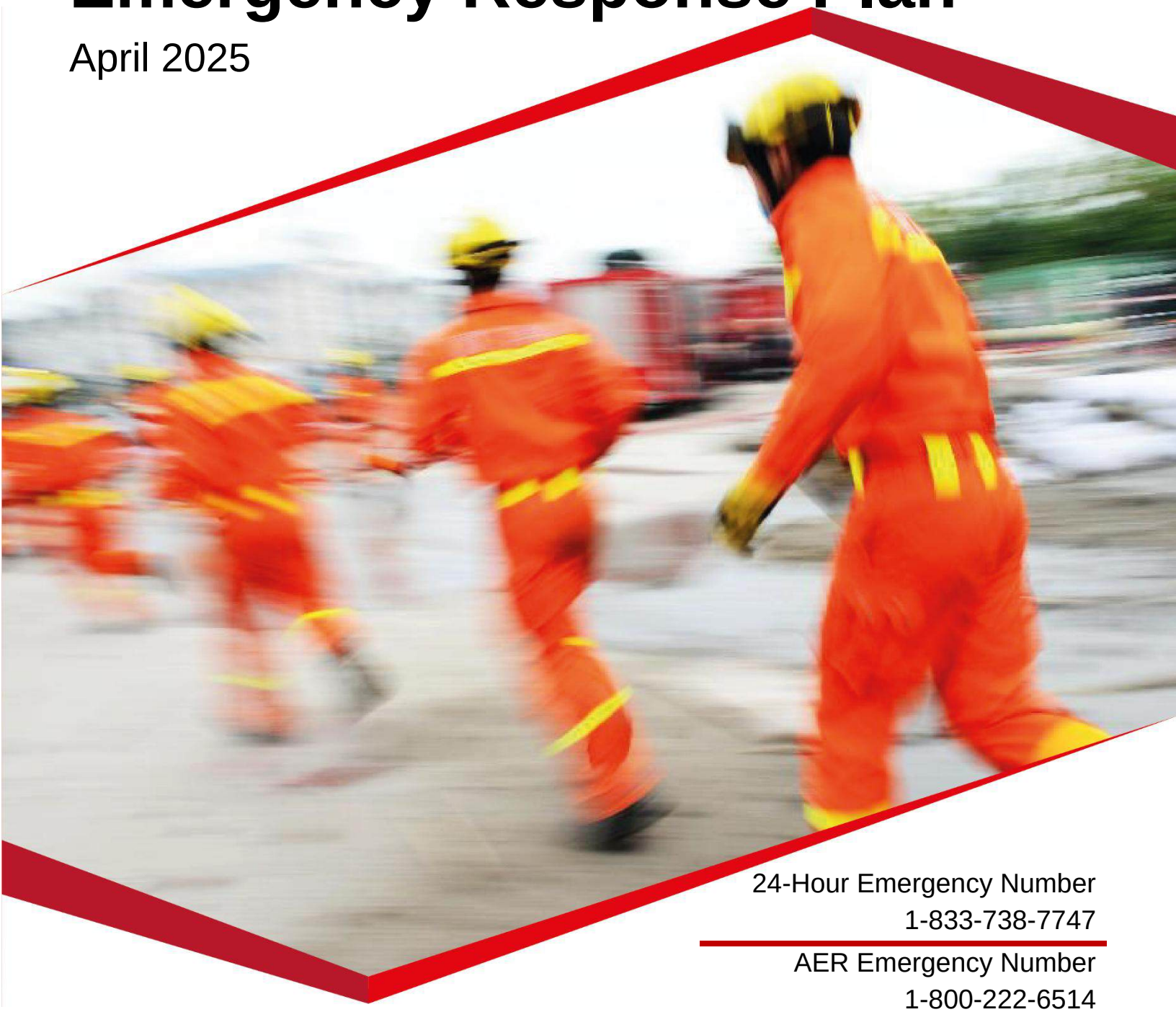
Corporate Emergency Response Plan

April 2025



24-Hour Emergency Number
1-833-738-7747

AER Emergency Number
1-800-222-6514

CORPORATE
EMERGENCY RESPONSE PLAN

Prepared by:

BLACK GOLD Emergency Planners Inc

April 2025

EMERGENCY RESPONSE PLAN
MANUAL RECEIPT FORM

Upon receipt of this Emergency Response Plan Manual, this Receipt Form must be completed and returned to the Operations in the Corporate Office. The Manual holder is responsible for ensuring that the Manual is kept current by inserting the latest revisions as they are issued.

Recipient Name (please print): _____

Position: _____

Field Area Name, if applicable: _____

Date: _____

Signed: _____

ERP Number (from Distribution List): _____

Name of ERP: _____

Return signed copy to:

Deltawest Energy Ltd.
1040, 396 - 11 Avenue SW
Calgary, AB T2R 0C5

Phone: 1-587-392-7762

Attention:

Matt Harrington
Operations
Email: matt@blacksailresources.com>

MANAGEMENT OF CHANGE REQUEST FORM

Deltawest Energy Ltd.

Attn: Matt Harrington, Operations
1040, 396 - 11 Avenue SW
Calgary, AB T2R 0C5

Email address: matt@blacksailresources.com>

Section Number: _____

Page Number: _____

Copies of revised pages attached: ☐ yes ☐ no

Description of Amendment:

_____

_____

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_____

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_____

Requested By:_____

Address:_____

_____

_____

Request Acknowledgement:_____

Request Numbered and Logged:_____

Correspondence Required:_____

Approved By:_____

Approval Date:_____

Revision Date:_____

Issue Date:_____

MANAGEMENT OF CHANGE LOG

Date Completed (DD/MM/YYYY)	Revision #	Section(s) Updated	Description	Revision [1]	Annual Update [2]	Date Inserted into ERP: DD/MM/YYYY	Signature
30-04-2025	New	All	New ERP	☐	☐		
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[1] **Revision**: An interim revision to the ERP when significant changes occur to Company personnel or infrastructure (drilling, facilities, pipelines). A revision does not replace the requirement for an annual update.

[2] **Annual Update**: A comprehensive update to all sections of the ERP. The entire document is reviewed and updated to ensure current distribution list, emergency telephone list, roles and responsibilities, mutual aid agreements, response agencies information, government support information, asset tables, safety equipment, and maps. In a Registered Site-Specific ERP, the stakeholder database is also verified, a hazard assessment is conducted, and area user contact information is updated.

DISCLAIMER

The Emergency Response Plan has been designed to provide a series of guidelines for responding to emergency situations. This plan identifies, defines and recommends actions for dealing with incidents that could impact facilities within the plan. This plan provides a logical and responsible approach to classifying and responding to incidents.

Verification of the information contained in this plan is the sole responsibility of Deltawest. Black Gold Emergency Planners Inc. does not accept any liability arising from the implementation or use of this plan. The Emergency Response Plan must be available on site. Unauthorized reproduction is strictly prohibited.

This plan is administered by:

Project Manager: Tyson Glenn

Suite 212, 4000 – 4th Street SE
Mountainview Business Campus
Calgary, AB T2G 2W3

Office: 403-216-7052
Fax: 403-216-7053

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DISTRIBUTION LIST

The following individuals will have a copy of this Emergency Response Plan for use as a reference document in the event of an emergency arising from Company operations.

CEOC COMMAND TEAM

ERP Number	Name/Title	Company	Core Plan	Registered Supplement	Partial	Field Name	ERP Type	Quick Ref
ERP 01	Kevin Wetteskind, President & CEO	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Paper	☐
ERP 02	Peter Liu, CFO	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐
ERP 03	Patrick Kam, VP Development	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐
ERP 04	Cindy Jiang, Controller	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐
ERP 05	Matt Harrington, Operations	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Paper	☐
ERP 06	Darryl Wiebe, Operations	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐

SITE COMMAND TEAM

ERP Number	Name/Title	Company	Core Plan	Registered Supplement	Partial	Field Name	ERP Type	Quick Ref
ERP 07	Trevor Filewich, Contract Operator	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐
ERP 08	Trevor Lewis, Contract Operator	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐
ERP 09	Roger Peyton, Contract Operator	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐
ERP 10	Kevin Lazowski, Contract Operator	Deltawest Energy Ltd.	☒	Non-Confidential	☐	All Fields	Email	☐

OTHER CONSULTANTS

ERP Number	Name/Title	Company	Core Plan	Registered Supplement	Partial	Field Name	ERP Type	Quick Ref
N/A	Emergency Response Planner	Black Gold Emergency Planners Inc.	☒	Non-Confidential	☐	All Fields	WEB	☐

ERP Types

Paper, WEB, Email, Memory Stick, CD, APP

1.0 CEOC TELEPHONE LIST / ROLE ASSIGNMENT

1.1 Corporate Contact List

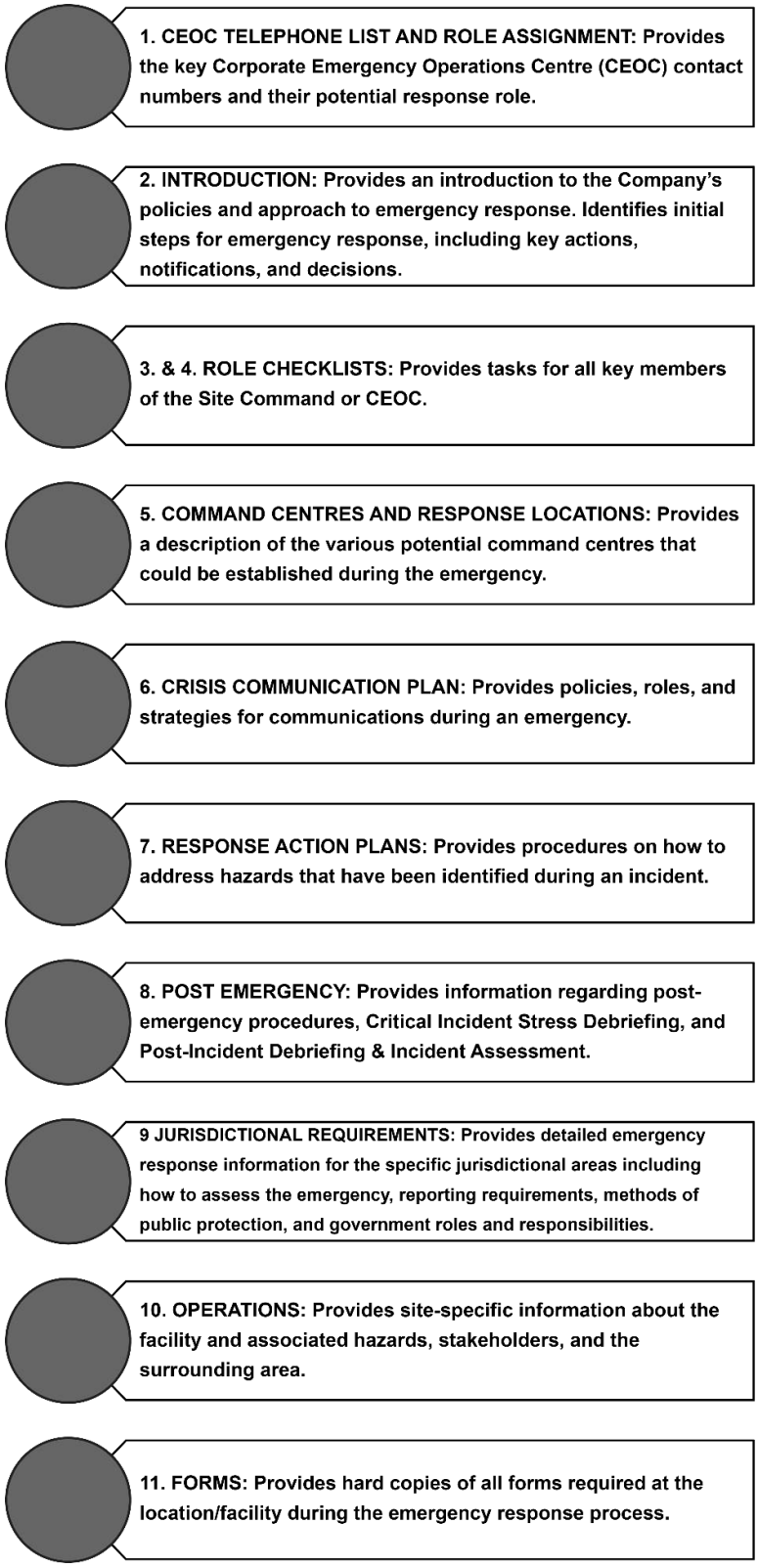
Deltawest Energy Ltd.				
24-Hour Emergency Number **1-833-738-7747** **Company Main Number** **1-587-392-7762**				
Name	**Position**	**Office**	**Cell**	**Other**
Kevin Wetteskind	President & CEO	--	1-403-804-0529	--
Peter Liu	CFO	--	1-403-650-7526	--
Patrick Kam	VP Development	--	1-403-818-2393	--
Cindy Jiang	Controller	--	1-403-708-2367	--
Matt Harrington	Operations	--	1-587-202-9502	--
Darryl Wiebe	Operations	--	1-403-874-5524	--

1.2 Potential Corporate Role Assignments

Name	Title
CEOC Director	
Kevin Wetteskind	President & CEO
Alt. Darryl Wiebe	Operations
CEOC Operations Chief	
Kevin Wetteskind	President & CEO
Alt. Darryl Wiebe	Operations
CEOC Liaison Officer	
Patrick Kam	VP Development
Alt. Matt Harrington	Operations
CEOC Information Officer	
Patrick Kam	VP Development
Alt. Matt Harrington	Operations
Corporate Executive Team	
Kevin Wetteskind	President & CEO
Peter Liu	CFO
Patrick Kam	VP Development
Matt Harrington	Operations
Darryl Wiebe	Operations

2.0 INTRODUCTION

2.1 How to Use the ERP



2.2 Incident Response Quick Guide

- Evacuate and/or isolate the hazard area.
- Sound the alarm.
- Call for assistance, as needed.
  - Backup personnel.
  - Emergency Services.
  - Response specialists.
- Notify immediate Supervisor, provide all known information.
  - What happened.
  - Any known injuries.
  - Additional hazards.
- Assess the situation and identify additional hazards.
  - Unplanned ignition.
  - Dangerous levels of toxins.
- Develop an Incident Action Plan.
- Expand the isolated area, as needed.
- Ensure personal safety. Don appropriate PPE.
- Account for all personnel on-site.
  - If safe to do so, conduct search and rescue procedures for anyone missing.
  - Establish personnel accountability system for on-site responders.
- If safe to do so, determine how to respond to any persons injured or trapped.
  - Rescue and evacuate the injured to a safe location.
  - Provide first aid or medical treatment to the injured.
  - If safe to do so, begin control and containment actions.
- Shutdown or modify operations.
  - Isolate and depressurize equipment.
  - Contain spilled/leaking product.
  - Ignite the release.
- Initiate public protection measures in the hazard area, as required.
  - Shelter in Place.
  - Evacuation.
  - Isolation.
  - Air monitoring.
- Ensure required regulatory agencies are notified and confirm the Level of Emergency.
- Ensure all local authorities, health authorities, and other responding agencies are notified, as required.
- If required, request a Fire Hazard Order, Closure Order, or NOTAM from the regulatory agency.
- Re-evaluate the Action Plan and identify additional strategies and objectives.

Refer to the Response Action Plans section in the appropriate Emergency Response Plan (ERP) for incident specific response guidelines.

2.3 Understanding the Situation

The overarching priority of any emergency response is to manage the **People** aspects first, then the impact on the **Environment**, followed by protecting further company **Assets** within the vicinity of the event and protecting **Reputation** which would be based on potential social and financial impacts during the event.

The Incident Command Post (ICP) and the Corporate Emergency Operations Centre (CEOC), as directed by the Incident Commander, will assess the situation using the following step.

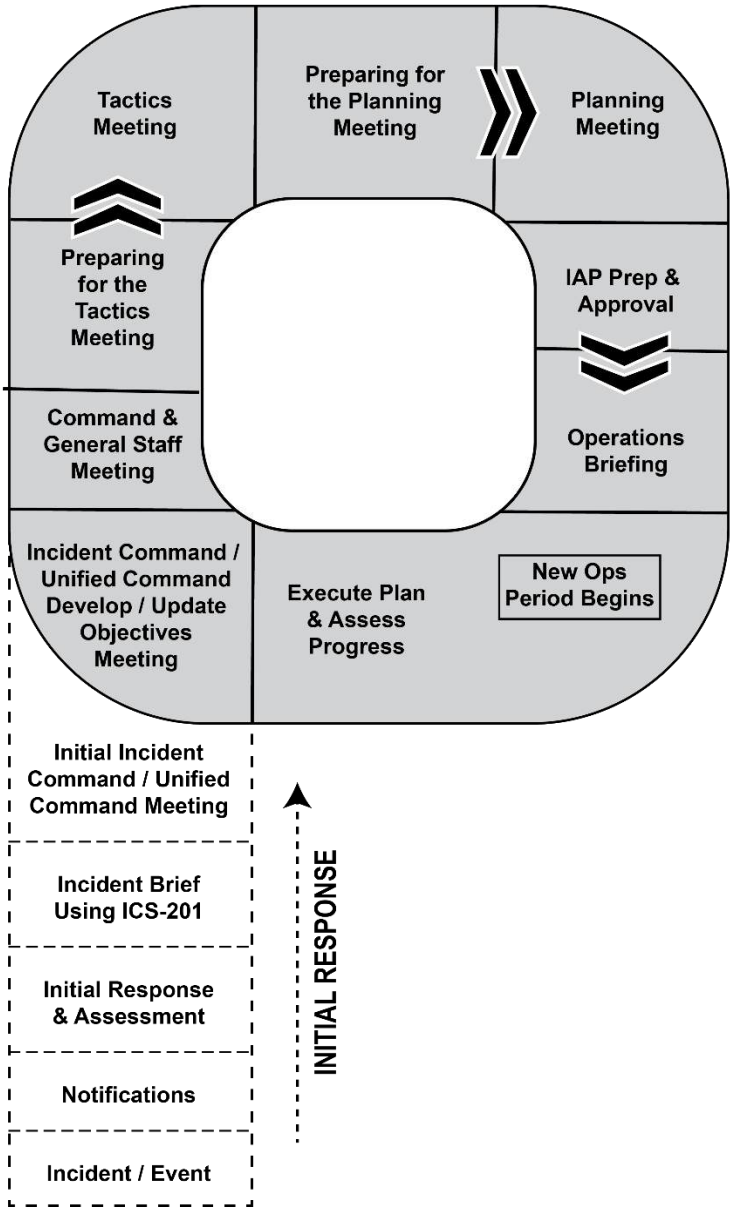
Capture information relating to:

- Incident history and responses already taken
- Current response actions
- Response organizations that are activated

2.3.1 PEAR Response Priorities and Objectives

P	**PEOPLE** Preserve safety of human life, consider the safety of all people in the immediate area including your own.
	❑ Minimize impact of the incident on all personnel and local communities.
	❑ Ensure the safety and welfare of all responders.
	❑ Confirm status of employees and contractors.
	❑ Contact incident site to clarify field and headquarters responsibilities.
E	**ENVIRONMENT** Minimize adverse effects to the environment and property.
	❑ Conduct situation assessment of the incident.
	❑ Protect lives and the well-being of those people impacted by the environmental hazard.
	❑ Establish communications with the incident site response team(s).
	❑ Ensure the dispatch of appropriate equipment/personnel to control the environmental hazard.
	❑ Appoint technical and specialist assistance to eliminate/control environmental impacts.
	❑ Continually monitor control and containment.
	❑ Ensure compliance tracking for emissions levels, limits, or permit exceedances.
	❑ Develop IAP in coordination with response team and agency/authority.
A	**ASSETS** Protect Company's assets, stabilize the situation to prevent the event from worsening.
	❑ Determine potential impacts on other Company infrastructure.
	❑ Minimize impact of incident on Company assets and quickly restore normal business operations.
	❑ Evaluate and minimize impact on other Company assets.
	❑ Provide requested technical and legal assistance.
	❑ Assist in asset restoration and business recovery.
	❑ Protect the operational integrity of Company asset base.
	❑ Provide requested financial support.
	❑ Establish communications with incident site response team(s).
R	**REPUTATION** Minimize reputational and business impacts and maintain effective internal and external communications.
	❑ Determine lead position on assumption of incident responsibility.
	❑ Protect Company reputation.
	❑ Mitigate adverse publicity surrounding the incident to reduce impact to Company image.
	❑ Coordinate government interface.
	❑ Develop and implement communications plan.
	❑ Defend the reputation of our company with key external audiences.
	❑ Coordinate high level Company Management communications.
	❑ Coordinate discovery and litigation preparation.
	❑ Coordinate performance of incident investigation and reporting.
	❑ Establish key liaisons (e.g. media, investor relations).
	❑ Monitor all type social media reporting on the emergency event (i.e. News agencies, social media, etc.

2.3.2 Planning 'P' Process



Deltawest response teams utilize the Incident Command System (ICS) incident planning process, also referred to as the Planning 'P' process.

The Incident Action Plan (IAP) provides formal documentation of incident and operational period objectives and associated strategies outlined during the planning process.

