EPZ intersects any highways / roads.
 - ☐ Outside of the hazard area.
 - ☐ At a conspicuous location where the **Roadblock** personnel will be visible to approaching traffic, providing them with enough time to safely stop.
 - ☐ At a location where traffic can easily turn around or detour (consider the potential for larger vehicles such as buses, semi-trailers, drilling rigs, etc.).
 - ☐ Where possible at natural roadblock locations (e.g., gates, bridges, junctions, etc).

Before Departure

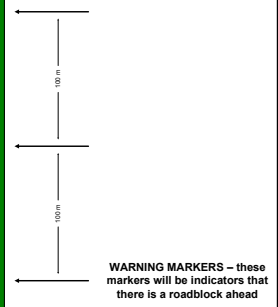
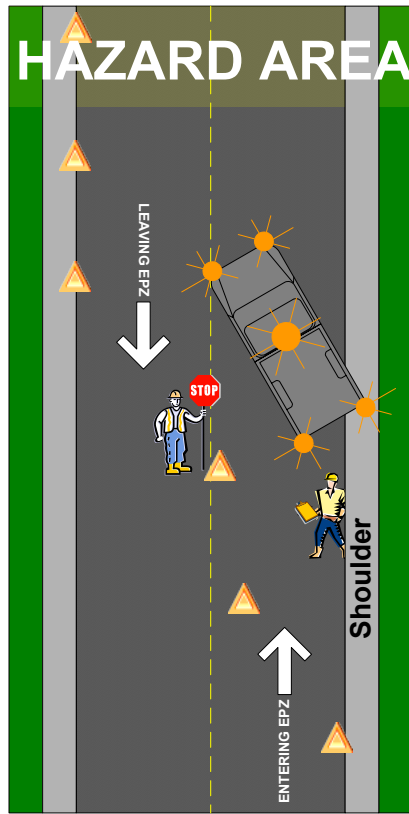
2.

- ☐ Make sure your vehicle is equipped and suitable for the travel conditions.
- ☐ Check roadblock kit to confirm all items are present (see sample of roadblock kit contents to left).
- ☐ Confirm that your handheld monitor for H₂S and / or LEL is functioning properly.
- ☐ Check all communications devices.
- ☐ Check that the red signaling baton flashlight is working and has spare batteries.
- ☐ Confirm that you have enough copies of the Roadblock Log form.
- ☐ Confirm the location of the roadblock with the **Public Safety Group Supervisor** and make sure you have a safe route to the assigned location that does not cross the hazardous area.

Setting up a Roadblock

3.

- ☐ Park vehicle as illustrated, activating four way flashers and roof mounted rotating beacon.
- ☐ Put on reflective vests.
- ☐ Take a reading with your handheld monitor for H₂S and / or LEL; ensuring your roadblock is not too close to the edge of the EPZ. Record readings on the Air Monitoring Log. Form A5
- ☐ Notify the **Public Safety Group Supervisor** once your roadblock is set up.
- ☐ Continue to monitor and record H₂S and / or LEL levels at scheduled intervals. Report to the **Public Safety Group Supervisor** at scheduled intervals.
- ☐ Maintain roadblock until the emergency is over and the "all clear" message is given or until relieved by other **Roadblock** personnel.



Reporting and Contacts

Roadblock personnel report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre

Location: _____

Phone Number: _____

Wind Direction: _____

To give motorists time to prepare to come to a stop, it is recommended that the **Roadblock** personnel set up all available collapsible reflective triangles 100 metres apart, at a minimum distance of 200 metres before the roadblock.

Roadblock personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a State of Local Emergency by the local authority.

- When establishing a roadblock consider:
- ☐ Visibility
 - ☐ Distance
 - ☐ Bends in the road
 - ☐ Level of the ground
- Remember to:
- ☐ Remain calm
 - ☐ Be courteous
 - ☐ Record names
 - ☐ Notify the **Public Safety Group Supervisor**

How to Stop Traffic

4.

1. Hold the reflective stop / slow paddle erect and away from your body. Never wave the sign.
2. Look directly at the approaching driver.
3. Raise your free arm with the palm of your hand exposed to the driver.
4. Bring the vehicle to a full stop.
5. After the first vehicle has stopped, move to a spot (near the centre line of the roadway) where you can be seen by other approaching vehicles.

Because visibility is reduced at night, it is important that you use utmost care when stopping traffic through a roadblock area, and that you protect yourself from injury by:

- ☐ Standing in a safe position on the shoulder of the road.
- ☐ Waving the red signaling baton flashlight back and forth.

Note: The red signaling baton flashlight should only be used in place of the reflective stop / slow paddle at night or in conditions of low / poor visibility.

Roadblock Script

5a.

"I am representing [Insert Company Name] and we are presently experiencing control problems ahead. This situation is serious enough to warrant restricted access beyond this point. For your own safety I must ask you not to proceed."

- Note:**
- ◆ Record driver's name, vehicle make, colour, etc. and at least the license plate number of all vehicles approaching your roadblock; also make a note of the time and of the direction the vehicle took when leaving (e.g., east, south, west, north) on your log sheet.
 - ◆ Remember you have no legal position to restrict access to the general public. You are there to protect and notify – to protect the health and safety of the people by notifying them of the danger and secondly to protect the property of the residents who have evacuated the area.
 - ◆ Should someone continue into the restricted area, regardless of your warning about personal safety, then use the 2-way radio or cell phone to notify the **Public Safety Group Supervisor** and the matter shall be immediately turned over to the Police.

Media Statement

5b.

If the media arrives at your roadblock location, company personnel may give the following statement:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Contact the **Public Safety Group Supervisor** if a media representative arrives at your roadblock.

NEVER offer your opinion of what is happening at the location to a media person or stranger. This can be interpreted as the company's position. **DO NOT** give statements, other than the above message, regarding the emergency situation to the MEDIA. Refer them to the Information Officer.

Be courteous but firm.
If the questioning persists, just keep politely repeating word for word the statement above.

Record Information

6.

Record information on the following forms located within this section:

- ☐ Roadblock Log
- ☐ Resident Contact Log
- ☐ Air Monitoring Log
- ☐ ICS 214 Activity Log

Form ICS 214

Form A5

Form B3

Form B4

Possible Scenarios for Roadblock Personnel:

- ◆ Motorist obeys request and drives away from the EPZ.
- ◆ Motorist is leaving the EPZ and agrees not to return until further notice.
- ◆ Emergency responders (service companies, fire, ambulance, etc.) are entering the EPZ to help respond to the incident.
- ◆ Motorist disobeys request to leave the area and enters the EPZ.

In all cases, notify the **Public Safety Group Supervisor** and log all information.

Date: _____ Responder Name: _____
 Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

[illegible]

Date: _____ Responder Name: _____
 Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

[illegible]

Incident Name:
Date / Time Initiated:

Prepared by:	Position / Title:
--------------	-------------------

Personnel Assigned

Name	ICS Position	Location

Activity Log

[illegible]

B3 Resident Contact Log

Date: _____

Responder Name: _____

Page _____ of _____

Responder Position: _____ Responders Phone No.: _____

[illegible]

ICS 214 Activity Log

[illegible]

Overview

In the event of an emergency in which residents and area users need to be sheltered and / or evacuated, a team of **Telephoners** will be established to contact people in the area and provide instructions to ensure their safety. The **Public Safety Group Supervisor** must be continuously updated with the **Telephoners** progress so that unsuccessful contact attempts and requests for evacuation assistance can be followed up on immediately.

Telephone Personnel Roles

- ☐ Confirm resident contact lists are available.
- ☐ Confirm communication links.
- ☐ In conjunction with the **Public Safety Group Supervisor**, determine who needs to be notified (residents, businesses, area users, etc.). Form B6
- ☐ Review with the **Public Safety Group Supervisor** the telephoner scripts to be used: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message. Form B7
- ☐ Contact special needs residents at a Level 1 Emergency and provide them with the option to evacuate. Form B8
- ☐ Contact the other residents and area users in the EPZ and advise them to evacuate or shelter.
- ☐ Contact the schools / school buses to make arrangements for school age children (if applicable).
 - ☐ Advise that buses in the affected area leave immediately and that buses should not enter the area.
 - ☐ Request a school administrator for the reception centre to assist in managing the children and releasing them to their guardians.
- ☐ Document all resident interactions using the Resident Contact Log and report this information to the **Public Safety Group Supervisor**. Immediately advise the **Public Safety Group Supervisor** about unsuccessful contacts and any residents requiring assistance. Form B3
- ☐ Document all activities using the ICS 214 Individual Activity Log. Form ICS 214
- ☐ Assist with post-incident activities.

Shelter-In-Place Instructions

- ☐ Immediately gather everyone indoors and stay there. Do not leave even if you see people outside.
- ☐ Close and lock all outside doors and windows. Tape gaps around doors and windows. Leave all inside doors open.
- ☐ Turn off appliances or equipment that blows out indoor air or sucks in outside air.
- ☐ Turn down furnace thermostats to the minimum setting and turn off air conditioners.
- ☐ Extinguish all potential sources of ignition (do not smoke or attempt to start your vehicle).
- ☐ Stay off of the phone so that you can be contacted by emergency personnel.
- ☐ Stay tuned to local radio and television for possible updates.

Note: For the full Shelter-In-Place instructions see page 2 of the Shelter-In-Place Telephoner Text form located in SECTION 6.0: FORMS.

Who to Contact

- ☐ Residents
- ☐ Schools / School Bus Transportation
- ☐ Businesses
- ☐ Public Facilities
- ☐ Recreation Areas
- ☐ Urban Centres (contact local authority to coordinate)
- ☐ Area Users (other oil and gas operators, rail, logging, etc.)
- ☐ Trappers
- ☐ Guides / Outfitters
- ☐ Grazing Lease / Allotment Holders

Priority is given to:

- ☐ Those closest to the hazard
- ☐ Those downwind of the hazard
- ☐ Those with sensitivity issues (health issues, require assistance, etc.)

Tips

- ☐ Ensure you have enough personnel to quickly and efficiently shelter / evacuate the required residents / area users.
- ☐ A general guideline is to have one **Telephoner** for every seven residences that need to be contacted and one **Telephoners Leader** for every ten **Telephoners**.
- ☐ Special needs residents should be contacted at a Level 1 Emergency and given the option to evacuate.

Response personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a Local State of Emergency by the local authority.

2a.

Shelter-In-Place Phone Message

Hello, this is _____ of _____.
Is this the _____ residence at _____?
_____ is responding to a (potential) emergency at _____ in your area.

For your safety, it is extremely important that you, and those with you, stay indoors until the potential hazard no longer exists, or you are advised to evacuate.

To help us understand your immediate needs, we need to know:

How many people are at your location now?

Adults _____
Children _____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to get in doors or stay out of the area?

☐ Yes ☐ No

IF YES Whom? _____

Location of the person(s) _____

We will send someone to find them as soon as possible.

Do you have children in school at this time?

☐ Yes ☐ No

IF YES What school? _____

Children's names _____

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you have the "Shelter-in-Place" instructions previously provided to you by _____?

☐ Yes ☐ No

IF YES Please follow the Shelter-in-Place instructions located inside the resident pamphlet.

IF NO Verbally walk the resident through the Shelter-in-Place instructions on the next page.

Do you understand what I have told you?

Is there an alternate number we can contact you at? _____

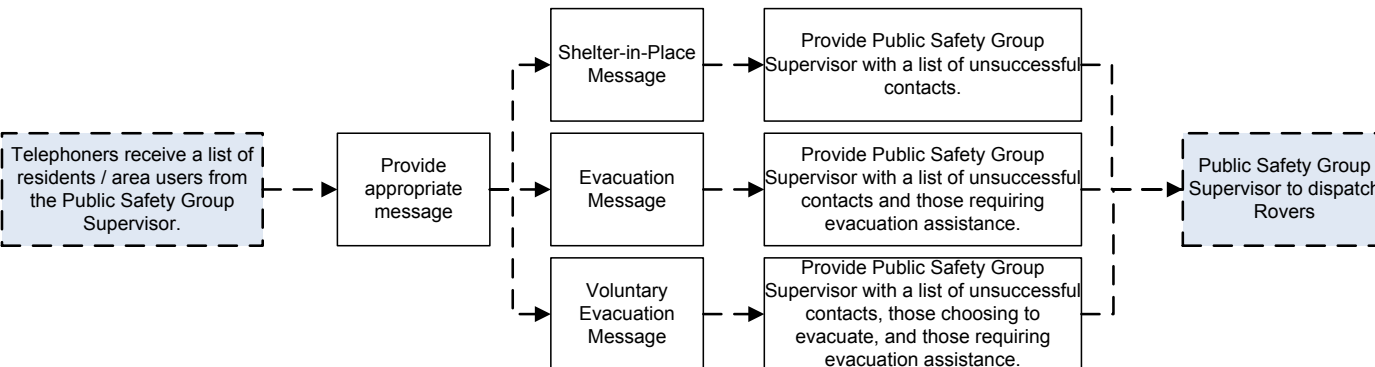
If you have any urgent questions, please contact _____ at _____.

Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Note: Refer to Shelter-in-Place instructions on page 2 of the Shelter-in-Place Phone Message located in this section.

Telephoner Communication Flow



2b.

Evacuation Phone Message

Hello, this is _____ of _____.
Is this the _____ residence at _____?
_____ is responding to a (potential) emergency at _____ in your area.

For your safety, it is extremely important that you and your family leave your residence immediately and travel in a north / east / south / west direction to our reception centre located at:

To help us understand your immediate needs, we need to know:

How many people are at your location now?

Adults _____
Children _____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to evacuate away from the area?

☐ Yes ☐ No

IF YES Whom? _____

Location of the person(s) _____

We will send someone to find them as soon as possible.

Do you have children in school at this time?

☐ Yes ☐ No

IF YES What school? _____

Children's names _____

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you require evacuation / transportation assistance?

☐ Yes ☐ No

IF YES We are sending someone to assist you. Please stay indoors and close all doors and windows until a Rover or the local police arrive to evacuate you.

IF NO Provide the resident with:

- ☐ Directions to safely travel to the reception centre
- ☐ A list of items to bring with them to the reception centre (medications, cell phone, etc.)
- ☐ An idea of how long they may be expected to stay at the reception centre
- ☐ The option to bring their house pets to the reception centre

Please contact _____ if you are unable to make it to the reception centre for any reason. Please keep your phone line free so that we can contact you if necessary.

Is there an alternate number we can contact you at? _____

A company representative at the reception centre will address any questions you may have and will make arrangements for your temporary accommodations. Do you understand everything I have told you? Are you leaving immediately?

If you have any urgent questions, please contact _____ at _____.

Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

3.

Record Information

Record information on the following forms located within this section:

- ☐ Resident Contact Log
- ☐ ICS 214 Individual Activity Log
- ☐ Voluntary Evac Message
- ☐ Shelter-in-Place Message
- ☐ Evacuation Message

Form ICS 214 Form B3 Form B6 Form B7 Form B8

Reporting and Contacts

Telephoners report to the **Public Safety Group Supervisor**.

Name: _____

Phone Number: _____

Reception Centre
Location: _____

Phone Number: _____

Wind Direction: _____

Date: _____ Responder Name: _____
 Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

B6 Early Notification / Voluntary Evacuation Phone Message

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Incident Name:	
Date / Time Initiated:	
Prepared by:	Position / Title:

[illegible]

Initial Response:

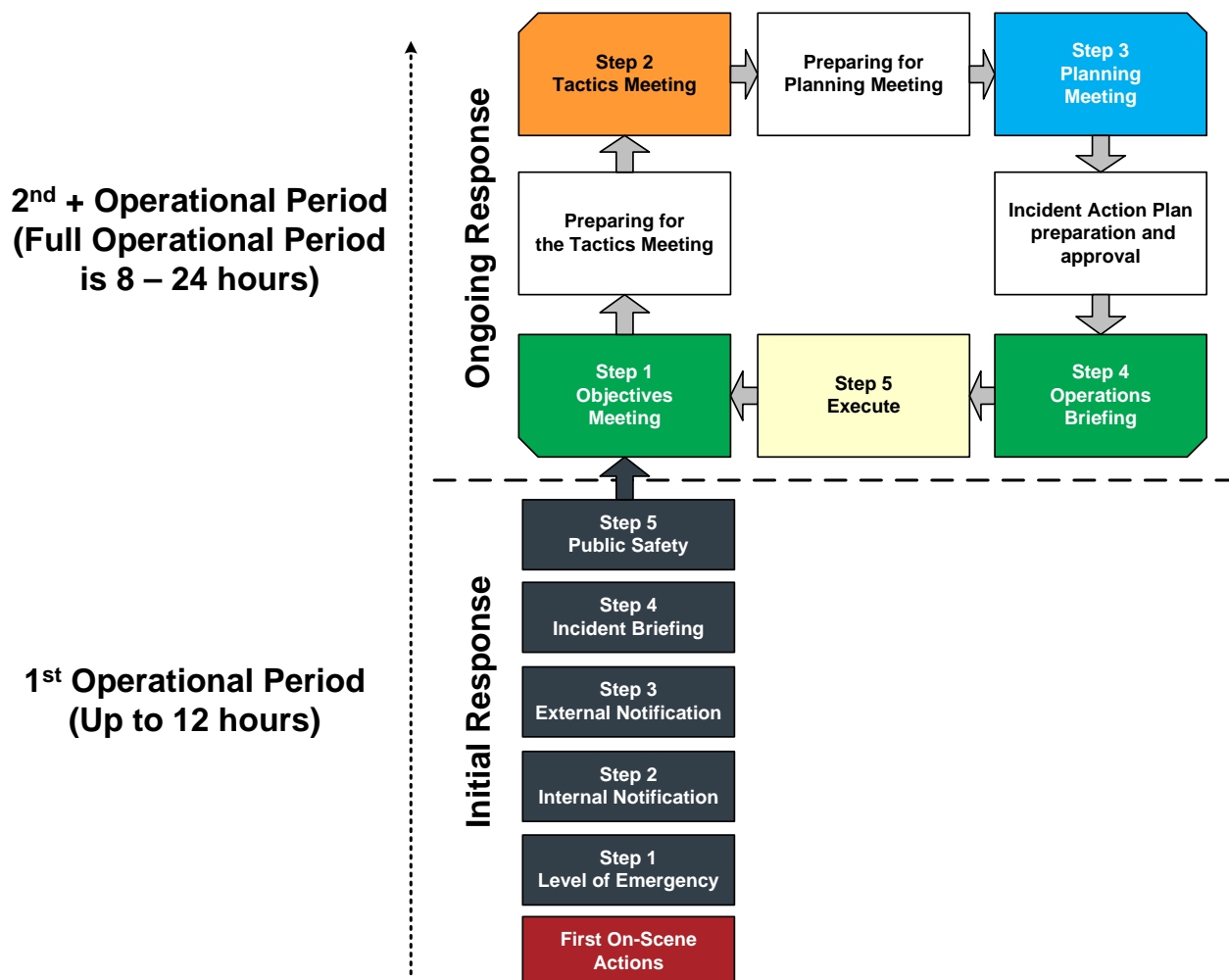
All incidents begin with the initial response (reactive phase) during the first operational period. At the onset of an emergency response an Initial Emergency Report (A1) Form is completed to determine the severity of the emergency and extent of the response. 95% of emergency responses begin and end in the first operational period.

After response personnel ensure their own personal safety by following the First On-Scene Actions, the Five Step Initial Response Guide, and associated tools, provide a structure for the Incident Commander to formulate a response and outlines the steps (key considerations) that need to be addressed and re-addressed when evaluating the incident and associated emergency response.

Ongoing Response:

An ongoing response (proactive phase) is required for an extended emergency response that spans over multiple operational periods and revolves around establishing the objectives, strategies, and tactics for the next upcoming operational period. 5% of incidents require an ongoing response, but once engaged emergency responders will circulate through this cycle multiple times.

After the initial response has been completed, the Five Step Ongoing Response Guide and associated tools provide a cycle to plan the next steps of the emergency response. This continual cycle provides a structure for the Command Staff and General Staff to complete the Incident Action Plan (IAP) and associated documents. The ongoing response cycle and an associated IAP must be completed for each operational period until the incident is stood down.



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Step 1 - Objectives Meeting

Incident Commander conducts the meeting.

Review the ICS 201 form completed during the Initial Response phase and begin the ICS 209 form by evaluating the current incident status.

Identify issues/problems to resolve using the PPOST methodology.

Develop SMART (Specific, Measurable, Attainable, Realistic, & Time-Sensitive) objectives to mitigate the identified problems.

Prioritize the objectives using the ICS 202 form.

Complete the ICS 202 form and identify initial staffing on the ICS 207 form.

Utilize IAP Checklist (A4) to complete the IAP.

Prepare for Tactics Meeting

Develop draft strategies and tactics for each defined objective.

Outline work assignments and develop an operations organization chart using the ICS 207 form.

Identify future tactical plans to optimize the Tactics Meeting.

Begin to prepare a safety analysis once all hazards have been identified using ICS 215A form.

Step 2 - Tactics Meeting

Operations Section Chief conducts the meeting.

Review the incident status using the ICS 209 form that was completed during the Objectives Meeting.

Operations Section Chief proposes strategies and tactics.

Evaluate and assign resources and personnel.

Ensure that all strategies have associated tactics to ensure responder safety and complete the ICS 215A form.

Complete the ICS 215 form and update the ICS 207 form started during the Objectives Meeting.

Prepare for Planning Meeting

Review and update the ICS 209 form.

Confirm availability of resources and locations.

Prepare all information for review at the Planning Meeting.

Gather any additional incident documentation (i.e., maps and status boards).

Step 3 - Planning Meeting

Planning Section Chief conducts the meeting.

Review the incident status using the updated ICS 209 form.

Confirm the strategies and tactics assigned to achieve the defined objectives.

Ensure that all assigned tactics can be performed safely and follow the defined safety analysis using the ICS 215A form.

Incident Commander to give tentative approval of proposed plan and review with key response personnel.

Incident Action Plan Preparation and Approval

Produce a coordinated and sustainable Incident Action Plan using the IAP Checklist (A4), ICS forms 202, 207, 209, 215, 215A, and gather any additional incident documentation (i.e., maps and status boards).

Receive final approval from the Incident Commander.

Define work assignments and break the work into manageable units.

If necessary, other documents may be included such as a Demobilization plan.

Step 4 - Operations Briefing

Incident Commander conducts the meeting.

Provide personnel with work assignments from the IAP.

Operations Section Chief to brief the organization and provide clarification on all tactical assignments.

Ensure that all responders know and understand the safety analysis, hazards, and controls.

Step 5 - Execute

Perform work assignments according to assigned roles.

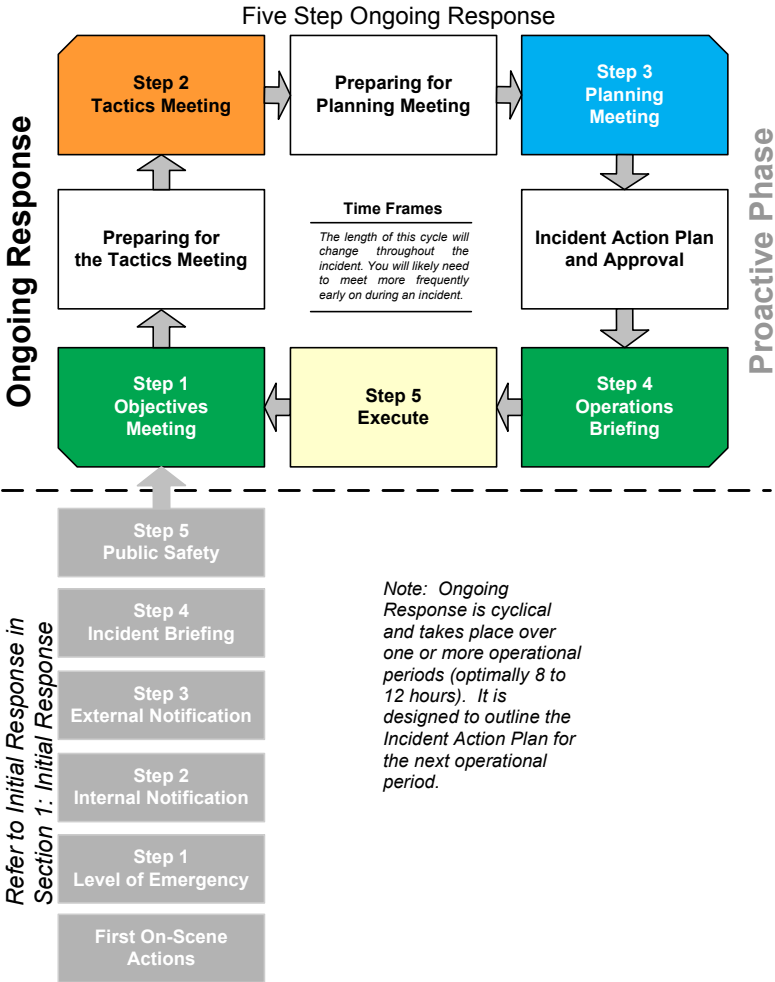
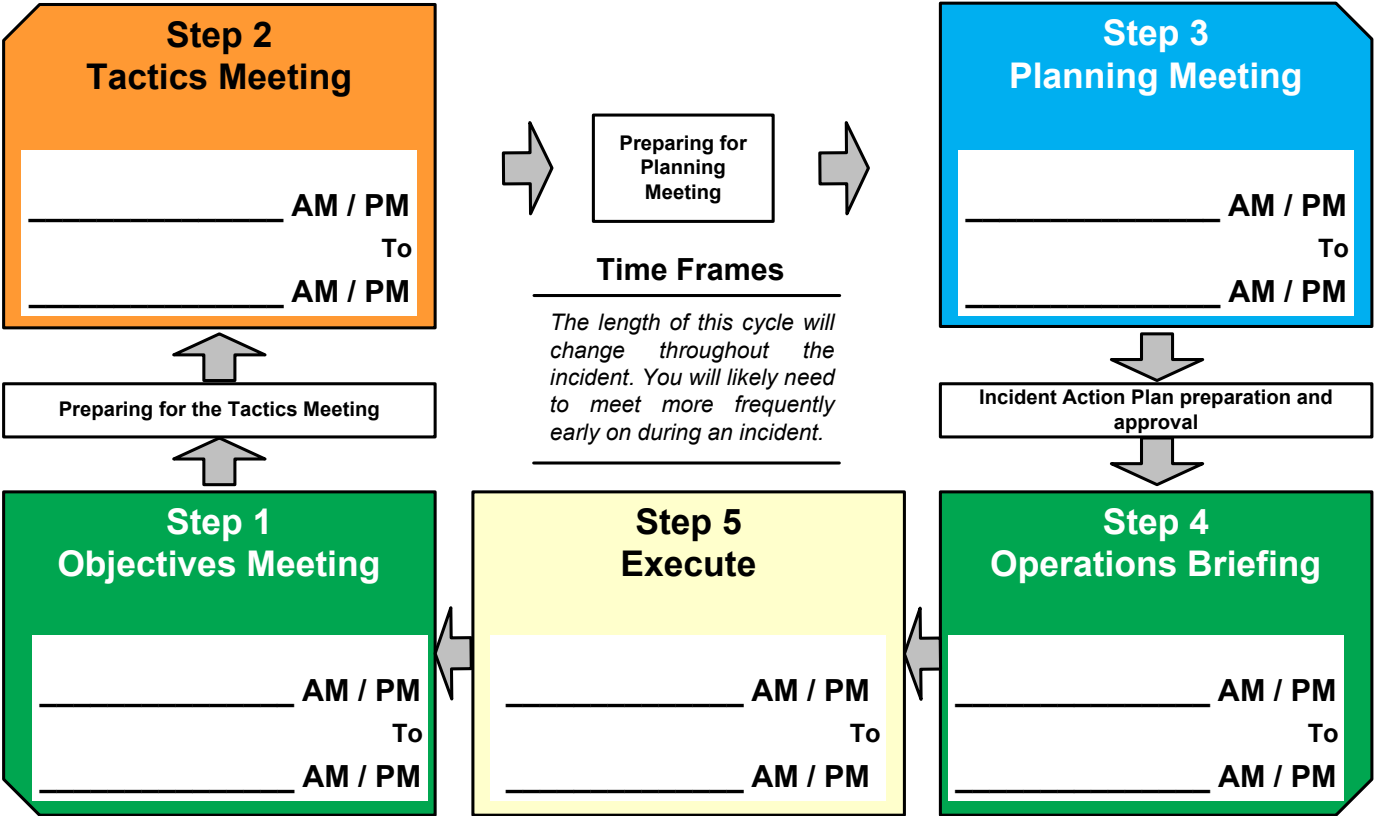
Document all actions, decisions, and conversations.

Constantly evaluate how well the plan is designed and being conducted.

Adjust the plan and associated actions accordingly.

Identify additional objectives for the upcoming operational period.

Schedule next Objectives Meeting if applicable.



Owner: Incident Commander	Date:	Time:
Roles below will attend only if designated and available		
Attendees:		
<input type="checkbox"/> <i>Incident Commander:</i>	<input type="checkbox"/> <i>Planning Section Chief:</i>	
<input type="checkbox"/> <i>Deputy Incident Commander:</i>	<input type="checkbox"/> <i>Logistics Section Chief:</i>	
<input type="checkbox"/> <i>Operations Section Chief:</i>	<input type="checkbox"/> <i>Finance/Admin. Section Chief:</i>	
<input type="checkbox"/> <i>Planning Section Chief:</i>	<input type="checkbox"/> <i>Safety Officer:</i>	
<input type="checkbox"/> <i>Liaison Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<input type="checkbox"/> <i>Information Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
Summary:		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> • Have a completed ICS 202 form agreed upon by all attendees (Command and General Staff). • Establish objectives and priorities for the upcoming operational period. • Begin an ICS 209 Incident Status Summary report. • Begin identifying all required roles on the ICS 207 form. • Begin addressing the Incident Action Plan Checklist (A4). • Schedule and prepare for the Tactics Meeting. 		
Resources:	ICS 202, 207, 209 forms, and the IAP Checklist (A4)	
Agenda Items:		
<input type="checkbox"/> Status Update and review the ICS 201 Incident Briefing form.		
<input type="checkbox"/> Determine incident priorities. Reference the PPOST methodology.		
<input type="checkbox"/> Establish an incident organization that is capable of meeting initial and long-term challenges required to mitigate the incident.		
<input type="checkbox"/> Determine the incident response objectives and complete and ICS 202 Incident Objectives form. They must be SMART (Specific, Measurable, Attainable, Realistic, & Time Sensitive).		
<input type="checkbox"/> Identify initial staffing requirements and begin filling out the ICS 207 Incident Organizational Chart.		
<input type="checkbox"/> Identify and select incident support facilities.		
<input type="checkbox"/> Review the incident objectives for the next operational period so your management team can begin work on the IAP.		
<input type="checkbox"/> Document the incident status to relay to all responding personnel.		
Key Points:		
• Ensure that the meeting is documented / recorded. (Utilize the back side of this page.)		
• Define the hours of work and operational period.		
• Utilize Incident Action Plan Checklist (A4).		
• Identify constraints and limitations.		
• Clarify any staff roles and responsibilities.		
• Determine expectations of the team for how all communications are to be made.		
• Discuss and agree on process issues such as resource ordering, cost accounting, operations security, and sensitive information.		
• Continue to develop tasks for Command and General Staff.		
• Agree on division of command workload, such as press and agency briefings.		

Notes:

Owner: Operations Section Chief	Date:	Time:
Roles below will attend only if designated and available		
Attendees:		
<input type="checkbox"/> Incident Commander:	<input type="checkbox"/> Planning Section Chief:	
<input type="checkbox"/> Deputy Incident Commander:	<input type="checkbox"/> Logistics Section Chief:	
<input type="checkbox"/> Operations Section Chief:	<input type="checkbox"/> Finance/Admin. Section Chief:	
<input type="checkbox"/> Planning Section Chief:	<input type="checkbox"/> Safety Officer:	
<input type="checkbox"/> Liaison Officer:	<input type="checkbox"/> Other:	
<input type="checkbox"/> Information Officer:	<input type="checkbox"/> Other:	
Summary:		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> • Define tactics, work assignments, and resources to meet actions identified during the Objectives Meeting. • Have completed ICS 215 and 215A forms agreed upon by all attendees (Command and General Staff). • Update the ICS 207 Incident Organization Chart. • Refer to Incident Action Plan Checklist (A4) and continue to add to items accomplished. • Schedule and prepare for the Planning Meeting. 		
Resources:	ICS 209, 215, 215A, and IAP Checklist (A4)	
Agenda Items:		
<input type="checkbox"/> Review ICS 209 Incident Status Summary.		
<input type="checkbox"/> Review incident objectives.		
<input type="checkbox"/> Define tactics to complete objectives set out during the Objectives Meeting.		
<input type="checkbox"/> Provide an operational update and identify tactics to deal with incident.		
<input type="checkbox"/> Identify roles and responsibilities that have to be performed to implement tactics.		
<input type="checkbox"/> Build on already established ICS 207 Incident Organization Chart, check span-of-control, and match up with ICS 215 assignments.		
<p>Complete the Operational Planning Worksheet, ICS 215 (Utilize one form for every established objective).</p> <ul style="list-style-type: none"> <input type="checkbox"/> Identify work assignments <input type="checkbox"/> Identify resources requirements to achieve each work assignment <input type="checkbox"/> Identify overhead staffing needs to support each work assignment <input type="checkbox"/> Identify specialized equipment and supply needs for each work assignment <input type="checkbox"/> Specify reporting times and location for personnel 		
<p>Complete the Incident Action Plan Safety Analysis, ICS 215A.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Identify potential hazard types <input type="checkbox"/> Identify mitigations for associated hazard types 		
<input type="checkbox"/> Identify support facilities and locations.		
Key Points:		
<ul style="list-style-type: none"> • Ensure that the meeting is documented / recorded. (Utilize the back side of this page.) • Review planned actions against incident objectives and priorities. • Utilize a map or chart to depict the operational areas, support facilities, and any key information. • Discuss any applicable open action items. • Consider contingencies and secondary options. 		

Notes:

Owner: Planning Section Chief	Date:	Time:
Roles below will attend only if designated and available		
Attendees:		
<input type="checkbox"/> Incident Commander:	<input type="checkbox"/> Planning Section Chief:	
<input type="checkbox"/> Deputy Incident Commander:	<input type="checkbox"/> Logistics Section Chief:	
<input type="checkbox"/> Operations Section Chief:	<input type="checkbox"/> Finance/Admin. Section Chief:	
<input type="checkbox"/> Planning Section Chief:	<input type="checkbox"/> Safety Officer:	
<input type="checkbox"/> Liaison Officer:	<input type="checkbox"/> Other:	
<input type="checkbox"/> Information Officer:	<input type="checkbox"/> Other:	
Summary:		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> Finalize an Incident Action Plan with the necessary forms based on the objectives, tactics, and strategies outlined from the previous command meetings. Schedule and prepare for the Operations Briefing. 		
Resources:	IAP Checklist (A4) and all associated ICS forms	
Agenda Items:		
<input type="checkbox"/> Review Incident Action Plan forms (ICS 202, 207, 209, 215, and 215A).		
<input type="checkbox"/> Review Command's incident objectives, priorities, decisions, and direction.		
<input type="checkbox"/> Provide briefing on current situation, resources at risk, weather forecast, and incident projections.		
<input type="checkbox"/> Operations Section Chief provides briefing on: <ul style="list-style-type: none"> <input type="checkbox"/> Current operations. <input type="checkbox"/> An overview on the proposed plan including strategy, tactics or work assignments, resource commitment, contingencies, organization structure, and needed support facilities. 		
<input type="checkbox"/> Review the proposed plan to ensure that Command direction, priorities, and operational objectives are met.		
<input type="checkbox"/> Delegate assignments and deadlines to appropriate staff members to assure timely and effective IAP development.		
Key Points:		
<ul style="list-style-type: none"> Ensure that the meeting is documented / recorded. (Utilize the back side of this page.) Review IAP Checklist (A4) to ensure that all critical materials have been accounted for in the IAP. Planning Section Chief brings meeting to order, cover ground rules, and review agenda. Planning Section Chief requests tacit Command approval of the plan as presented. Planning Section Chief reviews and validates responsibility for any open actions and management objectives. Planning Section Chief conducts round table of Command and General Staff to solicit their final input and commitment to the proposed plan. 		

Notes:

Owner: Incident Commander	Date:	Time:
Roles below will attend only if designated and available		
Attendees:		
<input type="checkbox"/> Incident Commander:	<input type="checkbox"/> On-Site Group Supervisor	
<input type="checkbox"/> Deputy Incident Commander:	<input type="checkbox"/> Public Safety Group Supervisor	
<input type="checkbox"/> Operations Section Chief:	<input type="checkbox"/> Air Monitor Team Lead	
<input type="checkbox"/> Planning Section Chief:	<input type="checkbox"/> Roadblock Team Lead	
<input type="checkbox"/> Liaison Officer:	<input type="checkbox"/> Rover Team Lead	
<input type="checkbox"/> Information Officer:	<input type="checkbox"/> Telephoner Team Lead	
<input type="checkbox"/> Planning Section Chief:	<input type="checkbox"/> Reception Centre Representatives	
<input type="checkbox"/> Logistics Section Chief:	<input type="checkbox"/> Other:	
<input type="checkbox"/> Finance/Admin. Section Chief:	<input type="checkbox"/> Other:	
<input type="checkbox"/> Safety Officer:	<input type="checkbox"/> Other:	
<input type="checkbox"/> Staging Area Manager:	<input type="checkbox"/> Other:	
Summary:		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> • Review a summary of the incident status with all responders. • Relay objectives, tactics, and strategies. • Reinforce/relay the safety message. • Assign roles & responsibilities and tasks for all responders to accomplish. • Execute the response. • Tentatively schedule next Objectives Meeting and identify potential problems/issues to address in the next operational period. 		
Resources:	IAP Checklist (A4) and all associated ICS forms	
Agenda Items:		
<input type="checkbox"/> Planning Section Chief briefly walks through the IAP components and makes changes as needed.		
<input type="checkbox"/> Operations Section Chief conducts roll call of the Operation Section Supervisors and provides a briefing on emergency response.		
<input type="checkbox"/> Operations Section Chief briefs supervisory personnel on their assignments along with clarification on any of their issues and concerns.		
<input type="checkbox"/> Safety Officer covers major safety issues.		
<input type="checkbox"/> Logistics Section Chief covers logistical support of operations (communications, supply, transportation, medical, etc).		
<input type="checkbox"/> Finance / Admin. Section Chief covers time & cost tracking, procurement, and compensation process.		
<input type="checkbox"/> General Staff to cover issues applicable to Operations Section personnel.		
Key Points:		
<ul style="list-style-type: none"> • Ensure that the meeting is documented / recorded. (Utilize the back side of this page.) • Planning Section Chief opens briefing, covers ground rules, agenda, and conducts roll call of Command and General Staff members. • Establish a briefing and message for all responders. • Review pre-determined public and media statements. • Planning Section Chief solicits final comments and adjourns briefing. 		

Notes:



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Mike Sherk	Central Area Lead Operator	780-524-6720	msherk@enercapita.com

VIKING REGION		Cell	Email
Will Nordstrom	Viking Area Superintendent	780-385-1909	wnordstrom@enercapita.com

Section 3: Communication & Media

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Media Relations and Generic Media Statement

Any incident that affects the environment, the health and safety of individuals, or causes extensive property damage could be a news "item". When such an incident occurs, the media should not be avoided. The key is to establish good rapport with the media early in the life of the emergency. Open and honest communication will help to create favourable public opinion and could help to prevent the public from overreacting to the incident.

Media releases are generated and released as significant developments occur. The company is expected to coordinate media releases with the relevant government agencies prior to release to provide consistency and accuracy of information. Information is communicated through written news releases, news conferences, and any other effective means that the company chooses to use. The company must identify a spokesperson to carry out this role and to interact with applicable government agencies.

Media releases will be developed by the Incident Commander in conjunction with the applicable regulatory agency. The Incident Commander will assign a Media Spokesperson to deliver the approved messages.

Media at the field level will be coordinated by the Information Officer with the Support of the Incident Commander. If media have arrived at the emergency site and the designated Information Officer is not yet available, only the Incident Commander or their designate can act as the company spokesperson, and will issue only the information below.

Future statements will be prepared by the Incident Commander and should be issued only by the designated Media Spokesperson. All media statements will be reviewed with the regulatory agency's Media Coordinator.

All information that is given to the media should be recorded. See **Section 6: Forms** for the C2 Media Contact Log.

Generic Media Statement

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Media Management

- Do not wait until you are contacted by the media to react to their inquiries. By preparing in advance, the company will appear to be organized, aware, and actively responding to the situation. The essence of effective media management is preparation in advance of any media contact.
- It is important when contacting the media with a news release that you do not favour one media organization or agency over another. To minimize the chances of creating a prejudicial situation, deal solely with major umbrella press agencies.
- If media representatives are not provided with the basic information, it can be assumed that they will fill the gap with material from less reliable sources.

Be aware at all times that it is possible for the media or others to be monitoring your radio, cellular phone, or telephone conversations.

On-Site Media Spokesperson

Depending on the specific emergency an on-site spokesperson may be required to handle all on-camera activities requested by the media. Only approved and trained spokespeople will be allowed to provide comment to the media. The Information Officer or Incident Commander will identify any and all media spokespersons. The Information Officer or Incident Commander may serve as the on-site Media. This representative will endeavor to maintain a favourable public image on behalf of the company. It is important that they keep in mind the following:

- The Dos and Don'ts of conducting yourself on camera; 75% of information comes from non-verbal actions (gestures, tone, posture, etc.)
- Public appearance, ensuring appropriate and approved wardrobe
- Preparation in communicating the media release in advance so the message feels natural
- How to handle impromptu or "off the record" inquiries from the media

Managing the Media On-Site

Depending upon the size and/or scope of the emergency to the incident site, the media will likely travel to site and attempt to secure coverage of the situation. Usually the size and nature of an emergency will determine the amount of media attention garnered. It is important everyone on-site understands how to properly manage the media and that only designated individuals are to speak to the media. It is recommended that only individuals with adequate media training have even casual interactions with the media.

Media Briefing Areas are to be designated by the Incident. The Information Officer will, if required by the Incident Commander, determine the need for media management at the incident site.

As appropriate, the Information Officer should be designated to oversee local news media management. In order to address the needs of the media at the incident site, the following guidelines should be considered:

- If practical, an information centre will be set up nearby the incident site. All on-site media will be informed that this will be the only place where information is to be released.
- During an emergency situation, media access to company property is strictly prohibited unless prior approval has been given by the Incident Commander. If the Incident Commander deems the situation safe and access is granted to company property, media personnel must be accompanied at all times and wearing appropriate personal protective equipment (PPE).
- Ensure that if any media personnel are granted access on-site all potential hazards are identified and handled appropriately prior to their arrival (i.e. all on-site personnel are wearing proper PPE, operating equipment safely, etc.).
- With the exception of providing the initial prepared company statement, any requests by the media for information or interviews should be referred to the Information Officer.
- For an emergency that lasts more than 24 hours, consideration will be given to establishing a newsroom for all required personnel.
 - Ensure it is located a safe distance away from the incident.
 - Ensure proper internet and telephone access is made available.
 - Large enough to accommodate all of the potential media personnel.

Internal Communication

Internal communication plans for company personnel must include:

- Identification of primary and secondary communication methods during an incident.
- Procedures to control flow of information*:
 - Ensure facts and relevant information are distributed to key responders
 - Proper management of sensitive information
 - Camera and cellphone photo restrictions
 - Social media protocol

** Note: These procedures are developed by the Information Officer during the incident.*

Communicating With the Public

Communication plans for contacting affected parties must be in place:

- When affected parties are within the Hazard Planning Zone (HPZ) / Emergency Planning Zone (EPZ) at the beginning of drilling and initial completion operations.
- A minimum of 24 hours before drilling operations enter a sour zone.
- At the conclusion of drilling and initial completion operations.
- At the beginning and conclusion of other operations including workovers, flaring, fracking, etc.

Information Disseminated to the Public

The company must make the following information available to the public, while maintaining documentation, as soon as possible during an incident:

- **To the affected public at the onset of the incident:**
 - Type and status of the incident.
 - Location and proximity of the incident to people in the vicinity.
 - Public protection measures to follow, evacuation instructions, and any other emergency response measures to consider.
 - Actions being taken to respond to the situation, including anticipated time period.
 - Contacts for additional information.
- **To the affected public during the incident:**
 - Description of the products involved and their short-term and long-term effects.
 - Effects the incident may have on people in the vicinity.
 - Areas impacted by the incident.
 - Actions the affected public should take if they experience adverse effects.
 - An explanation of the steps taken to address concerns.
 - An explanation of the steps to be taken to prevent similar emergencies in the future.

Information Disseminated to the Public, continued

- **To the general public during the incident:**
 - Type and status of the incident.
 - Location of the incident.
 - Areas impacted by the incident.
 - Description of the products involved.
 - Contacts for additional information.
 - Actions being taken to respond to the situation, including anticipated time period.
- **To the evacuated or sheltered public post-incident:**
 - Status of recovery.
 - Financial reimbursement information.
 - Contacts for additional information.

Preparing a Preliminary Media Statement

This verbal or written statement is the initial information given only to the media by the Information Officer, Incident Commander (or alternate) when the company's designated Media Spokesperson is unavailable, or authorizes a press release at the local level. See **Section 6: Forms** for the C1 Preliminary Media Statement form.

The preliminary statement shall contain:

- What, when, and where the incident occurred:
 - State the general nature and description of the incident.
 - Associate the incident location to the nearest major centre and the exact time the incident began or was discovered.
 - For example: At 11:00 am, today, September 13th, 2012, a warehouse at our battery location northeast of Wainwright caught on fire.
- Injuries / fatalities / damages:
 - Clearly distinguish the severity of the injuries sustained and if any fatalities occurred.
 - State the number of people currently receiving treatment.
 - Ensure no names are released to the media; it is important to keep this information private until all families and next-of-kin notifications are made.
 - For example: We have confirmed that three employees sustained injuries, two minor and one major. All of the injured casualties have been transported to the nearest care facilities and are receiving treatment.
- The current status of the emergency:
 - Indicate the nature of the situation; i.e. what is being done by whom.
 - For example: Emergency crews currently have the fire under control and local authorities are investigating the cause. We are actively notifying the employee's families of the incident.
- When to expect more information:
 - For example: Our designated spokesperson will be issuing a formal statement once we have more information confirmed. Thank you for your cooperation and we will not be accepting any questions at this time.

Preparing a Preliminary Media Statement, continued

What not to do:

- Don't downplay the seriousness of the event or speculate on volumes, damage or timelines.
- Don't point fingers; liability will be determined later by appropriate authorities.
- Primary focus must remain on the company's commitment to addressing the response and recovery effort.
- Attempt to avoid any questions if possible, as designated media personnel should handle all media questions.
- Avoid saying "no comment." It sounds like you're hiding something. If necessary, explain why it is not appropriate or possible for you to answer the question.

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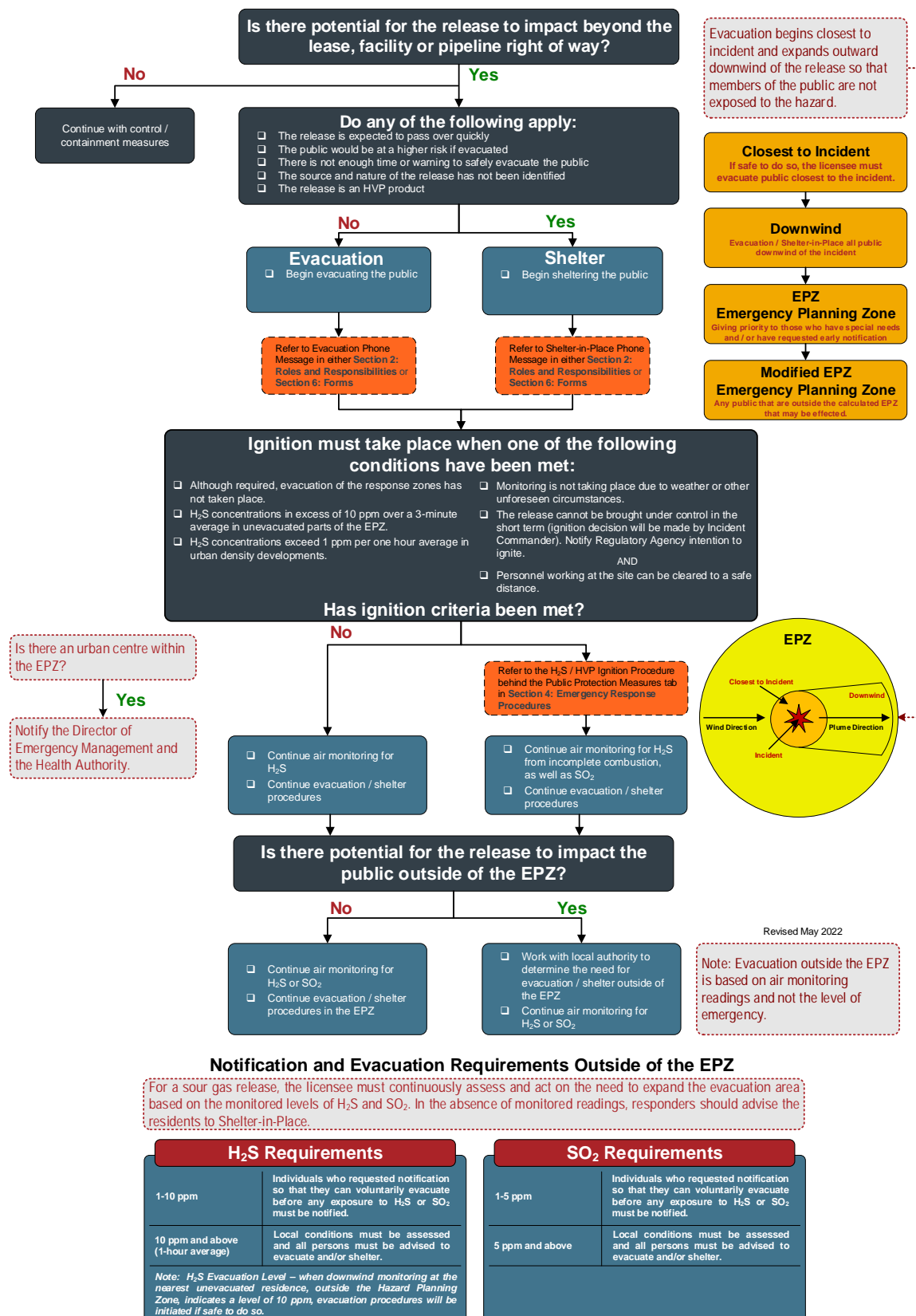
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Public Protection Measures



Public Protection Measures, continued

There are three primary public protection measures that are used to ensure the safety of the public in the event of an incident: evacuation, shelter-in-place and ignition.

Evacuation

For long-term releases, evacuation is preferred to sheltering if public safety can be assured during the evacuation process.

Evacuation is a viable public protection measure in circumstances when:

- The location of the plume is known, and safe egress routes can be assured
- The release will not likely be contained in the near future
- Visibility and road conditions are good
- The residents clearly understand their directions

Tactical Evacuation: A measure to immediately move people to a safe area as part of emergency response and operations. Does not require approval from local authority but the local authority may enact an evacuation order, if required. The local authority must be advised if a tactical evacuation has occurred. Appropriate methods must be utilized to ensure transients (hunters, trappers, recreational users, non-resident landowners, etc.) within the EPZ are located and evacuated. Refer to Section 5: Forms for Evacuation Scripts for information that should be communicated as part of the evacuation process.

Planned Evacuation: An evacuation coordinated by local government authority that can authorize evacuation alerts and orders.

Residents should also be evacuated during ongoing emergency flaring or burning if their health and safety could be affected by the operation.

Special procedures may be required for evacuating large industrial operations and/or public facilities. If large numbers of people are involved, the licensee must address assistance with transportation. Refer to the Area Specific Information Section for information regarding transportation (e.g., providing school buses) or other changes in the normal notification procedures.

The licensee must continuously assess and act on the need to expand the evacuation area, based on the specifics of the incident, including harmful levels of hazardous substances.

The licensee is expected to monitor the air quality along the edge of the EPZ to determine if sheltering or evacuation criteria have been met outside the EPZ. Evacuation outside of the EPZ must be coordinated with the Local Authority.

Appropriate methods must be utilized to ensure transients (hunters, trappers, recreational users, non-resident landowners, etc.) within the EPZ are located and evacuated. When a tactical evacuation has taken place, the appropriate local authority must be notified.

Public Protection Measures, continued

Shelter-In-Place

Shelter-in-place is considered the primary safety measure when the hazard is of a limited duration or the public would be at a higher risk if evacuated. Sheltering within a building creates an indoor buffer to protect affected individuals from higher (more toxic) concentrations that may exist outdoors. The goal is to reduce the movement of air into and out of the building until either the hazard has passed, or other appropriate emergency actions can be taken (such as evacuation).

Sheltering indoors is a viable public protection measure in circumstances when:

- There is insufficient time or warning to safely evacuate the public
- Residents are waiting for evacuation assistance
- The release will be of a limited size and /or duration
- The location of the release has not been identified
- The public would be at a higher risk if evacuated
- Escape routes traverse the hazards

Refer to either **Section 2: Roles and Responsibilities** or **Section 6: Forms** for the Shelter-in-Place Phone Message script to be used when contacting residents. Residents advised to shelter-in-place will be notified if additional measures are required, and when it is “all-clear”.

Sheltering Measures for HVP Product Release

For a flammable or combustible liquid fire to start, a mixture of vapour and air must be ignited. There are many possible ignition sources:

- Sparks from electrical tools and equipment
- Sparks, arcs, and hot metal surfaces from welding and cutting
- Tobacco smoking
- Open flames from portable torches and heating units, boilers, pilot lights, ovens, and driers
- Hot surfaces such as boilers, furnaces, steam pipes, electric lamps, hot plates, irons, hot ducts and flues, electric coils, and hot bearings
- Embers and sparks from incinerators, foundry cupolas, fireboxes, and furnaces
- Sparks from grinding and crushing operations
- Sparks caused by static electricity from rotating belts, mixing operations or improper transfer of flammable or hot combustible liquids

You can eliminate many ignition sources by:

- Removing open flames and spark-producing equipment
- Not smoking around these liquids
- Using approved explosion proof equipment in hazardous areas

Public Protection Measures, continued

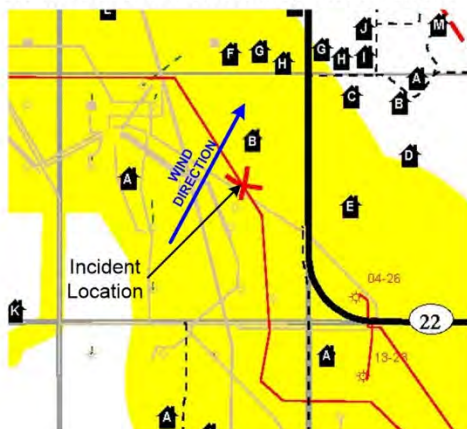
1. Identify the location of the incident on the map:



3. Determine the wind direction

Look for wind direction indications such as flags, windsocks, direction of smoke, etc..

Draw the wind direction on the map with an arrow.



2. Determine the size of response zones (hazard areas):

EPZ - Emergency Planning Zone

Closest to Incident

Downwind

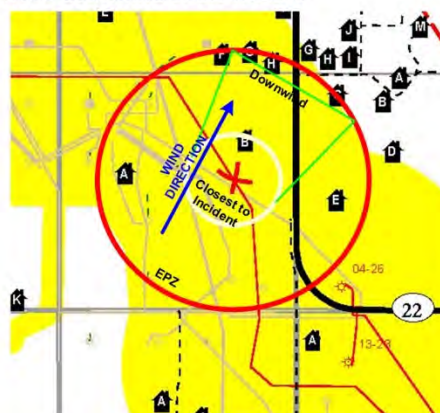
You can find this information:

- a) Labeled on the map
- b) In the site specific tables
- c) As the yellow area on the map

If the incident is at a facility or if you have not yet confirmed the exact location of the incident, you must use the largest EPZ for the area. The largest EPZ for the area is shown in yellow on the map.

4. Draw the zones on map:

- a) EPZ - The entire hazard area
- b) Those closest to the hazard
- c) Those downwind of the hazard



5. Isolate the hazard area with roadblocks

If any residences exist between the optimal roadblock location and the EPZ, expand the EPZ to include those residences.

Additionally, if any residences only route of egress is through the EPZ, expand the EPZ to include those residences.



Legend
 --- Other Roads
 — Main Hwy

6. Following the appropriate provincial public protection measures chart, initiate public safety activities.

Residents closest to the hazard are the most at risk of being adversely affected.

Residents downwind of the EPZ are the second group to be evacuated / sheltered in place as being downwind of the hazard puts them at a higher risk than the rest of the residences in the EPZ that are upwind or crosswind from the hazard.

Public Protection Measures, continued

Ignition

In conjunction with shelter-in-place and evacuation strategies, the release may be ignited at the source in order to reduce public exposure to the hazard. The combustion of the hydrogen sulphide (H_2S) results in the produced sulphur dioxide (SO_2) being carried high into the atmosphere allowing additional time for the public to safely evacuate. If an immediate threat to human life exists and there is not sufficient time to evacuate the hazard area or the Emergency Planning Zone (EPZ) – whichever is bigger – the On-Site Group Supervisor is authorized to ignite the release.

Note: Only those personnel trained in ignition procedures can determine if ignition is required and operate the ignition equipment.

Ignition of an HVP product release should occur only after the position of the plume has been established, after careful deliberation, and when safe to do so.

Until such time that a decision has been made to ignite a release, the licensee should take steps to minimize any chance of unplanned ignition in the area.

Note: Initial location of the plume may be identified by the following methods:

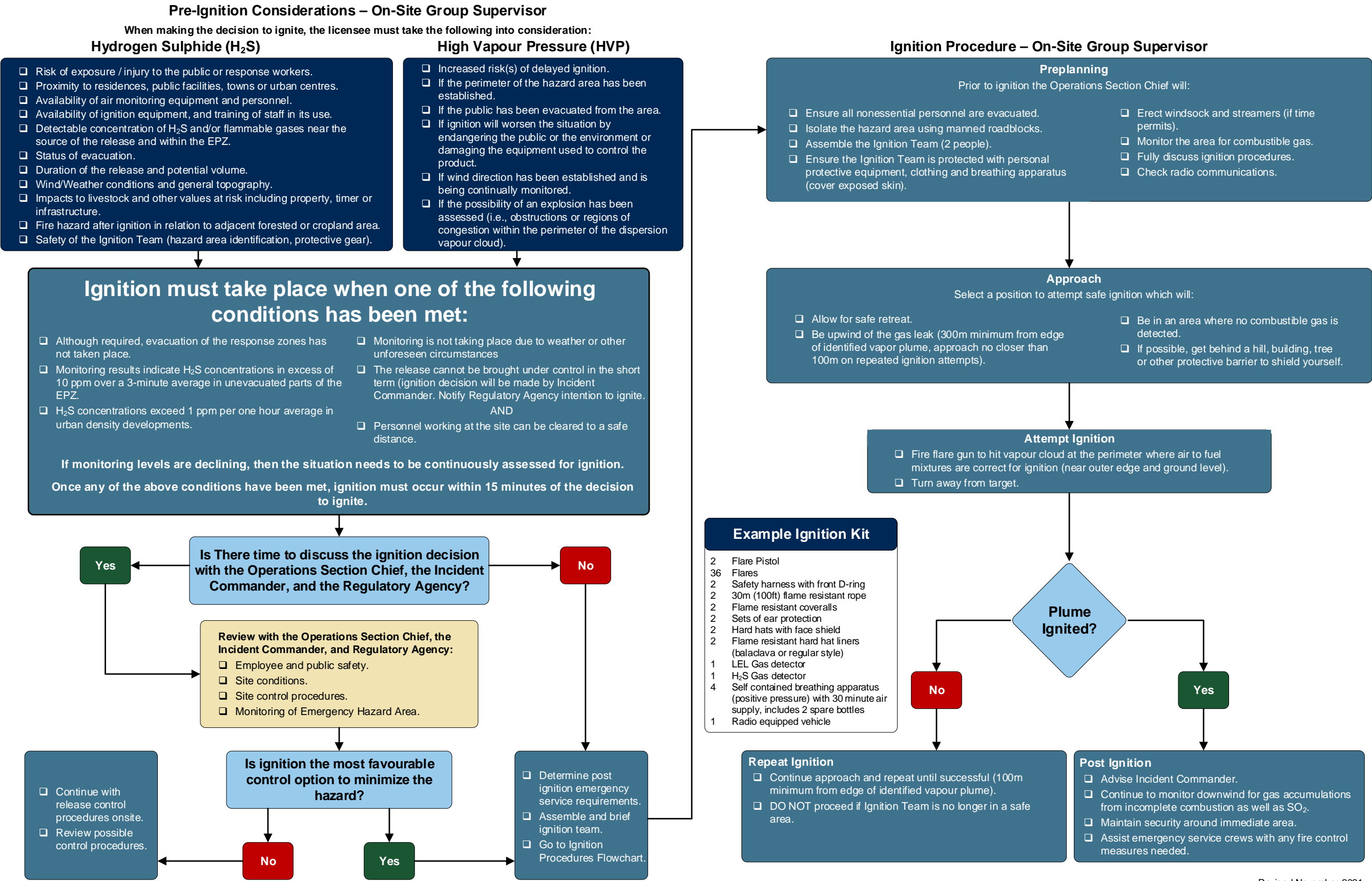
- *Visually (i.e.; frost or condensation buildup, white cloud or dust cloud, dead vegetation, bubbling water, etc.)*
- *Auditory (i.e.; hissing or whistling sound, etc.)*
- *Smell (i.e.; smell of mercaptan – rotten eggs)*

When making the decision to ignite, the licensee must take the following into consideration:

- If personnel are on-site, proceed to muster location for headcount and further instructions. Refer to Five Step Initial Response Guide in **Section 1: Initial Response** for First On-Scene Actions.
- Refer to the H_2S / HVP Ignition Procedure on the following page for further considerations.

If at all possible, the On-Site Group Supervisor must consult with higher authority individuals within the company (ideally the Operations Section Chief, Incident Commander, etc.) and the appropriate government regulator.

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Public Protection Measures, continued

Road and Airspace Closures

The company should receive authorization from local authorities or the RCMP before establishing roadblocks on public roads. The company must contact the RCMP and the transportation authority to have one-, two- or three-digit highways closed. However, if the safety of the public is in jeopardy, the company must be prepared to quickly restrict access to the area before contacting these agencies.

If warranted, the regulatory agency can issue a Closure Order that provides legal authority to close the area. The local authority may, if warranted, declare a Local State of Emergency. This grants the local authority special powers to do such things as road closures or declare mandatory evacuation.

The public must also be prevented from flying into the airspace above a gas release. It may be necessary to issue a Notice to Airmen (NOTAM) to advise pilots of restrictions in the airspace above the EPZ or to close the airspace for a certain radius from the release (a no-fly zone). NOTAMs are issued by NAV Canada and airspace closures are issued by Transport Canada's Aviation Operations Centre (AVOPS). NOTAMs or airspace closures may be requested by the licensee at a level 2 or level 3 emergency.

Air Monitoring

Air monitoring equipment is used to:

- Track/follow the plume.
- Determine if ignition criteria are met.
- Determine whether evacuation and / or shelter-in-place criteria have been met.
- Determine roadblock locations.
- Determine concentrations in areas being evacuated to ensure that evacuation is safe.
- Assist in determining when the emergency can be downgraded.

As such, H₂S, SO₂, LEL or other toxic substance concentrations will be monitored continuously during the incident response and it is crucial that Air Monitors continuously update their direct supervisor with monitored results.

- Air monitors (personal handheld, stationary and mobile) should be dispatched at a Level 1 Emergency.
- Air quality monitoring occurs downwind, with priority being directed to the nearest un-evacuated residence or area where people may be present.
- Licensee personnel will monitor and record the concentrations until a mobile air monitoring unit arrives or until the incident is over. At minimum, these readings must include LEL and H₂S.
- Mobile air quality monitoring units must be dispatched when it is evident that spill control measures are not effective and that a sour product release is likely to occur.
- For HVP releases, monitoring may occur downwind or upwind, depending on how the plume is tracking, with priority being directed to the nearest un-evacuated residence or areas where people may be present. The licensee is expected to provide monitored HVP product LEL information on a regular basis for the duration of the incident.
- If a sour gas release has been ignited, the licensee should continue to monitor response zones for H₂S from incomplete combustion, as well as SO₂.
- Ensure all equipment is operational and the appropriate documentation is available to verify testing and calibration requirements.

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Spill Response

The spill response section can be used as a quick reference by first-on-scene responders to select and implement containment and recovery tactics with spill response equipment during the first 48-72 hours of the response. This section contains a collection of inland spill tactics that can be applied using obtainable resources to a liquid product release until additional resources and personnel arrive on site. This section is a reference tool and supplement to prior training, field experience, technical instruction, and equipment operation knowledge. The licensee will rely on the training and judgment of its first-on-scene responders to select only those tactics that can be accomplished safely.

Refer to the Petroleum Industry Release Reporting Requirements chart at the end of this section to determine the TDG and Provincial Reporting Requirements for each class of chemicals (as classified by the TDG Hazard Classification System).

Spill Response Objectives and Strategies

Objectives establish the desired outcomes of an incident and are statements of intent related directly to response priorities. Priorities are situational and influenced by many factors, with life safety always being the highest priority followed by incident stabilization and property and environment. The Incident Commander comes to a consensus on a collective set of objectives with response strategies. The following table contains some standard objectives with example strategies that can be utilized to assist in the first four to six hours of a spill response.

Objectives	Strategies
Ensure the safety of citizens and response personnel	Identify hazard(s) of spilled material.
	Establish work zones (hot, warm, and cold zones).
	Establish site perimeter and access controls.
	Consider evacuation or shelter-in-place, as needed.
	Monitor air quality in impacted areas to ensure responders select appropriate Personal Protective Equipment (PPE).
	Establish aircraft restrictions.
	Develop a Health and Safety Plan for response personnel.
	Run air dispersion model to determine potential evacuation zones.
Control the source of the spill	Complete emergency shut-down procedures.
	Eliminate potential flammable vapour ignition sources.
	Initiate temporary repairs to stop the leak.
	Transfer product to an approved container or facility.
	Construct barriers to prevent spill from reaching a waterbody.
Maximize protection of environmentally sensitive areas	Implement Control Points and pre-designated response strategies.
	Identify and prioritize the environmentally sensitive areas.
	Identify Resources at Risk (RAR) in spill vicinity.
	Track oil movement and develop spill trajectories.
	Conduct visual assessments (e.g., aerial overflights, ground-truthing).
	Identify, prioritize, and flag areas used as habitat by endangered species.
	Develop/implement appropriate protection strategies.

Spill Response, continued

Objectives	Strategies
Manage a coordinated response effort	Complete or confirm notifications.
	Establish Incident Command Post.
	Ensure local government and Indigenous officials are included in response organization.
	Initiate spill response Incident Action Plan.
	Ensure mobilization and tracking of response resources.
	Account for personnel and equipment
	Maintain, complete, and log all documentation related to the incident.
	Evaluate planned response objectives vs. actual response.
Contain and recover spilled material	Deploy containment boom at the spill source.
	Deploy containment boom at appropriate recovery areas.
	Conduct open water skimming.
	Develop disposal plan.
Recover and rehabilitate injured wildlife	Establish oiled wildlife reporting hotline.
	Conduct injured wildlife search and rescue operations.
	Operate wildlife rehabilitation center.
	Establish team for injured wildlife.
Remove oil from impacted areas	Conduct appropriate shoreline cleanup efforts.
	Clean oiled structures.
	Clean oiled equipment.
Keep stakeholders informed of response activities	Provide forum to obtain stakeholder input and concerns.
	Provide stakeholders with details of response actions.
	Identify stakeholder concerns and issues and address as practical.
	Provide regulatory bodies details of response actions.
Keep the public informed of response activities	Provide timely safety announcements.
	Conduct public meeting, as appropriate.
	Conduct regular news briefings.
	Manage news media access to spill response activities.

Control Points

The objective of control points is to identify pre-planned locations where spill responders can safely and effectively deploy oil spill response equipment to intercept and limit downstream movement of oil on a watercourse. Depending on the specific conditions at the time of a spill, one or more control points may be implemented as part of a response. Control points are intended to:

1. Protect sensitive areas downstream.
2. Provide locations for oil removal and collection.

Spill Response, continued

Typically, oil spill response entails multiple parallel and simultaneous activities including:

1. Source control (valve closures, clamping and pipeline drain-down)
2. Near source response (containment using berms and recovery using pumping and skimming)
Downstream response (control points)

Control points are pre-identified points along watercourses and lakes that provide responders with key tactical information and can greatly reduce planning and implementation of containment, recovery, public protection, and wildlife protection measures during a response to a spill. Control points are typically grouped in the following categories:

1. Critical Control Points are established based on the company's asset locations and are based on the following criteria:
 - a. River crossing with easy access and staging areas.
 - b. Upstream of environmentally sensitive areas.
 - c. Upstream or proximity to communities and public infrastructure such as drinking water intakes.
 - d. Downstream of major infrastructure such as pipelines, storage, or facilities.
 - e. In areas of high-volume transportation corridors.
2. Non-Critical Control Points may include the following:
 - a. Recreational areas
 - b. Private or public land
 - c. Boat launches

When assessing the location of a control point the following factors should be considered:

1. Sites should be located downstream of the watercourse crossing and at distances that can be reached in a two- to four-hour-response time.
2. Sites should have reasonable land access.
3. Sites should have available working space for staging equipment and personnel.
4. Ideally, river flow should be slow or pooled, and/or with back eddies rather than turbulent flow conditions.
5. Ideally, sites should have public access, low banks, and should not be heavily vegetated.

Designated site-specific control points need to be reviewed at least annually. Each control point site should be visited periodically to evaluate suitability and to ensure information is accurate and complete. Old unsuitable control points should be removed, and new control points added, as a part of revisions to site specific information, as required. Control point listings should include a site description, site diagram, access description, landowner/occupant phone number, site suitability and any other information related to the site.

For a detailed list of control points, utilize the Western Canadian Spill Services (WCSS) website (<http://www.wcss.ab.ca>)

Spill Response, continued

Health and Safety

Committed to the protection of the health and safety of all spill response personnel and third parties whether members of the public or contractor personnel. The Site Safety Plan is intended to protect all personnel against potential health and safety hazards by providing information in identifying, evaluating, controlling risks, and explaining procedures to be followed during emergencies.

Provisions have been made to ensure that the health and safety of third parties, particularly members of the general public, is also protected. Third party protection procedures include evacuations, the monitoring of wind direction at the site of the release to determine the direction and spread of hazardous vapours and, if considered appropriate, conducting air monitoring in other areas where responders or third parties could be threatened.

Initial Site Assessment

The initial site assessment, hazard identification, and characterization will normally be performed by a minimum of two qualified persons outfitted in appropriate personal protective equipment. Where possible, a backup team should be immediately available. The information gained during the initial site assessment will be used to determine the site work zones (hot, warm, and cold zones) and in the development of the Site Safety Plan. The Site Safety Plan must be monitored on an ongoing basis and revised to reflect changing conditions. Personnel entering or already on site must be immediately advised of changes. The person responsible for the Site Safety Plan will ensure compliance is monitored whenever any person is within the spill response zones or any area that may be threatened as a result of the spill.