The following guidance is provided in relation to the Planning 'P' process, and should be utilized when:

- Establishing incident objectives
- Developing, preparing and disseminating the incident action plan
- Executing, evaluating and reviewing the incident action plan

For simple incidents of short duration, the Incident Action Plan (IAP) will be developed by the Incident Commander and communicated to subordinates in a verbal briefing. The planning associated with this level of complexity does not demand the formal planning meeting process as noted below:

	PLANNING 'P' GUIDANCE		
	What	**Who**	**When**
ESTABLISH INCIDENT OBJECTIVES	Determine the Operational Period, which is the amount of time for which the group is planning. Operational Periods typically range 2 to 24-hours.	Incident Commander	Prior to Objectives Meeting
	Determine the Objectives for the incident and have them universally agreed upon and communicated between activated command posts.	Incident Commander Section Chiefs	Objectives Meeting
	Identify safety hazards and immediate safety actions to be taken to protect against the hazards. The purpose of this meeting is to gather input or to provide immediate direction that cannot wait until the planning process is completed. This meeting occurs as needed and should be as brief as possible.	Incident Commander General Staff	Command & General Staff Meeting
	Document the Objectives from the Incident Commander and a General Safety Message / Plan from the Site Safety Officer.	Site Planning Section Chief or CEOC Planning Chief	
DEVELOP THE INCIDENT ACTION PLAN	Discuss how the Objectives will be accomplished. Strategies are the general plan or direction selected to accomplish Objectives for individual Sections. Tactics are the short-term specific actions taken to complete or satisfy the Objectives.	Operations Section Chief or CEOC Planning Chief Site Safety Officer Site Logistics Section Chief or CEOC Logistics Chief Site Finance Section Chief or CEOC Finance Chief	Tactics Meeting
	Discuss what resources will be needed to accomplish the Objectives.	Site Operations Section Chief Site Logistics Section Chief or CEOC Logistics Chief Site Finance Section Chief or CEOC Finance Chief	
	Document resource requests.	Site Logistics Section Chief	
	Coordinate obtaining resources and appropriate financial tracking.	Site Operations Section Chief. Site Logistics Section Chief or CEOC Logistics Chief Site Finance Section Chief or CEOC Finance Chief	
	Ensure all Objectives have been assigned to someone for action.	Incident Commander	
	Record assignments against Objectives.	Site Planning Section Chief or CEOC Planning Chief	

PREPARE & DISSEMINATE IAP	Compile the Incident Action Plan.	Site Planning Section Chief Incident Commander General Staff	Planning Meeting
	Approve the Incident Action Plan.	Incident Commander	
	Distribute the Incident Action Plan to all Incident Command Post members.	Site Planning Section Chief or CEOC Planning Chief	
	Distribute the Incident Action Plan to CEOC Director/CEOC.	Site Operations Section Chief	
	Distribute the Incident Action Plan to external response organizations.	Site Liaison Officer	

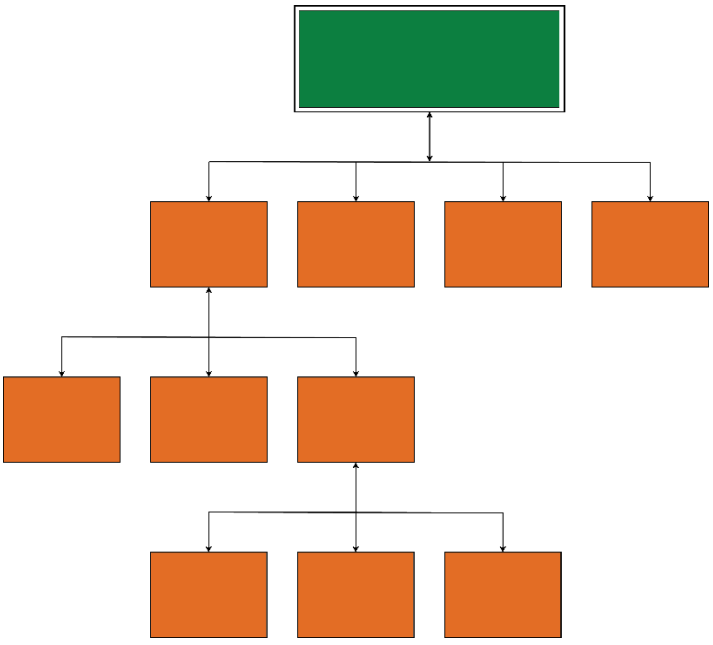
EXECUTE, EVALUATE, REVIEW	Execute the Incident Action Plan, including evaluating the need for changes.	All	Operations Briefing
	Make corrective actions as needed through consultation with the Incident Commander and other Section Chiefs.	All	
	As the first (or current) Operational Period is concluding, the Incident Action Plan process begins again.	All	New Operational Period

2.4 ICS Guidelines

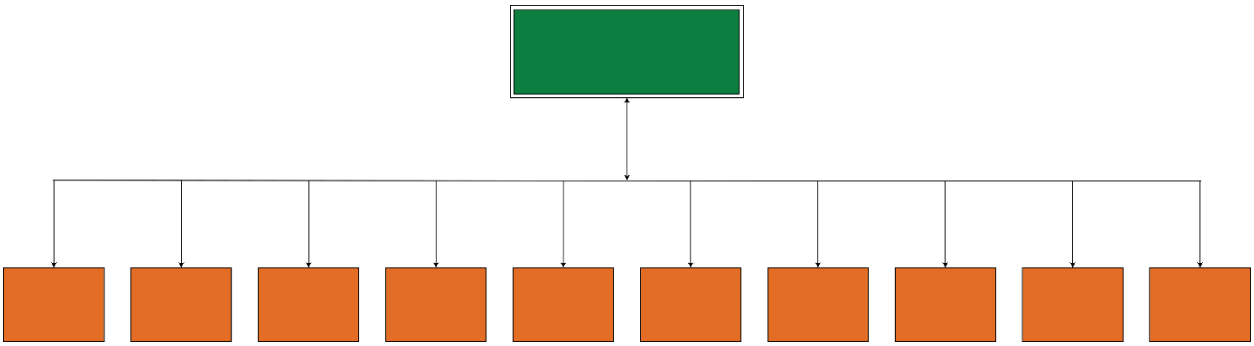
2.4.1 Span of Control

Span of Control is a term to describe how many resources can be directly managed by another person. Maintaining adequate Span of Control is very important and is most effective in a range from three to seven - a ratio of one to five reporting elements is recommended. If the number of reporting elements falls outside of these ranges, the expansion or consolidation of the organization is likely necessary.

This diagram shows effective Span of Control.

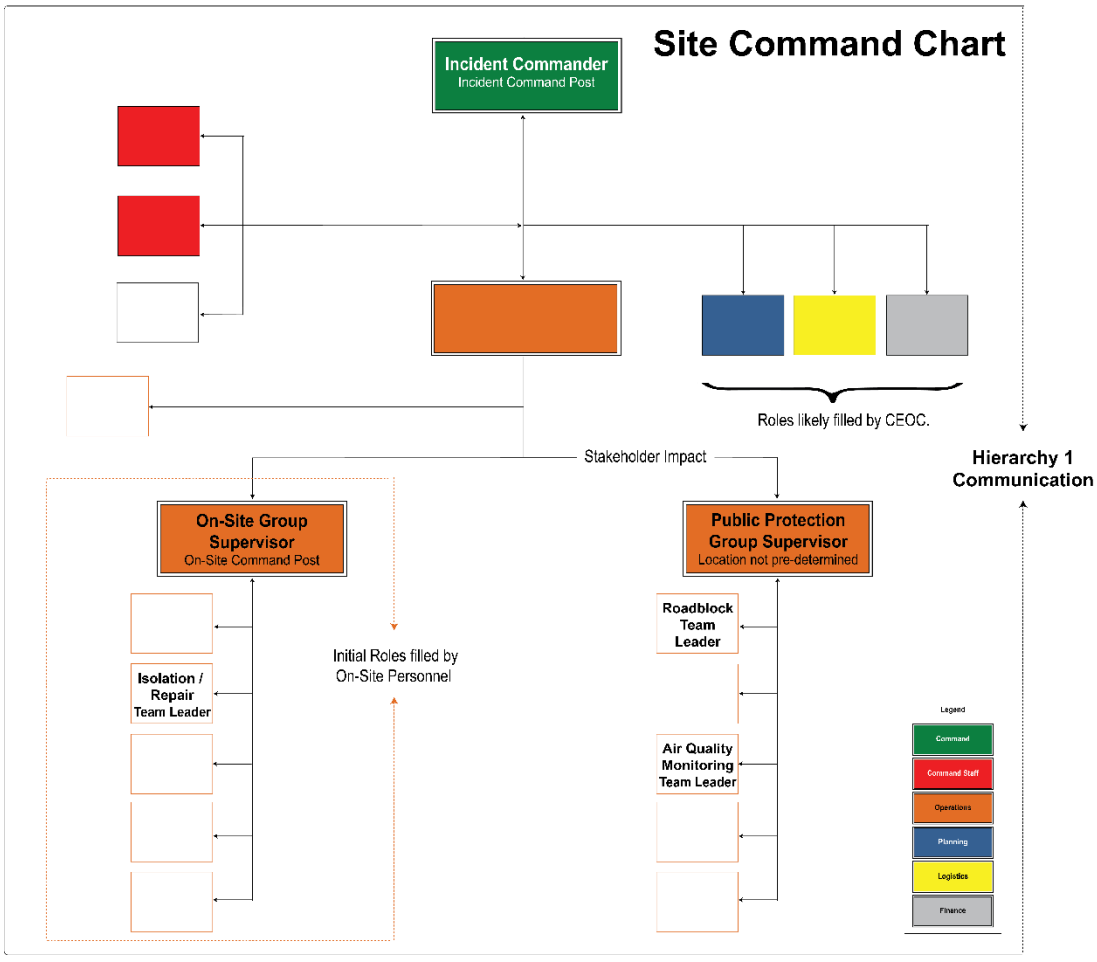


The following diagram shows Span of Control that is considered ineffective and possibly dangerous.



Organization Flexibility

The Response Organization needs to be flexible and scalable where functions required to appropriately respond will determine the extent of the response organization. As needs arise or are reduced, the organization can easily adapt to the change. In the following diagram of a Response Organization only the named resources are currently active.

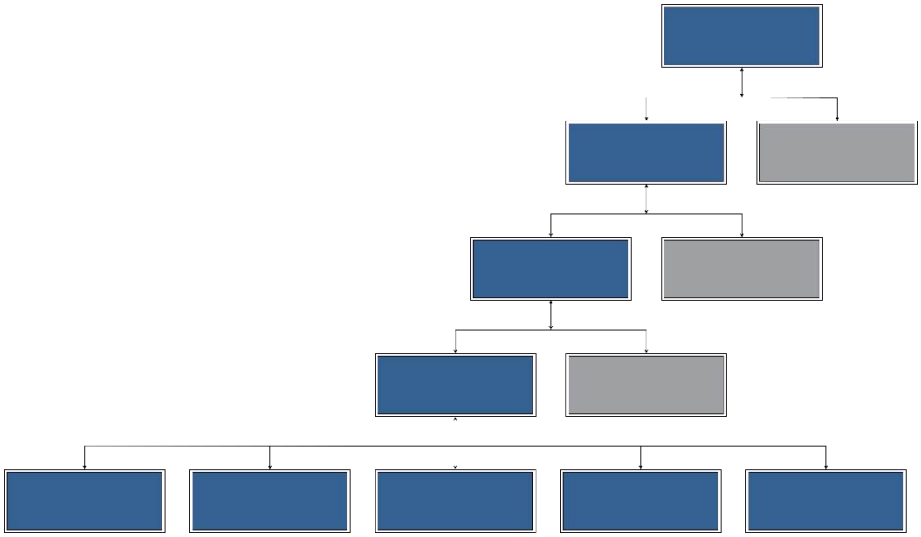


2.4.2 Unity and Chain of Command

Unity of Command means that every individual has a designated supervisor. There is a clear line of supervision.

Chain of Command means that there is a line of authority in the Response Organization with lower levels subordinate to, and connected to, higher levels. This achieves an orderly ranking of management positions in line of authority.

This diagram shows Unity and Chain of Command.



Establishment and Transfer of Command

Command at an incident is initially established by the highest-ranking authority at the scene. Transfer of Command at an incident will take place for the following reasons:

- A more qualified person assumes control.
- The incident situation changes to where the authority is transferred to the jurisdictional authority because of legal requirement or good management sense.
- Normal turnover of personnel on long or extended incidents.

Unified Command

Unified Command is a management process which allows all stakeholders who have jurisdictional or functional responsibility for the incident to jointly develop a common set of incident objectives and strategies.

This is accomplished without losing or giving up authority, responsibility or accountably.

Unified Command allows stakeholders who have legitimate responsibility at an incident to be part of the Incident Command function.

Under Unified Command the following always applies:

- The incident will function under a single, coordinated Incident Action Plan.
- One Operations Section Chief will have responsibility for implementing the Incident Action Plan.
- Only one On-Site Command Post will be established.

2.4.3 Transfer of Command

The process of moving the responsibility for incident command from one Incident Commander to another is called “transfer of command.”

During a command transfer, a role can be transferred during an incident for several reasons: as the incident grows a more qualified person may be required to take over as Incident Commander, or conversely where an incident reduces in size command can be passed down to free up highly qualified resources for other tasks. This can also occur when those involved in the ICP have exceeded a 12-hour day with no breaks and need to transfer command to other qualified individuals.

In the unlikely event of an incident larger, or more involved, than Deltawest’s scope of management, there may be additional agencies involved, in which case incident control may be handed over to the most suitable commander.

2.4.4 Five Steps of Transfer of Command

There are five important steps in effectively assuming command of an incident in progress.

Step 1: The incoming Incident Commander should, if at all possible, personally perform an assessment of the incident situation with the existing Incident Commander.

Step 2: The incoming Incident Commander must be adequately briefed.

This briefing must be by the current Incident Commander and take place face-to-face if possible. The briefing must cover the following:

- Incident history (what has happened)
- Priorities and objectives
- Current plan
- Resource assignments
- Incident organization
- Resources ordered/needed
- Facilities established
- Status of communications
- Any constraints or limitations
- Incident potential
- Delegation of Authority

The ICS Form 201 is especially designed to assist in incident briefings. It is available in the Corporate ERP. It should be used whenever possible because it provides a written record of the incident as of the time prepared. The ICS Form 201 contains:

- Incident objectives.
- A place for a sketch map.
- Summary of current actions.
- Organizational framework.
- Resources summary.

The ICS 201 form is typically duplicated and distributed before the initial briefing of the Command and General Staff (or other responders, as appropriate). The following sections of the briefing form are provided to the Planning Section: "Map Sketch", "Current and Planned Actions, Strategies, and Tactics", “Current Organization", and "Resource Summary"

Step 3: After the incident briefing, the incoming Incident Commander should determine an appropriate time for transfer of command.

Step 4: At the appropriate time, notice of a change in incident command should be made to:

- Agency representatives.
- General Staff members (if designated).
- Command Staff members (if designated).
- All incident personnel.

Step 5: The incoming Incident Commander may give the outgoing Incident Commander another assignment on the incident. There are several advantages of this:

- The outgoing Incident Commander retains first-hand knowledge regarding the incident.
- This strategy allows the outgoing Incident Commander to observe the progress of the incident and to gain experience.

2.5 Scope

An emergency is any unexpected event that may result in a serious injury, loss of life, major property or environmental damage. This manual provides solutions to:

- Promote the safety of workers, responders, and the public.
- Promote the protection of the environment and reduce the magnitude of environmental impacts.
- Reduce the potential for destruction of goods and other property.
- Help responders quickly determine and initiate proper remedial actions.
- Reduce recovery times and costs.
- Make responders, industry, and the public more confident that emergencies will be properly managed.

Should communications fail, and the first responder is unable to make contact with a direct supervisor, the responder must be able and willing to take action to minimize the negative impact resulting from the incident. They should also know that they will be fully supported by their supervisors and the Company for whatever actions they deemed necessary to address the incident.

2.6 Purpose

Every ERP should be concise, well organized, and include enough detail to ensure quick access to critical information required during an emergency. Preparedness can shorten an initial period of confusion and reduce the impact of the emergency.

The ERP identifies common types of emergencies and helps personnel prepare an adequate response to the incident. These documents may include the following:

- **Core Plans** – These plans tend to be a more static document, with set processes, policies, and procedural authorities to activate plans, ICS structure, establishment of an emergency operations centres, corporate communications and information policies, ignition protocols, and processes for roadblocks, securing an incident site, preserving evidence, etc.
- Supplemental (field area)/Site Specific Plans
  - **Drilling and Completions** – While these plans are valid for one-year, short extensions are possible on request by the permit holder/licensee, and review

by the Regulatory Authority. A Supplemental/Site Specific Plan may also be created for and applied to a multi-well pad.

- **Facilities, Fields, and Pipelines** – These supplemental (field area) plans are typically organized by operating area or when a large or unique facility requires specialized training for an effective incident response. Supplemental (field area) ERPs generally contain site-specific information.

Deltawest has no broadly available safety equipment and resources (i.e. equipment caches). For a list of all site-specific equipment and available resources please refer to the Supplemental (field area) /Site Specific ERP.

The emergency response community includes company personnel, local service providers, fire department, police, EMS, mutual aid responders, and other governmental agencies.

Serious emergencies can arise from many sources and can be difficult to manage. Emergency management incorporates prevention, preparedness, response, and recovery. It also involves a wide range of activities that prepare responders for incidents.

2.7 Emergency Preparedness Policy

Deltawest Energy Ltd. (Deltawest), strives to provide and maintain a workplace free of incidents, but despite our best efforts to prevent incidents, there may be occasions where our actions, the actions of others or natural occurrences result in the need for emergency response actions.

All employees across our organization share responsibility for ensuring our Company is capable of effective emergency response. By accepting this responsibility, we take control of our own health and safety and contribute to the health and integrity of the company and the communities in which we work.

To ensure our Company is prepared to respond effectively, we will:

- Provide the resources necessary to prepare for, respond to and recover from incidents in a timely manner.
- Comply with regulatory requirements and industry best practices for all aspects of emergency response.
- Develop an appropriate emergency response process for the control of emergencies within company sites.
- Respond as quickly as possible to protect the health and safety of our employees, contractors, stakeholders and individuals in the communities near our operations.
- Ensure we have an adequate pool of trained response personnel available to us at all times.
- Provide appropriate training for all members of our emergency response organization.
- Provide appropriate information for employees, with emphasis on induction of new employees and persons with disabilities.
- Be responsive, understanding and compassionate to the needs of stakeholders impacted by any incident related to our operations.
- Respect the rights of our employees and other stakeholders to be kept informed about the risks and outcomes of incidents that do occur.
- Adopt a positive and pro-active approach to emergency response with the aim of minimizing adverse effects resulting from any emergency.
- Encourage participation in and ownership of emergency response procedures to ensure individuals can take part in their own safety management.

- Establish meaningful methods for tracking and measuring our response capabilities, particularly during incidents.
- Use the lessons we learn through training exercises, audits, inspections and actual incidents to continuously improve our emergency response capabilities.
- Listen to our employees and other stakeholders who offer comments on our response capabilities.

2.8 Authority to Activate the ERP

Any Employee or Contractor detecting an incident has the authority to activate and implement any part of the plan to prevent the emergency situation from escalating. An immediate notification process must be followed as part of the activation.

The Employee or Contractor detecting the incident has the responsibility to determine if the unplanned operational event has the potential to cause:

- A threat to worker or public health, and safety.
- Loss of property.
- A negative impact on the environment.
- A perception of risk by the public and neighbouring stakeholders.

If it is determined that there is an actual emergency situation (or the perception of an emergency by the public) the ERP must be activated, and appropriate response action taken to address the incident.

When the ERP is activated, it is of the utmost importance and urgency that the appropriate Company Personnel and government agencies are notified as outlined in this document.

2.9 Program Administration

The responsibility for maintaining this Emergency Response Plan (ERP) is as follows:

- The Operations is responsible for updating the company-wide sections of the manual. Any requests for revisions to these sections should be forwarded to the Operations for approval and implementation.
- The Operations is responsible for ensuring the ERP is reviewed by all personnel annually and immediately after any changes have been made to the manual.
- The appropriate field office is responsible for updating the Field Area Section of the manual and distributing to those on the distribution list.
- All manual recipients are responsible for ensuring that their assigned manuals are current.

Before any new or major modification to an existing facility is brought on-stream, relevant data will be added to the appropriate Field Area Section. It is the responsibility of the Operations to ensure that this data is included. Company personnel and contractors will attend ERP review meetings before major facility modifications are commissioned.

2.10 Maintenance Schedule

Core Revisions	Semi-Annually	Annually	Every 2 Years	Every 3 Years
Distribution List		X		
Emergency Telephone List		X		
ERP Roles and Responsibilities		X		
Mutual Aid Agreements, if applicable		X		
Response Agencies and Government Support		X		
Non-Regulated Field Area	**Semi-Annually**	**Annually**	**Every 2 Years**	**Every 3 Years**
Asset Tables		X		
Safety Equipment		X		
Map		X		
Orientation and Tabletop Training except in a year when a major exercise is held		X		
Registered Site Specific	**Semi-Annually**	**Annually**	**Every 2 Years**	**Every 3 Years**
Stakeholder Consultation - personal visit			X	
Stakeholder database verification - except in a year when a personal visit is completed		X		
Hazard Assessments		X		
Area users contact information		X		
Major Exercise Training				X

2.11 Training and Testing the ERP

Emergency response training is a required and regulated activity where Deltawest personnel are to demonstrate that they are able to take action, solve problems, and make decisions in a team structure as if they are responding to a real emergency. The training should contain an appropriate balance between theoretical and practical hands on content and it should be structured so that each new skill builds upon those previously acquired.

Simulated emergency response exercises, such as a tabletop exercise, are essential in developing, maintaining and improving Emergency Response Plan programs. Exercises are particularly important for training and evaluating roles and responsibilities during an emergency. Testing or exercising enables critical aspects of the Emergency Response Plan to be examined in a structured way, simulating conditions to reveal mistakes and omissions so that they can be subsequently corrected without consequences.

The exercise scenario created must reflect a credible type of event for the location. When designing an exercise, the facilitator should ensure that the scenario reinforces any previous training, is simple enough that available resources are adequate and difficult enough to be challenging. The goal of the training is to provide maximum lessons learned and include a post-exercise evaluation with corrective actions.

An appropriate exercise design process is composed of four main steps:

- Planning the exercise.
- Holding the exercise.
- Evaluating the outcomes.
- Reporting on the outcomes.

The training should be designed to ensure that the following objectives are met:

- Appropriate assignment of personnel to fill the roles required to manage an efficient response.
- Effective communication amongst response personnel, agencies and support organizations.
- Accurate determination of the level of emergency.
- Worker and public safety considerations.
- Effective source control and incident mitigation.
- Coordinated and efficient response activities.
- Identification of gaps in the ERP and recommend changes to the document.
- Identification of additional training that may be required.

The Company will undertake training sessions on a regular basis for fulfilling functions defined in its ERP in accordance with CAN/CSA Z-731 and CSA Z-246 to ensure that responsible personnel retain competency in emergency response procedures. Personnel will be trained and capable of carrying out their responsibilities at all times. The Company will accomplish this by providing training sessions and response exercises.

The various types of Emergency Response Plan Training are as follows:

2.11.1 Orientation

Orientation training is designed to familiarize team members with emergency response, business continuity and crisis communications plans. Orientation of newcomers to emergency response operations can be completed without the demands of a Tabletop Exercise or Major Exercise.

2.11.2 Tabletop Exercise

As described in CAN/CSA-Z-731 and CSA Z-246, an informal exercise generally used to review resource allocations and roles and responsibilities of personnel and to familiarize personnel with emergency operations.

Tabletop exercises are discussion-based sessions where team members meet in an informal, classroom setting to discuss their roles during an emergency and their responses to a particular emergency situation. A facilitator guides participants through a discussion of one or more scenarios. The duration of a tabletop exercise depends on the audience, the topic being exercised, and the exercise objectives. Many tabletop exercises can be conducted in a few hours, so they are cost-effective tools to validate plans and capabilities.

2.11.3 Communication Exercise

These exercises are considered expanded tabletop exercises and focus on the internal and/or external communication required during an incident. The scope of these exercises can vary greatly and may include public protection radio communication, internal telephone communication, as well as external agency communication.

2.11.4 Functional Exercise

Functional exercises allow personnel to validate plans and readiness by performing their duties in a simulated operational environment. Functional exercises are designed to exercise specific team members, procedures, and resources (e.g. communications, warning, notifications and equipment set-up) but they do not typically include outside agencies or stakeholders.

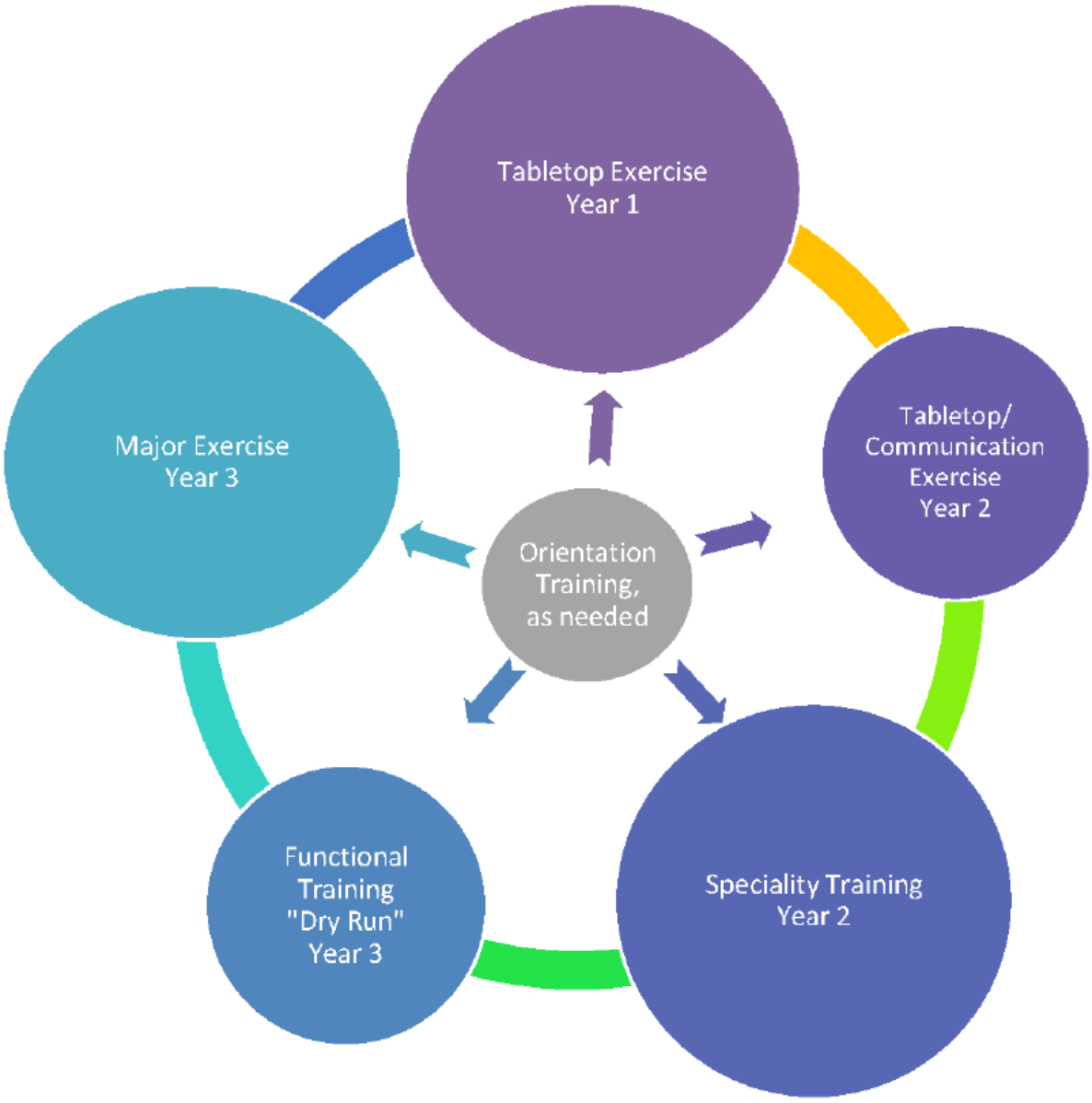
2.11.5 Major Exercise

As described in CAN/CSA-Z731 and CSA Z-246, an exercise involving emergency response agencies and the licensee that entails the deployment of all resources required to test the licensee's ERP. It is intended to provide a realistic simulation of an emergency response.

A Major Exercise is as close to the real thing as possible. It takes place on location using the equipment and personnel that would be called upon in a real event. Major exercises are conducted in conjunction with public agencies and regulatory authorities. They often include participation from local stakeholders.

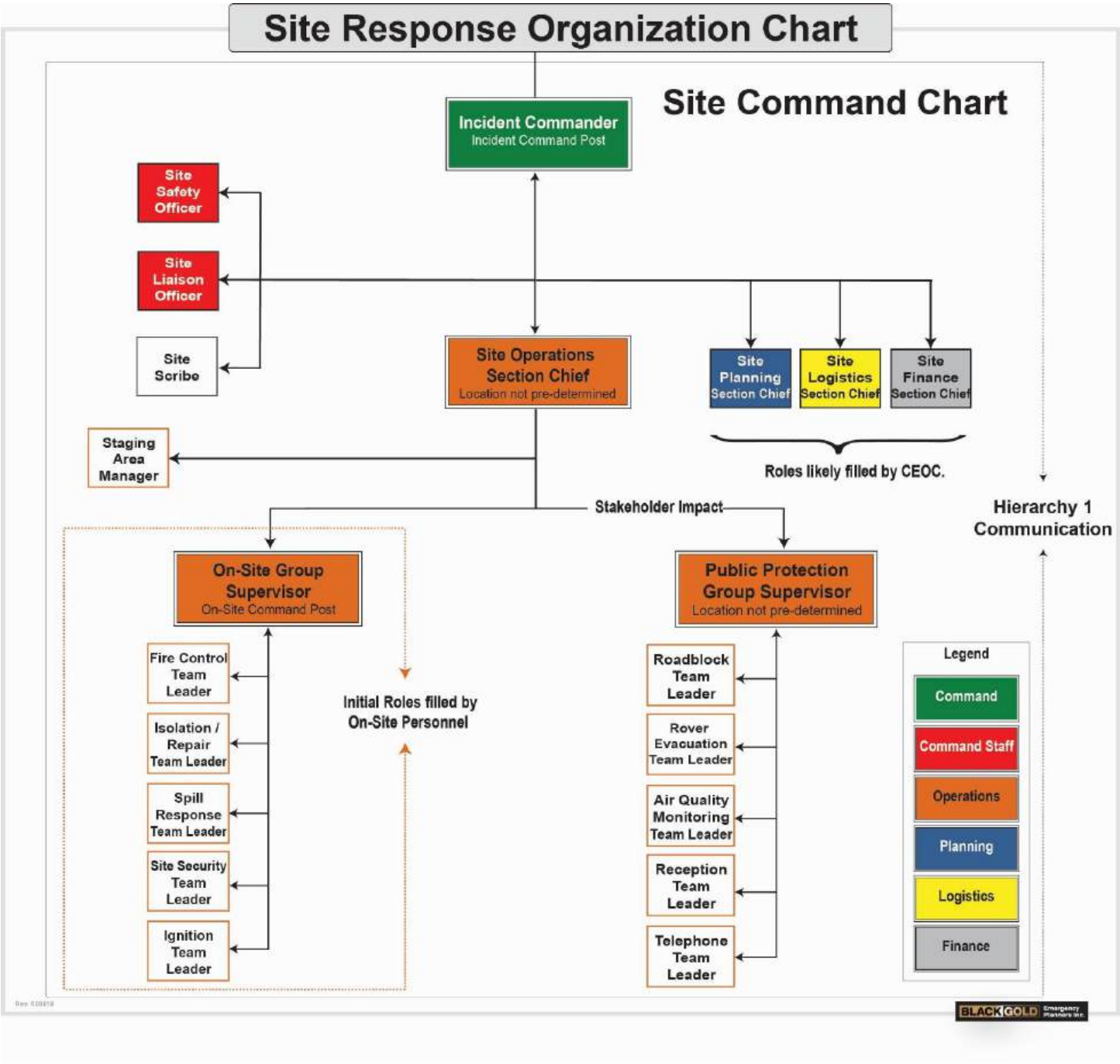
The licensee must notify the appropriate Regulatory Authority 30 days in advance of a scheduled exercise and invite the local authority or any other government department or agency to participate and/or observe at Major Exercises.

2.11.6 Training Cycle



3.0 SITE INCIDENT COMMAND STRUCTURE - ROLES AND RESPONSIBILITIES

3.1 Site Command Chart



3.2 First Responder

The First Responder is the first person at the incident location. If properly trained and qualified, the First Responder will be responsible for the following checklist.

Location	On-Site
Evacuate (Protect yourself)	❑ Remain calm. ❑ Get to a safe area away from the hazard. ❑ Direct others to a safe area.
Sound the Alarm	❑ Alert other personnel on-site. ❑ Call for help (your supervisor or control room, as appropriate). ❑ Activate mutual aid and emergency services, as required.
Assess Incident	❑ Resist the urge to rush in, others cannot be helped if you are injured. ❑ Gather at muster stations and conduct a head count. ❑ Consider wind direction. ❑ Identify exposure to environments that may be toxic, flammable, explosive, or otherwise harmful. ❑ Ensure personnel understand hazards and control actions.
Protect	❑ Assume on-site ICS duties until relieved, refer to Incident Commander checklist. ❑ Take action to shutdown, isolate, control, or contain incident. ❑ Don personal protective equipment. ❑ Control entry into hazardous area. ❑ Secure the area. ❑ Release non-essential on-site personnel.
Rescue Operations	Only if safe to do so: ❑ Rescue victim to safe area.
Medical Aid	❑ Revive victim. ❑ Administer first aid, maintain ongoing care and confirm emergency services have been dispatched.
Continue Response	❑ Continue to implement ICS response actions.

Forms	
❑	ICS 214 – Activity Log

3.3 Incident Commander

The Incident Commander assumes responsibility for the implementation and management of emergency response procedures at the incident site. Even if other functions are not filled, an Incident Commander will always be designated.

The Incident Commander role should be assigned to the most experienced company supervisor or representative near the incident site. The Incident Commander has the responsibility to establish the Incident Command Post and manage the implementation of a safe and effective tactical response.

The Incident Commander is responsible for all response functions until he/she delegates those response activities.

INCIDENT COMMANDER		
Location		
	Incident Command Post.	
Confers With		
❑	CEOC Operations Chief.	
Gives Direction To		
❑	Site Operations Section Chief.	
❑	Site Planning Section Chief.	
❑	Site Logistics Section Chief.	
❑	Site Finance Section Chief.	
❑	Site Safety Officer.	
❑	Site Liaison Officer.	
❑	Site Scribe.	
Situation Assessment		
❑	Consider evacuating non-essential personnel to safety and place them on standby to fill public protection roles.	
❑	Dispatch trained and appropriately equipped personnel (preferably in pairs) to investigate.	
❑	If the situation assessment confirms that company assets are involved, activate the ERP and establish Incident Command.	
❑	If the incident involves another company's asset, ensure that their personnel are notified. Maintain contact with the responsible operating company until they arrive on scene.	
❑	Contact the person who reported the incident and advise them of the result of the situation assessment.	
❑	Notify appropriate company personnel.	
❑	Assess the situation using the appropriate matrix for classifying incidents.	
Alert/Minor		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Develop an initial response strategy that adheres to the PEAR emergency response priorities. These response priorities are protecting people, environment, assets and reputation.	
❑	Establish method of communications with the CEOC Operations Chief.	
❑	Schedule regular briefings with the CEOC Operations Chief.	
❑	Evaluate resource requirements and advise CEOC Operations Chief.	
❑	For an incident that is not impacting public safety, consider public notification as a courtesy.	
❑	Ensure Regulatory Authority notification according to the applicable requirements.	
❑	Refer to the Notification Requirements for Key Government Agencies and Resources in the Jurisdictional section of this document.	
Level 1		
❑	Continue with previous actions.	
❑	Determine the Operational Period.	
❑	Complete the ICS 201 – Incident Briefing Form.	
❑	Facilitate Objectives Meeting with Section Chiefs. Determine the objectives for the incident and communicate them between activated command posts.	

INCIDENT COMMANDER

INCIDENT COMMANDER	
❑	Facilitate Command and General Staff Meeting, as required. Identify safety hazards and immediate safety actions to be taken to protect against the hazards.
❑	Request resources, personnel and equipment to address emergency situation.
❑	Take steps to protect personnel, the public, and the environment.
❑	Direct on-site operations; take steps to control the incident (e.g. shutdown, isolate, depressurize) to protect the property.
❑	Initiate first aid, as required.
❑	Ensure that a head count and personnel accountability record is maintained for the duration of the incident.
❑	Immediately report any suspected threats of violence, sabotage, or terrorism.
❑	Report worker exposure exceeding allowable limits.
❑	Develop Incident Action Plan in coordination with the Section Chiefs. Ensure all objectives have been assigned to someone for action.
❑	Develop Incident Action Plan in coordination with the Section Chiefs.
❑	Secure the scene and restrict access to authorized personnel only.
❑	Initiate on-site monitoring.
❑	Establish an Incident Command Post and communications with other Command Centres.
❑	Define the boundaries of the response zones and identify the boundaries on the area map.
❑	Ensure that the Site Operations Section Chief evaluates how many members of the public could be inside the response zones.
❑	Initiate stakeholder notification within the EPZ of the incident.
❑	Ensure Site Operations Section Chief initiates a transient survey of the area.
❑	Dispatch Mobile Air Monitoring Unit to the incident scene.
❑	For an incident with the potential of odours, smoke, or hazardous airborne release initiate monitoring at nearest downwind occupied location.
❑	Discuss actions, media requirements, resource requirements and conditions with CEOC Operations Chief.
❑	Delegate responsibilities to Company personnel and contract support resources.
❑	Assign roles to personnel as appropriate for the size and complexity of the incident.
❑	Notify police in the event of an industrial fatality or motor vehicle incident.
❑	If the incident involves a pressure vessel notify the designated Company Chief Inspector.
Level 2	
❑	Continue with previous actions.
❑	Reassess level of emergency and confer with the CEOC Operations Chief in the event of a change.
❑ .	Determine the potential for the incident to escalate
❑	Ensure the Site Operations Section Chief has established site security and is working to address source control.
❑	Secure response zones and set up roadblocks, if required.
❑	Establish a sign-in post/station as required.
❑	Evacuate non-essential personnel.
❑	Initiate first line emergency services such as firefighters, police, ambulance, safety contractors, or oil spill contractors.
❑	Dispatch helicopter, if required, to survey area, transport supplies and/or assist with control measures.
❑	If the emergency has the potential to require ignition, ensure a qualified Ignition Team is chosen, duties are discussed, and ignition equipment is on-site.
❑	Evaluate ignition criteria and communicate with the Site Operations Section Chief, CEOC Operations Chief and applicable Regulatory Authority regarding ignition decision.
❑	Establish a Unified Command structure with government agencies at the Incident Command Post, if necessary.
❑	Ensure field responders are promptly notified of any status updates.
❑	Continually reassess the situation and the risk to life and safety.
Level 3	
❑	Continue with previous actions.
❑	Reassess the level of emergency and confer with the CEOC Operations Chief in the event of a change.
❑	Confer with CEOC Operations Chief to discuss additional control measures.
❑	Determine if ignition criteria have been met.

INCIDENT COMMANDER	
❑	Consult with CEOC Operations Chief and applicable Regulatory Authority, if possible. Initiate ignition procedures as required
❑	Determine the need for Site Planning Section Chief, Site Logistics Section Chief, and Site Finance Section Chief and activate as required.
❑	Expand the response zones if monitoring indicates it is necessary.
❑	Ensure Site Operations Section Chief has established an appropriate staging area and is providing resource support.
❑	Update previous contacts if there is a change of status.
Deactivation	
❑	Where applicable, commence reclamation activities once the spill has been isolated and the area has been secured.
❑	Coordinate the removal of the impacted waste material and dispose of the waste to an approved facility.
❑	Obtain a sufficient number of samples of the remediated site to demonstrate containment.
❑	Downgrade the emergency in consultation with the CEOC Operations Chief and the applicable Regulatory Authority.
❑	Ensure all appropriate government agencies are notified of the stand-down of the emergency.
❑	Ensure any notified media are updated of the stand-down of emergency.
❑	Ensure all affected stakeholders are notified of the stand-down of emergency.
❑	Ensure the Site Operations Section Chief coordinates the ventilation of all residences and businesses as required and that monitoring for gas pockets continues to take place.
❑	Ensure evacuee expenses and damage claims are collected.
❑	Ensure post-incident reports are completed and submitted, if applicable.
❑	Ensure all members of the Emergency Response Team and other key participants are invited to the debriefing.
❑	Conduct post-incident debriefing.
❑	Assess the physical and emotional health of responders and make recommendations for Critical Incident Stress Debriefing.

INCIDENT COMMANDER

Forms	
❑	ICS 201 – Incident Briefing
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Notification Record
Note: A comprehensive Incident Action Plan should, as a minimum, include ICS Forms 201, 202, 203, and 207.	

3.4 Site Operations Section Chief

The Site Operations Section Chief is responsible for the direction and coordination of all incident tactical operations and resources. Initially the Site Operations Section Chief consists of those few resources first assigned to an incident (these resources will initially report directly to the Incident Commander until the Site Operations Section Chief is assigned).

SITE OPERATIONS SECTION CHIEF	
Location	
	Location not pre-determined.
Takes Direction From	
❑	Incident Commander.
Confers With	
❑	Section Chiefs, if applicable.
❑	Site Safety Officer
Gives Direction To	
❑	On-Site Group Supervisor.
❑	Public Protection Group Supervisor.
❑	Staging Area Manager.
Alert/Minor	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Establish method of communications with the Incident Commander and provide support as required.
❑	Schedule regular briefings with the Incident Commander.
❑	Designate Public Protection Group Supervisor and On-Site Group Supervisor, as required.
Level 1	
❑	Continue with previous actions.
❑	Establish On-Site Command Post.
❑	Facilitate Tactics Meeting with the Site Safety Officer, Site Logistics Section Chief, and Site Finance Section Chief. Discuss how the objectives will be met. Review strategy and required resources to satisfy the objectives.
❑	Prepare the ICS 215 – Operational Planning Worksheet with assistance from the Site Safety Officer and Site Logistics Section Chief or CEOC Logistics Chief. Document all decisions made during the Tactics Meeting concerning resource assignments and needs for the next operational period. Share completed ICS 215 with all Command and General Staff.
❑	Prepare the ICS 204 – Assignment List, obtain sign-off from the Planning Section and approval from Incident Commander prior to dissemination as part of the Incident Action Plan.
❑	Distribute approved Incident Action Plan to the Incident Commander.
❑	Participate in the Operations briefing.
❑	Implement Incident Action Plan in coordination with the Incident Commander, On-Site Group Supervisor, Public Protection Group Supervisor, and Staging Area Manager.
❑	Identify EPZ boundaries.
❑	Evaluate how many stakeholders could be inside the EPZ. Account for residents, businesses, First Nations persons, trappers, guide/outfitters, grazing lessees, transients, highways, waterways, railroads and public facilities.
❑	Determine applicable public protection method.
❑	Direct Public Protection Group Supervisor to initiate area resident notifications.
❑	Determine what methods of communication are available to the Team Directors and Team Leaders and schedule regular briefings.
❑	Provide any required voluntary evacuation assistance to residents identified as having special needs.
❑	Review the topographical information, weather data, and weather forecast information.
❑	Ensure an appropriate air quality monitoring strategy is employed.
❑	Develop a roadblock strategy.
❑	Determine resource requirements.
❑	Provide direction to the On-Site Group Supervisor to address fire control, isolation, equipment damage, repair, spill response, site security, and waste management, as required.

SITE OPERATIONS SECTION CHIEF

❑	Assess the requirements for on-site safety supervision, personnel, equipment, and other contract services.
❑	Coordinate with the Logistics Section Chief (if assigned) to obtain equipment and resources.
❑	Compile and display incident information.
❑	Assign roles to personnel as appropriate for the size and complexity of the incident.
Level 2	
❑	Continue with previous actions.
❑	Direct Public Protection Group Supervisor to review EPZ boundaries.
❑	Direct Public Protection Group Supervisor to initiate shelter and/or evacuation procedures.
❑	Ensure transient surveys are completed.
❑	Ensure mobile environmental and/or air quality monitoring is taking place.
❑	Ensure roadblocks are established.
❑	When required, dispatch a Staging Area Manager to establish and coordinate operations at the Staging Area. The Staging Area must be located outside the EPZ and near the emergency site.
❑	Evaluate ignition criteria and communicate with the Incident Commander regarding ignition decision.
❑	Ensure field responders are promptly notified of any status updates.
❑	Continually reassess the situation and the risk to life and safety.
Level 3	
❑	Continue with previous actions.
❑	Confirm with Public Protection Group Supervisor that all members of the public in the EPZ have been evacuated and/or sheltered.
❑	Ensure Public Protection Group Supervisor has established a protocol for resident updates and evacuees are provided with updated information.
❑	Maintain security.
❑	Evaluate monitoring data and expand planning zone if required.
❑	Review Ignition Criteria to determine if any one of the conditions have been met and coordinate with the Incident Commander.
Deactivation	
❑	Discuss downgrading of emergency with Incident Commander once it has been determined that the incident site is controlled.
❑	Notify all responders once the decision to downgrade the emergency has been made.
❑	If a serious injury or death has occurred, the scene must be left as undisturbed as possible until the appropriate authorities can complete a site investigation.
❑	Ensure that the Public Protection Group Supervisor ventilates residences/businesses as required and that monitoring for gas pockets continues to take place.
❑	Ensure that the Public Protection Group Supervisor notifies all evacuees that the emergency has been downgraded.
❑	Ensure that the Public Protection Group Supervisor assists evacuees in returning to their residences/businesses as required.
❑	Ensure that the Public Protection Group Supervisor collects all Resident Expense Claims forms.
❑	Participate in post-incident debriefing held by Incident Commander.
❑	Participate in any Critical Incident Stress Debriefing, as required.

Forms	
❑	ICS 204 – Assignment List
❑	ICS 214 – Activity Log
❑	ICS 215 – Operational Planning Worksheet (to be completed with support from Site Safety Officer and Site Logistics Section Chief or CEOC Logistics Chief)
❑	ICS 234 – Work Analysis Matrix
❑	Status Board

3.5 Public Protection Group Supervisor

The Public Protection Group Supervisor is responsible for initiating and managing public protection measures. Working closely with air quality monitoring, evacuation and roadblock personnel, the Public Protection Group Supervisor ensures the efficient notification and/or evacuation of residents, businesses, industrial operators and transients.