Safety Briefing

Response personnel and others authorized to enter the response area must be briefed on the content of the Site Safety Plan prior to entering the site. The person assigned to be responsible for site safety or their delegate will conduct this briefing. A copy of the Site Safety Plan must be available for reference at the spill site. Responders must also have access to the Safety Data Sheet (SDS) for the spilled product if the SDS does not form part of the Site Safety Plan.

1. SDS provide detailed hazard, precautionary, protection, and emergency information on hazardous products and may be obtained from the manufacturer or supplier of the product. Copies of SDS shall be available for all products used or handled at spill sites.
2. A copy of the appropriate SDS should be attached to the Site Safety Plan.
3. Contractors are required to have SDSs available for all products that they bring to spill sites.
4. The appropriate SDS or Emergency Response Guidebook should be referred to for spills or leaks of substances not specifically covered by this plan.

Initial Site Safety and Hazard Control Plan

An Initial Site Safety and Hazard Control Plan should be completed as soon as possible by one of the initial responders and updated as required. When completing the Initial Site Safety and Hazard Control Plan, some of the information may not apply during the initial stages of the response but may change within a short period, thereby altering the PPE and/or other requirements.

Spill Response, continued

The Initial Site Safety and Hazard Control Plan:

1. Aids the initial first responders in assessing hazards related to the incident.
2. States the required PPE to be used.
3. Documents important health and safety information.
4. Serves as an interim "Plan" until a Site Safety Plan is developed.
5. Assigns responsibilities.
6. Identifies "site set-up" features that may be required.
7. Upon the completion and delivery of the Site Safety Plan, the Initial Site Safety and Hazard Control Plan becomes "void".

Western Canadian Spill Services (WCSS)

WCSS maintains spill contingency plans and provides spill response equipment to all member companies that do not maintain their own full spill response plans. Please refer to their website for copies of their Spill Contingency Plan and live equipment reports - WCSS - <http://www.wcss.ab.ca/>

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British Columbia Petroleum Industry Release Reporting Requirements

All spills exceeding the spill/release quotas listed in the table on the following page **MUST** be reported immediately to the appropriate regulatory agency.

Agency	Reportable Spills	Report Type	Report to
Emergency Management and Climate Readiness (EMCR) BC Energy Regulator (BCER)	Report when: 1) If a spill/release occurs or is at imminent risk of occurring. 2) Any Minor Incident through KERMIT. **See Note** 3) When a sour gas product is released, any measurement of 10 ppm or greater measured at 1 metre from the source of the leak. 4) All spills or releases of any amount of material which impacts or may impact a body of water. 5) All spills or releases of hazardous substances which are not provincially regulated (such as radioactive substances). 6) All pipeline incidents, such as spills during construction phase or failure (without release) of any pressure control or ESD device. 7) All Substances spilled/released, or likely to be spilled/released when quantities are equal to or exceed the quantities listed in the Environment Reporting Requirements column in the Release Reporting Thresholds table on the following page. Response to land based spills: 1) During the day must be initiated within 6 hours from time of discovery. 2) During the weekend or night must be initiated within 12 hours from time of discovery.	Verbal	24 Hour Number 800-663-3456 (Within 1 hour of a level 1, 2 or 3 emergency)
		Written	Electronic submission through the Online Minor Incident Reporting System, operated through KERMIT (Within 24 hours of a Minor incident)
		Written	Minister of Environment Initial Report - as soon as possible on request of the minister Follow-up Report - at least once every 30 days after the spill began (if continuing) and any time the previously reported information has become inaccurate or incomplete End of Spill Report - 30 days after spillage has been contained and eliminated.
Environment and Climate Change Canada (ECCC)	Environmental emergencies if: 1) The emergency involves any of the substances identified in Environment & Climate Change Canada's CEPA E2 List of regulated substances. See the website link at the bottom of the following page for more information. Note: CEPA has not identified specific reporting thresholds; however, CEPA has suggested that existing provincial reporting thresholds or TDG reporting thresholds are acceptable for use. A Schedule 8 written report through SWIM must be completed in the case of: 1) An environmental emergency involving the release of a hazardous substance that: a) Has or may have an immediate or long-term harmful effect on the environment b) Constitutes or may constitute a danger to the environment on which human life depends c) Constitutes or may constitute a danger in Canada to human life or health 2) The reasonable likelihood of an occurrence of an environmental emergency	Verbal	BCER / EMCR 24 Hour Number 800-663-3456
		Written	As soon as possible, submit a Schedule 8 through the SWIM (Single Window Information Manager) system
Transportation of Dangerous Goods (TDG)	Substances regulated by Transportation of Dangerous Goods if: 1) A release is anticipated, or the release meets or exceeds the reporting threshold in the TDG Reporting Requirements column in the Release Reporting Thresholds table on the following page.	Verbal	911 Local Authority Dangerous Goods BCER / EMCR 800-663-3456
		Written	Within 30 days
Canadian Transport Emergency Centre (CANUTEC)	Loss and theft reporting: 1) CANUTEC - all loss or theft of dangerous goods materials 2) Natural Resources Canada Inspector - Class 1 explosive materials only 3) Canadian Nuclear Safety Commission - Class 7 radioactive materials only	Verbal	1) 888-226-8832 or 613-996-6666 2) 613-995-5555 3) 613-995-0479
		Written	Within 30 days
Department of Fisheries and Oceans (DFO)	1) A release of any substance deleterious to fish into a fish bearing water body.	Verbal	BCER / EMCR 24 Hour Number 800-663-3456
Canada Energy Regulator (CER) & Transportation Safety Board (TSB)	Immediately reportable and near-miss events as defined in the Event Reporting Guidelines: 1) An incident that harms people or the environment, 2) A rupture, or 3) A toxic plume Note: Immediately reportable incidents must be reported within 3 hours to both the TSB Reporting Hotline and CER's OERS. If applicable, refer to the Federal Roles & Responsibilities chart in SECTION 5: EXTERNAL AGENCIES and the CER site section behind the AREA SPECIFIC INFORMATION tab for further regulations, definitions and reporting guidelines.	Verbal	Via Transportation Safety Board (TSB) Reporting Hotline 819-997-7887
		Written	PipelineNotifications@tsb.gc.ca
		Written	CER Online Event Reporting System (OERS) https://apps.cer-rec.gc.ca/ers/home/index
		Written	CER - Within 21 days after the day of incident/near-miss
		Written	TSB - Within 30 days after the day of the incident/near-miss
Canadian Nuclear Safety Commission (CNSC)	All radioactive releases must be reported immediately.	Verbal	613-995-0479
		Written	Within 21 days
Indian Oil & Gas (IOGC)	Immediately reportable events on First Nation reserve lands only: 1) Any health or environment-threatening emergency or off-lease spills. 2) On-lease spills greater than 1m ³ .	Verbal	IOGC Tsuu T'ina Office 403-292-5625

****Note:** The permit holder must report any minor incident (both spill and non-spill related) to the BCER within 24 hours by electronic submission through the Online Minor Incident Reporting System, opened through KERMIT (Form A). In addition to Form A, minor spills and leaks must also be reported immediately to EMCR so that a Dangerous Goods Incident Report (DGIR) number may be issued.

Lead Agency Contact Numbers	
British Columbia	
Emergency Management and Climate Readiness (EMCR)	800-663-3456
BC Energy Regulator (BCER)	
Canada	
CANUTEC	
All Provinces	888-CAN-UTEC (888-226-8832) 613-996-6666
Canada Energy Regulator (CER) / Transportation Safety Board of Canada (TSB)	
TSB Reporting Hotline (Pipelines)	819-997-7887

Note: Spills must be reported promptly to avoid possible prosecution.

OGAA S.37 - Spillage

- A permit holder and a person carrying out an oil and gas activity must
 - Prevent spillage, and
 - Promptly report to the commission any damage or malfunction likely to cause spillage that could be a risk to public safety or the environment
- If spillage occurs, a permit holder or person carrying out an oil and gas activity must promptly do all of the following:
 - Remedy the cause or source of the spillage;
 - Contain and eliminate the spillage;
 - Remediate any land or body of water affected by the spillage;
 - If the spillage is a risk to public safety or the environment, report to the commission:
 - The location and severity of the spillage, and
 - Any damage or malfunction causing or contributing to the spillage.
- A person who is aware that spillage is occurring or likely to occur must make reasonable efforts to prevent or assist in containing or preventing the spillage.

Please refer to the BC Environmental Management Act; **Spill Reporting Regulation**, Schedule “Reporting Levels for Certain Substances” for determining reportable spillage amounts of other substances not listed here.

Even though some spills are not reportable, the requirement to clean up the spill is still mandatory. Spills of reportable amounts which occur in a secondary containment are still a reportable incident.

See following page for spill/release quotas.

British Columbia Petroleum Industry Release Reporting Requirements

All spills exceeding the spill/release quotas listed in the table on the following page **MUST** be reported immediately to the appropriate regulatory agency.

Chemical Class	Substance / Example	T.D.G. Reporting Requirements		B.C. (BCER / EMCR) Reporting Requirements
		Road, Rail or Marine	Loss or Theft	
Other Released Substances	Hydrogen Sulphide (H ₂ S)	Any quantity	Any quantity	10 ppm or greater
	Hydraulic Oil	No TDG Reporting Requirements		100 L on-site Any release off-site
	Methanol	See Class 3 & 6.1		
	Crude Oil / Emulsion	See Class 3		100 L on-site / Any release off-site
	Produced / Salt Water	No TDG Reporting Requirements		200 L / Any release off-site
	Drilling or Invert Mud	No TDG Reporting Requirements		100 L on-site / Any release off-site
	Condensate	See Class 3		
	Glycol	No TDG Reporting Requirements		200 kg or 200 L
	Fresh Water	No TDG Reporting Requirements		10,000 L
	Any fluid with toxic substances	No TDG Reporting Requirements		25 L
Class 1 Explosives	Ammunition Nitro-glycerine	Any quantity of Packing Group II	Any quantity in Class 1.1, 1.2, and 1.3 Total quantity of 450 kg or more in Class 1.4 (except 1.4S), 1.5, or 1.6	50 kg, or less if the substance poses a danger to public safety
Class 2.1 Flammable Gases	Methane Propane Butane Natural Gas (see line 25 below)	Any quantity	Total quantity of 450 kg or more	10 kg
Class 2.2 Non-Flammable Gases	Compressed Air O ₂ N ₂ CO ₂		No TDG Reporting Requirements	10 kg
Class 2.3 Toxic Gases (poisonous or corrosive)	SO ₂ Hydrogen Cyanide Nitric Acid Anhydrous Ammonia		Any quantity	5 kg
Class 3 Flammable Liquids	Gasoline Diesel Methanol Demulsifiers Scale Inhibitors		Total quantity of 450 kg or more of desensitized explosives Any quantity of UN1261, Nitromethane	100 L
	Lube Oil			100 L
Class 4.1 Flammable Solids	Calcium Resinate Naphthalene Crude		Total quantity of 450 kg or more of desensitized explosives Any quantity of UN1357, Urea Nitrate, with not less than 20% water, by mass; UN3370, Urea Nitrate, Wetted, with not less than 10% water by mass	25 kg
Class 4.2 Spontaneously Combustible	Activated Carbon Potassium Sulphide Phosphorus		Total quantity of 450 kg or more in Packing Groups I or II	
Class 4.3 Dangerous when Wet	Molten Sulphur Calcium Carbide Sodium Activated Carbon		Total quantity of 450 kg or more in Packing Groups I or II	
Class 5.1 Oxidizing Substances	Calcium Nitrate Ammonium Nitrate Bleaches		Total quantity of 450 kg or more in Packing Groups I or II Any quantity of UN1485, Potassium Chlorate; UN1486, Potassium Nitrate; UN 1487, Potassium Nitrate and Sodium Nitrate Mixture; UN1489, Potassium Perchlorate; UN1495, Sodium Chlorate; UN1498, Sodium Nitrate; UN1499 Sodium Nitrate and Potassium Nitrate Mixture; UN1511, Urea Hydrogen Peroxide; UN1942 Ammonia Nitrate, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substances; UN2014 Hydrogen Peroxide, Aqueous Solution with not less than 20% but not less than 60% hydrogen peroxide (stabilized as necessary); UN2015, Hydrogen Peroxide, Stabilized; UN2031, Nitric Acid, other than red fuming; UN3149, Hydrogen Peroxide and Peroxyacetic Acid Mixture with acid(s), water and not more than 5% peroxyacetic acid, stabilized	50 kg or 50 L
Class 5.2 Organic Peroxides	Methyl Ethyl Ketone Peroxide Succinic Acid Peroxide	Any quantity of Packing Group I or II More than 30 L or 30 kg of Packing Group III	Any quantity in Class 5.2, Type B, liquid or solid, temperature controlled	1 kg or 1 L
Class 6.1 Poisonous Toxic Substances	Arsenic Lead Acetate Mercuric Oxide Methanol Toxic Pesticides		Any quantity of Packing Group I	5 kg or 5 L
Class 6.2 Infectious Substances	Infectious Substances affecting Humans / Animals		Any quantity of Category A or B	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
Class 7 Radioactive Substances	Uranium Plutonium Naturally Occurring Radioactive Materials (N.O.R.M.)	For packages being transported under exclusive use: (i) 10 mSv/h on the external surface (ii) 2 mSv/h on the surface of the conveyance, and (iii) 0.1 mSv/h at a distance of 2 m from the surface For packages not being transported under exclusive use: (i) 2 mSv/h on the external surface (ii) 0.1 mSv/h at a distance of 1 m from the package, (iii) 2 mSv/h on the surface of the conveyance, and (iv) 0.1 mSv/h at a distance of 2 m from the surface of the conveyance.	Any quantity	Any quantity that could pose a danger to public safety and an emission level greater than the emission level established in section 20 of the "Packaging and Transport of Nuclear Substance Regulations"
Class 8 Corrosives	Acids Bases Batteries Caustic Amine	Any quantity of Packing Group I or II 30 L or 30 kg of Packing Group III	Total quantity of 450 kg or more in Packing Group I or II Any quantity of UN1796, Nitrating Acid Mixture with more than 50% nitric acid; UN1826, Nitrating Acid Mixture, Spent, with more than 50% nitric acid; UN2032, Nitric Acid, Red Fuming	5 kg or 5 L
Class 9 Miscellaneous Products, Substances & Organisms, Environmentally Hazardous Substances	P.C.B. Asbestos Substances not regulated by the <i>Transportation of Dangerous Goods Act</i>	30 L or 30 kg of Packing Group II or III, or without Packing Group	No TDG Reporting Requirements	25 kg or 25 L of Packing Group II or III, or without Packing Group

Other items in the BC Spill Reporting Regulation that are applicable to the petroleum industry but do not fit in the above table format.		
Item	Substance Spilled	Specified Amount
14	Waste containing dioxin as defined in Section 1 of the Hazardous Waste Regulation	1 k or 1 L, or less if the waste poses a danger to public safety or the environment
15	Leachable toxic waste as defined in Section 1 of the Hazardous Waste Regulation	25 kg or 25 L
16	Waste containing polycyclic aromatic hydrocarbons as defined in Section 1 of the Hazardous Waste Regulation	5 kg or 5 L
17	Waste asbestos as defined in Section 1 of the Hazardous Waste Regulation	50 kg
18	Waste oil as defined in Section 1 of the Hazardous Waste Regulation	100 L
20	PCB wastes as defined in Section 1 of the Hazardous Waste Regulation	25 kg or 25 L
23	A hazardous waste as defined in Section 1 of the Hazardous Waste Regulation and not covered under items 1 to 22 (built into above table)	25 kg or 25 L
24	A substance, not covered by items 1 to 23 (built into above table) that can cause pollution	200 kg or 200 L
25	Natural Gas	10 kg, if there is a breakage in a pipeline or fitting operated above 100 psi that results in a sudden and uncontrolled release of natural gas

For all other reportable substances/quantities, please refer to company SDS sheets for more information.

Containment and Recovery

Understanding Environments – Ground and Water

A spill can occur in several different environments. The type of environment will influence the most appropriate technique to be used for the response strategy, while the fate of oil will be influenced by many other situational and local factors. The response can be complicated due to geophysical and environmental factors that can affect the oil spill's behavior.

	Ground	
	Permeable Ground	Impermeable Ground
Understand oil behavior:	Oil on permeable ground will flow in both horizontal and vertical directions. Penetration of ground will depend on the oil type and the porosity and permeability of the surface materials.	Oil on impermeable ground will either remain relatively static on the terrain or follow the path of least resistance if a slope is present. It is likely to collect in depressions and watercourses.
Identify resources at risk:	Examples of resources needing protection include: <ul style="list-style-type: none"> • Non-vegetated: mud/silt; sand; pebble/boulders. • Vegetated: grassland; forest; wetland. 	Examples of resources needing protection include: <ul style="list-style-type: none"> • Drainage systems • Watercourses • Utilities
Response Considerations:	<ul style="list-style-type: none"> • Penetration of soil below the uppermost layer must be minimized. • Prevent oil from entering areas with ground water. • Drains and inlets should be blocked. 	<ul style="list-style-type: none"> • Oil should be contained as soon as possible. • Any flowing oil should be intercepted quickly to prevent further contamination of the surface. • Drains and inlets should be blocked.

Permeable Ground



Impermeable Ground



Containment and Recovery, continued

	Water	
	Static Water	Moving Water
Understand oil behavior:	Oil on static water will float, spreading to form a thin surface layer. Water is rarely truly “static”, with wind-induced waves causing spilled oil to drift.	Oil can be rapidly transported by moving water, following the direction of both wind and currents. The oil generally spreads to form a thin surface layer and will also be subjected to significant weathering processes.
Identify resources at risk:	Examples of resources needing protection include: <ul style="list-style-type: none"> • Ponds • Lakes • Reservoirs 	Examples of resources needing protection include: <ul style="list-style-type: none"> • Rivers • Streams • Water intakes • Fishing areas
Response Considerations:	<ul style="list-style-type: none"> • Prevent oil from spreading beyond the water body and contaminating further surfaces. • Consider impact of oil moving into vegetated areas such as reed beds. This will act to trap oil making it more difficult to recover. 	<ul style="list-style-type: none"> • Oil should be contained as soon as possible and collected. • Intercept oil flowing downstream to prevent further contamination, while protecting resources at risk.

Static Water



Moving Water



Containment and Recovery, continued

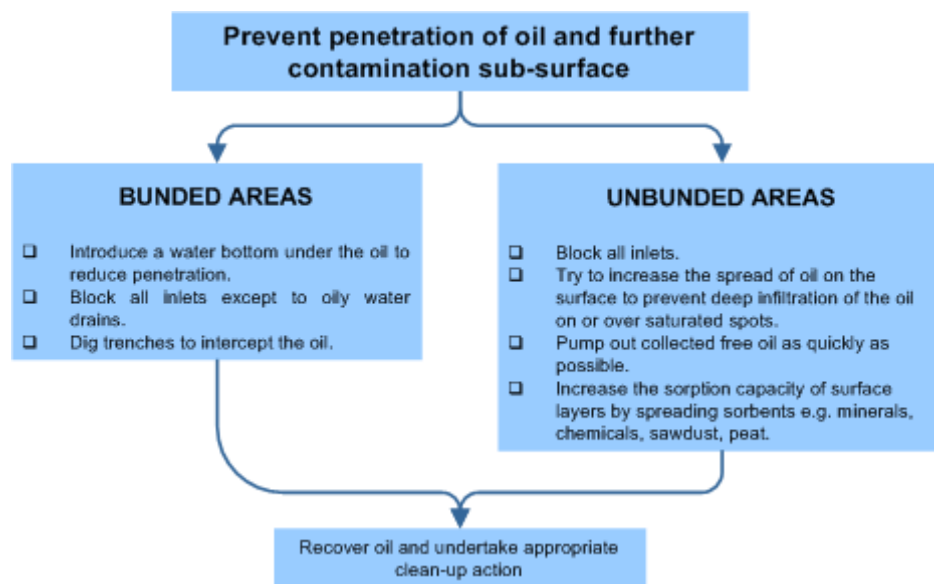
Containment of Spilled Product

On Permeable Ground

Permeable ground will pose challenges to the containment of oil as it flows in both a horizontal and vertical direction and will travel with the direction of groundwater flow once it is reached.

1. Response Priorities

When responding to a spill on permeable surfaces, it is important to minimize the amount of oil that can penetrate below the surface; this should require the oil to be spread over a large surface area in the attempt to reduce head pressure on the surface to prevent penetration. This may well be the preferable option compared to long-term operations of subsoil and groundwater clean-up.



2. Retention Capacities in Permeable Surfaces

Each type of permeable surface will allow oil to permeate at different rates and will retain oil at varying capacities. Although the pore spaces in coarser soils are larger, oil will flow through more readily (due to gravity) thus giving a lower retention capacity.

Finely packed sediments retain the oil in two ways; first, the oil molecules cannot pass so easily between the particles due to their size and secondly because the forces associated with capillary action hold the oil in the pore spaces.

Surface area is also a factor in retention capacities; small grain sediments have a higher surface area and therefore hold more oil on the surface of the grains than larger grained sediments.

Containment and Recovery, continued

Surface Type	Capacity (ltrs/m ³)
Stones / Coarse Gravel	5
Gravel / Coarse Sand	8
Coarse Sand / Medium Sand	15
Medium Sand / Fine Sand	25
Fine Sand / Silt	40

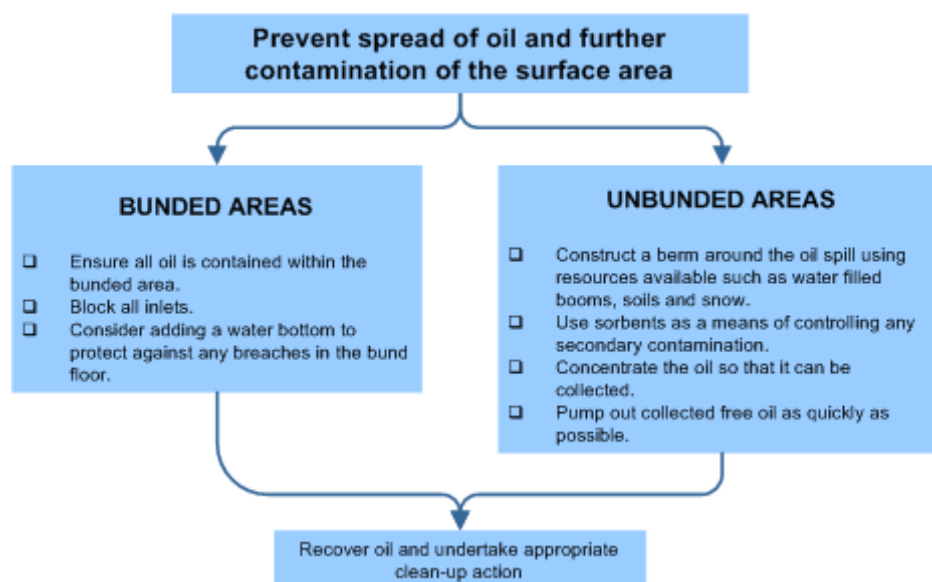
Note: Groundwater movement is very slow, usually between 0.5 m and 1.5 m per day. If oil reaches below subsurface layers, a study of the underlying hydrogeology to identify the most optimal location for the recovery of oil. Different recovery methods can then be put in place, preventing both the further spread of the oil, and flushing from the groundwater system.

On Impermeable Ground

Spill on impermeable ground will remain static until it is recovered, unless a gradient is present that may cause it to spread.

1. Response Priorities

If spills on impermeable ground, the response should first prevent the oil from further spreading and potentially contaminating other surface areas. Once contained, the oil will then need to be recovered through either manual or mechanical methods.



Containment and Recovery, continued

2. Spills in Urban Areas

Urban and built-up areas will contain a vast amount of man-made surface areas sitting alongside natural environments. These man-made surface areas will often be impermeable in nature, so prevention of spread and containment remains the main priority, however, urban areas also pose a significant health and safety risk.

Urban areas are likely to feature intricate drainage and sewage systems, therefore important to prevent the spread of oil to these highly sensitive areas where there is a risk of either contamination with sewage treatment plants and/or watercourses by:

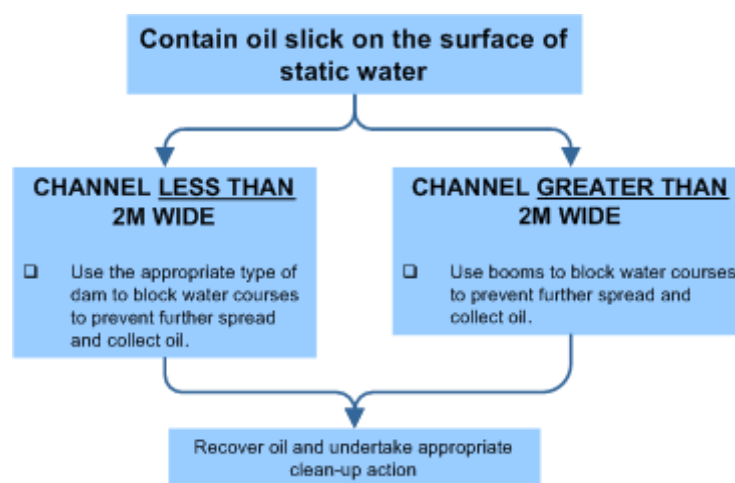
- Using dams formed from soil, sandbags, or sorbents to protect inlets.
- Seal drain gratings with plastic bags filled with water and sand.

Oil and the associated fumes can also be highly volatile. As the vapours are heavier than air, it will gather in underground lines, wells, and troughs. This leads to an increased explosion risk; therefore, it is essential to minimize the potential of ignition, ensuring that:

- Traffic is stopped and other ignition sources are extinguished.
- Any affected system operators such as utilities, telephone and railways are informed.

On Static Water

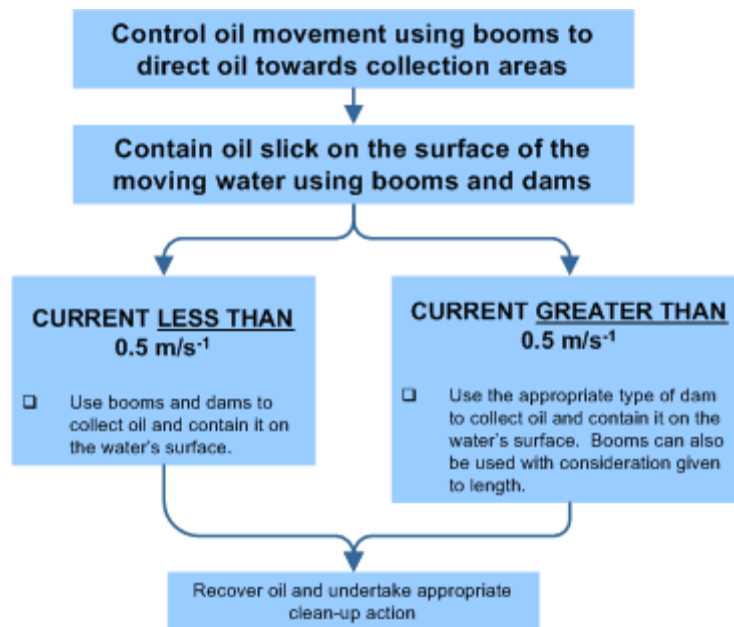
On larger areas of static water, boom can be used to contain the floating oil. The water bodies can be subject to wind-induced wave action, causing the oil to drift, therefore making it necessary to prioritize the containment to prevent further spreading. Where lakes etc. are fed and drained by watercourses, their inlets and outlets need to be protected, methods described in oil on moving water can be utilized.



Containment and Recovery, continued

On Moving Water

For spills that occur in rivers with currents more than 0.5 m/s, various techniques, and equipment, including booms and dams, have been developed to suit the relevant environmental conditions. In currents faster than 1 m/s, it is advisable to use techniques that allows water to flow freely subsurface while containing the oil solely on the surface of the water, such as a sorbent fence, inverted weir, culvert block, water gate or turner valley gate.

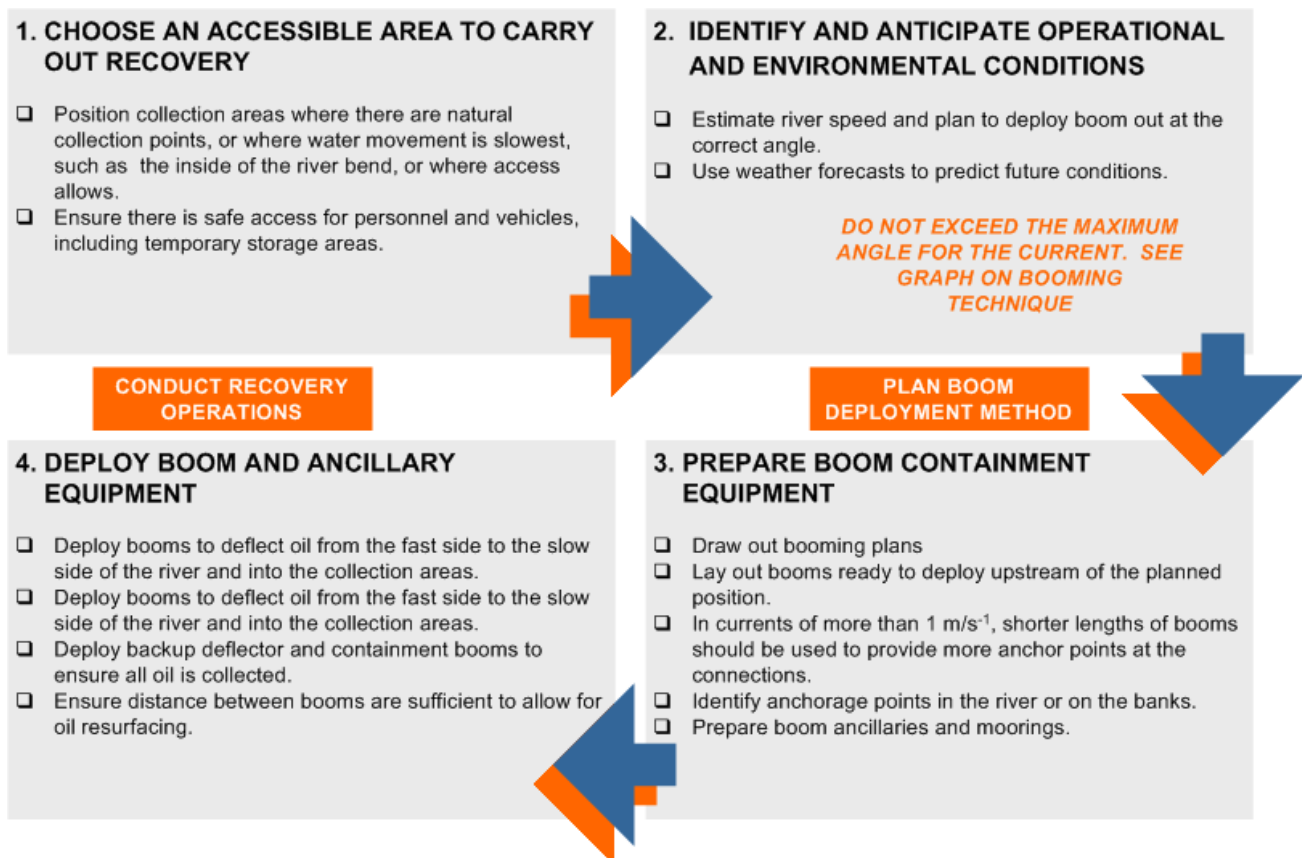


Containment and Recovery, continued

Containment to Recovery Process for Moving Water

Booms can be used to direct the flow of oil, limit any further spread, and then contain it on the water's surface ready for recovery. Different techniques can be employed depending on the quantity of oil spilled and the surrounding operational and environmental conditions, such as the width and windings in the channel of a river, stream, or other watercourse.

If there are pre-determined control point tactical plans this will also guide the location, personnel and equipment required to implement the containment to recovery process.



Containment and Recovery, continued

Recovery of Spilled Product

A range of response strategies are available to the responder, dependent on resources accessibility. Each strategy will require a level of expertise, coordination and is likely to generate waste. These factors should also be considered when deciding on the most appropriate clean-up method to use.

Natural Recovery

In some areas, it may be less environmentally damaging to allow the area to recover naturally. Natural recovery is a slow process; however, it may be the only course of action from a safety and operational perspective.



Manual Clean Up

Manual recovery is a labor-intensive strategy that utilizes large numbers of people collecting stranded oil with the necessary tools; shovels, buckets, etc.



Mechanical Recovery

Oil can be removed from the surface using a multitude of machinery, including pumps and vacuum equipment, scrapers, graders, and oil skimmers.



Use of Water

Flooding can cause the oil to float on the water, this allows it to be recovered later by pumps and skimmers. Flushing can be used to remobilize the oil from the soil and/or wash it from the surface. Both techniques should be used carefully, and containment boom in place to prevent further spread.



Sorbents

Sorbents, made of oleophilic materials; natural (straw) and synthetic (polypropylene), can be introduced to the area to selectively absorb the oil while repelling water.



In-Situ Burn

In-situ burning may be considered when physical recovery is not feasible. It is best used in remote areas, especially where roots are protected by high water levels. Some environments may recover from burning more readily than if left oiled without treatment.



Containment and Recovery, continued

Recovery Techniques

Technique	Description	Equipment / Resources	Applicability	Environmental Impacts
Manual Clean Up	Hand tool (scrapers, wire brushes, shovels, cutting tools, wheelbarrows, etc.) are used to scrape oil off surfaces or recover oiled sediments, vegetation, or debris where oil conditions are light or sporadic and/ or access is limited.	<ul style="list-style-type: none"> Shovels Buckets Sorbents (10-20) labourers 	<ul style="list-style-type: none"> Can be used on all habitat types Light to moderate oiling conditions for stranded oil or heavy oils that have formed semi-solid to solid masses In areas where roosting or birthing animals cannot or should not be disturbed. 	<ul style="list-style-type: none"> Sediment disturbance and erosion potential.
Mechanical Removal	Mechanical earthmoving equipment is used to remove oiled sediments and debris from heavily impacted areas with suitable access.	<ul style="list-style-type: none"> Motor grader, Backhoe Dump truck Elevating scrapers (2-4) labourers Equipment operators 	<ul style="list-style-type: none"> On land, wherever surface sediments are accessible to heavy equipment Large amounts of oiled materials. 	<ul style="list-style-type: none"> Removes upper 5 to 30 cm of sediments.
Sorbent Use	Sorbents are applied manually to oil accumulations, coatings, sheens, etc. to remove and recover the oil.	<ul style="list-style-type: none"> Hand tools Sorbents (2-10) labourers 	<ul style="list-style-type: none"> Can be used on all habitat types Free-floating oil close to shore or stranded on shore, secondary treatment method after gross oil removal Sensitive areas where access is restricted. 	<ul style="list-style-type: none"> Sediment disturbance and erosion potential Trampling of vegetation and organisms Foot traffic can work oil deeper into soft sediments.
Vacuum / Pumps / Skimmers	Pumps, vacuum trucks, skimmers are used to remove oil accumulations from land or relatively thick floating layers from the water.	<ul style="list-style-type: none"> (1-2) - 50 to 100 bbl vacuum trucks w/ hoses (1-2) nozzle screens or skimmer heads (2-6) labourers truck operators 	<ul style="list-style-type: none"> Can be used on all habitat types Stranded oil on the substrate Shoreline access points. 	<ul style="list-style-type: none"> Typically, does not remove all oil Can remove some surface organisms, sediments, and vegetation.
Flooding	High volumes of water at low pressure are used to flood the oiled area to float oil off and out of sediments and back into the water or to a containment area where it can be recovered. Frequently used with flushing.	<ul style="list-style-type: none"> (1-5) - 380 to 750 lpm pumping systems (1) – 100 ft perforated header hose per system (1-2) – 200 ft containment booms per system (1) oil recovery device per system (6-8) labourers per system 	<ul style="list-style-type: none"> All shoreline types except steep intertidal areas Heavily oiled areas where the oil is still fluid and adheres loosely to the substrate Where oil has penetrated gravel sediments Used with other washing techniques. 	<ul style="list-style-type: none"> Can impact clean down gradient areas Can displace some surface organisms if present Sediments transported into water can affect water quality.

Containment and Recovery, continued

Technique	Description	Equipment / Resources	Applicability	Environmental Impacts
Flushing	Water streams at low to moderate pressure, and possibly elevated temperatures, are used to remove oil from surface or near-surface sediments through agitation and direct contact. Oil is flushed back into the water or a collection point for subsequent recovery. May also be used to flush out oil trapped by shoreline or aquatic vegetation.	<ul style="list-style-type: none"> • (1-5) - 189 to 380 lpm / 689 kpa pumping systems with manifold • (1-4) - 30 m hoses and nozzles per system • (1-2) - 60 m containment booms per system • (1) oil recovery device per system • (8-10) labourers per system 	<ul style="list-style-type: none"> • Substrates, riprap, and solid man-made structures • Oil stranded onshore • Floating oil in shallow areas. 	<ul style="list-style-type: none"> • Can impact clean down gradient areas • Will displace many surface organisms if present • Sediments transported into water can affect water quality • Hot water can be lethal to many organisms • Can increase oil penetration depth.
High Pressure Washing	High pressure water streams are used to remove oil coatings from hard surfaces in small areas where flushing is ineffective. Oil is directed back into water or collection point for subsequent recovery.	<ul style="list-style-type: none"> • (1-5) - 1,200 to 4,000 psi units with hose and spray wand • (1-2) - 30 m containment booms per unit • (1) oil recovery device per unit • (2-4) labourers per unit 	<ul style="list-style-type: none"> • Bedrock, man-made structures, and gravel substrates • When low-pressure flushing is not effective • Directed water jet can remove oil from hard-to-reach sites. 	<ul style="list-style-type: none"> • Will remove most organisms if present • Can damage surface being cleaned • Can affect clean down gradient or nearby areas.
Sediment Tilling	Mechanical equipment or hand tools are used to till lightly to moderately oiled surface sediments to maximize natural degradation processes.	<ul style="list-style-type: none"> • (1) tractor fitted with tines, dicer, ripper blades, etc., or • (1-4) rototillers • hand tools • (2-10) labourers 	<ul style="list-style-type: none"> • Any sedimentary substrate that can support heavy equipment • Sand and gravel beaches with subsurface oil • Where sediment is stained or lightly oiled • Where oil is stranded above normal high waterline. 	<ul style="list-style-type: none"> • Significant amounts of oil can remain on the shoreline for extended periods of time • Disturbs surface sediments and organisms.
Log / Debris Burning	Oiled logs, driftwood, vegetation, and debris are burned to minimize material handling and disposal requirements. Material should be stacked in tall piles and fans used to ensure a hot, clean burn.	<ul style="list-style-type: none"> • (1) set of fire control equipment • (2-4) fans • (1) supply of combustion promoter • (2-4) labourers 	<ul style="list-style-type: none"> • On most habitats except dry muddy substrates where heat may impact the biological productivity of the habitat • Where heavily oiled items are difficult or impossible to move • Many potential applications on ice. 	<ul style="list-style-type: none"> • Heat may impact local near-surface organisms • Substantial smoke may be generated • Heat may impact adjacent vegetation.
Natural Recovery	No action is taken, and oil is allowed to degrade naturally	<ul style="list-style-type: none"> • None required 	<ul style="list-style-type: none"> • All habitat types • When natural removal rates are fast • Oiling is light • Access is severely restricted or dangerous to cleanup crews • When cleanup actions will do more harm than natural removal. 	<ul style="list-style-type: none"> • Oil may persist for significant periods of time • Remobilized oil or sheens may impact other areas • Higher probability of impacting wildlife.

SORBENTS



Sorbents can be used to recover oil product that can not be easily recovered using mechanical methods. They are predominately single-use products. When allowed to come in contact with oil on water, they will absorb or adsorb the oil over time.

Objectives

- ◇ Prevent further migration of released products.
- ◇ Recover released product in areas that it may be difficult to reach.



Safety

- ◇ Identify hazards and complete a site safety plan.
- ◇ Consider toxic and flammable vapours.
- ◇ Adjacent infrastructure such as powerlines, pipelines, and underground services.
- ◇ Waders, safety harness, line and PFD may be required.



Environmental Consideration

- ◇ Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.
- ◇ Ensure decontamination areas have been established to minimize transfer of released product during site assessment and site preparation activities.
- ◇ Consider air quality issues and proximity of stakeholders.



Equipment / Resources

- ◇ Sorbents
- ◇ Waste disposal bags
- ◇ Gloves



Personnel

- ◇ Supervisor / lead
- ◇ Site safety
- ◇ Labourers

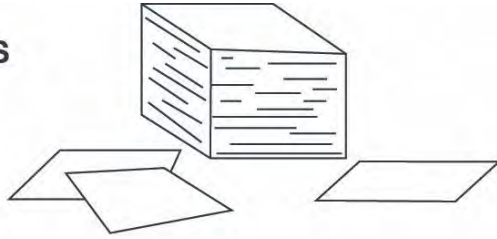


Procedure

- ◇ Use sorbents to soak up and recover released product.
- ◇ Place used sorbents in waste bags for off-site disposal.



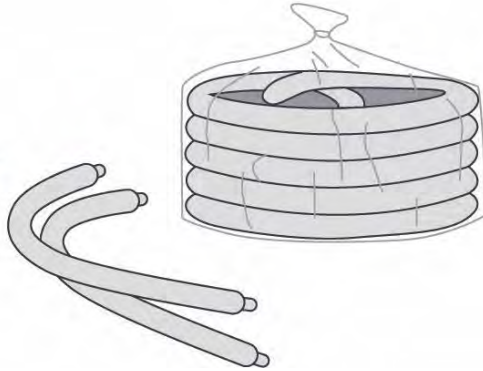
SORBENT PADS



Sorbent Pads

- ◇ Generally smaller in size. Useful for spot cleaning by hand.

SORBENT BOOMS



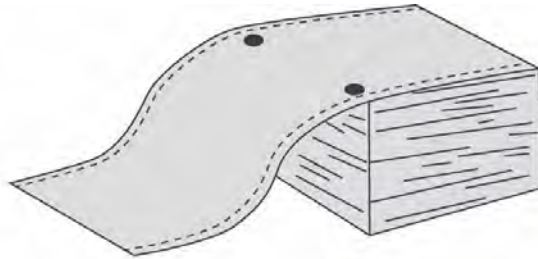
Sorbent Booms

- ◇ Sorbent booms are easily deployed in low current environments.
- ◇ Usually sausage-shaped, with a few inches of height above the water when floating.



Sorbent Sweeps

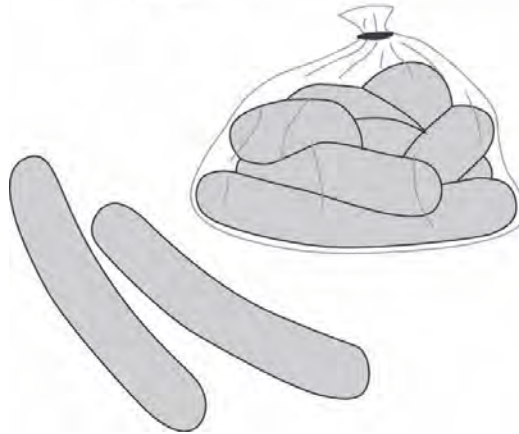
- ◇ Long, narrow sheets of sorbent material with an integral tension member.
- ◇ Sorbent sweeps can be used in place of sorbent booms for managing and recovering sheens.



SORBENT SWEEPS

Sorbent Socks

- ◇ A smaller, more compact version of sorbent booms.
- ◇ Useful for building small containment walls around storm drains, sumps, bilges or sewer entries.



SORBENT SOCKS



BERMS



Berms can be constructed using any non-porous material using mechanical or hand equipment. They can be used to prevent migration of released product as well as used to divert surface flow from areas that have been impacted by a spill. They are used in conjunction with other containment and recovery methods such as trenches, bell holes and inverted weirs.

Objectives

- ◇ To halt the advance of spilled product and allow for the recovery of the spilled product.
- ◇ Contain and prevent further migration of released products by channeling the spill in a particular direction
- ◇ Create a pooled area for recovery of released product.
- ◇ Diversion of surface flows from impacted area.



Safety

- ◇ Identify hazards and complete a site safety plan.
- ◇ Consider toxic and flammable vapours.
- ◇ Adjacent infrastructure such as powerlines, pipelines, and underground services.
- ◇ Establish communications in remote areas.
- ◇ Be cautious of wildlife.



Environmental Consideration

- ◇ Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.
- ◇ If possible, remove and conserve topsoil for reclamation activities. Avoid constructing berms with topsoil material.
- ◇ Ensure decontamination areas have been established to minimize transfer of released product during construction of berm.
- ◇ Handle and dispose of contaminated wastes in an approved manner.



Equipment / Resources

- ◇ Shovels and/or earth moving equipment
- ◇ Plastic sheeting
- ◇ Sorbents
- ◇ Vacuum truck / portable vacuum unit



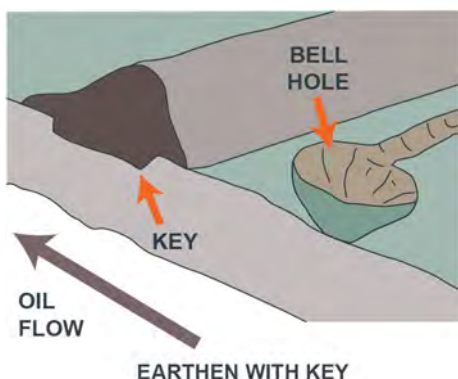
Personnel

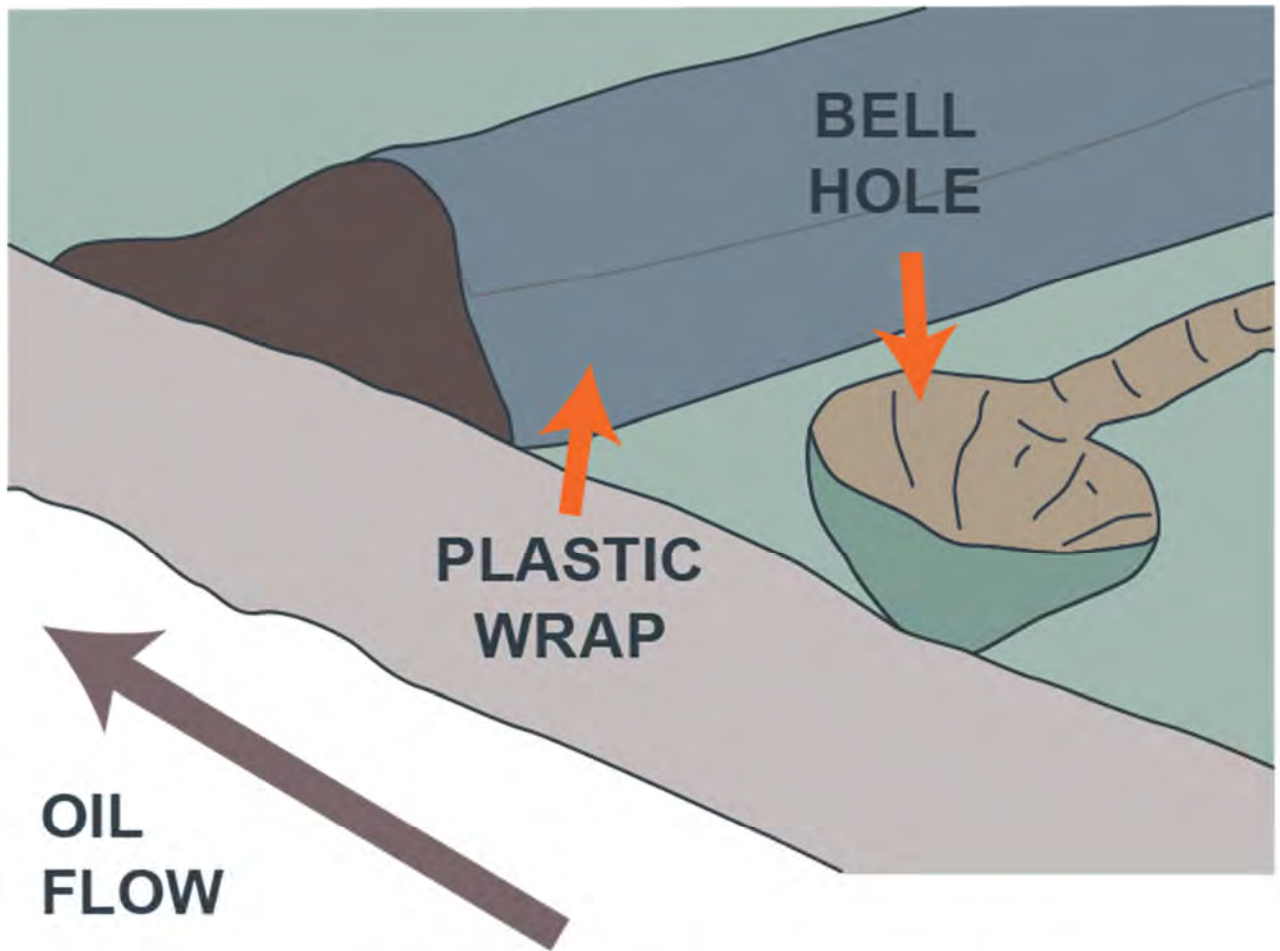
- ◇ Supervisor / lead
- ◇ Site safety
- ◇ Labourers
- ◇ Vacuum truck operator



Procedure

- ◇ Lay plastic on ground, across expected route of spill travel.
- ◇ Pile non-porous materials on downstream side of plastic (away from approaching oil).
- ◇ Flip upstream side of plastic sheet over berm to prevent contamination of berm contents.
- ◇ Hand dig small bell hole upstream of berm recovery.
- ◇ Ensure waste disposal bags and tags if sorbents are to be used.





EARTHEN PLASTIC WRAP



SURFACE FLOW DIVERSION

TRENCHES AND BELL HOLES



Trenches can be excavated to contain a spill and used most commonly with bell holes to allow recovery of fluids and released product via vacuum unit or transfer pumps. For additional containment, the materials excavated from the trench can be used to construct berms downgradient of the trench. For larger spills, skimmers can be considered for recovery of released products.

Objectives

- ◇ To halt the advance of the spilled product and allow for recovery while reducing potential for environmental damage.
- ◇ Provide capacity to recover released product and ensure containment.
- ◇ To stop spilled product where a significant containment capacity is required on a slope.



Safety

- ◇ Identify hazards and complete a site safety plan.
- ◇ Consider toxic and flammable vapours.
- ◇ Adjacent infrastructure such as powerlines, pipelines, and underground services.
- ◇ Consider ground disturbance requirements.



Environmental Consideration

- ◇ Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.
- ◇ Utilize low lying areas to minimize depth of excavations.
- ◇ Keep trench depth at a minimum to prevent further sub-surface or groundwater impacts.
- ◇ Stockpile clean materials for reclaiming area of trenches and bell holes.
- ◇ Ensure decontamination areas have been established to minimize transfer of released product during construction of trenches and bell holes.



Equipment / Resources

- ◇ Shovels / earth moving equipment
- ◇ Plastic sheeting
- ◇ Vacuum truck / vacuum unit
- ◇ Transfer pump / skimmer
- ◇ Temporary storage
- ◇ Containment booms
- ◇ Sorbents
- ◇ Hand lines



Personnel

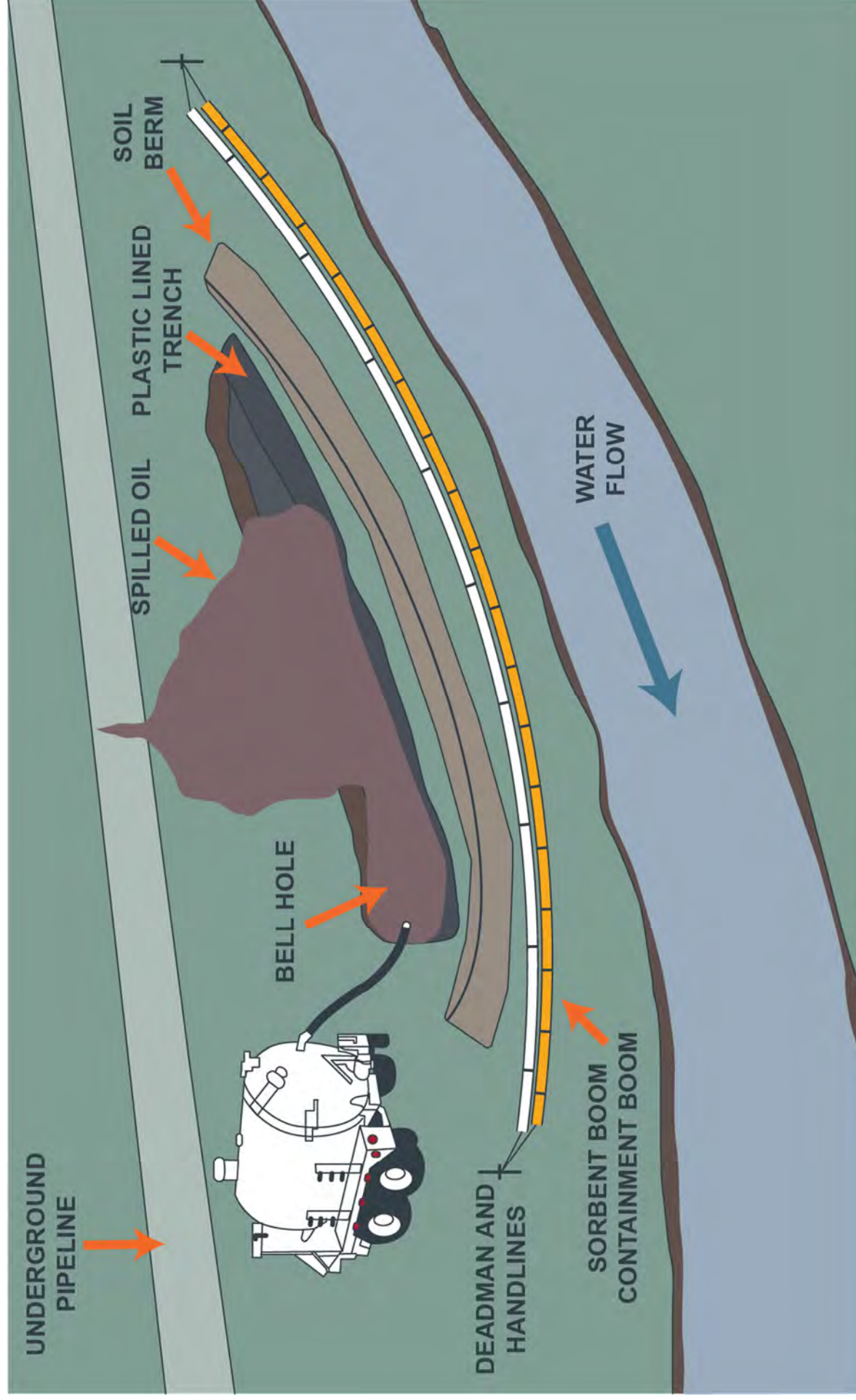
- ◇ Supervisor / Lead
- ◇ Site Safety
- ◇ Labourers
- ◇ Vacuum truck operator



Procedure

- ◇ Excavate shallow trench downstream and ensure berm is on downstream side of trench. Line the trench and berm with plastic sheeting to prevent contamination of berm contents.
- ◇ Excavate bell hole at low end of trench for the collection of fluids.
- ◇ Recover collected fluids using vacuum truck / vacuum unit or transfer pump into temporary storage.





TRENCH AND BELL HOLE

AQUADAM



Aquadam's are made up of multiple parallel chambers called fill tubes which give it a level of stability against shifting. While slightly more complicated to place and fill than a simple bladder, in many cases it does not require external anchors. Use in slow moving shallow watercourses.

Objectives

- ◇ Contain and facilitate recovery of a water-borne spill from a ditch, creek or stream.
- ◇ Contain and prevent further migration of released products.
- ◇ Provide capacity to recover released product and impacted fluids.



Safety

- ◇ Identify hazards and complete site safety plan.
- ◇ Consider toxic and flammable vapours.
- ◇ Adjacent infrastructure such as powerlines, pipelines, and underground services.
- ◇ Establish communications in remote areas.
- ◇ Be cautious of wildlife.



Environmental Consideration

- ◇ Maintain control of damming materials to avoid introducing foreign substances into the watercourse.
- ◇ Utilize existing access routes to minimize disturbance of soils and care should be taken to minimize disturbance of watercourse and banks. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.
- ◇ Ensure decontamination areas have been established to minimize transfer of released product during setup.
- ◇ Handle and dispose of contaminated wastes in an approved manner.



Equipment / Resources

- ◇ Aquadam / water bags
- ◇ Water source
- ◇ Trash pump / hose
- ◇ Suction hose
- ◇ Vacuum unit
- ◇ Skimmer



Personnel

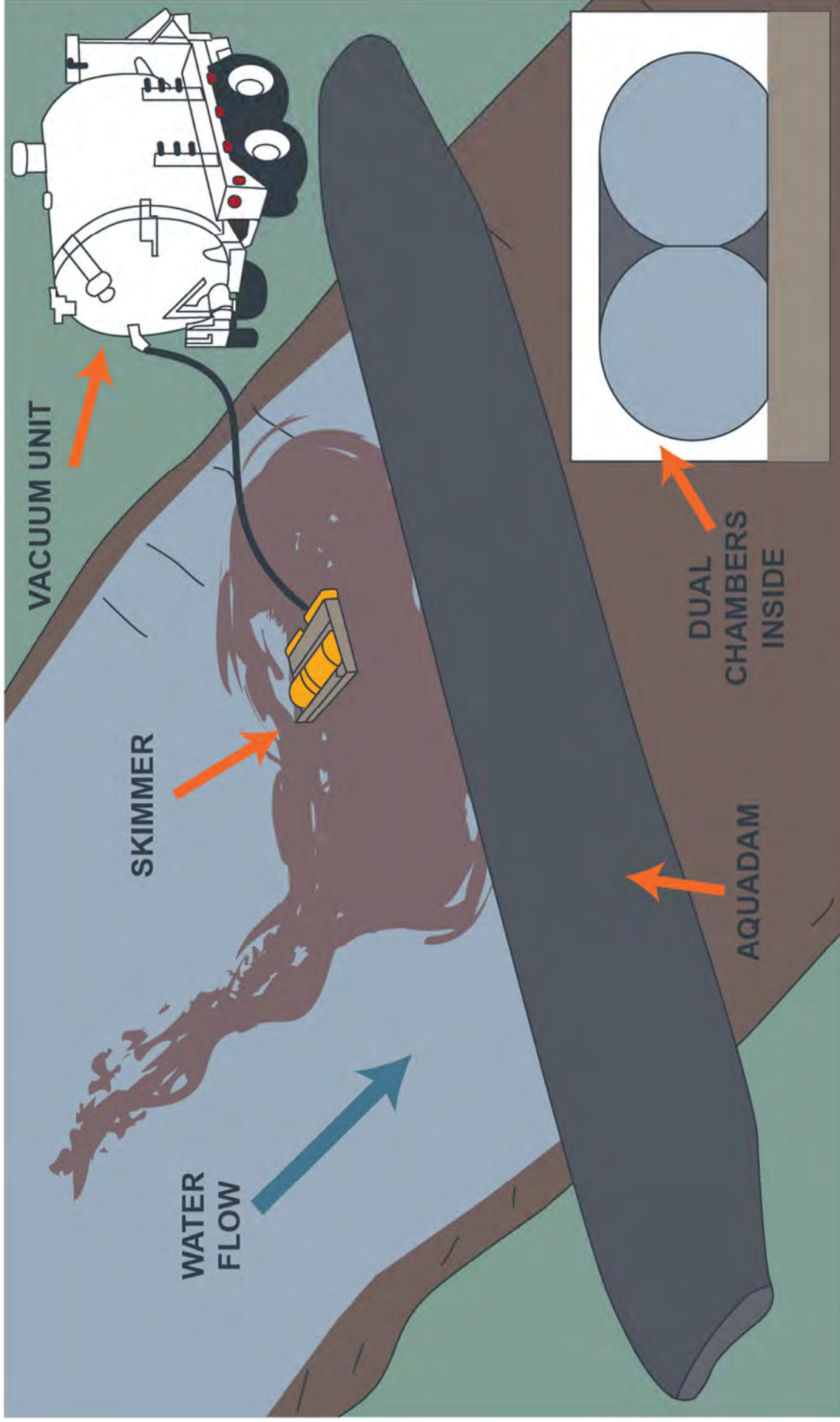
- ◇ Supervisor / lead
- ◇ Site Safety
- ◇ Labourers
- ◇ Vacuum truck operator



Procedure

- ◇ Set up trash pump/hose.
- ◇ Prepare area by removing any sharp debris that could puncture or damage the aquadam.
- ◇ Unroll aquadam across the area of desired containment.
- ◇ Fill aquadam using trash pump and hose.
- ◇ Recover released product using skimmer / vac unit.





AQUADAM

CULVERT BLOCK



Culverts that allow a watercourse to pass under or through obstacles present an opportunity for controlling the spread of oil. If water flows are sufficiently low, they can be blocked entirely with boards or plywood to contain oil above the culvert. In higher flow situations, partial culvert blocks can be installed to create underflow dams.

Objectives

- ◇ Contain and prevent further migration of released products using sandbags / plywood.
- ◇ Create pooled area to allow recover of released product.



Safety

- ◇ Identify hazards and complete a site safety plan.
- ◇ Consider toxic and flammable vapours.
- ◇ Adjacent infrastructure such as powerlines, pipelines, and underground services.
- ◇ Establish communications in remote areas.



Environmental Consideration

- ◇ Utilize existing access and routes to minimize disturbance of soils. Consider environmental sensitivities such as vegetation soil types and wildlife/fish habitat.
- ◇ Ensure decontamination areas have been established to minimize transfer of released product during site assessment and site preparation activities.
- ◇ Consider air quality issues and proximity of stakeholders.
- ◇ Manage board level to allow water to pass through culvert, reducing flooding upstream and maintain downstream flow.



Equipment / Resources

- ◇ Track hoe
- ◇ Sorbents
- ◇ Shovels
- ◇ Earthen materials or sandbags
- ◇ Vacuum truck / portable vacuum unit
- ◇ Skimmer
- ◇ Temporary storage
- ◇ Plywood, stakes, nails



Procedure

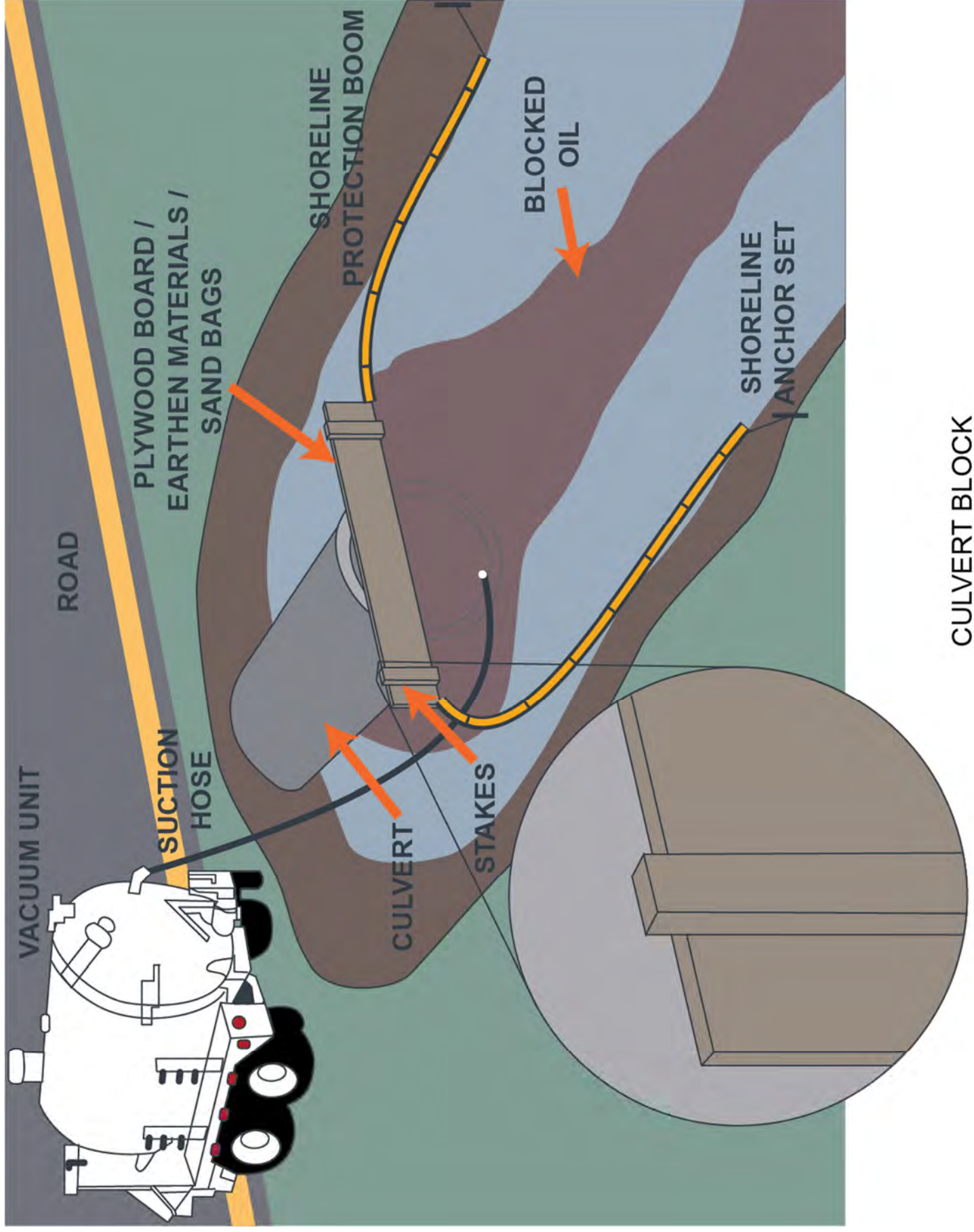
- ◇ Using earthen materials or sandbags, completely block the culvert or,
- ◇ Using plywood on upstream side of culvert. Secure in place with two stakes driven into bed of ditch, creek or stream. Raise board enough to allow passage of water under the board's lower edge. Secure in place with driving nails through stakes into the plywood.
- ◇ Monitor water levels to ensure sufficient flow and to prevent washouts.
- ◇ Utilize vacuum unit or skimmer to recover pooled fluids and dispose at appropriate location.
- ◇ Utilize containment boom to protect banks from oil impacts.



Personnel

- ◇ Track hoe operator
- ◇ Vacuum operator
- ◇ Supervisor / lead
- ◇ Site safety
- ◇ Labourers





BOOM DEPLOYMENT



Larger watercourses are those where any combination of water depth, river or stream width, or current velocity would make the installation of bottom-founded or rigid fixtures impractical. The tactics that follow rely on the installation of flexible, floating barriers to redirect or divert surface contaminants.

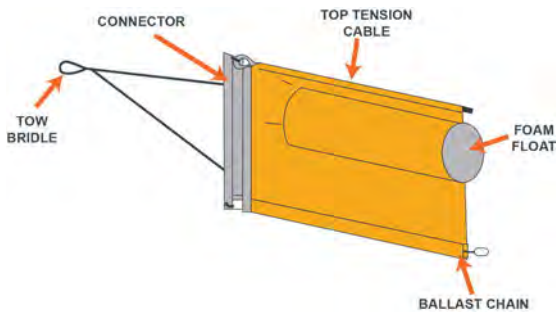
Objectives

- ◇ Divert surface contaminants from sensitive resources.
- ◇ Divert surface contaminants to areas of quiet water where velocities are slower and contaminants may be collected.



Floating Containment Boom

- ◇ Identified by the overall height of the boom or by the diameter of the float and the depth of the skirt.
- ◇ Shallow skirts are advised for fast moving waters, because their reduced drag makes them easier to deploy and secure. Deeper skirts are advised where waves may be encountered.

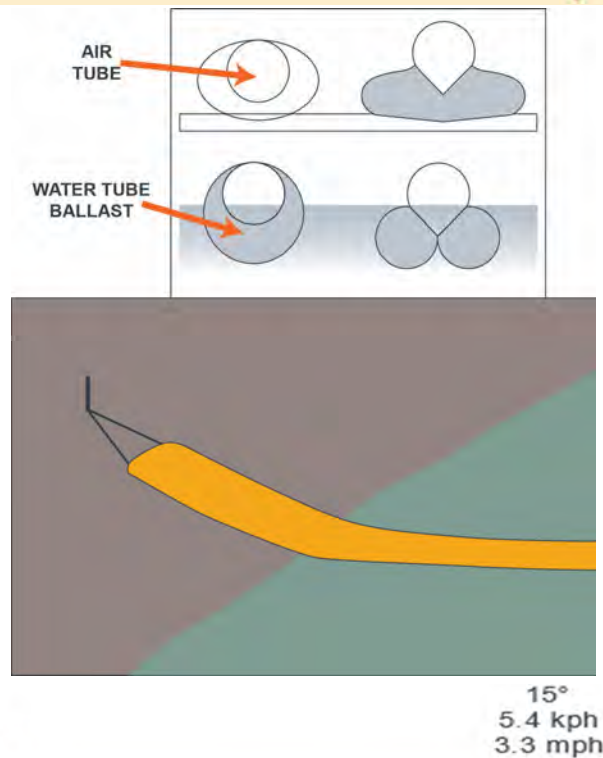


Boom Property	Static Water	Moving Water
Overall height (in)	6 - 24	8 - 32
Minimum gross buoyancy to weight ratio	3:1	4:1
Minimum total tensile strength (lbs)	1,500	5,000

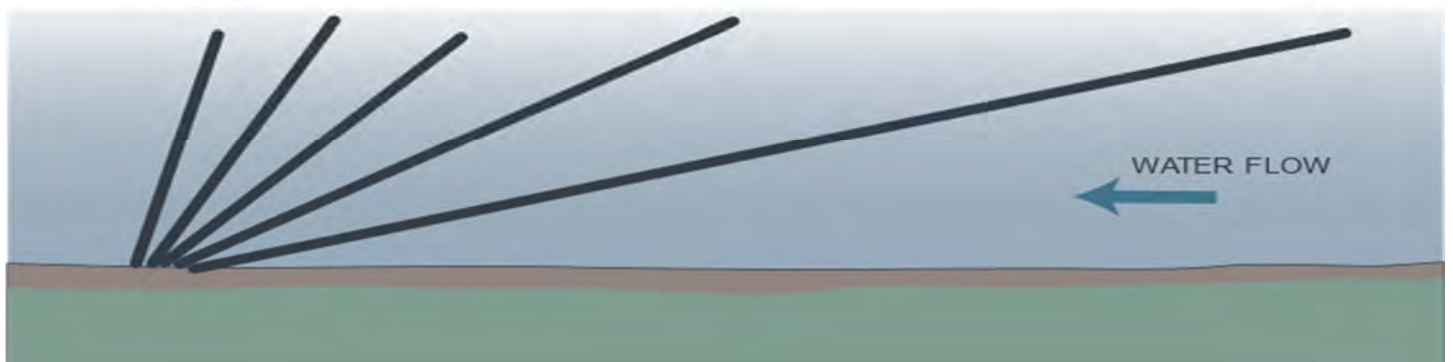
75°	60°	45°	30°	
1.4 kph	1.6 kph	2.0 kph	2.8 kph	
0.9 mph	1.0 mph	1.2 mph	1.7 mph	

Shore Seal Boom

- ◇ Provides an effective barrier to control the spread of oil in the critical region where water meets the shoreline.
- ◇ A floating barrier with integral water bags that provide an effective seal when grounded.
- ◇ A smaller tube is fitted into a larger tube. The larger outer tube is filled with water and the smaller inner tube is filled with air.
- ◇ Shore seal boom can adjust to fluctuating water levels.



15°
5.4 kph
3.3 mph



Time in seconds stick travels 30 m (100 ft)	Current km/hr	Current mph	Current (metres per second)	Current (feet per second)	Boom angle (degrees to current)
216 108 72 54	0.5 1.0 1.5 2.0	0.31 0.62 0.93 1.25	0.14 0.28 0.42 0.56	0.46 0.92 1.38 1.84	30 degrees
43 36 31 27	2.5 3.0 3.5 4.0	1.5 1.9 2.2 2.5	0.69 0.83 0.97 1.11	2.26 2.72 3.18 3.60	20 degrees
24 22 18	4.5 5.0 6.0	2.8 3.1 3.7	1.25 1.39 1.67	4.10 4.56 5.48	15 degrees
15 14 12 11	7.0 8.0 9.0 10.0	4.3 5.0 5.6 6.2	1.94 2.22 2.50 2.78	6.36 7.28 8.20 9.12	10 degrees

Considerations

When determining the type of containment operation to be utilized on a watercourse, the following should be considered:

- ◇ The slower the current and deeper the water, the more effective the containment and recovery operations will be.
- ◇ Chose a location where the current is directed towards the recovery area.
- ◇ Consider access and staging when selecting a recovery location.
- ◇ On larger watercourses chose a location that is on the side as the spill.
- ◇ Boom should be a straight as possible to defect oil to recovery areas.
- ◇ Boom angle is critical for ongoing maintenance of containment and recovery operations.
- ◇ In faster moving water, consider additional containment boom downstream to capture any flow through.
- ◇ If not feasible to boom entire channel, select as site that will capture most of the released product and consider further downstream containment and recovery areas.
- ◇ Select boom anchoring methods considering the following:
 - ◇ Shoreline Pins can be used on narrow slow-moving watercourses and installed along the banks and include drive pin, screw, wing pin anchors, trees, or large rocks.
 - ◇ Trolley Line can be deployed across large, moderate to fast moving watercourses and can be used with split pulley to deploy and adjust the boom angle.
 - ◇ Bridge Pier Bridle can be installed on large, moderate to fast moving watercourse with the use of workboats
 - ◇ In-Stream anchors and chain sets can be deployed within the watercourse by workboat crews and include sarca, danforth and rake anchors.
 - ◇ Boom Vane can be deployed from shore and utilizes the instream current and mooring lines to set boom angles.



SKIMMERS, VACUUM UNITS, TEMPORARY STORAGE

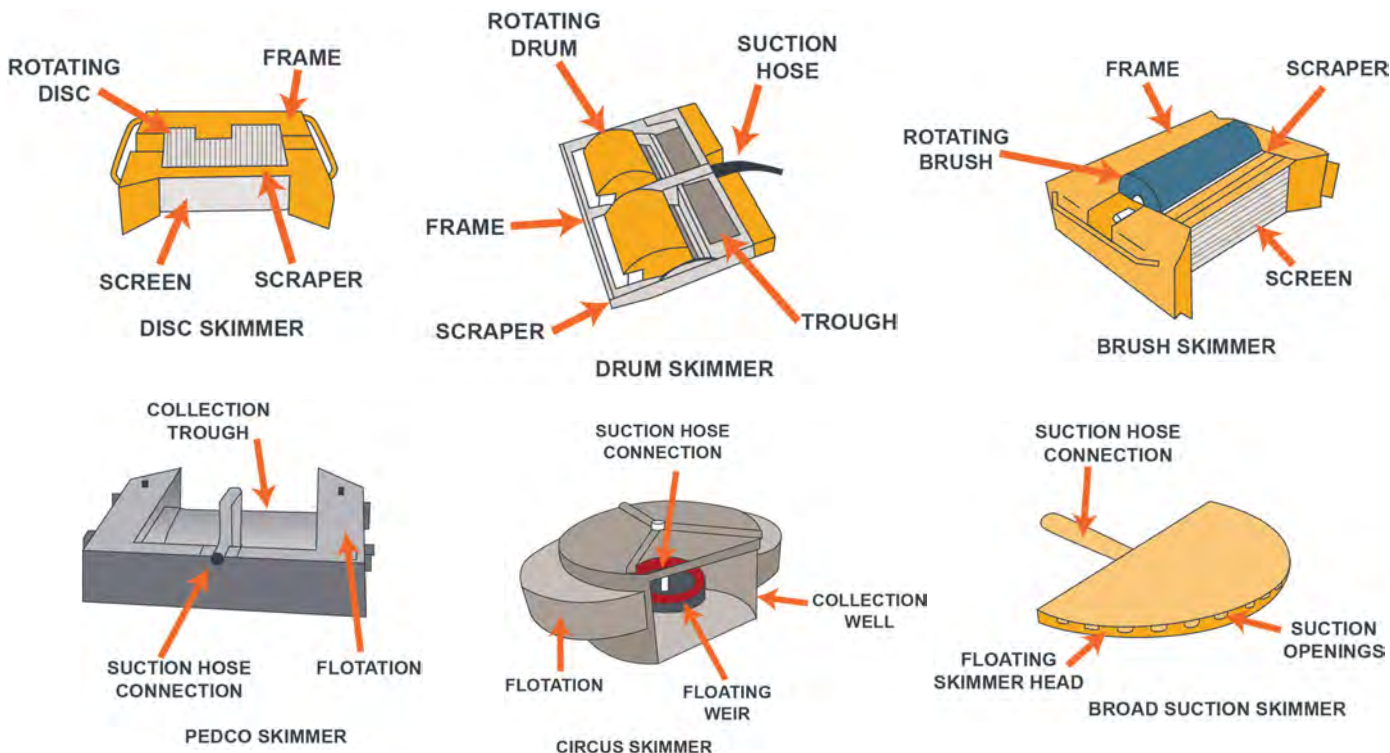


Recovery will involve the use of equipment as determined by plans and the scope of the incident.

Skimmers

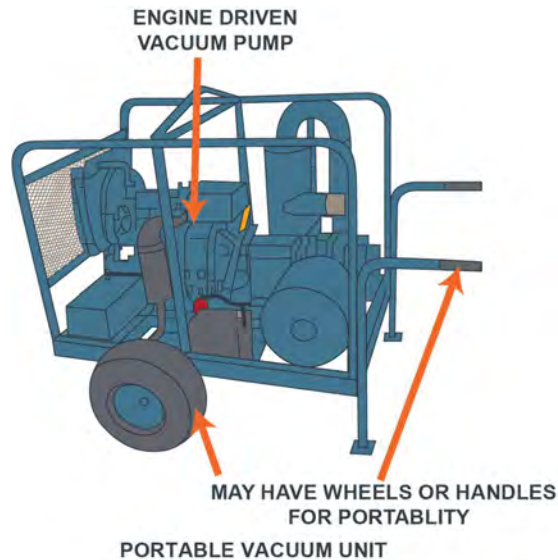
- ◇ Selective skimmers rely on oleophilic material that can be passed through the oil-interface. Selective skimmers collect a higher concentration of oil in the recovered fluid stream than non-selective skimmers.
- ◇ Non-selective skimmers are usually weir or suction devices that recover fluid indiscriminately.

Skimmer Type	Oil Type	Mode	Debris Tolerance	Wave Tolerance	Currents
Drum (selective)	Wide range of oil viscosities	Stationary	Debris must be managed to allow flow of oil to skimmer	Low sensitivity to waves with height less than diameter of drum	Not generally used in currents
Disc (selective)	Low to medium viscosity	Stationary	Debris must be managed to allow flow of oil to skimmer	Low sensitivity to waves with height less than diameter of disc	Not generally used in currents
Brush (selective)	Medium to high viscosity	May be operated in stationary mode if current is present	Effective in most forms of small debris	Low sensitivity to waves	May be operated in stationary mode if current is present
Pedco (non-selective)	Wide range of oil viscosities	Stationary	Debris must be managed to allow flow of oil to skimmer	Low sensitivity to waves	Used in currents typically river, streams and creeks
Circus (non-selective)	Wide range of oil viscosities	Stationary and advancing	Debris must be managed to allow flow of oil to skimmer	Good wave-following characteristics in nonbreaking waves	Used in currents typically river, streams and creeks
Broad Suction (non-selective)	Wide range of oil viscosities	Powered by vacuum or pump	Works around debris	Low sensitivity to waves	Static water conditions



Vacuum Units

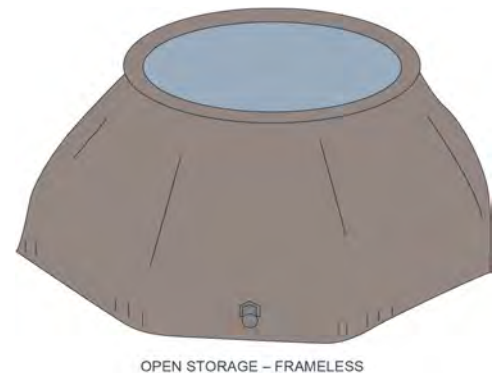
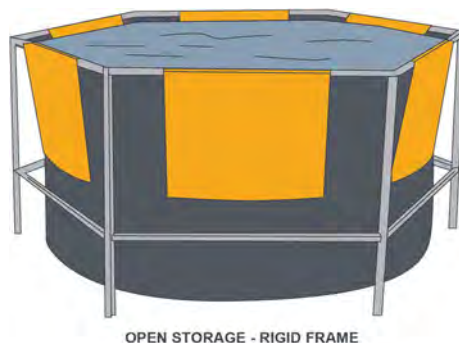
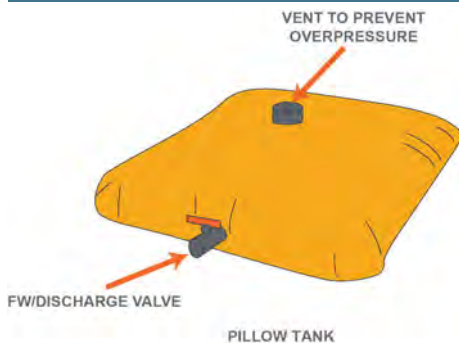
- ◇ Operate on the same principle as an industrial vacuum cleaner
- ◇ A suction pump pulls large quantities of air through a hose and into a large-volume receptacle. The sudden velocity drop that occurs in the receptacle causes liquids and solids to fall out of the airstream and collect. This process may be aided by internal baffles in the receptacle.
- ◇ May be used in place of pumps to operate pedco or broad suction skimmers or to transfer collected oil from disc or drum skimmers.



Temporary Storage

- ◇ Recovered oil can be critical to the success of a spill response. Temporary storage tanks are usually fabric, for storage and portability.
- ◇ Depending on the type, they may or may not have a rigid frame
- ◇ Note that open storage devices do not have positive vapor control. Hence, they may not be suitable for storage of highly volatile products.

Storage Type	Vapor Control	Capacity	Storage Length
Pillow Tank	Yes	750 - 19,000 L	Temporary and long-term
Open Storage - Rigid Frame	No	900 - 75,000 L	Temporary
Open Storage - Frameless	No	750 - 19,000 L	Temporary



Post-Incident

Ensure all statements, event logs, forms and documentation on the incident remain securely stored following the incident. Records must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.

Call Down Notification

After consultation with a senior company representative or the appropriate Regulatory Agency, Provincial Emergency Management or local County / Municipality, the Incident Commander will:

1. Give the "all clear" signal. Prior to the "all-clear" signal, the Incident Commander will confirm that all evacuated areas are safe to re-enter. This may involve such activities as:
 - Ensuring all equipment and locations are free of any pockets of fire, smoke and / or toxic gases.
 - Ensuring all equipment and debris are removed from offices and / or public areas.
 - Cordoning off the incident area to isolate any remaining hazards.
 - Checking low-lying areas and basements for contamination, if a toxic leak has occurred.

After the "all-clear" message has been given, the Incident Commander will be responsible for:

- Ensuring all evacuees are promptly notified once the call down is given.
 - Coordinating the return of any evacuees to the area. Ensure the public and employees receive any assistance they may require.
 - Maintaining security in any evacuated areas until the evacuees have returned and the businesses in the area have again become occupied.
2. Coordinate the deactivation of all emergency response operations, personnel, equipment and incident areas.
 3. Ensure all previous contacts, including other companies; government agencies, etc. are notified of the emergency status call down.
 4. Advise all response team members to document their call down notification calls.
 5. Prepare and release an "all clear" statement to the media in conjunction with the Regulatory Agency.
 6. Organize debriefing meetings for advisory personnel involved. In the case of incidents that have involved a death or serious injury, consult with Human Resources personnel about arranging critical incident counselling.
 7. Notify and debrief Joint Interest Partners and Insurance company representatives.

Note: Ensure all statements, event logs, forms and documentation on the incident remain securely stored following the incident.

Public Care and Assistance

The decision to recall evacuees will be coordinated by the regulatory agency in consultation with other applicable government agencies and the licensee. Ensure the following tasks are completed as required:

1. Ensure all evacuees are promptly notified once the call down is given.
2. Coordinate the return of any evacuees to the area. Ensure the public and employees receive any assistance they may require.
3. Maintain security in any evacuated areas until the evacuees have returned and the businesses in the area have again become occupied.
4. Ensure homes and businesses are ventilated and checked for gas pockets before allowing the occupants to enter. Rovers must check each room, office and public area.

Post-Incident, continued

5. Ensure members of the Response Teams and other key participants in the emergency are debriefed as soon as possible.
6. Designate a senior company representative to act as the company Liaison with the public and other companies.
7. Ensure the affected employees and public are provided with post-incident company contact names and telephone numbers. If the emergency has impacted a large number of the public or has caused significant damage to private property or the environment, a temporary Public Relations Office should be established in the affected area.
8. Schedule a follow-up meeting with the public to clearly explain the cause of the incident and to address their concerns. Organize critical incident counselling as required.
9. Ensure public expense / damage claims have been collected and are processed in a timely manner.

Clean-up and Repair

If a serious injury or death has occurred, the scene must be left undisturbed, as much as possible, until an investigation of the site can be completed by the appropriate authorities.

Ensure the following tasks are completed as required:

- Ensure the incident site is not disturbed if there has been a fatality or a serious injury until police, regulatory officials and company representatives complete necessary investigations.
- Ensure that site clean-up continues.
- Ensure that the correct procedures are developed and implemented for the decontamination of equipment.
- Ensure the On-Site Group Supervisor disposes of all hazardous waste according to applicable regulations (confer with the safety support personnel, the Response Team or other company safety personnel).

Note: The position of On-Site Group Supervisor during the remediation phase may be best filled by an Environmental Specialist.

- Ensure that priority is given to clearing debris and restoring the site to normal operating conditions after the government and company investigations are complete.
- Ensure that all safety equipment is demobilized, cleaned and inspected for contamination.
- Ensure all roadblocks, staging area and detour equipment is demobilized.
- Ensure that all clean-up and repair actions follow the companies safety and environment policies and safe-work procedures.

Third Party Investigations

The Incident Commander will coordinate and observe all site investigations. Third party investigators such as police, government agencies and insurance companies may be required to investigate an incident site. It is important to co-operate with third party investigators. However, company personnel should be aware of the corresponding corporate guidelines.

- Obtain the name, title, address and telephone number of all inspectors and immediately inform the Incident Commander before proceeding with the investigation.

Post-Incident, continued

- Ensure a company representative accompanies the inspector at all times. Never leave an inspector unattended.
- Give the inspectors the information they request, the facts only, no speculative information. Always tell the truth.

Document all items of evidence that the inspector has retained. Where possible, keep copies of the evidence provided to the Inspectors.

Wait until legal counsel is present before answering questions where the inspector indicates that any statements may be used as evidence or indicates that you have the right to counsel.

Review and Debriefing

The effectiveness of the ERP shall be reviewed after the end of the emergency. In some situations, a formal debriefing may be held. The objective of the debriefing should be to improve emergency preparedness and response by identifying areas of success and areas requiring improvement (a debriefing should not be a fault-finding mission). If one is held, all groups that responded to the emergency should be represented. The representatives should come prepared with complete details of their activities during the emergency and, where possible, provide supporting documentation. Common elements of an effective debriefing include:

- a) A facilitator;
- b) A secretary to record the proceedings;
- c) A review of the sequence of events, including timing and actions taken; and
- d) Identification of those portions of the ERP that were effective and those that require improvement.

Action items identified during the debriefing should be documented and assigned with completion timelines, key lessons learned from emergency outcome should be shared with the appropriate parties, and the ERP should be revised as necessary. Separate debriefings may be held with different groups that participated in the emergency (e.g., emergency services organizations, the media, etc.).

Critical Incident Stress Debriefing (CISD)

Responders are often under a great deal of stress. They must act quickly, often in the face of pain and fear, to assess the situation, determine priorities and begin rescuing others who are in danger. They may have experienced a serious injury themselves or witnessed the death of co-workers or the public.

If necessary, the Incident Commander will request that the company's Human Resource personnel dispatch specially trained counselors to meet with responders, preferably within 24 to 48 hours, to provide support and reassurance to those affected by an emergency. Team members should include a mental health professional and trained peer support personnel (fire-fighters, paramedics, police, military, etc.).

CISDs allow individuals to express the circumstances they were confronted with, how they felt at the incident and what their reactions were after the incident. The participants must understand that the meetings are strictly confidential and are not intended to judge or lay blame on an individual's actions. Recording devices and note taking should be prohibited. Meetings should be limited to a maximum of 20 individuals. Individuals who are perceived to be responsible for the incident should be excluded from group meetings and met on a one-on-one basis.

These sessions provide the responders with a supportive environment that helps them deal with their emotions. It also provides them with information about stress and its effects (severe agitation, emotional upset, inability to sleep, etc.) and it educates them about stress management techniques.

Post-Incident, continued

Post-Incident / Accident Investigation

Once the emergency status has been removed, a senior company representative will appoint a subcommittee to investigate the event. This subcommittee will consist of appropriate management and technical specialists as required.

The objective of the investigation will be to analyze and evaluate the event in order to establish a cause, to provide advice on how to prevent a reoccurrence of the event, and to make recommendations on procedures that will improve the company's emergency response efforts in the future.

The post-incident / accident investigation should include:

- A review of the events leading up to the incident / accident.
- An analysis of the on-site remedial procedures, including an evaluation of the safety standards that were applied.
- An appraisal of the company's shelter-in-place / evacuation response for the affected public.
- An evaluation of the effectiveness of the notification and communication systems between the incident site and the head office, as well as within the company.
- An appraisal of the effectiveness of any media or public relations efforts.
- An assessment of any potential legal or environmental issues that may be raised as a result of the event or as a result of the company's response efforts.
- A summary of current and future costs.
- Completed appropriate event report forms and applicable attachments.
- An assessment of the strengths and weaknesses of the company's response.

This report will be directed to the attention of a senior company representative. It will be his / her responsibility to ensure all recommendations for improvements to the Corporate and Field Emergency Response Plans are incorporated where applicable and promptly communicated to the appropriate company personnel.

Within 30 days of the end of an incident, a Licensee must file with the Provincial Agency, Canada Energy Regulator (CER), and / or the Transportation Safety Board (TSB), an Operator Incident Summary Report structured as outlined by the Provincial / Federal Agency. After reviewing the Operator Incident Summary Report, the Provincial and / or Federal agency may require that the licensee attend a meeting to further discuss the incident.

All documentation recorded during and following an emergency must be retained for up to five years in the event the Regulatory Agency requests it.

Medical Emergencies

DISCLAIMER: The information contained in this section does not replace formal First Aid, CPR & AED training. The company makes no guarantee as to, and assumes no responsibility for, the correctness, sufficiency or completeness of such information or recommendations. A First Aid provider is someone who has completed formal first aid training from a recognized provider. Training can be obtained from the Canadian Red Cross (www.redcross.ca) or St. John Ambulance (www.sja.ca).

The 3 basic steps to follow in any emergency:

Remember: stay calm, look for dangers, never risk your own safety

CHECK the person

- Does the person want your help? If the person is unable to answer, assume you have consent to give first aid.
- Check the person's ABCs (Airway, Breathing, and Circulation).



CALL EMS/9-1-1

- If the person responds, find out if there is a need to call EMS/9-1-1.
- If the person does not respond, call for help and EMS/9-1-1.



CARE for life-threatening conditions first

- Reduce the risk of disease transmission by using protective equipment, such as disposable gloves and a barrier device.



Canadian Red Cross (2013). Check, Call, Care First Aid Poster. Retrieved February 2013, from Canadian Red Cross Web site: http://www.redcross.ca/cmslib/general/tp_fa_poster_checkcallcare_web.pdf

Medical Emergencies, continued

First Aid Information

CPR

The simplified Adult Basic Life Support algorithm includes five steps. The algorithm diagram provided by the American Heart Association emphasizes the following:

1. Assess the victim's responsiveness. If a victim is not breathing, or is not breathing normally (i.e., gasping), initiate CPR. Health care professionals should be trained to recognize cardiac arrest that presents as seizure-like activity or with agonal respirations.
2. Activate EMS (Emergency Medical Response) by calling 911.
3. Retrieve a defibrillator, usually an automatic external defibrillator (AED).
4. The algorithm proceeds in a loop of CPR and rhythm checks with defibrillation.
5. Check PULSE before chest compressions for at least five seconds and no more than ten seconds. If in doubt, begin compressions
6. CPR: push hard and fast. Begin chest compressions before ventilation. Chest compressions allow blood flow to the heart and brain. Delays in chest compressions result in diminished survival. Be sure to allow the chest to recoil between compressions. The chest should be compressed 100-120/min to a depth of 2"-2.4" (5-6cm)
7. For effective breathing, watch for chest rise and avoid excessive ventilation. 10 BREATHS should be delivered each minute, or one breath every six seconds. Each breath should be delivered over 1 second. Observe visible chest rise.
8. Avoid gastric inflation, as it may result in aspiration, pneumonia or vomiting.
9. The ratio of chest compressions to breaths is 30 to 2.
10. After the defibrillator becomes available, check rhythm. Use the AED when indicated and available. The victim should receive a shock that is repeated every two minutes or 5 cycles.

Burns

The American Red Cross recommends these steps to care for minor burns.

- Stop the burning. Put out the flames or remove the victim from the source of the burn.
- Cool the burn. Use large amounts of water to cool the burned area. DO NOT use ice or ice water other than on small superficial burns. Ice causes body heat loss. Use whatever resources are available: tub, shower or garden hose. You can apply soaked towels, sheets or other wet cloths to a burned face or other areas that cannot be immersed. Be sure to keep cloths cool by adding more water.
- Cover the burn. Use dry, sterile dressings or a clean cloth to cover a burn. Loosely bandage them in place. Covering the burn helps keep air out and reduces pain. Covering the burn also prevents infection. If the burn covers a large area of the body, cover it with clean, dry sheets or other cloth.

For minor burns and burns with open blisters that are not serious enough to need medical care, wash the areas with soap and water. Keep it clean. Put on an antibiotic ointment. Watch for signals of infection.

Medical Emergencies, continued

Burns, continued

Critical burns will need immediate medical attention. Call 911 or your emergency number if any one of the following instances occurs:

- Victim is having difficulty breathing.
- More than one part of the body is burned.
- There are burns to the head, neck, hands, feet or genitals.
- A child or an elderly person has been burned.
- Chemicals, electricity or explosions have caused the burns.

Chemical Exposure Guidelines

- In the event of chemical exposure, emergency services or poison control centre should be contacted as soon as possible.
- The eye may be irrigated using copious amounts of clean water, preferably using an eyewash bottle, eyewash station or shower.
- First aid providers may use continuous, large volumes of clean water for irrigation of chemical injuries where chemical exposure has occurred to other parts of the body.

Wounds & Abrasions Guidelines

- Superficial wounds and abrasions should be irrigated with clean water, preferably tap water because of the benefit of pressure.
- First aid providers may apply antibiotic ointment to skin abrasions and wounds to promote faster healing with less risk of infection.
- First aid providers may apply an occlusive dressing to wounds and abrasions with or without antibiotic ointment.
- The use of triple antibiotic ointment may be preferable to double- or singleagent antibiotic ointment or cream.
- If antibiotic is not used, antiseptic could be used.
- There is some evidence that traditional approaches, including applying honey, are beneficial and may be used on wounds by first aid providers.
- People with wounds that develop redness, warmth or become painful or with wounds where the person develops fever should seek assessment from a healthcare provider.

Medical Emergencies, continued

Bleeding Guidelines

- First aid providers must control external bleeding by applying direct pressure.
- The use of pressure points and elevation is NOT recommended.
- When direct pressure fails to control life-threatening external limb bleeding or is not possible (e.g. multiple injuries, inaccessible wounds, multiple casualties), tourniquets could be considered in special circumstances (such as disaster, war-like conditions, remote locations or in instances where specially trained first aid providers are providing care).
- Localized cold therapy with or without pressure may be beneficial in haemostasis for closed bleeding in extremities. Caution is advised when applying this recommendation to children due to a potential for hypothermia.
- The out-of-hospital application of a topical haemostatic agent to control lifethreatening bleeding not controlled by standard techniques and in situations where standard techniques could not be applied could be considered with appropriate training.

Source: www.redcross.ca/crc/documents/1303501_FirstAid-2016_Guidelines_LR-PDF.pdf

Medical Emergencies, continued

Next-of-Kin Notification

When an employee, contractor or member of the public is seriously injured, missing, or pronounced dead, the next-of-kin must be notified as promptly as possible. Keep in mind the following policies before notifying any next-of-kin:

- Death is never presumed, and first aid must be administered until relieved by a paramedic.
- No telephone or radio discussion is to take place regarding the name(s) of the injured.
- Notification is not to occur until the casualty has been pronounced dead by a medical doctor or medical examiner.

If an employee, contractor or member of the public is injured or killed as a result of company operations; notifications will be coordinated through local RCMP / municipal police and designated company personnel.

Before Notifying the Next-of-Kin

- Never release the names of the injured, missing, or persons pronounced dead before the next-of-kin are notified.
- Triple-check the identity of any casualty.
- If the casualty is conscious, document concerns. Do not make promises that cannot be kept.
- Confirm the casualty's relationship with the people being notified.
- Be prepared to support the next-of-kin. Provide assistance such as transportation, child care, alternative accommodation, reimbursements for daily expenses, and the temporary care of the family home if required.

During the Notification of the Next-of-Kin

- Make the notification in person, not by telephone or through an intermediary.
- Provide the relatives with as much information as possible; too few details can cause excessive worry. Present only the facts; do not speculate.
- Do not discuss personal views of liability or fault.
- Allow the next-of-kin to vent their emotions.
- Attempt to support and reunite families as quickly as possible.
- Offer assistance; document key issues and concerns. Do not make promises that cannot be kept. Follow up on relatives' requests.
- Document the details of anyone who appears to be having trouble coping with the incident so that he / she can be given prompt psychological support.

Medical Emergencies, continued

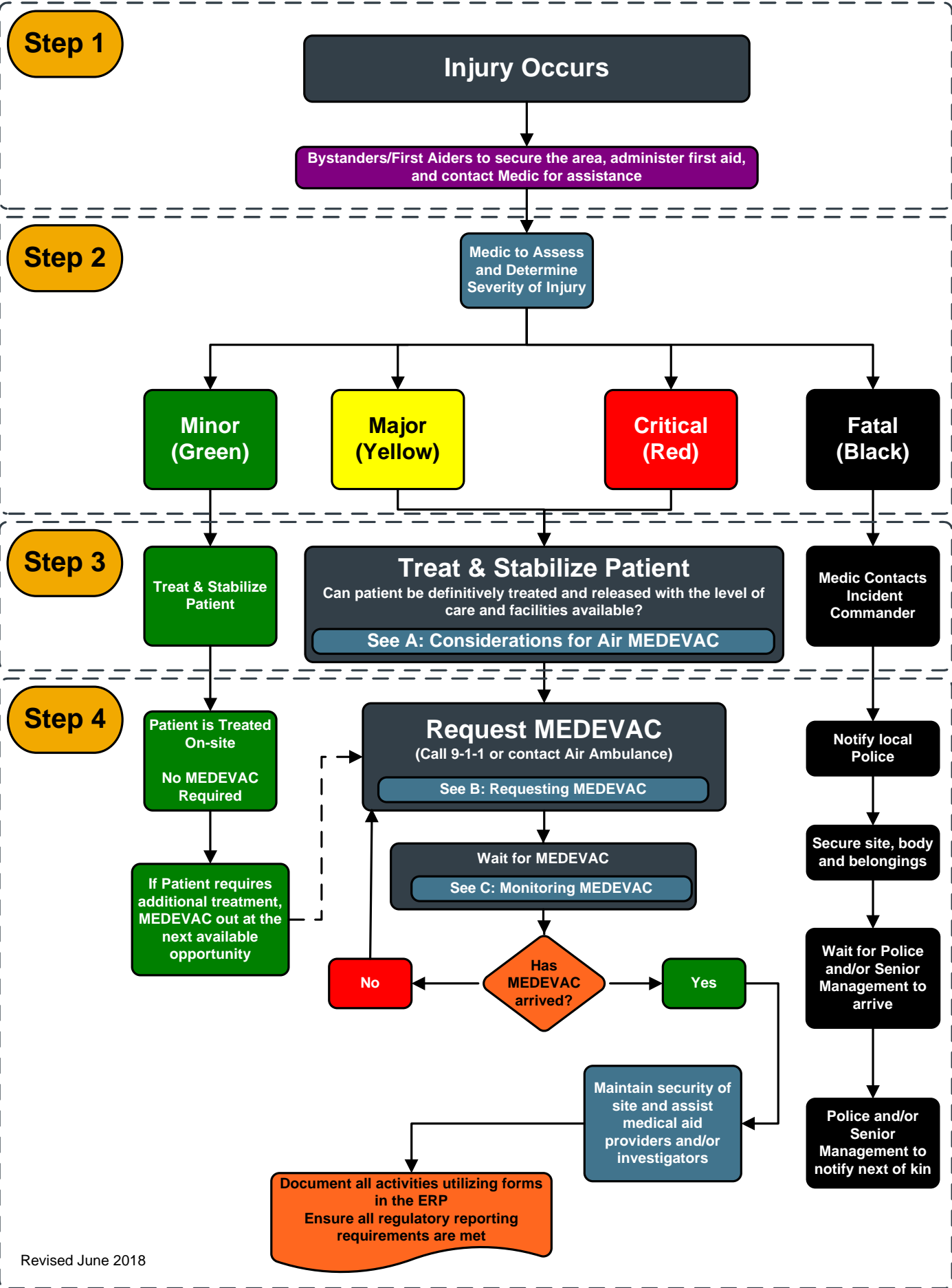
During the Notification of the Next-of-Kin, continued

- Do not leave the next-of-kin alone.
- Offer to contact a neighbour, friend, relative, minister, doctor, or counsellor.
- Leave your name and telephone number with family members.
- Ensure the next-of-kin are protected from media harassment as required.

Follow-Up

- The same representative who conducted the initial notification should continue to contact and support the next-of-kin.
- If required, a senior company representative will ensure that a trained psychologist conducts critical incident stress debriefing sessions with next-of-kin, friends and company employees involved or affected by the tragedy.
- Advise the employee's family that a senior company representative will be contacting them to discuss any immediate needs and to provide information on insurance coverage and benefits support. Follow up on this commitment.

Medical Evacuation (MEDEVAC) Procedure



In the event of any injury or illness the following steps shall be followed:

1) Survey the scene and ask yourself the following questions:

- Is it safe for me to help?
- What happened?
- How many people are injured?

2) Call for help:

- 1) Activate Emergency Responders and/or call 9-1-1
- 2) Identify your location
- 3) Follow the direction of the Medic and administer First Aid if required and you are trained to do so
- 4) Review Step 1

Patient Priority Colour Code

The practice of colour coding patients is a useful tool to prioritize patients into categories depending on their medical condition. This colour code system allows ease of communicating the condition of the patient to those involved in the care and transportation of the patient.

Green – Patients with minor injuries or illnesses who are usually walking. Medical care can be delayed beyond 2 hours.

For example:

- Minor burns
- Sprains and strains
- Colds and flu symptoms

Yellow – Patients with major injuries or illnesses that should be treated within 20 minutes to 2 hours.

For example:

- Open fractures
- Large lacerations

Red – Patients with critical, life threatening injuries or illnesses that require treatment as soon as possible.

For example:

- Airway problems
- Severe hemorrhage
- Severe burns
- Failing vital signs

Black – Death is obvious. Note: resuscitation / treatment must continue until directed otherwise by a qualified medical provider. Await Police.

A: Considerations for Air MEDEVAC

Consider air transport when:

- Patient requires critical care life support during transport that is not available locally.
- Patient's condition requires that time spent in transport be as short as possible.
- Potential delays associated with ground transport (road obstacles or conditions, traffic, distance) are likely to worsen the patient's condition.
- Patient is located in an area inaccessible to regular ground transport.
- The use of medical transportation resources would leave the local area or worksite without adequate medical coverage.

B: Requesting MEDEVAC

When requesting MEDEVAC, be prepared to supply the following information:

- Location of patient pickup (facility, airport, road intersection, GPS)?
- Who will be meeting MEDEVAC crew (radio callsign / frequency, cell number)?
- Will the patient meet the MEDEVAC crew at the pickup location or will the MEDEVAC crew need to be transported to the patient?
- Any special equipment required (ventilator, bariatric transport equipment, etc.)?
- Will any additional personnel be necessary (physician, nurse)?
- Is there an intended destination (major hospital, community)?
- Has any consultation with medical providers at the intended destination been done?

Do not delay launch / dispatch of MEDEVAC, provide the following information once available:

- Mechanism of injury (and time of injury if known)
- Injury or illness sustained
- Symptoms and vital signs
- Treatment given

C: Monitoring MEDEVAC

When requesting MEDEVAC, ensure that you are monitoring the transport and are aware of who to contact for updates and in case changes to plan are required.

When is MEDEVAC transport scheduled to arrive?: _____

What number should be contacted if something in the plan needs to be changed? _____

If transport doesn't arrive, or if no updates are heard, what time will we contact MEDEVAC for an update? _____

Emergency MEDEVAC Phone Numbers

PROVINCIAL AIR AMBULANCE:

Alberta	800-661-3822
British Columbia	911
Manitoba	800-689-6559
Saskatchewan	888-782-8247

STARS (AB, BC, SK, MB):
24 Hour Emergency: 888-888-4567

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Security Incidents

A security incident is a security-related occurrence, threat or action that has adversely affected people, the environment, assets and economic stability, or could potentially do the same.

General Notes on Prevention of Security Incidents

As defined in the CSA Standard Security Management for Petroleum and Natural Gas Industry Systems (Z246.1-17), a Security Management Program should be implemented to ensure security incidents and threats are identified and managed with appropriate safeguards and response procedures in place.

This documented security risk management process should incorporate threat, vulnerability, risk assessment and asset characterization. Asset characterization, in particular, identifies and ranks any assets that could result in adverse consequences if damaged or destroyed.

To minimize the possibility of threats within a company property, an adequate physical security system must be in place. This should include the following:

- Perimeter fencing and gates to protect against unauthorized entry into a facility – gates should be closed when not in use and locked when unoccupied
- Appropriate signage at the perimeter and entrances
- Intrusion detection systems / alarm systems
- Sufficient lighting in darkness or areas of poor visibility
- Pedestrian access control
- Security guard force, both static and mobile
- Employee awareness

Types of Security Threats

Security-related threats have the intent to cause harm and could include bomb threats, suspicious packages, terrorism, vandalism, trespassing and cyber-attacks.

Responding to Threats

Should any facility or office be the subject of a threat, or be advised of the potential of a terrorist attack, or of the potential of an attack to an adjoining facility being operated by another company, the person receiving the initial threat should remain calm, document all information in writing and notify his supervisor immediately. The supervisor should make an immediate assessment of the circumstances then:

- Obtain all data from the person who received the threat.
- If there is clear and imminent danger, the plant should be immediately evacuated, and the Field Response Team activated from a remote location.
- Contact local police / Royal Canadian Mounted Police (RCMP).
- Notify the Regulatory Agency.

Security Incidents, continued

Once the Field Response Team is activated, the Field Response Team Incident Commander and a senior company representative will consider the threat and options available to respond to the threat. There are a myriad of potential short and long term responses available and they will be dependent on the evaluation of the threat, time available to respond, resources available locally or that can be brought in a reasonable time, and police and military resources available.

- If the threat is considered possible, the Canadian Security Advisor recommends that the following immediate/short term responses should be considered:

Field Operations:

- Establish intelligence liaison with local authorities (e.g. police).
- Report all suspicious activity to Corporate Security.
- Discontinue all site tours and visits.
- Restrict vehicle access to specifically authorized vehicles only.
- ID all visitors seeking access.
- Assign a person to patrol the perimeter of the facility at the beginning of each operational shift and note any deficiencies; look for signs of attempted break and enter.
- Conduct an evacuation exercise.

Remotely Operated Facilities (also applies to any facility operated by a single person):

- Establish full lock down on fences and assets on the lease/site – everything that can be secured and locked is secured and locked.
- Conduct a fence perimeter patrol before entering the site – look for signs of illegal entrance.
- Conduct a full exterior building patrol before entering a building – look for signs of unlawful entrance (doors pried, windows open, broken glass etc.).
- When working, lock the gates upon entering and leaving the facility, and rigidly adhere to the work alone guidelines.

Bomb Threats

Bomb threats are delivered in a variety of ways. The majority of threats are called in to the target, though occasionally these calls are through a third party. Sometimes a threat is communicated in writing, or by a recording.

Persons making bomb threats generally have one of two motivations:

1. The caller has definite knowledge or believes that an explosive or incendiary bomb has been, or will be, placed. He or she wants to minimize personal injury or property damage. The caller may be the person who placed the device or someone who has become aware of such information.
2. The caller wants to create an atmosphere of anxiety and panic which will, in turn, result in a disruption of the normal activities at the location where the device is purportedly placed.

While most bomb threats are unfounded, some are not. As such, each one must be dealt with as though it is real and handled seriously and calmly.

Security Incidents, continued

Bomb Appearance

Bombs can be constructed to look like almost anything, and can be placed or delivered in any number of ways. The probability of finding a bomb that looks like the stereotypical bomb is almost non-existent. Most bombs are homemade, and are limited in their design only by the imagination and resources available to the bomber.

Remember, when searching for a bomb, suspect anything that looks unusual. Ultimately, however, let a trained bomb technician determine what is or is not a bomb.

Responding to Bomb Threats over the Phone

Most threats or implied threats are received by telephone, generally at a publicized or switchboard number. Should that occur, obtain as much information as possible, filling out the Threatening Call / Bomb Threat form (**Section 6: Forms**).

If a bomb threat is received over the telephone, the employee receiving the phone call should take the following actions:

- Stay calm and keep their voice calm.
- Pay close attention to details. Write information down as the caller says it. Attempt to get the following information from the caller:
 - What type of bomb is being used?
 - Did you place the bomb?
 - Who is the target?
 - Where has the bomb been placed?
 - What time is the bomb set to explode?
 - Why was the bomb placed?
 - What type of container is the bomb placed in?
 - What does it look like?
 - What is the bomber's name?
 - What is the bomber's address?
- While the first employee is dealing with the threatening phone call, they should have a co-worker or another person contact the police (dial 911) using another telephone, and as covertly as possible. As the first employee writes down answers to the questions above, these answers should be relayed to the police.
- The call recipient should attempt to keep the caller on the phone.
- The call recipient should note the caller's:
 - Age and gender
 - Emotional state (angry, agitated, calm, etc.)
 - Speech patterns (accent, tone)
 - Background noise (traffic, people talking and accents, music and type, etc.)

Responding to Bomb Threats Received in Writing

If a threat has been received in writing, minimize the handling of the document to ensure preservation of forensic evidence - DO NOT PHOTOCOPY.

Security Incidents, continued

Supervisor Responsibilities after Receiving a Bomb Threat

The supervisor should then:

- Obtain all data from the person who received the threat
- Activate the ERP if the situation warrants
- Contact local police / Royal Canadian Mounted Police (RCMP) if this has not already been done
- Notify the Regulatory Agency
- Decide on partial or total evacuation (if needed)
- Decide on partial or total search of the facility (if needed)

Evacuating the Facility

If it seems prudent to evacuate the building:

- Have all employees briefly check their work areas for unfamiliar items.
- Instruct all employees not to touch suspicious items, but simply to report them to their supervisors (taking pictures if feasible).
- Instruct all employees not to take personal belongings when they leave.
- Leave doors and windows open
- Do not to turn light switches on or off.
- Do not activate the fire alarm.
- Use stairs only; do not use elevators.
- Use of radio communications should be restricted as the signal could detonate a device.
- All evacuees should report to an outside pre-designated muster area for accountability.

IED Evacuation Distances

Improvised Explosive Device (IED)
SAFE STAND OFF DISTANCE

	Threat Description	Explosives Mass (TNT equivalent) ¹		Building Evacuation Distance ²		Outdoor Evacuation Distance ³	
High Explosives (TNT Equivalent)	Pipe Bomb	5 lbs	2.3 kg	70 ft	21 m	850 ft	259 m
	Suicide Belt	10 lbs	4.5 kg	90 ft	27 m	1,080 ft	330 m
	Suicide Vest	20 lbs	9 kg	110 ft	34 m	1,360 ft	415 m
	Briefcase/Suitcase Bomb	50 lbs	23 kg	150 ft	46 m	1,850 ft	564 m
	Compact Sedan	500 lbs	227 kg	320 ft	98 m	1,500 ft	457 m
	Sedan	1,000 lbs	454 kg	400 ft	122 m	1,750 ft	534 m
	Passenger/Cargo Van	4,000 lbs	1 814 kg	640 ft	195 m	2,750 ft	838 m
	Small Moving Van/ Delivery Truck	10,000 lbs	4 536 kg	860 ft	263 m	3,750 ft	1 143 m
	Moving Van/Water Truck	30,000 lbs	13 608 kg	1,240 ft	375 m	6,500 ft	1 982 m
	Semitrailer	60,000 lbs	27 216 kg	1,570 ft	475 m	7,000 ft	2 134 m

Security Incidents, continued

Bomb Search Guidelines

Employees must not touch anything - only law enforcement explosive disposal units or qualified private consultants are qualified to search for a bomb or suspicious package.

In the event of a search, however, employees may be called upon to unlock drawers, cabinets, and the like for the search crew, and to identify any strange or unfamiliar objects.

Explosive Device Located

If a device or suspected device is located:

- Do not touch or move the object.
- Evacuate the immediate area.
- If possible, take steps to minimize effects of an explosion in the vicinity by evacuation or isolation of the area.
- Ensure RCMP are apprised of the location so explosive disposal unit can be called.

If there is an Explosion

- Have employees take cover under sturdy furniture, or leave the building if directed to do so by emergency responders.
- Stay away from windows.
- Do not light matches.
- Move well away from the site of the hazard to a safe location.
- Use stairs only; do not use elevators.
- Call 911 if no one has called.

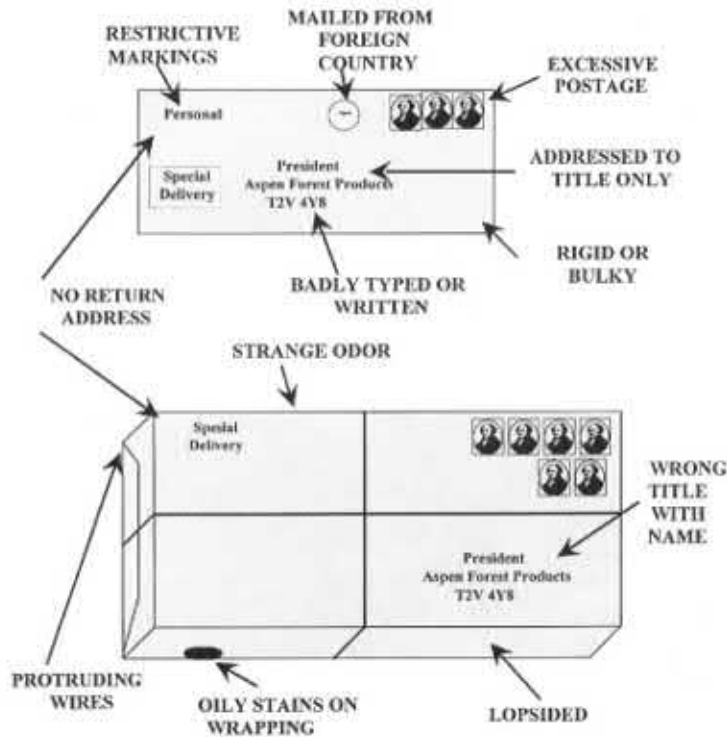
Suspicious Packages

The likelihood of receiving a bomb in the mail is remote. Unfortunately, however, a small number of explosive devices have been mailed over the years resulting in death, injury and destruction of property.

A bomb can be enclosed in either a parcel or an envelope, and its outward appearance is limited only by the imagination of the sender. However, mail bombs have unique characteristics that may assist in identifying suspect packages.

Security Incidents, continued

Appearance of Suspicious Packages



- Mail bombs may display restricted endorsements such as “Personal” or “Private”. This factor is important when the addressee does not usually receive personal mail.
- Addressee’s name / title may be inaccurate.
- Return address may be fictitious.
- Mail bombs may reflect / distort handwriting or the name and address may be prepared with homemade labels or cut-and-paste lettering.
- Cancellation or postmark may show a different location than the return address.
- Mail bombs may have excessive postage.
- Mail bombs may feel rigid or appear uneven or lopsided and may have an irregular shape, soft spots or bulges.
- Parcel bombs may be unprofessionally wrapped with several combinations of tape used to secure the package and may be endorsed “Fragile – Handle With Care” or “Rush – Do Not Delay”.
- Parcel bombs may have a buzzing or ticking noise or a sloshing sound.
- Pressure or resistance may be noted when removing contents from an envelope or parcel.

Security Incidents, continued

Dealing with Suspicious Packages

If an employee is suspicious of a mailing and is unable to verify the contents with the addressee or sender:

- Do not open the article.
- Isolate the item and evacuate the immediate area.
- Do not put the package or envelope in water or a confined space such as a desk drawer or filing cabinet.
- If possible, open windows in the immediate area to assist in venting potential explosive gases.

If an employee suspects a harmful chemical or biological substance is in a package already on company property they should:

- Cover the package or envelope with a plastic sheet, raincoat, etc.
- Evacuate the room closing all doors and windows.
- Call their supervisor who will contact the local police.
- Isolate the area where the package is.
- Isolate themselves in another area that has a telephone and wait for the emergency responders to arrive.

If an employee has touched a package that possibly contains a harmful substance or got some on their clothes, they should:

- Wash their hands well.
- Shower with their clothes on
- Undress and seal their clothes in a plastic bag.
- Shower again and put on fresh clothes.

If an employee has any reason to believe a letter or parcel is suspicious, they should never take a chance or worry about possible embarrassment if the item turns out to be innocent.

Trespassing

Any person who enters land where entry is prohibited or does not leave land immediately after being directed to do so by the owner or occupier of the land is guilty of trespassing.

Dealing with Trespassing

If any personnel encounter a trespasser:

- Ask the trespasser to leave the unauthorized area.
- Give the trespasser a reasonable amount of time to leave peacefully.
- If the trespasser refuses to leave, call the RCMP / local authority.

Security Incidents, continued

Vandalism

Vandalism is the willful damaging or defacing of property belonging to another person or to the public. Acts of vandalism can include:

- **Defacing** – removing, marking or damaging a part of an object to draw attention to it.
- **Criminal damage** – willful and unlawful destruction of other people's property.
- **"Tagging" or graffiti** – gangs use "tags" to mark their territory and usually spray-paint walls and doors of homes and business establishments.

Vandalism can happen at any time of the day or night and in any season, but it most often occurs:

- In the evening during summer and fall
- On weekday evenings
- At night when fewer people are around and the property isn't under as much scrutiny
- Where building design and lighting offers concealment and anonymity
- In areas frequented by young people such as schools, parks, shopping plazas and public buildings
- In unoccupied buildings, open spaces or parked vehicles where minimum surveillance is given to property

Dealing with Vandalism

- Report all incidents of vandalism to a supervisor
- Do not paint over vandalism and graffiti until the police department gives clearance to do so.

Terrorism

Terrorism is the use of violence and threats against persons or property for the purposes of intimidation, coercion or ransom. The direct targets of violence are not the main targets of a terrorist but a means to draw the attention of the local populace, the government and the world to their cause. A terrorist group commits acts of violence to:

- Produce widespread fear
- Obtain worldwide, national, or local recognition for their cause by attracting the attention of the media
- Destroy facilities or disrupt lines of communication in order to create doubt that the government can provide for and protect its citizens
- Discourage foreign investments, tourism or assistance programs that can affect the target country's economy and support of the government in power
- Influence government decisions, legislation or other critical decisions
- Satisfy vengeance

Acts of terrorism include threats of terrorism, assassinations, kidnappings, hijackings, bomb scares and bombings, cyber-attacks, and the use of chemical, biological, nuclear and radiological weapons.

Security Incidents, continued

Examples of Petroleum Assets Subject to Risk

- Buildings: Administration offices, corporate offices, control rooms
- Equipment: Process units and associated control systems, product storage tanks, surge vessels, boilers, turbines, process heaters, sewer systems
- Support Systems: Utilities such as natural gas lines, electrical power grid and facilities (including back-up power systems), water-supply systems, wastewater treatment facilities
- Transportation Interfaces: Railroad lines and railcars, product loading racks and vehicles, pipelines entering and leaving facility, marine vessels and dock area, off-site storage areas
- Cyber systems and information technology: Computer systems, networks, all devices with remote maintenance ports, SCADA systems, laptops, PDAs and cell phones.

Dealing with Terrorism

All threats and incidents should be reported to the RCMP Terrorism Tip Line at 1-800-420-5805.

In order to deal with threats of terrorism, it is important to establish a security management system to effectively manage security risks. This system should include a security risk management process incorporating asset characterization, threat assessment, vulnerability assessment, risk assessment, risk mitigation, communication and recommendations.

This system should be reviewed at regular intervals and updated as necessary.

Cyber-Attacks

Cyber-attacks are computer-to-computer attacks that undermine confidentiality, integrity or availability of a computer or the information contained.

Cyber-attacks can make computer systems malfunction or result in a disrupted flow of data and have the potential to create extreme economic damage.

This threat includes a risk to SCADA and DCS systems, which collect, display and store information in support of controlling equipment, devices and facilities.

Preventing Cyber-Attacks

Steps that can be taken to enhance your cyber security:

- Know who owns and operates the IT system and its operating framework.
- Map the network – include all internal/external connections, configuration control, etc.
- Develop a security policy structure and implement compliance monitoring.
- Apply as much security and hardening as appropriate.
- Accredite the IT system and follow a risk management approach.
- Know the system's possible vulnerabilities.
- Patch the system in a timely manner – the longer this is delayed, the longer the system is vulnerable.
- Reduce Internet access points.
- Reduce or eliminate potential sources of infection – USB flash drives (thumb drives, USB keys, etc.), flash media, etc.

Security Incidents, continued

- Communicate, train and educate staff and users.

Source: 10 IT Security "Commandments" - Communications Security Establishment Canada

Dealing with Cyber-Attacks

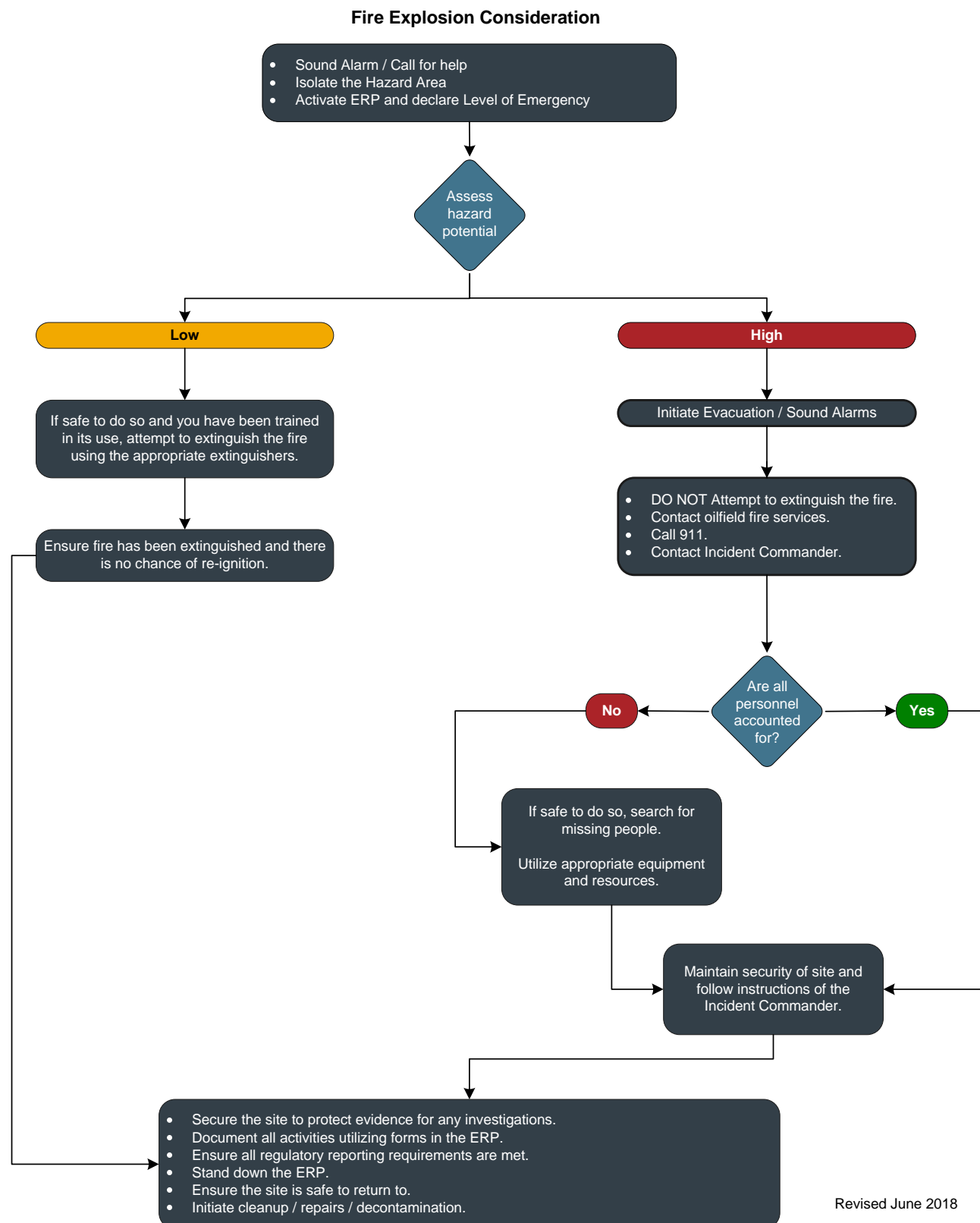
In the event of a cyber-incident:

- After obtaining corporate approval, local police or RCMP should be notified.

Serious cyber incidents:

- Should be reported to Public Safety Canada by email at contact@cyber.gc.ca or by phone at 1-833-292-3788.

Fire / Explosion



Fire / Explosion, continued

An explosion is a mechanical or chemical reaction that suddenly releases a large amount of energy, resulting in a shock or pressure wave that causes damage, high temperature and usually a release of gases. Explosions can be loosely categorized according to reaction time. High explosives react quickly within a millionth of a second, while low explosives react more slowly. Important general guidelines must be followed for all fires or explosions to ensure the safety of the public, employees and environment. When encountering different types of fire, the appropriate firefighting services should always be contacted. This is especially important for fuel-related, structure-related or forest-related fires to decrease the risk of major damage. For oil-related fires, industrial fire-fighters are the best equipped to reduce further danger in the area.

If a fire or explosion occurs, the following actions shall be taken:

Control / Containment:

- If possible;
 - Isolate the source and take reasonable action to extinguish or contain the fire.
 - Shut down all known fuel sources.
 - Shut off high voltage power supplies to equipment in fire-affected area.
 - Shut off fuel to heaters near to, or downwind of fire.
 - Dissipate static electrical charges on bodies of all personnel in area. Grounding may be accomplished by holding onto a metal structure for ten seconds with bare hands.
- Call out to industrial firefighting services.
- Notify the Incident Commander.
- Isolate hazard area or equipment as required.

External Notifications:

- Follow notification procedures for fires outlined in the Government Notification Matrix in **Section 5: External Agencies**.

Fire / Explosion, continued

Classification of Fires

Most fires that occur will fall into one or more of the following categories:

Class / Symbol	Material	Extinguishing Agent
	Ordinary combustible materials, such as wood, paper, cloth, trash, and plastics.	Cooling, blanketing or wetting extinguishing agent is needed. Water and foam extinguishers work on this class of fire.
	Flammable liquids such as gasoline, thinners, oil-based paints and greases; Also includes flammable gases such as propane and butane.	Extinguishers for this type of fire include carbon dioxide, dry chemical and halogenated or clean agent types.
	Energized electrical equipment, such as motors transformers and appliances.	The most common type of extinguisher for this class is a carbon dioxide extinguisher. A dry chemical or clean agent extinguisher can also be used.
	Combustible metals such as magnesium, sodium, potassium, titanium and aluminum.	Special dry powder extinguishing agents are required for this class of fire, and must be tailored to the specific hazardous metal.
	Cooking oils and greases such as animal fats and vegetable fats.	A wet chemical fire extinguisher agent is used for this class of fire.

Source: www.femalifesafety.org

Fire / Explosion, continued

Response Actions Based on Type of Fire

Process Fire

Definition:

Process fires include those within or adjacent to: fractionation skids, compressors, exchangers, vessels (also see BLEVE / LPG), piping, tanks/bullets (also see BLEVE / LPG).

Hazards:

Process fires can be a particular hazard where flammable materials are present.

Response Actions:

Deny or restrict access to the area, shut down and depressurize any related or additional process equipment, if safe to do so. Do not attempt to extinguish a process fire if you are not properly trained.

Sulphur Fire

Definition:

Sulphur dust suspended in air ignites easily, and can cause an explosion in confined areas.

Hazards:

Toxic gases will form upon combustion. Bulk/solid forms burn only at a moderate rate, whereas dust burns with explosive violence. Burning sulphur decomposes into toxic sulphur oxide gases such as sulphur dioxide (SO₂) and hydrogen sulphide (H₂S) which is toxic if inhaled.

Response Actions:

The following precautions should be taken when dealing with sulphur fires:

- Prevent human contact or inhalation. Fire may produce irritating and/or toxic gases.
- Wear full faced, self-contained breathing apparatus and full protective clothing.
- Use a water fog, NOT water, to extinguish fire.
- Cool fire, surrounding area, and containers, tanks, and trucks to below 154°C in order to diminish the fire.
- Evacuate the area, except for essential personnel.
- Isolate the area with a 1600m radius.

Trained personnel, local fire departments or contract fire services should only attempt to control a sulphur fire. To ensure public protection, evacuate 1600 meters in all directions and ensure air monitoring is set up downwind of fire and the smoke plume. Continually assess evacuation zone based on air quality readings.

Fire / Explosion, continued

Electrical System Fire

Definition:

Electrical fires are fires involving potentially energized electrical equipment. This sort of fire may be caused by, for example, short-circuiting machinery or overloaded electrical cables.

Hazard:

Electrical fires can quickly get out of control and can cause serious damage and threaten lives.

Response Actions:

Electrical fire may be fought in the same way as an ordinary combustible fire, but water, foam, and other conductive agents are not to be used. While the fire is, or could possibly be electrically energized, it can be fought with any extinguishing agent rated for electrical fire. Carbon dioxide CO₂, FM-200 and dry chemical powder extinguishers such as PKP and even baking soda are especially suited to extinguishing this sort of fire. Once electricity is shut off to the equipment involved, it will generally become an ordinary combustible fire. Water conducts electricity; throwing water on an electrical fire can cause the fire to get larger.

Grass Fire

Definition:

A grass fire is a fire that burns large amounts of grass. They mainly occur in grasslands and or Great Plains.

Hazards:

Grassfires spread rapidly, travelling at speeds of up to 25 km/hr, and can quickly threaten lives and properties.

Response Actions:

Threatening grass fires have a potential to involve the licensee's and other area operators' facilities, pipelines and well sites, therefore guidelines to minimize damage to any property need to be followed. To protect the licensee's and other area user property, it is important to follow these guidelines:

- Notify other area operators of the emergency.
- Isolate and shut in all affected facilities if safe to do so.
- For small grass fires extinguish using a shovel or ABC type fire extinguisher. If it enters coulees, along rivers, or into large areas of trees or forests, contact the local fire department and local forestry office for assistance.
- For larger grass fires do not attempt to extinguish, but contact local fire department and local forestry office.

Fire / Explosion, continued

Forest Fire / Wildfire

Definition:

A forest fire is an uncontrolled fire in a wooded area. A forest fire is a natural disaster consisting of a fire which destroys a forested area, and can be a great danger to people who live in forests as well as wildlife. Forest fires are generally started by lightning, but also by human negligence or arson, and can burn thousands of square kilometres.

Hazards:

Forest fires can quickly get out of control and can cause serious damage in agricultural and forested lands.

Response Actions:

- Notify other area operators of the emergency.
- Isolate and shut in all affected facilities if safe to do so.
- For small fires extinguish using a shovel or ABC type fire extinguisher. If it enters coulees, along rivers, or into large areas of trees or forests, contact the local fire department and local forestry office for assistance.
- For larger fires do not attempt to extinguish the fire. To report a forest fire/wildfire, call:

British Columbia	1-800-663-5555 (Prov-wide) or *5555 (from cell, Prov-wide)
Alberta	310-FIRE (3473) (Prov-wide)
Saskatchewan	1-800-667-9660 (Prov-wide)
Manitoba	1-800-782-0076 (Prov-wide)
Northwest Territories	1-877-NWT-FIRE (698-3473) (Prov-wide)

Fire / Explosion, continued

Natural Gas Liquid Fire

Definition:

Liquid natural gas is very flammable after vaporization to a gaseous phase.

Hazard:

If liquid natural gas is spilled, it vaporizes. The natural gas vapours are initially heavier than air and they form a cloud close to the ground, which is pushed downwind and eventually dissipates. If a viable ignition source is present where a vapour cloud exists at a 5%–15% concentration in air, the vapour cloud can ignite and burn. A vapour cloud, formed by an LNG spill, could drift downwind into populated areas. An LNG fire gives off a tremendous amount of heat. Water will react violently with the LNG and may cause the fire to flare up and intensify.

Response Actions:

A solid stream of water should never be used to extinguish this type because it can cause the fuel to scatter, spreading the flames. The most effective way to extinguish a liquid or gas fueled fire is by inhibiting the chemical chain reaction of the fire, which is done by dry chemical and Halon extinguishing agents, although smothering with CO₂ or, for liquids, foam is also effective.

BLEVE

Definition:

BLEVE is an acronym for Boiling Liquid Expanding Vapour Explosion. It is the term for an uncontrolled fire and explosion of vapour as it escapes from a ruptured vessel of pressurized / liquefied gas. Such explosions can be extremely hazardous.

Hazards:

The hazards associated with a BLEVE include the initial impact of the blast, the fireball and radiation from the explosion and projectiles (pieces of the tank and nearby equipment) that are rocketed from the explosion.

Response Actions:

- Contact Emergency Response Assistance Canada (ERAC) for assistance with emptying any damaged tanks.
 - Under the plan, response is provided for the following chemicals: LPG - UN 1075, Propane - UN 1978, Butane - UN 1011, Propylene - UN 1077, Butylene - UN 1012, Isobutane - UN 1969, Isobutylene - UN 1055, Butadiene-1,3 - UN 1010
- If safe to do so, attempt to extinguish any fires before they come in contact with any storage bullets.
- Call 911 to obtain assistance with fire suppression. Ensure all responders are made aware of the hazards.
- Flowing water can be used to cool the tanks in order to prevent or delay a BLEVE; however, this requires a significant amount of water and should not be attempted unless an unlimited water supply can be located and the tank can be approached safely.
- Evacuate all personnel and isolate the area to a 1600m radius.
- Evaluate the tank from a safe distance away. Choose an upwind position to the side of the tank if possible.
- Leave the area immediately if you hear a rising sound from venting safety devices or see discoloration of the tank.

Fire / Explosion, continued

BLEVE Considerations Based on Tank Capacity

BLEVE

Capacity		Diameter		Length		Propane Mass		Minimum time to failure for severe torch	Approximate time to empty for engulfing fire	Fireball Radius		Emergency Response Distance		Minimum Evacuation Distance		Preferred Evacuation Distance		Cooling Water Flow Rate	
Litres	Gallons	Metres	Feet	Metres	Feet	kg	lbs	Minutes	Minutes	Metres	Feet	Metres	Feet	Metres	Feet	Metres	Feet	Litres/min	Gal/min
100	38.6	0.3	1	1.5	4.9	40	88	4	8	10	33	90	295	154	505	307	1007	94.6	25
400	154.4	0.61	2	1.5	4.9	160	353	4	12	16	53	90	295	244	801	488	1601	189.3	50
2000	772	0.96	3.2	3	9.8	800	1764	5	18	28	92	111	364	417	1368	834	2736	424	112
4000	1544	1	3.3	4.9	16.1	1600	3527	5	20	35	115	140	459	525	1722	1050	3445	598	158
8000	3088	1.25	4.1	6.5	21.3	3200	7055	6	22	44	144	176	577	661	2169	1323	4341	848	224
22000	8492	2.1	6.9	6.7	22	8800	19400	7	28	62	203	247	810	926	3038	1852	6076	1404	371
42000	16212	2.1	6.9	11.8	38.7	16800	37037	7	32	77	253	306	1004	1149	3770	2200	7218	1938	512
82000	31652	2.75	9	13.7	45	32800	72310	8	40	96	315	383	1257	1435	4708	2200	7218	2710	716
140000	54040	3.3	10.8	17.2	56.4	56000	123457	9	45	114	374	457	1499	1715	5627	2200	7218	3539	935

Section 5: External Agencies

Provincial Notification Matrix

Provincial Lead Agency Roles

Government Consultation Summary

Specific Government Agency Roles

Health Services

Local Authority

Provincial Supporting Agency Roles

Federal Agency Roles

Alberta

Notification Requirements for Key Government Agencies

Alberta

Notification Requirements for Key Government Agencies

Incident Type	Agency or Resource									Initial Responders		Lead Agencies			Supporting Agencies & Other Government Contacts									
	Ambulance Services	Local Fire Department	RCMP - Royal Canadian Mounted Police	AER - Alberta Energy Regulator	Local Authorities	AHS - Alberta Health Services	AEMA - Alberta Emergency Management Agency	CER - Canada Energy Regulator	OHS - Occupational Health & Safety	ABSA - Alberta Boilers Safety Association	Alberta Safety Services - Electrical Branch	Workers' Compensation Board	ECCC - Environment & Climate Change Canada	CANUTEC	Emergency Response Assistance Canada	DFO - Department of Fisheries and Oceans	IOGC - Indian Oil & Gas Canada							
Sour Gas / HVP Release (Uncontrolled)		a	✓	✓	✓	✓	✓	✓	✓	c			d	e	f			j						
Chlorine Gas Release		a	✓	✓	✓	✓	✓			c			d	e	f	g		j						
Sweet Combustible Gas Release		a	✓	✓	✓	✓	✓	✓		c			d	e				j						
Spill / Transportation Incident (Unrefined Products)**		a	✓	✓	✓	✓	✓	✓		c			✓	e	f	g	h	i	j					
Spill / Rail or Trucking Incident (Refined Products)**		a	✓	✓	✓	b	✓	✓		c			✓	e	f	g	h	i	j					
Serious Injury or Death (Including Vehicle Accidents)	✓		✓	✓	✓	✓		✓	✓				✓											
Missing Person			✓						✓															
Fire / Explosion / B.L.E.V.E.	✓	✓	✓	✓	✓		✓	✓		c	✓		d	e			h		j					
Pressure Vessel or Piping Incident			✓	✓	✓	✓		✓		c	✓			e	f									
Electrical Incident			✓	✓						c		✓		e										
Motor Vehicle Accident (No Injuries)			✓																					
Security Incident			✓	✓				✓		c														
On-Site Incident Involving E2 Regulated Substance		a	✓	✓		b				c				f			i		j					

At any
Emergency
Level

Licensee

- 911
- EMS
- RCMP / P
- Fire Dep
- Local Au

The AER Duty Officer will initiate the notification process as per this chart, which external departments and agencies require notification of the emergency. The AER Duty Officer initiates the notification process as per this chart.

✓ Compulsory contact

* CER is a compulsory contact only for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.

** Refer to the Alberta Petroleum Industry Release Reporting Requirements chart included in the ERP.

a) Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.

b) Contact Alberta Health Services (AHS) if the incident has the potential to impact public health (e.g., contaminated drinking water).

c) Contact Occupational Health & Safety and report when: an injury or accident results in death; an injury results in a worker being admitted to a hospital; a potentially serious incident (PSI) where a reasonable and informed person would determine that under slightly different circumstances, there would be a high likelihood for a serious injury to a person; there is an unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential to cause a serious injury; there is a collapse or upset of a crane derrick or hoist or; there is a collapse or failure of any component of a building or structure necessary for its structural integrity.

d) Alberta EDGE (Environmental and Dangerous Goods Emergencies) is the first call for all transportation related spills/incidents. If spill is contained on-site, Alberta EDGE will contact the AER. If the spill moves off-site or into a waterbody, Alberta EDGE will contact Alberta Environment and Protected Areas (EPA) and/or Environment & Climate Change Canada (ECCC). Contact Alberta EDGE or the RCMP if an oil & gas emergency affects a highway designated by 1, 2, or 3 digits (e.g., Hwy 2, Hwy 47, Hwy 837). Alberta EDGE and RCMP have the authority to shut down highways.

e) Contact the Workers' Compensation Board within 72 hours of being notified of an injury/illness that results in or will likely result in: Lost time or the need to temporarily or permanently modify work beyond the date of accident, death or permanent disability, a disabling or potentially disabling condition caused by occupational exposure or activity, the need for medical treatment beyond first aid, or medical aid expenses.

f) ECCC will be notified by AER as required for incidents involving regulated substances at E2 registered facilities, incidents involving PCBs or any spills on first nations lands, in National Parks, into river or lake systems containing fish, or onto railway right-of-way.

g) Contact the Canadian Transport Emergency Centre (CANUTEC) when a highway is shut down, there is an injury or fatality, there is lost, stolen or unlawfully interfered with dangerous goods (except Class 9), the incident involves infectious substances, there is an accidental release from a cylinder that has suffered a catastrophic failure, where the shipping documents display CANUTEC's telephone number, where a railway vehicle, ship, aircraft aerodrome or an air cargo facility is involved, when a facility is closed, evacuation/shelter-in-place procedures take place as a result of the transportation of dangerous goods, containment has been damaged and integrity compromised, or the centre/stub sill of a tank car is broken or there is a crack in the metal ≥ 15cm(6"). CANUTEC can also provide guidance on handling procedures for toxic material releases.

h) Emergency Response Assistance Canada will only respond to incidents that involve the following UN numbers: 1075 (Propane, Butane, etc.) and 1010 (Butadiene); with a tank storage capacity of 450 litres or greater. Advisory assistance will be provided to incidents involving tank storage capacities less than 450 litres.

i) Contact the Department of Fisheries and Oceans Canada to report an oil spill that occurs in or around fresh and marine waters.

j) Indian Oil & Gas (IOGC), the First Nation and the provincial authority must be notified immediately in the event of any health or environment-threatening emergency or off-lease spills on First Nation reserve lands. On-lease spills greater than 1m³ must be reported to IOGC immediately.