PUBLIC PROTECTION GROUP SUPERVISOR	
Location	
❑	Location not pre-determined.
Takes Direction From	
❑	Site Operations Section Chief.
Gives Direction To	
❑	Roadblock Team Leader.
❑	Rover Evacuation Team Leader.
❑	Air Quality Monitoring Team Leader.
❑	Reception Team Leader.
❑	Telephone Team Leader.
Alert/Minor	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Determine operating location and setup as necessary.
❑	Determine what job aids your position may require.
❑	Review ERP map.
Level 1	
❑	Continue with previous actions.
❑	Establish communication with the Site Operations Section Chief.
❑	Proceed to On-Site Command Post.
❑	Review the Public Protection requirements.
❑	Record the wind direction and speed.
❑	Review EPZ inventory.
❑	As required, activate the following positions: Roadblock Team Leader, Rover Evacuation Team Leader, Air Quality Monitoring Team Leader, Reception Team Leader, and Telephone Team Leader.
❑	Establish and maintain reporting cycles with all of the Public Protection Team Leaders.
Level 2	
❑	Continue with previous actions.
❑	Ensure the Telephone Team Leader contacts residents to evacuate by phone.
❑	Designate Reception Centre.
❑	Dispatch Reception Team Leader to the Reception Centre.
❑	Ensure the Rover Evacuation Team contacts residents in person.
❑	Ensure the EPZ has been evacuated in a timely fashion, and roadblocks are in place to isolate the EPZ.
❑	Ensure EPZ has been checked for transients and that they are evacuated as required.
❑	Ensure air quality monitoring occurs downwind, with priority being directed to the nearest unevacuated residence or areas where people may be present.
❑	Record all air quality monitoring results from the Air Quality Monitoring Team Leader.
❑	Ensure field responders are promptly notified of any status updates.
❑	Continually reassess the situation and the risk to life and safety.
❑	Review information from the Roadblock, Rover Evacuation, Air Quality Monitoring and Telephoner Teams.
❑	At pre-determined intervals, report status and discuss responses with Site Operations Section Chief.

PUBLIC PROTECTION GROUP SUPERVISOR

PUBLIC PROTECTION GROUP SUPERVISOR

Level 3	
❑	Continue with previous actions.
❑	Update the Site Operations Section Chief of status
❑	Ensure Rover Evacuation Team has successfully evacuated the EPZ.
❑	Ensure the Roadblock Team Leader maintains roadblocks as required.
❑	Ensure the EPZ is being monitored effectively by the Air Quality Monitoring Team Leader.
❑	Ensure Telephone Team Leader is providing ongoing status updates to impacted stakeholders.
❑	Ensure Reception Team Leader has a record of all evacuees.
Deactivation	
❑	Ensure all evacuees are notified of the downgrading of the level of emergency.
❑	Ensure residences/businesses are ventilated as required and that monitoring of gas pockets continues to take place.
❑	Ensure evacuees are assisted in returning to their residences/businesses as necessary.
❑	Ensure evacuee's evacuation expenses and damage claims are collected.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Incident Stress Debriefing as required.

Forms	
❑	ICS 214 – Activity Log
❑	Stakeholder Contact Record
❑	ICS 234 – Work Analysis Matrix
❑	Status Board

3.5.1 Roadblock Team Leader

The Roadblock Team Leader has the responsibility to secure the perimeter of the EPZ through road closures and monitoring in coordination with the local police, local authority, or road maintenance personnel.

ROADBLOCK TEAM LEADER		ROADBLOCK TEAM LEADER
Location		
	Location not pre-determined.	
Takes Direction From		
❑	Public Protection Group Supervisor.	
Confers With		
❑	Public Protection Team.	
Gives Direction To (via Roadblock Team)		
❑	Road Traffic.	
Alert/Minor		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Review the ERP map.	
❑	Obtain safety equipment including SCBA, H_2S and LEL monitors (handheld instruments), barricade tape and radio communication, as required.	
❑	Obtain roadblock kit, if not nearby arrange to have it brought to you.	
❑	Ensure a sufficient supply of appropriate forms.	
❑	Review vehicle requirements to carry out your assignment.	
❑	Fill vehicle fuel tank.	
Level 1		
❑	Continue with previous actions.	
❑	Establish communication with the Public Protection Group Supervisor.	
❑	Determine if there are roads and how many lead into a Planning Zone.	
❑	Assess weather conditions in and around the area of emergency.	
❑	Implement Incident Action Plan in coordination with the Public Protection Group Supervisor.	
❑	As required, dispatch roadblock teams to their assigned roadblock locations using a safe route.	
❑	Contact the RCMP, local police, and/or local authority to inform them of the location of roadblocks. The authority contacted will be dependent on whether the roadway is a numbered highway, urban roadway, or rural road. Provide them with sufficient information regarding the incident and allow them to determine if they choose to take control of the roadblock.	
Level 2		
❑	Continue with previous actions.	
❑	Establish roadblocks at required sites to secure identified EPZ.	
❑	Engage the four-way flashers on your vehicle and don illuminated traffic vest so you are visible to traffic.	
❑	Do not completely block the road, leave at least one lane open.	
❑	Take air quality monitoring readings periodically for your safety and reposition as necessary.	
❑	Record any incoming and outgoing vehicles and equipment.	
❑	Ask the residents leaving the EPZ to proceed to the designated Reception Centre.	
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.	
Level 3		
❑	Continue with previous actions.	
❑	Report any significant or unusual activities.	
Deactivation		
❑	Ensure all roadblock equipment is cleaned and returned to its proper location.	
❑	Participate in the post-incident debriefing held by the Incident Commander.	
❑	Participate in any Critical Incident Stress Debriefing as required.	

Note: The licensee has the responsibility to protect the public by activating roadblocks. Restricting access to the hazard area will remain under the authority of the applicable agency (i.e. police, RCMP, fire department, road maintenance contractor, regulatory authority, etc). If someone insists on going through the roadblock, ask him or her for emergency contact numbers, this may encourage the driver to stop.

Forms	
❑	ICS 214 – Activity Log
❑	Roadblock Checkpoint Record
❑	Environmental Monitoring Record

3.5.2 Rover Evacuation Team Leader

The Rover Evacuation Team Leader is responsible for identifying and evacuating all members of the public within the response zones. He/she provides support to those who need evacuation assistance by checking residences, businesses (where no phone contact has been made), trappers, Guide/Outfitters, transients, and seasonal and casual area users.

ROVER EVACUATION TEAM LEADER	
Location	
	Location not pre-determined.
Takes Direction From	
❑	Public Protection Group Supervisor.
Confers With	
❑	Public Protection Team.
Gives Direction To (via Rover Evacuation Team)	
❑	Residents.
❑	Businesses.
❑	Trappers.
❑	Guide/Outfitters.
❑	Transients.
❑	Seasonal and casual area users.
Alert/Minor	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Review the ERP map.
❑	Obtain safety equipment including SCBA, H_2S and LEL monitors (handheld instruments) and radio communication, as required.
❑	Ensure a sufficient supply of appropriate forms.
❑	Review vehicle requirements to carry out your assignment.
❑	Fill vehicle fuel tank.
❑	Review product release rates, wind direction, and safest egress routes.
Level 1	
❑	Continue with previous actions.
❑	Establish communication with the Public Protection Group Supervisor.
❑	Review the boundaries of the response zones.
❑	Evaluate how many members of the public could be inside the EPZ and the response zones. Account for residents, businesses, First Nations persons, trappers, guide/outfitters, grazing lessees, and transients.
❑	Identify highways, waterways, railroads, airports, campgrounds, hiking trails, etc. where stakeholders may be located.
❑	Assess weather conditions in and around the area of the emergency. Determine if weather conditions could impact or impede emergency response efforts.
❑	Identify the required number of Rovers and prepare to dispatch.
❑	Implement Incident Action Plan in coordination with the Public Protection Group Supervisor.
❑	Commence transient survey.
❑	Advise members of the public identified as having special needs of the incident. Provide evacuation assistance if requested.
Level 2	
❑	Continue with previous actions.
❑	Report any observations or issues which may negatively impact evacuations.
❑	Take air quality monitoring readings periodically for your safety.
❑	Ensure all public locations are visited and evacuated.
❑	When contacting stakeholders, identify yourself, speak slowly and confidently.
❑	Document time of arrival.

ROVER EVACUATION TEAM LEADER

ROVER EVACUATION TEAM LEADER	
❑	Account for all members of the household, business or dwelling. Inquire as to the whereabouts of anyone not present.
❑	Review the condition of stakeholders and identify any special requirements.
❑	Relay travel time and directions to the reception centre using safe egress routes.
❑	Check all fields and vacant locations to ensure that they are empty.
❑	Post a Notice of Evacuation on all doors of each unoccupied residence and business, on each outbuilding and the windshield of each unattended vehicle within the evacuated zones.
❑	Expand transient survey if EPZ is increased.
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.
Level 3	
❑	Continue with previous actions.
❑	Ensure EPZ has been evacuated.
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.
Deactivation	
❑	Continue to monitor for gas pockets.
❑	Assist evacuees in returning to their residences/businesses as required.
❑	Ventilate residences/businesses as required.
❑	Provide Company phone number in the event of additional concerns or questions.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Incident Stress Debriefing, as required.

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Stakeholder Contact Record
❑	Notice of Evacuation

3.5.3 Air Quality Monitoring Team Leader

The Air Quality Monitoring Team uses air quality monitoring equipment and personnel to identify and track the extent of the plume associated with a gas release to atmosphere.

AIR QUALITY MONITORING TEAM LEADER	
Location	
	Location not pre-determined.
Takes Direction From	
❑	Public Protection Group Supervisor.
Confers With	
❑	Public Protection Team.
Gives Direction To	
❑	Mobile air quality monitoring unit.
Alert/Minor	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Review ERP map, product release rates, wind direction, and safest egress routes.
❑	Review stakeholder locations and proximity to urban developments.
❑	Obtain radio communication equipment, as required.
❑	Verify operational condition and appropriateness of plume monitoring equipment.
❑	Ensure a sufficient supply of appropriate forms.
❑	Review vehicle requirements to carry out your assignment.
❑	Fill vehicle fuel tank.
Level 1	
❑	Continue with previous actions.
❑	Establish communication with the Public Protection Group Supervisor.
❑	Implement Incident Action Plan in coordination with the Public Protection Group Supervisor.
❑	If safe to do so, perform air quality monitoring with hand-held aspirating detectors until mobile air quality monitoring unit arrives.
❑	Confirm dispatch of the mobile air quality monitoring unit, if required.
Level 2	
❑	Continue with previous actions.
❑	Track the plume perimeter and record measured concentration.
❑	Where a release has the possibility of being sustained, the EPZ must be redefined using mobile monitoring vehicles equipped with devices to continuously measure and record wind speed, directions and concentrations.
❑	Air quality monitoring must occur downwind with priority being directed to the nearest un-evacuated residence or area where people may be present.
❑	If the EPZ includes a portion of an urban density development, mobilize sufficient air quality monitoring units so that one unit will be dedicated to the urban density development.
❑	In coordination with the Public Protection Group Supervisor, provide monitored information to applicable Regulatory Authority, local authority, local health authority and environmental authority on a regular basis throughout the emergency.
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.
Level 3	
❑	Continue with previous actions.
❑	Ensure the EPZ is being monitored effectively.
❑	Provide Air Quality Monitoring Record reports to the Public Protection Group Supervisor.
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.

AIR QUALITY MONITORING TEAM LEADER

AIR QUALITY MONITORING

AIR QUALITY MONITORING TEAM LEADER

Deactivation	
❑	Collect and submit all reports and documents to the Public Protection Group Supervisor.
❑	Determine from the Public Protection Group Supervisor if your position will require any follow up actions before you leave the scene.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

Forms	
❑	ICS 214 – Activity Log
❑	Environmental Monitoring Record

3.5.4 Reception Team Leader

The Reception Team Leader is responsible for establishing a Reception Centre at a suitable location outside the EPZ and addressing the concerns and immediate needs of evacuated stakeholders.

RECEPTION TEAM LEADER		
Location		
	Reception Centre.	
Takes Direction From		
❑	Public Protection Group Supervisor.	
Confers With		
❑	Public Protection Team.	
Gives Direction To		
❑	Evacuated stakeholders.	
Alert/Minor		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Prepare reception centre kit (pen, paper, area phone book, registration forms, and title badges).	
Level 1		
❑	Continue with previous actions.	
❑	Identify appropriate Reception Centre.	
❑	Contact reception centre to make necessary arrangements.	
❑	Implement Incident Action Plan in coordination with the Public Protection Group Supervisor.	
❑	Proceed to designated Reception Centre and prepare facility to receive evacuees if evacuation is probable.	
❑	Set up communication with the Public Protection Group Supervisor.	
Level 2		
❑	Continue with previous actions.	
❑	Receive evacuees and record names of evacuees who arrive at the Reception Centre.	
❑	Receive school children who live inside the EPZ whose school buses have been redirected to the Reception Centre. Children must be supervised until they are picked up by their parents or guardians.	
❑	If necessary, arrange for a school administrator to come to the Reception Centre.	
❑	Address evacuees' immediate needs for food and housing.	
❑	Provide information to the evacuees on the status of the incident.	
❑	Record details of temporary destinations and contact numbers when evacuees leave the Reception Centre.	
❑	Discuss immediate expense issues.	
❑	Relay concerns regarding requirements for ongoing care of livestock to the Public Protection Group Supervisor, if applicable.	
❑	Provide support to evacuees who may be emotionally upset.	
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.	
Level 3		
❑	Continue with previous actions.	
❑	Verify with Public Protection Group Supervisor that all members of the public have been evacuated.	
❑	Continue with status updates for residents and other concerned members of the public.	
❑	Update telephone contacts for evacuees as required.	
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.	
Deactivation		
❑	Advise evacuees that they may return to their residences and arrange any assistance.	
❑	Collect and document all evacuation expense claims, provide copies to the Site Finance Section Chief and/or CEOC Finance Chief, if activated.	
❑	Provide Company phone number in the event of additional concerns or questions.	
❑	Participate in post-incident debriefing held by the Incident Commander.	
❑	Participate in the Critical Incident Stress Debriefing as required.	

Forms	
❑	ICS 214 – Activity Log
❑	Evacuee Expense Claim Form
❑	Reception Centre Registration Form

3.5.5 Telephone Team Leader

The Telephone Team Leader is responsible for contacting impacted stakeholders to provide updates regarding any emergency situation when necessary. Communication will be facilitated using the appropriate scripts as a guide.

TELEPHONE TEAM LEADER		
Location		TELEPHONE TEAM LEADER
❑	Location not pre-determined.	
Takes Direction From		
❑	Public Protection Group Supervisor.	
Confers With		
❑	Public Protection Team.	
Gives Direction To (via Telephone Team)		
❑	Area Stakeholders.	
Alert/Minor		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Review the ERP map.	
❑	Assemble required telephone team forms.	
❑	Review area stakeholder list and phone numbers, if applicable.	
❑	Review the Communication Plan scripts.	
❑	Identify appropriate space and communication devices to facilitate stakeholder telephone notification, if required.	
Level 1		
❑	Continue with previous actions.	
❑	Implement Incident Action Plan in coordination with the Public Protection Group Supervisor.	
❑	Standby and prepare to initiate stakeholder telephone notification.	
❑	Prepare evacuation or shelter-in-place phone messages based on direction from the Public Protection Group Supervisor. Use scripts in the manual for consistent wording and clarity.	
❑	Notify stakeholders and other area users inside the EPZ so they may choose whether to voluntarily evacuate.	
❑	An automated telephone notification system can be used but prepare to follow-up the automated system with personal contact from the Telephoner Team.	
❑	Record all details of contacts using the Stakeholder Contact Record for documentation.	
❑	Advise the Public Protection Group Supervisor about stakeholders requiring assistance.	
❑	Update the Public Protection Group Supervisor of status.	
Level 2		
❑	Continue with previous actions.	
❑	Contact stakeholders and other area users in EPZ and advise them to evacuate.	
❑	Confirm the location of the Reception Centre so coordination with stakeholders can occur.	
❑	If school is in session, contact impacted schools and school bus authorities. This contact is not to be made by an automated telephone system.	
❑	Coordinate with the Reception Team Leader and request a school administrator assist with the effective management of the students and parents at the Reception Centre.	
❑	Document and track the status of stakeholders who have evacuated or sheltered.	
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.	
Level 3		
❑	Continue with previous actions.	
❑	Continue phoning stakeholders who have been unreachable.	
❑	Remain on standby to assist with telephone calls as required.	
❑	Update the Public Protection Group Supervisor of status at scheduled intervals.	

TELEPHONE TEAM

TELEPHONE TEAM LEADER

Deactivation	
❑	As instructed by the Public Protection Group Supervisor, advise all evacuees that they may return.
❑	Ensure a post-incident telephone message is communicated to the public impacted by the emergency.
❑	Collect and submit all reports and documents to the Public Protection Group Supervisor.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Stakeholder Contact Record

3.6 On-Site Group Supervisor

The On-Site Group Supervisor is responsible for establishing the On-Site Command Post and coordinating personnel and equipment to address control, containment and recovery from the incident.

ON-SITE GROUP SUPERVISOR	
Location	
❑	On-Site Command Post.
Takes Direction From	
❑	Site Operations Section Chief.
Confers With	
❑	Public Protection Group Supervisor.
Gives Direction To	
❑	Fire Control Team Leader.
❑	Isolation/Repair Team Leader.
❑	Spill Response Team Leader.
❑	Site Security Team Leader.
❑	Ignition Team Leader.
Alert/Minor	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Identify hazards.
❑	Attend to medical needs.
❑	Request emergency medical services, as required.
❑	Isolate the scene.
Level 1	
❑	Continue with previous actions.
❑	Establish communication with the Site Operations Section Chief.
❑	Discuss the incident situation and actions to be taken with the Site Operations Section Chief.
❑	Release non-essential personnel.
❑	Isolate the immediate area until the Public Protection Group Supervisor assumes this responsibility.
❑	Activate appropriate Source Control Team Leaders to address the incident.
❑	Ensure all on-site personnel follow the appropriate safe work procedures.
❑	Ensure all on-site personnel have the appropriate training and personal protective equipment.
❑	Assess the requirements for on-site safety supervision, equipment, and personnel.
❑	Coordinate on-site responses to gain control, shutdown, isolate, and depressure equipment, as required.
❑	Review dangerous conditions near the incident site. For example fuel leaks, toxic gas releases, oxygen deficiency, BLEVE, ignition sources, and chemical leaks.
❑	Build dykes with available materials to stop leaks from travelling off-lease or into waterways.
❑	Evaluate ignition criteria and communicate with the Site Operations Section Chief regarding ignition decision.
❑	Obtain spill samples as required and monitor environment for adverse effects.
❑	Record and report all readings at established intervals to the Site Operations Section Chief.
Level 2	
❑	Continue with previous actions.
❑	Update the Site Operations Section Chief of status.
❑	Continue spill sampling.
❑	Ensure field responders are promptly notified of any status updates.
❑	Continually reassess the situation and the risk to life and safety.
❑	In conjunction with the Site Operations Section Chief, choose a qualified ignition team, discuss ignition duties, and check ignition equipment in advance of meeting any ignition criteria.
❑	Confirm with the Site Operations Section Chief that you have the authority to ignite, if required.

ON-SITE GROUP SUPERVISOR

ON-SITE GROUP SUPERVISOR

Level 3	
❑	Continue with previous actions.
❑	Update the Site Operations Section Chief of status at scheduled intervals.
❑	Initiate ignition procedure if ignition criteria have been met (upon consultation with Site Operations Section Chief).
Deactivation	
❑	Ensure site is safe.
❑	Ensure the incident site is not disturbed until all necessary site investigations have been completed by the appropriate authority.
❑	Ensure all work areas, safety equipment, machinery, and tools are cleaned, repaired, and returned to their proper location.
❑	Ensure that on-site personnel and equipment including contracted services are decontaminated before leaving the incident site.
❑	Complete and submit all documents to the Site Operations Section Chief.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Stress Incident Debriefing, as required.

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Spill/Release Written Report Form

3.6.1 Fire Control Team Leader

The Fire Control Team Leader is responsible for coordinating the fire suppression efforts with the local fire department, industrial firefighting contractors, and the On-Site Team members.

FIRE CONTROL TEAM LEADER	
Location	
	On-Site Command Post.
Takes Direction From	
❑	On-Site Group Supervisor.
Confers With	
❑	Local Fire Department.
❑	Industrial Firefighters.
❑	On-Site Team.
Gives Direction To	
❑	On-Site Fire Control Personnel.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Inventory number, type and location of fire extinguishers.
❑	Proactive notification to local Fire Department.
❑	Establish communication with the On-Site Group Supervisor.
❑	Determine classification of fire.
❑	Implement Incident Action Plan in coordination with the On-Site Group Supervisor.
❑	Request assistance from local Fire Department or Industrial Firefighters.
❑	Use a fire extinguisher only when it can be done safely.
❑	Contain fire until fire department or additional firefighting resources arrive.
Deactivation	
❑	Ensure site is safe.
❑	Ensure all work areas, safety equipment, machinery, and tools are cleaned, repaired, and returned to their proper location.
❑	Complete and submit all documents to the On-Site Group Supervisor.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Stress Incident Debriefing, as required.

Forms	
❑	ICS 214 – Activity Log

3.6.2 Isolation/Repair Team Leader

The Isolation/Repair Team Leader is responsible for emergency shutdown, isolation, depressurization, troubleshooting, and repair efforts with the On-Site isolation/repair personnel and the On-Site Team members.

ISOLATION/REPAIR TEAM LEADER	
Location	
	On-Site Command Post.
Takes Direction From	
❑	On-Site Group Supervisor.
Confers With	
❑	On-Site Team.
Gives Direction To	
❑	On-Site isolation/repair personnel.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Identify hazards involved.
❑	Account for all personnel on-site.
❑	Evacuate immediate work area.
❑	Go to muster point.
❑	When possible confirm situation with back-up personnel.
❑	Determine if situation requires isolation and/or emergency shutdown of an individual piece of equipment.
❑	Determine if situation requires complete shutdown of facility.
❑	Contact the On-Site Group Supervisor for further instructions and provide the exact location of the incident.
❑	Implement Incident Action Plan in coordination with the On-Site Group Supervisor.
Deactivation	
❑	Ensure site is safe.
❑	Ensure all work areas, safety equipment, machinery, and tools are cleaned, repaired, and returned to their proper location.
❑	Complete and submit all documents to the On-Site Group Supervisor.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Stress Incident Debriefing, as required.

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix

3.6.3 Spill Response Team Leader

The Spill Response Team Leader is responsible for coordinating spill, containment, and clean-up efforts to minimize impairment to the environment, human health, or property.