1 In the event of a fatality, request that the RCMP contact the Medical Examiner. The RCMP must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infections substances.

2 Alberta Energy Regulator is designated as the lead agency (single window approach) to implement the Gov't of Alberta Emergency Response Support Plan for a Petroleum Industry Incident.

3 Local Authorities include: cities, towns, villages, counties, municipal districts, improvement districts, special areas, Métis settlements, and first nations reserves.

4 Request that Alberta Emergency Management Agency identify the affected local authorities and implement Emergency Services. The Emergency Management Field Officer may provide assistance in contacting some or all of the local authorities.

5 Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.

6 Occupational Health and Safety - see c) for further details on this agency's role.

At any Emergency Level

Licensee

As required for initial response

- 911
- EMS
- RCMP / Police
- Fire Department
- Local Authority

AER Duty Officer

As required For Initial response

- Local AER Field Centre
- Emergency Response Services

As required

Provincial Operations Centre (POC)

At any Emergency Level

External Notification Including:

- INAC
- AEMA
- AH
- AHS
- EPA
- AB EDGE
- Energy Security Unit
- FNIHB
- Etc.

Initial SitRep

- AAI CMO
- AFPT CMO
- EPA CMO
- AH CMO
- ATEC CMO
- AB Justice CMO
- CPE
- Others/Specific Lists (determined by AEMA & lead agency)

The AER Duty Officer will determine which external departments/agencies require notification of the emergency. The AER Duty Officer initiates the initial notification process as per this table.

British Columbia

Notification Requirements for Key Government Agencies

Incident Type	Initial Responders										Lead Agencies				Supporting Agencies & Other Government Contacts					
	Agency or Resource	Ambulance Services	Local Fire Department	RCMP - Royal Canadian Mounted Police 1	EMCR - Ministry of Emergency Management & Climate Readiness 2	BCER - BC Energy Regulator 3	Local Authorities 4	Northern Health Authority	CER - Canada Energy Regulator 5	WorkSafe BC 6	MOE - Ministry of Environment 7	Technical Safety BC 8	ECCC - Environment & Climate Change Canada	MOTI - Ministry of Transportation & Infrastructure	PSPC - Public Services and Procurement Canada	CANUTEC	ERAC - Emergency Response Assistance Canada	DFO - Department of Fisheries and Oceans	IOGC - Indian Oil & Gas Canada	
Sour Gas / HVP Release (Uncontrolled)		a	✓	✓	✓	✓	✓	✓	✓	✓		✓	c	d						g
Chlorine Gas Release		a	✓	✓		✓	b	✓	✓		✓	✓	c	d	e					g
Sweet Combustible Gas Release		a	✓	✓	✓	✓	✓	✓	✓	✓		✓	c	d						g
Spills / Transportation Incidents (Unrefined Products)**		a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	c	d	e			✓		g
Spills / Rail or Trucking Incidents (Refined Products)**		a	✓	✓	✓	✓	b	✓	✓	✓	✓	✓	c	d	e	f	✓			g
Serious Injury or Death as a Result of Oil & Gas Activity	✓		✓	✓	✓	✓	✓	✓												
Missing Person			✓					✓												
Fire / Explosion / B.L.E.V.E.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	c	d						g
Pressure Vessel or Piping Incident			✓		✓			✓	✓	✓	✓									
Electrical Incident			✓		✓			✓		✓										
Motor Vehicle Accident (Serious Injury or Death)	✓		✓					✓						d						
Motor Vehicle Accident (No injuries)			✓																	
Security Incidents			✓					✓												
On - Site Incident Involving E2 Regulated Substance		a	✓		✓		b	✓	✓	✓		✓						✓		g

Phone numbers for the agencies listed above are located in the Area Specific Information

26-May-23

✓ Compulsory contact

* CER is a compulsory contact only for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.

** Refer to the British Columbia Petroleum Release Reporting Requirements chart included in the ERP.

_ Technical Safety BC only requires reporting of rail related accidents, incidents and spills. No other transportation related emergencies need to be reported.

EMCR to notify the BCER for all incident types including fire/explosion incidents, pressure vessel incidents, spills and releases, or electrical incidents occurring at facilities approved by the BCER.

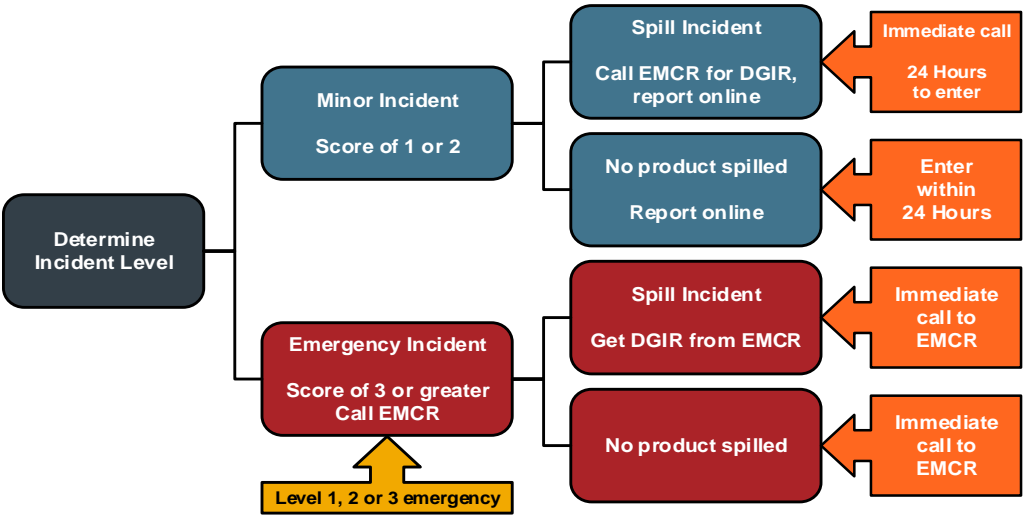
EMCR to notify the Ministry of Environment and Climate Change Strategy for any incident which affects the water, air, or land environment, or any white or green space in the province.

EMCR to notify Environment & Climate Change Canada (ECCC) of all oil and gas incidents in time, but immediately as required for incidents involving regulated substances at E2 registered facilities, incidents involving PCBs or any spills on First Nations lands, in National Parks, into river or lake systems containing fish, or onto railway right-of-way.

EMCR to notify Ministry of Forests, Northern Health Authority, affected municipalities and all other level of government and industry; depending on the ECC code level in their SOPs.

- a) Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.
- b) Contact the Northern Health Authority if the incident affects public health, e.g., contaminated drinking water.
- c) Contact the Ministry of Transportation and Infrastructure (MOTI) and the RCMP if the emergency intersects with a 1, 2 or 3 digit Provincial or Secondary highway (e.g., Hwy 2, Hwy 47, Hwy 837). MOTI and RCMP have the authority to shut down highways.
- d) Contact Public Services and Procurement Canada (PSPC) and the RCMP if the emergency intersects with the Alaska Highway (97) north of mile 83.5 all the way to the Yukon border. PSPC and RCMP have the authority to shut down this portion of the Alaska highway.
- e) Contact the Canadian Transport Emergency Centre (CANUTEC) when a highway is shut down, there is an injury or fatality, there is lost, stolen or unlawfully interfered with dangerous goods (except Class 9), the incident involves infectious substances, there is an accidental release from a cylinder that has suffered a catastrophic failure, where the shipping documents display CANUTEC's telephone number, where a railway vehicle, ship, aircraft aerodrome or an air cargo facility is involved, when a facility is closed, evacuation/shelter-in-place procedures take place as a result of the transportation of dangerous goods, containment has been damaged and integrity compromised, or the centre/stub sill of a tank car is broken or there is a crack in the metal ≥ 15cm(6"). CANUTEC can also provide guidance on handling procedures for toxic material releases.
- f) Emergency Response Assistance Canada will only respond to transportation incidents and only incidents that involve the following UN numbers: 1075 (Propane, Butane, etc.) and 1010 (Butadiene); and those products have tank storage capacity of 450 litres or greater.
- g) Indian Oil & Gas (IOGC), the First Nation and the provincial authority must be notified immediately in the event of any health or environment-threatening emergency or off-lease spills on First Nation reserve lands. On-lease spills greater than 1m3 must be reported to IOGC immediately.
- 1 In the event of a fatality, request that the RCMP contact the Medical Examiner. The RCMP must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infections substances.
- 2 Notify Ministry of Emergency Management and Climate Readiness (EMCR) for all spill and non-spill incidents to receive a Dangerous Goods Incident Report (DGIR) number. EMCER will notify the BCER, Ministry of Environment & Climate Change Strategy, and will provide a representative to coordinate the provincial response.
- 3 Contact the BCER for any spills or release of hazardous substances that are not provincially regulated (such as radioactive materials), pipeline incidents such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations, drilling kicks when any of the following occur: pit gain of 3m³ or greater, casing pressure 85% of MA, 50% out of hole when kicked, well taking fluid (LC), associated spill or general situation deterioration such as leaks, equipment failure or unable to circulate etc., major damage to oil and gas roads or road structures and security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only. The BCER must also be notified of needed emergency oil and gas road closures. The BCER may request a NOTAM order upon request from operator.
- 4 Local authorities include regional district disaster services, national park authorities and the local police.
- 5 Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for all emergencies and near misses involving CER regulated sites and inter-provincial pipelines. The CER regulates all inter-provincial pipelines and other facilities and sites located in Frontier lands (Northern Canada).
- 6 Ensure any workplace conditions that present an immediate hazard to other workers are addressed, ensure first aid and medical treatment for the worker, and then notify WorkSafeBC of the incident. The requirement to immediately report a serious injury or fatality is separate from the requirement to report injuries for claims purposes. Failure to immediately notify WorkSafeBC will be considered a breach of section 172 of the Workers Compensation Act. The employer must immediately report the following incidents, injury or not: Any incident that kills, causes risk of death, or seriously diving incident or decompression sickness, a major leak or release of a dangerous substance, a major structural failure or collapse of a structure, equipment, construction support system or excavation, or any serious mishap. Must also report incidents that requires the employee to seek medical attention or cause time-loss from work.
- 7 Ministry of Environment and Climate Change Strategy was formerly known as Ministry of Water, Land and Air Protection.
- 8 Technical Safety BC is to be notified immediately in cases of Boilers, Pressure Vessels, Piping and Fittings, Electrical & Gas incidents resulting in a moderate, major and fatal injury or moderate, major or severe property damage. All other incidents must be reported within 24 hours (or as soon as practical). Rail accidents where a person sustains a serious injury or is killed as a result of being on board or getting on or off the rolling stock, or coming into contact with any part of the rolling stock or its contents, or the rolling stock is involved in a grade crossing collision or a derailment, sustains damage that affects its safe operations, or causes or sustains a fire or explosion, or causes damage to the railway, that poses a threat to the safety of any person, property or the environment, or any dangerous good is released.

BCER Incident Reporting Process



	Before the Incident	During the Incident	After the Incident
Common Tasks	<ul style="list-style-type: none"> All departments/agencies should participate in training and exercises for this plan and the Energy Resources Industry Emergency Support Plan (ERIESP). This plan will be reviewed as required. A join multi-department/agency exercise will be held as required. 	<ul style="list-style-type: none"> The AER may activate the ERIESP based on the following criteria: <ul style="list-style-type: none"> Level 2 or 3 emergencies (as defined by the AER) Any level of emergency: <ul style="list-style-type: none"> requires coordination of multi-agency response; requires coordination of information and communication between departments/agencies and/or has significant provincial/national media interest. Elevations of the POC will be escalated by AEMA. Once the elevations level of the POC has been escalated, provincial-level emergency control will be coordinated by AEMA under the leadership of the lead agency. The AER will develop emergency objectives to guide the GoA response and support to duty holders and local authorities. AEMA will assist the AER by providing leadership and strategic policy direction for the GoA as per the <i>Government Emergency Management Regulation (AR 248/2007)</i>. GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority. 	<ul style="list-style-type: none"> Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcome. Integrate PIA into internal response processes. All departments/agencies will participate in a joint PIA to be coordinated by AER. Participation from each department/agency will be determined by the response to the emergency. Reports required by other regulatory authorities must be completed and delivered to the appropriate regulatory body within the time lines they prescribe.
*Alberta Energy Regulator (AER)	<ul style="list-style-type: none"> Confirm and act as lead Government of Alberta (GoA) organization in energy resources industry emergency preparedness and response. Set requirements for planning for, and responding to energy resources industry emergencies. Participate in exercises of this plan. Review and recommend changes to this plan. Maintain 24/7 telephone contact where energy resources industry emergencies can be reported. Maintain 24/7 emergency contact numbers where resources can be accessed to carry out a response to this plan. Make this plan available to stakeholders. Communicate changes to the plan with stakeholders Maintain emergency response resources. Act as Subject Matter Expert (SME). 	<ul style="list-style-type: none"> Receive notification of energy resources industry emergencies. Determine the emergency level of an emergency through consultation with the duty holder. Dispatch AER representative to the site of the emergency, as required. Confirm that local resources have been notified as appropriate. Monitoring discharges and ensuring appropriate mitigation and response actions are taken to reduce the impact of liquid releases for land based spills and to ensure watercourses are protected. Confirm, plan and/or implement public safety actions taken to ensure the safety of the public and the environment, including issuing Fire Hazard Orders or requesting NOTAMs. As lead agency, provide coordination for departments/agencies and duty holder on site. Request a local authority liaison officer to be present at the REOC, if necessary. Activate the Energy Resources Industry Emergency Support Plan. Advise AEMA to escalate POC activation (if required). Identify and request initial provincial resources to support the emergency response, to be coordinated at the regional level if necessary through a local or regional EOC. Initiate consolidated Situation Reports through AEMA. Provide Situation Reports to AEMA if requested. Send an AER representative to the emergency location and/or the incident command post. Establish an EOC at the local AER Field Centre until the duty holder or local authority establishes a REOC. AER ECC will be expanded if a REOC is not established. Dispatch an AER representative to the REOC when it opens. Request the deployment of other provincial GoA department/agency representative to be present at the REOC, or the local AER Field Centre ECC. Provide timely situation reports, through AEMA, to other GoA departments/agencies activated by this plan. Notify all participants when the emergency has concluded and there is no longer any hazard to the public. 	<ul style="list-style-type: none"> Conduct the PIA related to the response, as described by the ERIESP. As part of the PIA, recommend any mitigation actions that may improve the coordination of the GoA response, as described by the ERIESP. Establish processes to receive and address community concerns. Review and update the ERIESP, in consultation with AEMA. Communicate any changes to the ERIESP to applicable stakeholders.
*AEMA	<ul style="list-style-type: none"> Act as the provincial coordinating agency in energy resources industry emergency responses as per the <i>Emergency Management Act</i>. Maintain list of 24 hour emergency contact numbers. Maintain 24 hour duty manager system. 	<ul style="list-style-type: none"> Confirm AER has been notified. Conduct the notification in accordance with Section 5.3. Obtain a situation report from the AER, AEP, local authority, etc. Confirm the level of emergency. Elevate the POC as required. Notify the appropriate provincial officials as per standard operating procedures. Release consolidated Situation Reports in accordance with section 3.4.4. Coordinate the Government of Alberta response including requests for provincial/federal resources. Provide ongoing situation reports or briefing notes to appropriate provincial officials in accordance with the AEP or as requested. Notify partners and stakeholders when the event is over. 	<ul style="list-style-type: none"> Participate in all PIAs related the ERIESP. Complete documentation or reporting in relation to the activation of the ERIESP and the emergency for all GoA-wide PIAs.
Local Authority	<ul style="list-style-type: none"> Work with the operator to effectively prepare for a petroleum industry incident. Provide input to the industrial operator's site-specific plan to ensure it is compatible with the Municipal Emergency Plan (MEP), where feasible. Participate in industrial operators' preparatory training and exercises where possible. Train personnel to carry out functions as assigned by MEP or procedures. Maintain 24 hour emergency contact numbers. Meaningful planning (including confirmation and coordination of roles and responsibilities) between the local authority and the licensee/operator has taken place. Details on municipal emergency response capacity and planning are found in the applicable municipal emergency plan. 	<ul style="list-style-type: none"> Receive notification and work with the licensee/operator. In a petroleum industry incident, determine if the incident can be managed and the level of support that would be needed if required from AER and AEMA. If the local authority, licensees or operators are unable to manage the response, the AER with assistance from AEMA will manage the response. Send a local authority liaison officer to be present at the AER regional EOC if necessary. If AEMA is providing support provide regular situation reports. Respond to and assess the emergency incident. Establish contact with the industrial operator in order to: <ul style="list-style-type: none"> Obtain additional hazard information. Determine where road blocks should be or are established. Determine the direction of approach to the incident. Determine if there are any injuries. Find out what response and public protection actions have been taken. Identify the location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs). Activate the MEP, when required. Manage the Local Authority's emergency response. Activate the emergency public warning system to alert people to life threatening hazards, as required. Activate the Municipal EOC (MEOC), as required. Initiate public protection measures, as necessary. May dispatch a representative to the Provincial Operations Centre (POC), when it is established, to coordinate the response, if requested. If necessary, declare a local State of Emergency. If the hazard area extends beyond the Emergency Planning Zone (EPZ), the county will coordinate evacuation of the public as well as reception centre establishment and maintenance with the industrial operator. When possible, work with all other responders to establish a single Regional EOC (REOC). Establish a public information service, including the use of the news media to inform and instruct the public of the emergency and of any protective actions to be taken. Coordinate news releases with the licensee, if required. Inform AEMA and the public when the emergency is over. 	<ul style="list-style-type: none"> Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator. Participate in multi-agency debriefings.
Alberta Health Services (AHS)	<p>Alberta Health Services (AHS) - Environmental Public Health (EPH) roles and responsibilities in public health emergency preparedness and response to oil and gas industry are outlined below. The provision of services during an emergency depends upon our assessment of legislative responsibilities, impact to services, and business continuity.</p> <p>Environmental Public Health will endeavor to:</p> <ul style="list-style-type: none"> Participate with the licensee in the development of their Emergency Response Plans as it relates to the Environmental Public Health Program's role and responsibility. Provide the AHS Zone Single-Point-of-Contact (SPOC) emergency phone number to enable the Licensee to notify and alert the Zone of an emergency. From the initial notification or alert, AHS emergency response will fan out to and coordinate with other AHS programs and facilities as necessary. The 911 EMS services remain independent of the Zone SPOC notification/alert process. Participate with stakeholders in preparedness training and exercises associated with a Licensee's simulated activation of an Emergency Response Plan in which Environmental Public Health has a role and responsibility. Participate in public information sessions during the Licensee's Emergency Response Plan development process when appropriate and as resources allow. 	<ul style="list-style-type: none"> Provide guidance to stakeholders and local municipal authorities in identifying sites suitable for establishing and operating an evacuation centre and/or reception centre, including operational requirements. Provide guidance to stakeholders on substances that may affect public health in consultation with the Zone Medical Officer of Health (MOH), including Alberta Health Acute Exposure Health Effects for Hydrogen Sulphide and Sulphur Dioxide information. Conduct assessments, inspections and give regulatory direction, when appropriate, to ensure the requirements of provincial legislation and EPH program areas of responsibilities for public health protection and disease prevention are maintained. Notify the Zone Medical Officer of Health of any incident affecting or potentially affecting other AHS programs or facilities. The Zone MOH will notify and coordinate emergency response in other program areas and facilities as necessary. Establish EPH emergency management operations, when appropriate, to support regional efforts and liaise with the Government Emergency Operations Centre, Municipal Emergency Operations Centre and/or Industry Emergency Operations Centre, if needed. Assist the Zone Medical Officer of Health, local municipal authority, and Public Information/Communication officers in the development, issuance, and rescinding of public health, public evacuation, and shelter-in-place advisories. Provide guidance to stakeholders on matters relating to evacuation of the public and/or public facilities, and the re-occupancy of those evacuated areas or facilities. Record and respond to health complaints or concerns from the public during and following and incident. 	<ul style="list-style-type: none"> Record and respond to health complaints or concerns from the public during and following and incident. Participate in stakeholder debriefings as necessary.

Note: The roles for the local authority(s) and regional health authority(s) are not outlined in the Energy Resources Industry Emergency Support Plan (ERIESP) Plan and will be coordinated during the public consultation program.

*AER - Alberta Energy Regulator

*AEMA - Alberta Emergency Management Agency

*AHS - Alberta Health Services

Revised June 2018



Lead Agency Roles



Lead Agency Roles



AB Emergency Services

Before the Incident

The first level of emergency response is provided by fire and/or police services and may involve the activation of the Emergency Operations Centre (EOC). Other first responders, such as the RCMP and Emergency Medical Services, or EMS, have a provincial mandate but with a local presence through detachments or stations. These agencies are usually accessed through 911 and have internal dispatch arrangements.

- ☐ First responders work at the site level of an event and include police, fire and ambulance. Activities of first responders include medical response, firefighting and managing crowds or evacuation zones
- ☐ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC
- ☐ First response services provided by a fire department are determined by the local authority responsible, and may include hazardous material incident response, road rescue, and medical rescue
- ☐ Emergency Medical Services, or EMS, operates under the authority of the Alberta Health Services. No matter where an emergency happens in Alberta, AHS EMS can transport patients by either a ground ambulance or air ambulance – fixed wing airplane or helicopter.
- ☐ AHS EMS staff actively participates in emergency planning, mock emergency exercises and other joint training initiatives to ensure emergency preparedness and response resources are identified and deployed quickly and effectively when they are needed most
- ☐ Maintain readiness status for emergency notification
- ☐ Participate in industrial operators’ exercises where possible
- ☐ Maintain 24 hour emergency contact numbers

During the Incident

RCMP

- ☐ RCMP or local police would also become involved if there are fatalities, as they are required to participate in the investigations. This could be through the medical examiner.
- ☐ Maintain law and order and assist the operator with local security but would require discussion with the local police at the time.
- ☐ The Office of the Fire Commissioner (OFC) has a working relationship with the RCMP and the RCMP may conduct selected duties of the Fire Commissioner where the fire’s impact is not significant.
- ☐ Assist with traffic control, crowd control, evacuation, and residence security.
- ☐ Typically would not be involved in setting up or maintaining roadblocks unless the emergencies impacted or required the closure of 1, 2 and 3 digit Provincial or Secondary highways.
- ☐ Establish and maintain communications with industrial operator.
- ☐ Dispatch a representative to the off-site Regional Emergency Operations Centre, when established, to coordinate the response.
- ☐ Coordinate with the industrial operator both the establishment and the administration of reception centres for evacuees.
- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.

Fire

- ☐ Respond to and assess emergency incident to the scope of their abilities.
- ☐ Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).
- ☐ Communicate to MEOC and provide site reps as required.
- ☐ Assist with fire protection where trained personnel are available.
- ☐ Provide emergency medical assistance, as required.
- ☐ Coordinate news releases with the licensee, if required.

EMS

- ☐ Respond to and assess emergency incident to the scope of their abilities.
- ☐ The Alberta Health Services provides and coordinates ambulance services within Alberta, including triage, treatment, transportation and care of casualties
- ☐ Provide emergency medical assistance, as required. Emergency Medical Technicians (EMT) or Emergency Medical Responders (EMR) provide basic patient assessment and treatment including obtaining vital signs, administering oxygen and splinting extremities.
- ☐ ALS ambulances have at least one paramedic with expanded training, scope of practice, and can provide advanced treatment in airway management and medication administration.

After the Incident

- ☐ Complete a “lessons learned” process based on the scope of involvement and provide any feedback to the industrial operator.
- ☐ Participate in multi-agency debriefings.

*BCER

*EMCR

Local Authority / Regional Districts

*BC Emergency Services

Before the Incident

The Emergency Response and Safety Department is the lead department responsible for emergency management within the BCER. The Department oversees the administration of the EMCR. This includes:

- ☐ Reviewing industry emergency management programs and plans
- ☐ Participating in permit holder emergency response exercises
- ☐ Providing 24 hour Emergency Officer services
- ☐ Leading emergency and incident follow-up and investigation
- ☐ Administering incident and complaint response services

☐ The BCER uses a combination of reviews, assessments, and field inspections.

☐ To ensure permit holders maintain compliance with the requirements detailed in the Emergency Management Regulation and the Oil and Gas Activities Act. The audit and inspection program objectives are to ensure permit holders have adequate processes and procedures in place.

☐ Participate in selected licensee ERP exercises.

☐ Maintain a 24 hour telephone contact where petroleum industry incidents can be reported.

☐ Assist the BCER with planning initiatives regarding petroleum industry emergency response as requested by the BCER.

☐ EMCR Northeast Region receives Industry Facility Emergency Response Plans.

☐ Participate in selected licensee ERP exercises when requested as time permits.

☐ Maintain a 24 “800” telephone contact where petroleum industry spill incidents can be reported.

☐ Maintain 24 hour emergency contact numbers for local governments and provincial emergency responders.

☐ Set up and maintain an emergency management organization which can include an executive committee, emergency program management committee, emergency program coordinator or emergency social services director.

☐ Develop and maintain a Hazard, Risk and Vulnerability Analysis (HRVA) to identify potential emergencies and disasters in its jurisdictional area.

☐ Educate community residents and business owners about the need for personal emergency preparedness.

☐ Prepare for emergencies and disasters through mitigation, preparedness, response and recovery planning.

☐ Conduct training and exercises for all emergency response staff.

☐ Establish procedures for implementing, reviewing and revising response and recovery plans.

☐ Complete periodic reviews and updating of the local emergency plan.

☐ Respond to emergencies when required.

☐ Establish procedures for notifying persons threatened by emergencies or impending disasters.

☐ Identify procedures for obtaining emergency resources.

☐ Establish priorities for restoring essential services.

☐ Work with volunteer groups to plan for the provision of food, clothing and shelter to victims.

☐ Participate in industrial operators’ preparatory training and exercises where possible.

☐ Maintain 24 hour emergency contact numbers.

The first level of emergency response is provided by fire and/or police services and may involve the activation of the Emergency Operations Centre (EOC). Other first responders, such as the RCMP and British Columbia Ambulance Service, have a provincial mandate but with a local presence through detachments or stations. These agencies are usually accessed through 911 and have internal dispatch arrangements.

☐ First responders work at the site level of an event and include police, fire and ambulance. Activities of first responders include medical response, firefighting and managing crowds or evacuation zones.

☐ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC.

☐ First response services provided by a fire department are determined by the local authority responsible, and may include hazardous material incident response, road rescue, and medical rescue.

☐ The BC Ambulance Service (BCAS) operates under the authority of the Emergency and Health Services Commission (EHSC) and is tasked with the provision of pre-hospital emergency care and transport of patients across the province.

☐ BCAS staff actively participates in emergency planning, mock emergency exercises and other joint training initiatives to ensure emergency preparedness and response resources are identified and deployed quickly and effectively when they are needed most.

☐ Participate in industrial operators’ exercises where possible.

☐ Maintain 24 hour emergency contact numbers.

During the Incident

During emergencies the BC Energy Regulator (BCER) acts as a liaison between industry operators and the provincial emergency management structure to provide situation updates related to threatened oil and gas assets.

☐ Oversee operator’s response to an incident.

☐ Notified by EMCR of incidents within BCER’s jurisdiction (on lease).

☐ Establish communication with operator.

☐ Confirm incident level with operator.

☐ Confirm downgrade of incident level.

☐ Issue road closure order upon request from operator.

☐ Request NOTAM order upon request from the operator.

☐ May send an BCER representative to operator’s On-Site Command Post and / or Evacuation Centre.

☐ May establish a government EOC at the BCER office.

☐ Confirm ignition decision with operator if time permits.

☐ Confirm media releases to be sent out by operator.

☐ ECC Victoria will notify the BCER on call Emergency Response Officer and initiate British Columbia’s notification of government agencies including MOF, MOE, MOT, Health Unit, WorkSafe BC, affected municipalities and all other level of government and industry, depending on the level of “coding” (notification code 1,2,3 is determined by the Lead Agency MOE or BCER), depending on the code level Standard Operating Procedures (SOPs) in ECC will determine who is notified.

☐ Provide representatives to help coordinate provincial response as required.

☐ Provides the local government response for rural and crown areas.

☐ Assesses the situation.

☐ Provides support to the first responders, including resources.

☐ Provides public information, including media briefings.

☐ Coordinates the provision of food, clothing, shelter and transportation.

☐ Liaises with volunteer groups.

☐ Provides situation reports to the PREOC.

☐ Tracks finances.

☐ Coordinates recovery of essential services.

☐ Coordinates community recovery efforts.

☐ During emergencies and disasters the local authority’s primary link to the provincial emergency management structure is the PREOC.

☐ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC.

☐ Establish contact with the industrial operator in order to:

- ☐ Obtain additional hazard information.
- ☐ Determine where roadblocks should be or are established.
- ☐ Determine the direction of approach to the incident.
- ☐ Determine if there are any injuries.
- ☐ Find out what response and public protection actions have been taken.
- ☐ Identify the location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs).

☐ Activate the MEP, when required.

☐ Manage the Local Authority’s emergency response.

☐ Activate the emergency public warning system to alert people to life threatening hazards, as required.

☐ Activate the Municipal EOC (MEOC), as required.

☐ May dispatch a representative to the Government EOC (GEOC), when it is established, to coordinate the response, if requested.

☐ If necessary, declare a local State of Emergency.

☐ When possible, work with all other responders to establish a single Regional EOC (REOC).

☐ Inform EMCR and the public when the emergency is over.

RCMP

☐ Maintain law and order and assist the operator with security.

☐ Assist with mobilization of additional resources as directed by EMCR.

☐ Assist with traffic control, evacuation, and residence security.

☐ Assist with setting up and maintaining roadblocks or closures of 1, 2 and 3 digit Provincial or Secondary highways.

☐ Establish and maintain communications with industrial operator.

☐ Dispatch a representative to the off-site Regional Emergency Operations Centre, when established, to coordinate the response.

☐ Coordinate with the industrial operator both the establishment and the administration of reception centres for evacuees.

☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.

Fire

☐ Respond to and assess emergency incident to the scope of their abilities.

☐ Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).

☐ Communicate to MEOC and provide site reps as required.

☐ Assist with fire protection where trained personnel are available.

☐ Provide emergency medical assistance, as required.

☐ Coordinate news releases with the licensee, if required.

EMS

☐ Respond to and assess emergency incident to the scope of their abilities.

☐ The BC Ambulance Service provides and coordinates ambulance service s within British Columbia, including triage, treatment, transportation and care of casualties.

☐ The BC Ambulance Service provides situational awareness and coordinates resources through the PREOCs and PECC.

☐ Provide medical aid and transportation of ill or injured workers to a medical facility during high risk operations as required under the *WCB Act* and WSBC Regulations.

☐ Provide emergency medical assistance, as required.

After the Incident

☐ Close EOC if established.

☐ Participate in event debriefings.

☐ Receive and review Post-Incident reports.

☐ May audit licensee records.

☐ As requested by BCER

☐ Complete a “lessons learned” process based on the scope of involvement and provide any feedback to the industrial operator.

☐ Participate in multi-agency debriefings.

☐ Complete a “lessons learned” process based on the scope of involvement and provide any feedback to the industrial operator.

☐ Participate in multi-agency debriefings.

*BCER - BC Energy Regulator

*EMCR - Ministry of Emergency Management and Climate Readiness

* Emergency Services - as managed / operated by the Local Authority

Lead Agency Roles



Northern Health Authority

Ministry of Justice

Before the Incident

- Northern Health is the regional health authority responsible for providing health services to 300,000 people over an area of 600,000 square kilometers in the province of British Columbia. Services include:
- ☐ Acute (hospital) Care
 - ☐ Public Health (Protection, Preventive and Population Health services
 - ☐ Mental Health and Addictions
 - ☐ Home and Community Care
- ☐ In the event of a major emergency/disaster, Northern Health will provide health care services within its capacity, and will activate its emergency response management plan(s).
- ☐ Participate with industry, local authority and other partners in the development of their Emergency Response Plans as it relates to health authority roles and responsibilities.
- ☐ Participate in stakeholder training and exercises associated with activation of an Emergency Response Plan, in which Northern Health or HEMBC have a role and responsibility.

- The Police and Community Safety Branch of the Ministry of Justice will work with EMCR to:
- ☐ Prepare, promulgate and implement orders relating to law enforcement and internal security.
- ☐ Provide through the jurisdictional police force:
- ☐ Advice to local authorities respecting the maintenance of law and order
 - ☐ Reinforcement of local police services
 - ☐ Security control of emergency areas; and
 - ☐ Traffic and crowd control
- ☐ The Ministry of Justice provides legal services to the government. Policy direction and legislative changes are made in consultation with the Ministry of Justice. During emergencies or disasters the Ministry of Justice may be called on to assist with risk management and provide expertise. This could include providing advice to provincial ministries and government corporations on legal matters relating to the preparation and promulgation of emergency orders, regulations, declarations and contractual arrangements.

During the Incident

- ☐ Activate internal emergency response management plans related to ongoing provision of its services
- ☐ Provide acute care and emergency services at existing Northern Health hospitals/health centres.
- ☐ Work with BC Emergency Health Services (Ambulance) and the BC Patient Transfer Network to transport patients to the appropriate levels of care.
- ☐ Apply and enforce the Public Health Act, and associated regulations.
- ☐ Provide advice/information to the stakeholders on the existing or potential public health effects of an incident (including drinking water safety, air quality, environmental contaminants, communicable disease prevention, re-occupancy of evacuated areas, etc.).
- ☐ Provide advice/information on the best methods for monitoring health effects from an incident.
- ☐ Assist in development of (joint) messaging for public information on emergency incidents.
- ☐ Provide guidance to stakeholders and local authorities on public health considerations in operating reception and evacuation centres, and group lodging facilities.

- ☐ Jurisdictional police forces to task search and rescue services for missing persons on land and in inland waters.
- ☐ Before, during and after an emergency the Ministry of Justice could be called upon to provide expertise, technical advice and/or policy direction regarding police and correctional services.
- ☐ The Minister of Justice has overall responsibility for emergency management in the province. In the event of a disaster, the Minister may:
 - ☐ Declare a provincial state of emergency
 - ☐ Make a formal written request for federal assistance or aid from the Government of Canada
 - ☐ Direct the establishment of M-DEC
 - ☐ Inform his/her colleagues of the situation, and
 - ☐ Be available for media interviews

After the Incident

Government Consultation Summary

Type of Agency	Agency Name	Provided Specific Roles	Agreed to Generic Roles	Unable to Contact	Willing to consider a single REOC	Evacuation outside of the EPZ	Location of EOC	Suggested Reception Centres	Notes
Health Authority	Northern Health	✓			Yes, where possible	N/A	N/A	N/A	
Health Authority	Alberta Health Services Z5 – North Zone	✓			Yes, where possible	Require assistance	Virtual	N/A	
Local Authority	Emergency Management and Climate Readiness (EMCR)	✓			Yes, where possible	N/A	Prince George	N/A	
Local Authority	Peace River Regional District	✓			Yes, where possible	Require assistance	PRRD 810 Alaska Avenue, Dawson Creek, BC	N/A	
Local Authority	Clear Hills County	✓			Yes, where possible	Require assistance	313 Alberta Avenue, Worsley, AB	N/A	

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Emergency Response Roles & Responsibilities

Health Emergency Management BC, North (HEMBC)

HEMBC is a program under the Provincial Health Services Authority (PHSA). HEMBC provides the expertise, education, tools, and support specifically for the BC Health Sector to effectively mitigate, prepare for, respond to, and recover from the impacts of emergency events; ensuring the continuity of health services. There is a HEMBC team in each BC health authority. HEMBC-North deals specifically with Northern Health.

Roles and responsibilities:

- Maintain a 24-hour emergency/on call contact number for notification and activation of the health system in Northern BC (appendix I)
- Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the incident/emergency event.

Northern Health (NH)

Northern Health is the regional health authority responsible for providing health services to 300,000 people over an area of 600,000 square kilometers in the province of British Columbia. Services include:

- Acute (hospital) Care
- Public Health (Protection, Preventive and Population Health services)
- Mental Health and Addictions
- Home and Community Care

In the event of a major emergency/disaster, Northern Health will provide health care services within its capacity, and will activate its emergency response management plan(s).

NH Roles & responsibilities - PREPAREDNESS (PRE-EVENT):

- Participate with industry, local authority and other partners in the development of their Emergency Response Plans as it relates to health authority roles and responsibilities:
- Participate in stakeholder training and exercises associated with activation of an Emergency Response Plan, in which Northern Health or HEMBC have a role and responsibility (as resources allow);

NH Roles & responsibilities - RESPONSE:

- Activate internal health emergency management plans related to ongoing provision of services (listed above);
- Provide acute care and emergency services at existing Northern Health hospitals/health centres;
- Work with BC Emergency Health Services (Ambulance) and the BC Patient Transfer Network to transport patients to the appropriate levels of care;
- Apply and enforce the Public Health Act, and associated regulations;
- Provide advice/information to the stakeholders on the existing or potential public health effects of an incident (including drinking water safety, air quality, environmental contaminants, communicable disease prevention, re-occupancy of evacuated areas, etc.);
- Provide advice/information on the best methods for monitoring health effects from an incident.
- Assist in development of (joint) messaging for public information on emergency incidents;
- Provide guidance to stakeholders and local authorities on public health considerations in operating reception and evacuation centres, and group lodging facilities

NOTE: British Columbia Emergency Health Services (BCEHS - Ambulance) remains independent of Northern Health. If an ambulance is required please contact BCEHS via 911 (or the local contact number, if 911 is not available in your area).

Appendix I

NH/HEMBC- Contact information

1. **For Emergency events that require immediate connection with Northern Health, please call :**
 - HEMBC on call number (24/7) **855-554-3622** (or 855-55-HEMBC)
 - HEMBC will notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the event/emergency. Please include this number in industry ERPS, for the use of permit holders in contacting Northern Health on an emergency basis.
 - **Please do NOT** include this number on Public Awareness Pamphlets for individual projects; the EMBC/Oil and Gas Commission's emergency number(s) is more appropriate, and the HEMBC 24/7 number is on record with those agencies.
2. **For non-urgent requests related to Emergency Response Plans, or emergency exercise planning/information,** contact HEMBC North Director Mary Charters, at:
 - 250-617-5288
 - HEMBC@northernhealth.ca
3. **For Environmental assessment inquires and general government consultation questions pertaining to health** please email the NH Office of Health and Resource Development at:
 - resource.development@northernhealth.ca

Oil & Gas Industry Emergency Preparedness and Response

Alberta Health Services (AHS) - Environmental Public Health (EPH) roles and responsibilities in public health emergency preparedness and response to the oil and gas industry are outlined below. The provision of services during an emergency depends upon our assessment of legislative responsibilities, impact to services, and business continuity.

EPH will endeavor to:

- Participate with the Licensee in the development of their Emergency Response Plans as it relates to the Environmental Public Health Program's role and responsibility.
- Provide the AHS Zone Single-Point-of-Contact (SPOC) emergency phone number to enable the Licensee to notify and alert the Zone of an emergency. From the initial notification or alert, AHS emergency response will fan out to and coordinate with other AHS programs and facilities as necessary. The 911 EMS services remain independent of the Zone SPOC notification/alert process.
- Participate with stakeholders in preparedness training and exercises associated with a Licensee's simulated activation of an Emergency Response Plan in which EPH has a role and responsibility.
- Participate in public information sessions during the Licensee's Emergency Response Plan development process when appropriate and as resources allow.
- Provide guidance to stakeholders and local municipal authorities in identifying sites suitable for establishing and operating an evacuation centre and/or reception centre, including operational requirements.
- Provide guidance to stakeholders on substances that may affect public health in consultation with the Zone Medical Officer of Health (MOH), including Alberta Health Acute Exposure Health Effects for Hydrogen Sulphide and Sulphur Dioxide information.
- Conduct assessments, inspections and give regulatory direction, when appropriate, to ensure the requirements of provincial legislation and EPH program areas of responsibilities for public health protection and disease prevention are maintained.

Notify the Zone Medical Officer of Health of any incident affecting or potentially affecting other AHS programs or facilities. The Zone MOH will notify and coordinate emergency response in other program areas and facilities as necessary.

Oil and Gas Industry Emergency Preparedness and Response | 2

- Establish EPH emergency management operations, when appropriate, to support regional response efforts and liaise with the Government Emergency Operations Centre, Municipal Emergency Operations Centre and/or Industry Emergency Operations Centre, if needed.
- Assist the Zone Medical Officer of Health, local municipal authority, and Public Information/Communication officers in the development, issuance, and rescinding of public health, public evacuation and shelter-in-place advisories.
- Provide guidance to stakeholders on matters relating to evacuation of the public and/or public facilities, and the re-occupancy of those evacuated areas or facilities.
- Record and respond to health complaints or concerns from the public during and following an incident.
- Participate in stakeholder debriefings as necessary.

24 Hour Emergency Notification

Phone: 1-844-755-1788

Email: edp@ahs.ca

Use the phone number and email for all notifications across Alberta.

Contact us at 1-833-476-4743 or [submit a request online](#) at ahs.ca/eph.

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Emergency Management and Climate Readiness (EMCR)

Emergency Response Roles & Responsibilities

Before An Emergency

- Assist the OGC with planning initiatives regarding upstream petroleum industry emergency response as requested by the OGC
- EMCR Northeast Region receives Industry Facility Emergency Response Plans.
- Participate in selected licensee ERP exercises when requested as time permits.
- Maintain a 24 hour 800 telephone contact where petroleum industry spill incidents can be reported.
- Maintain 24 hour emergency contact numbers for local governments and provincial emergency responders.

During an Emergency

- ECC Victoria will notify the OGC on call Emergency Response Officer and initiate British Columbia's notification of government agencies including MOF, MOE, MOT, Health Unit, WorkSafe BC, affected municipalities and all other level of government and industry, depending on the level of "coding" (notification Code: 1,2,3 is determined by the Lead Agency MOE or OGC); depending on the code level Standard Operating Procedures (SOP's) in ECC will determine who is notified).
- Provide representatives to help coordinate provincial response as required.

After an Emergency

- As requested by OGC.



PEACE RIVER REGIONAL DISTRICT

1981 Alaska Avenue, Box 810, Dawson Creek, BC, V1G 4H8

Tel: 250-784-3200, Fax: 250-784-3201. www.prrd.bc.ca

Local Authority (Regional District)

Peace River Regional District (PRRD) has a formal Emergency Management Plan, which outlines the measures and sources of assistance that can be obtained to support emergency response efforts, within their jurisdictional boundaries. Upon request from the BC Energy Regulator (BCER), the Regional District may address emergency response capabilities, expectations and preparedness. If required or requested the Regional District may activate their emergency plan in order to achieve any of the following:

- Work with the BCER's Emergency Operations Centre (EOC) if established
 - With remote support as a cooperating agency through the BCER Liaison Officer and/or,
 - In the BCER operations section as an assisting agency
- Provide support and assistance to ensure notification of endangered area residents
 - Mass Alerting
 - Notifications
- Provide support to coordinate the delivery of Emergency Support Services (ESS) to evacuated or effected residents
- If necessary, declaration of a State of Local Emergency to enact legislative powers including but not limited to:
 - Issuance of Evacuation Alerts, Orders and Rescinds (persons, livestock, and animals);
 - Acquire or use any land or personal property considered necessary to prevent, respond or alleviate the effects of an event (following BCEMS Model); and
 - Control or Prohibit Travel in the region for safety
- Assist with public information service (joint, BCER, Industry and local government)
- Assist with the provision of building re-entry procedures jointly with utility providers, industry, Northern Health, and Technical Safety BC.

Revised July 17, 2023

diverse. vast. abundant.

LOCAL AUTHORITY – CLEARWATER COUNTY

- **Roles – Local Authority – Municipal:** Clearwater County requests your Emergency Response Plan reflects the following roles and responsibilities of our jurisdiction.
 - Initiates and manages the local disaster services response in accordance with County Policy
 - May dispatch representative(s) to the Government's off-site Emergency Coordination Centre
 - Ensures all local emergency services and resources are available in accordance with County Policy
 - If required, activates the Municipal Emergency Coordination Centre and coordinates activities at this centre
 - May assist with set up and maintenance of road blocks in accordance with County Policy
 - Assists with Fire Protection in accordance with County Policy
 - If necessary, may declare a State of Local Emergency (SOLE) to provide local authorities with special powers
 - Supports the Company in dealing with the emergency in accordance with County Policy

Note: It is the County's policy with regard to oil and gas that any emergency is the responsibility of the company having assets within Clearwater County's jurisdiction, regardless of whether the emergency is contained within or migrates outside of the Emergency Planning Zone.

The County may not have enough resources or manpower to cover the entire area of the County boundaries. Clearwater County will assist where possible, but cannot guarantee any assistance in the event of oil and gas emergency. It is recommended that all oil and gas companies ensure that they are capable of providing emergency response without assistance from the County and that area Mutual Aid groups be accessed for this purpose.

Common
Tasks

*OHS

*AAI

*AFPT

*ATEC

*CPE

Alberta
Justice

Before the Incident

- ☐ All departments/agencies should participate in training and exercises for this plan and the Energy Resources Industry Emergency Support Plan (ERIESP).
- ☐ This plan will be reviewed as required.
- ☐ A joint multi-department/agency exercise will be held as required.

- ☐ Maintain and provide resources to support 24\7 employer reporting of incidents to OHS.
- ☐ Maintain capacity for OHS attendance to a work site when warranted.
- ☐ Maintain a formal Incident Management Program is in place to ensure compliance to OHS requirement to reporting, investigation, risk management, and monitoring.

- ☐ Act as subject matter expert (SME) relating to agriculture and livestock impacts.
- ☐ Act as the liaison between farming/ranching community and the Government of Alberta (GoA).
- ☐ Maintain emergency response resources.

- ☐ Maintain 24/7 contact numbers and duty officer where resources can be accessed for emergency response.
- ☐ Maintain emergency response resources.
- ☐ Act as subject matter expert (SME).

- ☐ Maintain a 24/7 call centre (EDGE - Environmental and Dangerous Goods Emergencies) to receive emergency calls related to the transportation and handling of dangerous goods as well as environmental spills/releases/ incidents, and AER emergency notifications.
- ☐ Act as SME for dangerous goods incidents.

- ☐ Maintain a team of trained Communications and Public Engagement personnel.
- ☐ Activate crisis communications plan and crisis communications response.

- ☐ Maintain the list of Critical Infrastructure and key assets in the Province of Alberta.
- ☐ Maintain and regularly test the Emergency Notification System.
- ☐ Maintain awareness of threats, vulnerabilities, and risks related to human induced intentional hazards.

During the Incident

- ☐ The AER may activate the ERIESP based on the following criteria:
 - ☐ Level 2 or 3 emergencies (as defined by the AER)
 - ☐ Any level of emergency:
 - ☐ requires coordination of multi-agency response;
 - ☐ requires coordination of information and communication between departments/agencies and/or has significant provincial/national media interest.
- ☐ Elevations of the POC will be escalated by AEMA. Once the elevations level of the POC has been escalated, provincial-level emergency control will be coordinated by AEMA under the leadership of the lead agency.
- ☐ The AER will develop emergency objectives to guide the GoA response and support to duty holders and local authorities. AEMA will assist the AER by providing leadership and strategic policy direction for the GoA as per the *Government Emergency Management Regulation (AR 248/2007)*.
- ☐ GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority.

- ☐ Ensure appropriate response and management of the scene is conducted:
 - ☐ Ensure appropriate medical response is initiated and emergency response is contacted.
 - ☐ Ensure safety of those on-site.
 - ☐ Ensure security and integrity of the incident site is maintained.
- ☐ Inspect the work activities and processes to ensure legislative standards are being met by all work site parties. (Attendance to be determined by Occupational Health and Safety management.)
- ☐ Ensure the appropriate provincial/territorial agencies are notified, where required.

- ☐ Act as SME relating to agriculture and livestock impacts.
- ☐ Act as the liaison between farming/ranching community and GoA during energy resources industry emergencies.
- ☐ Provide information relating to agricultural and livestock impacts to the GoA during energy resources industry emergencies.

- ☐ Notify forestry staff in the area of the emergency.
- ☐ Forest Areas Wildfire Coordination Centres will notify duty holder if energy resources industry infrastructure is threatened by wildfire, where practical and in order of priority. Priority contact will be through the contact information indicated in the company's Industrial Wildfire Control Plan for the identified locations. Can fight wildfires started as the result of the energy resources industry product release.
- ☐ Alberta Wildfire is responsible for managing all wildfires within the Forest Protection Area. Will suppress wildfires caused from industry operations when industry has appropriately shut-in the operation and notified Alberta wildfire to ensure the safety of first responders.

- ☐ Handle inter-departmental communication as needed during energy resources industry emergencies.
- ☐ Maintain ability to process calls for new emergencies.
- ☐ Provide information on the impacts to transportation routes.
- ☐ Provide response support if dangerous goods are released.

- ☐ Confirm distribution of AER messaging. Provide support as required.

- ☐ Provide intelligence and threat risk assessments when appropriate and when requested, in relation to critical infrastructure and key assets.
- ☐ Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if necessary through the Emergency Notification System maintained by ASSIST.

After the Incident

- ☐ Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcome.
- ☐ Integrate PIA into internal response processes.
- ☐ All departments/agencies will participate in a joint PIA to be coordinated by AER. Participation from each department/agency will be determined by the response to the emergency.
- ☐ Reports required by other regulatory authorities must be completed and delivered to the appropriate regulatory body within the time lines they prescribe.

- ☐ Ensure work site parties have implemented appropriate controls prior to re-entry by workers.
- ☐ Investigate the incident if the incident is a reportable incident in line with current Alberta OHS Legislation.
- ☐ Ensure internal investigation has been conducted and that identified corrective actions have been minimized to reduce recurrence of similar incidents.
- ☐ Ensure outcomes and corrective actions are communicated to workers.
- ☐ Ensure health and safety committee or health and safety representative as defined by OHS legislation has been involved in internal investigations.

- ☐ Conduct agriculture and livestock impact assessments.
- ☐ Implement response activities as required.

- ☐ Conduct forest impact assessment. (if applicable)

- ☐ Provide a summary of transportation impacts during the PIA process. (if applicable)

- ☐ Participate in all PIAs related to the ERIESP.
- ☐ Coordinate key messaging with the AER.

- ☐ Participate in all PIAs related to the ERIESP.
- ☐ Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if necessary through the Emergency Notification System maintained by ASSIST.

Supporting Agency Roles

Supporting Agency Roles



*WCB - Workers' Compensation Board

*EPA - Alberta Environment and Protected Areas

*ABSA - Alberta Boilers Safety Authority

Revised January 2023



	Before the Incident	During the Incident	After the Incident
*EPA	<div><input type="checkbox"/> Maintain 24 hour emergency contact numbers and duty officer where resources can be accessed for a response related to this plan.</div> <div><input type="checkbox"/> Maintain emergency response resources.</div> <div><input type="checkbox"/> Maintain a specialty air monitoring team and equipment used to oversee and verify air monitoring during incident response.</div> <div><input type="checkbox"/> Act as SME.</div> <div><input type="checkbox"/> Prepare to act as lead agency when appropriate.</div>	<div><input type="checkbox"/> Ensure that non-energy industry resources environmental impacts are mitigated.</div> <div><input type="checkbox"/> Provide expertise to mitigate the impacts of non-energy resources industry liquid releases on land and into watercourses.</div> <div><input type="checkbox"/> Provide technical assistance related to emergency drinking water supply engineering.</div> <div><input type="checkbox"/> Notify Fish and Wildlife staff in the area of the emergency.</div>	<div><input type="checkbox"/> Compile and maintain environment/emergency related records</div> <div><input type="checkbox"/> Monitor environmental recovery, when required.</div>
*WCB	<div>The Workers' Compensation Board is a statutory corporation created by government under the Workers' Compensation Act to administer a system of workplace insurance for the workers and employers of the province of Alberta.</div> <div><input type="checkbox"/> WCB has the overall responsibility for the administration of the workers' compensation system in Alberta.</div> <div><input type="checkbox"/> Be a neutral and autonomous administrator of the worker's compensation system.</div> <div><input type="checkbox"/> Strive to balance the interests of workers and employers.</div> <div><input type="checkbox"/> Delivery of workers' compensation services to the workers and employers of Alberta.</div> <div><input type="checkbox"/> Make decisions based on evidence, law and policy and fair, impartial and transparent processes.</div> <div><input type="checkbox"/> Encourage safer workplaces and promote disability management.</div>	<div>Employer must report to WCB within 72 hours of being notified of an injury/illness that results in or will likely result in:<div><input type="checkbox"/> Lost time or the need to temporarily or permanently modify work beyond the date of accident</div><div><input type="checkbox"/> Death or permanent disability (amputation, hearing loss, etc.)</div><div><input type="checkbox"/> A disabling or potentially disabling condition caused by occupational exposure or activity (poisoning, infection, respiratory disease, dermatitis, etc.)</div><div><input type="checkbox"/> The need for medical treatment beyond first aid (assessment by a physician or chiropractor, physiotherapy, etc.)</div><div><input type="checkbox"/> Medical aid expenses (dental treatment, eyeglass repair/replacement, prescription medications, etc.)</div></div> <div>Note: Immediately report fatalities and serious injuries to the OHS Contact Centre 1-866-415-8690.</div> <div><input type="checkbox"/> Determines whether the injury or illness is caused by work.</div> <div><input type="checkbox"/> Responds to all client inquiries forwarded by the Minister and all other elected officials.</div>	<div><input type="checkbox"/> Compensates injured workers for lost income, health care and other costs related to a work-related injury.</div> <div><input type="checkbox"/> Safely restores injured workers through return-to-work services to a level of competitive employability.</div> <div><input type="checkbox"/> Take reasonable measures to maintain a reasonable quality of life for severely injured workers through the provision of services allowed by legislation and policy.</div>
*ABSA	<div><input type="checkbox"/> Review, accept and register pressure equipment designs and construction procedures that relate to pressure equipment.</div> <div><input type="checkbox"/> Issue certificate of inspection permits for pressure equipment before the equipment is placed into service.</div> <div><input type="checkbox"/> Ensure that regular inspections of in-service pressure equipment are conducted.</div> <div><input type="checkbox"/> Keep records for pressure equipment that has been registered for use, or manufactured, in Alberta.</div> <div><input type="checkbox"/> Examine, certify and register Pressure Welders and Welding Examiners, Power Engineers, and Pressure Equipment Inspectors.</div> <div><input type="checkbox"/> Authorize and monitor, through quality management systems, organizations that have been permitted to conduct some of the activities subject to the regulations.</div> <div><input type="checkbox"/> Conduct safety education and training.</div>	<div><input type="checkbox"/> Receive notification of an incident.</div> <div><input type="checkbox"/> As required under the <i>Pressure Equipment Safety Regulation</i> Section 35, the accident scene must not be disturbed (except when it is absolutely necessary to prevent death or injury, or to prevent further property damage) unless approval to do so has been given by an ABSA Safety Codes Officer.</div>	<div><input type="checkbox"/> Investigate accidents or unsafe conditions that involve pressure equipment.</div> <div>May:<div><input type="checkbox"/> close all or part of the accident site for 48 hours (or longer if authorized by a Justice)</div><div><input type="checkbox"/> prohibit any person from entering the site for safety reasons or to preserve evidence</div><div><input type="checkbox"/> be accompanied by any person for assistance</div><div><input type="checkbox"/> inspect and photograph any thing</div><div><input type="checkbox"/> require any person to make full disclosure</div><div><input type="checkbox"/> require closure or disconnection of any thing</div><div><input type="checkbox"/> require to be performed any tests or evaluations</div><div><input type="checkbox"/> remove evidence</div><div><input type="checkbox"/> require production of documents</div></div>

*MECCS

Ministry of
Forests

* MOTI

* PSPC

Technical
Safety BC

Before the Incident

- ☐ Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.
- Can liaise with Ministry of Forests to provide:**
 - ☐ Species and ecosystem protection policy.
 - ☐ Water protection and sustainability policy.
 - ☐ Conservation and resource management enforcement.

- ☐ Five key agencies are housed within the Ministry of Forests: Wildfire Management Branch, Dam Safety, Flood Safety, GeoBC and the River Forecast Centre.
- ☐ Develop, deliver and promote innovative and effective wildfire management practices to clients.
- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- ☐ The Ministry of Forests is identified to provide personnel, equipment, supplies, telecommunications equipment, aviation support and weather information to assist in emergency response operations.
- ☐ The Ministry of Forests is the designated key agency for wildfires.

- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- ☐ In the event of an emergency, the Highway Department's Operations, Maintenance and Re-construction team plays an important role to ensure the public is safe and transportation routes are available for accessing emergency services.
- ☐ Ministry of Transportation and Infrastructure oversees provincial highways identified as emergency response routes - a network of pre-identified routes that can best move emergency services and supplies to where they are needed in response to a major disaster.
- ☐ Disaster Response Routes (DRRs) are a critical part of the overall emergency transportation system.
- ☐ Responsible for the construction, maintenance and operation of public roads.

The Roles & Responsibilities listed below for Public Services and Procurement Canada (PSPC) are only in relation to the Alaska Highway (97) in British Columbia, north of mile 83.5 (km 133) to the border of British Columbia and Yukon Territories at km 968.

In conjunction with the BC Ministry of Transportation & Infrastructure (MOTI) and the provincial maintenance contractor, PSPC may:

- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- ☐ Hold responsibility for the acquisition of contracts for the maintenance and operation of the Alaska Highway.
- ☐ Oversee Alaska Highway response routes - a network of pre-identified routes that can best move emergency services and supplies to where they are needed in response to a major disaster.

- ☐ Technical Safety BC (formerly BC Safety Authority) is an independent, self-funded organization mandated to oversee the safe installation and operation of technical systems and equipment across the province.
- ☐ In addition to issuing permits, licenses and certificates, we work with industry to reduce safety risks through assessment, education and outreach, enforcement, and research.

During the Incident

- Before, during and after an emergency the Ministry could be called upon to provide expertise, technical advice and/or policy direction regarding:
- ☐ Environmental emergency response (including hazardous materials)
 - ☐ Air, land and water quality standards
 - ☐ Pollution prevention and waste management
 - ☐ Water and air monitoring and reporting
 - ☐ Environmental assessment
 - ☐ Environmental monitoring
 - ☐ Parks, wilderness and protected areas.
- ☐ Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.
 - ☐ May provide a representative to the Incident Command Centre, the Off-Site Command EOC and the BCER Emergency Operations Centre (EOC) and / or the Provincial Emergency Operations Centre (PREOC) on a 24-hour basis.
 - ☐ In a larger scale incident, based on risk, additional ministry resources such as IMTs (Incident Management Teams) may be deployed to establish unified command and monitor, augment, or take over the response if the RP fails to take appropriate action as deemed necessary by the EERO or Provincial Incident Commander.
 - ☐ May assist the RP to ensure that other required agencies and affected stakeholders are contacted.
 - ☐ May provide assistance with hazardous waste management.
 - ☐ May conduct sampling for monitoring and enforcement purposes.

- Before, during and after an emergency the Ministry of Forests could be called upon to provide expertise, technical advice and/ or policy direction regarding:
- ☐ Forest stewardship policy
 - ☐ Land use planning
 - ☐ Water use planning and authorizations
 - ☐ Drought management
 - ☐ Dam and dike safety and regulation
 - ☐ Flood plain management
 - ☐ GeoBC and information management
 - ☐ Pests, disease, invasive plants and species
 - ☐ Wildfire management

- Before, during and after an emergency the Ministry of Transportation and Infrastructure (MoTI) could be called upon to provide expertise, technical advice and/or policy direction regarding:
- ☐ Highway construction and maintenance
 - ☐ Safety and protection of provincial road and bridge infrastructure
 - ☐ Transportation planning and policy
- ☐ MoTI can:
- ☐ Authorize the closure of provincial transportation routes, including highways and inland ferries, where the safety of the public is at risk.
 - ☐ Assist in public notification through the DriveBC website, as well as posting advisories on overhead message boards along designated routes.
 - ☐ Coordinate and arrange for transportation, engineering and construction resources.
 - ☐ Rebuild and restore provincial highways that are impacted by an emergency.

- In conjunction with the BC Ministry of Transportation & Infrastructure (MOTI), PSPC, and the provincial maintenance contractor may be called upon to:
- ☐ Provide expertise, technical advice and/or policy direction regarding:
 - ☐ Highway construction and maintenance
 - ☐ Safety and protection of provincial road and bridge infrastructure
 - ☐ Transportation planning and policy
 - ☐ Play an important role to ensure the public is safe and transportation routes are available for accessing emergency services.
 - ☐ Assist in the coordination of roadblock locations along the highway.
 - ☐ Authorize closure of the Alaska Highway where the safety of the public is at risk.
 - ☐ Assist in public notification of an emergency through the MOTIs DriveBC website, as well as posting advisories on overhead message boards along designated routes.
 - ☐ Coordinate and arrange for transportation, engineering and construction resources.
 - ☐ Handle inter-departmental communication as needed during energy resources industry emergencies.
 - ☐ Maintain ability to process calls for new emergencies.
 - ☐ Provide information on the impacts to transportation routes.
 - ☐ Provide response support if dangerous goods are released.

- ☐ Technical Safety BC implements a business continuity plan in the event of a natural disaster. This plan ensures that Technical Safety BC resumes safety services as soon as possible.
- ☐ Though Technical Safety BC is not a first responder, they will provide technical support including inspection services to the recovery team relating to the technical equipment and systems covered by the Safety Standards Act (e.g., gas, electrical, elevating devices, boiler and pressure vessel technologies) after first ensuring the safety of its employees.
- ☐ Starting in the planning phase and through collaboration with other agencies, Technical Safety BC can provide most value to the public and best support the other agencies.

After the Incident

- ☐ Participate in event debriefings.
- ☐ Complete a "lessons-learned" process based on the scope of their involvement and the outcome.

- ☐ Work with appropriate local and federal entities to facilitate the restoration of roadways and utilities.

- ☐ Work with appropriate local and federal entities to facilitate the restoration and re-opening of the Alaska Highway.
- ☐ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
- ☐ Provide a summary of transportation impacts during the post incident review process.
- ☐ Participate in multi-agency debriefings.

- ☐ Technical Safety BC tracks and investigates incidents and hazards that are reported to inform awareness and prevention initiatives
- ☐ Technical Safety BC does not investigate all reported incidents and may not follow-up with a notification unless there is an intention to investigate.
- ☐ Technical Safety BC will contact duty holders within 24 hours of the next regular business day following the report of an incident if more information is required or an investigation is planned to occur.

*PSPC - Public Services and Procurement Canada

*MOTI - Ministry of Transportation and Infrastructure

*MECCS - Ministry of Environment and Climate Change Strategy

Supporting Agency Roles



		Before the Incident	During the Incident	After the Incident
Supporting Agency Roles	Ministry of Health	<ul style="list-style-type: none">❑ Provide public health measures, including epidemic control and immunization programs.❑ Provide and coordinate ambulance services and triage, treatment, transportation and care of casualties.❑ Provide the continuity of care for patients evacuated from hospitals or other health institutions and for medically dependent patients from other care facilities.❑ Provide standard medical units consisting of emergency hospitals, advanced treatment centres, casualty collection units and blood donor packs.❑ Monitor potable water supplies.❑ Inspect and regulate food quality with the assistance of the Minister of Agriculture.❑ Provide critical incident stress debriefing and counselling services.❑ Provide support services for physically challenged or medically disabled people affected by an emergency.❑ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.❑ Provide input on public health issues related to a petroleum incident.	<p>Before, during and after an emergency the Ministry of Health could be called upon to provide expertise, technical advice and/or policy direction regarding:</p> <ul style="list-style-type: none">❑ Health service delivery❑ Public health planning and response❑ Community and home support services❑ Mental health❑ Communicable disease prevention <p>❑ During an emergency the Ministry of Health will provide the continuity of care both for patients evacuated from hospitals or other health institutions and for medically dependent patients from other care facilities; The Ministry will also provide emergency psychosocial services.</p> <p>❑ Ensure appropriate Health entities have been notified of the incident.</p> <p>❑ Ensure appropriate Executive and Public Health personnel have been notified of the incident.</p> <p>❑ Carry out evacuation of medically dependent and vulnerable populations, as needed.</p> <p>❑ Transport incident casualties as required.</p> <p>❑ Triage and provide medical care to incident casualties as required.</p> <p>❑ Decontaminate incident casualties that present to health care facilities, as needed.</p> <p>❑ Relay health hazard information to the public.</p> <p>❑ Monitor water and air quality, as it relates to public health.</p> <p>❑ Coordinate the public health response to the incident.</p> <p>❑ Address the psychosocial aspects of the aftermath of an event.</p> <p>❑ Arrange with Health Canada and the Public Health Agency of Canada for federal support, if needed.</p>	<ul style="list-style-type: none">❑ Participate in event debriefings.❑ Complete a “lessons-learned” process based on the scope of their involvement and the outcome.❑ Continue with public health and environmental health monitoring as required.❑ Continue to address the psychosocial aspects of recovery.
	WorkSafeBC	<p>WorkSafeBC is the BC Health and Safety Regulator. In addition to providing a no-fault insurance system and providing when work-related injuries or diseases occur compensation and support to workers in their recovery, rehabilitation, and safe return to work; WorkSafeBC assists workers in creating and maintaining healthy and safe work workplaces, with Proactive roles which include:</p> <ul style="list-style-type: none">❑ Providing health and safety information to employers, workers, and the public❑ Establishing standards and guidelines for occupational health and safety❑ Educating employers, supervisors, and workers on prevention of work-related injury and illness.❑ Conducting work site inspections to help employers comply with health and safety regulations.❑ Collaborating with provincial and federal agencies and ministries on matters of occupational health and safety❑ Providing access to prevention resources for workers and employers	<p>As required by the Workers Compensation Act (WCA Sec 68) Employers must immediately report the following types of incidents to WorkSafeBC at 1-888-621-7233 (whether there is an injury or not):</p> <ul style="list-style-type: none">❑ Any incident that kills or seriously injures a worker❑ A major leak or release of a dangerous substance❑ A major structural failure or collapse of a structure, equipment, construction support system, or excavation❑ A fire or explosion that had a potential for causing serious injury to a worker❑ Any blasting accident that results in injury, or unusual event involving explosives (required by regulation)❑ A diving incident that causes death, injury, or decompression sickness requiring treatment (required by regulation) <p>This requirement is in addition to the requirement of reporting workplace injuries or disease for claims purposes.</p>	<p>Prompt investigation of incidents must be conducted to identify causation and prevent recurrence. The WCA (sec 69) requires preliminary investigations to be conducted within 48 hours and full investigations completed within 30 days of the following types of incidents:</p> <ul style="list-style-type: none">❑ is required to be reported under section 68 (specified above),❑ resulted in injury to a worker requiring medical treatment,❑ did not involve injury to a worker, or involved only minor injury not requiring medical treatment, but had a potential for causing serious injury to a worker, or❑ was an incident required by regulation to be investigated. <p>The investigation process must be carried out by persons knowledgeable about the type of work involved and, if they are reasonably available, with the participation of the employer or a representative of the employer and a worker representative. Full investigations must be submitted to WorkSafeBC.</p>
	Ministry of Agriculture and Food	<p>Emergency management support roles for all hazards (upon request of Local Authority, First Nation, EMCR, or other requesting agency):</p> <ul style="list-style-type: none">❑ Provide advice to farmers, aqua-culturalists and fishers on the protection of crops, livestock and provincially managed fish and marine plant stocks.❑ Coordinate the emergency evacuation and care of poultry and livestock.❑ Inspect and regulate food quality.❑ Identify food and potable water supplies.❑ Assist the Minster of Health in the inspection and regulation of food safety.	<p>The designated lead provincial ministry for planning and response before, during and after an emergency for:</p> <ul style="list-style-type: none">❑ Diseases and epidemics as specified below:<ul style="list-style-type: none">❑ Animal diseases❑ Plant diseases❑ Pest infestations	
	HEMBC North	<p>Health Emergency Management BC (HEMBC) is a program under the Provincial Health Services Authority (PHSA). HEMBC provides the expertise, education, tools, and support specifically for the BC Health Sector to effectively mitigate, prepare for, respond to, and recover from the impacts of emergency events; ensuring the continuity of health services. There is a HEMBC team in each BC health authority. HEMBC-North deals specifically with Northern Health.</p> <ul style="list-style-type: none">❑ Maintain a 24-hour emergency/on call contact number for notification and activation of the health system in Northern BC.	<ul style="list-style-type: none">❑ For emergency events that require immediate connection with Northern Health, please call HEMBC on call (24/7) - 855-554-3622. HEMBC will notify / activate the appropriate Northern Health programs (ie. Public Health, Acute Care etc.) based on the nature of the event / emergency. Please include this number in industry ERPs for the use of permit holders in contacting Northern Health on an emergency basis.❑ Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the incident/emergency event.	