SPILL RESPONSE TEAM LEADER	
Location	
	On-Site Command Post
Takes Direction From	
❑	On-Site Group Supervisor.
Confers With	
❑	On-Site Team.
Gives Direction To	
❑	Spill Responders.
Alert/Minor	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Collect date, time, name, and contact numbers from the person who reports the spill.
❑	Dispatch initial responders to incident site.
❑	Establish site control.
❑	Analyze the situation.
❑	Establish a muster point.
❑	Identify the type and volume of spill product.
❑	Report the incident to the On-Site Group Supervisor.
❑	Implement spill response objectives in coordination with the On-Site Group Supervisor.
Level 1	
❑	Continue with previous actions.
❑	Dispatch spill responders and equipment to the incident site.
❑	Control all access to the incident site.
❑	Identify the contamination zone, support zone, and equipment staging area.
❑	Identify an emergency signal, escape routes, and meeting location for response personnel.
❑	Place a wind indicator at appropriate locations.
❑	Establish an entry and exit checkpoint at the periphery of the incident site.
❑	Monitor weather conditions that could hinder the spill response.
❑	Identify area stakeholders and environmental sensitivities.
❑	Identify designated spill control points.
❑	Initiate containment and recovery operations.
❑	Develop a waste management plan.
❑	Develop sampling and analysis strategy.
Level 2	
❑	Continue with previous actions.
❑	Establish a bulletin board.
❑	Post site safety plan, SDS, crew roster sheets, status reports, and other relevant information.
❑	Obtain radios and megaphones to direct communications on-site.
❑	Establish first aid station in a visible area with appropriate facilities and supplies.
❑	Establish a decontamination area where responders can remove contaminated clothing, wash up, and return clean equipment.
❑	Create diagrams of response strategies, e.g. trenching berm, setting up a boom, blocking a culvert, etc.

SPILL RESPONSE TEAM LEADER

SPILL RESPONSE TEAM LEADER

SPILL RESPONSE TEAM LEADER

Level 3	
❑	Continue with previous actions.
Deactivation	
❑	Ensure site is safe.
❑	Ensure all work areas, safety and spill equipment, machinery, and tools are cleaned, repaired, and returned to their proper location.
❑	Complete and submit all documents to the On-Site Group Supervisor.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Stress Incident Debriefing, as required.

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Spill/Release Written Report Form

3.6.4 Security Team Leader

The Security Team Leader is responsible for the security of the site and establishing boundaries to prevent unauthorized entry.

SECURITY TEAM LEADER	
Location	
	On-Site Command Post.
Takes Direction From	
❑	On-Site Group Supervisor.
Confers With	
❑	On-Site Team.
Gives Direction To	
❑	Security Personnel.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Investigate and report a security breach that has the potential to impact people, property, or the environment.
❑	Monitor and ensure security of the site.
❑	Develop security guidelines for the site and potentially affected area.
❑	Establish communication with the On-Site Group Supervisor at scheduled intervals.
❑	Implement Incident Action Plan in coordination with the On-Site Group Supervisor.
❑	Establish a security perimeter.
❑	Control access to the incident site of non-essential personnel.
❑	Report any significant or unusual activities immediately to the On-Site Group Supervisor.
Deactivation	
❑	Complete and submit all documents to the On-Site Group Supervisor.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Stress Incident Debriefing, as required.

SECURITY TEAM LEADER

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Roadblock Checkpoint Record

3.6.5 Ignition Team Leader

The Ignition Team Leader is responsible for reviewing pre-ignition considerations, preparing ignition equipment and assembling a trained ignition team in the event that ignition criteria is met.

IGNITION TEAM LEADER	
Location	
	On-Site Command Post.
Takes Direction From	
❑	On-Site Group Supervisor in coordination with the Site Operations Section Chief and Incident Commander.
Confers With	
❑	On-Site Team.
Gives Direction To	
❑	Ignition Team Members.
Alert/Minor	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Consider safety and health risks to emergency personnel.
❑	Consider proximity of release to public areas.
❑	Consider availability of air monitoring equipment and personnel.
❑	Consider detectable concentrations of H_2S and/or flammable gases near the source of the release and within the EPZ.
❑	Consider weather conditions.
❑	Consider duration of the release and potential volume.
❑	Consider impacts to livestock.
❑	Consider impacts to other values at risk including property, timber, or infrastructure.
Level 1	
❑	Continue with previous actions.
❑	Establish communication with the On-Site Group Supervisor.
❑	Implement Incident Action Plan in coordination with the On-Site Group Supervisor.
❑	Review ignition procedures.
❑	Review ignition criteria.
❑	Review flare gun manufacturer's loading instructions and specifications.
❑	Prepare ignition equipment.
❑	Review training of ignition team members.
Level 2	
❑	Continue with previous actions.
❑	Assemble an adequate ignition team, ideally containing four members but never fewer than two members so that there is at least one person for rescue backup.
❑	Carry out pre-ignition planning.
❑	Monitor the area for combustible gas.
❑	Erect windsock and streamers, if time permits.
❑	If it is not an urgent situation and time permits, consultation with the On-Site Group Supervisor, Site Operations Section Chief, Incident Commander, CEOC Operations Chief, and Regulatory authorities should be made regarding ignition.
Level 3	
❑	Continue with previous actions.
❑	Assemble an adequate ignition team, ideally containing four members but never with fewer than two members so that there is one person for rescue backup.
❑	Carry out pre-ignition planning.
❑	Monitor the area for combustible gas.
❑	If time permits, consultation with the On-Site Group Supervisor, Site Operations Section Chief, Incident Commander, CEOC Operations Chief, and Regulatory authorities should be made regarding ignition.

IGNITION TEAM

IGNITION TEAM LEADER

Deactivation	
❑	Ensure all work areas, safety equipment, machinery and tools are cleaned, repaired and returned to their proper location.
❑	Complete and submit all documents to the On-Site Group Supervisor.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Stress Incident Debriefing, as required.

Forms	
❑	ICS 214 – Activity Log
❑	Stakeholder Contact Record
❑	Environmental Monitoring Record

3.7 Staging Area Manager

The Staging Area Manager oversees and controls the movement of equipment, services, and personnel at the staging area.

STAGING AREA MANAGER	
Location	
	Location not pre-determined.
Takes Direction From	
❑	Site Operations Section Chief.
Confers With	
❑	On-Site Team.
Gives Direction To	
❑	Contractors and suppliers.
Alert/Minor	
❑	No assigned duties during an alert/minor.
Level 1	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Proactively review area map to identify potential staging areas near the incident site and outside of the EPZ.
❑	Ensure potential staging area has an adequately sized site that is stable and level with suitable access roads.
❑	Ensure potential staging area has no entry problems such as narrow approach ways, gates, power lines, etc.
❑	Ensure potential staging area has adequate communication reception.
Level 2	
❑	Continue with previous actions.
❑	Ensure approval has been obtained from landowner.
❑	Establish a staging area.
❑	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.
❑	Advise the Site Operations Section Chief about the location and directions to the staging area.
❑	Respond to Site Operations Section Chief's request for resources.
❑	Coordinate and maintain a log of personnel and services.
❑	Maintain a copy of the ICS 211 - Check-In List, provide a completed copy of all resources that are available, in use, and out of service to the Site Operations Section Chief and CEOC Finance Chief.
Level 3	
❑	Continue with previous actions.
❑	Continue coordinating staging area operations support requirements until incident is concluded.
Deactivation	
❑	Demobilize or move staging area in accordance with incident demobilization plan.
❑	Remove all equipment and supplies and coordinate clean-up of the staging area.
❑	Participate in post-incident debriefing held by the Incident Commander.
❑	Participate in any Critical Incident Stress Debriefing, as required.

Forms	
❑	ICS 211 – Check-In List
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix

3.8 Site Safety Officer

The role of the Site Safety Officer is to develop and recommend measures for assuring the safety of all personnel, as well as to assess and anticipate hazardous situations. The Site Safety Officer reviews the site Incident Action Plan for safety concerns and discontinues any operation which threatens the health and safety of responders.

SITE SAFETY OFFICER	
Location	
	Incident Command Post.
Takes Direction From	
❑	Incident Commander.
Confers With	
❑	Site Section Chiefs.
❑	Site Liaison Officers.
Gives Direction To	
❑	Site Operations Section Chief.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Continually evaluate risks and identify hazardous situations associated with the incident.
❑	Assertively make safety concerns known to the Incident Commander.
❑	Exercise emergency authority to stop and prevent unsafe acts.
❑	Prepare ICS 215A – Incident Action Plan Safety Analysis, collaborate with the Site Operations Section Chief in the development of the ICS 215A.
❑	Confirm all workers have required training before they are dispatched to the incident.
❑	Prepare ICS 206 – Medical Plan for the operational period. To be provided to all Command and General Staff as part of the Incident Action Plan (IAP).
❑	Prepare ICS 208 - Safety Message / Plan for the operational period - can be included as part of the IAP.
❑	Review the complete Incident Action Plan for safety implications.
❑	Complete safety message for operation period on the Incident Action Plan.
❑	Conduct responder safety orientations, if required.
❑	Ensure the proper use of personal protective equipment.
❑	Ensure that responder personnel are taking appropriate actions; safe work procedures, proper grounding, bonding procedures, working in teams, etc.
❑	Ensure workers who show signs of stress, fatigue or adverse symptoms are demobilized and sent for treatment, if necessary.
❑	Recommend alternatives for activities which are considered to be unsafe.
❑	Ensure incident casualties receive first aid and ongoing care.
❑	If any serious injuries occur, ensure the incident scene remains undisturbed, if possible, until there has been a thorough investigation.
❑	Investigate accidents that have occurred within the incident area.
❑	Document all injuries and on-site medical treatments.
❑	Review and approve the medical plan if implemented.
❑	Ensure safe and adequate lighting is in place as required.
❑	Ensure only intrinsically safe radios are used in the incident area.
❑	Ensure that nobody, including contract personnel, works alone.
❑	Participate in planning meetings.
❑	Continue to follow up and maintain safety responsibilities.
Deactivation	
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

SITE SAFETY OFFICER

Forms	
❑	ICS 206 – Medical Plan
❑	ICS 208 – Safety Message / Plan
❑	ICS 214 – Activity Log
❑	ICS 215A – Incident Action Plan Safety Analysis
❑	Environmental Monitoring Record

3.9 Site Liaison Officer

The Site Liaison Officer interfaces with field government agency representatives who arrive at the Incident Command Post. The objective of the Site Liaison Officer is to ensure there is collaborative communication with the field government agency representatives and to report communications to the Incident Commander.

SITE LIAISON OFFICER		
Location		
❑	Incident Command Post.	
❑	Government Emergency Operations Centre (Level 2 and 3).	
Takes Direction From		
❑	Incident Commander.	
Confers With		
❑	Site Section Chiefs.	
❑	Site Safety Officer.	
All Levels		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Receive briefing from Incident Commander.	
❑	Evaluate which government agencies have jurisdiction inside the planning zone.	
❑	In coordination with the Incident Commander, ensure Regulatory Authority notification according to the applicable requirements.	
❑	Refer to the Notification Requirements for Key Government Agencies and Resources in the Jurisdictional section of this document.	
❑	Determine which government and regulatory notifications have been completed.	
❑	Receive representatives from the Regulatory Authority, the local authority, and local regional health authority, at the Incident Command Post, if they arrive on-scene.	
❑	Coordinate the flow of information to and from the government agencies who are present.	
❑	Update the Incident Commander.	
❑	Travel to the Government Emergency Operations Centre, if necessary.	
Deactivation		
❑	Participate in post-incident debriefing held by Incident Commander.	
❑	Participate in the Critical Incident Stress Debriefing as required.	

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Status Board

3.10 Site Scribe

The Site Scribe provides documentation and administrative assistance to the Incident Command Post. This includes the recording of meeting minutes, information filing, and reproduction tasks. If required, a Scribe may be assigned to solely maintain a written record of the incident response.

SITE SCRIBE		
Location		SITE SCRIBE
	Incident Command Post.	
Takes Direction From		
❑	Incident Commander.	
All Levels		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Maintain a chronological summary of the incident response activities.	
❑	Record names of personnel in each assigned response position and their location utilizing ICS 211 – Check-In List and ICS 207 – Incident Organization Chart.	
❑	Record control and containment measures.	
❑	Record environmental monitoring information.	
❑	Record injuries, deaths, and missing persons.	
❑	Record phone calls.	
❑	Record decisions.	
❑	Record actions.	
❑	Record status of the public protection actions.	
❑	Collect documentation from response team members.	
❑	Maintain a consistent system for organizing the data.	
Deactivation		
❑	Participate in the post-incident debriefing held by the Incident Commander.	
❑	Participate in the Critical Incident Stress Debriefing as required.	

Forms	
❑	ICS 207 – Incident Organization Chart (may be completed by Site Planning Section Chief, if assigned)
❑	ICS 211 – Check-In List
❑	ICS 214 – Activity Log
❑	Environmental Monitoring Record
❑	ICS 234 – Work Analysis Matrix
❑	Status Board

3.11 Site Planning Section Chief

The Site Planning Section Chief is responsible for strategic planning, evaluating and processing information for use in the development of the Incident Action Plan. Disseminating information can be in the form of the Incident Action Plan, formal briefings, or status board displays.

SITE PLANNING SECTION CHIEF	
Location	
❑	Incident Command Post.
Takes Direction From	
❑	Incident Commander.
Confers With	
❑	Site Section Chiefs.
❑	Site Liaison.
❑	Site Safety Officer.
Gives Direction To	
❑	Site Section Chiefs.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Prepare the ICS 202 – Incident Objectives Form following each Command and General Staff Meeting. Obtain sign-off from Incident Commander prior to dissemination as part of the Incident Action Plan.
❑	Prepare for the Planning Meeting, Review ICS 215 – Operational Planning Worksheet developed in the Tactics Meeting. Review ICS 215A – Incident Action Plan Safety Analysis – prepared by the Site Safety Officer.
❑	Assess current operations effectiveness and resource efficiency, gather information to support incident management decisions.
❑	Facilitate Planning Meeting with Command and General Staff. Review. Validate the operational plan as proposed by the Site Operations Section Chief.
❑	Prepare the ICS 203 – Organization Assignment List with information on all positions currently activated, include the names of personnel staffing each position. ICS 203 serves as part of the Incident Action Plan.
❑	Compile the complete Incident Action Plan to include ICS 202 – Incident Objectives, ICS 203 Organization Assignment List, ICS 204 – Assignment List, ICS 206 Medical Plan and possibly ICS 208 Safety Message Plan.
❑	Distribute Incident Action Plan to the Incident Commander for approval prior to disseminating to Command and General Staff.
❑	Assess the current situation and prepare an incident response strategy considering “what if” scenarios.
❑	Assemble information and propose alternative strategies.
❑	Compile and display incident information on the Status Board.
❑	Using the information contained within the ICS 203 – Organization Assignment List, continuously monitor and update ICS 207 – Incident Organization Chart.
❑	In a prolonged incident, ensure site response strategies are considered. Develop the ICS 209 – Incident Status Summary, as required.
Deactivation	
❑	Develop plan for demobilization. Utilize ICS 221 – Demobilization Check-Out Form.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

Forms	
❑	ICS 202 – Incident Objectives
❑	ICS 203 – Organization Assignment List
❑	ICS 207 – Incident Organization Chart
❑	ICS 209 – Incident Status Summary (to be completed following a significant incident)
❑	ICS 214 – Activity Log
❑	ICS 221 – Demobilization Check-Out
❑	ICS 230 – Daily Meeting Schedule

3.12 Site Logistics Section Chief

The Logistics Section Chief assists the response effort by procuring equipment and support services.

SITE LOGISTICS SECTION CHIEF	
Location	
❑	Incident Command Post.
Takes Direction From	
❑	Incident Commander.
Confers With	
❑	Site Section Chiefs.
❑	Site Liaison.
❑	Site Safety Officer.
Gives Direction To	
❑	Site Section Chiefs.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Develop and implement Incident Action Plan in coordination with the Site Section Chiefs and Incident Commander.
❑	Procure supplies.
❑	Procure transportation services.
❑	Procure equipment.
❑	Procure manpower.
❑	Procure communications systems.
❑	Procure oil spill contractor/cooperative services.
❑	Procure catering services for the responders.
❑	In a prolonged incident, identify and obtain accommodations for responders.
Deactivation	
❑	Notify all services and suppliers of the stand-down of the incident.
❑	Forward all data related to the incident to the Incident Commander.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix

3.13 Site Finance Section Chief

The Site Finance Section Chief is responsible for tracking cost, time compensation and claims. This role, when filled by field personnel, is to provide financial administrative support to the CEOC.

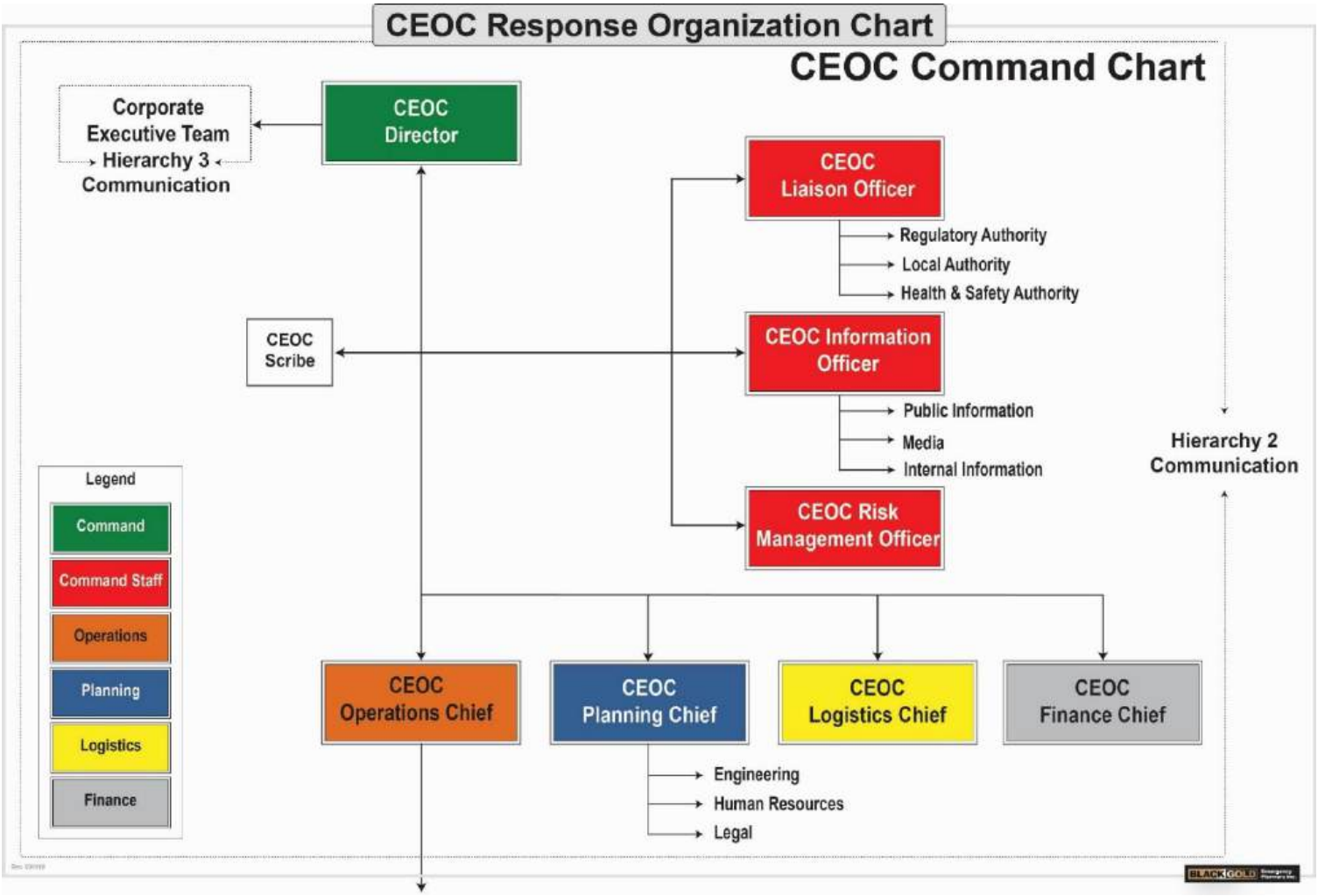
SITE FINANCE SECTION CHIEF	
Location	
	Incident Command Post.
Takes Direction From	
❑	Incident Commander.
Confers With	
❑	Site Section Chiefs.
❑	Site Liaison.
❑	Site Safety Officer.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Obtain briefings from the Incident Commander.
❑	Account for costs.
❑	Track time.
❑	Adhere to procurement procedures.
❑	Track compensation and claims.
❑	Attend planning meetings.
❑	Submit reports and expense claims to the CEOC Financial Department.
Deactivation	
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

SITE FINANCE SECTION CHIEF

Forms	
❑	ICS 214 – Activity Log
❑	Evacuee Expense Claim Form

4.0 CEOC INCIDENT COMMAND STRUCTURE - ROLES AND RESPONSIBILITIES

4.1 CEOC Command Chart



4.2 CEOC Director

The CEOC Director provides advice and support to the CEOC Chiefs. The CEOC Director provides overall policy direction and has the final decision authority.

CEOC DIRECTOR	
Location	
	Corporate Emergency Operations Centre.
Confers With	
❑	Corporate Executive Team.
Gives Direction To	
❑	CEOC Chiefs.
❑	CEOC Liaison Officer.
❑	CEOC Risk Management Officer.
❑	CEOC Information Officer.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Advise the Corporate Executive Team.
❑	In consultation with the CEOC Operations Chief, develop and implement a comprehensive response plan for the incident.
❑	Evaluate the CEOC Operations Chief's actions.
❑	Make CEOC Operations Chief aware of external expertise and services that can be provided.
❑	Ensure personnel and expertise from Engineering, Human Resources, and Legal are available as required to support the incident response activities.
❑	Confirm the status of the incident.
❑	Estimate the maximum impact and duration of the incident.
❑	Determine the impact on the public.
❑	Determine business continuity issues.
❑	Advise on corporate responsibilities.
❑	Advise on any internal company policies.
❑	Identify agencies (government and regulatory) with jurisdiction related to the incident.
❑	If incident escalates ensure that the CEOC Liaison Officer role is filled.
❑	Ensure that CEOC Liaison Officer is coordinating communication between government agencies and company personnel as required.
❑	Ensure ongoing internal communication, as appropriate.
❑	Approve major capital financial support as required.
❑	Advise and support the CEOC Information Officer regarding media and public statements.
Deactivation	
❑	Ensure the CEOC Liaison Officer, in coordination with the Regulatory Authority agree that there is consensus to downgrade emergency.
❑	Ensure the CEOC Liaison Officer has notified all previously contacted government agencies of the decision to downgrade the emergency.
❑	Ensure all records and reports are gathered in their original state, for accurate post-incident review.
❑	Ensure all CEOC Team Members are notified.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.
❑	Approve final release of incident reports in coordination with the legal department.

Forms	
❑	ICS 214 – Activity Log.

4.3 CEOC Operations Chief

The CEOC Operations Chief is the main link between Site Command, the Corporate Emergency Operations Centre and is the main informant for the CEOC Director. The CEOC Operations Chief speaks directly with the Incident Commander.

The CEOC Operations Chief provides operational, public safety, planning and logistics advice and support to assist the Incident Commander with developing an effective field Incident Action Plan (IAP).