	Before the Incident	During the Incident	After the Incident
*ECCC	<p>Environment & Climate Change Canada’s Environmental Emergencies Program (EEP) protects Canadians and their environment from the effects of environmental emergencies through provision of <u>science-based expert advice</u> and <u>regulations</u>. The key Acts and Regulations that govern ECCC’s role in environmental emergencies that allow it to deliver its mandate are:</p> <ul style="list-style-type: none"> <input type="checkbox"/> <i>Canadian Environmental Protection Act, 1999</i> <input type="checkbox"/> <i>Fisheries Act—Pollution Prevention Provisions;</i> <input type="checkbox"/> <i>Migratory Birds Convention Act, 1994;</i> <input type="checkbox"/> <i>Statutory Notification Requirements—EC’s Environmental Notification System.</i> <input type="checkbox"/> <i>Environmental Emergencies Regulations.</i> 	<p>During an environmental emergency, <i>The National Environmental Emergencies Centre (NEEC)</i> is the focal point for ECCC.</p> <p>ECCC’s services during an environmental emergency:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Collaborate with federal, provincial, territorial and international environmental protection agencies to enable rapid sharing of information. <input type="checkbox"/> Convene and chair a Science Table of experts and stakeholders to develop consensus based advice to the Lead Agency. <input type="checkbox"/> Identify environmentally sensitive areas and priorities (sensitivity and resource at risk mapping). <input type="checkbox"/> Advise on mitigation and cleanup measures. <input type="checkbox"/> Provide support and guidance in the assessment of oiled shorelines to prioritize their protection and cleanup (Shoreline Cleanup Assessment Technique (SCAT)). <input type="checkbox"/> Advice on the fate and behavior of the spilled product. <input type="checkbox"/> Advice on sampling and laboratory analysis. <input type="checkbox"/> Provide weather forecasting and spill dispersion modelling to identify where these substances are likely to move in the environment. <input type="checkbox"/> Provided expertise on the migratory bird resources and species at risk, including on-site assessment and determination of wildlife impact. <input type="checkbox"/> Can conduct post-emergency assessments. 	<ul style="list-style-type: none"> <input type="checkbox"/> ECCC can conduct post-emergency assessments. <input type="checkbox"/> Provide specialized advice in shoreline clean-up assessment techniques (SCAT). <input type="checkbox"/> Provide Advise on mitigation and cleanup measures..
*DFO	<p>The Canadian Coast Guard is the lead federal agency for ensuring appropriate response to all ship-source and unknown mystery spills in Canadian waters and waters under international agreements.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Establishes appropriate and nationally consistent level of preparedness and response services in Canadian waters. <input type="checkbox"/> Design and develop related regulations, policies, strategies and tools. <input type="checkbox"/> Review, assess and monitor activities associated with fish habitat to ensure their compliance with the Fisheries Act and Species at Risk Act. <input type="checkbox"/> Conduct environmental assessments under the Canadian Environmental Assessment Act. <input type="checkbox"/> Design, develop and implement communication and education strategies. 	<ul style="list-style-type: none"> <input type="checkbox"/> Any amount of hydrocarbons entering a waterway frequented by fish or occupied by waterfowl is deemed to be in contravention of the Federal Fisheries Act and must be reported to the Department of Fisheries and Oceans. <input type="checkbox"/> Work together with provincial environment protection agencies and may be initially notified by ECCC. <input type="checkbox"/> May send personnel to the site if there has been or could potentially be an impact to fish or fish habitat. <input type="checkbox"/> Monitors and investigates all reports of marine pollution in Canada in conjunction with other federal departments. <input type="checkbox"/> Maintains communications with the program’s partners, including Transport Canada and ECCC, to ensure a consistent coordinated approach to marine pollution incident response. <input type="checkbox"/> Aids in search and rescue operations. 	<ul style="list-style-type: none"> <input type="checkbox"/> Work closely with ECCC, The Canadian Coast Guard and other provincial environmental agencies.
NAV Canada	<p>NAV Canada is a private company who coordinates the safe and efficient movement of aircraft in Canadian domestic airspace and international airspace assigned to Canadian control.</p> <p>Flight Information Centre (FIC) – FIC Services</p> <p>Each Flight Information Centre is responsible for providing its particular service area with the following services, which pilots rely upon for safe flight planning and operations:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Emergency <input type="checkbox"/> Aviation Weather Briefing <input type="checkbox"/> Flight Planning <input type="checkbox"/> En-route Flight Information Services <input type="checkbox"/> Remote Aerodrome Advisory Services (RAAS) 	<ul style="list-style-type: none"> <input type="checkbox"/> As requested by the oil and gas company, the Flight Information Centre will issue a NOTAM (Notice to Airmen). <input type="checkbox"/> To close air space beyond an airport (e.g. above a sour gas release), Refer to Transport Canada on back side of this page. 	<ul style="list-style-type: none"> <input type="checkbox"/> Rescind the NOTAM.
Health Canada	<ul style="list-style-type: none"> <input type="checkbox"/> Sets national standards to keep the environment healthy, keep water and air pollution low and Canadians safe. <input type="checkbox"/> Maintains a nationwide network of radiation monitoring stations and can act if levels spike. <input type="checkbox"/> Under Chemicals Management Plan, assess health risks from chemicals used in manufacturing and agriculture and require users to prove they actually need the chemicals to make their products <input type="checkbox"/> Sets strict rules on how chemicals are used in order to limit human exposure. <input type="checkbox"/> Preparedness exercises are designed to test how well the plans and procedures work during simulated emergency situations. Such exercises help the government identify strengths as well as any problems or inadequacies in preparedness plans and procedures so that these can be addressed before, not after, an actual emergency. 	<ul style="list-style-type: none"> <input type="checkbox"/> During a health emergency or disaster, Health Canada and the Public Health Agency of Canada are responsible for supporting emergency health and social services in the provinces and territories. 	<ul style="list-style-type: none"> <input type="checkbox"/> Work collaboratively with the provinces and territories to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.
Public Health Agency of Canada	<p>The Centre for Emergency Preparedness and Response (CEPR) is responsible for:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Developing and maintaining national emergency response plans for the Public Health Agency of Canada and Health Canada. <input type="checkbox"/> Assessing public health risks during emergencies. <input type="checkbox"/> Contribution to keeping Canada’s health and emergency policies in line by collaborating with other federal and international health and security agencies. <input type="checkbox"/> The health authority in the Government of Canada on bioterrorism, emergency health services and emergency response. <input type="checkbox"/> Strengthen intergovernmental collaboration on public health and facilitate national approaches to public health policy and planning. <input type="checkbox"/> Manages emergency preparedness and emergency response plans and keeps them up to date. <input type="checkbox"/> Develops and runs exercises to train emergency workers. <input type="checkbox"/> Develops and delivers training courses that teach health workers how to respond to emergencies. 	<ul style="list-style-type: none"> <input type="checkbox"/> In an emergency situation, the Office of Emergency Response Services (OERS) is responsible for supporting emergency health and social services in the provinces, territories or abroad. It manages the National Emergency Stockpile System (NESS), which includes medical, pharmaceutical and related emergency supplies. The Office is responsible for the federal response to emergencies that have health repercussions; this includes the deployment of health emergency response teams (HERT). <input type="checkbox"/> If a public health emergency grows beyond one province and/or territory, the Public Health Agency of Canada usually gets involved. 	<ul style="list-style-type: none"> <input type="checkbox"/> Work with Health Canada to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.

*ECCC - Environment & Climate Change Canada

*DFO – Canadian Department of Fisheries & Oceans

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Section 6: Forms

Documentation During and After an Incident

Form Descriptions

Incident Command System (ICS) Forms

- ICS 201 Incident Briefing
- ICS 202 Incident Objectives
- ICS 203 Organization Assignment List
- ICS 204 Assignment List
- ICS 207 Incident Organization Chart
- ICS 208 Safety Message / Plan
- ICS 209 Incident Status Summary
- ICS 211 Check-In / Out List
- ICS 214 Activity Log
- ICS 215 Operational Planning Worksheet
- ICS 215A IAP Safety Analysis
- ICS 221 Demobilization Checkout
- ICS 230 Meeting Schedule
- ICS 231 Meeting Summary
- ICS 233 Incident Open Action Tracker

Emergency Forms

- A1 Initial Emergency Report Form
- A2 Odour Complaint Script
- A3 Regulatory First Call Communication
- A4 Incident Action Plan Checklist
- A5 Air Monitoring Log
- A6 Threatening Call / Bomb Threat
- A7 STARS Landing Zone Card

Resident Forms

- B1 Reception Centre Registration Log
- B2 Resident Compensation Log
- B3 Resident Contact Log
- B4 Roadblock Log
- B5 Evacuation Notice
- B6 Early Notification / Voluntary Evacuation Phone Message
- B7 Shelter-In-Place Phone Message
- B8 Evacuation Phone Message

Media Forms

- C1 Preliminary Media Statement
- C2 Media Contact Log
- C3 Government Agency Contact Log
- C4 Media Centre Site

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Documentation During and After an Incident

It is imperative that accurate documentation is kept throughout the duration of an incident for record keeping purposes. Records kept may be used for legal, investigation, audits, historical and/or analytical purposes. All documentation must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.

It is the Documentation Units responsibility to collect documentation (forms, checklists, event logs, etc.) from response team members and maintain a consistent system for organizing the data.

Form Descriptions

The Incident Command System uses a series of standard forms and supporting documents that convey directions for the accomplishment of the objectives and distributing information. Listed below are the standard ICS form titles and descriptions of each form utilized.

Further ICS forms can be found through the ICS Canada website: <http://www.icscanada.ca/en/forms.html>.

Standard ICS Form Title	ICS Form Description
ICS 201 Incident Briefing	Provides the Incident Command and General Staffs with basic information regarding the incident situation and the resources allocated to the incident. This form also serves as a permanent record of the initial response to the incident.
ICS 202 Incident Objectives	Describes the basic strategy and objectives for use during each operational period.
ICS 203 Organization Assignment List	Provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position.
ICS 204 Assignment List	Informs Division and Group supervisors of incident assignments.
ICS 207 Incident Organization Chart	A complete picture of the organizational structure for the incident.
ICS 208 Safety Message / Plan	Expands on the Safety Message and Site Safety Plan.
ICS 209 Incident Status Summary	Summarizes incident information for staff members and external parties, and provides information to the Public Information Officer for preparation of media releases.
ICS 211 Check-In/Out List	Used to check in personnel and equipment arriving at or departing from the incident. Check-in / out consists of reporting specific information that is recorded on the form.
ICS 214 Activity Log	Provides a record of unit activities. Unit Logs can provide a basic reference from which to extract information for inclusion in any after-action report.
ICS 215 Operational Planning Worksheet	Documents decisions made concerning resource needs for the next operational period. The Planning Section uses this Worksheet to complete Assignment Lists, and the Logistics Section uses it for ordering resources for the incident. This form may be used as a source document for updating resource confirmation on other ICS forms such as the 209 Incident Status Summary.
ICS 215A Incident Action Plan Safety Analysis	Used to communicate to the Operations and Planning Section Chiefs the potential hazards identified by the Safety Officer. It identifies mitigation measures to address the identified hazards.

Form Descriptions, continued

Standard ICS Form Title	ICS Form Description
ICS 221 Demobilization Checkout	Ensures that resources checking out of the incident have completed all appropriate incident business, and provides the Planning Section information on resources released from the incident.
ICS 230 Meeting Schedule	To record information about the daily scheduled meeting activities.
ICS 231 Meeting Summary	Provides more detailed information concerning the attendees and notes from a particular meeting.
ICS 233 Incident Open Action Tracker	Used by Command Staff to track time sensitive tasks / actions assigned to incident personnel.

Emergency Form Title	Emergency Form Description
A1 Initial Emergency Report Form	Used by recipient of a phone call from either a member of the public or other company personnel to record detailed information about incident.
A2 Odour Complaint Script	Used to record odour information from a member of the public as well as scripts to follow.
A3 Regulatory First Call Communication	A regulatory required form used to send detailed information to the regulator about an emergency used for assessment, historical, and analytical purposes following an incident.
A4 Incident Action Plan Checklist	A checklist of other forms and information required to accurately create an incident action plan.
A5 Air Monitoring Log	A form used by designated Air Monitor personnel to log information about air quality readings.
A6 Threatening Call / Bomb Threat	Detailed point driven form used to document incoming phone calls pertaining to personnel threats and bomb threats.
A7 Stars Landing Zone Card	An information card utilized if medical evacuation is required via STARS Air Ambulance.

Resident Form Title	Resident Form Description
B1 Reception Centre Registration Log	Log used by Reception Centre Rep to record information from evacuees being received at the reception centre. Can also be faxed to reception centre in case a representative has not been identified or cannot make it before evacuees start arriving.
B2 Resident Compensation Log	Detailed spreadsheet for expenses incurred by evacuees so that compensation may be properly dealt with.
B3 Resident Contact Log	A log used by various company personnel to record contact made with residents, whether they're sheltered / evacuated and if assistance is required.
B4 Roadblock Log	A log used by designated Roadblock personnel to identify details about vehicles and persons entering or exiting a hazard area.
B5 Evacuation Notice	A document to be left in doors / windows of surface developments that are unable to be contacted as a way to issue evacuation instructions

Form Descriptions, continued

Resident Form Title	Resident Form Description
B6 Early Notification/Voluntary Evacuation Message	A script and document filled out by Telephoner personnel issuing calls to residents for early notification and voluntary evacuation purposes.
B7 Shelter-In-Place Message	A script and document filled out by Telephoner personnel issuing calls to residents with shelter-in-place instructions.
B8 Evacuation Phone Message	A script and document filled out by Telephoner personnel issuing calls to residents with evacuation instructions.

Media Form Title	Media Form Description
C1 Preliminary Media Statement	A generic script used by the Media Spokesperson to issue media statements until which time more detailed information is known and can be issued.
C2 Media Contact Log	A log used to identify what media outlets/persons have contacted the company and their contact information.
C3 Government Agency Contact Log	A log used to identify what government agencies have been notified about the incident.
C4 Media Centre Site	A document to distribute to media outlets/persons about the location for further media enquiries and press releases as well as details to get there.

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Current and Planned Objectives:	
Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property	
1. Ensure Safety of Citizens and Response Personnel:	4. Minimize Economic Impacts:
<input type="checkbox"/> 1a. Identify hazard(s) of released product.	<input type="checkbox"/> 4a. Consider tourism and local economic impacts.
<input type="checkbox"/> 1b. Establish site control (hot zone, warm zone, cold zone, & security).	<input type="checkbox"/> 4b. Protect public and private assets, as resources permit.
<input type="checkbox"/> 1c. Establish an Emergency Response Zone and Initiate Public Safety Actions.	<input type="checkbox"/> 4c. Establish damage claims process.
<input type="checkbox"/> 1d. Consider evacuations if needed.	5. Keep Stakeholders and Public Informed of Response Activities:
<input type="checkbox"/> 1e. Establish aircraft restrictions.	<input type="checkbox"/> 5a. Provide forum to obtain stakeholder input and concerns.
<input type="checkbox"/> 1f. Monitor air in impacted areas	<input type="checkbox"/> 5b. Provide stakeholders with details of response actions.
<input type="checkbox"/> 1g. Develop site safety plan for personnel and ensure safety briefings are conducted.	<input type="checkbox"/> 5c. Identify stakeholder concerns and issues, and address as practical.
2. Control the Source of the Release:	<input type="checkbox"/> 5d. Provide timely safety announcements.
<input type="checkbox"/> 2a. Complete emergency shutdown.	<input type="checkbox"/> 5e. Conduct regular news briefings.
<input type="checkbox"/> 2b. Conduct firefighting.	<input type="checkbox"/> 5f. Conduct public meetings, as appropriate.
<input type="checkbox"/> 2c. Initiate temporary repairs.	
3. Manage a Coordinated Response Effort:	
<input type="checkbox"/> 3a. Complete or confirm notifications.	
<input type="checkbox"/> 3b. Establish a unified command organization and facilities (command post, etc.).	
<input type="checkbox"/> 3c. Ensure mobilization and tracking of resources and account for personnel and equipment.	
<input type="checkbox"/> 3d. Complete documentation.	
Current and Planned Actions, Strategies and Tactics:	
Time:	Actions:
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	

Current Organizational Structure: (draw in current response structure)*

*** This is a condensed Organizational Chart to account for all currently responding personnel during the Initial Response.**

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graph TD
    IC[Incident Commander] --- IO[Information Officer]
    IC --- LO[Liaison Officer]
    IC --- SO[Safety Officer]
    IC --- OSGS[On-Site Group Supervisor]
    IC --- PSGS[Public Safety Group Supervisor]
    IC --- DOC[Documentation]
    OSGS --- SS[SITE SAFETY]
    OSGS --- C[Control]
    OSGS --- CO[Containment]
    OSGS --- O1[Other]
    OSGS --- O2[Other]
    OSGS --- O3[Other]
    PSGS --- AM[Air Monitors]
    PSGS --- RB[Roadblocks]
    PSGS --- R[Rovers]
    PSGS --- T[Telephoners]
    PSGS --- RCR[Reception Centre Representative]
    PSGS --- O4[Other]
  
```

Incident Commander
Name _____
Number _____

Information Officer
Name _____
Number _____

Liaison Officer
Name _____
Number _____

Safety Officer
Name _____
Number _____

On-Site Group Supervisor
Name _____
Number _____

Public Safety Group Supervisor
Name _____
Number _____

Documentation
Name _____
Number _____

SITE SAFETY
Name _____
Number _____

Control
Name _____
Number _____

Containment
Name _____
Number _____

Other
Name _____
Number _____

Other
Name _____
Number _____

Other
Name _____
Number _____

Air Monitors
Name _____
Number _____

Roadblocks
Name _____
Number _____

Rovers
Name _____
Number _____

Telephoners
Name _____
Number _____

Reception Centre Representative
Name _____
Number _____

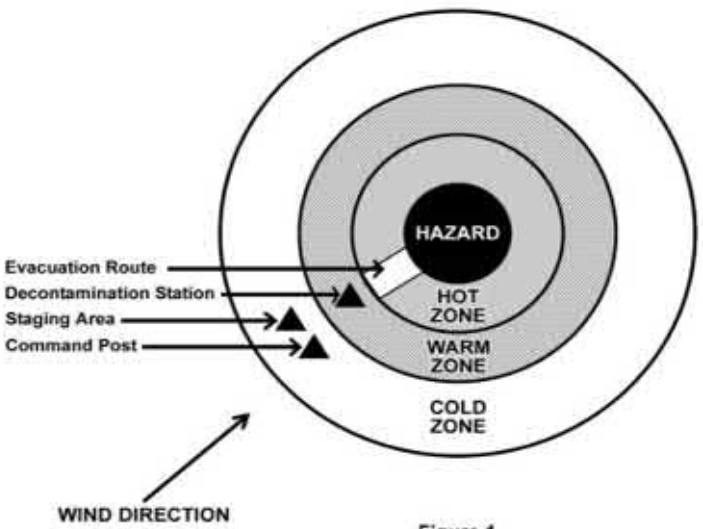
Other
Name _____
Number _____

Note: Refer to ICS 207 Incident Organization Chart in Section 6: Forms (Blue Tab) for full command structure.

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Site Safety and Hazard Control Analysis	
Site Control	
1. Is Site Control set-up? <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Is there an On-Scene Command Post? <input type="checkbox"/> Yes <input type="checkbox"/> No If so, where?
3. Have all personnel been accounted for? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	Injuries: _____ Unaccounted: _____ Fatalities: _____ Trapped: _____
4. Are observers involved or rescue attempts planned? Observers: <input type="checkbox"/> Yes <input type="checkbox"/> No Rescuers: <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Are Decon areas setup? <input type="checkbox"/> Yes <input type="checkbox"/> No If so, where?
Hazard Identification, immediate signs of: (if yes, explain in remarks)	
1. Electrical line(s) down or overhead? <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Unidentified liquid or solid products visible? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Wind direction across incident: <input type="checkbox"/> Towards your position Wind Speed: <input type="checkbox"/> Away from your position	4. Is a safe approach possible? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Odours or smells? <input type="checkbox"/> Yes <input type="checkbox"/> No	6. Vapours visible? <input type="checkbox"/> Yes <input type="checkbox"/> No
7. Holes, ditches, fast water, cliffs, etc. nearby? <input type="checkbox"/> Yes <input type="checkbox"/> No	8. Fire, sparks, sources of ignition nearby? <input type="checkbox"/> Yes <input type="checkbox"/> No
9. Is local traffic a potential problem? <input type="checkbox"/> Yes <input type="checkbox"/> No	10. Product placards, colour codes visible? <input type="checkbox"/> Yes <input type="checkbox"/> No
11. Other Hazards? <input type="checkbox"/> Yes <input type="checkbox"/> No	12. As you approach the scene from the upwind side, do you note a change in the status of any of the above? <input type="checkbox"/> Yes <input type="checkbox"/> No
13. Remarks:	
Hazard Mitigation: have you determined the necessity for any of the following?	
1. Entry Objectives:	
2. Warning sign(s), barriers, colour codes in place? <input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Hazardous material being monitored? <input type="checkbox"/> Yes <input type="checkbox"/> No 3a. Sampling equipment: 3b. Sampling location(s): 3c. Sampling frequency: 3d. Peak reading: 3e. Personal exposure monitoring:	
4. Protective gear / level: 4b. Respirators 4d. Boots:	4a. Gloves: 4c. Clothing: 4e. Chemical cartridge change frequency:
5. Decon 5a. Instructions: 5b. Decon equipment and materials:	
6. Emergency escape route established? <input type="checkbox"/> Yes <input type="checkbox"/> No Route?	
7. Field responders briefed on hazards? <input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Remarks:	
Protective Zones: record initial control perimeters (see Figure 1)	

 <p>Figure 1 Protective Zones</p>	<p>1. Is there a Hot Zone established?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If so, Where?</p>
	<p>2. Is there a Warm Zone established?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If so, Where?</p>
	<p>3. Is there a Cold Zone established?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If so, Where?</p>
	<p>4. Remarks: (Include any information on evacuation route, etc.)</p>
<p>5. Include any site sketches or photos of the protective zones (if available):</p>	

ICS 202 Incident Objectives

Incident Name:	
Date / Time Initiated:	
Prepared by:	ICS Position:
General Control Objectives for the Incident:	
1	
2	
3	
4	
5	
Weather Forecast:	
General Safety Message:	
<i>Note: Create and prioritize SMART (Specific, Measureable, Attainable, Realistic, & Time-Sensitive) objectives that address the incident issues and utilize the solutions identified on the Operations Briefing page.</i>	

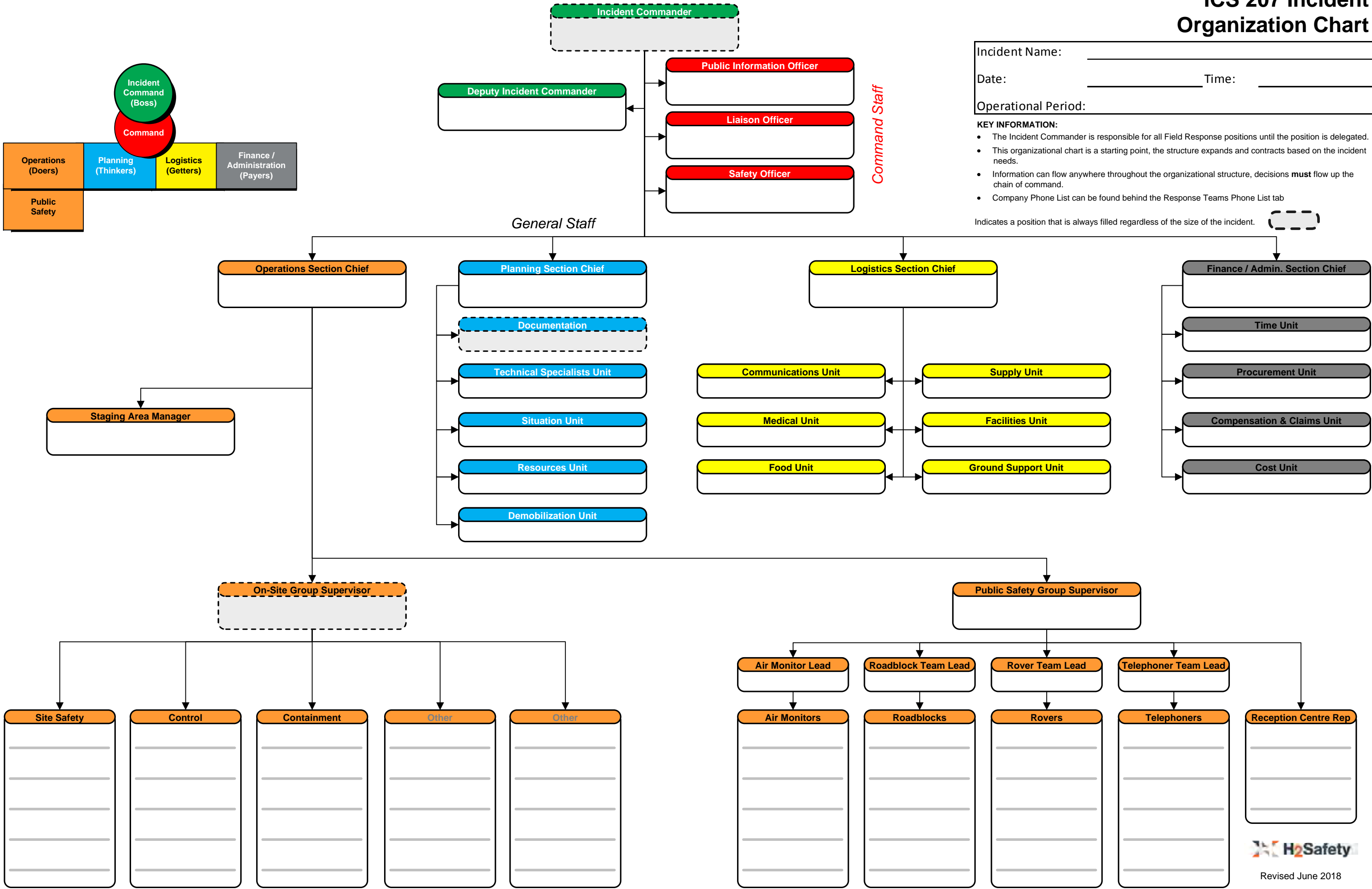
ICS 203 Organization Assignment List

Incident Name			Operational Period (Date/Time)	
			From:	To:
Incident Commander(s)			Operations Section	
Agency	IC	Deputy	Chief	
			Deputy	
			Staging Area Manager	
			On-Site Group	
			Supervisor	
Safety Officer			Lead	
Assistant			Lead	
Information Officer			Lead	
Assistant			Lead	
Liaison Officer			Lead	
Assistant				
			Public Safety Group	
			Supervisor	
Agency Representatives			Lead	
Agency	Name		Lead	
			Lead	
			Lead	
			Lead	
			Lead	
			Branch – Division / Group	
			Branch Director	
			Deputy	
Planning Section			Division/Group	Lead
Chief			Division/Group	Lead
Deputy			Division/Group	Lead
Resources Unit			Division/Group	Lead
Situation Unit			Division/Group	Lead
Environmental Unit				
Documentation Unit			Branch – Division / Group	
Demobilization Unit			Branch Director	
Technical Specialists			Deputy	
			Division/Group	Lead
			Division/Group	Lead
Logistics Section			Division/Group	Lead
Chief			Division/Group	Lead
Deputy			Division/Group	Lead
Supply Unit				
Facilities Unit			Finance / Admin Section	
Ground Support Unit			Chief	
Communications Unit			Deputy	
Medical Unit			Time Unit	
Food Unit			Procurement Unit	
			Compensation / Claims Unit	
			Cost Unit	
Prepared By: (Resources Unit)			Date/Time	

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Section 6: Forms

ICS 207 Incident Organization Chart



ICS 208 Safety Message / Plan



Incident Name:	Operational Period: From: Date _____ Time _____ To: Date _____ Time _____	
Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:		
Site Safety Plan Required? <input type="checkbox"/> Yes <input type="checkbox"/> No Approved Site Safety Plan(s) Located At:		
Prepared By: (Name and Position)	Date Prepared:	
Signature:	Time Prepared:	

ICS 209 Incident Status Summary



Incident Name:		Location of Incident:	
Date / Time Initiated:		(LSD / NTS)	
Prepared by:		ICS Position	
Incident Details:			
Gas readings:	H ₂ S	SO ₂	LEL
Level of Emergency:			
Incident Severity:		<input type="checkbox"/> Alert / Minor	<input type="checkbox"/> Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 3
Affect Medium: (Check all that apply)			
<input type="checkbox"/> Air	<input type="checkbox"/> Water	<input type="checkbox"/> Soil	<input type="checkbox"/> Other – Specify:
Site Type: (Select only 1)			
<input type="checkbox"/> Well (Active)		<input type="checkbox"/> Well (Abandoned/Suspended)	<input type="checkbox"/> Remote Sump
<input type="checkbox"/> Well (Drilling & Completions): Rig Name:			
<input type="checkbox"/> Battery/Plant/Facility		<input type="checkbox"/> Tank Farm/Storage	<input type="checkbox"/> Pipeline
<input type="checkbox"/> Riser (Pipeline)			
<input type="checkbox"/> Road or Road Structure		Name:	Location on Road:
<input type="checkbox"/> Other – Specify:			
Incident Type: (Check all that apply)			
<input type="checkbox"/> Sour Gas Release	<input type="checkbox"/> Sweet Gas Release	<input type="checkbox"/> Liquid Spills	
<input type="checkbox"/> Natural Disaster/Weather	<input type="checkbox"/> Fire/Explosion	<input type="checkbox"/> Drilling Kick	
<input type="checkbox"/> Worker Injury/Fatality	<input type="checkbox"/> Security (theft, threat, terrorism)	<input type="checkbox"/> Induced Seismicity	
<input type="checkbox"/> Well Bore Communication	<input type="checkbox"/> Pipeline Boring	<input type="checkbox"/> Vehicle/Transportation	
<input type="checkbox"/> Equipment/Structural Damage	<input type="checkbox"/> Pipeline Break	<input type="checkbox"/> Well Control	
<input type="checkbox"/> Other – Specify:			
Activity: (Check all that apply)			
<input type="checkbox"/> Construction (Road, Lease, Pipe)	<input type="checkbox"/> Drilling/Exploration	<input type="checkbox"/> Waste Management	
<input type="checkbox"/> Processing	<input type="checkbox"/> Well Fracturing	<input type="checkbox"/> Servicing	
<input type="checkbox"/> Repair	<input type="checkbox"/> Flaring (Emergency)	<input type="checkbox"/> Well Testing	
<input type="checkbox"/> Pressure Testing	<input type="checkbox"/> Transportation		
<input type="checkbox"/> Other – Specify:			

ICS 209 Incident Status Summary



Consequence or Impacts: (Check all that apply, if none, leave blank)			
<input type="checkbox"/> Worker Safety (Injuries, Fatalities)		<input type="checkbox"/> Property	
<input type="checkbox"/> Economic (Loss of and/or damage to equipment or infrastructure, loss of production, work stoppage)			
<input type="checkbox"/> Other – Specify:			
Material Information:			
Is spill off lease?		<input type="checkbox"/> Yes - Estimated spill quantity: <input type="text"/> <input type="checkbox"/> No	
<input type="checkbox"/> Liquid Hydrogen (Crude, Oil, Diesel, Fuel)		<input type="checkbox"/> Toxic Gas Liquid (>1% Different Toxins)	
<input type="checkbox"/> Acid	<input type="checkbox"/> Emulsion (Oil, Gas, Water)	<input type="checkbox"/> Sweet Natural Gas	<input type="checkbox"/> Salt Water
<input type="checkbox"/> Methanol	<input type="checkbox"/> Non-Toxic Liquids	<input type="checkbox"/> Fresh Water	
<input type="checkbox"/> Sour Natural Gas	<input type="checkbox"/> Sour Liquids (<1% H ₂ S)	<input type="checkbox"/> Other – Specify:	
<input type="checkbox"/> Non-Toxic Gases (Nitrogen, Carbon Dioxide, Inert Gases)			
Area Information:			
Land Type:		Field Name:	
<input type="checkbox"/> Private Land <input type="checkbox"/> Crown Land			
Area Type: <input type="checkbox"/> Forest <input type="checkbox"/> Muskeg <input type="checkbox"/> Farmland <input type="checkbox"/> Residential <input type="checkbox"/> Other			
Access: <input type="checkbox"/> Helicopter <input type="checkbox"/> ATV <input type="checkbox"/> 4WD <input type="checkbox"/> 2WD <input type="checkbox"/> Unknown			
Name of road the asset is located on:			
KM where the incident occurred:			
Distance to nearest residence/public facility:			
Nearest City/Town/Open Camp:			
Weather Conditions:			
Weather Conditions <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Other:			
Wind Direction N NE NW E SE S SW W			
Wind Strength <input type="checkbox"/> Calm <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Gusty			
Temperature °C			
Public / Worker Injuries / Medical Emergencies:			
<input type="checkbox"/> First Aid	<input type="checkbox"/> Hospitalization	<input type="checkbox"/> Fatality	<input type="checkbox"/> Other – Specify:
Notification: (Notify all agencies as required)			
<input type="checkbox"/> 911 (Police/RCMP, Fire, EMS)	<input type="checkbox"/> Energy Regulator (BCER, AER*, etc.)	<input type="checkbox"/> Local Authority (MD, County, Town, City)	<input type="checkbox"/> Health Authority
<input type="checkbox"/> Canada Energy Regulator (CER)	<input type="checkbox"/> Occupational Health & Safety (OH&S)	<input type="checkbox"/> Emergency Management Agency	<input type="checkbox"/> Ministry of Transportation
<input type="checkbox"/> Workers' Compensation Board (WCB)	<input type="checkbox"/> Emergency Response Assistance Canada (ERAC)	<input type="checkbox"/> Western Canadian Spill Services (WCSS)	<input type="checkbox"/> CANUTEC
<input type="checkbox"/> Transportation Dangerous Goods (TDG)	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
*Request that the AER notify Alberta Environment & Parks (Forestry/Fish/Wildlife/Lands), Environment & Climate Change Canada (ECCC) and the Department of Fisheries and Oceans as required.			
Refer to the Government Notification Matrix and External Agencies Contact List or Area Specific Information for complete list of agencies requiring contact.			

Agency Notification			
Agency Name	Contact Name	Contact Number	Notified (Y/N)

Collect all completed C3 Government Agency Contact Logs from responders for full documentation.

Notes:

Roadblock Locations:

Roadblock Number	Name	Location/LSD

Collect all completed B4 Roadblock Logs from responders for full documentation.

Notes:

Air Monitor Locations:		
Air Monitor Number	Name	Location/LSD

Collect all completed A5 Air Monitoring Logs from responders for full documentation.

Notes:

Reception Centres		
Name	Location	Phone Number

Collect all completed B1 Reception Centre Registration Logs from responders for full documentation.

Notes:

ICS 211 Check-In / Out List



Incident Name:							
Date / Time Initiated:							
Prepared by:				ICS Position:			
Check-in Location <input type="checkbox"/> Staging Area <input type="checkbox"/> ICS Res. Unit <input type="checkbox"/> Other:							
Name of Company	Date of Check-in	Supervisor Name	Total # of Personnel	Incident Assignment	Assigned	Available	Date of Check-out
Notes:							

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Section 6: Forms

ICS 215 Operational Planning Worksheet

Incident Name:								Operational Period:											
								To: Date_____ Time_____				To: Date_____ Time_____							
Branch	Division, Group, or Other	Work Assignments & Special Instructions	Resources													Overhead Position(s)	Special Equipment & Supplies	Reporting Location	Requested Arrival Time
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
		Total Resources Required:															Prepared by: Name: Position/Title: Date/Time: Signature:		
		Total Resources - Have on Hand:																	
		Total Resources Need to Order:																	

ICS 215a Incident Action Plan Safety Analysis



Incident Name:							Date / Time Initiated:			
Prepared by:							ICS Position:			
Division or Group	Potential Hazards									Controls (e.g., PPE, buddy system, escape routes)
	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	Type of Hazard	

ICS 221 Demobilization Checkout



Incident Name / Number:		Date / Time:		Demob. Number:	
Unit/Personnel Released:					
Transportation Type / Number:					
Actual Release Date / Time:				Manifest Completed? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Destination:		Notify:	<input type="checkbox"/> HQ	<input type="checkbox"/> Agency	<input type="checkbox"/> Region
		Name:			
		Date:			
Unit Leader responsible for collecting performance rating					
Unit / Personnel					
<p>You and your resources have been released subject to Sign-Off from the following:</p> <p>Demobilization Unit Leader – Check the appropriate box</p>					
Logistics Section					
<input type="checkbox"/> Supply Unit					
<input type="checkbox"/> Communications Unit					
<input type="checkbox"/> Facilities Unit					
<input type="checkbox"/> Ground Support Unit Leader					
Planning Section					
<input type="checkbox"/> Demobilization Unit					
Finance/Admin Section					
<input type="checkbox"/> Time Unit					
Other					
<input type="checkbox"/>					
<input type="checkbox"/>					
Remarks:					
Page		of		Prepared By: (Name and Position)	Signature:

ICS 230 Meeting Schedule

Incident Name:		Operational Period: From: Date_____ Time_____		
Meeting Schedule (Commonly-held meetings are included)				
Date / Time	Meeting Name	Purpose	Attendees	Location
Prepared by: (Situation Unit Leader)		Date / Time:		

ICS 231 Meeting Summary



Incident Name:	Meeting Date / Time:
Meeting Name:	
Meeting Location:	
Meeting Facilitator:	
Attendees:	
Notes: (with summary of decisions and action items)	
Prepared by:	Date / Time:

ICS 233 Incident Open Action Tracker



Incident Name:							
No.	Item	For	Status	Start Date	Briefed	Target Date	Actual Date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ICS 233 Incident Open Action Tracker



No.	Item	For	Status	Start Date	Briefed	Target Date	Actual Date
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

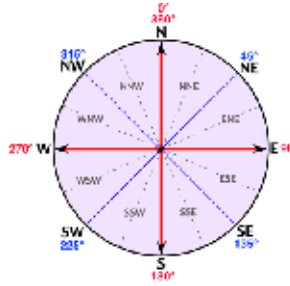
A1 Initial Emergency Report Form

First On-Scene Actions

Evacuate	<input type="checkbox"/> Get to a safe area immediately. <input type="checkbox"/> Move upwind if release is downwind of you. <input type="checkbox"/> Move crosswind if a release is upwind from you. <input type="checkbox"/> Move to higher ground if possible.
Alarm	<input type="checkbox"/> Call for help ("Man Down"). <input type="checkbox"/> Sound bell, horn or whistle, or call by radio. <input type="checkbox"/> For medical emergencies, call 911.
Assess	<input type="checkbox"/> Take head count, locate any casualties. Consider all of the hazards. <input type="checkbox"/> Fill out information below to complete assessment.
Protect	<input type="checkbox"/> Put on breathing apparatus before attempting rescue.
Rescue	<input type="checkbox"/> Remove victim to a safe area.
First Aid	<input type="checkbox"/> Follow the standard first aid protocols at worksite. (CPR, etc.)
Medical Aid	<input type="checkbox"/> Arrange transport of casualties to medical aid. <input type="checkbox"/> Provide information to Emergency Medical Services (EMS).

Incident Details <i>To be completed by the person involved or notified</i>	
Report taken by	Date / Time
Name of person calling	Caller Telephone
Incident Location (LSD / NTS)	
Event Summary	
Agencies Notified <input type="checkbox"/> Yes Who? <input type="checkbox"/> No	
Event Status <input type="checkbox"/> Incident contained or controlled <input type="checkbox"/> Intermittent control possible <input type="checkbox"/> Imminent control possible <input type="checkbox"/> Incident is uncontrolled	
Site Type <input type="checkbox"/> Well <input type="checkbox"/> Pipeline <input type="checkbox"/> Tank Farm/Storage <input type="checkbox"/> Battery/Plant/Facility <input type="checkbox"/> Other_____	
Incident Type <input type="checkbox"/> Sour Gas Release <input type="checkbox"/> Sweet Gas Release <input type="checkbox"/> Pipeline Break <input type="checkbox"/> Security (theft, threat, terrorism) <input type="checkbox"/> Loss of Containment <input type="checkbox"/> Fire/Explosion <input type="checkbox"/> Worker Injury/Fatality <input type="checkbox"/> Vehicle/Transportation <input type="checkbox"/> Liquid Spill <input type="checkbox"/> Other_____	

A1 Initial Emergency Report Form

Impacts			
Public Health and Safety		<input type="checkbox"/> Could be jeopardized <input type="checkbox"/> Is jeopardized	
Public Protection Measures Taken		<input type="checkbox"/> Notification <input type="checkbox"/> Evacuation <input type="checkbox"/> Shelter-in-place <input type="checkbox"/> Roadblocks	
Worker Injuries		<input type="checkbox"/> First Aid <input type="checkbox"/> Hospitalized <input type="checkbox"/> Fatality <input type="checkbox"/> Other _____	
Distance to nearest surface development		_____ km	Distance to nearest urban centre _____ km
Details			
Release Impact		<input type="checkbox"/> On-Lease <input type="checkbox"/> Off-Lease Product _____ Amount _____	
Gas Readings		H ₂ S _____ SO ₂ _____ LEL _____ Other _____	
Distance to nearest watercourse		_____ km	Weather Conditions 
Details			
Media Involvement?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Regulator Involvement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Public Affairs/Community Relations Issues?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Details			
Notes / Instructions Provided:			

Distribute this completed report to all Key Response Personnel

Note: Ensure the First On-Scene Actions have been completed before proceeding to the Five Step Initial Response Guide.

A2 Odour Complaint Script

Date:	Prepared by:
Time: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Duration of call:

To help us understand your immediate needs, we need to know:

<i>Name:</i> _____
<i>Contact number:</i> _____
<i>Description of the concern:</i> _____

How many people are you with right now?
<i>Adults</i> _____ <i>Children</i> _____
Can you provide the location of the incident?
<i>Location of the incident (address, legal, landmark, etc.):</i> _____

Where are you right now?
<input type="checkbox"/> <i>Home / Work</i> <input type="checkbox"/> <i>In a Vehicle</i> <input type="checkbox"/> <i>Outside</i> <input type="checkbox"/> <i>Other</i> _____
<i>If the resident is at home / work / outside tell them:</i>
The company will send someone to investigate. To be safe, you and anyone that you may be with need to go inside and stay inside. Close all doors and windows and turn off any appliances that blow out indoor air (i.e. clothes dryer) or suck in outside air (i.e. heating / air conditioning). Do not go outside or attempt to start any vehicles until you are told it is safe to do so.
<i>If the resident is in a vehicle and cannot shelter-in-place tell them:</i>
The company will send someone to investigate. To be safe, you and anyone that may be with you need to get inside the vehicle and stay inside. Keep all doors and windows closed and shut off the air conditioning / heat. If you see or hear anything that might indicate where the incident is occurring, travel in the opposite direction of the hazard; otherwise, continue travelling on your current course which will likely take you out of the hazard area.
Someone will call you back with further instruction so please stay off of the phone so that we can contact you. If you have any urgent questions please call the company at _____.

Contact Details	Regulatory Contact		Field Centre	
	Caller			Phone
	Notification	Date	Time	Release Start Time End Time <input type="checkbox"/> Ongoing
	Licensee			Phone
	Location		Nearest Town	
	Nearest Resident	Distance/Direction		Phone
	Media Involvement?	<input type="checkbox"/> Local <input type="checkbox"/> Regional	<input type="checkbox"/> National <input type="checkbox"/> International	Media Contact
	Operator			Phone
Public Impact	Public Health and Safety <input type="checkbox"/> Could be jeopardized <input type="checkbox"/> Is jeopardized		Worker Injuries <input type="checkbox"/> First Aid <input type="checkbox"/> Fatality <input type="checkbox"/> Hospitalization	
	Emergency Assessment Matrix completed with licensee <input type="checkbox"/> Minor <input type="checkbox"/> Two <input type="checkbox"/> One <input type="checkbox"/> Three		ERP Activated? <input type="checkbox"/> Site Specific <input type="checkbox"/> Corporate <input type="checkbox"/> Field/Area	
	EPZ Size (2 km if unknown)	Numbers and Types of Public in EPZ		EOC/ICP Location
	Public Protection Measures Implemented <input type="checkbox"/> Notification <input type="checkbox"/> Shelter		<input type="checkbox"/> Roadblocks <input type="checkbox"/> Evacuation	Number Evacuated
Release Type	Release Impact <input type="checkbox"/> On lease <input type="checkbox"/> Off lease		H ₂ S Concentration	
	<input type="checkbox"/> Sensitive Environment	Environment Affected	<input type="checkbox"/> Air <input type="checkbox"/> Land	<input type="checkbox"/> Standing Water <input type="checkbox"/> Flowing Water Water Body Name
	Area Affected (m ³)	<input type="checkbox"/> Property Damage <input type="checkbox"/> Equipment Loss <input type="checkbox"/> Wildlife / Livestock Affected		
	Gas Release <input type="checkbox"/> Sweet <input type="checkbox"/> Sour	Volume/Rate		
	Liquid Release <input type="checkbox"/> Oil <input type="checkbox"/> Water <input type="checkbox"/> Effluent	Volume/Rate		
	<input type="checkbox"/> Release Point Determined			
Containment	Third Party / Outside Assistance Required <input type="checkbox"/> Incident contained or controlled <input type="checkbox"/> Intermittent control possible		<input type="checkbox"/> Imminent control probable <input type="checkbox"/> Incident is uncontrolled	
	Company		WCSS Co-op	
Operations Type	Well Licence No.	Type of Incident	<input type="checkbox"/> Kick <input type="checkbox"/> Blowout <input type="checkbox"/> Loss of Circulation	
	Well Status <input type="checkbox"/> Drilling <input type="checkbox"/> Standing	<input type="checkbox"/> Servicing <input type="checkbox"/> Sweet	<input type="checkbox"/> Producing <input type="checkbox"/> Sour	<input type="checkbox"/> Injection <input type="checkbox"/> Critical <input type="checkbox"/> Suspended
	Pipeline License No.	Line No.	<input type="checkbox"/> Hit <input type="checkbox"/> Leak <input type="checkbox"/> Rupture	
	Production Facility License No.	<input type="checkbox"/> Gas <input type="checkbox"/> Oil	<input type="checkbox"/> Gas Plant <input type="checkbox"/> Battery	<input type="checkbox"/> Compressor <input type="checkbox"/> Other AENV Approval No.

A3 First Call Communication

Air Monitoring	<input type="checkbox"/> License Air Monitoring Occurring <input type="checkbox"/> Mobile <input type="checkbox"/> Handheld			Estimated Time of Arrival		
	Initial Readings / Location		<input type="checkbox"/> PPB <input type="checkbox"/> On Site <input type="checkbox"/> PPM <input type="checkbox"/> Off Site	Distance		
	Contractor Name		Phone		AMU Phone	
	Wind	Direction	Speed	Meteorological Conditions	AER AMU ETA	
Communications	Communications completed by Licensee and /or Regulatory Agency					
	<input type="checkbox"/> RCMP/Police <input type="checkbox"/> Ambulance <input type="checkbox"/> Fire <input type="checkbox"/> CER	<input type="checkbox"/> Energy Regulator <input type="checkbox"/> Local Authority <input type="checkbox"/> Health Authority <input type="checkbox"/> First Nations	<input type="checkbox"/> Emergency Management Agency <input type="checkbox"/> Ministry of Transportation <input type="checkbox"/> Environment & Climate Change Canada (ECCC) <input type="checkbox"/> Indian Oil & Gas	<input type="checkbox"/> TDG <input type="checkbox"/> CANUTEC <input type="checkbox"/> ERAC <input type="checkbox"/> Other	<input type="checkbox"/> OH&S <input type="checkbox"/> DFO <input type="checkbox"/> Other <input type="checkbox"/> Other	<input type="checkbox"/> WCB <input type="checkbox"/> WCSS <input type="checkbox"/> Other <input type="checkbox"/> Other
	Contact Names & Phone Numbers					
	Incident Cause <input type="checkbox"/> Natural <input type="checkbox"/> Human-Induced unintentional <input type="checkbox"/> Human-Induced Intentional					
Other Information	<input type="checkbox"/> First Nations Band <input type="checkbox"/> Metis Settlement	Band / Settlement Name / Contact			Phone	
	Complaints	<input type="checkbox"/> Local <input type="checkbox"/> Large area				
	Private Land Title holder			Phone		
	Additional Information					

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Section 6: Forms

A5 Air Monitoring Log

Date: _____	Responder Name: _____
Page _____ of _____	Responder Position: _____

Time	Location of Samples	H ₂ S (ppm)	LEL (%)	O ₂ (%)	SO ₂ (ppm)	Other	Temp (°C)	Wind Conditions *		Comments
								From	Speed (km/hr)	

**Estimate meteorological conditions where accurate readings are not available.*

A5 Air Monitoring Log



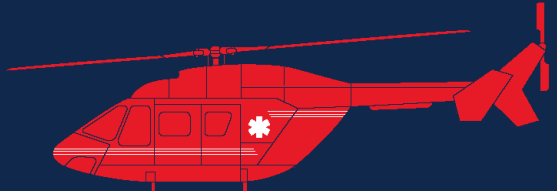
Time	Location of Samples	H ₂ S (ppm)	LEL (%)	O ₂ (%)	SO ₂ (ppm)	Other	Temp (°C)	Wind Conditions *		Comments
								From	Speed (km/hr)	

**Estimate meteorological conditions where accurate readings are not available.*

A6 Threatening Call / Bomb Threat

Date:	Time Call Received:	Time Call Reported:
Person Receiving Call:		What/Whom Call Directed To:
Caller's Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown		Approximate Age:
Accent: <input type="checkbox"/> Yes <input type="checkbox"/> No Type:		Familiar voice: <input type="checkbox"/> Yes <input type="checkbox"/> No Who:
Threat (Exact Wording):		
Tips: <ul style="list-style-type: none"> Listen carefully and remain calm. Do not interrupt caller. Attempt to keep caller talking. Attempt to ask questions below. Obtain as much information as you can while call is in progress. Signal someone to call your supervisor; give him / her this information. Do not hang up or disconnect your phone, even after the caller hangs up. For telephone tracing, call the local telephone company and local police. 		
If bomb threat, ask the following questions:		
When will the bomb go off? (date and time)		
Where is it located?		
Why did you place it?		
What kind of bomb is it?		
What does it look like?		
What is your name?		
Where are you calling from?		
Was the caller familiar with company facilities, or employees? (e.g.: nicknames, familiarity with staff, etc.) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Did caller appear familiar with building / facility by the description of the bomb location? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifying Characteristics of Caller		
Voice	Speech	Language
<input type="checkbox"/> Loud	<input type="checkbox"/> Fast	<input type="checkbox"/> Excellent
<input type="checkbox"/> Soft	<input type="checkbox"/> Slow	<input type="checkbox"/> Good
<input type="checkbox"/> High Pitched	<input type="checkbox"/> Distinct	<input type="checkbox"/> Fair
<input type="checkbox"/> Deep	<input type="checkbox"/> Distorted	<input type="checkbox"/> Poor
<input type="checkbox"/> Raspy	<input type="checkbox"/> Stutter	<input type="checkbox"/> Foul Language
<input type="checkbox"/> Pleasant	<input type="checkbox"/> Nasal	<input type="checkbox"/> Accent
<input type="checkbox"/> Intoxicated	<input type="checkbox"/> Slurred	<input type="checkbox"/> _____
<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
Notify proper authorities as soon as possible. Have employees take a look around their immediate work stations for unusual packages. Evacuate building if necessary.		Manner <input type="checkbox"/> Calm <input type="checkbox"/> Angry <input type="checkbox"/> Rational <input type="checkbox"/> Irrational <input type="checkbox"/> Coherent <input type="checkbox"/> Incoherent <input type="checkbox"/> Deliberate / <input type="checkbox"/> Serious <input type="checkbox"/> Emotional <input type="checkbox"/> Laughing <input type="checkbox"/> Nervous <input type="checkbox"/> _____
		Background <input type="checkbox"/> Office Machines <input type="checkbox"/> Factory Machines <input type="checkbox"/> Street Traffic <input type="checkbox"/> Airplanes <input type="checkbox"/> Trains <input type="checkbox"/> Animals <input type="checkbox"/> Party Atmosphere <input type="checkbox"/> Music <input type="checkbox"/> Voices <input type="checkbox"/> Quiet <input type="checkbox"/> _____
Name of the supervisor first notified:		

STARS® * LANDING ZONE INFORMATION CARD.




* STEP 1

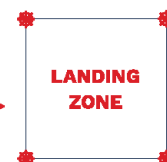
Advise your dispatch centre which channel you will be using to communicate with STARS.

* STEP 2

Select an area for the landing zone that is downwind from the incident site (unless hazardous materials or gases are present).



WIND DIRECTION



LANDING ZONE

* STEP 3

Select an area for the landing zone that is a minimum of 72 metres (or 236 feet, or 72 paces) from the incident site.



INCIDENT SITE

72 METERS
(236 FEET OR 72 PACES)



LANDING ZONE

* STEP 4

Select a flat, level surface for the landing zone; preferably pavement or concrete, if available.



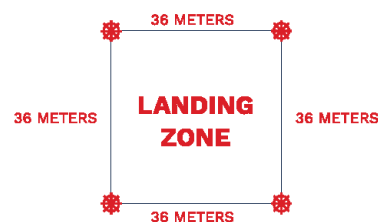
* STEP 5

Ensure the landing zone area is clear of wires, poles, trees and debris.



* STEP 6

Mark out a 36 metre by 36 metre (120 feet x 120 feet, or 36 paces x 36 paces) square, and mark the corners with LED beacons, heavy pylons or any other bright conspicuous objects easily seen from the air.



* STEP 7

Brief STARS crew via radio or cell phone and stand at the middle of the upwind side of the landing zone with the wind at your back.

Monitor radio frequency to communicate with the STARS team.

As the helicopter approaches, go down on one knee and DO NOT MOVE from your position.

Do not approach the helicopter at any time unless escorted by the STARS crew.

LANDING ZONE HAND SIGNALS



ALL CLEAR TO LAND ALL CLEAR TO DEPART ABORT LANDING



* STEP 1

Identify yourself and confirm the Landing Zone Officer is present with the landing zone secure.

* STEP 2

Communicate the location of the landing zone using N/E/S/W to reference the accident scene or other landmarks.

* STEP 3

Identify the type of surface for the landing zone (field, road, other).

* STEP 4

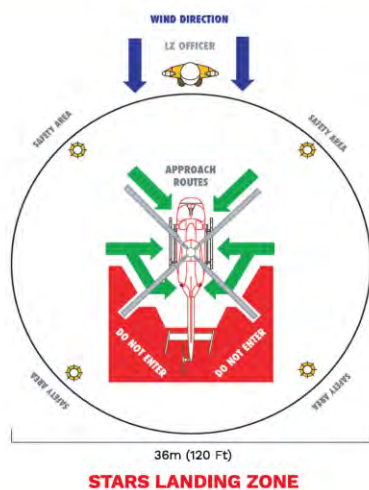
State what marking the corners of the landing zone: LED beacons, heavy pylons or any other bright conspicuous objects easily seen from the air.

* STEP 5

Communicate the wind direction and approximate speed.

* STEP 6

Identify the hazards in the area of the landing zone such as wires, poles, trees, or hazardous materials using N/E/S/W in reference to the landing zone.



SPECIAL CONSIDERATION

Remove any loose debris and indicate if there is snow or dust in the landing zone. If dusty, water down the landing zone if possible prior to the helicopter's arrival. As marshaller, maintain your position at the middle of the upwind side of the landing zone, knees and **DO NOT MOVE** from your position as the helicopter lands.

If you have any questions or comments regarding this landing zone information card or would like to watch our landing zone video, please visit www.stars.ca



INDUSTRY EMERGENCY LINE 1-888-888-4567

This number can also be used to provide a landing briefing to the STARS crew if radio communications are not available.

WE ARE ALL STARS®

B1 Reception Centre Registration Log



Due to travel and time constraints, the company may not always be able to have a company employee at the Reception Centre before evacuees begin arriving. In this case this cover page can be included with the forms on the next 2 pages and sent to a representative at the Reception Centre to provide them with guidance on how to register and track evacuees until a company representative arrives.

Evacuee registration guidelines

[Insert Company Name] requires your assistance with receiving evacuees at the following Reception Centre: _____

Your company contact is:

Name: _____ Position: _____ Contact Number: _____ Fax Number: _____

- 1) Record all evacuees as they arrive on the forms provided.
- 2) Provide all evacuees with the statement below and any other status updates as provided by your company contact.
- 3) Provide the evacuees with food and lodging as required.
- 4) Record if any evacuees choose to leave the Reception Centre (name, contact number, where are they going, etc.).
- 5) Continually update the company of any residences arriving at or leaving the Reception Centre so that they can follow up on any residents that are unaccounted for.

B1 Reception Centre Registration Log



Date: _____ Responder Name: _____

Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

Resident ID	Name (list all names in party)		# Of Occupants	Number arrived	Arrival time	Depart time	Destination phone # (where they can be reached)	Comments
	First	Last						

B2 Resident Compensation Log

Resident's Name:	Home Address:	Home Telephone #:	Location of Land (LSD):
		Business Telephone #:	
Number of Residents Evacuated:	Evacuated to:	Telephone # While Evacuated:	

No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details of Expense
Total Reported Expenses									

Approved By: _____

Date: _____

B2 Resident Compensation Log

Resident's Name:	Home Address:	Home Telephone #:	Location of Land (LSD):
		Business Telephone #:	
Number of Residents Evacuated:	Evacuated to:	Telephone # While Evacuated:	

No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details of Expense
Total Reported Expenses									

Approved By: _____

Date: _____

B3 Resident Contact Log

Date: _____ Responder Name: _____

Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

Time	Resident name	Resident ID	Shelter / Evacuate	Number of people		Assistance or transportation required?	Comments
				Inside	Outside		
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	

Time	Resident name	Resident ID	Shelter / Evacuate	Number of people	Assistance or	Comments
------	---------------	-------------	--------------------	------------------	---------------	----------

B3 Resident Contact Log

				Inside	Outside	transportation required?	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	
			<input type="radio"/> Shelter <input type="radio"/> Evacuate			<input type="radio"/> Yes <input type="radio"/> No	

B4 Roadblock Log



Date: _____ Responder Name: _____

Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

Only emergency responders should be allowed to enter the Emergency Planning Zone (EPZ).

Vehicle Type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering Zone	Time Exiting Zone	Comments (record all vehicles turned away)

B4 Roadblock Log

Vehicle type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering zone	Time Exiting zone	Comments (record all vehicles turned away)

DATE: _____

TIME: _____

EVACUATION NOTICE

[Insert Company Name] has an emergency at its nearby location.

**As a safety precaution, please leave the area in a
(north / east / south / west) direction and proceed to the
Reception Centre located at**

_____.

[Insert Company Name] representatives will be available at the Reception Centre to address your questions or concerns.

For assistance, call *[Insert Company Name]* at

_____.

Thank you for your cooperation.

B6 Early Notification / Voluntary Evacuation Phone Message



Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this is _____ <i>(your name)</i> _____ calling from _____ <i>(company name)</i> _____ .	
Is this the _____ <i>(name of residence / business)</i> _____ at _____ <i>(telephone number)</i> _____ ?	
_____ <i>(company name)</i> _____ is responding to a <i>(potential)</i> emergency at _____ <i>(location)</i> _____ in your area.	
You are in no danger at this time. All efforts are being made to resolve the problem and this phone call is only to inform you and provide you with an early notification.	
To help us understand and your immediate needs we need to know:	
How many people are at your location now?	
<i>Adults</i> _____	
<i>Children</i> _____	
Do you wish to leave your residence at this time?	
If Yes	Please travel in a <i>north / east / south / west</i> direction to our reception centre located at: _____
If No	Please standby for further contact. Please do not use your telephone for outgoing calls as this may prevent us from contacting you with updated information or when the problem has been eliminated.
If you have urgent questions, please contact _____ <i>(company name)</i> _____ at _____ <i>(telephone number)</i> _____ .	
Thank you for your cooperation.	

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

B6 Early Notification / Voluntary Evacuation Phone Message



B7 Shelter-In-Place Phone Message



Hello, this is _____ (*your name*) of _____ (*company name*) .
Is this the _____ (*name*) residence at _____ (*telephone number*) ?
_____ (*company name*) is responding to a (*potential*) emergency at _____ (*location*) in your area.

For your safety, it is extremely important that you, and those with you, stay indoors until the potential hazard no longer exists, or you are advised to evacuate.

To help us understand your immediate needs, we need to know:

How many people are at your location now?

Adults _____

Children _____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to get in doors or stay out of the area?

☐ Yes ☐ No

If Yes *Whom?* _____

Location of the person(s) _____

We will send someone to find them as soon as possible.

Do you have children in school at this time?

☐ Yes ☐ No

If Yes *What school?* _____

Children's names _____

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you have the "Shelter-in-Place" instructions previously provided to you by _____ (*company name*) ?

☐ Yes ☐ No

If Yes Please follow the Shelter-in-Place instructions located inside the resident pamphlet.

If No *Verbally walk the resident through the Shelter-in-Place instructions on the next page.*

Do you understand what I have told you?

Is there an alternate number we can contact you at? _____

If you have any urgent questions, please contact _____ (*company name*) at _____ (*telephone number*) .

Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Shelter-In-Place Instructions

For your safety:

- Immediately gather everyone indoors and stay there
- Close and lock all windows and outside doors
 - If convenient, tape the gaps around the exterior door frames
- Leave open all inside doors
- Extinguish indoor wood burning fires
 - If possible, close flue dampers
- Turn off appliances or equipment that either:
 - Blows out or uses indoor air, such as:
 - Bathroom and kitchen exhaust fans
 - Built-in vacuum systems
 - Clothes dryers
 - Gas fireplaces and gas stoves
 - Sucks in outside air, such as:
 - Heating, ventilation and air conditioner (HVAC) systems for apartments, commercial or public facilities
 - Fans for heat recovery ventilators or energy recovery ventilators (HRV / ERV)
- Turn down furnace thermostats to the minimum setting and turn off air conditioners
- Avoid using the telephone, except for emergencies, so that you can be contacted by company emergency response personnel
- Call the company emergency numbers you have been provided:
 - If you are experiencing symptoms or smelling odours (so that we can address your concerns and adjust our response priorities)
 - If you have contacted fire, police or ambulance (so that we can coordinate our response)
- Stay tuned to local radio and television for possible information updates
- Do not leave your residence, even if you see people outside, until you are told to do so
- After the hazardous substance has passed through the area you will receive an “all-clear” message from the company emergency response personnel. You may also receive, if required, instructions to:
 - Ventilate your building by opening all windows and doors; turning on fans and turning up thermostats. During this time the air outside may be fresher and you may choose to leave your building while ventilating.
 - Once the building is completely ventilated return all equipment to normal settings & operation.
- Do not leave your sheltered location or attempt to start any vehicle until a company representative advises you that the area is safe.

If you are unable to follow these instructions, please notify company emergency response personnel.

ENERCAPITA

Hello, this is _____ *(your name)* of _____ *(company name)*.

Is this the _____ *(name)* residence at _____ *(telephone number)* ?

_____ *(Company name)* is responding to a *(potential)* emergency at _____ *(location)* in your area.

For your safety, it is extremely important that you and your family leave your residence immediately and travel in a *north / east / south / west* direction to our reception centre located at:

To help us understand your immediate needs, we need to know:

How many people are at your location now?

Adults _____

Children _____

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to evacuate away from the area?

☐ Yes ☐ No

If Yes *Whom?* _____

Location of the person(s) _____

We will send someone to find them as soon as possible.

Do you have children in school at this time?

☐ Yes ☐ No

If Yes *What school?* _____

Children's names _____

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

Do you require evacuation / transportation assistance?

☐ Yes ☐ No

If Yes We are sending someone to assist you. Please stay indoors and close all doors and windows until a Rover or the local police arrive to evacuate you.

If No *Provide the resident with:*

☐ *Directions to safely travel to the reception centre*

☐ *A list of items to bring with them to the reception centre (medications, cell phone, etc.)*

☐ *An idea of how long they may be expected to stay at the reception centre*

☐ *The option to bring their house pets to the reception centre*

Please contact _____ *(company name)* if you are unable to make it to the reception centre for any reason. Please keep your phone line free so that we can contact you if necessary.

Is there an alternate number we can contact you at? _____

A company representative at the reception centre will address any questions you may have and will make arrangements for your temporary accommodations. Do you understand everything I have told you? Are you leaving immediately?

If you have any urgent questions, please contact _____ *(company name)* at _____ *(telephone number)*.

Thank you for your cooperation.

Section 6: Forms

C1 Preliminary Media Statement



Date:(YY/MM/DD)	Responder Name:
Responder Position:	Responder Phone No.:

This is the information I can give you so far:

At (time – 24hr local clock) on (date), a(n) (fire, explosion, gas release, spill) occurred at the Company's (location name) site, located (distance) kilometres (east / west / north / south) of (nearest town or city).

Presently, (number of personnel) workers are being treated for injuries. The names and condition of the injured cannot be released until their families have been contacted.

The (well site, plant, pipeline, office, drilling location) has been (shut down, isolated, or is still flowing).

Company staff have been activated and are directing emergency response procedures to protect the public, our workers and the environment.

The cause of the (fire, explosion, gas release, spill) is not yet known and no estimate of damage is available. As information becomes available, news releases will be issued from the Information Office.

Any further inquiries should be directed to the Incident Commander, who will issue a press release at a later time.

Contact:

_____ Office: _____

_____ Fax: _____

*Note: Only the **Media Spokesperson** designated by the Incident Commander is to provide any specific information to the public or the media. Refer to page 1 of Section 3: Communications & Media for the generic media statement to be used by all other response personnel.*

C2 Media Contact Log

Date: _____ Responder Name: _____

Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

If you feel you are not the appropriate person to be answering the media agencies questions, use the following series of statements.
"[Insert Company Name] has an Information Officer to answer all media questions."
"May I request the following information to expedite your request?" (complete the form below).
"Thank you. [Insert Company Name] appreciates your cooperation and I will pass on this information to the appropriate person."

Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Telephone Numbers		Remarks / Information Required
					Work	Fax	

C2 Media Contact Log



Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Telephone Numbers		Remarks / Information Required
					Work	Fax	

C3 Government Agency Contact Log

Date: _____ Responder Name: _____

Page _____ of _____ Responder Position: _____ Responders Phone No.: _____

If you feel you are not the appropriate person to be answering the media agencies questions, use the following series of statements.

"[Insert Company Name] has a Government Liaison to answer all media questions."

"May I request the following information to expedite your request?" (complete the form below).

"Thank you. [Insert Company Name] appreciates your cooperation and I will pass on this information to the appropriate person."

Time	Call To	Call From	Agency	Contact Name	Telephone Numbers		Remarks / Comments
					Work	Fax	

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.

C3 Government Agency Contact Log



Time	Call To	Call From	Agency	Contact Name	Telephone Numbers		Remarks / Comments
					Work	Fax	

Address: _____

City / Town: _____

Phone #: _____

Contact Name: _____

Office #: _____

Home #: _____

[illegible]

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Appendix A: ERP Scope, Training and Plan Maintenance

Scope

This plan defines the emergency response process related to all hazards affecting petroleum operations. This Emergency Response Plan (ERP) outlines the process for an Alert/Minor, Level-1, Level-2, or Level-3 emergency for any jurisdiction or incident type.

Plan Objectives

The primary objective of this Emergency Response Plan (ERP) is to define the incident management system and organizational structure, process and tools to respond effectively to all incidents regardless of size or complexity. It has been designed to be intuitive and have natural process flow utilizing the Incident Command System (ICS) and to comply with applicable regulations, standards, and industry best practices.

Purpose

This ERP clearly defines emergency response team roles, functions and duties to protect people, environment, and assets during an incident. This plan clarifies the following:

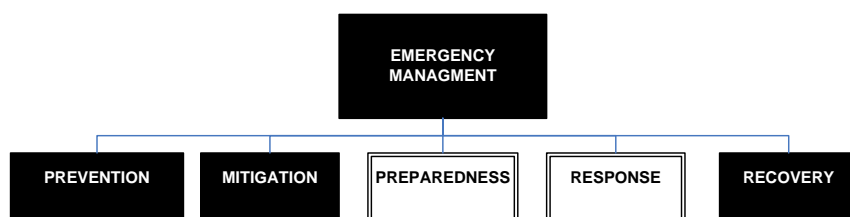
- Overall Incident Command System (ICS) response organization.
- Incident Command System (ICS) Roles and responsibilities.
- Guidance to determine the Alert or Emergency Level.
- Mechanisms to activate the ERP.
- Notification /communication requirements to stakeholders (public /government /responders).
- Documentation tools for accurate records management of events and decisions during an event.
- Guidance for post-emergency actions.

The intent of this Emergency Response Plan (ERP) is to define effective measures in place to:

- Notify and protect the workers and the public.
- Minimize environmental impact.
- Minimize asset and property loss.
- Regain steady state of operations.
- Minimize emergency response time.
- Maximize response effectiveness.
- Coordinate with government agencies and stakeholders.
- Minimize business and reputational impact.

This manual outlines the framework, tools and reference materials to facilitate a prompt, safe, efficient and properly managed response to all incidents regardless of size or complexity. Therefore this plan provides employees and contractors with practical tools that will guide them through the Preparedness and Response principles of Emergency Management.

Emergency Management Process Flow



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HEALTH, SAFETY AND ENVIRONMENTAL POLICY

The safety of workers and the protection of the environment are integral parts of the business operations of Enercapita Energy Ltd. The company will operate in a manner that minimizes adverse effects to the environment and ensures the safety and health of its employees, contractors and the public.

In fulfilling this commitment, Enercapita Energy Ltd. will maintain a safe work environment directed by acceptable industry practices and in compliance with legislative requirements. Enercapita believes that zero incidents are the only acceptable level and will work towards this goal each and every day.

Employees and contractors are responsible to work in a conscientious manner, which safeguards themselves, co-workers, the public and the environment.

We will strive to eliminate any foreseeable hazard that could possibly result in hazardous product releases/spills, fire, explosion, security breaches, loss or damage to property, personal injuries/illnesses, damage to the environment or danger to public safety.

Enercapita Energy Ltd. management, employees and contractors are collectively responsible for implementing the Health, Safety and Environmental Policy. To assist Enercapita employees and contractors in accomplishing these objectives; guidance and specific duties are described in the Corporate Safety Management Program and the Emergency Response Plans.

A handwritten signature in black ink, appearing to read "Duane Masse".

Duane Masse
Executive VP and Chief Operating Officer
Enercapita Energy Ltd.

October 2019

The information in this policy does not take precedence over any applicable government legislation, with which all employees and contractors must be familiar.

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Appendix A: ERP Scope, Training and Plan Maintenance, continued

Training Requirements

Frequency / Action	As Required	Annually*	Every Three (3) Years**	Every Five (5) Years***
Training				
Employee Orientation New / Transfer	✓			
On-the-job Training	✓			
Response Discussion During Pre-Job Meetings	✓			
Drills	✓			
Tabletop Exercise		✓ one of these exercises		
Communication / Partial Mobilization Exercises				
Major (Full Scale) Exercise	✓ Start-up of facility or transmission line (BCER)		✓	✓
Post Incident (Actual) Review	✓			
ERP Review / Self Audit		✓		

* Must be held annually.

** CSA Z246.2-18, CER, BCER & AER requires Major Exercises be held every three (3) years.

*** Environment & Climate Change Canada (ECCC) requires Major Exercises be held every five (5) years for facilities with E2 required substances.

Appendix A: ERP Scope, Training and Plan Maintenance, continued

Plan Maintenance

Responsibility

The licensee is responsible to ensure that an ERP is created for all provincial and federally regulated oil and gas activities (i.e. sour operations, HVP pipelines, cavern storage facilities, etc.), they are maintained regularly, and any updates are disseminated to the regulatory agency and other plan holders as required. In order for this to occur the following responsibilities are designated:

- Each individual plan holder is responsible for ensuring their assigned manuals are current, all updates are applied / downloaded / inserted, and any errors or omissions are reported to a supervisor.
- Each Area Manager is responsible for ensuring that an annual review of their ERP is conducted. The ERP Revision Request Form is located in this section and can be used to track this information and provide documentation in the case of an ERP assessment. Any of the following events will trigger an ERP update:
 - Changes to emergency information (e.g., contact phone numbers).
 - New mapping information.
 - New resident information.
 - Changes to response staff information or response capabilities.
 - Facility additions such as well or pipeline tie-ins that do not require submission of a supplement. Before starting operations, the duty holder is expected to update its approved ERPs with information about on- and off-site emergency response team personnel.
- Any requests for revisions to this plan should be forwarded to the applicable Area Manager for review. These revisions will be discussed with the company's Emergency Response Program Coordinator and H2Safety Services Inc. Any significant changes including those resulting from exercises and incidents will require immediate updates sent out to all plan holders; less significant changes will be implemented during the ERP's next annual update.
- The company's Emergency Response Program Coordinator is responsible for ensuring that the plans and distribution lists are updated, training is performed, and new projects are included in the plan. Information in this plan will be verified and updated at least once a year.
- Old manuals must be sent to H2Safety Services Inc. or destroyed. If a plan holder no longer requires their manual (job changes, position changes, etc.), it must be returned to the company's Emergency Response Program Coordinator to be tracked, reassigned, or destroyed.

The licensee must distribute changes in information that are instrumental to implementing the ERP to all required plan holders.

Errors identified in the ERP by the regulatory agency, licensee, and other party must be corrected immediately upon identification.

Modifications to New or Existing Operations

The licensee must submit a supplement for review and approval to the regulatory agency for all newly added wells, pipelines, well / pipeline tie-ins, facilities and operating areas prior to commencement of operations if there are new surface developments within the Emergency Planning Zone. For example, the EPZ for a new pipeline tie-in does not fall entirely within the existing Emergency Planning Zone and impacts a new residence / public facility / trapper cabin / etc. that was not previously included in the Emergency Response Plan. The licensee must conduct a public involvement program for all new members of the public. Before any new or major modifications to an existing facility / pipeline are brought on-stream, any additions or changes will be added to the Emergency Response Plan. If required, a site specific Emergency Response Plan will be developed. Meetings to review response plan requirements must be held before major facility modifications are commissioned.

Appendix A: ERP Scope, Training and Plan Maintenance, continued

ERP Revision Request Form

Plan Holder Name / Title / Company: _____

ERP Name: _____

Manual Number: _____

If any of the following items have changed, please check the box beside it and provide a description of the change in the space provided:

- ☐ Company information
- ☐ Mapping information
- ☐ Resident contact information
- ☐ Response staff information or capacity changes
- ☐ Facility additions, such as well or pipeline tie-ins
- ☐ Other

Description of the change:

Please attach additional pages and/or support documentation as required.

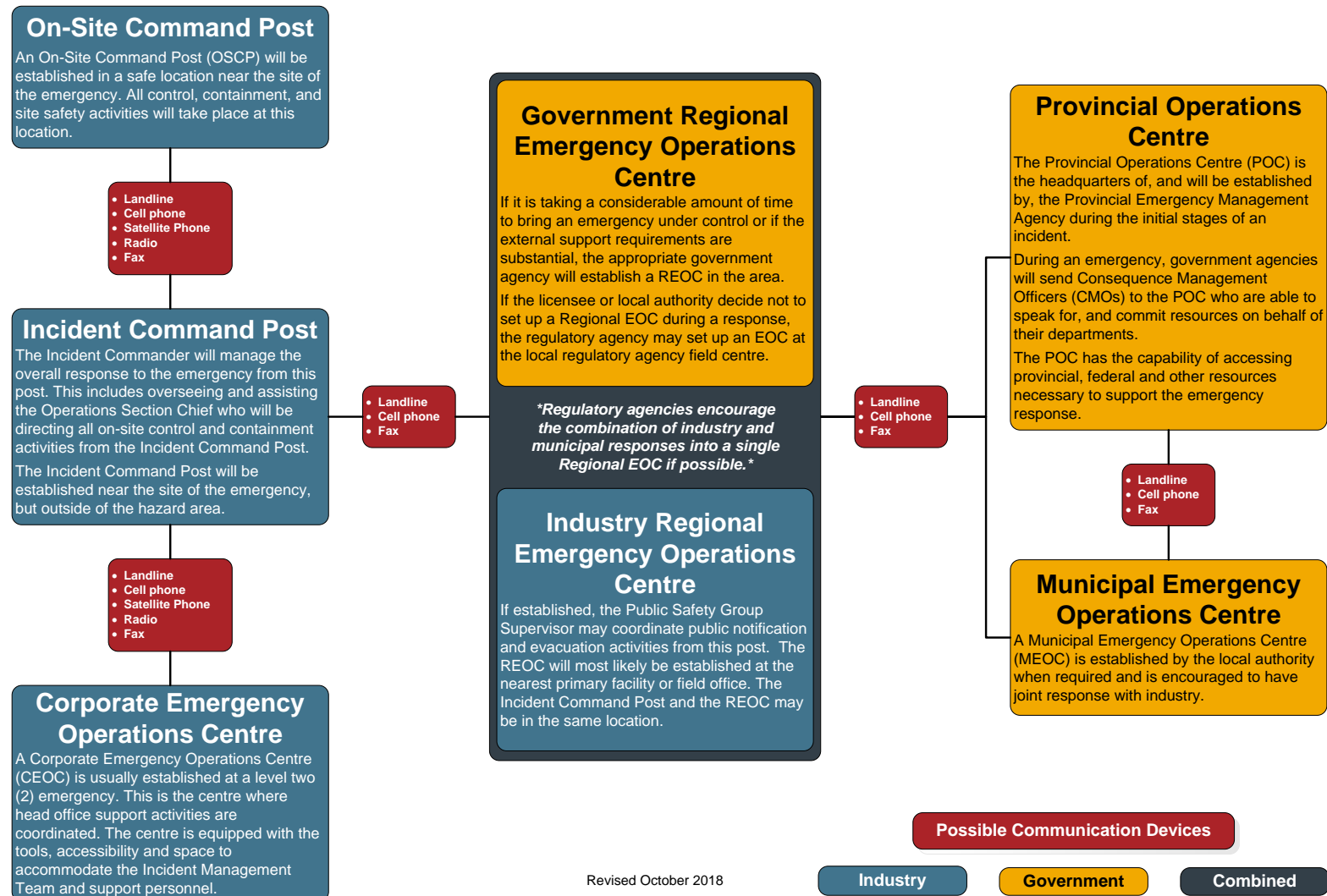
Please return the completed checklist to:

H2Safety Services Inc.
210, 7260 – 12 Street SE
Calgary, AB T2H 2S5
Email: erp@h2safety.ca
Fax: 403-313-9180

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Appendix B: Incident Command Post (ICP)

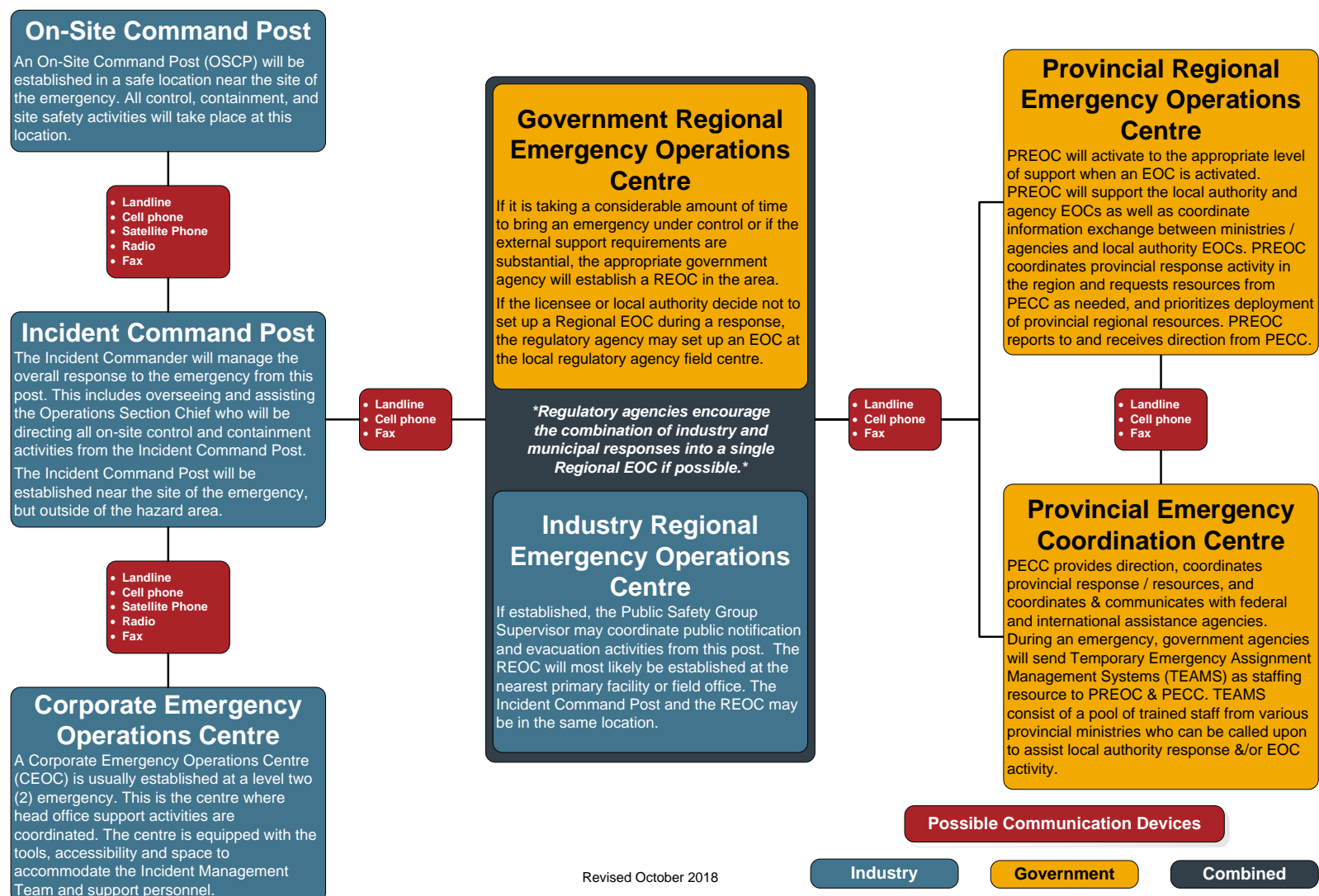
Communication Methods Between Command Posts - Alberta



Revised October 2018

Appendix B: Incident Command Post (ICP), continued

Communication Methods Between Command Posts - British Columbia



Appendix B: Incident Command Post (ICP), continued

ICP Activation and Setup

The Incident Command Post is activated by the Incident Commander.

The following tasks must be addressed once the ICP has been activated:

Position	Task
Incident Commander	<ul style="list-style-type: none"> <input type="checkbox"/> Establish briefings with the Field Response Team (FRT). <input type="checkbox"/> Ensure staffing is adequate for the task(s). <input type="checkbox"/> Consider the time difference, if applicable, and determine how time will be communicated throughout the incident.
Safety Officer	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure the room / floor / building is secure. <input type="checkbox"/> Ensure a safe work area, i.e. remove clutter or cords causing slips, trips, falls, etc.
Information Officer	<ul style="list-style-type: none"> <input type="checkbox"/> Notify the receptionist that there is an incident. Provide details of what message should be given out to the public and media, as well as where to direct incoming calls. <input type="checkbox"/> Ensure inbound and outbound calls received or made are centrally logged. <input type="checkbox"/> Ensure responders have their office phones forwarded to their cell phones.
Logistics / IT Support	<ul style="list-style-type: none"> <input type="checkbox"/> Turn on all computers; ensure the relevant systems are operational and that they all have internet/email access. <input type="checkbox"/> Bring up any ERP related electronic tools (ie; H2CommandCentre) and ensure they are working and that they can all be displayed on various projectors / screens as required. <input type="checkbox"/> Check that printers are connected to the computers and working. Print a test page to confirm. <input type="checkbox"/> Check that the fax machine is setup and working. <input type="checkbox"/> Check that any phone conferencing systems are set up and working. <input type="checkbox"/> Ensure that telephone lines are available and active. <input type="checkbox"/> Ensure TVs are working properly and set up to local news or CNN. <input type="checkbox"/> Obtain any additional equipment as required.
Logistics / Security	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure the room/floor/building is secure. Arrange for additional security if required. <input type="checkbox"/> If the location of the Incident Command Post is closed to general staff, provide a list of staff needing access clearance to the meeting area. <input type="checkbox"/> The following supplies should be available: notepaper, pens, printer cartridges and paper, documentation forms, dry erase markers, staplers and staples, spare power bars and extension cords, etc. <input type="checkbox"/> Arrange for refreshments (coffee, food, water, etc.) for those working there, as well as sleeping space if required. <input type="checkbox"/> Ensure there are sufficient tables and chairs for the team.

Appendix B: Incident Command Post (ICP), continued

ICP Activation and Setup, continued

Position	Task
Planning / Documentation	<ul style="list-style-type: none"> <input type="checkbox"/> Determine which emergency response plans and other ERP tools are needed and pull them out to be readily accessible. <input type="checkbox"/> Determine what laminated maps and charts are going to be utilized and put them up on the wall with dry erase markers. Set up the white boards and roles chart. <input type="checkbox"/> Ensure clocks are displaying the correct time, including any clocks with a different time zone. <input type="checkbox"/> As each person arrives: provide them with a vest, provide them with a print out of the Initial Emergency Report Form, ensure they synchronize their watches and ensure they check in with their assigned supervisor. <input type="checkbox"/> As team members arrive, write their name in the appropriate position on the Field Response Team Assignment Chart. <input type="checkbox"/> Pass out documentation forms and provide an overview of the documentation process. <input type="checkbox"/> Ensure the latest contact list for Field Response Team members are available. <input type="checkbox"/> Begin documenting all actions, decisions and major events. Start-up H₂CommandCentre if available. <input type="checkbox"/> Continually update the laminated maps and charts as information becomes available (Field Response Team Assignment Chart, Emergency Status Board, etc.). <input type="checkbox"/> Post a schedule of events, including shift changes and status updates.

Incident Command Post Briefings

Once the ICP has been activated and team members arrive, the Incident Commander or Deputy needs to conduct an initial briefing to provide the team with the status of the situation, establish operational periods for the ICP, establish a meeting schedule for both a planning meeting and periodic briefings and outline broad goals to guide the ICP throughout the emergency.

In addition to periodic briefings for status updates, the Incident Commander also has to conduct a meeting once the approved Incident Action Plan is in place. This meeting will outline the planned objectives and tasks and will ensure that resources required for implementation of the action plan are in available or en route.

At the end of each operational period, all departing members of the Field Response Team will be debriefed and must brief their replacements.

Documentation

It is critical to ensure that all ICP documentation is compiled, properly stored and readily available after the event. Proper documentation will aid in investigations, inquiries, debriefs and support for financial claims and budgets. Everything that happens during the Response/Recovery Operations should be recorded at the ICP. The forms at the back of this manual are designed to aid in this process.

Appendix C: Toxic Gases

Hydrogen Sulphide (H₂S)

Background

Hydrogen sulphide (H₂S) is a flammable, colourless gas with a characteristic odour of rotten eggs that people can smell at low levels. It is also known as hydrosulphuric acid and sewer gas. H₂S occurs naturally in crude petroleum, natural gas, volcanic gases and hot springs. It can also result from bacterial breakdown of organic matter. Industrial sources include emissions from industrial paper plants; combustion of coal, fuel oil and natural gas (including gas flares); kraft paper mills; tanneries; and emissions from sewers and waste treatment facilities. Cigarette smoke is also a source of hydrogen sulphide.

H₂S is released primarily as a gas and spreads in the air. Its residence time in the atmosphere ranges from about one day to more than 40 days, depending on ambient temperature and other atmospheric variables, including humidity, sunshine and presence of other pollutants. The decreased temperatures and decreased levels of hydroxyl ions in northern regions in winter increase the residence time. When released H₂S gas is ignited, it will change into sulphur dioxide (SO₂), be carried into the atmosphere and dispersed over a larger area at lower concentrations.

Signs and Symptoms

Exposure to hydrogen sulphide may cause irritation to the eyes, nose or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulphide can cause a loss of consciousness and possibly death. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of hydrogen sulphide (0.00011-0.00033 ppm).

Acute Exposure Effects

The effects on humans will vary depending on the duration and H₂S concentration of exposure. The health effects of acute exposure to H₂S are shown in the following table. Acute exposure reflects a range from a few seconds up to several weeks.

Hydrogen Sulphide Toxicity Table (BC Regulations)

Concentration (ppm)	Effects
Less than 1	Most people smell "rotten eggs".
3 – 5	Odour is strong.
20 – 150	Nose and throat feel dry and irritated. Eyes sting, itch or water and "gas eye" symptoms may occur. Prolonged exposure may cause coughing, hoarseness, shortness of breath and runny nose.
150 – 200	Sense of smell is blocked (olfactory fatigue).
200 – 250	Major irritation of the nose, throat and lungs, along with headache, nausea, vomiting and dizziness. Prolonged exposure can cause fluid buildup in the lungs (pulmonary edema), which can be fatal.
300 – 500	Symptoms are the same as above, but more severe. Death can occur within 1-4 hours of exposure.
Above 500	Immediate loss of consciousness. Death is rapid, sometimes immediate.

Adapted from Hydrogen Sulfide in Industry, WorkSafe BC February 2010

Appendix C: Toxic Gases, continued

Acute Health Effects of Hydrogen Sulphide (AB Regulations)

Concentration in Air (ppm)	Description of Potential Health Effects
1	A noticeable odour that may be offensive to some individuals. People may temporarily experience mild symptoms of discomfort, including nausea, headache, and irritability due to the odour. Asthma symptoms may worsen.
10 – 20	An obvious offensive odour. Temporary eye irritation may occur after a single exposure and last several hours. Symptoms include mild itchiness, dryness, increased blink reflex and slight watering. Some people may experience headaches, nausea and vomiting. Symptoms of asthma, bronchitis or other forms of chronic respiratory disease may worsen.
50	A strong, intense offensive odour that may irritate eyes and breathing passages. Eyes may be itchy, stinging, and red with increased blinking, tearing and tendency to rub eyes. Breathing passages could feel tingly or sting, with increased tendency to clear throat and cough. Symptoms of pre-existing respiratory disease may worsen. No permanent injury to eyes or breathing passages is expected unless exposure is prolonged. Odour-sensitive individuals may experience headaches, nausea, vomiting and diarrhea.
100	Initially there is a strong objectionable odour that lessens with prolonged exposure due to olfactory "fatigue." Eyes and breathing passages are often irritated within one hour of exposure. Eyes may be sore, stinging, burning, tearing, redness, swelling of eyelids, and possible blurred vision. Respiratory irritation may include sore throat, cough, soreness or stinging of breathing passages, and wheezing. The symptoms of asthma, bronchitis or other forms of chronic respiratory disease will worsen. Odour may cause headache, nausea, vomiting and diarrhea.
250	There may or may not be an odour present due to olfactory paralysis. Eyes and breathing passages will become irritated within minutes of exposure, and the irritation will worsen with longer exposure. The outer surface of the eyes and inner eyelids will be inflamed, red and sore. Eyes will begin watering and tearing immediately and vision may be blurred. Eyes may be permanently harmed if exposure is prolonged. Respiratory irritation will include sore throat, cough, difficulty breathing, soreness of chest, and wheezing. Asthma symptoms will worsen. People may experience "systemic" effects, including headache, nausea and vertigo depending on duration of exposure.
500	No odour is present due to olfactory paralysis. Severe irritation and possible permanent injury to the eyes and breathing passages within 30 minutes of exposure. Lung and breathing passage damage may cause 'chemical pneumonia' following exposure if the exposure was prolonged. Systemic effects involving the central nervous system may occur within one hour of exposure and include headache, anxiety, dizziness, loss of coordination and slurred speech. People may lose consciousness or collapse suddenly, and die if exposure persists.

Appendix C: Toxic Gases, continued

Acute Health Effects of Hydrogen Sulphide (AB Regulations), continued

Concentration in Air (ppm)	Description of Potential Health Effects
750	No odour is present due to olfactory paralysis. Central nervous system effects will be most obvious, and could include anxiety, confusion, headache, slurred speech, dizziness, stumbling, loss of coordination, and other signs of motor dysfunction. People may lose consciousness, collapse suddenly and possibly die, if exposure continues for more than a few minutes. Lung and breathing passage damage will likely cause 'chemical pneumonia' among survivors.
1000	Immediate "knock-down" and loss of consciousness. Death within moments to minutes. Immediate medical attention needed if victim is to survive.

Adapted from: Technical Advisory Committee on Public Health and the Oil and Gas Industry, Environmental Public Health Manual for Oil and Gas Activities in Alberta, 2007

Source: Alberta Health Services, Environmental Public Health

<http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf>

Appendix C: Toxic Gases, continued

Chronic Exposure Effects of Hydrogen Sulphide

Chronic effects from H₂S exposure is a developing area of research. Chronic exposure may inflame and irritate the upper respiratory tract.

Medical treatment for hydrogen sulphide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Hydrogen Sulphide (H₂S) Guidelines - Revised November 2000)

Guidelines for in Hospital Assessment/Treatment of Possible Hydrogen Sulphide Exposure

This is provided to assist medical staff in assessing a worker who has a possible or actual H₂S exposure.

Section I provides information on H₂S

Section II summarizes possible health effects, which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations

I. Hydrogen sulphide

H₂S is a colourless gas. It is heavier than air and tends to flow in ditches, trenches and low-lying areas.

H₂S is clearly recognizable in small concentrations at around one part per million (ppm) by its characteristic rotten egg smell.

At concentrations of about 150 ppm in the air, or after prolonged exposure to lower concentrations, the olfactory sense is paralyzed and the presence of H₂S can no longer be detected by odour.

II. Health effects of hydrogen sulphide

H₂S can be rapidly fatal. It acts by paralyzing the respiratory control centre in the brain and by inhibiting cellular respiration.

Hydrogen sulphide is a mucous-membrane and respiratory-tract irritant. Pulmonary edema, which may be immediate or delayed, can occur after exposure to high concentrations.

Acute exposure may include the following symptoms and signs:

Central Nervous System

CNS injury is immediate and significant after exposure to hydrogen sulphide. At high concentrations, only a few breaths can lead to loss of consciousness, coma, respiratory paralysis, seizures, and death. CNS stimulation may precede CNS depression. Stimulation manifests as excitation, rapid breathing, and headache; depression manifests as impaired gait, dizziness, and coma, possibly progressing to respiratory paralysis and death. In addition, decreased ability to smell occurs at 100 to 150 ppm.

Respiratory

Inhaled Hydrogen sulphide initially affects the nose and throat. Low concentrations (50 ppm) can rapidly produce irritation of the nose, throat, and lower respiratory tract. Pulmonary manifestations include cough, shortness of breath, and bronchial or lung hemorrhage. Higher concentrations can provoke bronchitis and cause accumulation of fluid in the lungs, which may be immediate or delayed for 24 hours or more. Lack of oxygen may result in cyanosis.

Appendix C: Toxic Gases, continued

Medical Treatment for Hydrogen Sulphide Exposure, continued

Cardiovascular

High dose exposure may cause insufficient cardiac output, irregular heartbeat and conduction abnormalities.

Renal

Although very unlikely, transit renal effect may include blood, casts, and protein in the urine. Renal failure as a direct result of hydrogen sulphide toxicity has not been described, although it may occur secondary to cardiovascular compromise.

Gastrointestinal

Symptoms may include nausea and vomiting.

Dermal

Prolonged or massive exposure may cause burning, itching, redness and painful inflammation of the skin.

Ocular

Eye irritation may result in inflammation (i.e. kerato-conjunctivitis) and clouding of the eye surface. Symptoms include blurred vision, sensitivity to light, and spasmodic blinking or involuntary closing of the eyelid.

Potential Sequelae

Inflammation of the bronchi can be a late development. Survivors of severe exposure may suffer psychic disturbances and permanent damage to the brain and heart.

III. Approach to the worker with suspected hydrogen sulphide exposure

Although this document refers only to H₂S, it is important for the clinician to keep in mind the possibility of co-exposure to numerous other agents. Sulphur dioxide may have been present if there has been combustion of hydrogen sulphide. Sulphur dioxide does not cause loss of consciousness but is a respiratory tract irritant. Therefore, the management of sulphur dioxide intoxication is similar to that for hydrogen sulphide. Other agents capable of causing asphyxia include carbon monoxide (toxic asphyxia) as well as a wide array of gases that act as simple asphyxiants (carbon dioxide, methane, nitrogen, etc.) by displacing oxygen. Finally, other conditions (MI, syncope, seizure, etc.) that may cause sudden collapse must be investigated and managed as appropriate.

History

The history is the key to the diagnosis of hydrogen sulphide (or other industrial) intoxication. There are two facets to the history in such cases:

Exposure history: This attempts to define, in qualitative terms, the likelihood of, and amount of exposure to hydrogen sulphide. This should include questions about work processes, the presence of a rotten egg odour and inquiring as to effects in co-workers. If possible, this should be supplemented by Industrial Hygiene information, which might include the triggering of alarms for hydrogen sulphide and historical data on air measurements. For suspected exposures, the workplace can often provide useful estimates regarding the level of exposure, although such data may require several days to reconstruct.

Clinical history: The physician should attempt to establish the presence of as many of the symptoms as possible associated with H₂S exposure. Determining the presence of respiratory tract irritation (conjunctivitis, rhinitis, tracheitis) is of particular importance since this symptom distinguishes hydrogen sulphide from several other asphyxiants and serious toxicity is unlikely in the absence of this symptom at presentation.

Investigations

There are no specific tests in routine clinical use to establish hydrogen sulphide intoxication. Rather, testing is aimed at characterizing the sequels of intoxication, as well as to rule out other causes for the presentation.

Appendix C: Toxic Gases, continued

Medical Treatment for Hydrogen Sulphide Exposure, continued

Treatment

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical burn and maintenance of circulatory status. Although nitrite therapy has been advocated as an antidote, there is little evidence to support its use and as it is potentially dangerous it is not recommended.

On arrival - check blood gases and assess for lactic acidosis. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema. ECG may assist as arrhythmias and bradycardia are not uncommon. Temporary T wave depression may occur and ECG may mimic infarction.

For the unconscious patient, give oxygen using mechanical ventilation with positive end expiratory pressure.

Assess for associated musculo-skeletal and internal traumatic injury.

Maintain circulating fluid volume, but be alert for delayed onset of pulmonary edema.

At times, strong physical restraint may be required. Keep the patient as inactive as possible.

A pulmonary function test should be done near time of discharge and, if abnormal should be repeated at appropriate intervals thereafter.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms

Possible exposure, with symptoms (that are compatible with H₂S)

Known exposure including "knockdown", with symptoms that require medical treatment and/or hospitalization.

In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation, and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (1) and (2), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24-48 hours prior to RTW.

Appendix C: Toxic Gases, continued

Sulphur Dioxide (SO₂)

Background

Sulphur Dioxide (SO₂) belongs to the family of sulphur oxide gases (SO₂). Sulphur is prevalent in raw materials including crude oil and coal, as well as in ore that contains common metals. Sulphur oxide gases form when fuels containing sulphur are burned and when gas is processed or metals are extracted from ore. Like other sulphur oxide gases, SO₂ dissolves in water or water vapour to form acid, and interacts with other gases and particles in the air to form sulphates and other products.

Sulphur dioxide is a colourless gas that is about 2.5 heavier than air. It has a sweet pungent odour, and can be detected by taste and smell at concentrations as low as 300 parts per billion (ppb). Acids that are formed when SO₂ (and nitrogen oxides) react with other substances in the air may be carried great distances before falling to earth as rain, fog, snow or dry particles. Acid rain damages forests and crops, changes the chemical make-up of soils, and increases the acidity of lakes and streams. Continued long-term exposure will affect the natural variety of plants and animals in an ecosystem. As well as contributing to smog, SO₂ emissions cause aesthetic damage and accelerate the decay of building materials and paints.