CEOC OPERATIONS CHIEF		
Location		CEOC OPERATIONS CHIEF
	Corporate Emergency Operations Centre.	
Takes Direction From		
❑	CEOC Director.	
Confers With		
❑	CEOC Chiefs.	
❑	CEOC Liaison Officer.	
❑	CEOC Risk Management Officer.	
❑	CEOC Information Officer.	
Gives Direction To		
❑	Incident Commander.	
All Levels		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Establish method of communications with the Incident Commander.	
❑	Schedule regular briefings with the Incident Commander.	
❑	Dedicate a phone line to the Incident Commander.	
❑	Confer with the Incident Commander to ascertain the level of emergency.	
❑	Activate the CEOC.	
❑	Appoint CEOC team members.	
❑	Complete the CEOC team and site command team assignment charts.	
❑	Schedule regular briefings with the CEOC team members and clarify objectives as necessary.	
❑	Ensure the Status Board and ICS 234 - Work Analysis Matrix are prominently displayed in the CEOC.	
❑	Develop Incident Action Plan in coordination with the CEOC team members and Incident Commander.	
❑	Ensure public protection and responder safety issues are being addressed.	
❑	Discuss actions with the Incident Commander and provide support until situation is normalized.	
❑	Verify the boundaries of the emergency response planning zones.	
❑	Discuss shelter and/or evacuation plan, as required.	
❑	Discuss transient surveys plan, as required.	
❑	Discuss mobile air quality monitoring plan, as required.	
❑	Discuss the area isolation and roadblock plan, as required.	
❑	Discuss Fire Hazard Order/Closure Order and NOTAM (Notice to Airmen) if necessary.	
❑	Verify that adequate containment and recovery measures are initiated.	
❑	Evaluate which government agencies have jurisdiction inside the emergency response zones.	
❑	In coordination with the Incident Commander, ensure Regulatory Authority notification according to the applicable requirements.	
❑	Refer to the Notification Requirements for Key Government Agencies and Resources in the Jurisdictional section of this document.	
❑	Designate CEOC Liaison Officer and direct him/her to communicate with Regulatory Authority, environmental agency, health authority, local authority, occupational health and safety authority, and pressure vessel authority.	
❑	Ensure Regulatory Authority notification according to the applicable requirements.	
❑	Ensure the applicable reporting form has been completed and submitted to the applicable Regulatory Authority.	

CEOC OPERATIONS CHIEF

CEOC OPERATIONS CHIEF

❑	Ensure confirmation of the level of emergency with Regulatory Authority.
❑	Notify the applicable Regulatory Authority if the public or media has been contacted.
❑	Evaluate ignition criteria and communicate with the Incident Commander and applicable Regulatory Authority regarding ignition decision.
❑	Ensure other required government authorities have been notified (e.g. environmental agency, local health authority, local authority, occupational health and safety authority, and pressure vessel authority).
❑	Ensure monitoring data is being provided to the appropriate regulatory agencies via the CEOC Liaison Officer.
❑	Assess the potential for media interest and the need to notify the CEOC Information Officer.
❑	Direct media communication to CEOC Information Officer.
❑	Ensure communication with all previously contacted agencies is maintained throughout the incident duration at set frequencies, until the incident is downgraded.
❑	Assess corporate responsibility with regards to health, environment, community, and business impacts including joint venture partner notification.
❑	Keep the CEOC Director and Corporate Executive Team advised of ongoing events.
❑	Discuss business continuity concerns with CEOC Director.
❑	Assess the incident situation with regards to both short and long-term implications.
❑	For prolonged incidents, ensure provisions for relieving and rotating staff on a regular basis.
Deactivation	
❑	In consultation with the Incident Commander and the applicable Regulatory Authority, downgrade the emergency.
❑	In consultation with the applicable Regulatory Authority, ensure the Fire Hazard Order/Closure Order and NOTAM are lifted, if necessary.
❑	Ensure all appropriate agencies previously notified of the emergency are notified of the stand-down of the emergency.
❑	Ensure all evacuees are notified of the stand-down of the emergency.
❑	In consultation with the CEOC Information Officer, ensure the media is notified of the stand-down of emergency.
❑	Confirm with the Incident Commander that all evacuees are being assisted in returning to their residences/businesses.
❑	Ensure follow-up meetings are held with affected residents/landowners.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Ensure Critical Incident Stress Debriefing for responders is coordinated by the Human Resources Department.
❑	Participate in any Critical Incident Stress Debriefing.

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Notification Record
❑	Status Board

4.4 CEOC Liaison Officer

The CEOC Liaison Officer interfaces with government agencies to determine their response capabilities at the time of the incident and to provide incident status reports. The mandate of the CEOC Liaison Officer is to develop an integrated response to the incident with the Regulatory Authority and Government Agencies.

CEOC LIAISON OFFICER		
Location		CEOC LIAISON OFFICER
	Corporate Emergency Operations Centre.	
	Government Emergency Operations Centre (Level 2 and 3).	
Takes Direction From		
❑	CEOC Director.	
Confers With		
❑	CEOC Chiefs.	
❑	CEOC Information Officer.	
❑	CEOC Risk Management Officer.	
All Levels		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Receive briefing from CEOC Operations Chief.	
❑	Evaluate which government agencies have jurisdiction inside the planning zone and response zones.	
❑	In coordination with the CEOC Operations Chief, ensure Regulatory Authority notification according to the applicable requirements.	
❑	Refer to the Notification Requirements for Key Government Agencies and Resources in the Jurisdictional section of this document.	
❑	Determine which government and regulatory notifications have been completed.	
❑	Develop a communication strategy with those government agencies who need to be contacted.	
❑	Address inquiries from and obtain information required by the government agencies.	
❑	Fill out and submit the forms as provided by the applicable government and/or Regulatory Authority.	
❑	Coordinate the flow of communication to and from the government agencies.	
❑	Coordinate the use of expertise and resources available through the government agencies.	
❑	Travel to the Government Emergency Operations Centre, if necessary.	
❑	Update all previous contacts of change in status.	
Deactivation		
❑	In coordination with the Regulatory Authority ensure that there is consensus to downgrade the emergency.	
❑	Notify all previously contacted government agencies of the decision to downgrade the emergency.	
❑	Participate in post-incident debriefing held by Incident Commander.	
❑	Participate in the Critical Incident Stress Debriefing as required.	

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Government/Regulatory Reporting Form
❑	Status Board

4.5 CEOC Information Officer

The CEOC Information Officer will develop a communication strategy to ensure information and releases are appropriate, consistent, accurate, and timely. He/she implements the communication plan, providing media information support and serving as the dissemination point for all media releases.

The CEOC Information Officer ensures the affected public receives ongoing information about emergency status, relief programs, and services.

CEOC INFORMATION OFFICER	
Location	
	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Director.
Confers With	
❑	CEOC Chiefs.
❑	CEOC Liaison Officer.
❑	CEOC Risk Management Officer.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Prepare telephone response for Company receptionists.
❑	Contact the Emergency 24-hour number attendant, if applicable and/or the Company Field Office to ensure all media enquiries are directed to the CEOC Information Officer.
❑	Monitor communication issues and incorporate into communications plan.
❑	Ensure communication channels are established and maintained with appropriate stakeholders.
❑	Assess media impacts and ensure concerns are clearly identified.
❑	Prepare all media responses with the assistance of the CEOC Director.
❑	Establish media notification schedules.
❑	Ensure all media releases are approved by the applicable Regulatory Authority prior to release.
❑	Organize news conferences.
❑	Dispatch personnel to field locations, media information centres and/or Government Emergency Operations Centre, if applicable.
❑	Ensure all other external requests are redirected to the appropriate recipient.
Deactivation	
❑	If required, continue media and public interaction.
❑	Upon direction from the CEOC Liaison Officer in coordination with the Regulatory Authority, prepare a media statement regarding the downgrade of the emergency.
❑	Participate in post-incident debriefing held by Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

CEOC INFORMATION OFFICER

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix

Use this template following the onset of an incident.

EMERGENCY COMMUNICATION PLANNING TEMPLATE		
EMERGENCY COMMUNICATION PLANNING TEMPLATE	❑	Identify the Communication Team.
	❑	Activate Communication Team.
	❑	Communication Team meets to assess the situation and develop communication strategies
	❑	CEOC Information Officer meets with CEOC Director to determine the response and message.
	❑	Communication Team prepares initial internal and external communication statements.
	❑	Ensure communication statements and strategy are reviewed and approved by CEOC Director.
	❑	CEOC Information Officer delivers initial internal and external messages in coordination with the applicable Regulatory Authority.
	❑	Communication Team updates company website information regarding the emergency.
	❑	Communication Team coordinates meetings with media and delivers approved messages.
	❑	Communication Team obtains regular status reports from CEOC Director.
	❑	Communication Team prepares and distributes status reports regularly on the communication situation.
	❑	Communication Team prepares and delivers regular updates to stakeholders, government agencies and other relevant entities.
	❑	Communication Team prepares and delivers messages on resolution of the emergency.
	❑	Communication Team provides ongoing updates to internal and external parties as the situation is resolved.
	❑	Communication Team is advised by CEOC Director that the emergency is over.
	❑	Communication Team stands down once the emergency has been resolved.
	❑	Communication Team prepares, and issues post-incident reports as needed to internal and external parties.
	❑	Communication Team conducts post-incident review of and revision to the Crisis Communication Plan.

4.6 CEOC Risk Management Officer

The CEOC Risk Management Officer takes into consideration events that have the potential to impact the Company's operations and business continuity. He/she identifies appropriate strategies to mitigate the risks.

CEOC RISK MANAGEMENT OFFICER	
Location	
	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Director.
Confers With	
❑	CEOC Chiefs.
❑	CEOC Liaison Officer.
❑	CEOC Information Officer.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Review the Incident Action Plan for risk management implications.
❑	Determine the severity and impact of business interruption to the company; loss of service, supply chain interruptions, catastrophic loss of critical infrastructure, etc.
❑	Establish which critical services/functions may be required for the response to the emergency.
❑	Identify the critical functions that need to be reinstated within 24-hours or are time-dependent; IT recovery, supply chain, procurement, vendors, etc.
❑	Aim to maintain the Company's minimum level of service.
Deactivation	
❑	Implement business/disaster/IT recovery procedures.
❑	Acquire the additional resources necessary for restoring business operations.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing if required.

CEOC RISK MANAGEMENT OFFICER

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix

4.7 CEOC Planning Chief

The CEOC Planning Chief leads the incident action planning process, typically thinking 12 to 36 hours in advance. He/she advises and supports the CEOC Operations Chief regarding technical assistance required for the response. The CEOC Planning Chief anticipates what actions need to be taken and recommends priorities to allocate corporate resources.

Note: The Site Planning Section Chief responsibilities may be allocated to CEOC Planning Chief dependent on the emergency level. See Site Planning Section Chief role in the previous section.

CEOC PLANNING CHIEF	
Location	
	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Director.
Confers With	
❑	CEOC Chiefs.
❑	CEOC Liaison Officer.
❑	CEOC Risk Management Officer.
❑	CEOC Information Officer.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Assess the current situation and prepare an incident response strategy considering 'what if' scenarios.
❑	Develop and implement Incident Action Plan.
❑	Gather specialists (Human Resources, Engineering, Environmental, or Legal) required for the response.
❑	Ensure incident information is documented, current, and disseminated to the CEOC.
❑	Utilize the Status Board, ICS 234 – Work Analysis Matrix and Response Organizational Chart.
❑	Review the degree of success of the previous actions.
❑	Post charts, plot plans, surveys, and maps as they are developed.
❑	In a prolonged incident, ensure corporate response strategies are considered.
❑	Notify and assemble replacement personnel if the incident lasts longer than 24-hours.
Deactivation	
❑	Compile the overall post-incident action plan.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

CEOC PLANNING CHIEF

Forms	
❑	ICS 202 – Incident Objectives
❑	ICS 203 – Organization Assignment List
❑	ICS 207 – Incident Organization Chart
❑	ICS 209 – Incident Status Summary (to be completed following a significant incident)
❑	ICS 214 – Activity Log
❑	ICS 221 – Demobilization Check-Out
❑	ICS 234 – Work Analysis Matrix
❑	ICS 230 – Daily Meeting Schedule

4.7.1 Engineering

The Engineering representative is responsible for all technical supporting data (well files, diagrams, schematics, process flow diagrams, etc.) along with any other engineering support requested by the CEOC Operations Chief.

ENGINEERING	
Location	
❑	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Planning Chief.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Gather the necessary information needed to resolve the emergency situation (down-hole diagrams, facility schematics, etc.).
❑	Provide engineering analysis and recommend solutions.
❑	Assist with the development of control and containment procedures.
Deactivation	
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

ENGINEERING

Forms	
❑	ICS 214 – Activity Log

4.7.2 Human Resources

The Human Resources representative is responsible for addressing employee inquiries and assisting individual employees affected by the incident.

HUMAN RESOURCES	
Location	
❑	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Planning Chief.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Mobilize additional Human Resource staff as required.
❑	Sort and compile information about insurance and benefits for affected employees.
❑	As required, mobilize counsellors to provide Critical Incident Stress Debriefing to employees and families.
❑	Clarify the nature and extent of injuries to any employees or contract personnel.
❑	Coordinate next of kin notification by the police in the event of death.
❑	Coordinate any follow up next of kin notification on behalf of the Company.
❑	Ensure compliance with all regulations for employment and human resource issues.
Deactivation	
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

HUMAN RESOURCES

Forms	
❑	ICS 214 – Activity Log

4.7.3 Legal

The Legal representative will provide legal advice on response activities, documentation, and communication.

LEGAL	
Location	
❑	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Planning Chief.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Council on legal matters.
❑	Evaluate liability implications of the incident.
❑	Ensure that proper documentation is gathered and preserved.
❑	Assist with legal settlement activities.
❑	Review press releases.
Deactivation	
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

LEGAL

Forms	
❑	ICS 214 – Activity Log

4.8 CEOC Logistics Chief

The CEOC Logistics Chief provides response support to the various Command Centres. This includes ordering supplies, communications, equipment, and personnel to support the emergency response activities.

Note: The Site Logistics Section Chief role may be allocated to CEOC Logistics Chief dependent on the emergency level. See Site Logistics Section Chief role in the previous section.

CEOC LOGISTICS CHIEF	
Location	
	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Director.
Confers With	
❑	CEOC Chiefs.
❑	CEOC Liaison Officer.
❑	CEOC Risk Management Officer.
❑	CEOC Information Officer.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Assemble assistants as required to contact and procure equipment and services for the Response Team.
❑	Develop and implement Incident Action Plan in coordination with the CEOC Chiefs.
❑	Procure materials.
❑	Procure equipment.
❑	Procure manpower.
❑	Procure transportation.
❑	Procure communications systems.
❑	Procure catering services for the responders.
❑	Procure spill services and contractors.
❑	Procure information technology services and support.
❑	Procure medical aid capabilities.
❑	Procure lighting units.
❑	Procure sleeping and sheltering areas.
❑	Procure sanitation and showers.
❑	Determine the maintenance workload requirements and timelines.
❑	Analyze equipment readiness status.
Deactivation	
❑	Notify all services and suppliers of the stand-down of the incident.
❑	Coordinate equipment recovery and demobilization operations.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

CEOC LOGISTICS CHIEF

Forms	
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix

4.9 CEOC Finance Chief

The CEOC Finance Chief is responsible for employee and contractor time tracking, procurement procedures, compensation claims and cost accounting.

Note: The Site Finance Section Chief role may be allocated to CEOC Finance Chief dependent on the emergency level. See Site Finance Section Chief role in the previous section.

CEOC FINANCE CHIEF	
Location	
	Corporate Emergency Operations Centre.
Takes Direction From	
❑	CEOC Director.
Confers With	
❑	CEOC Chiefs.
❑	CEOC Liaison Officer.
❑	CEOC Risk Management Officer.
❑	CEOC Information Officer.
All Levels	
❑	Document all activities utilizing the ICS 214 – Activity Log.
❑	Ensure that accounting standards for response efforts are established and communicated.
❑	Approve necessary banking and funding arrangements.
❑	Approve payment authorization limit for field response team personnel.
❑	Attend CEOC planning meetings.
❑	Track procurement costs.
❑	Track compensation claims.
❑	Compile employee and contractor time tracking.
❑	Determine the level and detail of documentation required for insurance requirements.
❑	Provide guidance on effective purchasing practices to achieve cost savings for products and services.
Deactivation	
❑	Evaluate public and other third-party claims.
❑	Compile loss estimates and summarize expected financial impact.
❑	Approve compensation payments.
❑	In conjunction with the insurance company, settle claim payment.
❑	Participate in the post-incident debriefing held by the Incident Commander.
❑	Participate in the Critical Incident Stress Debriefing as required.

Forms	
❑	ICS 214 – Activity Log
❑	Evacuee Expense Claim Form

4.10 CEOC Administration/Scribe

The CEOC Administration/Scribe provides documentation and administrative assistance to the CEOC. This includes the recording of meeting minutes, information filing, and reproduction tasks. If required, a Scribe may be assigned to solely maintain a written record of the incident response.

CEOC SCRIBE		
Location		
	Corporate Emergency Operations Centre.	
Takes Direction From		
❑	CEOC Director.	
All Levels		
❑	Document all activities utilizing the ICS 214 – Activity Log.	
❑	Maintain a chronological summary of the incident response activities.	
❑	Record names of personnel in each assigned response position and their location utilizing ICS 211 – Check-In List and ICS 207 – Incident Organization Chart.	
❑	Record control and containment measures.	
❑	Record environmental monitoring information.	
❑	Record injuries, deaths, and missing persons.	
❑	Record phone calls.	
❑	Record decisions.	
❑	Record actions.	
❑	Record status of the public protection actions.	
❑	Collect documentation from response team members.	
❑	Maintain a consistent system for organizing the data.	
Deactivation		
❑	Participate in the post-incident debriefing held by the Incident Commander.	
❑	Participate in the Critical Incident Stress Debriefing as required.	

Forms	
❑	ICS 207 – Incident Organization Chart (may be completed by CEOC Planning Chief, if assigned)
❑	ICS 211 – Check-In List
❑	ICS 214 – Activity Log
❑	ICS 234 – Work Analysis Matrix
❑	Environmental Monitoring Record
❑	Status Board

5.0 COMMAND CENTRES AND RESPONSE LOCATIONS

To coordinate response efforts, the Company and Government will establish various Command Centres to facilitate required actions. These centres represent the location of specific members of the response team and may be set up temporarily (in a vehicle for example) or long-term (field or head office) depending on the nature of the emergency and the availability of a facility. The following Command Centres would be established as required depending upon the nature and seriousness of the incident.

5.1 On-Site Command Post (OSCP)

The On-Site Command Post is at 'ground zero' and will be located as close to the actual incident site as possible given safety concerns. This location is where the On-Site Group Supervisor would manage actions to control and mitigate the situation and coordinate subsequent remedial activities.

The On-Site Command Post is the focal point for control and containment activities as well as communications to the Incident Command Post. The Incident Command Post and On-Site Command Post can be located at the same place.

5.2 Incident Command Post (ICP)

The Incident Command Post is the location from which the Incident Commander oversees all incident operations. Key field response activities, including public safety actions, are coordinated from this centre. It must have the appropriate equipment and resources, including good communication equipment, to manage the emergency. The ICP will be established near the site of the emergency but outside of the hazard area. Often the Incident Command Post is located in the closest company office, a nearby facility or building. It may be combined with the Regional Emergency Operations Centre.

5.3 Staging Area

The decision to establish a staging area will be made by the Site Operations Section Chief as directed by the Incident Commander. The staging area is a control point for regulating the flow of equipment and services.

The Staging Area is used for the initial drop off of heavy equipment and large numbers of personnel used in an emergency response. This will greatly aid the efficiency and preparedness of all equipment movement into the EPZ when required. Resources in the Staging Area need to be ready for deployment within five minutes from the incident site, if at all possible. When establishing the Staging Area, ensure that it has adequate entrance and exit routes and is on a paved surface, if possible.

5.4 Reception Centre

Reception Centres are established in order to provide a safe place for people within an established EPZ, including employees, contractors, and site visitors, to evacuate to during an emergency. Local authorities may have predetermined reception centre locations identified within their Municipal Emergency plan. Early contact with the local authority will ensure a coordinated response between the municipality and Company. A company representative will be assigned to travel to the Reception Centre and coordinate activities along with the Local Authority's representative.

Services provided include registration and inquiry, emergency food services, emergency clothing services, emergency lodging services, and personal services. Arrangements for accommodation, reimbursement of daily expenses and temporary care of evacuated property are managed through the centre.

A Reception Centre is usually required if five or more households are evacuated.

5.5 Helibase

A Helibase is a location where aircraft are maintained and fuelled. If helicopter evacuation is or may be a requirement, the helicopter services may be placed on standby at a Level 1 Emergency.

5.6 Helispot

The Helispot is the temporary location where the helicopter can land to load or unload evacuees, equipment, and supplies. Rover/Evacuation personnel will be located at each Helispot to assist evacuees including non-essential employees, contractors, and site visitors.

5.7 Corporate Emergency Operations Centre (CEOC)

Significant emergencies impact a business in many ways including reputation loss, regulatory non-compliance, the incurring of legal liabilities, financial loss, etc. During a Hierarchy 2 emergency the CEOC Team will assemble and provide support to the affected location.

The CEOC is the principal site of response coordination to support the Incident Commander. This is the centre where head office support activities are coordinated, it includes Company representatives with adequate authority, technical, and media relations skills. It is the location where personnel formulate strategies and action plans to manage regional emergency response issues.

The CEOC is equipped with the tools, accessibility and space to accommodate the CEOC Team and support personnel.