General guidelines dictate evacuation where SO₂ concentrations reach 5 ppm averaged over a 15 minute period. However, as a precaution, evacuation will be established under the criteria when the SO₂ level reaches 1 ppm for two to three hours, or averages 0.3 ppm over twenty-four hours.

Signs and Symptoms

Sulphur dioxide causes a wide variety of health and environmental impacts because of the way it reacts with other substances in the air. Acute and chronic exposure to SO₂ affects the respiratory system. Acute exposure effects, with increasing exposure, include irritation of the eye, nose and throat, choking, coughing, bronchitis and pneumonia. Exposure to low concentrations can aggravate chronic pulmonary diseases, such as asthma and emphysema. Co-exposure to cold or dry air may further exacerbate the respiratory effects of SO₂ on sensitive asthmatics. Particularly sensitive groups include children, the elderly and those with existing heart or lung disease.

Sulphur Dioxide Toxicity Table (BC Regulations)

Concentration (ppm)	Effects
0.13	24 hour level (MWLAP Level B Criteria).
0.34	One hour average evacuation level (MWLAP Level B criteria).
2	Eight hour occupational Exposure Limit (BC WCB)
3 – 5	Odour threshold.
5	15 minute Occupational Exposure Limit (BC WCB)
8 – 12	Throat irritation, coughing, constriction in chest, tearing and smarting of the eyes.
10 – 50	5 – 15 minutes exposure produces increased irritation of eyes, nose, and throat, choking, coughing, and in some cases wheezing due to narrowing of the airways (which increases the resistance of the air flow).
150	Short-term endurance lost due to the severe eye irritation and because of the effects on the membranes of the nose, throat, and lungs.
500	Highly dangerous after exposure of 30 – 60 minutes.

Adapted from the Canada Safety Council Data Sheet "Sulphur Dioxide" No. B-4 Oil and Gas Commission November 2003.

Appendix C: Toxic Gases, continued

Acute Health Effects of Sulphur Dioxide (AB Regulations)

Concentration (ppm)	Acute Health Effects
0.1	Transient bronchoconstriction ¹ in sensitive exercising asthmatic individuals that ceases when exposure ceases. ²
0.3 – 1	Possible detection by taste or smell.
0.75	Transient lung function changes in healthy, moderately exercising, non-asthmatic individuals.
1 - 2	Lung function changes in healthy non-asthmatics. Symptoms in asthmatics would likely increase in severity. There may be a shift to clinical symptoms from changes detectable only via spirometry.
3	Easily detected odour.
6 – 12	May cause nasal and throat irritation.
10	Upper respiratory irritation, some nosebleeds.
20	Definitely irritating to the eyes; chronic respiratory symptoms develop; respiratory protection is necessary.
50 – 100	Maximum tolerable exposures for 30-60 minutes.
Greater than 100	Immediate danger to life (NIOSH recommendation).

¹ At low levels, bronchoconstriction was generally observed as changes in airway conductance detectable by spirometry rather than as clinical symptoms.

² It should be noted that clinical studies on humans are generally designed to elicit a response and consequently subject study volunteers to challenging conditions such as exercising, mouth breathing, cold, dry air, etc. Real-life responses in asthmatics should be viewed as being individual-specific dependent on severity of asthma, whether the individuals are medicated or not, how cold and/or dry the air is, mouth breathing (vs. nose breathing, which can act as an effective scrubber mechanism) and exercise.

Adapted from: Technical Advisory Committee on Public Health and the Oil and Gas Industry, Environmental Public Health Manual for Oil and Gas Activities in Alberta, 2007

Source: Alberta Health Services, Environmental Public Health

<http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf>

Appendix C: Toxic Gases, continued

Medical treatment for sulphur dioxide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Sulphur Dioxide (SO₂) Guidelines - Revised July 2001)

Guidelines for in Hospital Assessment/Treatment of Possible Sulphur Dioxide Exposure

This is provided to assist medical staff in assessing a worker who has a possible or actual SO₂ exposure.

Section I provides information on SO₂

Section II summarizes possible health effects which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations.

I. Sulphur Dioxide

SO₂ is a colourless gas with a pungent odour detectable by the human nose at concentrations of about 0.5 to 0.8 ppm.

SO₂ is highly soluble in water resulting in the formation of sulphurous acid.

Approximately 90% of inhaled SO₂ is absorbed in the upper respiratory tract.

Asthmatics and individuals with underlying bronchial hyperactivity may be more susceptible to low level exposure to SO₂.

II. Health Effects of Sulphur Dioxide

SO₂ causes almost immediate coughing with significant exposure.

SO₂ causes irritation of the conjunctive and nasal mucosa at levels between 5 and 10 ppm.

Exposures of SO₂ as low as 8 ppm has been associated with symptoms of cough, phlegm, wheezing and exertional dyspnea.

Acute high-dose exposures leading to severe injury are unusual, parenchyma lung damage occurs above 50 ppm.

Appendix C: Toxic Gases, continued

Medical treatment for sulphur dioxide exposure, continued

Acute exposure may include the following symptoms and signs:

Respiratory

Inhaled SO₂ is a moderate to strong respiratory irritant. Reddening of the throat and nose may occur. Repeated exposure to 10 ppm has caused nosebleeds. Sensitivity varies among people, short exposure to low concentrations may produce a reversible decrease in lung function, and symptoms may include chest tightness.

Exposure to high concentrations of SO₂ has caused severe airways obstruction, hypoxia and pulmonary edema. The effects of pulmonary edema include coughing and shortness of breath which can be delayed until hours or days after the exposure; these symptoms are aggravated by physical exertion. Survivors of high concentration exposures may suffer chemical bronchopneumonia and bronchiolitis obliterans, which can be fatal after a few days. Delayed chemical pneumonitis and bronchial asthma can also result.

Dermal

The gas will react with moisture on the skin and cause irritation (redness, itching).

Ocular

Eye irritation may result in smarting of the eyes and tearing. In severe cases (high concentrations in a confined area), SO₂ has caused temporary corneal burns.

Potential Sequelae

Survivors of high concentration exposures may suffer chemical bronchopneumonia and bronchiolitis obliterans, which can be fatal after a few days. Delayed chemical pneumonitis and bronchial asthma can also result.

III. Approach to the worker with suspected Sulphur Dioxide Exposure

Although this document refers only to SO₂, it is important for the clinician to keep in mind the possibility of co-exposure to numerous other agents.

History

The history is the key to the diagnosis of SO₂ (or other industrial) intoxication. There are two facets to the history in such cases:

Exposure history: This attempts to define, in qualitative terms, the likelihood of, and amount of exposure to sulphur dioxide. This should include questions about work processes, the presence of an odour and inquiring as to the effects in co-workers. If possible, this should be supplemented by industrial hygiene information which might include the triggering of alarms for sulphur dioxide and historical data on air measurements. For suspected exposures, the workplace can often provide useful estimates regarding the level of exposure, although such data may require several days to reconstruct.

Clinical history: The physician should attempt to establish the presence of as many of the symptoms as possible associated with SO₂ exposure.

Investigations

There are no specific tests in routine clinical use to establish sulphur dioxide intoxication. Rather, testing is aimed at characterizing the sequels of intoxication as well as to rule out other causes for the presentation.

Appendix C: Toxic Gases, continued

Medical treatment for sulphur dioxide exposure, continued

Treatment

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical burn and maintenance of respiratory status.

On arrival - check blood gases. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema.

Oxygen should be delivered by nasal cannula or mask, or if pulmonary injury leads to severe hypoxia by mechanical ventilation.

If bronchospasm occurs, bronchodilators may be of value.

A pulmonary function test should be done near time of discharge and, if abnormal, should be repeated at appropriate intervals thereafter.

Conjunctival irritation should be treated with copious irrigation with saline and the eyes examined with fluorescein for corneal defects.

Assess for associated musculo-skeletal and internal traumatic injury.

Prophylactic antibiotics should be avoided.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms;

Possible exposure, with symptoms (that are compatible with SO₂) or

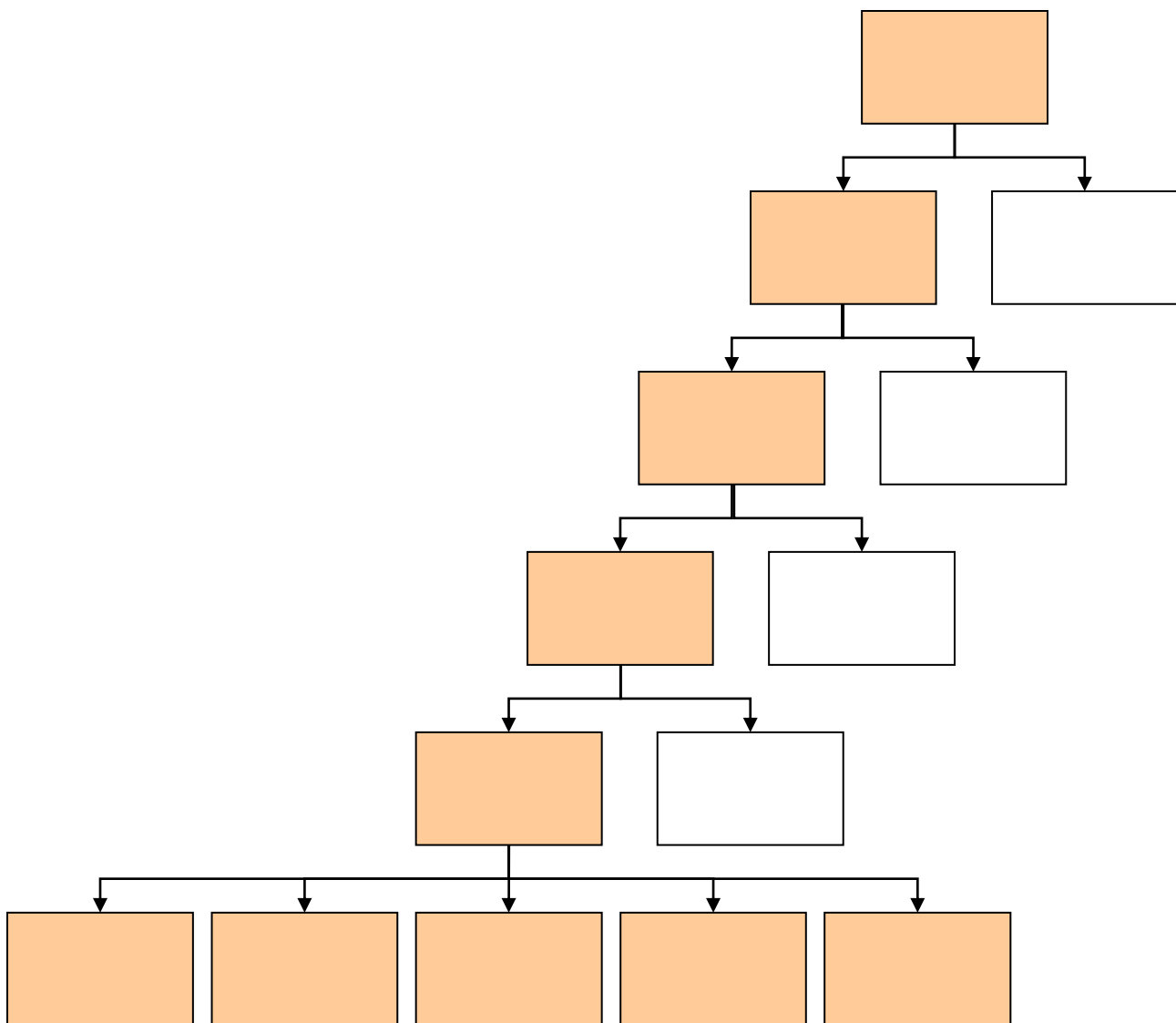
Known exposure, including "knockdown", with symptoms that require medical treatment and/or hospitalization.

In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (2) and (3), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24 - 48 hours prior to RTW.

Appendix D: Key Elements of the Incident Command System (ICS)

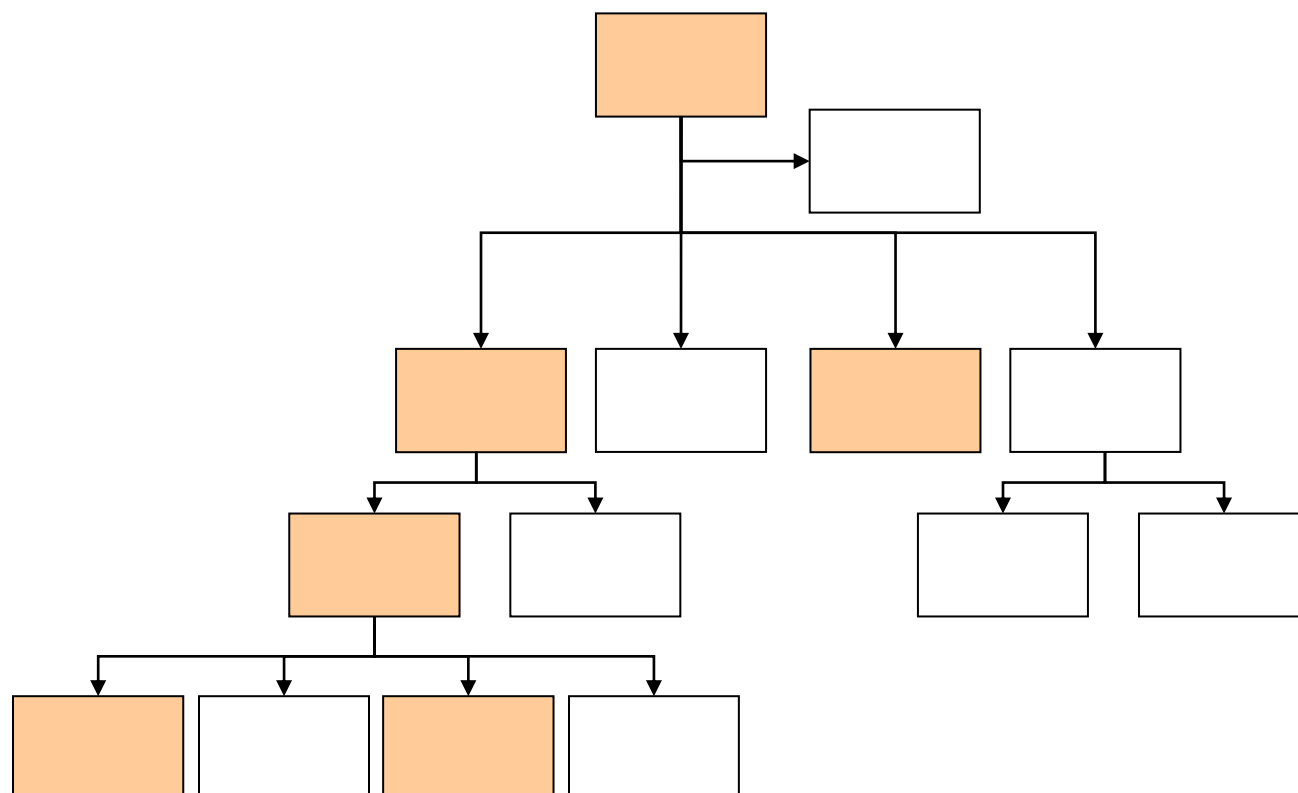
Management by Objectives – Objectives are ranked by priority, should be as specific as possible, must be attainable and if possible given a working time-frame. Objectives are accomplished by first outlining strategies (general plans of action), then determining appropriate tactics (how the strategy will be executed) for the chosen strategy

Unity and Chain of Command – Each individual takes direction from and reports to only one designated supervisor; this is called Unity of Command. Higher level personnel have authority over lower level personnel; the lower level personnel are subordinate to and take direction from higher level personnel. Orders and instructions travel down the chain of command from one supervisor to each subordinate. This is called Chain of Command.



Appendix D: Key Elements of the Incident Command System (ICS), continued

Organizational Flexibility – Only positions that are required at the time should be assigned. In most cases, very few positions will need to be assigned.



Span of Control – ICS requires that any single person's span of control (number of people reporting to them) should be between three and seven, with five being ideal.

Common Terminology – When different organizations are required to work together, the use of common terminology is essential.

Incident Action Plan (IAP) – Every incident must have a written or oral Incident Action Plan. The following information is part of an Incident Action Plan and must be communicated to the rest of the organization:

- Objectives, strategies and tactics outlined by the Incident Commander.
- Resources assignments – what resources do we have and what are they doing? What resources are on order and what are they going to do?
- A description of the ICS organizational structure – what positions will be filled?
- Supporting materials – incident map, communications plan, evacuation plan, stick diagrams, etc.

Integrated Communications – The use of a common communications plan is essential for ensuring effective communication during an incident.

Appendix D: Key Elements of the Incident Command System (ICS), continued

Establishment and Transfer of Command – The highest ranking authority arriving on-scene at an incident will assume the role of the Incident Commander. That person will continue to be the Incident Commander until there is a formal transfer of command. A transfer of command briefing usually consists of:

- Reviewing a description of the incident.
- Reviewing the actions taken thus far to contain and control the incident.
- Reviewing the current ICS organizational structure.
- A summary of the resources available and ordered.

Resources Management – A resource must either be in assigned, available, or out-of-service status.

- Assigned – a resource in assigned status is currently doing whatever tasks have been assigned to it.
- Available – a resource in available status is ready to be deployed at a moments notice. Resources in available status often wait for assignments at an incident Staging Area.
- Out-of-Service – a resources in out-of-service status might be sleeping, receiving medical aid, getting repairs, etc. and is not ready for assignment.

Summary of Responsibilities

These management functions are handled by the General Staff once they have been delegated by the Incident Commander.

Command Ensures safety. Assumes overall responsibility for the incident.

The Incident Commander is responsible for the Command of the incident as well as the following management functions until they are assigned to other response personnel:

Operations Implements the Incident Action Plan (IAP) focusing on control, containment, and site safety.

Public Safety Implements the Incident Action Plan (IAP) focusing on notification and evacuation of the public.

Planning Help create and track (document) the success of the Incident Action Plan (IAP).

Logistics Secure the resources and put them in place to allow Operations to implement the Incident Action Plan.

Finance/Admin Ensures procedures are in place to allow logistics to secure the resources (spending) and track and control the expenditures.

Communications Disseminates information and liaises with external agencies.

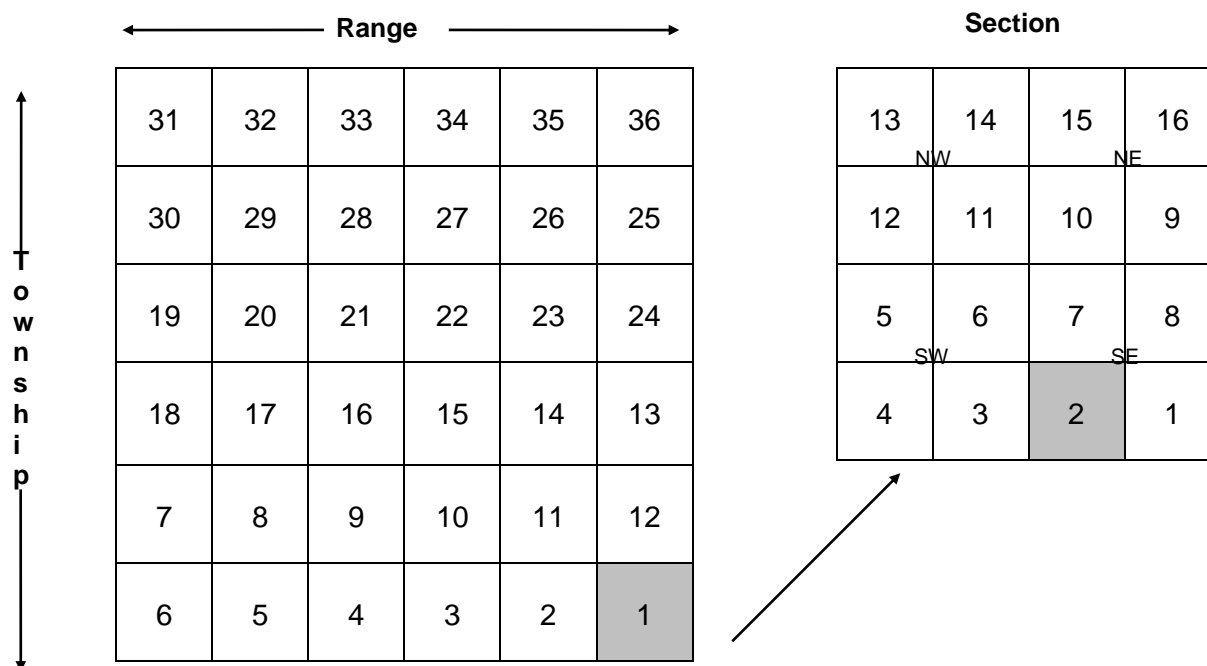
Communications is handled by the Information Officer once one has been appointed by the Incident Commander. The Information Officer is part of the Command Staff.

Appendix E: Land Descriptions

Dominion Land Survey (DLS) System

- Each township (6 mile x 6 mile) is divided into 36 sections (1 mile x 1 mile)
- Each section is divided into 16 legal sub-divisions (L.S.D.)
- Each section is divided into four quarters (N.W., N.E., S.W., and S.E.)

The numbering of sections and L.S.D.s is shown below:



- Townships increase in number from South to North starting at the Canada - USA border
- Ranges increase in number from East to West within a Meridian. A Range is one (1) Township wide (6 miles).
- Meridians run from the North Pole to the South Pole and are spaced every four degrees. The principal Meridian in Canada originates in Central Manitoba and increases West or East from there.
- Legal land description is listed in the following order:

	<u>L.S.D</u>		<u>Section</u>		<u>Township</u>		<u>Range</u>		<u>Meridian</u>
Example	02	-	01	-	38	-	09		West of the 4 th

Appendix E: Land Descriptions, continued

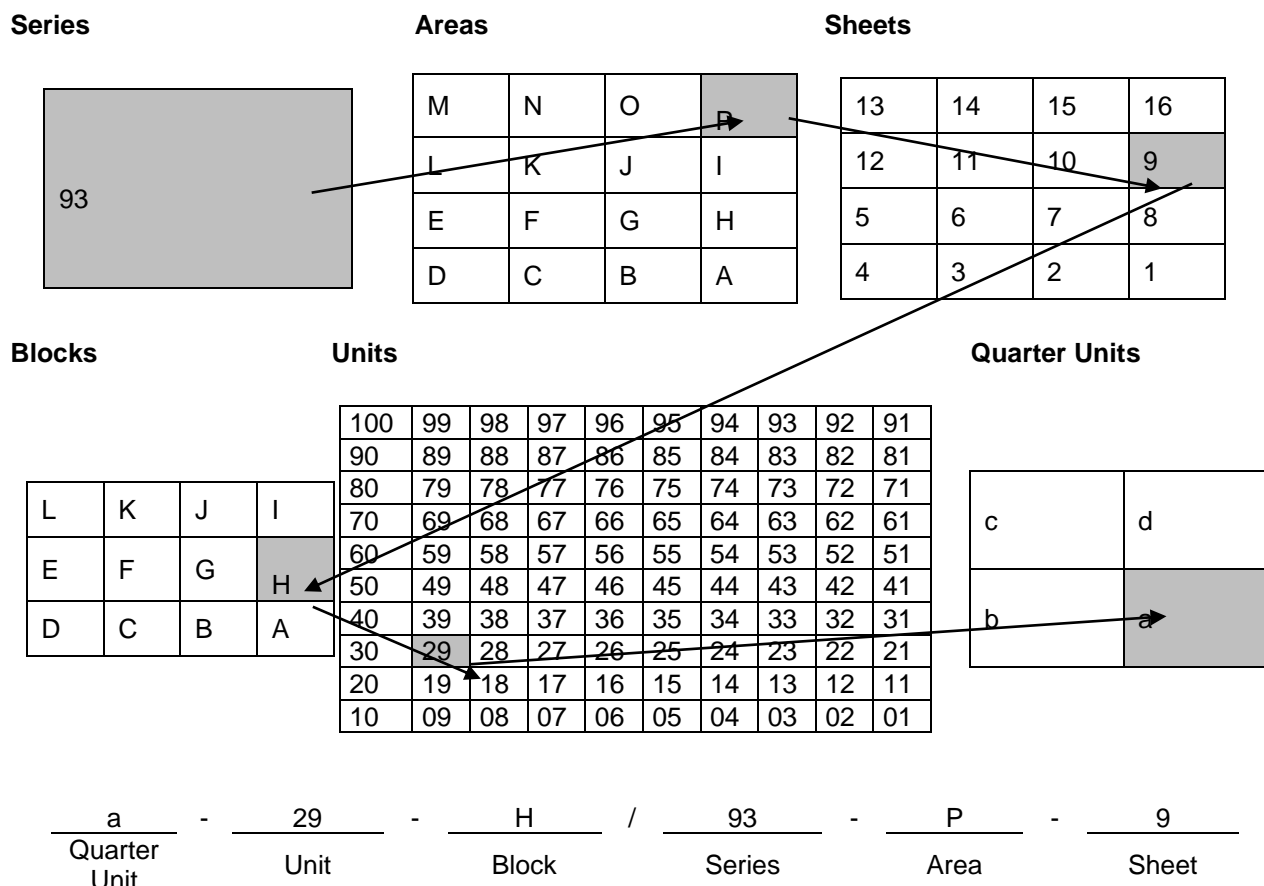
National Topographic System (NTS)

Based on the National Topographic System (NTS), the map labelling terms are as follows:

1) Series	A rectangular area that has a width of 8 degrees of longitude and 4 degrees of latitude. There are 9 Series in British Columbia (82, 83, 92, 93, 94, 102, 103, 104, and 114).
2) Area	1/16 of a map Series that has a width of 2 degrees of longitude by 1 degree of latitude (labelled from A to P).
3) Sheet	1/16 of map Area that has a width of 30' in longitude and 15' of latitude (labelled from 1 to 16).
4) Block	1/12 of a map Sheet with a width of 7'30" in longitude and 5' in latitude (labelled from A to L).
5) Unit	1/100 of a map Block, and has a latitudinal extent of 30" and longitudinal extent of 45" (labelled from 1 to 100).
6) Quarter Unit	1/4 of a map Unit (labelled from a to d).

Note: 1 degree is equivalent to approximately 111 km in British Columbia. Degrees vary in size around the planet. They become smaller the closer they get to the poles (north or south) and very large as they reach the equator.

Example a-29-H / 93-P-9



Appendix F: ERP Reference Material

Acronyms

Acronym	Meaning	Acronym	Meaning
ABSA	Alberta Boilers Safety Association	ICS	Incident Command System
AEMA	Alberta Emergency Management Agency	IIZ	Initial Isolation Zone
AER	Alberta Energy Regulator	IAP	Incident Action Plan
AH	Alberta Health	INAC	Indigenous and Northern Affairs Canada
AHS	Alberta Health Services	LA	Local Authority
AT	Alberta Transportation	LBV	Line Block Valve
BCER	BC Energy Regulator	LEL	Lower Explosive Limit
BLEVE	Boiling Liquid Expanding Vapour Explosion	LPG	Liquefied Petroleum Gas
CANUTEC	Canadian Transport Emergency Centre	MD	Municipal District
CAPP	Canadian Association of Petroleum Producers	MEP	Municipal Emergency Plan
CEPA	Canadian Environmental Protection Act	MOP	Maximum Operating Pressure
CER	Canada Energy Regulator	NGL	Natural Gas Liquids
CEOC	Corporate Emergency Operations Centre	NOTAM	Notice to Airmen
CISD	Critical Incident Stress Debriefing	OHS	Occupational Health and Safety
CPE	Communications and Public Engagement	OSCAR	Oil Spill Containment and Recovery
CSA	Canadian Standards Association	OSCP	On-Site Command Post
DFO	Department of Fisheries and Oceans	PAD	Protective Action Distance
EAZ	Emergency Awareness Zone	PAZ	Protective Action Zone
ECCC	Environment & Climate Change Canada	POC	Provincial Operations Centre
EMCR	Emergency Management & Climate Readiness	PPB	Parts Per Billion
EMO	Emergency Management Organization	PPE	Personal Protective Equipment
EOC	Emergency Operations Centre	PPM	Parts Per Million
EPZ	Emergency Planning Zone	RCMP	Royal Canadian Mounted Police
ER	Saskatchewan Ministry of Energy and Resources	RD	Rural District
ERAC	Emergency Response Assistance Canada	REOC	Regional Emergency Operations Centre
ERP	Emergency Response Plan	RHA	Regional Health Authority
ESD	Emergency Shut Down	RM	Rural or Regional Municipality
ESDV	Emergency Shut-Down Valve	SABA	Supplied Air Breathing Apparatus
ETA	Estimated Time of Arrival	SCBA	Self-Contained Breathing Apparatus
FH Order	Fire Hazard Order	SDS	Safety Data Sheet
FNIHB	First Nations and Inuit Health Branch – Health Canada	SHA	Saskatchewan Health Authority
GEOC	Government Emergency Operations Centre	SO ₂	Sulphur Dioxide
HPZ	Hazard Planning Zone	STARS	Shock Trauma Air Rescue Society
HVAC	Heating Ventilation Air Conditioning	TDG	Transportation of Dangerous Goods
HVP	High Vapour Pressure	WCSS	Western Canadian Spill Service
HVPL	High Vapour Pressure Liquid	WHMIS	Workplace Hazardous Materials Information System
H ₂ S	Hydrogen Sulphide		

Appendix F: ERP Reference Material, continued

Glossary of Terms

Adjacent to

Within 25 m.

Air Quality Monitoring

Measurement of atmospheric concentrations of a hazardous substance, such as H₂S or SO₂.

Alberta Energy Regulator (AER)

The AER ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for Albertans.

Alert (*Alberta specific*)

An incident that can be handled on-site by the duty holder through normal operating procedures and is deemed to be a very low risk to the public.

Auto-ignition temperature

All NGL products are flammable and will flash at extremely low temperatures. An open flame or spark is not necessary to cause ignition. Any hot surface which exceeds the auto-ignition temperature of a product can cause a fire if the vapours reaching the hot surface are within their flammable range.

Best practices

A technique or methodology that, through experience and research, has proven to reliably lead to a desired result. A commitment to using the best practices in any field is a commitment to using all the knowledge and technology at one's disposal to ensure success.

Body of water

Streams, lakes, and rivers.

Boiling Liquid Expanding Vapour Explosion (BLEVE)

Boiling Liquid Expanding Vapour Explosion, which is associated with natural gas liquids and high vapour pressure liquids.

Boiling point

This is the temperature that a liquid changes to a gas. NGL products change to a gas at extremely low temperatures and will absorb heat from the surrounding environment during the phase change. Therefore, caution must be used when working with NGLs because contact with flesh can reduce the temperature of the flesh to the NGL boiling point and cause severe frostbite.

British Columbia Emergency Management and Climate Readiness (EMCR) (*British Columbia specific*)

Aids local governments in analyzing hazards and risks, develop and test emergency plans, train and organize emergency staff and volunteers. EMCR also manages all agencies in the event of an emergency or disaster, which cannot be handled locally.

British Columbia Energy Regulator (BCER)

The BCER is the lead agency for all regulated oil and gas related activities within British Columbia.

Businesses

Industrial operators, retail outlet operators, suppliers, residents, outfitters, foresters and other entities that normally operate within the Emergency Planning Zone, but do not necessarily reside in the Emergency Planning Zone.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Closure order (*British Columbia specific*)

When the BCER believes that, because of hazardous conditions in a field or at a well, it is necessary or expedient to close an area and to shut out all persons except those specifically authorized, the BCER may make an order in writing setting out and delimiting the closed area. For Alberta see Fire Hazard (FH) Order.

Corporate Emergency Response Plan

Plans prepared by the duty holder under provincial regulations, statutes, or conditions imposed by the regulator. A corporate ERP contains planned procedures which allows for effective incident response.

Critical Incident Stress Debriefing (CISD)

Critical Incident Stress Debriefing is a specially structured counselling process between the debriefers and those who are directly involved and/or impacted by an incident.

Critical sour well (*Alberta specific*)

A well with an H₂S release rate greater than 2.0 m³/s or wells with lower H₂S release rates in near an urban centre as defined in Directive 056: Energy Development Applications and Schedules.

Emergency

A present or imminent event outside the scope of normal operations that requires prompt coordination of resources to protect the health, safety, and welfare of people and to limit damage to property and the environment.

Emergency Operations Centre (EOC)

An Emergency Operations Centre is a designated facility in a suitable location (i.e. head office, regional office, etc.) established by the permit holder to support Incident Command and to manage the larger aspects of an emergency. In a high-impact emergency, there may be a number of EOCs established to support the response. They may include the Incident Command Post, regional and corporate EOCs, a municipal EOC (MEOC), and the provincial government EOC (POC).

Emergency Awareness Zone (EAZ) (*British Columbia specific*)

A distance outside of the EPZ where public protection measures may be required due to poor dispersion of the hazard. This area is twice the radius of the Emergency Planning Zone (EPZ).

Emergency Planning Zone (EPZ)

An EPZ is a geographic area around wells, pipelines, or facilities where the presence of hazardous substances requires specific emergency preparedness by the duty holder.

Emergency Response Plan (ERP)

A comprehensive plan to protect the public that includes criteria for assessing an emergency situation and procedures for mobilizing response personnel and agencies and establishing communication and coordination among the parties.

Emergency Support Team (EST)

Provides advice and logistical support to the Field Response Team and Incident Commander in particular. The team is comprised of head office personnel and any contract emergency experts.

EOC Director

The EOC Director activates the Corporate Emergency Operations Centre with staff to provide advice and support to the Incident Commander (Field Response Team).

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

EOC Director, continued

Note: If the emergency happens outside an area that has a site specific Emergency Response Plan, only then will the EOC Director assume or appoint the role of Incident Commander and dispatch a Field Response Team to the incident site.

ERCBH2S (*Alberta specific*)

A software program that calculate site-specific EPZs using thermodynamics, fluid dynamics, atmospheric dispersion modelling and toxicology.

Evacuation

An organized, phased, and supervised withdrawal of persons from dangerous or potentially dangerous areas to safe areas.

Tactical Evacuation – A measure to immediately move people to a safe area as part of emergency response and operations. Does not require approval from local authority but the local authority may enact an evacuation order, if required, and local authority must be advised if a tactical evacuation has occurred.

Planned Evacuation – An evacuation coordinated by local government authority that can authorize evacuation alerts and orders.

Explosive Limits (Lower and Upper)

Each gaseous hydrocarbon substance has a minimum (Lower Explosive Limit or LEL) and a maximum (Upper Explosive Limit or UEL) percentage in air below or above which combustion will not take place. Explosive limit and flammability limit are used interchangeable. The terms "Too Lean" and "Too Rich" are used for levels outside of the explosive range.

Facility

Any building, structure, installation, equipment, or appurtenance that is connected to or associated with the recovery, development, production, handling, processing, treatment, or disposal of hydrocarbon-based resources or any associated substance or wastes. This does not include wells or pipelines.

Field Response Team (FRT)

Company and contractor personnel directly involved in controlling the incident at the emergency site and from the EOC.

Fire Hazard (FH) Order (*Alberta specific*)

An order issued by the AER during an emergency to restrict public access to a specified area.

Functional Exercise

As described in CAN/CSA Z246.2-18, an activity designed to evaluate capabilities and multiple functions using simulated response. A functional exercise will simulate the deployment of resources and rapid problem solving. Participants will evaluate management of the command and coordination centres and assess the adequacy of emergency response plans and resources.

Gathering system

The network of pipelines, pumps, tanks, and other equipment that carries oil and gas to a processing plant or to other separation equipment.

Hazard

A situation with potential to harm persons, property, or the environment.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Hazard Planning Zone (HPZ) (British Columbia specific)

A geographical area (a) determined by using the hazard planning distance as a radius, and (b) within which persons, property or the environment may be affected by an emergency. Defined in Emergency Management Regulation.

Hazardous product

A substance released in quantities that may harm persons, property, or the environment.

High Vapour Pressure Liquids (HVPLs)

HVPLs have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG @ 100°F) and include ethane, propane, butane, and pentanes plus, either as a mixture or as a single component.

Note: Comparisons

Gasoline - Vapour pressure between 55 and 100 kPa at 38°C (8 - 14.5 PSIG @ 100°F).

Condensate - Often a component of a propane/butane mixture, has a vapour pressure of 59 to 72 kPa at 38°C (8.6 - 10.4 PSIG @ 100°F).

High Vapour Pressure (HVP) plume dispersion geometry

An uncontrolled release of NGL product on flat terrain will form a vapour plume as it disperses. If the vapour plume formed at the leak site has not been ignited, it will most likely reach its maximum size within the first half hour of the leak occurrence. Two unique features of an NGL plume are:

The downwind edge of the plume tends to spread out significantly forming a broad frontal edge.

Under certain conditions, the plume will travel upwind for a short distance.

High Vapour Pressure (HVP) pipeline

A pipeline system conveying hydrocarbons or hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure greater than 110 kilopascals absolute at 38°C. Some examples are liquid ethane, ethylene, propane, butanes, and pentanes plus.

High Vapour Pressure (HVP) products

HVP products have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG at 100°F) and include ethane, propane, butane and pentanes plus, either as a mixture or as a single component. A leak from a vessel or pipe containing HVP products can result in a BLEVE.

Hydrogen sulphide (H₂S)

A naturally occurring gas found in a variety of geological formations and also formed by the natural decomposition of organic matter in the absence of oxygen. H₂S is colourless, has a molecular weight that is heavier than air, and is extremely toxic. In small concentrations, it has a rotten egg smell and causes eye and throat irritations. Depending on the particular gaseous mixture, gas properties, and ambient conditions, a sour gas release may be:

Heavier than air (dense), so it will tend to drop towards the ground with time,

Lighter than air (buoyant), so it will tend to rise with time, or

About the same weight as air (neutrally buoyant), so it will tend to neither rise nor drop but with time disperse.

Hydrogen sulphide (H₂S) release rate

The rate that sour gas escapes into the atmosphere is often calculated for sour gas wells. It is usually defined in cubic metres per second (m³/s). The size of the emergency planning zone is estimated from the H₂S release rate.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Hydrogen sulphide (H₂S) release volume

The volume of sour gas that escapes into the atmosphere is often calculated for facilities that have a defined retention volume, usually defined in cubic metres. Emergency planning zone sizes are often estimated using the volume of H₂S that may be released from a facility. More sophisticated models may also incorporate the rate at which the release could occur and the nature of the gas and the atmospheric conditions when determining the emergency planning zone size.

Hyper-susceptible

A person or persons who may be abnormally reactive to a given exposure to toxins and whose reaction may occur in orders of magnitude greater than that of the susceptible population. Hypersusceptibles include those persons with impaired respiratory function, heart disease, liver disease, neurological disorders, eye disorders, severe anemia, and suppressed immunological function.

Ignition

Process of setting a hydrocarbon release on fire.

Ignition Team

Consists of at least two personnel trained in plume ignition.

Incident

An unexpected occurrence or event that requires action by emergency personnel to prevent or minimize the impacts on people, property, and the environment.

Incident classification

A system that examines the risk level to members of the public following an incident and assigns a level of emergency based on the consequence of the incident and the likelihood of the incident escalating.

Incident Command Post (ICP)

A designated place where the Incident Commander and staff is located. The ICP should be located outside of the hazard area, but close to the incident. The ICP may be a vehicle, trailer, fixed facility or any location suitable to accommodate the function.

Incident Commander

Manages the overall response to emergency incidents. The Incident Commander is responsible for: developing objectives, strategies and tactics that guide the response; assigning personnel to fill necessary positions; ensuring the safety of all personnel; keeping internal and external stakeholders updated; coordinating with other response agencies.

Incident Command System (ICS)

A standardized, on-scene, all-hazard incident management system. The Incident Command System (ICS) is flexible in that it can be adapted for large and small incidents.

Initial Isolation Zone (IIZ)

The area in close proximity to a continuous hazardous release where indoor sheltering may provide temporary protection due to the proximity of the release.

Incident Management System

A system used to coordinate preparedness and incident management.

Isolating the release

Ensuring access to the hazard area is controlled.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Level 1 Emergency (*Alberta specific*)

The incident presents no danger outside the duty holder's property or threat to the public and has a minimal environmental impact. Duty holder personnel can manage the incident themselves with immediate control of the hazard. There is little or no media interest.

Level 1 Emergency (*British Columbia specific*)

There is no immediate danger to the public or environment as no H₂S has been released; the emergency is confined to the lease or company property.

Level 2 Emergency (*Alberta specific*)

The incident presents no immediate danger outside the duty holder's property but could potentially extend beyond the duty holder's property. Outside agencies must be notified. Imminent control of the hazard is probable, but there is a moderate threat to the public or the environment or both. There may be local and regional media interest in the event.

Level 2 Emergency (*British Columbia specific*)

There is potential risk to the public or environment, as the emergency could extend beyond company property. However, control is still possible.

Level 3 Emergency (*Alberta specific*)

The safety of the public is in jeopardy from a major uncontrolled hazard. There are likely significant and ongoing environmental impacts. Immediate multiagency municipal and provincial government involvement is required.

Level 3 Emergency (*British Columbia specific*)

An immediate danger to the public or environment exists; control of the situation has been lost.

Licensee

The responsible duty holder as specified in legislation.

Liquid to gas expansion

NGL products will expand greatly when released to the atmosphere. For example, propane expands 272 times its liquid volume. Other products expand at different rates, but all have a high gas to liquid ratio.

Liquefied Petroleum Gas (LPG)

Mixture of heavier, gaseous hydrocarbons (butane and propane), liquefied as a portable source of energy.

Local Authority

A local authority is considered to be:

- 1) The council of a city, town, village or municipal district;
- 2) in the case of an improvement district or special area, the Minister of Municipal Affairs;
- 3) for a national park, the park superintendent or the park superintendent's delegate;
- 4) the settlement council of a Métis settlement; or
- 5) the band council of a First Nations Reserve.

Local State of Emergency

See State of local emergency.

Lower Explosive Limit (LEL)

The lowest concentration of gas or vapour (per cent by volume in air) that explodes if an ignition source is present at ambient temperatures.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Manitoba Economic Development, Investment and Trade (EDIT) – Resource Development (Petroleum)

The Manitoba Economic Development, Investment and Trade (EDIT) – Resource Development (Petroleum) Branch administers The Mines and Minerals Act and related regulations governing the exploration, development, production, transportation and storage of crude oil and natural gas.

M.D.

Municipal District

Major (full-scale) exercise

As described in CAN/CSA Z246.2-18, a multi-agency, multi-jurisdictional activity involving actual deployment of resources in a coordinated response, as if a real emergency had occurred. The full-scale exercise includes the mobilization of units, personnel, and equipment. Participants will assess plans and procedures and evaluate coordinated responses under crisis conditions.

Maximum Operating Pressure (MOP)

The maximum licensed operating pressure for a vessel or pipeline or a section of it.

Ministry of Energy and Resources (ER)

ER is the lead regulatory agency for the upstream petroleum industry in Saskatchewan.

Mobile air quality monitoring

Use of sophisticated portable equipment to track substances such as H₂S or SO₂ at very low parts per billion atmospheric concentrations.

Municipality

See local authority.

Municipal Emergency Operations Centre (MEOC)

The centre from which responsible municipal officials manage and support emergency operations within their jurisdiction, as well as formulate protective actions and provide public information. The centre has adequate workspace, maps, status boards, and communications capability.

Municipal Emergency Plan (MEP)

The emergency plan of the local authority.

Natural Gas Liquids (NGL)

These are hydrocarbons liquefied under pressure in field facilities or in gas processing plants. Natural gas liquids include ethane, propane, butane and pentanes plus and normally occur as a mixture of these compounds.

Physical Properties of NGL Products:

Colour - NGL products are colourless except when they include a condensate component, which gives them a light-yellow appearance. Releases during winter conditions can discolour snow. NGL products may appear as a white cloud when released to the atmosphere. This white cloud is formed by the condensing of moisture in the air.

Odour - Most NGL products have a mild petroleum odour. During pipeline transport NGL products are almost odourless.

Vapour Density - A measure of the mass per unit volume of the vapour (i.e. kg/m³). All NGL products transported by the company have a vapour density greater than air or a relative vapour density greater than 1.0.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

NAV Canada

Canada's civil air navigation services provider, with operations coast to coast. NAV Canada provides air traffic control, flight information, weather briefings, aeronautical information services, airport advisory services, and electronic aids to navigation.

Notice to Airmen (NOTAM)

An order issued by Transport Canada restricting access to airspace in a defined area.

Notification

The distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development.

Odour complaint

A report that someone smells an offensive odour (may be sour gas) in the area.

Oil Spill Containment and Recovery Unit (OSCAR)

Trailer containing oil spill equipment for containment and recovery.

On-site command post (OSCP)

An emergency operations centre established in the immediate vicinity of the incident to provide immediate and direct response to the emergency and initially staffed by licensee personnel.

Partially controlled flow

A restricted flow of product at surface that cannot be shut off at the licensee's discretion with equipment on-site.

Personal consultation

Consultation through face-to-face visits or telephone conversations with all requisite individuals.

Petroleum industry

Refers to all petroleum industry operations.

Plume (gas plume)

An elongated mobile column of gas or smoke.

Protective Action Zone (PAZ)

An area downwind of a hazardous release where outdoor pollutant concentrations may result in life threatening or serious irreversible health effects on people.

Protective Action Distance (PAD)

The distance from the incident to the EPZ outer boundary.

Provincial Operations Centre (POC)

An operations centre with the capacity to accommodate representatives from each government department.

Public

The group of people who may be or are impacted by an emergency (e.g., employees, contractors, neighbours, emergency response organizations, regulatory agencies, the media, appointed or elected officials, visitors, customers, etc., as appropriate).

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Public facility (*Alberta specific*)

A public building, such as a hospital, rural school, or major recreational facility, situated outside of an urban centre that can accommodate more than 50 individuals and/or that requires additional transportation to be provided during an evacuation.

Public protection measures

The use of sheltering, evacuation, ignition, and isolation procedures to mitigate the impact of a hazardous release on members of the public.

Public Safety Group Supervisor

Member of the field response team. Individual charged with the responsibility of co-ordinating the evacuation or shelter of people in the emergency hazard Area. The Public Safety Group Supervisor reports to and may be located in the same location as the Incident Commander.

Publicly used development (*Alberta specific*)

Places where the presence of 50 individuals or less can be anticipated (e.g., places of business, cottages, campgrounds, churches, and other locations created for use by the non-resident public).

Publicly used facility (*British Columbia specific*)

Places where the presence of people can be anticipated. Examples include places of business, cottages, campgrounds, churches, and other locations created for use by the public. Includes any similar development the BCER may designate as a public facility.

Publicly used facility

Places where the presence of people can be anticipated. Examples include places of business, cottages, campground, churches, and other locations created for use by the public.

Reception centre

A centre established to register evacuees for emergency shelter, to assess their needs, and, if temporary shelter is not required because evacuees will stay elsewhere, to ascertain where they can be contacted.

Regional Emergency Operations Centre (REOC)

An operations centre established in a suitable location to manage the larger aspects of the emergency that is manned jointly by government and industry staff.

Residence

A dwelling that is occupied full time or part time.

Resident

Individual living in the area at a fixed location.

Resident data record

Form used to track the contact made with residents, businesses and transients.

Response zones (*Alberta specific*)

The Initial Isolation Zone (IIZ), Protective Action Zone (PAZ) and Emergency Planning Zone (EPZ).

Roadblock Crew

Personnel responsible for controlling access to the Emergency Hazard Area, reporting to the Public Safety Group Supervisor.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Rover

Member of the field response team. Individual responsible for assisting in the evacuation of the Hazard Area, reporting to the Public Safety Group Supervisor. May also be directed to shut-in / shut down equipment that may cause future safety hazards.

Rover Kit

A briefcase containing maps, forms, supplies and instructions needed by the Rover to carry out their duties.

S.A.B.A.

Supplied Air Breathing Apparatus.

S.C.B.A.

Self Contained Breathing Apparatus.

Serious injury

A serious injury includes the following:

- an injury that results in death;
- fracture of a major bone;
- amputation other than a portion of a finger or toe;
- loss of sight in an eye;
- internal haemorrhage;
- third degree burns;
- unconsciousness;
- An injury that results in paralysis (permanent loss of function).

Shelter-in-Place

Remaining indoors for short-term protection from exposure to toxic gas releases.

Sour gas

Natural gas, including solution gas, containing hydrogen sulphide (H₂S).

Sour gas release

An uncontrolled release of natural gas containing hydrogen sulphide (H₂S).

Sour multiphase product (*British Columbia specific*)

Any liquid that contains H₂S in the gas phase.

Sour multiphase pipeline (*British Columbia specific*)

A pipeline that transmits a multiphase product that contains more than 10 moles of H₂S per kilomole of natural gas in the gas phase.

Sour pipeline

Pipeline that conveys gas and/or liquid that contains sour gas.

Sour production facility

Facility that processes gas and/or liquid that contains sour gas

Sour well

An oil or gas well expected to encounter during drilling formations bearing sour gas or any oil or gas well capable of producing sour gas.

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Special needs

Those persons for whom early response actions must be taken because they require evacuation assistance, requested early notification, do not have telephones, require transportation assistance, have a language or comprehension barrier, or have specific medical needs. Special needs also include those who decline to give information during the public consultation process and any residences or businesses where contact cannot be made.

Special sour well (*British Columbia specific*)

A designation that reflects the proposed well's proximity to populated centers and its maximum potential H₂S release rate during the drilling state. The casing or open-hole flow configuration is used in arriving at this designation.

Standing well

A well that has been drilled and cased but not perforated. A company is generally allowed to leave the well as standing for up to one year.

State of local emergency

A declaration by a local authority providing the necessary authority, resources, and procedures at the municipal level to allow an emergency to be resolved effectively and efficiently.

Sulphur dioxide (SO₂)

A colourless, water-soluble, suffocating gas formed by burning sulphur in air; also used in the manufacture of sulphuric acid. SO₂ has a pungent smell similar to a burning match. SO₂ is extremely toxic at higher concentrations. The molecular weight of SO₂ is heavier than air; however, typical releases are related to combustion, which makes the gaseous mixture lighter than air (buoyant).

Surface development

Dwellings that are occupied full-time or part-time, publicly used development, public facilities, including campgrounds and places of business, and any other surface development where the public may gather on a regular basis. Surface development includes residences immediately adjacent to the EPZ and those from which dwellers are required to egress through the EPZ.

Susceptible

The subpopulation of persons who may be considered more sensitive to the effects of H₂S and SO₂, including the elderly, pregnant women, and the very young, particularly preschool-aged children.

Tabletop exercise

As described in CAN/ CSA Z246.2-18, an informal exercise generally used to review resource allocations and roles and responsibilities of personnel and to familiarize new personnel with emergency operations without the stress and time constraints of a major exercise.

Technically complete Emergency Response Plan (ERP)

A plan that meets all applicable requirements.

Telephoners

Telephoners place calls to residents as directed by the Public Safety Group Supervisor.

Threatening telephone call

Any communication that threatens the well-being of company personnel or property. A form is provided in the manual to capture data from or about a person who calls with a threatening message.

Transient

An individual that is temporarily in the area (e.g. camper, cross-country skier).

Appendix F: ERP Reference Material, continued

Glossary of Terms, continued

Trapper

The holder of a provincial licensed and registered trapline for the purpose of hunting and trapping fur bearing animals.

Uncontrolled flow

A release of product that cannot be shut off at the licensee's discretion.

Urban centre

A city, town, village, summer village, or hamlet with no fewer than 50 separate buildings, each of which must be an occupied dwelling, or any similar development.

Unrestricted country development

Any collection of permanent dwellings situated outside of an urban centre and having more than eight permanent dwellings per quarter section.

Urban density development

Any incorporated urban centre, unincorporated rural subdivision, or group of subdivisions with no fewer than 50 separate buildings, each of which must be an occupied dwelling.

Vapour pressure

The pressure exerted by the vapour when the rate of evaporation is equal to the rate of condensation of the vapour. All NGL products have vapour pressure greater than atmospheric pressure air and therefore have to be kept under pressure or else they will vaporize.

Vapour-air plume / vapour cloud

When released to atmosphere, products form a vapour-air plume that is colourless, heavier than air and has a faint gasoline odour. Depending on the product released and the atmospheric conditions, water vapour may condense to form a cloud.

Water body

Natural or manmade; contains or conveys water continuously, intermittently, or seasonally. A natural water body is any location where water flows or is present, whether the flow or the presence of water is continuous, seasonal, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, or other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills. Examples of a manmade water body include, but are not limited to, a canal, drainage ditch, reservoir, dugout or other manmade surface feature.

Well servicing

The maintenance procedures performed on a producing or injecting well after the well has been completed and operations have commenced. Well servicing activities are generally conducted to maintain or enhance well productivity or injectivity.

Workover

The process of re-entering an existing well to perform remedial action that will restore or improve the productivity or injectivity of the target formation.

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ENERCAPITA’S 24-HOUR 866-556-7838

24 HOUR EMERGENCY NUMBER: **866-556-7838**

Primary Incident Command Post

Will be determined at the time of incident but will typically be established at the nearest Battery location.

Corporate Emergency Operations Centre (CEOC)

Calgary Head Office Admin: 403-294-9199
600-215 2 Street SW Calgary, AB T2P 1M4

Alternate CEOC

H₂Safety Office Office: 403-212-2332
210, 7260 - 12 Street SE, Calgary, AB T2H 2S5

KEY RESPONSE PERSONNEL

Greg Shrode Cell: 780-305-6541
Boundary Lake Supterintendent

Shaun Moskalyk Cell: 780-834-0100
Boundary Lake North Foreman

** For a full list of field operators, refer to the yellow "Response Team Phone List" tab, behind the blue "Section 2.0: Roles and Responsibilities" tab. **

OPERATIONS SUMMARY

Enercapita Energy is the owner and operator of the Boundary Lake Central field, which is a sweet and sour oil and gas field straddling the border between Northeastern British Columbia and Northwestern Alberta. The field is located within the Peace River Regional District of British Columbia and Clear Hills County in Alberta. There are 6 inter-provincial pipelines between AB and BC, and as such, falls under the Canada Energy Regulator (CER) regulations.

The pipelines gather sour oil effluent and transport the product to the 04-16-86-13 W6M battery. At the 04-16 battery, the produced water is separated from the oil and is pipelined out to an injection well at 09-08-86-13 W6M to be injected back into the formation. Sweet oil is trucked out daily to Gordondale and Spirit River fields in Alberta. Oil trucks load product from 10 am to 10 pm daily. Fuel gas is transported through Enercapita pipelines to the CNRL gas gathering system, where it ultimately ends up at the CNRL Clear Hills Gas Plant.

EPZ & Hazard Information

The maximum expected H₂S concentration for the wells is 3.95%, with a maximum EPZ of 750 m.

The maximum expected H₂S concentration for the pipelines is 6.00%, with a maximum EPZ of 385 m.

On-Site Storage

Refer to the EPZ Calculation tables for a list of on-site storage, at the end of this section.

Closest Urban Centre & Indigenous Nation

The city of town of Taylor is approximately 37.4 km southwest of the Boundary field with a population of +/- 1,317.

Doig River First Nation is located approximately 24.4 km northwest of the field and has a population of +/- 118.

Indigenous Treaty & Metis Region Boundaries

Treaty 8
Metis Nation of Alberta Region 6
Metis Nation of BC Northeast Region

Hydrology

Boundary Lake, Boundary Creek, German Lake, Hogg Creek, Little Clear River, North Boundary Lake, and numerous unnamed creeks and water bodies. Refer to the map for more information.

Highways / Rail

There are no highways or rail lines impacted by the EPZ.

Site Access

Refer to the access map in this section for directions. Roads can be difficult to drive on due to rainy or snowy weather.

SAFETY EQUIPMENT

Operator / Truck Safety Equipment

Each field operator's truck contains a 20lb fire extinguisher, first aid kit, flashlight, and a personal 4 head monitor. Nearby locations with safety equipment are listed below.

Item	Quantity / Location
Fire Extinguishers - 30lb	2 (04-16 Battery office)
First aid kit	2 (06-29 Battery office)
SCBA	3 (06-29 Battery office)

Notification

There is no SCADA system in place in the Boundary Lake Central area. However, operators can monitor assets via a remote monitoring system on their mobile phones. In addition, CNRL has remote monitoring capability from its Clear Hills Gas Plant and can alert Enercapita operators. There are ESD valves throughout the gathering system that will shut in if an abnormal change in operating pressure is detected. Operators monitor the wells and facilities on a daily basis. Process alarms, including high-level tank alarms, go to a callout centre which alerts operators on their cellular phones.

Communications

The primary method of communication is via cell phone. Cell phone coverage is generally good in the area.

Roadblock Kits

Roadblock locations will be determined at the time of the incident. Equipment will be provided by safety companies. See Support Services for more information.

Staging Areas

The staging area(s) would be established at the nearest Battery or Compressor Station.

** If any of the above mentioned safety equipment is insufficient, Enercapita personnel will contact a local safety company who will be asked to provide additional equipment. **

EMERGENCY SERVICES

Note: All numbers, unless otherwise indicated, are 24 hours.

If there is no 911 service available, please call the 10 digit number listed.

RCMP / Ambulance **911**

BC Ambulance Services 250-374-5937
STARS Air Ambulance 888-888-4567
STARS Site Number: 06-29-87-14 W6M STARS = **3169**

Fire Departments

There is NO fire coverage from any local department. Fires must be handled by Enercapita, their contract operators or contract oilfield fire-fighting services. Local fire departments will only respond to motor vehicle accidents and medical emergencies unless specifically dispatched by EMCR or the Local Authority.

Hospitals

Fort St. John Hospital and Peace Villa 250-262-5200
Dawson Creek & District Hospital 250-782-8501

BC Hydro 888-769-3766

FortisBC Electric 866-436-7847

BC Drug and Poison Information Centre (BC DPIC) 604-682-5050

BC One-Call 800-474-6886
www.bc1c.ca

Reception Centres

Howard Johnson 250-787-0521
8540 Alaska Road, Fort St. John, BC

Lakeview Inn & Suites 250-787-0779
10103 - 98 Avenue, Fort St. John, BC

Pomeroy Hotel & Conference Centre 250-262-3233
11308 Alaska Road, Fort St. John, BC

GOVERNMENT AGENCIES

Note: All numbers, unless otherwise indicated, are 24 hours.

FEDERAL AGENCIES

Canada Energy Regulator (CER) Pipeline Emergency: 819-997-7887
All other Emergencies: 403-299-2773
https://apps.cer-rec.gc.ca/ers/home/index

Online Reporting System Admin: 403-292-5625

Indian Oil & Gas Canada (IOGC) 888-226-8832

CANUTEC

Air Traffic Control

NAV Canada* 866-541-4102
Transport Canada** 877-992-6853

* If flight information or a NOTAM advisory is required, contact NAV Canada.
** if a NOTAM is required for airspace closure, contact the Transport Canada Aviation Operations Centre.

Environment & Climate Change Canada (ECCC)

Meteorological Services 780-951-8907

Department of Fisheries & Oceans Canada (DFO)

Report Marine Pollution 800-889-8852

BC AGENCIES

BC Emergency Management & Climate Readiness (EMCR) / BC Energy Regulator (BCER)

Incident Reporting Line 800-663-3456*

*In the event of an emergency, EMCR will notify the BCER, Ministry of Environment & Climate Change Strategy, Ministry of Forests, Ministry of Water, Lands and Resource Stewardship, Northern Health Authority and any affected municipalities.

Peace River Regional District (PRRD)

800-670-7773 Admin: 250-784-3200

Northern Health Authority (NHA) HEMBC On Call: 855-554-3622

Technical Safety BC (TSBC) 866-566-7233

Transportation of Dangerous Goods (TDG) 800-663-3456

BC Ministry of Transportation & Infrastructure (MOTI) Admin: 250-787-3237

WORKSAFE BC - Fort St. John 888-621-7233

BC Ministry of Forests Admin: 250-784-1200
BC Wildfire Reporting Line 800-663-5555

BC Ministry of Environment & Climate Change Strategy

Peace Region Admin: 250-787-3411
800-889-8852

ALBERTA AGENCIES

Alberta Energy Regulator (AER) 800-222-6514*

Field Operations - Northwest
Wildfire Reporting 310-FIRE (3473)

* One call number for regulatory agency, Alberta environment, spill reporting & sustainable resource development (lands, fish, forest, wildlife) & Environment Canada.

Clear Hills County Admin: 780-685-3925
Allan Rowe, Deputy DEM 24 Hr: 780-835-8097

Alberta Health Services (AHS) - Z5 North 844-755-1788

Horse Lake First Nation

Casey Horseman, Industry Coordinator Cell: 780-814-3892

Indigenous Service Canada (ISC)

First Nations & Inuit Health (FNIH) 780-218-9929

Indian Oil and Gas Canada (IOGC) Admin: 403-292-5625

Alberta Emergency Management (AEMA) - Northwest 866-618-2362

Alberta Boilers Safety Association (ABSA) 780-437-9100

Alberta Safety Services - Electrical Branch Admin: 866-421-6929

Alberta EDGE 800-272-9600

Alberta Transportation and Economic Corridors - All Regions 780-638-1128

Alberta Occupational Health & Safety (OHS) 866-415-8690

Workers' Compensation Board (WCB) 866-922-9221

CANUTEC 888-226-8832

Air Traffic Control

NAV Canada* 866-541-4102
Transport Canada** 877-992-6853

* If flight information or a NOTAM advisory is required, contact NAV Canada.
** if a NOTAM is required for airspace closure, contact the Transport Canada Aviation Operations Centre.

Environment & Climate Change Canada (ECCC)

Meteorological Services 780-951-8907

Department of Fisheries & Oceans Canada (DFO)

Report Marine Pollution 800-889-8852

SUPPORT SERVICES

Note: All numbers, unless otherwise indicated, are 24 hours.

Air Monitoring*

Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
Trojan Safety Services - Grande Prairie, AB 877-785-9558
HSE Integrated Ltd. - Red Deer, AB 888-346-8260

Oilfield Fire Fighting / Safety Contractors*

Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
Trojan Safety Services - Grande Prairie, AB 877-785-9557
HSE Integrated Ltd. - Grande Prairie, AB 780-532-2088

Well Control Specialists*

Capstone Oilfield Services 866-347-3911
Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
Superior Fire Control - Grande Prairie, AB 877-882-0035

Ignition Services*

Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
HSE Integrated Ltd. - Grande Prairie, AB 780-532-2088
Superior Fire Control - Grande Prairie, AB 877-882-0035

*Due to response time, dispatch air monitoring at a Level 1 Emergency. Response time is expected to be approximately 2 hours from Blackfalds, Calgary & Airdrie, 3 hours from Red Deer, 4 hours from Edmonton, Fort Saskatchewan, Sherwood Park and St. Albert, 6 hours from Grande Prairie and 7 hours from Fort St. John.

Bus Transportation Services

BC Bus North - Fort St. John, BC Admin: 844-564-7494
Ambitious Hotshot & Piloting Ltd. - Fort St. John, BC 250-263-4639

Helicopter Companies (Day Flying Only)

Yellowhead Helicopters - Fort St. John, BC 250-785-2331
Bailey Helicopters - Fort St. John, BC 250-785-2518
Qwest Helicopters - Fort Nelson, BC (no loud hailers) 250-774-5302

Emergency Response Management

H₂Safety Services Inc. - Calgary 403-212-2332
Toll Free: 888-216-2332

Emergency Response Assistance Canada (ERAC) 800-265-0212
(ERAP 2-0010-448)

Spill Response

T. Rempel (Backhoe) - Fort St. John, BC 250-793-2319
Chad Esau (Backhoe) - Dawson Creek, BC 250-784-5097
Clean Harbors - Fort St. John, BC 800-645-8265
H.D. Services Ltd. (Vacuum Truck) - Fort St. John, BC 250-263-5317
Ridgeline Environmental, Fort St. John, BC 866-574-7928
SynergyAspen Environmental - Fort St. John, BC 604-837-4298
SWAT Consulting - Grande Prairie, AB 866-610-7928
Tempest Energy Services (Vacuum Truck) - Fort St. John, BC 250-785-3334

Roadblock Services* (kits/personnel)

Energetic Traffic Control - Fort St. John, BC 250-793-3331
Trojan Safety Services - Fort St. John , BC 877-785-9557

Spill Equipment

Western Canadian Spill Services (WCSS)* - COOP 9 866-541-8888
* See WCSS's website (www.wcss.ab.ca) for more information, equipment details, locations and directions.

SURFACE DEVELOPMENT INFORMATION

As the EPZs do not impact any surface developments, no information has been gathered for this field.

In the event of an incident, assign rovers to patrol the area for possible transients.

AREA USERS / TRANSIENTS

Note: All numbers, unless otherwise indicated, are 24 hours.

Oil and Gas

Bonavista Energy Corp.	866-971-8317
Canadian Natural Resources Ltd.	888-878-3700
Canlin Energy Corp.*	866-409-2744
Cardinal Energy Ltd.	866-261-2632
Obsidian Energy Ltd.	877-792-2990
Pembina Pipeline Corp.	800-360-4706
Plateau Pipe Line Ltd. - Subsidiary of Pembina Pipeline Corp.	800-360-4706
Surge Energy Inc.	403-261-7355
Tourmaline Oil Corp.	877-504-4252
Whitecap Resources Inc.*	250-787-3700

* There are tie-ins between Enercapita and the indicated companies. Refer to the Third-Party Tie-In list behind the blue Area Specific Information tab for more information.

Alberta

Guides and Outfitters - WMU (Wildlife Management Unit) # 525

Agency	Name	Phone
Alberta Racks N Tracks	Sean Snider	780-203-0909
Alberta Wilderness Adventures	Louis Shilka	780-772-7200
Bear Canyon Outfitters	Larry Smith	780-685-2159
Field Quarter	Russell Moore	936-225-3330
Lock N Load Outfitting Ltd.	Kevin D. Loades	780-385-8246
Mustang Ranch & Guides	Herb Bean	780-685-2509
Top of the Flyway Outfitters	Trevor Manteufel	780-625-6736
Udell's Guiding and Outfitting	Kelly Udell	780-722-0243
Wild Alberta High Country Outfitters Inc.	Ken Steinbru	780-882-6664

Trappers

Trapper ID	Name	Phone
2598	Larry Smith	780-685-2159

Forestry Management Units & Agreements (FMU & FMA)

P19 - Mercer Peace River Pulp Ltd.	Admin: 780-624-7300
P52 - See Alberta Energy Regulator (AER)	

British Columbia

Trappers

Trapper ID	Name	Phone
733T010	Vacant Line	N/A
746T001	Doig River Band	250-827-3776

Rights Holders

Forest Management License

File ID	Name	Phone
M02357, M02631	Cardinal Energy Ltd.	866-261-2632
M02428	Surge Energy Inc.	403-261-7355

Crown Tenure

File ID	Name	Phone
0234063, 8000917	Ministry of Forests,	800-663-5555
0248394	Saba Oil & Gas Ltd.	403-265-3026
0299121,0308522, 8004771,	Whitecap Resources Inc.	866-590-5289
8006547, 8006548,9000155		
8008238, 9611792	Enercapita Energy Ltd.	403-930-3101

Non-Resident Landowners

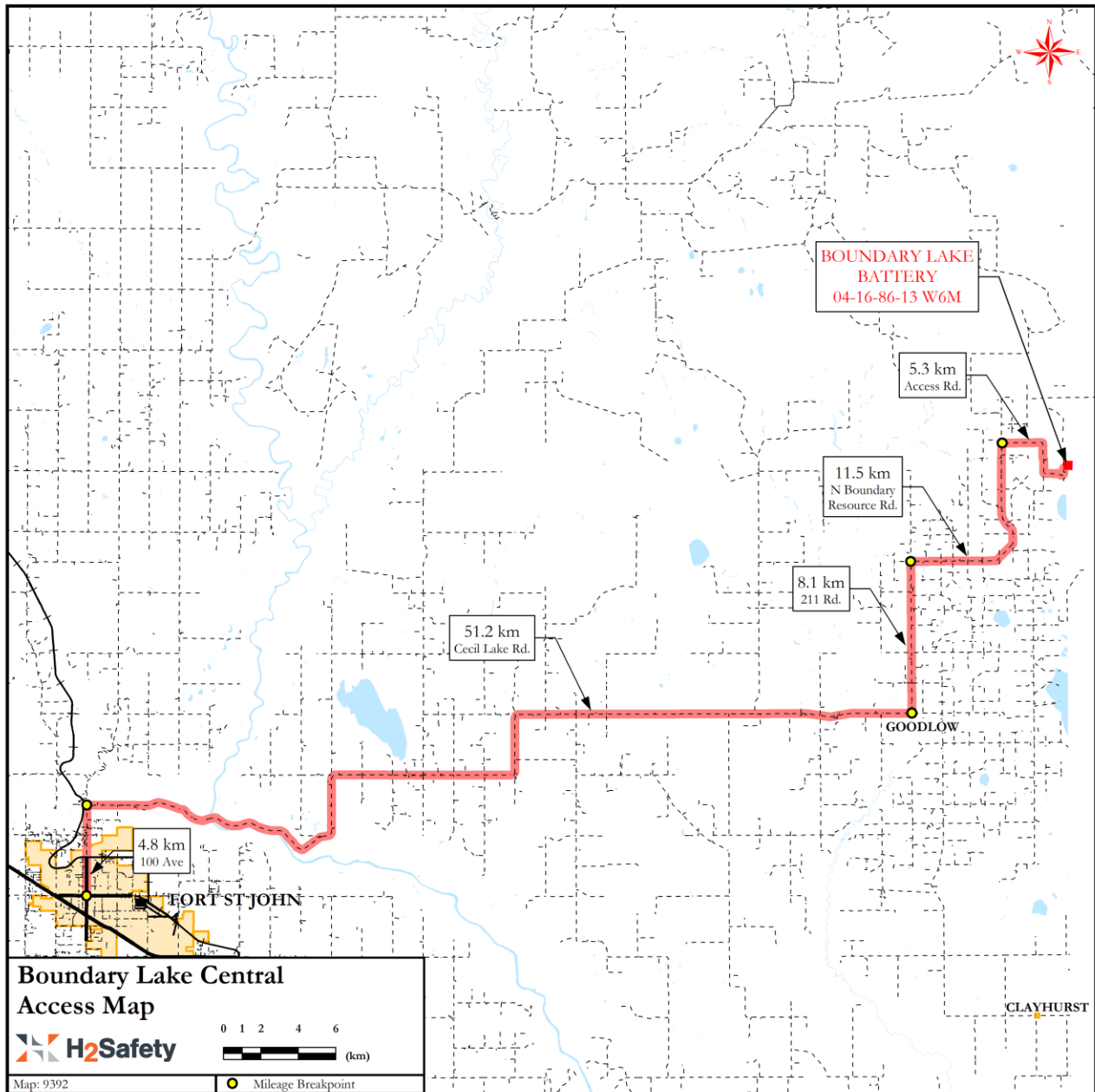
PID	Name	Phone
005-676-886	Wiebe Siphon Creek Ranch Inc.	250-827-3545
36-87-15 W6M PRD, Except The West 80 Feet		
005-677-076	Wiebe Siphon Creek Ranch Inc.	250-827-3545
31-87-14 W6M PRD, Except The West 80 Feet		
005-968-534	Alice Barker	250-781-3422
20-85-13 W6M Except The Most Westerly 80 Feet In Parallel Width Thereof		
012-934-747	TAQA North Ltd.	800-216-8062
26-85-14 W6M		
013-614-592	David /	403-931-2062
SE 1/4 of 29-85-14 W6M	Daniel Hogg	250-787-7725
013-614-592	Andrea Louise	Number Unavailable
SE 1/4 of 29-85-14 W6M		
014-212-650	Ray Piper	250-784-5080
NE 1/4 of 19-85-13 W6M		
045-560-801	Eveline, Cyril /	250-262-1302
W 1/2 of 28-85-14 W6M	Martin Ferguson	
018-315-208	Perry / Kane Piper	250-784-7879
District Lot 3984 PRD		

Non-resident landowner data is gathered from land titles and is separate from resident data. Land titles do not include phone numbers. A pamphlet and letter were sent to each landowner with a request to provide an emergency contact number to include in the ERP. If the phone number indicates "Number Unavailable", it is because the landowner did not provide it.

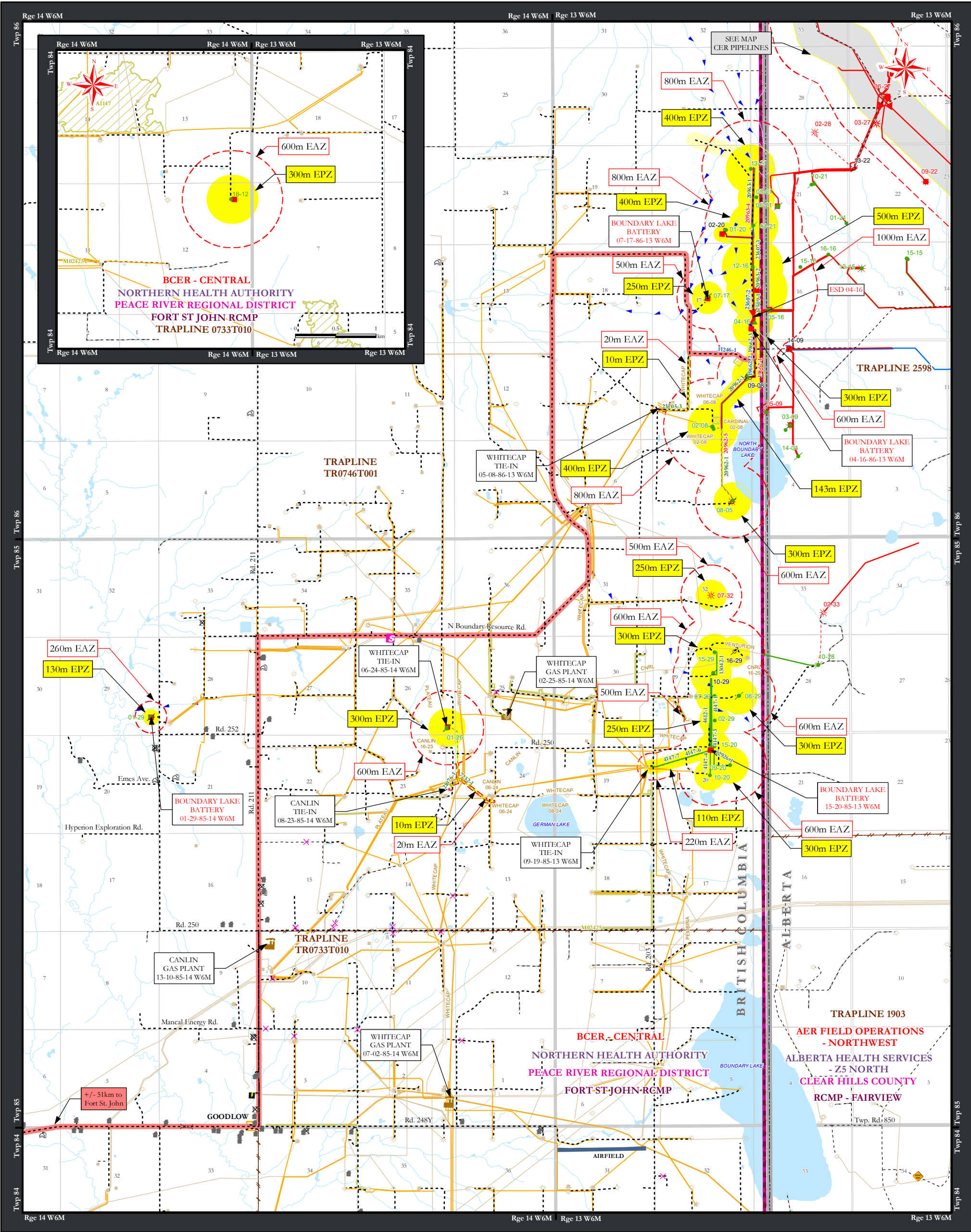
Directions to the Boundary Lake 04-16-86-13 W6M Battery

To access the Boundary Lake 04-16-86-13 W6M Battery from the intersection of 100th Avenue and 100th Street in Fort St. John:

- Travel north on 100th Street for 4.8 km
- Turn right (east) onto Cecil Lake Road and travel for 51.2 km
- Turn left (north) onto 211 Road and travel for 8.1 km
- Turn right (east) onto N Boundary Resource Road and travel for 11.5 km
- Turn right (east) onto Access Road and travel for 5.3 km to reach the battery



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BOUNDARY LAKE CENTRAL

MAP 1 of 2

BOUNDARY LAKE AREA

Draft Date: December 12, 2019 DS

Scale: 1:60,000

Map: 9389

Revision Date: November 27, 2023 ET

UTM ZONE 10 NAD83

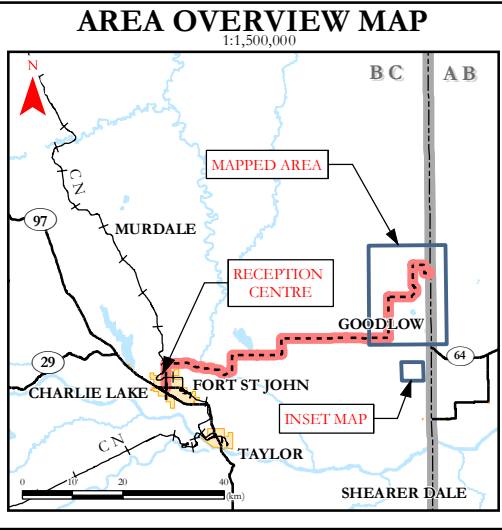
0123

(km)

MAP PRODUCED BY

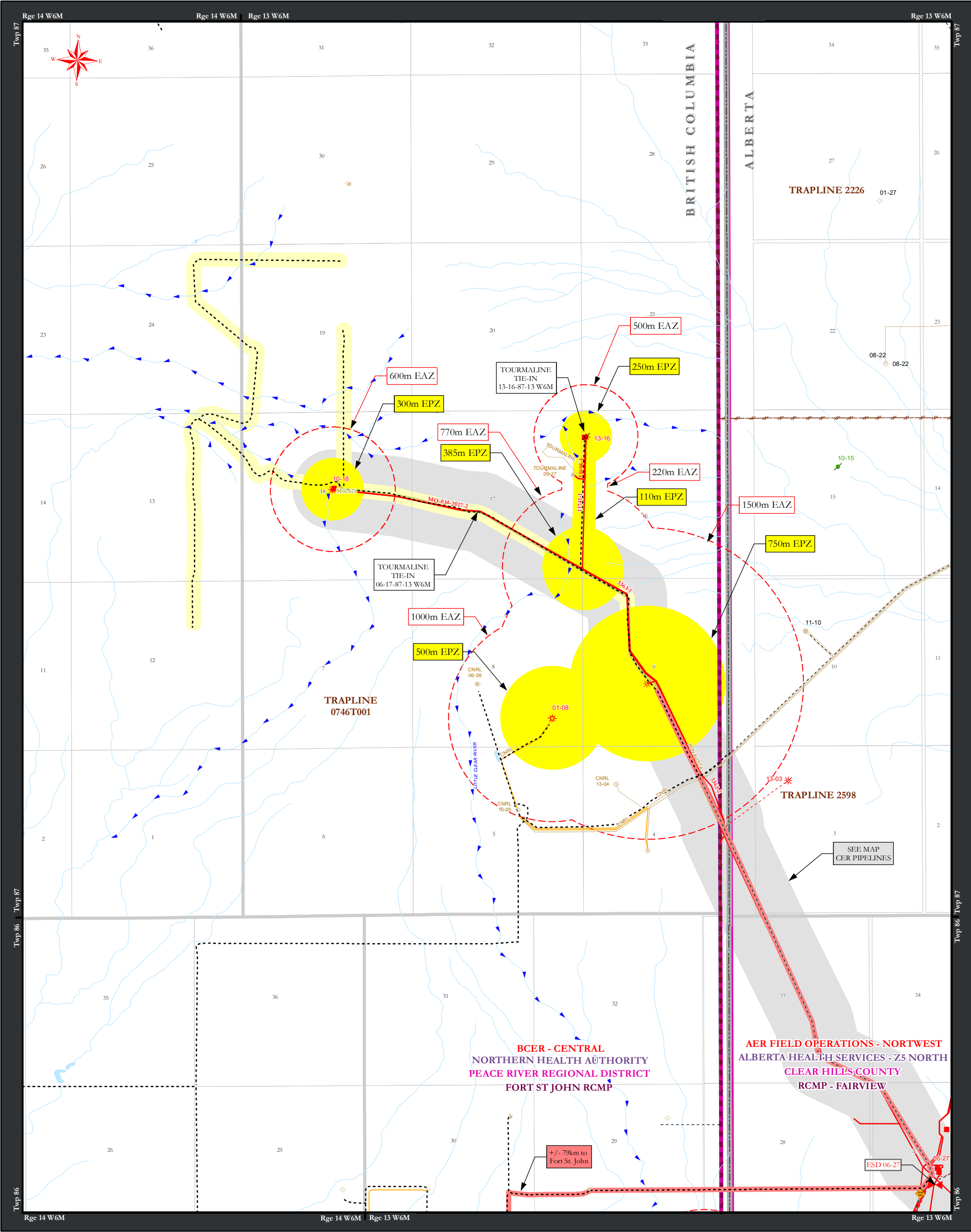
H2Safety

h2safety.ca



Third Party Well	Sour Third Party Pipeline	Surface Developments	River Flow Direction
Suspended Gas Well	Sweet Third Party Pipeline	Abandoned	Hydrology
Oil Well	Gas Pipeline	Bridge	Waterbody
Suspended Oil Well	Discontinued Gas Pipeline	Communication Tower	Urban Area
Injection Well	Oil Pipeline	Farm Use Area	Cutblocks
Suspended Well	Discontinued Oil Pipeline	Locked Gate	Provincial Boundary
Well Location	Water Pipeline	Power Station	BC Oil and Gas Commission
Third Party Facility	Other Roads	Staging Area	Health Authority
Third Party Gas Plant	Winter Roads/No Grade Roads	Dead End	Local Authority
Facility	Main Hwy		RCMP
ESD	Divided Hwy		Trapper Boundary
	Railway		EAZ
	Airfield		EPZ
	Access Route		Egress EPZ
			Other Existing EPZ

All roads are continuous unless otherwise indicated.



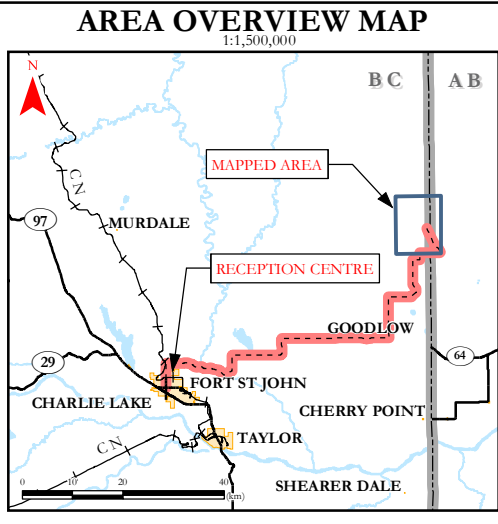
BOUNDARY LAKE CENTRAL
MAP 2 of 2
BOUNDARY LAKE AREA

ENERCAPITA

Draft Date: December 12, 2019 DS | Scale: 1:35,000 | Map: 9390
Revision Date: November 28, 2023 ET | UTM ZONE 10 NAD83

0 1 2 (km)

MAP PRODUCED BY **H2Safety** h2safety.ca



- Third Party Well
 - Gas Well
 - Suspended Gas Well
 - Suspended Well
 - Third Party Facility
 - Facility
 - ESD
 - Sour Third Party Pipeline
 - Sweet Third Party Pipeline
 - Gas Pipeline
 - Trails
 - Other Roads
 - Winter Roads/No Grade Roads
 - Main Hwy
 - Divided Hwy
 - Railway
 - Access Route
 - Dead End
 - River Flow Direction
 - Hydrology
 - Waterbody
 - Urban Area
 - Cutblocks
 - Provincial Boundary
 - BC Oil and Gas Commission
 - Health Authority
 - Local Authority
 - RCMP
 - Trapper Boundary
 - EAZ
 - EPZ
 - Egress EPZ
 - Other Existing EPZ
- All roads are continuous unless otherwise indicated.

Boundary Lake CER Regulated Pipelines

Emergency Contact Information

For Emergencies involving inter-provincial pipelines, the Canada Energy Regulator is the primary management agency – they will be contacted by the Transportation Safety Board.

**A pipeline is CER-regulated due to the fact that it crosses a provincial or federal border. **

This must be your first call

Transportation Safety Board (TSB) – for pipeline incidents	24 Hr Incident Line	819-997-7887
	Facsimile	819-953-7876
	Email	PipelineNotifications@tsb.gc.ca

Call the TSB 24 Hr Incident Line when an incident meets the Immediately Reportable Events (see page 2 for criteria) for all Canada Energy Regulator (CER) regulated pipelines and facilities.

Both the phone notification and the input of information into the

CER's Online Event Reporting System (OERS): <https://apps.cer-rec.gc.ca/ers/home/index>

are required to occur as soon as possible and no later than three hours of the incident being discovered.

For all other events (non-immediate) companies are only required to input the information via the OERS.

Secondary Calls

Contact as needed **AFTER** contacting the TSB and CER.

BC Energy Regulator	24 Hr	800-663-3456
Alberta Energy Regulator	24 Hr	800-222-6514

Hazardous occurrences (under Part XVI of the Canada Oil and Gas Occupational Safety and Health Regulations) and incidents requiring medical evacuations are to be reported to the CER immediately.



Canada Energy
Regulator

Régie de l'énergie
du Canada

Definition of an Emergency

CAN /CSA Z246.2-18 defines an emergency as “an event or imminent event, outside of the scope of normal operations that requires prompt coordination of resources to protect people, the environment, and property”.

Emergencies can result from numerous causes including pipeline and equipment failure, human error and natural perils such as tornadoes, hurricanes, floods, or earthquakes and terrorism or other criminal activities. Multi-hazard emergencies such as an earthquake causing pipeline breaks, fires and explosions, which result in injury and further property damage, can also occur.

Companies must consider all probable emergencies and have applicable procedures in place to deal with potential effects and threats to people, property and the environment, as determined through a formal hazard assessment.

CER Immediately Reportable Events (Significant Incident)

Section 52 of the Onshore Pipeline Regulations (OPR) requires companies to notify the CER of all incidents relating to the construction, operation, or abandonment of their pipelines.

A significant incident is an acute event that results in:

1. death;
2. missing person (as reportable pursuant to the *Canada Oil and Gas Drilling and Production Regulations (DPR)* under the *Canada Oil and Gas Operations Act (COGOA)* or the *Oil and Gas Operations Act (OGOA)*);
3. a serious injury (as defined in the OPR or TSB regulations);
4. a fire or explosion that causes a pipeline or facility to be inoperative;
5. a LVP hydrocarbon release in excess of 1.5m³ that leaves company property or the right of way;
6. a rupture; or
7. a toxic plume as defined in CSA Z662.

Note: A “rupture” is an instantaneous release that immediately impairs the operation of a pipeline segment such that the pressure of the segment cannot be maintained.

Companies are required to report a death or serious injury to a person only where the death or injury is a result of an occurrence that relates to the construction, operation, or abandonment of a “pipeline”. Whether a death or injury is related to the construction, operation, or abandonment of a pipeline will depend on whether the person who was killed or injured was working at the time of the incident and/or whether the work was a cause or contributing factor to the incident. It is important to note that, unlike the Canada Labour Code (CLC), the OPR does not differentiate between different types of “persons”. Therefore, companies must report all deaths or serious injuries to any person that occur relating to pipeline construction, operation, or abandonment regardless of whether or not that person was directly employed by the company.

The definition of “serious injury” in the OPR is not exhaustive and contains multiple injuries that qualify as serious, including “the fracture of a major bone”. The CER uses the following definition of “major bone”: skull, mandible, spine, scapula, pelvis, femur, humerus, fibula, tibia, radius, and ulna.

TSB Immediately Reportable Events

Call the TSB as soon as possible after discovery of any of the following occurrences:

- An occurrence that results in;
 - a death;
 - a serious injury (as defined in the OPR or TSB regulations);
 - an unintended or uncontrolled LVP hydrocarbon release in excess of 1.5 m³ that leaves company property or occurs on or off the right of way;

- an unintended or uncontrolled sweet natural gas or HVP release >30,000 m³;
- any unintended or uncontrolled release of sour natural gas or hydrogen sulfide;
- a significant adverse effect on the environment (a release of any chemical or physical substance at a concentration or volume sufficient to cause an irreversible, long-term, or continuous change to the ambient environment in a manner that causes harm to human life, wildlife, or vegetation)
- a fire, ignition, or explosion that poses a threat to the safety of any person, property, or the environment.
- A rupture:
 - an instantaneous release that immediately impacts the operation of a pipeline segment such that the pressure of the segment cannot be maintained.
- A Toxic Plume:
 - a band of service fluid or other contaminant (e.g. hydrogen sulfide or smoke) resulting from an incident that causes people, including employees, to take protective measures (e.g. muster, shelter-in-place or evacuation).

Where an event meets any of the above definitions, companies are required to notify the TSB Reporting Hotline at (819) 997-7887. Subsequently, the company is required to input the details required by both the TSB (see TSB regulations) and the CER into the OERS. The phone notification and the input of information into OERS are required to occur as soon as possible and no later than three hours of the incident being discovered. The goal of the initial phone notification is to allow the relevant agencies to mobilize a response to an incident, if required. Note that OERS will automatically determine whether the event meets the definition of an “Incident that Harms People or the Environment”, however the company will be responsible for specifically indicating whether the incident meets the definitions of “Rupture” and “Toxic Plume”.

For all other events that do not meet any of the definitions in this section, companies are not required to phone the TSB Reporting Hotline but must report the event as soon as possible and no later than twenty-four hours after the event was discovered.

Multiple Incident Types

It is possible that a single occurrence may result in multiple incident types. If multiple incident types occur as a result of a single occurrence, companies are expected to report those incident types under a single incident report.

Examples of situations where this might be the case include but are not limited to:

- A pipeline rupture (occurrence) where there is a release of gas (incident type) and an explosion (incident type);
- An industrial accident (occurrence) that causes a death (incident type), a serious injury (incident type) and a fire (incident type);
- An operational malfunction (occurrence) that causes an overpressure (incident type) and a release of product (incident type); or
- An operational malfunction (occurrence) that causes several concurrent or immediately consecutive overpressures (incident types).

In cases where an incident has occurred, and a second incident occurs during the response to the initial incident (e.g. a fire occurs during the clean-up of a spill), the second incident is considered distinct and should be reported separately.

The events that are reportable using the online reporting system are:

- incidents under the OPR, PPR, and DPR/*Oil and Gas Drilling Regulations*;
- emergency burning or flaring under the PPR;
- hazard identification under the PPR;

- suspension of operations under the PPR;
- near-misses under the DPR;
- serious accidents or incidents under the *Canada Oil and Gas Geophysical Operations Regulations/Oil and Gas Geophysical Operations Regulations*;
- emergencies or accidents under the *Canada Oil and Gas Installation Regulations/Oil and Gas Installation Regulations*; and
- accidents, illnesses, and incidents under the *Canada Oil and Gas Diving Regulations/Oil and Gas Diving Regulations*.

In the event that OERS is unavailable, companies are directed to report events to the TSB Reporting Hotline at 819-997-7887.

Reporting Timelines

Section 52 of the OPR requires companies to immediately notify the CER of any incident. Section 52 of the OPR also requires the submission of a Preliminary Incident Report (PIR) and a Detailed Incident Report (DIR) “as soon as is practicable”. Generally, companies’ initial notification of an incident will satisfy the PIR requirements. The information required for a DIR must be submitted within 12 weeks of reporting an incident. For complex incidents, companies may request an extension for submission of a DIR.

The CER and the TSB have adopted a single window reporting approach. However, in some areas, the TSB reporting requirements are somewhat different than the CER requirements. For additional details on the TSB reporting requirements, companies should refer to the TSB website (<http://www.bst-tsb.gc.ca/eng/incidents-occurrence/index.asp>).

Transportation Safety Board of Canada
Place du centre, 4th Floor
200 Promenade du Portage
Hull, Quebec K1A 1K8
Facsimile 819-953-7876

Supporting Information

The table below indicates the location of CER supporting documentation in this emergency response plan.

Supporting Information	Found in
CER Distribution	Foreword: Distribution List Page 3
Company 24/7 Emergency Number	Area Specific Information: Binder Cover
Area Map of CER Regulated Facilities	Area Specific Information
TSB Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
CER Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
Safety data sheets (SDS)	Available electronically to all personnel
Health and Safety Plan	Please refer to the company’s Health & Safety Plan located at the corporate head office and available electronically to all personnel

Emergency Preparedness & Response Policy

Emergency Management Expectations

An effective emergency management program includes being prepared for emergencies, responding in the event of an emergency and ensuring that operations are able to continue safely and can recover in a timely, efficient manner.

Emergency management is critical to ensuring that people, the environment, the public, the organization's assets and reputation are protected in the event of an unanticipated hazard event, be it natural, technological or human-induced.

Emergency Management Preparedness

Emergency preparedness is a continuous process of all-hazards planning and coordination in order to effectively minimize the adverse effects and consequences inherent in any emergency incident. Through the use of such tools as exercises, proactive resource management and capability analysis, preparedness is one of the key pillars with which to ensure the adaptation of comprehensive approaches for the company's emergency management strategy. The emergency management process must include the following:

- Hazard Risk and Vulnerability Assessment
- Public Involvement
- Communications Planning
- Situational Awareness
- Crisis Management Plans
- Emergency Response Plans
- Emergency Management Resources
- Competence, Training and Awareness
- Exercises and Drills
- Record Keeping
- Distributions Lists (Internal and External)
- Continuous Improvement

Emergency Response Plans should contain:

- Communication procedures
- Emergency contacts
- Evacuation and Rescue plans
- Equipment locations and supply companies
- Spill response and containment (where required)
- Meet regulatory requirements
- Event classification
- Activation and Stand Down Levels
- Guidelines for medical emergencies
- Defined roles and responsibilities
- Maps and Emergency Planning Zones
- Mutual Aid Understandings (where applicable)

Confidential ERPs will be available at the field Incident Command Post and the Corporate Emergency Response Centre.

Extended Emergencies

In an extended emergency, company responders will develop an Incident Action Plan utilizing forms found within ERP, which may include:

- ICS Form 201 – Incident Briefing
- ICS Form 202 – Incident Objectives
- Form A1 – Initial Emergency Report
- Form A4 – Incident Action Plan (IAP) Checklist

Emergency Response, Continuity and Recovery

In the event of an emergency, each business unit shall determine the level of emergency as per established protocols and respond according to their respective emergency response plans. Response includes the mobilization and ongoing management of resources, people, equipment and assets to manage the effects of an incident; functions inclusive of the Incident Command System (ICS), the company's primary response platform.

Each business unit shall establish, implement and maintain procedures for communicating information related to emergency management, including:

- Communication of plans and procedures to employees, operating partners, contractors, the supply chain, regulators and local communities; and
- Emergency and crisis communications to stakeholders, including emergency responders, regulators, the media, family members and the public.

Emergency Management Monitoring, Assessment and Continuous Improvement

Lessons learned and knowledge generated from monitoring results should be used to develop "improved practices", which are then shared widely. After emergencies or disasters occur, a systematic approach is used to learn lessons from the experience, increase effectiveness and improve emergency management practices and processes.

Manual Updating Procedures and Schedule

The company's Corporate and Site-Specific ERPs are to be updated annually and submitted to the CER on or before April 1st of each year, or when significant changes (either operational or identified from exercises/incidents and resulting debriefs) occur or are identified. If an update occurs outside of the January 1st to April 1st period, a letter must be submitted to the CER indicating that there have been no changes to operations since the ERP was last submitted. ERP updates are performed by a third-party company (H2Safety), whose expertise in the field provides company personnel with the education, training, and resources to excel in Emergency Response. Approvals for ERP updates will be carried out by the company's Emergency Management Coordinator.

Debriefing

Internal Debriefing

The Incident Commander, in consultation with the Lead Agency and/or other regulatory body, will order "Return to Normal" status.

- All response team members and on-site personnel, including contract personnel and emergency services, will be notified.
- All previous contacts including public, workers, landowners, government and industrial operators must also be notified of the end of the emergency.
- Ensure a media statement is prepared and delivered by Senior Management.
- Debriefing meeting(s) with company personnel (including insurance, legal, and human resources as appropriate) must be conducted.
- Debriefing meeting(s) to review effectiveness of the Emergency Response Plan must be conducted. Feedback and comments as a result of the debrief must be incorporated into the ERP revision and procedures. This feedback should be submitted to the ERP provider.
- Debriefing meeting(s) with residents, landowners, Lead Agency and other government agencies and all other impacted parties may be conducted.
- Document all "Return to Normal" activities.
- Complete response debriefing for all response teams. Submit, in writing, response findings and recommendations to the Incident Commander when applicable, which will be submitted to the overall report writer.

Public Debriefing

When the public has been impacted, company operations should provide the public information as soon after the emergency as possible, to answer any questions or concerns. This should be done by a senior company representative, a trained Media Advisor, or by the Incident Commander.

After an emergency, a number of additional items should be considered:

- Debriefings, as mentioned above.
- Crisis management for company personnel and for other members of the public that may have been significantly affected by the emergency.
- If the emergency is of a level where it has impacted the public, an information center may be established within the community where the emergency occurred to answer any questions posed by the public.
- Establish a means of compensating citizens who may have had out-of-pocket expenses (such as meals and lodging costs) as a result of the emergency.
- Through the media, provide details of the investigation into the incident that are pertinent to the public, as it becomes available.

Health and Safety Plan

The company's extensive Health and Safety program is to be implemented at all times during and after an incident. Training is provided to all company employees and contractors; all information and documentation can be found in the Health and Safety Manual.

Site Specific Control Points and Response

In the event of an incident (reported from an external source and/or confirmed by a drop in pressure), an operator would be sent out to visually confirm the need to shut down operations. Operators have the ability to manually trip the ESDs at the risers on the CER line. The operator would then immediately contact his/her supervisor and the TSB, and then work with internal support and outside agencies to determine a plan of action for resolving the source of the release.

Boundary Lake Central - Facilities

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE	MAXIMUM ASSOCIATED H2S RELEASE VOLUME (m3)	ASSOCIATED WELL OR PIPELINE HPZ (m)	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
ENERCAPITA OPERATING														
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 01-20-086-13 002	BCSA0018247	01-20-086-13W6	56.4659121	-120.0118766	56° 27' 57.283"	-120° 0' 42.755"	SA	N/A	130	N/A	130	6.915	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 04-16-086-13 002	BCBT0005510	04-16-086-13W6	56.4518908	-119.9995527	56° 27' 6.806"	-119° 59' 58.389"	BT	60.30	242	200	300	7.716	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 12-16-086-13 004	BCSA0018253	12-16-086-13W6	56.4575797	-120.0025795	56° 27' 27.286"	-120° 0' 9.286"	SA	60.30	242	N/A	500	7.290	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 15-20-085-13 003	BCBT0000141	15-20-085-13W6	56.3894392	-120.0154460	56° 23' 21.981"	-120° 0' 55.605"	BT	3.37	130	200	250	4.516	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 15-20-085-13 002	BCOM0007025	15-20-085-13W6	56.3894392	-120.0154460	56° 23' 21.981"	-120° 0' 55.605"	OM	3.37	130	N/A	250	4.516	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 16-12-084-14 001	BCBT0000001	16-12-084-14W6	56.2736832	-120.0611223	56° 16' 25.259"	-120° 3' 40.040"	BT	N/A	130	N/A	300	3.346	AC
ENERCAPITA SUSPENDED														
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 07-17-086-13 001	BCBT0007875	07-17-086-13W6	56.4563397	-120.0157799	56° 27' 22.822"	-120° 0' 56.807"	BT	N/A	130	N/A	250	6.756	S
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKE 01-29-085-14 001	BCBT0004079	01-29-085-14W6	56.3944343	-120.1647461	56° 23' 39.963"	-120° 9' 53.085"	BT	N/A	130	N/A	130	0.931	S

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: BT=Battery CS=Compressor Station GP=Gas Plant GI=Gas Injection IP=Injection Plant GM=Gas Sales Meter PG=Gathering point PS=Pump Station TS=Test Facility TL=Terminal
SA=Satellite DH=Dehydrator UN=Unknown WI=Water Injection PT=Pipeline Terminal WD=Water Disposal OM=Oil Sales Meter WF=Well Facility PR=Pigging Receiver/Launcher

WD=Water Disposal Facility WH=Water Hub

Status: A=Abandoned D=Discontinued O=Operating P=To Be Constructed S=Suspended AC=Active UN=Unknown NW=New RT=Retired CN=Cancelled

Other: EPZ=Emergency Planning Zone ROW=Pipeline Right of Way WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake Central - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	GAS PROD. RATE (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR HPZ (m)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
ENERCAPITA SOUR OPERATING														
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 01-08-087-13	9673	100010808713W602	01-08-087-13W6	56.5253	-120.0275	1,300	2.79	0.0000	100	118	500	7.545	GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 01-08-087-13	9673	100010808713W600	01-08-087-13W6	56.5253	-120.0275	1,300	20.86	0.0003	100	118	500	7.545	GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ BOUNDARY B02-08-086-13	31442	100160808613W602	02-08-086-13W6	56.4373	-120.0147	15,000	5.50	0.0010	100	118	400	5.971	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY A02-08-086-13	23855	100080808613W600	02-08-086-13W6	56.4370	-120.0143	13,700	10.67	0.0017	100	118	400	5.967	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 04-16-086-13	14854	100041608613W602	04-16-086-13W6	56.4527	-120.0033	18,800	3.18	0.0007	100	118	300	7.606	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 05-21-086-13	27453	100052108613W600	05-21-086-13W6	56.4713	-120.0026	19,100	1.18	0.0003	100	118	300	7.120	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 09-08-086-13	22742	100090808613W600	09-08-086-13W6	56.4448	-120.0051	17,700	14.76	0.0030	100	118	250	6.944	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 12-16-086-13	19281	100121608613W600	12-16-086-13W6	56.4609	-120.0037	15,800	2.99	0.0005	100	118	500	7.290	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 13-16-087-13	15888	100131608713W602	13-16-087-13W6	56.5497	-120.0221	1,300	17.35	0.0003	100	118	250	9.789	GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 13-21-086-13	23860	100132108613W600	13-21-086-13W6	56.4756	-120.0042	11,800	2.35	0.0003	100	118	400	6.983	OIL
ENERCAPITA SOUR SUSPENDED														
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 01-26-085-14	9858	100012608514W600	01-26-085-14W6	56.3929	-120.0856	15,100	2.10	0.0004	100	118	300	1.514	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY A01-26-085-14	24644	102012608514W602	01-26-085-14W6	56.3927	-120.0856	39,500	0.54	0.0002	100	118	300	1.538	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY A01-26-085-14	24644	102012608514W600	01-26-085-14W6	56.3927	-120.0856	39,500	0.54	0.0002	100	118	300	1.538	SUSPENDED
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 04-16-086-13	14854	100041608613W600	04-16-086-13W6	56.4527	-120.0033	13,800	3.18	0.0005	100	118	300	7.606	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 04-21-086-13	23861	100042108613W600	04-21-086-13W6	56.4671	-120.0034	19,900	0.68	0.0002	100	118	400	7.148	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 06-09-087-13	4811	100060908713W600	06-09-087-13W6	56.5283	-120.0127	3,800	28.55	0.0013	100	118	750	8.446	SUSPENDED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 07-17-086-13	24647	100071708613W600	07-17-086-13W6	56.4566	-120.0158	10	0.01	0.0000	100	118	250	6.744	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ BOUNDARY A08-05-086-13	22802	102160508613W602	08-05-086-13W6	56.4263	-120.0092	20,100	1.53	0.0004	100	118	300	5.652	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ BOUNDARY A08-05-086-13	22802	100090508613W600	08-05-086-13W6	56.4263	-120.0092	20,100	1.53	0.0004	100	118	300	5.652	SUSPENDED
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY A09-08-086-13	23883	102090808613W600	09-08-086-13W6	56.4451	-120.0051	200	5.26	0.0000	100	118	250	6.964	SUSPENDED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 10-29-085-13	6246	100102908513W604	10-29-085-13W6	56.4003	-120.0156	9,300	0.06	0.0000	100	118	300	4.821	SUSPENDED
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 13-16-087-13	15888	100131608713W600	13-16-087-13W6	56.5497	-120.0221	100	17.35	0.0000	100	118	250	9.789	SUSPENDED
ENERCAPITA SOUR DRILLED AND CASSED														
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 08-05-086-13	8096	100080508613W603	08-05-086-13W6	56.4279	-120.0094	15,000		0.0000	100		300	5.716	DRILLED AND CASSED
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 08-05-086-13	8096	100080508613W602	08-05-086-13W6	56.4279	-120.0094	15,000		0.0000	100		300	5.716	DRILLED AND CASSED
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY B09-08-086-13	26490	103090808613W602	09-08-086-13W6	56.4445	-120.0046	19,000		0.0000	100		250	6.951	DRILLED AND CASSED
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 09-08-086-13	22742	100090808613W602	09-08-086-13W6	56.4448	-120.0051	19,000		0.0000	100		250	6.944	DRILLED AND CASSED
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY A10-29-085-13	6798	102102908513W600	10-29-085-13W6	56.4006	-120.0151	9,300	0.64	0.0001	100		300	4.848	DRILLED AND CASSED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

Other: UWI=Unique Well Identifier HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake Central - Sour Gas Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS		
ENERCAPITA SOUR OPERATING																														
CHINOOK ENERGY (2010) INC.	-	09-17-087-13W6	WE	13-16-087-13W6	PL	-	-	-	CV	56.5495	-120.0226	15598	1	-	1	1	SG	114.3	0.42	4.0	9,930	0.01	5					Q		
ENERCAPITA ENERGY LTD.	-	13-16-087-13W6		01-17-087-13W6		CV	56.5495	-120.0226	-	-	-	11741	1	-	2	1,2	SG	114.3	1.25	4.0	9,930	0.01	5	0.7	0.160812	0.2148452	100	44	110	Q

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND
Facility: BT=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater
MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station SA=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher
Valve: CV=Check Valve ESD=Emergency Shutdown Valve
Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas
SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed
T=New V=Deactivated Z=Approved J=Out of Jurisdiction
Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction
TEMP=Temperature ROW=Pipeline Right of Way

Boundary Lake Central - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS		
ENERCAPITA SOUR OPERATING																																		
ENERCAPITA ENERGY LTD.	-	02-08-086-13W6	WE	09-08-086-13W6	PL	-	-	-	-	-	20962	2	-	1	1,2	SE	114.3	1.44	4.8	9,930	1.50	5	0.71	13.00	64.00	203.13	144.98	15.72471	28.3584139	130	44	143	Q	
ENERCAPITA ENERGY LTD.	-	09-08-086-13W6	WE	04-16-086-13W6	PL	-	-	-	ESD	56.4536	-120.0036	19662	3	-	2	1,2	OE	114.3	0.86	3.2	9,930	1.90	5	0.71	13.00	64.00	203.13	144.98	12.6337	28.3584139	130	42	143	Q
ENERCAPITA ENERGY LTD.	-	02-20-086-13W6	WE	04-16-086-13W6	BT	CV	56.4662	-120.0112	CV	56.4526	-120.0043	23607	1	-	3	3	SE	130.0	1.04	15.5	9,930	2.00	5	0.71	13.00	64.00	203.13	144.98	13.53846	13.5384611	100	50	110	Q
ENERCAPITA ENERGY LTD.	-	13-21-086-13W6	WE	04-21-086-13W6	PL	CV	56.4756	-120.0044	-	-	-	20963	1	-	4	4 to 6	SE	114.3	0.85	3.2	9,930	1.50	5	0.71	13.00	64.00	203.13	144.98	9.800009	60.2995962	220	42	242	Q
ENERCAPITA ENERGY LTD.	-	04-21-086-13W6	WE	12-16-086-13W6	PL	CV	56.467	-120.0037	-	-	-	20963	2	-	5	4 to 6	SE	114.3	0.57	3.2	9,930	1.50	5	0.71	13.00	64.00	203.13	144.98	6.552669	60.2995962	220	39	242	Q
ENERCAPITA ENERGY LTD.	-	12-16-086-13W6	WE	04-16-086-13W6	BT	CV	56.4609	-120.0039	CV	56.4525	-120.0035	17509	1	-	6	4 to 6	SE	114.3	0.94	3.2	9,930	6.00	5	0.70	13.00	64.00	203.13	146.93	43.94692	60.2995962	220	43	242	Q
ENERCAPITA ENERGY LTD.	-	10-29-085-13W6		15-20-085-13W6		-	-	-	CV	56.3893	-120.0149	4147	1	-	7	7,8	OE	88.9	1.29	3.2	3,800	0.93	5	0.87	0.25	36.00	6.9444	45.775	0.386871	0.76474501	100	22	110	Q
ENERCAPITA ENERGY LTD.	-	10-29-085-13W6		15-20-085-13W6		-	-	-	CV	56.3893	-120.0149	4147	2	-	8	7,8	SE	88.9	1.26	3.2	3,800	0.93	5	0.87	0.25	36.00	6.9444	45.775	0.377874	0.76474501	100	22	110	Q
ENERCAPITA ENERGY LTD.	-	02-29-085-13W6		15-20-085-13W6		-	-	-	CV	56.3893	-120.0149	4147	3	-	9	9	OE	88.9	0.41	3.2	3,800	0.93	5	0.87	0.25	36.00	6.9444	45.775	0.122959	0.122959	100	19	110	Q
ENERCAPITA ENERGY LTD.	-	10-20-085-13W6		15-20-085-13W6		-	-	-	CV	56.3893	-120.0149	4147	4	-	10	10	OE	88.9	0.47	3.2	3,800	0.93	5	0.87	0.25	36.00	6.9444	45.775	0.139454	0.1394535	100	19	110	Q
ENERCAPITA ENERGY LTD.	-	15-20-085-13W6		09-19-085-13W6		-	-	-	-	-	4147	7	-	11	7 to 11	SE	60.3	1.15	4.0	350	0.93	5	0.97	0.25	36.00	6.9444	4.7817	0.06523	1.09238755	100	10	110	Q	
ENERCAPITA SOUR DEACTIVATED																																		
ENERCAPITA ENERGY LTD.	-	14-08-086-13W6		05-08-086-13W6		-	-	-	-	-	23705	3	-	12	12	CO	88.9	1.55	4.0	3,450	1.30	5										10	V	
ENERCAPITA ENERGY LTD.	-	12-24-085-14W6	PL	08-23-085-14W6	PL	-	-	-	CV	56.3835	-120.0859	21076	1	-	14	13,14	SE	88.9	0.30	3.2	3,450	4.00	5									10	V	
ENERCAPITA ENERGY LTD.	-	01-26-085-14W6		06-24-085-14W6		-	-	-	-	-	7232	1	-	13	13,14	SE	88.9	1.69	3.2	3,450	4.00	5										10	V	
ENERCAPITA ENERGY LTD.	-	15-20-085-13W6		09-19-085-13W6		-	-	-	-	-	4147	6	-	15	15	SE	114.3	1.06	4.0	7,000	0.93	5										10	V	
ENERCAPITA ENERGY LTD.	-	08-05-086-13W6	WE	02-08-086-13W6	PL	-	-	-	-	-	20962	1	-	16	16	SE	114.3	1.30	4.8	9,930	1.50	5										10	V	
ENERCAPITA ENERGY LTD.	-	02-08-086-13W6	PL	09-08-086-13W6	PL	-	-	-	-	-	20962	3	-	17	17	SE	114.3	1.02	4.8	9,930	1.50	5										10	V	

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: BT=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater
MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station SA=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher
Valve: CV=Check Valve ESD=Emergency Shutdown Valve
Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas
SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed
T=New V=Deactivated Z=Approved J=Out of Jurisdiction
Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction
TEMP=Temperature ROW=Pipeline Right of Way

Boundary Lake Central - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
ENERCAPITA SWEET OPERATING											
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ BOUNDARY 01-20-086-13	31443	100011708613W600	01-20-086-13W6	56.4664	-120.0108	0	118	130	6.715	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 02-29-085-13	6349	100022908513W600	02-29-085-13W6	56.3931	-120.0154	0	118	250	4.918	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 07-29-085-13	6799	100072908513W600	07-29-085-13W6	56.3974	-120.0142	0	118	300	4.957	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 07-32-085-13	8239	100103208513W600	07-32-085-13W6	56.4123	-120.0150	0	118	250	4.869	CAPPED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 08-05-086-13	8096	100080508613W600	08-05-086-13W6	56.4279	-120.0094	0	118	300	5.716	CAPPED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY A09-08-086-13	23883	102090808613W602	09-08-086-13W6	56.4451	-120.0051	0		250	6.964	BRINE DISPOSAL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 09-20-085-13	16284	100092008513W600	09-20-085-13W6	56.3871	-120.0102	0	118	300	4.356	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 10-18-087-13	4581	100101808713W602	10-18-087-13W6	56.5452	-120.0617	0	118	300	8.100	GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 10-20-085-13	6247	100102008513W600	10-20-085-13W6	56.3857	-120.0156	0	118	250	4.107	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY A10-29-085-13	6798	102102908513W602	10-29-085-13W6	56.4006	-120.0151	0	118	300	4.848	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 15-29-085-13	16285	100152908513W600	15-29-085-13W6	56.4039	-120.0142	0	118	300	4.869	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 16-12-084-14	5950	100161208414W600	16-12-084-14W6	56.2736	-120.0613	0	118	300	3.344	OIL
ENERCAPITA SWEET SUSPENDED											
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 01-29-085-14	12844	100012908514W600	01-29-085-14W6	56.3944	-120.1647	0	118	130	0.929	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 08-29-085-13	6801	100082908513W600	08-29-085-13W6	56.3980	-120.0090	0	118	300	5.263	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 10-18-087-13	4581	100101808713W600	10-18-087-13W6	56.5452	-120.0617	0	118	300	8.100	SUSPENDED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY 15-20-085-13	6350	100152008513W600	15-20-085-13W6	56.3893	-120.0154	0	118	250	4.503	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL BOUNDARY A16-29-085-13	6800	102162908513W600	16-29-085-13W6	56.4040	-120.0090	0	118	250	5.194	SUSPENDED
ENERCAPITA SWEET DRILLED AND CASED											
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 01-29-085-14	12844	100012908514W602	01-29-085-14W6	56.3944	-120.1647	0		130	0.929	DRILLED AND CASED
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 07-17-086-13	24647	100071708613W602	07-17-086-13W6	56.4566	-120.0158	0		250	6.744	DRILLED AND CASED
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY 12-31-087-14	6769	100123108714W602	12-31-087-14W6	56.5895	-120.2305	0		300	2.730	DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

Other: UWI=Unique Well Identifier EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake Central - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
ENERCAPITA SWEET OPERATING																					
ENERCAPITA ENERGY LTD.	-	07-29-085-13W6	15-20-085-13W6	-	-	-	-	-	-	4612	1	-	OE	60.3	1.04	5.5	4,961	0	15	17	Q
ENERCAPITA ENERGY LTD.	-	10-18-087-13W6	06-09-087-13W6	-	-	-	-	-	-	5363	1	-	SG	114.3	3.51	4.0	9,660	0	44	49	T
ENERCAPITA ENERGY LTD.	-	06-09-087-13W6	08-04-087-13W6	-	-	-	-	-	-	5363	2	-	SG	114.3	1.70	4.0	9,660	0	44	49	T
ENERCAPITA ENERGY LTD.	-	09-20-085-13W6	15-20-085-13W6	-	-	-	-	-	-	12926	1	-	OE	88.9	0.56	3.2	3,800	0	20	22	Q
ENERCAPITA ENERGY LTD.	-	15-29-085-13W6	10-29-085-13W6	-	-	-	-	-	-	13042	1	-	OE	88.9	0.72	3.2	3,800	0	21	24	Q
ENERCAPITA ENERGY LTD.	-	04-16-086-13W6	BT 12-16-086-13W6	WE	-	-	-	-	-	17509	2	-	FG	60.3	0.94	3.2	9,930	0	21	24	Q
ENERCAPITA ENERGY LTD.	-	04-16-086-13W6	WE 09-08-086-13W6	PL	-	-	-	-	-	19662	1	-	FG	60.3	0.86	5.5	400	0	10	11	Q
ENERCAPITA ENERGY LTD.	-	09-08-086-13W6	WE 02-08-086-13W6	PL	-	-	-	-	-	20962	4	-	FG	60.3	1.10	3.2	1,100	0	10	11	Q
ENERCAPITA ENERGY LTD.	-	12-16-086-13W6	WE 04-21-086-13W6	PL	-	-	-	-	-	20963	3	-	FG	60.3	0.57	5.5	910	0	10	11	Q
ENERCAPITA ENERGY LTD.	-	04-21-086-13W6	WE 13-21-086-13W6	PL	-	-	-	-	-	20963	4	-	FG	60.3	0.85	5.5	910	0	10	11	Q
ENERCAPITA ENERGY LTD.	-	04-16-086-13W6	BT 02-20-086-13W6	WE	-	-	-	-	-	23607	2	-	PW	95.5	1.04	23.8	14,000	0		ROW	Q
ENERCAPITA ENERGY LTD.	-	04-21-086-13W6	UN 02-20-086-13W6	WE	-	-	-	-	-	23607	3	-	FG	69.0	0.53	7.5	910	0	10	11	Q
ENERCAPITA ENERGY LTD.	-	04-21-086-13W6	04-21-086-13W6	-	-	-	-	-	-	25800	1	-	FG	95.5	0.21	23.8	14,000	0	49	54	T
ENERCAPITA SWEET DEACTIVATED																					
ENERCAPITA ENERGY LTD.	-	04-16-086-13W6	14-08-086-13W6	-	-	-	-	-	-	11246	1	-	PW	88.9	1.69	3.2	3,450	0		ROW	V
ENERCAPITA ENERGY LTD.	-	04-16-086-13W6	WE 09-08-086-13W6	PL	-	-	-	-	-	19662	2	-	PW	114.3	0.86	3.2	9,930	0		ROW	V
ENERCAPITA ENERGY LTD.	-	02-08-086-13W6	PL 08-05-086-13W6	PL	-	-	-	-	-	20962	5	-	FG	60.3	1.30	3.2	1,100	0		10	V

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: BT=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater

MS=Meter Station PL=Pipeline PS=Pump Station SA=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in WF=Well Facility

Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas

FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water

UN=Unknown ML=Miscellaneous Liquids AA=Air

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed

T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: WALL=Wall Thickness OD=Outside Diameter EPZ=Emergency Planning Zone ROW = Pipeline Right of Way HPZ=Hazard Planning Zone

Boundary Lake - CER Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP ('C)	Z	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS	
ENERCAPITA SOUR OPERATING																													
ENERCAPITA ENERGY LTD.	-	04-16-087-13W6	PL	04-16-087-13W6	PL	-	-	-	-	-	280032	2	-	1	1,2	NG	114.3	0.01	3.2	10,200	0.62	5	0.70	0.084954	104.611971	350	22	385	O
ENERCAPITA ENERGY LTD.	-	10-18-087-13W6	PL	10-13-086-13W6	GP	-	-	-	-	-	80022	1 & 2	-	2	1,2	SG	114.3	13.57	4.0	9,660	0.62	5	0.71	104.527	104.611971	350	48	385	O
ENERCAPITA ENERGY LTD.	-	04-16-086-13W6	SA	05-16-086-13W6	WE	-	-	-	-	-	280166	1	-	3	2	NG	114.3	0.49	3.2	7,380	2.00	5	0.77	8.951693	8.95169324	100	32	110	O
ENERCAPITA ENERGY LTD.	-	04-16-086-13W6	SA	05-16-086-13W6	WE	-	-	-	-	-	280167	1	-	4	3	SW	114.3	0.49	3.2	7,380	0.003	5	0.77	0.013428	0.01342754	100		110	O
ENERCAPITA SWEET OPERATING																													
ENERCAPITA ENERGY LTD.	-	05-16-086-13W6	WE	04-16-086-13W6	SA	-	-	-	-	-	280168	1	-	5	5	FG	60.3	0.49	4.0	3,450	0	5				13	15	O	
ENERCAPITA SWEET DISCONTINUED																													
ENERCAPITA ENERGY LTD.	-	10-28-085-13W6	WE	14-29-085-13W6	PL	-	-	-	-	-	280178	2	-	6	6	OE	73.0	2.20	3.0	2,070	0							D	

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: BT=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater
MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station SA=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher
Valve: CV=Check Valve ESD=Emergency Shutdown Valve
Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas
SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed
T=New V=Deactivated Z=Approved J=Out of Jurisdiction
Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction
TEMP=Temperature ROW=Pipeline Right of Way

Boundary Lake Central - Tanks and Bullets

FACILITY / LOCATION	SUBSTANCE	NO. OF TANKS	TANK VOLUME	ENVIRONMENT CANADA REGISTRATION REQUIRED? ⁽¹⁾	ENVIRONMENT CANADA ERP REQUIRED? ⁽²⁾	HPZ (m)
04-16-086-13W6 04-16 Battery	Methanol	1	500 gal	No	No	100
		1	1000 gal			
	Propane	1	1000 gal	No	No	200
	Demulsifier	1	500 gal	No	No	100
	Corrosion Inhibitor	1	250 gal	No	No	100
	Oil Emulsion	3	400 bbl	No	No	100
15-20-085-13W6 15-20 Battery	Methanol	1	500 gal	No	No	100
		1	1000 gal			
	Propane	1	1000 gal	No	No	200
	Produced Water	2	750 bbl	No	No	100
	Oil	2	750 bbl	No	No	100

⁽¹⁾ E2 Schedules 2 only.

⁽²⁾ E2 Schedules 2, 3, 4 and 5.

LEGEND

Other: HPZ=Hazard Planning Zone

ENERCAPITA’S 24-HOUR
866-556-7838

24 HOUR EMERGENCY NUMBER: 866-556-7838

Primary Incident Command Post

Will be determined at the time of incident but will typically be established at the nearest Battery location.

Corporate Emergency Operations Centre (CEOC)

Calgary Head Office Admin: 403-294-9199
600-215 2 Street SW Calgary, AB T2P 1M4

Alternate CEOC

H₂Safety Office Office: 403-212-2332
210, 7260 - 12 Street SE, Calgary, AB T2H 2S5

KEY RESPONSE PERSONNEL

Greg Shrode Cell: 780-305-6541
Boundary Lake Supterintendent

Shaun Moskalyk Cell: 780-834-0100
Boundary Lake North Foreman

*** For a full list of field operators, refer to the yellow "Response Team Phone List" tab, behind the blue "Section 2.0: Roles and Responsibilities" tab. ***

OPERATIONS SUMMARY

Enercapita Energy is the owner and operator of the Boundary Lake North field, which is a sour oil and gas producing field located within the Peace River Regional District.

Production from the field is pipelined to the 08-31-87-14 W6M satellite where oil and gas are separated and delivered downstream to the 06-29-87-14 W6M battery. The battery has a gas inlet capacity of 142 e³m³/d and an oil inlet capacity of 635 m³/d.

Treated oil is delivered into the Plateau Pipe Line (subsidiary of Pembina Pipeline) delivery system and transported to market. Gas is sent downstream through Enercapita's meter station at 08-21-87-15 W6M and subsequently to the NorthRiver Gas Plant (formerly Enbridge) at 15-25-82-18 W6M. Water is disposed via the on-lease disposal facility.

EPZ & Hazard Information

The maximum expected H₂S concentration for the wells is 2.00%, with a maximum EPZ of 500 m.

The maximum expected H₂S concentration for the pipelines is 2.00%, with a maximum EPZ of 407 m.

On-Site Storage

Refer to the EPZ Calculation tables for a list of on-site storage, at the end of this section.

Closest Urban Centre & Indigenous Nation

The city of Fort St. John is approximately 42.8 km southwest of the Boundary field with a population of +/- 21,465.

Doig River First Nation is located approximately 8.4 km west of the field and has a population of +/- 118.

Indigenous Treaty & Metis Region Boundaries

Treaty 8
Metis Nation of BC Northeast Region

Hydrology

Little Clear River and numerous unnamed creeks and water bodies. Refer to the map for more information.

Highways / Rail

There are no highways or rail lines impacted by the EPZ. Several resource roads, including the Osborne Forestry Road and the CNRL LaGarde Road run through the EPZ. Refer to the map for more information.

Site Access

Refer to the access map in this section for directions. Siphon Creek Road to the West of Boundary Lake North EPZ can serve as an alternate route to Boundary North operations. Roads can be difficult to drive in poor weather.

SAFETY EQUIPMENT

Operator / Truck Safety Equipment

Each field operator's truck contains a 20lb fire extinguisher, first aid kit, flashlight, flare pistol / flares, and a personal 4 head monitor. All operators wear PPE (FR coveralls, hard hats, safety glasses, safety boots, gloves). Scot Air Packs are located at the 06-29 Compressor Station.

Item	Quantity / Location
Fire Extinguishers - 30lb	8 (06-29 Battery office)
First aid kit	2 (06-29 Battery office)
SCBA	4 (06-29 Battery office)
Eye Wash Stations	3 (06-29 Battery office)
Shower Unit (decontamination)	1 (06-29 Battery office)
Intrinsically Safe Radios	4 (08-21-87-09 W6M)

Notification

Operator's core hours are from 7:00 am to 5:00 pm. Operators visit wells and facilities on an unscheduled daily basis. Alarms on the ESD valves at 6-29-87-14 W6M Compressor Station would initiate a radio call-out to the on-call operator. The operator would then contact the lead operator to initiate response. When an alarm condition is detected by the PLC system, a call to the 24 hour answering service is initiated. The answering service will contact the operator on call.

Communications

The primary method of communication is via cell phone. Cell phone coverage is generally good in the area.

Roadblock Kits

Roadblock locations will be determined at the time of the incident. Equipment will be provided by safety companies. See Support Services for more information.

Ignition Services

Trained personnel have access to flare pistols and flares at Battery locations. Refer also to "Ignition Services" under "Support Services" for a complete list of companies with ignition services.

Staging Areas

The staging area(s) would be established at the nearest Battery or Compressor Station.

*** If any of the above mentioned safety equipment is insufficient, Enercapita personnel will contact a local safety company who will be asked to provide additional equipment. ***

GOVERNMENT AGENCIES

Note: All numbers, unless otherwise indicated, are 24 hours.

BC Emergency Management & Climate Readiness (EMCR) / BC Energy Regulator (BCER)
Incident Reporting Line 800-663-3456*

**In the event of an emergency, EMCR will notify the BCER, Ministry of Environment & Climate Change Strategy, Ministry of Forests, Ministry of Water, Lands and Resource Stewardship, Northern Health Authority and any affected municipalities.*

Peace River Regional District (PRRD)
800-670-7773
Admin: 250-784-3200

Northern Health Authority (NHA) HEMBC On Call: 855-554-3622

Technical Safety BC (TSBC) 866-566-7233

Transportation of Dangerous Goods (TDG) 800-663-3456

BC Ministry of Transportation & Infrastructure (MOTI) Admin: 250-787-3237

WORKSAFE BC - Fort St. John 888-621-7233

BC Ministry of Forests Admin: 250-784-1200
BC Wildfire Reporting Line 800-663-5555

BC Ministry of Environment & Climate Change Strategy
Peace Region Admin: 250-787-3411

CANUTEC 888-226-8832

Air Traffic Control
NAV Canada* 866-541-4102
Transport Canada** 877-992-6853

** If flight information or a NOTAM advisory is required, contact NAV Canada.
** If a NOTAM is required for airspace closure, contact the Transport Canada Aviation Operations Centre.*

Environment & Climate Change Canada (ECCC)
Meteorological Services 780-951-8907

Department of Fisheries & Oceans Canada (DFO)
Report Marine Pollution 800-889-8852

AREA USERS / TRANSIENTS

Note: All numbers, unless otherwise indicated, are 24 hours.

Oil and Gas

Baytex Energy Corp. 403-250-0086
Canadian Natural Resources Ltd. 888-878-3700
Canlin Energy Corporation 866-409-2744
Cardinal Energy Ltd. 866-261-2632
NorthRiver Midstream Inc. 844-667-8477
Procyon Energy Corp. 403-262-7271
Toumaline Oil Corp. 877-504-4252
Vermilion Energy Inc. 844-621-2858

Trappers

Trapline ID **Name** **Number**
746T001 Doig River Band 250-827-3776

Forestry Management Units & Agreements

M02631 Cardinal Energy Ltd. 866-261-2632
M02669 NorthRiver Midstream Inc. 844-667-8477

Natural Protected / Recreation Areas

Doig River First Nations No. 206 Admin: 250-827-3776
Fax: 250-827-3778

The Boundary Lake North field lies entirely within the proposed K'ih Tsaa'dze Tribal Park. The 90,000 hectare Park has been declared a tribal park by the Doig River First Nation and crosses into Alberta. It has not yet met the criteria for establishment of a conservation area in Alberta and negotiations are still ongoing with the BC government.

Rights Holders

Non-Resident Landowners

Name **Number**
Wiebe Siphon Creek Ranch Inc. 250-827-3545

PID

005-676-886 - 36-87-15 W6M, Except The West 80 Feet
005-677-076 - 31-87-14 W6M, Except The West 80 Feet

005-677-882 - 21-87-15 W6M, Except Block A Of The SE 1/4

005-678-188 - Parcel A (R27964) of 01-88-15 W6M

005-678-200 - 12-88-05 W6M, Except The West 25 Metres

005-678-366 - 11-88-15 W6M, Except The West 25 Metres

Name **Number**
NorthRiver Midstream 844-667-8477

PID

014-479-303 - Block A Of The South East 1/4 of 21-87-15 W6M

EMERGENCY SERVICES

Note: All numbers, unless otherwise indicated, are 24 hours.

If there is no 911 service available, please call the 10 digit number listed.

RCMP / Ambulance **911**
BC Ambulance Services 250-374-5937
STARS Air Ambulance 888-888-4567
STARS Site Number: 06-29-87-14 W6M STARS = **3169**

Fire Departments

***There is NO fire coverage from any local department. Fires must be handled by Enercapita, their contract operators or contract oilfield fire-fighting services. Local fire departments will only respond to motor vehicle accidents and medical emergencies unless specifically dispatched by EMCR or the Local Authority. ***

Hospitals

Fort St. John Hospital and Peace Villa 250-262-5200
Dawson Creek & District Hospital 250-782-8501

BC Hydro 888-769-3766

FortisBC Electric 866-436-7847

BC Drug and Poison Information Centre (BC DPIC) 604-682-5050

BC One-Call 800-474-6886
www.bc1c.ca

Reception Centres

Howard Johnson 250-787-0521
8540 Alaska Road, Fort St. John, BC

Lakeview Inn & Suites 250-787-0779
10103 - 98 Avenue, Fort St. John, BC

Pomeroy Hotel & Conference Centre 250-262-3233
11308 Alaska Road, Fort St. John, BC

SUPPORT SERVICES

Note: All numbers, unless otherwise indicated, are 24 hours.

Air Monitoring*

Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
Trojan Safety Services - Grande Prairie, AB 877-785-9558
HSE Integrated Ltd. - Red Deer, AB 888-346-8260

Oilfield Fire Fighting / Safety Contractors*

Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
Trojan Safety Services - Grande Prairie, AB 877-785-9557
HSE Integrated Ltd. - Grande Prairie, AB 780-532-2088

Well Control Specialists*

Capstone Oilfield Services 866-347-3911
Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
Superior Fire Control - Grande Prairie, AB 877-882-0035

Ignition Services*

Safety Boss - Edmonton, AB / Fort St. John, BC 800-882-4967
Firemaster Oilfield Services Inc. - Clairmont, AB 877-342-3473
HSE Integrated Ltd. - Grande Prairie, AB 780-532-2088
Superior Fire Control - Grande Prairie, AB 877-882-0035

Due to response time, dispatch air monitoring at a Level 1 Emergency. Response time is expected to be approximately 2 hours from Blackfalds, Calgary & Airdrie, 3 hours from Red Deer, 4 hours from Edmonton, Fort Saskatchewan, Sherwood Park and St. Albert, 6 hours from Grande Prairie and 7 hours from Fort St. John.

Bus Transportation Services

BC Bus North - Fort St. John, BC Admin: 844-564-7494
Ambitious Hotshot & Piloting Ltd. - Fort St. John, BC 250-263-4639

Helicopter Companies (Day Flying Only)

Yellowhead Helicopters - Fort St. John, BC 250-785-2331
Bailey Helicopters - Fort St. John, BC 250-785-2518
Qwest Helicopters - Fort Nelson, BC (no loud hailers) 250-774-5302

Emergency Response Management

H₂Safety Services Inc. - Calgary, AB 403-212-2332
Toll Free: 888-216-2332

Emergency Response Assistance Canada (ERAC) 800-265-0212
(ERAP 2-0010-448)

Spill Response

T. Rempel (Backhoe) - Fort St. John, BC 250-793-2319
Chad Esau (Backhoe) - Dawson Creek, BC 250-784-5097
Clean Harbors - Fort St. John, BC 800-645-8265
H.D. Services Ltd. (Vacuum Truck) - Fort St. John, BC 250-263-5317
Ridgeline Environmental, Fort St. John, BC 866-574-7928
SynergyAspen Environmental - Fort St. John, BC 604-837-4298
SWAT Consulting - Grande Prairie, AB 866-610-7928
Tempest Energy Services (Vacuum Truck) - Fort St. John, BC 250-785-3334

Roadblock Services (kits/personnel)

Energetic Traffic Control - Fort St. John, BC 250-793-3331
Trojan Safety Services - Fort St. John, BC 877-785-9557

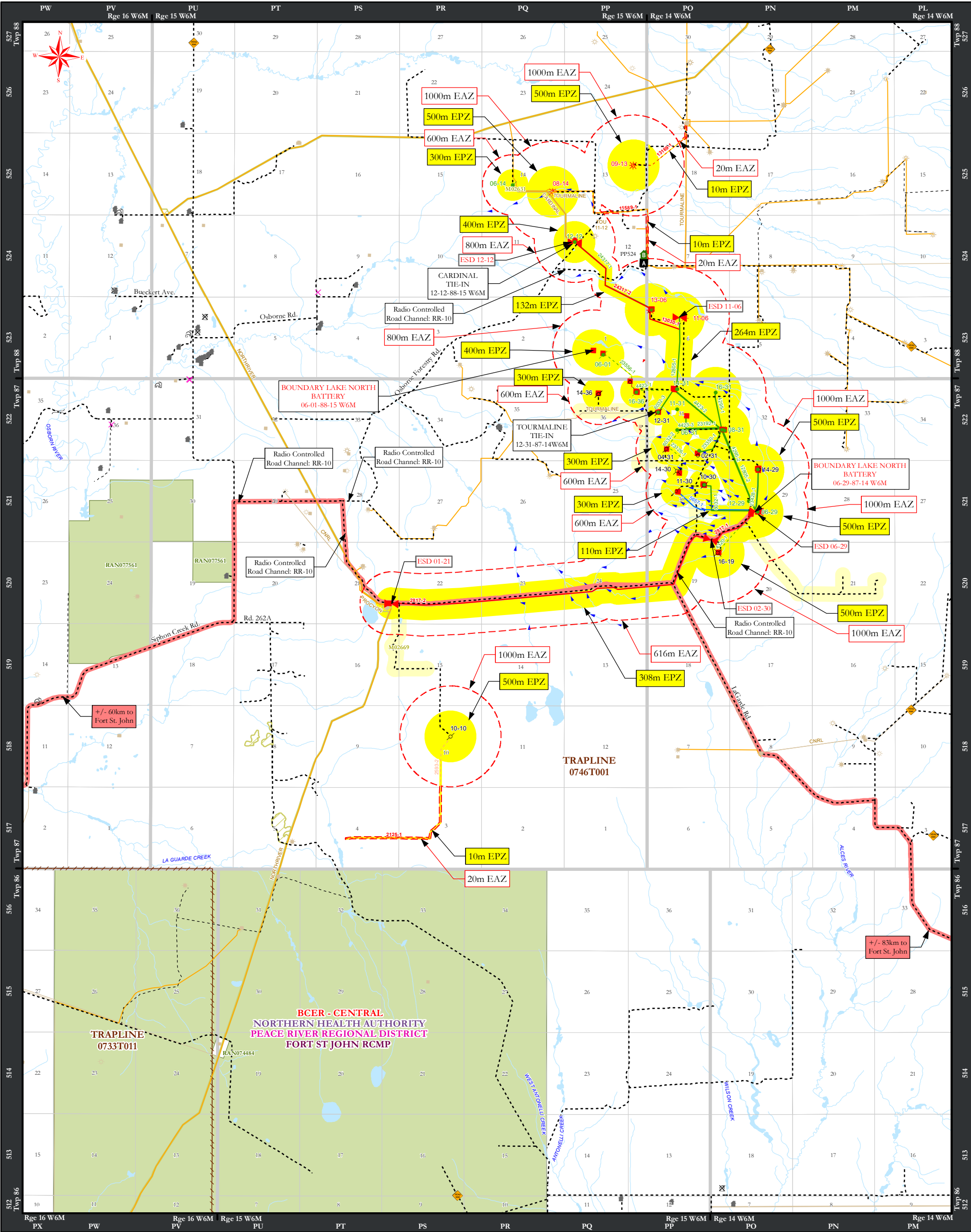
Spill Equipment

Western Canadian Spill Services (WCSS)* - COOP 9 866-541-8888
** See WCSS's website (www.wcss.ab.ca) for more information, equipment details, locations and directions.*

SURFACE DEVELOPMENT INFORMATION

There are 2 surface developments within the EPZ, including: one occupied facility and one organized camp. In the event of an incident, assign rovers to patrol the area.

Note: The detailed Resident Information List can be found behind the white "Confidential Information" tab. Procedures for contacting and evaluating / sheltering affected parties, as well as procedures for isolating the EPZ, can be found in "Section 4: Emergency Response Procedures".



BOUNDARY LAKE NORTH

BOUNDARY LAKE AREA

ENERCAPITA

Draft Date: December 12, 2019 DS

Scale: 1:72,000

Map: 9388

Revision Date: November 27, 2023 ET

UTM ZONE 10 NAD83

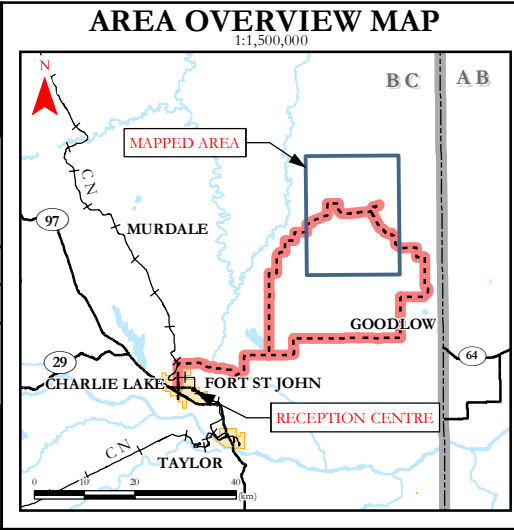
01234

(km)

MAP PRODUCED BY

H2Safety

h2safety.ca



<ul style="list-style-type: none">Third Party WellGas WellSuspended Gas WellOil WellSuspended Oil WellInjection WellService WellSuspended WellWell LocationThird Party FacilityFacilityESD	<ul style="list-style-type: none">Gas PipelineDiscontinued Gas PipelineOil PipelineDiscontinued Oil PipelineDiscontinued Misc. Fluids PipelineWater PipelineSour Third Party PipelineSweet Third Party PipelineTrailsOther RoadsWinter Roads/No Grade RoadsMain HwyDivided HwyRailwayAirfieldAccess Route	<ul style="list-style-type: none">Surface DevelopmentOrganized CampOccupied FacilityAbandonedBridgeFarm Use AreaLocked GateDead End	<ul style="list-style-type: none">River Flow DirectionHydrologyWaterbodyUrban AreaGrazing TenureCutblocksBC Energy RegulatorHealth AuthorityLocal AuthorityRCMPTrapper BoundaryEAZEPZEgress EPZ
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All roads are continuous unless otherwise indicated.

Directions to the Boundary Lake North 06-29-87-14 W6M Battery

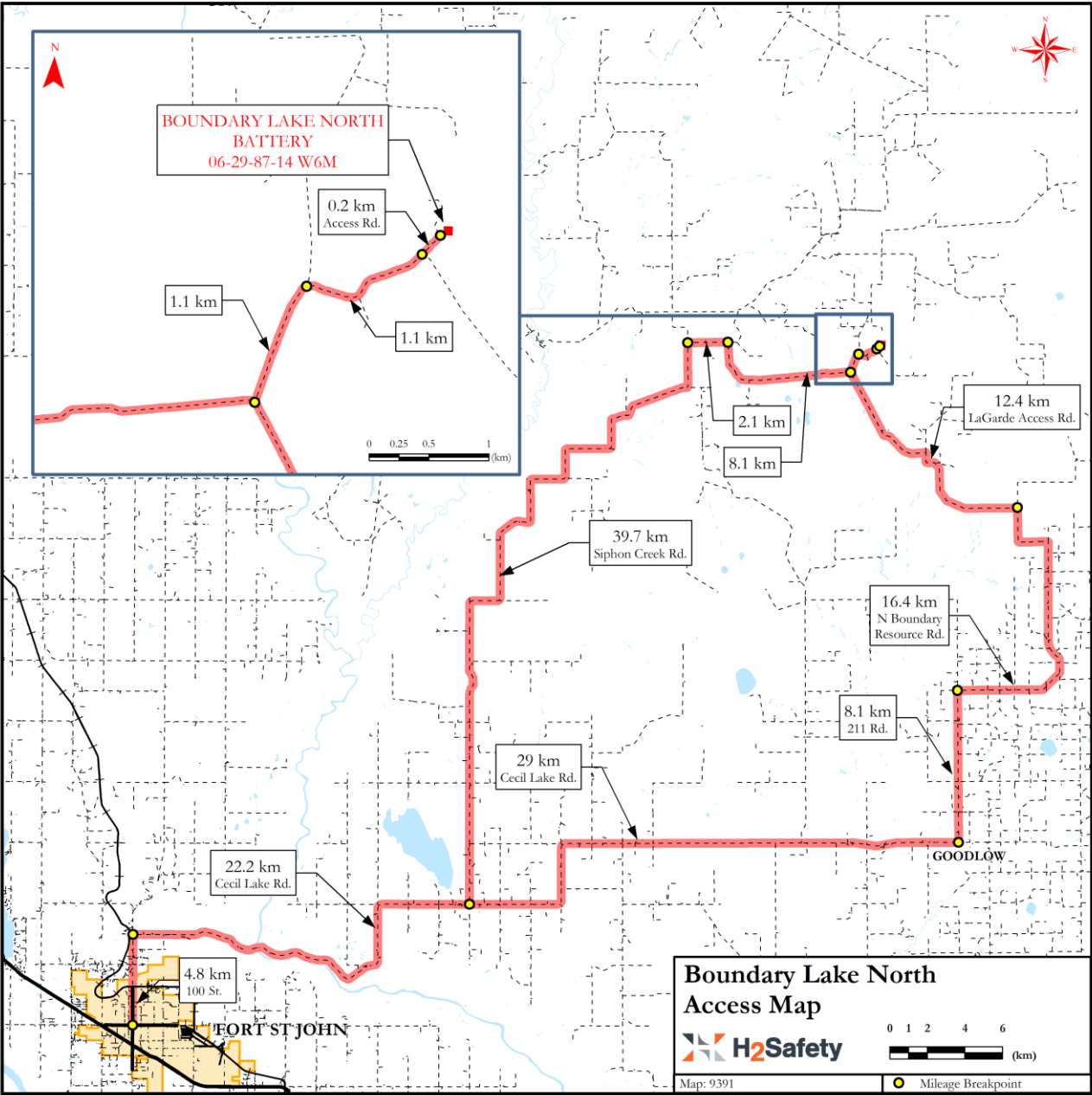
To access the Boundary Lake North 06-29-87-14 W6M Battery from the intersection of 100th Avenue and 100th Street in Fort St. John:

- Travel north on 100th Street for 4.8 km
- Turn right (east) onto Cecil Lake Road and travel for 51.2 km
- Turn left (west) onto 211 Road and travel for 8.1 km
- Turn right (east) onto N Boundary Resource Road and travel for 16.4 km
- Turn left (west) onto LaGarde Access Road and travel 12.4 km
- Turn right (northeast) onto Access Road and travel for 1.1 km
- Turn right (west) onto Access Road and travel for 1.1 km
- Continue straight (northeast) onto Access Road and travel for 0.2 km to reach the battery

Alternate Route:

To access the Boundary Lake North 06-29-87-14 W6M Battery from the intersection of 100th Avenue and 100th Street in Fort St. John:

- Travel north on 100th Street for 4.8 km
 - Turn right (east) onto Cecil Lake Road and travel for 22.2 km
 - Turn left (north) onto Siphon Creek Road and travel for 39.7 km
 - Turn right (west) onto Access Road and travel for 2.1 km
 - Turn right (south) onto Access Road and travel for 8.1 km
 - Turn left (northeast) onto Access Road and travel for 1.1 km
 - Turn right (west) onto Access Road and travel for 1.1 km
 - Continue straight (northeast) onto Access Road and travel for 0.2 km to reach the battery
-



Boundary Lake North - Facilities

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE	MAXIMUM ASSOCIATED H2S RELEASE VOLUME (m3)	ASSOCIATED WELL OR PIPELINE HPZ (m)	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
ENERCAPITA OPERATING														
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 06-01-088-15 001	BCBT0000082	06-01-088-15W6	56.6004598	#####	56° 36' 1.655"	-120° 15' 10.438"	BT	N/A	100	N/A	400	1.959	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 06-29-087-14 002	BCBT0000080	06-29-087-14W6	56.5717062	#####	56° 34' 18.142"	-120° 12' 3.164"	BT	108.73	407	200	500	0.062	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 08-21-087-15 001	BCGM0008074	08-21-087-15W6	56.5547254	#####	56° 33' 17.011"	-120° 19' 8.391"	GM	N/A	N/A	N/A	100	3.250	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 08-31-087-14 002	BCSA0000081	08-31-087-14W6	56.5863377	#####	56° 35' 10.815"	-120° 12' 38.626"	SA	108.73	407	N/A	500	1.758	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 10-30-087-14 002	BCSA0018023	10-30-087-14W6	56.5764801	#####	56° 34' 35.328"	-120° 13' 1.945"	SA	8.34	130	N/A	300	1.099	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 11-30-087-14 001	BCWD0001082	11-30-087-14W6	56.5753292	#####	56° 34' 31.185"	-120° 13' 32.264"	WD	N/A	N/A	N/A	300	1.526	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY LAKE 13-06-088-14 003	BCSA0018201	13-06-088-14W6	56.6077685	#####	56° 36' 27.966"	-120° 14' 2.892"	SA	25.75	132	N/A	500	0.917	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 14-29-087-14 003	BCSA0018199	14-29-087-14W6	56.5791522	#####	56° 34' 44.948"	-120° 11' 58.974"	SA	4.40	130	N/A	500	0.867	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARY LAKE NORTH 14-31-087-14 003	BCSA0017887	14-31-087-14W6	56.5935195	#####	56° 35' 36.670"	-120° 13' 36.319"	SA	7.51	130	N/A	400	2.553	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 16-19-087-14 002	BCSA0017844	16-19-087-14W6	56.5644857	#####	56° 33' 52.148"	-120° 12' 45.038"	SA	5.24	130	N/A	500	1.029	NW
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 16-36-087-15 003	BCSA0018139	16-36-087-15W6	56.5931830	#####	56° 35' 35.458"	-120° 14' 20.748"	SA	N/A	118	N/A	300	2.490	AC
ENERCAPITA ENERGY LTD.	ENERCAPITA BOUNDARYLAKENORTH 14-36-087-15 002	BCBT0007519	14-36-087-15W6	56.5928243	#####	56° 35' 34.167"	-120° 15' 4.798"	SA	N/A	118	N/A	300	2.053	AC

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).

All Facility locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: BT=Battery CS=Compressor Station GP=Gas Plant GI=Gas Injection IP=Injection Plant GM=Gas Sales Meter PG=Gathering point PS=Pump Station TS=Test Facility TL=Terminal

SA=Satellite DH=Dehydrator UN=Unknown WI=Water Injection PT=Pipeline Terminal WD=Water Disposal OM=Oil Sales Meter WF=Well Facility PR=Pigging Receiver/Launcher

WD=Water Disposal Facility WH=Water Hub

Status: A=Abandoned D=Discontinued O=Operating P=To Be Constructed S=Suspended AC=Active UN=Unknown NW=New RT=Retired CN=Cancelled

Other: EPZ=Emergency Planning Zone ROW=Pipeline Right of Way WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake North - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	GAS PROD. RATE (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR HPZ (m)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
ENERCAPITA SOUR OPERATING														
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ N BOUNDARY 02-31-087-14	30221	100042908714W600	02-31-087-14W6	56.5819	-120.2191	11,700	14.43	0.0020	100	118	300	1.575	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 06-29-087-14	4024	100062908714W600	06-29-087-14W6	56.5717	-120.2000	10,500	14.43	0.0018	100	118	500	0.112	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 06-31-087-14	6634	100063108714W600	06-31-087-14W6	56.5862	-120.2258	8,000	0.56	0.0001	100	118	300	2.206	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ N BOUNDARY A08-31-087-14	30222	100112908714W600	08-31-087-14W6	56.5862	-120.2107	20,000	8.35	0.0019	100	118	300	1.723	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 10-30-087-14	8368	100103008714W600	10-30-087-14W6	56.5765	-120.2172	14,100	4.19	0.0007	100	118	300	1.097	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 11-06-088-14	16089	100110608814W600	11-06-088-14W6	56.6063	-120.2254	10,200	14.43	0.0017	100	118	500	1.287	GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ N BOUNDARY 11-31-087-14	29659	100070108815W600	11-31-087-14W6	56.5886	-120.2230	20	6.96	0.0000	100	118	200	2.311	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ BOUNDARY LAKE NORTH 12-12-088-15	33052	100141408815W600	12-12-088-15W6	56.6197	-120.2589	12,300	5.77	0.0008	100	118	400	1.402	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 12-29-087-14	16730	100122908714W602	12-29-087-14W6	56.5736	-120.2028	10,000	2.10	0.0002	100	118	300	0.246	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 12-29-087-14	16730	100122908714W600	12-29-087-14W6	56.5736	-120.2028	10,000	2.10	0.0002	100	118	300	0.246	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 12-31-087-14	6769	100123108714W600	12-31-087-14W6	56.5895	-120.2320	8,800	1.60	0.0002	100	118	250	2.730	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ N BOUNDARY A13-06-088-14	31607	100131208815W600	13-06-088-14W6	56.6076	-120.2340	8,000	6.83	0.0006	100	118	500	0.934	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 13-06-088-14	16845	100160108815W602	13-06-088-14W6	56.6076	-120.2343	6,500	0.90	0.0001	100	118	500	0.930	GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 13-06-088-14	16845	100160108815W600	13-06-088-14W6	56.6076	-120.2343	6,500	0.90	0.0001	100	118	500	0.930	CAPPED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ N BOUNDARY A14-29-087-14	30369	100022908714W600	14-29-087-14W6	56.5792	-120.2000	4,900	12.58	0.0007	100	118	500	0.867	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ N BOUNDARY A14-31-087-14	29512	102163008714W600	14-31-087-14W6	56.5936	-120.2272	6,100	13.84	0.0010	100	118	400	2.556	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 14-31-087-14	5958	100143108714W602	14-31-087-14W6	56.5935	-120.2270	2,900	1.01	0.0000	100	118	400	2.564	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 14-31-087-14	5958	100143108714W600	14-31-087-14W6	56.5935	-120.2270	2,900	0.12	0.0000	100	118	400	2.564	OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 16-31-087-14	6320	100163108714W600	16-31-087-14W6	56.5929	-120.2136	100	0.30	0.0000	100	118	500	2.489	OIL
ENERCAPITA SOUR SUSPENDED														
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY A04-31-087-14	8367	100043108714W600	04-31-087-14W6	56.5829	-120.2294	20,000	0.88	0.0002	100	118	300	2.122	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA HZ BOUNDARY LAKE A06-01-088-15	32151	100111108815W600	06-01-088-15W6	56.5997	-120.2496	20,000	8.35	0.0019	100	118	400	1.959	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 08-31-087-14	3242	100083108714W600	08-31-087-14W6	56.5863	-120.2115	1,800	0.11	0.0000	100	118	300	1.759	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 09-13-088-15	17541	100091308815W602	09-13-088-15W6	56.6333	-120.2399	20,000	1.28	0.0003	100	118	500	1.938	SUSPENDED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 09-13-088-15	17541	100091308815W600	09-13-088-15W6	56.6333	-120.2399	20,000	4.96	0.0011	100	118	500	1.938	SUSPENDED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 16-36-087-15	6650	100163608715W600	16-36-087-15W6	56.5930	-120.2389	7,900	0.71	0.0001	100	118	300	2.546	SUSPENDED OIL
ENERCAPITA SOUR DRILLED AND CASED														
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY A04-31-087-14	8367	100043108714W602	04-31-087-14W6	56.5829	-120.2294	20,000	0.88	0.0002	100		200	2.122	DRILLED AND CASED
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 10-30-087-14	8368	100103008714W602	10-30-087-14W6	56.5765	-120.2172	20,000	4.11	0.0010	100		300	1.097	DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

Other: UWI=Unique Well Identifier HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake North - Sour Gas Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	SEGMENT		SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS		
																							H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)						
ENERCAPITA SOUR OPERATING																														
ENERCAPITA ENERGY LTD.	-	06-29-087-14W6	BT	02-30-087-14W6	PL	ESD	56.5717	-120.2009	-	-	-	2817	1	-	1	1,2	SG	88.9	2.41	4.8	7,248	2.00	5	0.77	23.28019	78.4378323	280	29	308	Q
ENERCAPITA ENERGY LTD.	-	02-30-087-14W6	PL	01-21-087-15W6	PL	-	-	-	CV	56.5553	-120.3177	2817	2	-	2	1,2	SG	88.9	5.71	4.8	7,248	2.00	5	0.77	55.15764	78.4378323	280	29	308	Q
ENERCAPITA ENERGY LTD.	-	12-12-088-15W6		13-06-088-14W6		ESD	56.6198	-120.2591	-	-	-	24317	2	-	3	3,4	FG	69.0	2.17	7.5	4,960	2.00	5	0.84	6.156529	25.7511225	120	18	132	Q
ENERCAPITA ENERGY LTD.	-	13-06-088-14W6	UN	11-06-088-14W6	UN	-	-	-	ESD	56.6064	-120.2237	13030	1	-	4	3,4	SG	114.3	0.78	4.0	9,929	1.95	5	0.71	19.59459	25.7511225	120	42	132	Q
ENERCAPITA ENERGY LTD.	-	11-06-088-14W6	PL	08-31-087-14W6	PL	ESD	56.6064	-120.2237	CV	56.5865	-120.211	12805	1	-	5	5	MP	114.3	2.58	4.0	9,929	2.00	5	0.71	66.47476	66.4747557	240	45	264	Q
ENERCAPITA ENERGY LTD.	-	08-31-087-14W6	PL	06-29-087-14W6	PL	-	-	-	ESD	56.5716	-120.2008	12805	2	-	6	5,6	MP	114.3	1.64	4.0	9,929	2.00	5	0.71	42.25527	108.730028	370	45	407	Q
ENERCAPITA SOUR DEACTIVATED																														
ENERCAPITA ENERGY LTD.	-	08-14-088-15W6		08-12-088-15W6		-	-	-	-	-	-	11589	1	-	7	7	SG	114.3	3.51	4.0	9,928	0.70						10	V	
ENERCAPITA ENERGY LTD.	-	09-13-088-15W6		03-19-088-14W6		-	-	-	-	-	-	13169	1	-	8	8	SG	114.3	1.55	4.0	9,928	2.00						10	V	
ENERCAPITA ENERGY LTD.	-	16-36-087-15W6		16-36-087-15W6		-	-	-	-	-	-	23556	3	-	9	9	FG	69.0	0.27	7.5	4,960	2.00						10	V	

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND
Facility: BT=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater
MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station SA=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher
Valve: CV=Check Valve ESD=Emergency Shutdown Valve
Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas
SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed
T=New V=Deactivated Z=Approved J=Out of Jurisdiction
Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction
TEMP=Temperature ROW=Pipeline Right of Way

Boundary Lake North - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (1000 m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS																														
ENERCAPITA SOUR OPERATING																																																														
ENERCAPITA ENERGY LTD.	-	12-31-087-14W6		14-31-087-14W6		-	-	-	CV	56.5935	-120.2268	6032	3	-	1	1	SE	88.9	0.56	3.2	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	1.993803	1.99380265	100	22	110	Q																												
ENERCAPITA ENERGY LTD.	-	14-31-087-14W6	WE	08-31-087-14W6	SA	CV	56.5935	-120.2268	CV	56.5864	-120.2119	4423	2	-	2	1,2	SE	88.9	1.32	3.2	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	4.699678	6.69348051	100	24	110	Q																												
ENERCAPITA ENERGY LTD.	-	11-31-087-14W6	PL	08-31-087-14W6	SA	-	-	-	CV	56.5864	-120.2119	23192	1	-	3	3	SE	97.0	0.94	10.0	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	2.912557	2.91255747	100	26	110	Q																												
ENERCAPITA ENERGY LTD.	-	06-31-087-14W6	WE	08-31-087-14W6	SA	-	-	-	CV	56.5864	-120.2119	4423	3	-	4	4	SE	88.9	0.98	3.2	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	3.489155	3.48915471	100	24	110	Q																												
ENERCAPITA ENERGY LTD.	-	02-31-087-14W6	WE	08-31-087-14W6	SA	-	-	-	CV	56.5862	-120.2118	23350	1	-	5	5	SE	124.0	0.73	12.5	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	3.713416	3.71341592	100	33	110	Q																												
ENERCAPITA ENERGY LTD.	-	16-31-087-14W6	PL	08-31-087-14W6	PL	-	-	-	CV	56.5864	-120.2119	4295	1	-	6	6	SE	88.9	0.75	3.2	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	2.670271	2.67027141	100	23	110	Q																												
ENERCAPITA ENERGY LTD.	-	08-31-087-14W6	SA	06-29-087-14W6	BT	-	-	-	ESD	56.5717	-120.2009	4295	2	-	7	1 to 7	SE	88.9	1.74	3.2	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	6.19503	25.6739097	120	24	132	Q																												
ENERCAPITA ENERGY LTD.	-	14-29-087-14W6	PL	06-29-087-14W6	PL	-	-	-	ESD	56.5717	-120.2009	23428	1	-	8	8	SE	124.0	0.86	12.5	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	4.40488	4.40487962	100	34	110	Q																												
ENERCAPITA ENERGY LTD.	-	10-30-087-14W6	WE	06-29-087-14W6	BT	-	-	-	ESD	56.5717	-120.2009	6032	1	-	9	9	SE	88.9	1.52	3.2	9,922	2.00	5	0.71	20.00	278.00	71.94	144.83	7.814769	7.81476873	100	33	110	Q																												
ENERCAPITA ENERGY LTD.	-	12-12-088-15W6		13-06-088-14W6		ESD	56.6198	-120.2591	-	-	-	24317	1	-	10	10	SE	97.0	2.17	10.0	4,960	2.00	5	0.84	20.00	278.00	71.94	61.949	6.72367	6.72367014	100	27	110	Q																												
ENERCAPITA SOUR DEACTIVATED																																																														
ENERCAPITA ENERGY LTD.	-	16-19-087-14W6	PL	06-29-087-14W6	PL	-	-	-	-	-	-	4320	1	-	11	11	SE	88.9	1.15	3.2	6,895	2.00											10	V																												
ENERCAPITA ENERGY LTD.	-	06-29-087-14W6		14-29-087-14W6		-	-	-	-	-	-	4360	1	-	12	12	WS	88.9	0.90	4.8	20,700	0.43											10	V																												
ENERCAPITA ENERGY LTD.	-	16-36-087-15W6	WE	08-31-087-14W6	SA	-	-	-	-	-	-	4423	1	-	13	13	SE	88.9	2.34	3.2	4,960	2.00											10	V																												
ENERCAPITA ENERGY LTD.	-	04-31-087-14W6	WE	08-31-087-14W6	SA	-	-	-	-	-	-	6032	2	-	14	14	SE	88.9	1.25	3.2	4,960	2.00											10	V																												
ENERCAPITA ENERGY LTD.	-	14-30-087-14W6	WE	04-31-087-14W6	PL	-	-	-	-	-	-	23126	1	-	15	15	SE	88.9	0.71	3.2	4,960	2.00											10	V																												
ENERCAPITA ENERGY LTD.	-	06-01-088-15W6	PL	16-36-087-15W6	PL	-	-	-	-	-	-	23556	1	-	16	16	SE	97.0	1.08	10.0	4,960	2.00											10	V																												
ENERCAPITA ENERGY LTD.	-	16-36-087-15W6	PL	16-36-087-15W6	PL	-	-	-	-	-	-	23556	2	-	17	17	SE	97.0	0.27	10.0	4,960	2.00											10	V																												

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND
Facility: BT=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater
MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station SA=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher
Valve: CV=Check Valve ESD=Emergency Shutdown Valve
Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas
SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed
T=New V=Deactivated Z=Approved J=Out of Jurisdiction
Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction
TEMP=Temperature ROW=Pipeline Right of Way

Boundary Lake North - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
ENERCAPITA SWEET OPERATING											
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 11-30-087-14	3098	100113008714W600	11-30-087-14W6	56.5753	-120.2257	0		300	1.526	WATER INJECTOR
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 14-30-087-14	6876	100143008714W600	14-30-087-14W6	56.5786	-120.2254	0	118	200	1.657	OBSERVATION
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 16-19-087-14	4023	100161908714W600	16-19-087-14W6	56.5645	-120.2127	0	118	500	1.030	OBSERVATION
ENERCAPITA SWEET SUSPENDED											
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 06-14-088-15	7699	100061408815W600	06-14-088-15W6	56.6299	-120.2789	0	118	300	2.998	SUSPENDED OIL
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 08-14-088-15	8423	100081408815W600	08-14-088-15W6	56.6287	-120.2659	0	118	500	2.270	SUSPENDED GAS
ENERCAPITA ENERGY LTD.	ENERCAPITA ET AL E SIPHON 10-10-087-15	3852	100101008715W602	10-10-087-15W6	56.5317	-120.2988	0	118	500	5.459	SUSPENDED
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 14-36-087-15	19973	100143608715W603	14-36-087-15W6	56.5926	-120.2512	0	118	300	2.053	SUSPENDED
ENERCAPITA SWEET DRILLED AND CASED											
ENERCAPITA ENERGY LTD.	ENERCAPITA N BOUNDARY 14-36-087-15	19973	100143608715W604	14-36-087-15W6	56.5926	-120.2512	0		300	2.053	DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).

All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

Other: UWI=Unique Well Identifier EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake North - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
ENERCAPITA SWEET OPERATING																					
ENERCAPITA ENERGY LTD.	-	06-29-087-14W6	11-30-087-14W6	-	-	-	-	-	-	5657	1	-	SW	88.1	1.65	6.6	13,780	0		ROW	Q
ENERCAPITA SWEET DEACTIVATED																					
ENERCAPITA ENERGY LTD.	-	06-03-087-15W6	06-04-087-15W6	-	-	-	-	-	-	2125	1	-	NG	88.9	1.62	3.2	6,890	0		10	V
ENERCAPITA ENERGY LTD.	-	10-10-087-15W6	06-03-087-15W6	-	-	-	-	-	-	2593	2	-	UN	88.9	2.06	3.2	0	0		10	V

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).
All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: BT=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater

MS=Meter Station PL=Pipeline PS=Pump Station SA=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in WF=Well Facility

Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas

FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water

UN=Unknown ML=Miscellaneous Liquids AA=Air

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed

T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: WALL=Wall Thickness OD=Outside Diameter EPZ=Emergency Planning Zone ROW = Pipeline Right of Way HPZ=Hazard Planning Zone

Boundary Lake North - Tanks and Bullets

FACILITY / LOCATION	SUBSTANCE	NO. OF TANKS	TANK VOLUME	ENVIRONMENT CANADA REGISTRATION REQUIRED? ⁽¹⁾	ENVIRONMENT CANADA ERP REQUIRED? ⁽²⁾	HPZ (m)
06-29-087-14W6 Boundary Lake North Battery	Methanol	1	500 gal	No	No	100
		1	1000 gal			
	Propane	6	1000 gal	Yes	No	200
	Dewax	1	250 gal	No	No	50
	Demulsifier	1	250 gal	No	No	50
	Corrosion Inhibitor	1	250 gal	No	No	50
	Produced Water	4	750 bbl	No	No	50
	Oil	3	750 bbl	No	No	100
	Slop Tank	1	750 bbl	No	No	100
		1	400 bbl			

⁽¹⁾ E2 Schedules 2 only.

⁽²⁾ E2 Schedules 2, 3, 4 and 5.

LEGEND

Other: HPZ=Hazard Planning Zone

Page Redacted for Confidentiality

**24 Hour Emergency Number:
1-866-556-7838**



Hazard Assessment



**Enercapita Energy Boundary Lake Field
Operations**

November 2023

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1.0 Introduction

The objective of the hazard assessment process is to identify, assess, and quantify the consequential emergency events which may result from Enercapita Energy's specific oil and gas activities. This is achieved by identifying all relevant oil and gas substances currently under process / storage containment within a defined area. From that, the realistic worst-case scenario resulting from an incident which could directly or indirectly impact public safety has been determined.

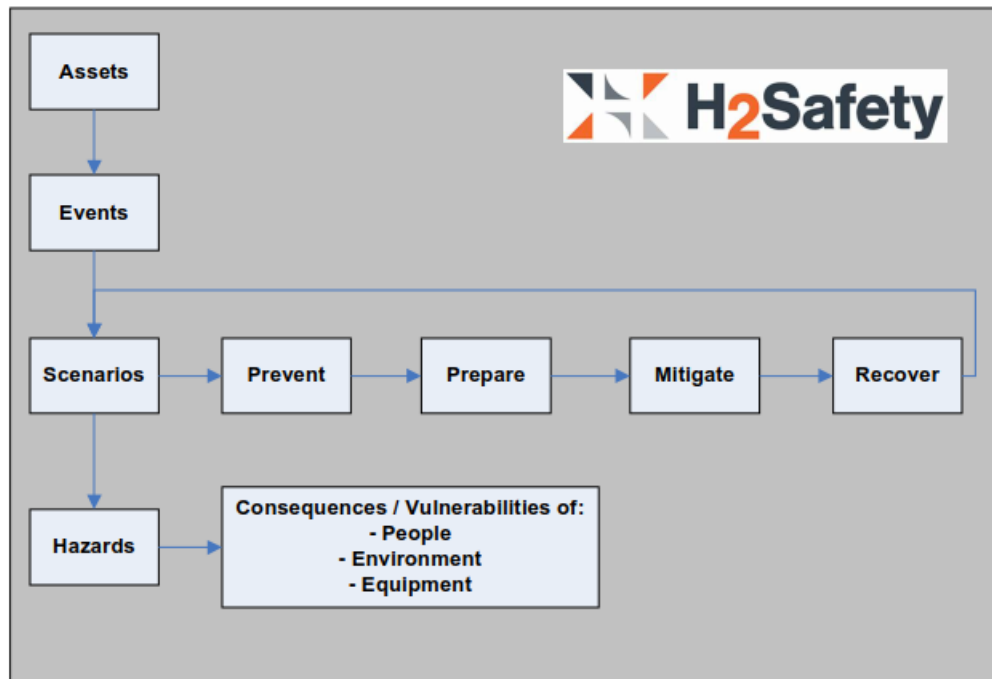
Utilizing best practices in the field of emergency management and with consideration of CSA Z246.2-18 Emergency Preparedness and Response for Petroleum and Natural Gas Industry Systems, this hazard assessment process will permit Enercapita Energy to deliver an effective and timely response protocol for each identified consequential emergency event in order to protect the public, the environment and assets.

This document also intends to meet the following regulations:

- BC Energy Regulator Emergency Management Manual; November 2021; Version 2.3
- Canada Energy Regulator Onshore Pipeline Regulations – SOR/99-294
- Canadian Environmental Protection Act, 1999

2.0 Hazard Risk Vulnerability Assessment (HRVA)

The first step in our hazard assessment is to complete a Hazard Risk Vulnerability Assessment (HRVA) for the area which includes the following steps:



Assets – a complete list of assets in a geographical area.

Events – these are triggers that start an emergency. These can be natural (earthquake, flood) or manmade (human error, equipment failure).

Scenarios – the event then triggers an emergency scenario to occur. We then review these scenarios to look at Prevention, Preparation, Mitigation, and Recovery.

Hazards – the various scenarios then create a hazard that can affect people, the environment, or property.

2.1 Scenarios

Included below is a list of most probable scenarios that could occur at an oil and gas location. This would include wellsite's, pipelines, pipeline risers, or at a facility. Scenarios are then reviewed from the following perspectives:

- Preventative – steps taken to reduce the occurrence of a scenario happening
- Preparation – ensuring preparedness if a scenario occurs
- Response – steps taken to reduce impacts if a scenario does occur
- Recovery – actions taken after the scenario has been resolved

Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
Fire	<ul style="list-style-type: none"> - Engineering Controls - Administrative Controls - Training / exercises - Grounding procedures for vessels and trucks 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> - Repair / Replace damaged equipment
Container Rupture	<ul style="list-style-type: none"> - Engineering Controls - Administrative Controls - Training / exercises - Preventative maintenance procedures - Operator present daily - Pressure Safety Valve (PSV) - PSV serviced regularly - Secondary containment - Berms 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> - Incident investigation - Recover Product - Environmental and/or wildlife cleanup and rehabilitation
Loading / unloading incident	<ul style="list-style-type: none"> - Engineering Controls - Administrative Controls - Training / exercises - Operator present daily - Secondary containment - Berms - Truck loading / unloading procedures - Positive grounding procedures - Driver competency check 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> - Incident investigation - Environmental and/or wildlife cleanup and rehabilitation
Physical Container Damage	<ul style="list-style-type: none"> - Engineering Controls - Administrative Controls - Training / exercises - Operator present daily - Restricted areas - Physical barriers - Tank farm design - Signage - Check Valves - Secondary containment 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> - Incident investigation - Recover Product - Repair / Replace equipment

Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
Container Degradation	<ul style="list-style-type: none"> - Engineering Controls - Administrative Controls - Training / exercises - Operator present daily - External inspections - Vessel coating - Asset integrity program 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> - Incident investigation - Recover Product - Repair / Replace equipment
Environmental Impacts (freezing, excess heat, etc)	<ul style="list-style-type: none"> - Engineering Controls - Administrative Controls - Training / exercises - Preventative maintenance procedures - Operator present daily - Pressure Safety Valve (PSV) - PSV serviced regularly - Secondary containment - Berms 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> - Incident investigation - Recover Product - Environmental and/or wildlife cleanup and rehabilitation
Pipe System Failure	<ul style="list-style-type: none"> - Engineering Controls - Administrative Controls - Training / exercises - Preventative maintenance procedures - Operator present daily - Equipment and lines clearly identified - Check Valves - Manual Block Valves - Automatic or remote Emergency Shutdown Valve (ESD) - Asset Integrity program - Technical Safety BC compliance 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> - Incident investigation - Recover Product - Environmental and/or wildlife cleanup and rehabilitation

2.2 Hazards

Based on typical oil and gas products and the scenarios above, we can typically classify hazards into the following categories:

- Physical Hazard: Flammable, Combustible, or Oxidizing Substances
- Physical Hazard: Potential for Pool Fires
- Human Health Hazard: Inhalation Toxicity
- Human Health Hazard: Carcinogenicity
- Human and Environmental Health Hazard: Corrosive Substances
- Environmental Health Hazard: Persistent, Bioaccumulative, or Aquatically Toxic

These hazards have the potential to result in the following consequences:

Impacted	Potential Consequences
Company Employees	<ul style="list-style-type: none">- Fatality- Permanent Disability- Lost time Injury- Illness- Medical Aid- Low to no potential consequences
Other Workers in the Area	<ul style="list-style-type: none">- Fatality- Permanent Disability- Lost time Injury- Illness- Medical Aid- Low to no potential consequences- Evacuation / restricted access / road closures
General Public	<ul style="list-style-type: none">- Fatality- Permanent Disability- Lost time Injury- Illness- Medical Aid- Low to no potential consequences- Evacuation / restricted access / road closures
Environment	<ul style="list-style-type: none">- Release into atmosphere / plume- Release of flammable gas / liquid- Release of corrosive liquid- Liquid spill on land and negative impacts to plant life- Liquid spill into water body and negative impacts to water and plant life- Negative impacts to wildlife (illness, injury, disability, or fatality)
Equipment	<ul style="list-style-type: none">- Equipment failure / damage- Complete loss of equipment- Lost revenues

3.0 Hazard Planning Zones

The purpose of the Hazard Assessment is to determine zones for emergency planning purposes. Hence, actual response zones may be smaller or larger than the planning zones based on real world air monitoring, terrain impacts, weather, etc.

The Hazard Assessment considers hazards from primary sources only. Cascading events (one BLEVE event leading to another) and chemical reactions are not considered in the Hazard Planning Zone (HPZ) calculations.

To quantify the hazards described above, we must determine how an HPZ is defined. This is typically done by determining what endpoint is used in the modeling. Modeling endpoints are often based on a Level of Concern (LOC) which is a threshold that relates a modeling endpoint to a human health effect.

Hazard	Endpoint	Units	Health Effects
Thermal Radiation	5.00	kW / m ²	2 nd degree burns within 60 seconds
Overpressure	3.50	Psi	Serious injury likely
Toxic Effects	Dependent on substance released		

- Thermal radiation – high temperatures associated with the burning of gas can cause significant burns or even death to individuals that are too close to the heat source.
- Overpressure – is the pressure above atmospheric pressure that is caused by the shock wave created from an explosion. Overpressure can result in structural damage leading to public harm or directly by damaging hollow organ systems such as auditory, respiratory, and gastrointestinal systems.
- Toxic Effects – Various substances will have different effects

Thermal Radiation and Overpressure LOC's are from ALOHA; which is an air hazard modeling program developed jointly by NOAA and the Environmental Protection Agency (EPA). Toxic Effect HPZ's are determined utilizing numerous methods and LOC's depending on the substance, but are generally completed using one of the following:

- BC Energy Regulator Emergency Management Manual; November 2021; Version 2.3
- Alberta Energy Regulator (AER) ERCBH2S Dispersion Model
- Transport Canada 2016 Emergency Response Guidebook
- ALOHA Dispersion Model

3.1 Deactivated Pipelines

In accordance with the BCER Oil and Gas Activities act – Pipeline Regulation, all pipelines being re-licensed to Deactivated status must be deactivated in accordance with CSA Z662. CSA Z662 states under section 10.15.1.1 *Deactivation of piping*:

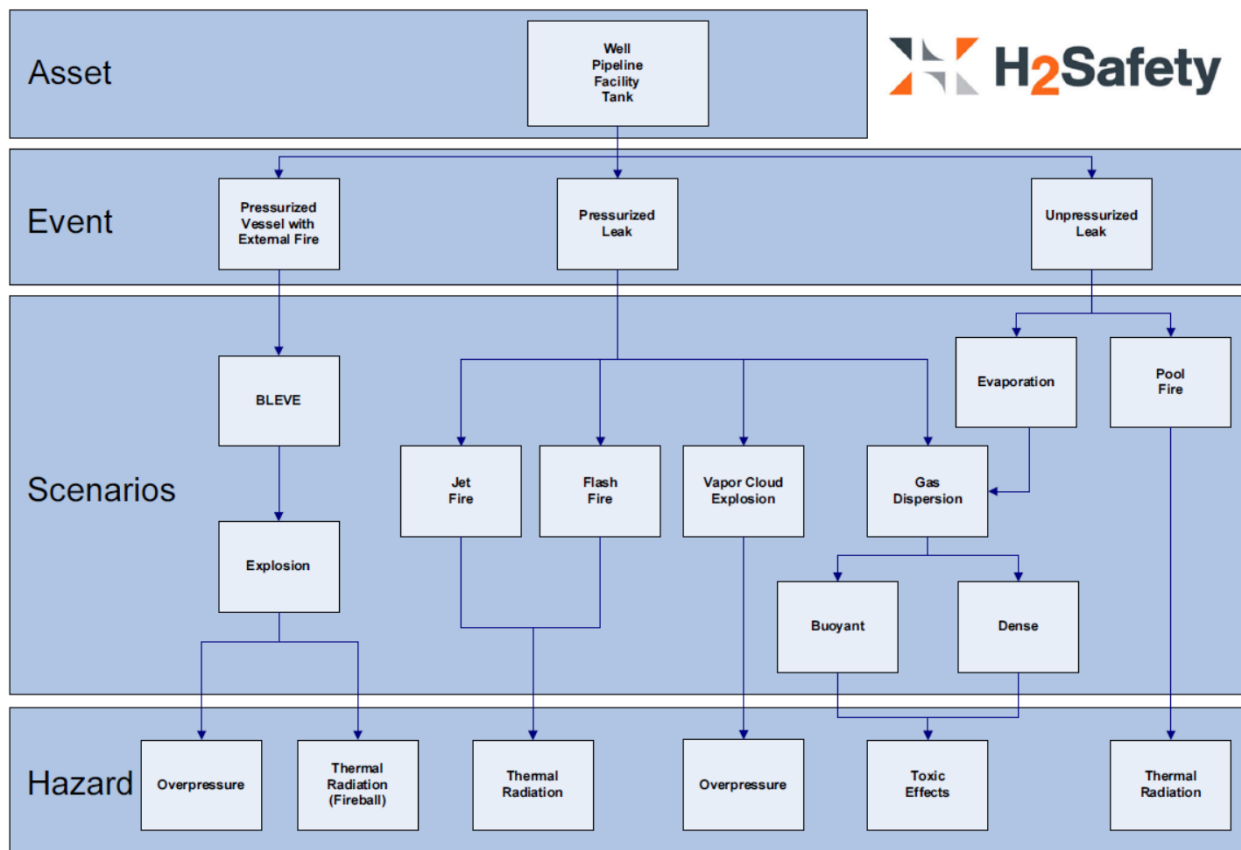
Operating companies deactivating piping shall

- a) Isolate the piping, using blind flanges, weld caps, or blanking plates suitable for the pressure from which the deactivated piping is being isolated;
- b) Where required, provide a pressure-relief system; and
- c) Fill the piping with a suitable medium, having regard for the intended duration of the deactivation, the effects of the medium on the integrity of the piping, and the potential consequences of a leak.

As a corrosion inhibitor may be utilized in deactivated pipelines, a hazard planning zone (HPZ) of 10 meters has been assigned to all deactivated pipelines to represent the pipeline right-of-way.

4.0 Methodology

Included below is the methodology used to determine HPZ's.



5.0 Asset Tables

For asset tables, refer to the back of the applicable supplement area (white tabs). Each set of asset tables will include their associated Hazard Planning Zones (HPZ's).

6.0 Health Effects

Included below is a list of most probable health effects that could occur at an oil and gas location.

Hazardous Product	General Description	Health Effects
Natural Gas	<ul style="list-style-type: none"> - Extremely flammable. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground. 	<p>Hydrogen sulphide gas and hydrocarbon vapours may:</p> <ul style="list-style-type: none"> - Cause irritation of eyes, nose and throat, dizziness and drowsiness. - At higher concentrations, severe irritation of eyes, nose, throat and lungs may occur. - Unconsciousness and respiratory failure may happen without warning. Death may result if not promptly revived. - Contact with skin may cause irritation and possibly dermatitis. Hydrocarbons are absorbed through intact skin. - Contact of liquid with eyes may cause severe irritation.
Carbon Dioxide	<ul style="list-style-type: none"> - Vapours from liquefied gas are initially heavier than air and spread along ground. 	<ul style="list-style-type: none"> - Vapours may cause dizziness or asphyxiation without warning. - Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
Hydrogen Sulphide	<ul style="list-style-type: none"> - Flammable - explosive when mixed with air – forms SO_2 when combusted - Rotten egg smell at low concentrations – inhibits olfactory senses at high concentrations. - Heavier than air; will tend to disperse slower in sheltered or low lying areas. - Extremely toxic. 	<ul style="list-style-type: none"> - Initial odour of H_2S detected at about 0.1 ppm. Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. - H_2S may cause a loss of sense of smell at 100 ppm. At higher concentrations, severe irritation of eyes, nose, throat and lungs, dizziness. Headache, nausea, unconsciousness and respiratory failure may occur. Death may result if not revived promptly. - Contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin. - Contact of liquid with eyes may cause severe irritation and possible damage.

Hazardous Product	General Description	Health Effects
Oil or Condensate	<ul style="list-style-type: none"> - Colourless/straw coloured liquid, hydrocarbon and rotten eggs odour. - Material will ignite at normal temperatures. 	<ul style="list-style-type: none"> - Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. - H₂S may cause a loss of sense of smell at 100 ppm. At higher concentrations, severe irritation of eyes, nose, throat and lungs, dizziness. Headache, nausea, unconsciousness and respiratory failure may occur. Death may result if not revived promptly. - Contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin. - Contact of liquid with eyes may cause severe irritation and possible damage.
Nitrogen	<ul style="list-style-type: none"> - Containers may explode when heated. Ruptured cylinders may rocket. 	<ul style="list-style-type: none"> - Vapours may cause dizziness or asphyxiation without warning. - Vapours from liquefied gas are initially heavier than air and spread along ground.
Compressed Air	<ul style="list-style-type: none"> - High pressure air 	<ul style="list-style-type: none"> - Possible burns, abrasions and skin irritation.
Steam	<ul style="list-style-type: none"> - High pressure, high temperature air/water 	<ul style="list-style-type: none"> - Possible burns and skin irritation.
Emissions	<ul style="list-style-type: none"> - Carbon monoxide 	<ul style="list-style-type: none"> - Very toxic. - Can harm the blood (decreased ability to carry oxygen). Symptoms may include headache, nausea, dizziness, drowsiness and confusion - May cause permanent damage to organs including the brain and heart. - Symptoms of mild frostbite include numbness, prickling and itching. - Symptoms of more severe frostbite include a burning sensation and stiffness. The skin may become waxy white or yellow. Blistering, tissue death and infection may develop in severe cases.
	<ul style="list-style-type: none"> - Sulphur Dioxide 	<ul style="list-style-type: none"> - Very toxic if inhaled. - Causes severe skin burns and eye damage - Corrosive to the respiratory tract.

Hazardous Product	General Description	Health Effects
Produced Water	<ul style="list-style-type: none"> - Clear to dirty grey liquid. - Flammable liquid and vapour. 	<ul style="list-style-type: none"> - Can be fatal if inhaled. - Causes serious eye irritation. - May cause skin irritation. - May cause gastrointestinal irritation.
Diesel	<ul style="list-style-type: none"> - Bright, oily liquid; clear to yellow in colour with mild petroleum-like odour. - Flammable liquid and vapour. 	<ul style="list-style-type: none"> - May be fatal if swallowed and enters airways. - Causes skin irritation. - Harmful if inhaled. - May cause damage to organs through prolonged or repeated exposure.
Gasoline	<ul style="list-style-type: none"> - Clear to slightly yellow or green liquid with Gasoline odour. - Extremely flammable liquid and vapour. 	<ul style="list-style-type: none"> - May be fatal if swallowed and enters airways. - Causes skin irritation. - May cause drowsiness or dizziness. - May cause cancer. - May cause damage to organs through prolonged or repeated exposure.
Lube Oil	<ul style="list-style-type: none"> - Yellow liquid with petroleum oil like odour. 	<ul style="list-style-type: none"> - May cause skin and eye irritation. - Repeated or long term exposure may cause dizziness or drowsiness.
Propane	<ul style="list-style-type: none"> - Colourless, liquefied gas. - Extremely flammable and may explode when heated. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground. 	<ul style="list-style-type: none"> - May displace oxygen and cause rapid suffocation. - May cause respiratory irritation. - Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. - May cause eye and skin irritation.
Corrosion Inhibitor	<ul style="list-style-type: none"> - Black liquid. - Highly flammable liquid and vapour. 	<ul style="list-style-type: none"> - Harmful if swallowed or in contact with skin. - Causes skin irritation. - Causes serious eye damage. - Toxic if inhaled. - May cause drowsiness or dizziness. - May cause kidney damage through prolonged or repeated exposure.

Hazardous Product	General Description	Health Effects
Scale Inhibitor	<ul style="list-style-type: none"> - Colourless liquid. - Flammable liquid and vapour. 	<ul style="list-style-type: none"> - Harmful if swallowed. - May cause damage to eyes. - May cause damage to kidneys through prolonged or repeated exposure.
Paraffin Inhibitor	<ul style="list-style-type: none"> - Clear liquid. - Hydrocarbon-like odour. - Flammable liquid and vapour. 	<ul style="list-style-type: none"> - Harmful in contact with skin and can cause skin irritation. - Causes serious eye irritation. - May cause respiratory irritation. - May cause drowsiness or dizziness. - May cause cancer or genetic defects. - May cause damage to nervous system through prolonged or repeated exposure. - May be fatal if swallowed and enters airways.
Biocide	<ul style="list-style-type: none"> - Colourless liquid. - Pungent odour. - Flammable liquid and vapour. 	<ul style="list-style-type: none"> - Causes serious eye damage. - Causes severe skin burns. - May cause allergic skin reaction. - Harmful if swallowed. - Causes digestive tract burns. - May cause allergic respiratory tract irritation. - Toxic if inhaled.
Demulsifier / Emulsion Breaker	<ul style="list-style-type: none"> - Clear amber liquid. - Highly flammable liquid and vapour. - Hydrocarbon-like odour. 	<ul style="list-style-type: none"> - Harmful if swallowed. - May be fatal if swallowed and enters airways. - Causes skin irritation. - Causes serious eye irritation. - May cause respiratory irritation. - May cause drowsiness or dizziness. - May cause genetic defects.
Ethylene Glycol	<ul style="list-style-type: none"> - Clear, colourless, viscous liquid. 	<ul style="list-style-type: none"> - May cause eye irritation. - May be harmful if inhaled. Causes respiratory tract irritation. - May be harmful if absorbed through skin. Causes skin irritation. - May be harmful if swallowed.

Hazardous Product	General Description	Health Effects
Natural Gas Liquids (NGL)	<ul style="list-style-type: none"> - Colourless, liquefied gas. - Extremely flammable and may explode when heated. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground. 	<ul style="list-style-type: none"> - May displace oxygen and cause rapid suffocation. - May cause respiratory irritation. - Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. - May cause eye and skin irritation.
Liquefied Petroleum Gas (LPG)	<ul style="list-style-type: none"> - Colourless, liquefied gas. - Extremely flammable and may explode when heated. - Will be easily ignited by heat, sparks or flames. - Will form explosive mixtures with air. - Vapours from liquefied gas are initially heavier than air and spread along ground. 	<ul style="list-style-type: none"> - May displace oxygen and cause rapid suffocation. - May cause respiratory irritation. - Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. - May cause eye and skin irritation.
Methanol	<ul style="list-style-type: none"> - Clear, colourless liquid. - Alcohol-like odour. - Highly flammable in liquid and vapour. 	<ul style="list-style-type: none"> - Toxic if swallowed. - Toxic in contact with skin. - Toxic if inhaled. - Causes damage to organs.
Jet Fuel (Jet B or Avgas)	<ul style="list-style-type: none"> - Clear to straw-coloured liquid. - Highly flammable liquid and vapour. - Gasoline-like odour. 	<ul style="list-style-type: none"> - May be fatal if swallowed and enters airways. - Causes skin irritation. - May cause drowsiness or dizziness. - May cause cancer. - May cause damage to organs through prolonged or repeated exposure.
Amine (MEA)	<ul style="list-style-type: none"> - Clear, colourless liquid. - Amine-like odour. - Combustible at high temperatures. 	<ul style="list-style-type: none"> - Harmful if swallowed, in contact with skin or inhaled. - Causes severe skin burns and eye damage. - May cause respiratory irritation. - May cause damage to organs through prolonged or repeated exposure if swallowed.

Hazardous Product	General Description	Health Effects
H ₂ S Scavenger	<ul style="list-style-type: none"> - Clear liquid. - Soluble in Water. 	<ul style="list-style-type: none"> - Irritating to eyes and skin. - Irritating to respiratory system. May cause severe irritation burns. - May cause allergic skin reaction. - May be harmful if swallowed.
Other	<ul style="list-style-type: none"> - At facilities, well-sites, risers, etc., other hazardous materials are likely to be present. Refer to SDS sheets and Transportation Canada Emergency Guidebook for a description and health effects of unlisted hazardous products. 	