5.7.1 Suggested Equipment and Supplies for the CEOC

Office Equipment and Supplies	
❑ Pens/Pencils	❑ Appropriate batteries for all equipment
❑ Felt-tip markers	❑ Appropriate printer cartridges
❑ Dry erase markers	❑ Envelopes of various size
❑ Coloured grease pencils	❑ Light bulbs
❑ Pencil sharpeners	❑ Paper for flip charts
❑ Staples/staplers	❑ String
❑ Staple removers	❑ Photocopy/printer paper
❑ Scissors	❑ Identification tags/name plates
❑ Scotch tape/tape dispenser	❑ CEOC forms
❑ Notepads	❑ Laminated Status Board
❑ Calculator(s)	❑ Laminated ICS 234 – Work Analysis Matrix
❑ Elastic bands	❑ Clocks
❑ File folders	❑ Waste baskets/recyclable containers
❑ In/Out boxes	❑ Stamps (“For Action”, “Completed”, “Approved”)
❑ Map tacks/thumb tacks	❑ Flashlights
Communications Equipment	
❑ Telephones	❑ Telephone Conference Unit (Polycom)
❑ Phone/computer cables	❑ Computers/laptops with networking capability
❑ Power boards	❑ LCD projector/screen
❑ Extension cords	❑ Overhead projector
❑ Television/DVD player	❑ AM/FM radios
❑ Digital cameras/video camera	❑ Fax machine
❑ Memory card(s)/disc(s)/tape(s) for cameras	❑ Photocopier
Furnishings	
❑ Workstation desks/tables	❑ Filing cabinet(s)
❑ Conference table(s)	❑ Whiteboard(s)
❑ Map stand	❑ Cork boards
❑ Chairs	❑ Flip chart stands
❑ Bookshelf(ves)	❑ Coat rack/hangers
Reference Materials	
❑ Updated CEOC floor plan	❑ Contingency plans
❑ Checklists (operational guidelines)	❑ Local, area, and regional maps
❑ Updated contact/supplier/media lists	❑ Aerial photos
❑ Current phone/email lists	❑ Resource inventories
❑ Emergency Response Plans (with extras)	❑ CANUTEC guide
❑ OHS Standards	❑ TDG Regulations
Store Supplies and Dispensary	
❑ Paper towels	❑ Facial tissue/Kleenex
❑ First aid kit	
Food Service Areas	
❑ Coffee/tea	❑ Pitchers
❑ Kettle/tea pot	❑ Glasses/paper cups
❑ Coffee maker filters/coffee pot	❑ Refrigerator/freezer
❑ Mugs	❑ Stove
❑ Food preparation/serving equipment	❑ Dishwashing supplies
❑ Eating utensils/dinner plates	❑ Storage cabinets
❑ Food supplies	❑ Garbage bags
❑ Water	

5.8 Government Command Posts

5.8.1 Regional Emergency Operations Centre (REOC)

If it is taking a considerable amount of time to bring an emergency under control or if the external support requirements are substantial, the appropriate government agency will establish a REOC in the area.

The REOC is a single operations centre that is established in a suitable location to manage the larger aspects of the emergency and it is managed jointly by government and industry staff. The Regulatory Authority encourages the combination of industry and municipal responses into a single REOC if possible.

This centre has two functions:

1. To provide a central location for addressing the demands and coordinating the services of various government agencies.
2. To provide a centre for public and media interaction.

If a REOC is established, the Company will dispatch a Liaison to the centre to represent the company's view on management, technical, and public affairs issues. The REOC may be combined with a Company command post in order to centralize personnel.

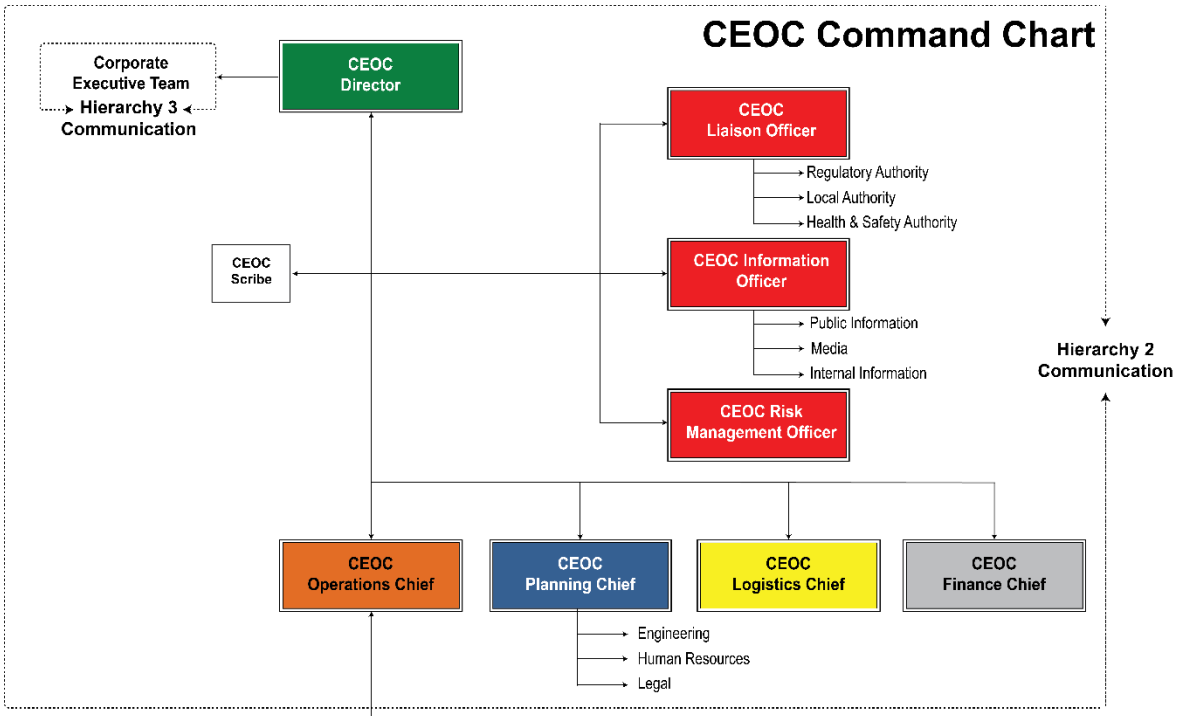
5.8.2 Municipal Emergency Operations Centre (MEOC)

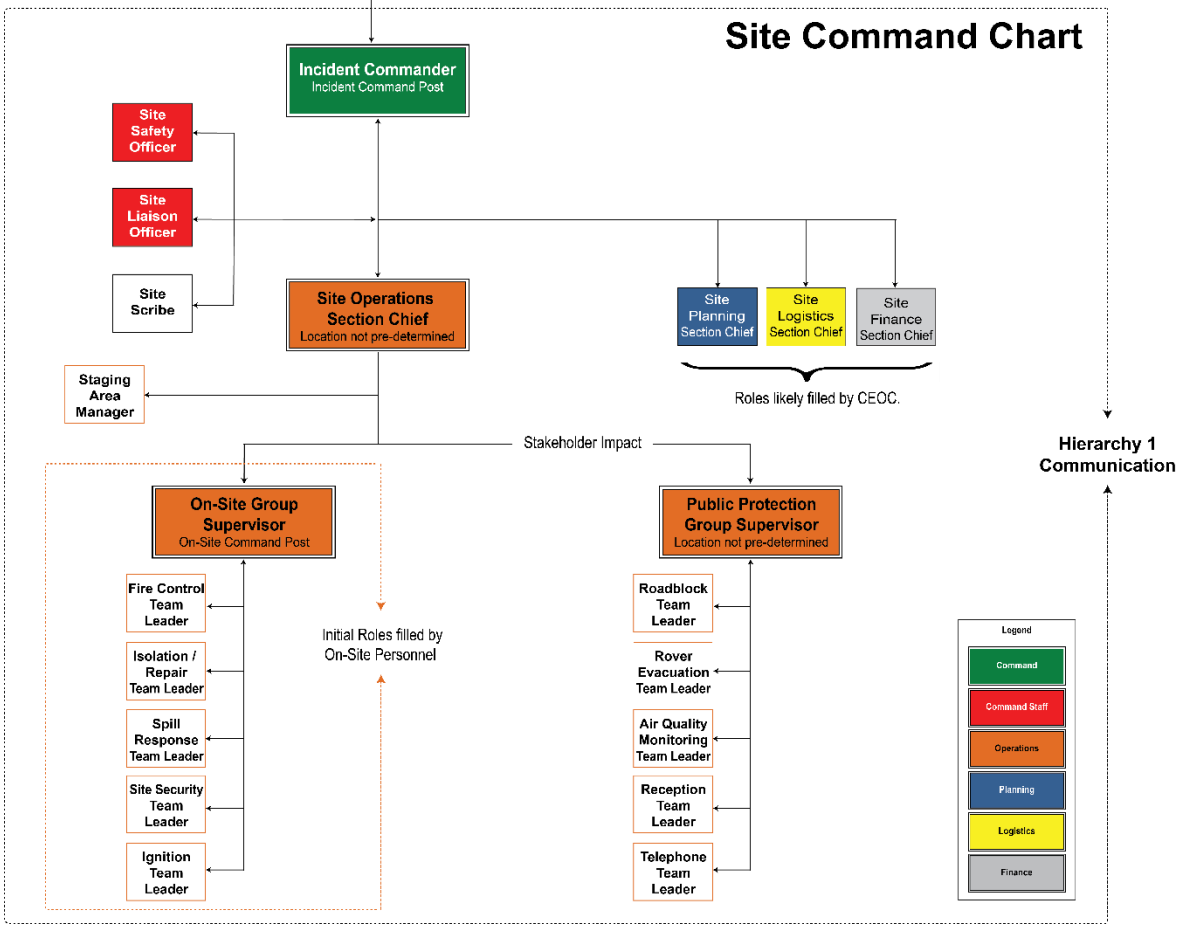
The MEOC is activated by the Local Director of Disaster Services to support the local authority's emergency response. The MEOC can assess the capability of Municipal Government services and other available resources necessary to support the emergency response.

5.8.3 Government Emergency Operations Centre (GEOC)

If the incident affects more than one local authority, provincial/state involvement may necessitate the need for activation of a GEOC.

6.0 CRISIS COMMUNICATION PLAN





6.1 Purpose of the Crisis Communication Plan

A crisis communication plan provides policies and procedures for the coordination of communication within the organization and between the organization and any applicable outside agencies (e.g. the media, regulatory agencies, customers, suppliers, stakeholders, and the public) in the event of an emergency or controversial issue.

6.2 Crisis Communication Policy

The Company will conduct all aspects of response to a crisis with transparency, timeliness, and honesty and will strive to implement effective communication channels between the Company and all stakeholders in the event of a critical incident.

All communication is designed from the following perspectives:

- Comply with all applicable laws and regulations; making use of industry standards and best practices where appropriate.
- Accept accountability of the operation, of its assets, and the conduct of its employees, contractors, and consultants.
- Communicate openly with all stakeholders.

6.3 Crisis Communication Plan Objectives

The Communication Plan Objectives are as follows:

- To factually assess the situation and determine whether a communication response is warranted.
- To assemble personnel who will make recommendations on appropriate responses.
- To implement immediate action to:
  - Identify those parties who should be informed about the situation.
  - Communicate facts about the crisis.
  - Minimize rumours.
  - Restore order and/or confidence.

6.4 Crisis Communication Audiences

Important audiences for the Company during an emergency event includes employees, contractors, residents, businesses, visitors, stakeholder organizations, all levels of government, media, and the general public who are considered to be at risk. Priority in messaging will be given to those considered at greatest risk.

6.5 Crisis Communication Process

To be effective, emergency response requires timely and efficient communication. The appropriate Company personnel and government/regulatory agencies must be informed of the potential for a serious incident (or the occurrence of a significant event requiring emergency support and response). Notification of a potential incident can occur in several ways: through external stakeholders, through detection by field personnel or through Company reception/ 24-hour emergency number.

Regardless of whether all information is available at the time, the CEOC Information Officer should produce a media statement in a timely manner indicating that the situation is under investigation.

6.5.1 24-Hour Emergency Number

The Company must establish a 24-hour emergency number for stakeholders to report an operational emergency such as smoke, fire, odours, or spills. This number appears on all facility, well, and pipeline crossing signs. The Company must ensure that incoming calls to the 24-hour emergency number initiate immediate action.

The 24-hour emergency number may be managed by a Call Centre which provides a 24-hour a day, 7 days a week live answering service to notify Company personnel based on a pre-defined call-down list.

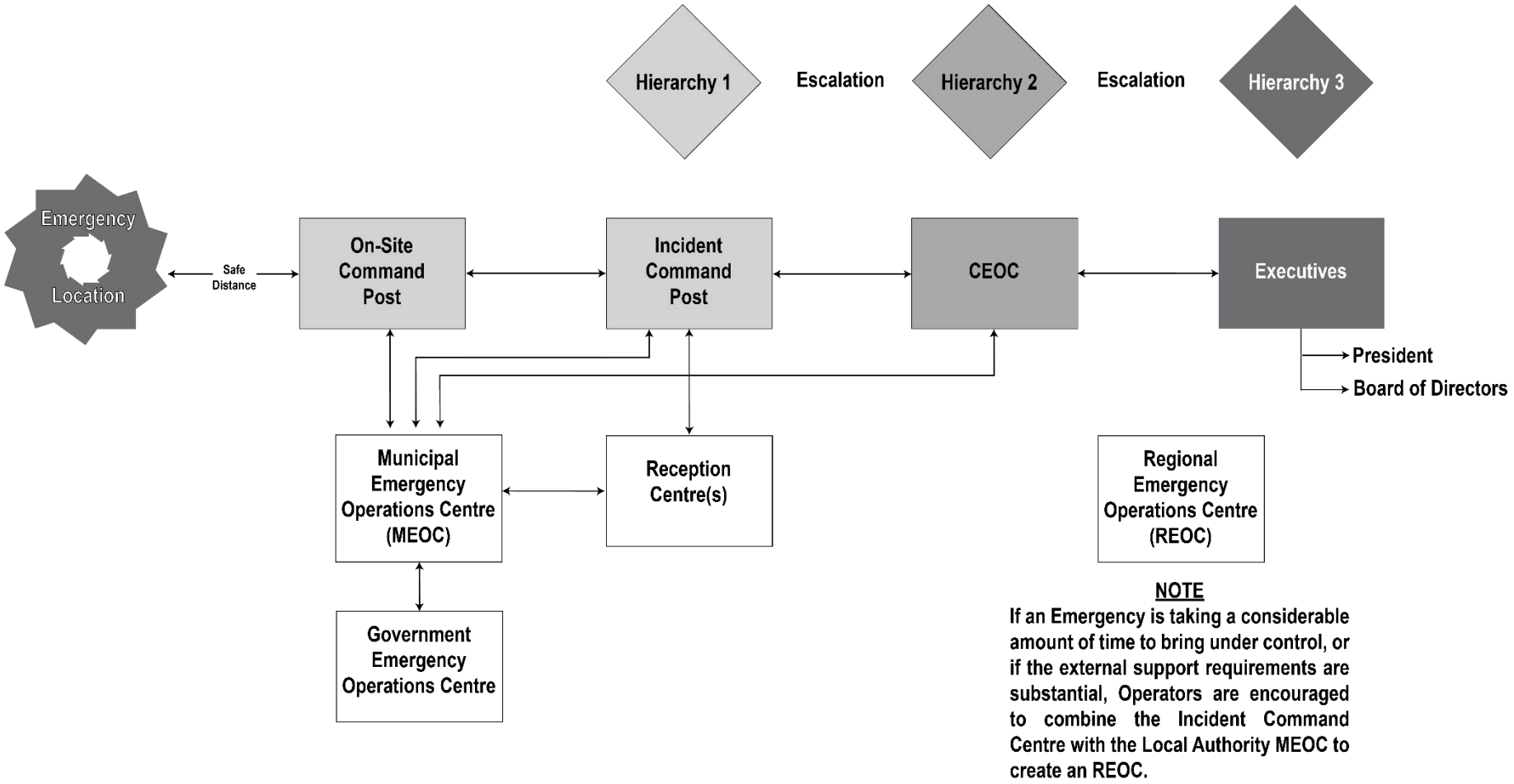
During an emergency, the CEOC Information Officer must contact the Emergency 24-hour number attendant to ensure all media enquiries are directed appropriately.

6.5.2 Public Inquiry

Calls to the Company main switchboard are first directed to the CEOC where support staff will screen and collect information from all inquiries. CEOC support staff will then pass all incoming information requests or issues to the CEOC Information Officer. The CEOC Information Officer, in conjunction with the CEOC Director, will evaluate all incoming requests for action and response and either handle the requests directly or forward the requests onto the Incident Commander or the Corporate Executive Team to handle.

The appropriate notifications must start immediately when declaring an emergency incident. See Communication Flow diagram for notification and reporting flow process.

6.5.3 Command Centre Communication Flow Diagram



6.6 Internal Communication and Command Centres

Effective command, control, and coordination of the incident is dependent on situational awareness gained from fully functioning communication processes and systems. This not only applies between the responders and the On-site Command Post, but also across the entire response effort. The Incident Command Post and the Corporate Emergency Operations Centre function as communication hubs and it is important that the relationship and function of each centre is understood.

Internal communications are those between the incident site, company response team members, and other contract emergency resources.

Equipment includes telephones, two-way radios, computer networks, as well as company and response plan contact lists. Outside resources should be procured to assist with the equipment needs. Any site-specific radio and communication infrastructure existing within an area owned either by the Company or through mutual aid should be integrated into the response communication plan. Specific telephone lines may be identified for incoming and outgoing purposes and specific locations may be set up as communication centres with designated media personnel. Roadblock, monitoring, and rover crews also utilize the communication equipment to report conditions and actions, on an ongoing basis, to the Incident Commander or a designate.

An organized, efficient and effective collection of these resources and procedures are considered an incident communication system. It is this system that captures and relays information and orders so that effective decision-making and action can occur throughout the emergency management structure.

The different types of response centres in the emergency communication system are described below.

6.6.1 Communication at On-site Command Post

The On-site Command Post is the primary emergency response location. It is located a safe distance away from the incident but close enough to facilitate site emergency response operations and communication. If necessary, this could be at a Company Facility or Mutual Aid Operator's Field Office.

6.6.2 Communication at Incident Command Post

The Incident Command Post is typically located at a nearby facility or field office and provides oversight, support, and coordination of regional (vs. site) response activities. Emergency Response activities at the Incident Command Post include the management of impacts to employees, stakeholders and operations.

The Incident Command Post will need to collect relevant tactical information to make a strategic picture of what is happening. Communication of this information from the On-site Command Post/ Incident Command Post is critical as it enables the Incident Commander to communicate a strategic picture to the Corporate Emergency Operation Centres.

This accurate strategic picture will assist the CEOC to maintain strategic situational awareness of the event allowing senior decision makers to identify and respond appropriately to issues occurring at regional, national, and international levels.

6.6.3 Communication at the Corporate Emergency Operations Centre (CEOC)

During an emergency which requires a Hierarchy 2 communication level, the Corporate Emergency Operations Centre will assemble and provide support to the affected location. This may include the aspect of various support sections (e.g. Legal, Information Officer, Finance, etc.) responding to the Incident Command Post.

6.6.4 Communication with the Executives: President and Board of Directors

During an emergency which requires a Hierarchy 3 communication level, the President and Board of Directors should be notified because significant incidents impact business in many ways including, reputation loss, regulatory compliance, the incurring of legal liabilities, financial loss, etc.

Concurrent with notification to the CEOC of the incident, the CEOC Director will confirm that the Corporate Executive Team will be the primary conduit for Board notification.

The Corporate Executive Team will notify the Board of the incident and commit to providing updates as the incident evolves.

6.7 External Communication

6.7.1 Communication with Government/Regulatory

A key component of the plan is to establish and maintain effective two-way communication with government departments and regulatory agencies that have legislated responsibilities for emergency management within their jurisdiction.

6.7.2 Communication with the Public

Public communication can be done in person or by phone. The Company must provide the public with timely emergency information that addresses what actions, if any, are to be taken by the public (for example - shelter in place or evacuate). For extended emergency situations, scheduled information sessions should be conducted to keep the public and affected community updated on the incident (including environmental, health, or safety information).

The following Information must be disseminated to the public at the onset of and during an incident:

To those evacuated or sheltered - at onset	To those evacuated or sheltered - during	To the general public - during
• 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.	• 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.	• 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.

6.8 Media Communication

In times of crisis, the public forms their opinions from various media sources. It is critical the company uses all available platforms to relay information to the public.

6.8.1 Media Crisis Communication Policy

Media releases should be coordinated with the applicable Regulatory Authority prior to release to ensure consistency and accuracy of information. The CEOC Director will delegate the CEOC Information Officer role to interact with the Regulatory Authority and other applicable government agencies.

It is expected that the designated CEOC Information Officer will interact with the media in a timely, open and honest manner.

When dealing with members of the press, Company representatives must:

- Demonstrate professionalism at all times.
- Be available for comment and response.
- Be timely and respect the increasingly fast pace of the news cycle.
- Be completely transparent.
- Provide only truthful and accurate information being mindful of the Company's continuous disclosure obligations and restrictions.
- Provide available point of contact for follow-up inquiries.
- Never comment on issues outside of your area of expertise.

Generally, other Company personnel are not permitted to make any verbal or written public statements regarding Company operational matters or events (e.g. accidents, spills, injuries) unless approved by the CEOC Information Officer.

Company goals are to:

- Limit public statements to only those that are deemed necessary.
- Make public statements solely from the Company's Head office.
- Present a unified and accurate corporate image to the community.
- Provide correct information to the public.
- To be in compliance with applicable laws, rules and regulations.

If approached by the media for an interview:

- Politely check and record credentials of media, news photographers, and public officials.
- Remember you are always "on-the-record" with the media.
- Assure the media that a Company representative will address their questions at a later time.
- All media inquiries at the emergency site must be forwarded to the CEOC Information Officer who is authorized to supply the media with a brief initial statement.
- Use the following statement as a guideline, never lie or say "no-comment".

Hello, my name is _____ (state your name).

"We are currently dealing with the situation at hand to ensure the safety of persons, property and the environment. The matter is being investigated. A statement will be released by the Company once the facts have been determined. If you would like to leave your contact information with me, I will promptly pass it on to someone who will contact you and provide you with information as it becomes available."

Name of Media Individual:_____

Media Organization:_____

Telephone Number:_____

6.8.2 Media Access to Emergency Site

Company safety procedures apply to everyone on-site. Therefore, to ensure the safety the media will not be allowed on-site unless otherwise agreed to by Senior Management. No objection should be made of the media filming or photographing the event provided they do so in a safe place, off the property.

The following information provides some additional guidelines when dealing with the media and public reactions.

6.8.3 Preliminary Holding Statement

A preliminary holding statement is a brief description of a critical situation. The statement is intended to be the first information that contains the key messages from the Company to the public, prior to any media release. It includes a brief description of the situation, including who was involved, what occurred and any other critical information. It is not meant to replace a media release or a press conference. The preliminary holding statement will be regularly updated by the CEOC Information Officer with the most current key points or messages from the company.

The preliminary holding statement should be provided to all telephone operators in the case of a crisis. The statement should be faxed or emailed to the Incident Commander and On-Site Group Supervisor as soon as approved so that the field location can communicate the same messages as Head Office. By having one consistent statement for all callers, the amount of conjecture, personal opinion and speculation is removed from the media contact.

Where a Preliminary Holding Statement is required by the media, the Statement shall contain:

Nature of Emergency:	General description of what happened. Do not give an opinion of the cause. Do not speculate. Use non-technical language.
Where, When:	Location of the site from the nearest major centre and the time the incident began.
Injuries/Fatalities/ Damages:	No opinions shall be given as to the extent of damage or injuries. State the number of people receiving treatment. No names are to be released until after permission has been granted by the next-of-kin.
Status:	Indicate the nature of the situation: what is being done and by whom.
When to Expect More Information:	The CEOC Information Officer, or alternate, will issue further information to the media. Ongoing media attention focused at the emergency site shall be referred to the CEOC Information Officer.

Sample Preliminary Holding Statement

Name of Media Representative: _____ Organization they work for: _____ Date: _____ Time (0-2400 hrs): _____
At approximately _____ (Time, am/pm) today, Deltawest Energy Ltd. experienced a _____ (Fire/Explosion/Gas Release) at its _____ facility located approximately _____ kilometres (east/west/north/south) of _____ (Nearest Town/City).
There are no injuries associated with this incident. or There are injuries associated with this incident. However, the numbers, names, and conditions of those injured have not yet been confirmed for release.
The cause of this incident is not yet known, and no estimate of damage is available. However, Deltawest Energy Ltd. is directing emergency procedures at this time and steps are being taken by Deltawest Energy Ltd. to control this incident.
For additional information about this incident, please call: _____. Deltawest Energy Ltd. at _____.

6.8.4 General Guidelines

- Be proactive in advising media of the situation to ensure consistent and appropriate communication to the public.
- Establish an agreed upon schedule for updating the media on a timely basis.
- Coordinate media communication with the Government Emergency Operation Centres if established.
- Return media calls promptly and courteously.
- Restrict comments to indisputable facts and brief descriptions of what is being done.
- Keep messages consistent.
- Record names and numbers for media contacts (so you can provide subsequent contact and updates).

The questions that should be answered are:

- What, where and when did it happen?
- Who was involved? (not providing any names)
- Why did it happen? Do not respond until you have facts – otherwise we are investigating the cause.
- What is the status of the situation?
- When will more information be expected?
- Which Government agencies were notified/are on the scene?
- Plus, any other relevant facts that will dispel rumour, speculation and fear.

DO	DO NOT

• Ensure individuals present for any media communication are authorized to be there.
• Provide factual information quickly. A reporter will be on the next news broadcast regardless. It is in the Company's best interest that he/she has the facts and not just speculation and comments from others.
• Have one person locally and one at the head office as designated spokespersons (all others will defer questions to them).
• Keep your commitments. If you say you will check something, ensure you do.
• If there is an important development, provide an information update immediately.
• Show yourself as caring and concerned.
• Reinforce that the Company has active safety, prevention, and response programs.
• As soon as the Company can confirm, provide:
  ○ Estimate of when production or flow can be resumed.
  ○ Estimate of clean-up details (e.g. cost, time frame).
  ○ After notification of families, names of those injured.
• Keep your answers brief.
• Maintain strong eye contact with those asking questions. Wandering or averted eyes will make you seem dishonest.
• Immediately provide the CEOC Information Officer with details of what you have said.
• Keep a record of all media representatives' organizations and when you talk with them.
• Politely correct reporters who have carried inaccurate information.
	• Never use the term "no comment." Those two words arouse suspicion. If you don't have the answer, say for example "I don't have that information now, but it is currently being investigated".
	• Do not speculate or guess.
	• Do not place blame on anyone – or accept any blame. Do not prejudge the situation by agreeing with any statement (e.g. you heard the driver was speeding).
	• Do not accuse anyone of negligence.
	• Do not discuss anything "off the record".
	• Do not discuss liability.
	• Do not get flustered by hostile questions: control any anger you may want to return.
	• Do not play favourites with reporters. Be consistent with the information you provide.
	• Do not ask to see or hear a reporter's story to check it before it goes. Do, however, make yourself available to confirm facts.
	• Do not answer hypothetical questions. Comment that the question is hypothetical and that every effort is being made to contain the situation.
	• Do not fall victim to the either/or question. Repeat your facts.
	• Do not repeat the reporter's negative or colourful words (e.g. deadly) even to deny them and do not accept or make comparison to other publicized situations.
	
	Do not allow yourself to be positioned in front of a blowout for an interview or photograph but do try to find an interesting backdrop that you control.

Public reaction to a crisis moves through four stages:

1. Curiosity — This is the need (or want) to know stage.
2. Concern — People want to know how it affects them, their community or region.
3. Anxiety — If the Company does not seem to be informing a concerned public, anxiety sets in. People worry about their health and the environment.
4. Anger/Fear — Emotions focus on the perceived threat to people's self-interest. Anger is directed in many directions, especially towards the Company and Government.

6.8.5 Media Release

A media release is a communication directed at members of the news media for the purpose of announcing something ostensibly newsworthy. Typically, they are faxed or e-mailed to assignment editors and journalists at newspapers, magazines, radio stations, television stations or television networks.

The media release starts with the most important information first (who, what, where, when, why). This is followed by additional information that may be important with supporting details. It ends with contact information. The objective of each media release is to build or maintain the Company's reputation and public support. The release should emphasize company values, convey empathy to show the public that the Company is concerned and is taking responsibility for the situation. Include only facts that can be confirmed and emphasize resolve of the company to get answers or rectify the problem.

The Media Release contains three core messages that form the basis of all public incident communications.

The Company's primary concern is to ensure the safety of all those affected by the incident, to work closely and cooperatively with all agencies involved and to address any environmental impacts.	A core message of empathy
The Company is putting its full effort into bringing the impact of the incident under control. As more information becomes available it will keep all stakeholders informed.	A core message of commitment and candor
Incident prevention comprises an integral part of the Company's job in all its facilities. However, specific details of how the incident occurred will be subject to a full investigation and it is not appropriate for the Company's to either comment or speculate on this at this time.	A core message of competence

6.8.6 Crisis Media Interview

Crisis interviews are intended to communicate that the Company:

- Has control over the situation.
- Is familiar with the crisis situation and has the knowledge to handle and resolve problem.
- Takes accountability for the situation and attempts to instill trust with the public in handling the crisis.

During crisis media interviews, the messages should be simple, without jargon and conducted in a slow and clear manner with action points repeated. An interviewee should listen with empathy and invoke conviction and compassion through tone of voice.

Before conducting an interview always review, revise, and rehearse. Ensure information is confirmed and factual, that key messages are well prepared, that the interviewee is comfortable in the chosen location for the interview, and that all the background information supports key points.

When asked a question by a media interviewer, the interviewee should take time to assess whether he or she has the authority to answer the question or the expertise (adequate subject matter knowledge) to answer question. If so, then frame your response with these 3 key points in mind:

- What is the answer – avoid extended preamble and get to the point succinctly.
- How did you derive this answer – use 2-3 supporting points to substantiate your answer.
- Opportunity – select the best key message for the audience to build trust and confidence for company's actions.

Remember the keys to effective crisis media relations are:

- Accuracy of information.
- Speed of release of information.
- Empathy and openness builds trust with stakeholders.

6.8.7 News Conference Guidelines

When you notify the media of news conferences be sure to define what kind of event you are having. News conferences are held to announce something for the first time.

- Do not call unnecessary news conferences, if it's not worth their time, the media will only be angered. If holding a news conference, try to tell media in advance some details that you will be announcing.
- Gauge the size of your crowd carefully when reserving a room; it is better to have too much than too little space. Make sure microphones, chairs, lighting, and water are in place at least 30 minutes prior to the event.
- Decide format in advance – who will introduce speakers, who decides when questions/answer period ends, and other details.
- Decide in advance whether handouts are needed. If speaker is giving a talk for which there is a text, you may want to wait and hand out material after the talk, so media will stay and listen. However, it's advisable to tell the media you will provide a text of the speech, so they are not irritated by having to take unnecessary notes.
- Check to see what else is happening in your organization or the community before scheduling a press conference.
- Consider whether you need to let other organizations and agencies know you are having a news conference. You may wish to invite others to attend or participate in your event.
- Decide who will maintain control at the news conference, who will decide where cameras are set up, and who sits where.
- Try to plan the length of the news conference but be flexible.
- Consider the time of the news conference. If you want to make the noon, 6 PM or 11 PM news, you need to allow time for crews to travel and edit tape.
- If you are going to set restrictions on an event such as limited photo access, try to put the restrictions in writing and communicate to the media at least 24-hours in advance.

6.8.8 *Reporting*

Regular status updates or status reports provided during the emergency response will be the responsibility of the CEOC Information Officer in consultation with the CEOC Director. Reports should be provided to the agencies at defined intervals or as frequently as updates are required. Reporting intervals may be adjusted as the situation develops. Reporting will continue until the emergency has been declared over and the response effort has stood down.

Specifically, the Communication Plan establishes a guideline for the following core communication expectations:

Communication	Suggested Timeline
Notifications to internal staff and regulators	As per CEOC Director
Initial written public holding statement	Within 1 hour of CEOC team activation for a Level 2 or 3 crisis
Media release	Within 2 hours of CEOC team action for a Level 3 crisis
Media appearance (if required) and spokesperson preparation	Within 3 hours of communication team activation for a Level 3 crisis
News conference (if required)	Prior to 4 PM if possible
Formal updates – media release, continuous disclosure obligations	Every 4-6 hours or as situation warrants

6.9 Social Media

The use of social media, (Facebook, Twitter, Reddit, etc.) to communicate with the public can be a very efficient and effective form of communication during an incident. With the release of one small statement the Company can potentially notify a large segment of the population.

Social media provides a form of two-way communication with the public during an emergency situation. Social media provides the ability to directly see how a situation is affecting people and gives the opportunity to respond to them, keeping them informed, preventing panic, and keeping rumors at bay. By following keywords and hashtags, the Company is able to easily monitor what the community is saying about the incident and respond accordingly.

It should be noted that news organizations are increasingly monitoring social media as a way to find news stories; in some cases, finding out about events before a company.

During an emergency in the CEOC Information Officer should appoint an assistant to monitor social media. The designated person can employ a web program such as HootSuite to monitor several social media feeds at once.

6.10 Mutual Aid Agreements

A wide range of emergencies may occur that have an impact on neighbouring stakeholders. In this event, multiple parties may want to provide assistance during the emergency.

It must be agreed upon prior to any type of third party response that Deltawest will remain the primary emergency responder, and that any assistance provided by third parties must be under the supervision of a Deltawest representative. Furthermore, the party providing mutual aid must comply with all applicable Deltawest policies and applicable government regulations.

If another Area Operator provides assistance, the principal behind this assistance should remain as follows:

- Companies or individuals providing assistance are to provide the support outside the lease boundary. The focus will be to provide the manpower and support

required for roadblock crews, rovers, resident contact, and evacuation co-ordination as required by Deltawest requesting the assistance.

- Third party responders will report to the Incident Commander or other coordinating position in the area.
- Individuals providing assistance retain the right to withdraw the assistance should his/her personal safety be jeopardized.

6.11 Emergency Answering Procedures

When answering telephone calls listen to the person on the other end of the line carefully. You need to determine whether this is an emergency situation or not. Try to get the following information, repeat it back for clarification.

- Record the time of day.
- Make sure you ask and log the following information:
  - The person's name.
  - The person's phone number.
  - The exact location of the person calling.
  - Directions to the caller's home/incident site.
  - The exact location of the potential emergency.
  - The extent of injuries or damage.
  - Wind direction.
  - Nature of emergency.
- Please tell the caller to call _____ (collect) if their situation changes or gets worse.
- Call the Company representative for that area and relay all the information. Fax, or scan and email, a copy of the recorded information to the responder.

Please remember how important this information is as you will have to relay it to a Company representative.

If the person calling is agitated, try to keep them on the line long enough to get this information. Let them know a Company representative will be dispatched to check out the incident and will contact them with further information.

6.11.1 General Evacuation Script

Ensure you are speaking with the correct person. Record answers to your questions on a separate sheet of paper. Speak slowly, calmly and clearly.
Mr./Mrs. _____, this is _____ of Deltawest Energy Ltd. calling. I am phoning you because we are experiencing some _____ problems at the nearby _____ property. This situation does not pose any immediate threat, but we want you to be aware of it in case the situation gets worse. If it does, we will call back and ask you to go to the _____ reception centre. Would you need any help in getting to the _____? I will be calling back, in any event, to give you an update. If you have any questions, please phone me, collect, at _____. If at all possible, please avoid the use of your telephone, so we can call you again quickly with further information. Thank you.

Immediately report, to the Telephone Team Leader, the names of all residents not contacted.

6.11.2 Shelter in Place Script

Telephone message for Residences/Businesses inside the EPZ where it is initially deemed unsafe to evacuate.

Ensure you are speaking with the correct person. Record answers to your questions on a separate sheet of paper. Speak slowly, calmly and clearly.
Mr./Ms. _____, this is _____ from Deltawest Energy Ltd. calling. We are experiencing a gas leak, which has created a vapour cloud (plume) that may be toxic or cause a serious fire and explosion near your home. Deltawest Energy Ltd. is currently responding to the emergency. For your safety it is essential that you and your family/associates, remain sheltered indoors, preferably at the upper levels in your house until we can evacuate you safely or until the situation is under control and this serious hazard no longer exists. Please take the following actions immediately: 1. Gather everyone in the house and close all windows and doors. 2. Extinguish all potential sources of ignition, including open flames. 3. Do not smoke. 4. Turn off the electrical power at your switch box. 5. If possible, plug any fresh air intakes or vents to your home, or furnace. 6. Move to the upper levels of your house. 7. Use a portable radio and stay tuned to a local station for public information. **Do not leave your house or attempt to start any vehicle until Deltawest Energy Ltd. advises you that the area is safe.** Do you understand what I have just told you? A Company representative or the local police will come to your house as soon as the fire and explosion hazard no longer exists. If at all possible, please avoid the use of your telephone, so we can call you again quickly with further information. If you have urgent questions, please call Deltawest Energy Ltd. at _____* **The Telephone Team Leader will designate the phone number at the time of the incident.** Thank You

6.11.3 Urgent Evacuation Script

Ensure you are speaking with the correct person.
Record answers to your questions on a separate sheet of paper.
Speak slowly, calmly and clearly.

Mr./Ms. _____, this is _____ of Deltawest Energy Ltd. calling. I want to tell you about a/the serious _____ we are experiencing at our _____ location.

The wind is carrying the escaping gas to the north/south/east/west.

YOU ARE IN NO IMMEDIATE DANGER.

However, as a safety precaution, we want you to leave your premises and go right away to the reception centre located at _____.

How many people are currently at your home?

Are there any medical considerations or other special concerns that could affect your safe evacuation?

Do you have transportation? If not, please stay indoors and close all windows and doors. We will send one of our drivers and vehicles to get you right away.

If you have transportation, please take the north/south/east/west route, which will take you safely out of the endangered area. You can then travel by _____ to get to the reception centre.

Read the following paragraph only during school hours:

We have contacted the schools and have arranged to hold students at the school.

You may pick them up there or would you like to have us take them to the reception centre?

What are your children's names and which school are they at?

It is very important for us to know where you are and where you can be contacted both during and after the evacuation. Please report to the reception centre to confirm your accommodations and other support you may need.

Any concerns you have regarding livestock, pets, or property will be addressed by our representatives at the reception centre.

Please try not to use your telephone as it may tie up the lines and prevent us from calling other residents.

Immediately report, to the Telephone Team Leader, the names of all residents not contacted.

6.11.4 Notification Script

Ensure you are speaking with the correct person. Speak slowly, calmly and clearly.
Mr./Ms. _____, this is _____ of Deltawest Energy Ltd. calling. I am calling with an important message. Deltawest Energy Ltd. has an emergency near your location, which does not affect your safety; REPEAT, does not affect your safety. You are in no danger at this time; Deltawest Energy Ltd. is notifying you for informational purposes only. **Repeat: <u>You are in no danger at this time; we are notifying you for informational purposes only.</u>** If you would like to voluntarily evacuate, please go to the Reception Centre located at the _____. For further information, please contact Deltawest Energy Ltd.'s 24-hour emergency number at 1-833-738-7747.

7.0 RESPONSE ACTION PLANS

7.1 Purpose

The following examples of emergency response actions have been developed to provide a guide for response personnel. They should be reviewed and (if applicable) implemented as part of a specific emergency response.

The Site Command and Corporate Emergency Operations Command staff may follow these guidelines to protect worker and public safety.

7.2 Incident Site Worker Protection

To ensure that workers take the appropriate actions in the event of an emergency they should be properly trained and familiar with the Company emergency response strategy. This includes the following:

Actions:

- Ensure familiarity with egress routes and the muster point.
- Know where the safety equipment is located (fire extinguishers, first aid kits, gas monitoring equipment, and personal protective equipment).
- Understand how to initiate a site evacuation by sounding an alarm.
- If required, assist with a head count at the muster point and identify any missing personnel.
- Provide medical aid to an injured worker.
- Ensure that there is an accounting system in place for on-site personnel.

7.3 Personal Protective Equipment (PPE)

All responders should be properly equipped with PPE in their role as first responders at a Company site. In prolonged emergency response situations, a critical role of the Site Logistics Section Chief is to ensure that adequate quantities of all types of equipment and clothing are available for response personnel including essential spare parts (e.g. additional air bottles, bunker gear etc.). Local suppliers of safety equipment should be pre-identified.

Respiratory Protection

Supplied-Air Breathing Apparatus (SABA) supplies air from air carts rather than breathing ambient air. The most common type of supplied-air apparatus is the Self-Contained Breathing Apparatus (SCBA) for example, Scott Air Packs, which supplies air from tanks carried on the responder's back with a full face-piece. SABA and SCBA represent the highest level of respiratory protection available.

The following general guidelines can assist in the selection of proper respiratory protection for responders:

- SCBA should be used by initial responders (i.e. the first responders to enter the planning zone or immediate area of the spill), especially if the levels of concentration are unknown but suspected to be high, or if there is the possibility of oxygen deficiency (e.g., confined spaces). One of the key roles of the initial responders will be to take accurate vapour concentration measurements to determine the actual level of risk to follow-up responders.

- Air-purifying (e.g. organic cartridge) respirators can be used when the levels of vapour concentration are confirmed by gas testing to be safely below the level for the chemical involved, and the situation has stabilized (e.g., vapours are starting to be dispersed by wind, or have been suppressed using foam).

Note: All responders should be trained in the proper use of respiratory protection equipment. Final selection of respirators should always be based on accurate, ongoing measurements of vapour concentration levels at and around the spill site (especially downwind).

Protective Clothing

Recommended protective clothing requirements are outlined in Safety Data Sheets (SDS) which are published for all products.

Chemicals can pass through protective clothing through three processes:

- **Penetration** occurs when the liquid or vapour passes through seams or small openings in the clothing.
- **Degradation** is the deterioration or breakdown of the clothing material caused by the action of the chemical.
- **Permeation** is the process by which molecules of liquid or gas move through clothing material. Permeation is regarded as the most useful measure of the level of protection afforded by different clothing materials.

7.4 Protection Levels

There are four general levels of responder protection, which are recognized in both the U.S. and Canada. These are outlined in the table below.

- For solvents and Styrene, initial responders will probably require Level B protection until vapour concentration levels have been confirmed. Follow-up responders should have Level C protection.
- For certain specialty chemicals like Phenol, Level A protection may be required depending on the nature and location of the incident.

7.4.1 Levels of Responder Protection for Spill Response

Protection Level	Situation	Protective Equipment
A	Entry into unknown or high levels of skin-permeating chemicals.	SCBA and totally-encapsulated or gas-tight suit.
B	High concentrations – no skin-permeating chemicals present.	SCBA and chemical resistant clothing and gloves, boots.
C	Known levels of non-permeating chemicals.	Air-purifying respirator, liquid-repellent clothing, gloves, boots, safety goggles/glasses, and hard hat.
D	Chemicals well below danger levels.	Coveralls, gloves, boots, safety goggles or glasses, hard hat.

7.5 Preparing a Health and Safety Plan

The Health and Safety Plan for a hazardous material spill highlights the critical information about the product, physical location of the spill and other incident-specific conditions required by responders to respond safely to the incident, as well as appropriate safety rules and precautions that will be enforced at the scene.

In most circumstances, the Health and Safety Plan for a specific incident should be prepared by a Site Safety Officer at the scene who is in a position to conduct a thorough, accurate hazard assessment.

The Health and Safety Plan should be concise, and written in clear, non-technical language to ensure understanding by responders.

The Health and Safety Plan outlines the key hazards associated with the incident, and the safety procedures and precautions that are to be enforced during the response. As the response progresses, the Health and Safety Plan should be updated on a regular basis to reflect changing conditions at or near the scene of the incident.

The Incident Commander is responsible for reviewing the Health and Safety Plan. The Site Operations Section Chief and On-Site Group Supervisor are responsible for implementing and enforcing the safety requirements of the plan throughout the response.

7.6 Health and Safety Plan

Product Specific Information

Product Hazards:

- Poisonous or toxic.
- Flammability.
- Corrosive.

Risk of Fire or Explosion:

- Flash Point.
- Lower Explosive Limit (LEL).
- Upper Explosive Limit (UEL).

Health Hazards and Risks:

- By ingestion.
- By direct contact, skin.
- By inhalation.

Exposure Limits (ACGIH – if other specify):

- TLV-TWA.
- TLV-STEL.
- TLV-C.

Critical Behaviours and Properties (as required by the situation):

- Vapours heavier or lighter than air?
- Sinks, floats, dissolves or evaporates in water?

Other:

Responder Safety and Protection

Responder Qualifications/Training Requirements:

Recommended Level of Personal Protective Equipment (PPE):

- Level A (specify equipment).
- Level B (specify equipment).
- Level C (specify equipment).

Site-Specific Information

Drawing, map or sketch of the incident site showing:

- Key topographical features (e.g., buildings, natural features).
- Initial Isolation Zone.
- Protective Action Zone.
- Potential Downwind Evacuation Zone.
- Wind Direction.
- Real and potential vapour monitoring points.
- Security Access Points (if applicable).
- First Aid stations (if applicable).
- Command Centre and Staging Areas (if applicable).

Note key features of the location that might affect the safety of responders.

Describe proximity to:

- Populated areas (e.g. residential or commercial).
- Bodies of water (e.g. lakes, rivers, streams, ocean).
- Environmentally-sensitive areas.

7.7 Public Safety and Protection

In most foreseeable situations, the responsibility for public safety and protection following an emergency incident will be the responsibility of the local authorities including one or more of the following:

- Police.
- Fire Department.
- Municipal Emergency Planners and Responders.
- Public Health officials.

Actions taken may range from nothing if no public risk is perceived, to notification or public warnings, public health alerts, and full or partial evacuation of certain areas around the incident site.

Company personnel will support this process by providing whatever information is required about Company emissions and their related properties and hazards to enable the authorities to reach the most appropriate decision given the circumstances at the time. Such information may include:

- Physical and chemical properties.
- Toxicological properties and risks.
- Critical physical parameters such as flash point, explosive limits, exposure limits, etc.
- Physical properties and behaviour following a spill on land, water, or in vapour form.

7.8 Air Quality Monitoring

At a Level 1 Emergency, Mobile Air Quality Monitoring equipment and qualified operating personnel will be dispatched to the Emergency Planning Zone and placed downwind to gather the ambient air quality data required to support public safety actions.

Air Quality Monitoring equipment will be used to:

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

Downwind Mobile Air Quality Monitoring Requirements		
Level 1 Emergency	**Level 2 Emergency**	**Level 3 Emergency**
Deploy unit(s) to area of release and commence mobile air quality monitoring.	Continue mobile air quality monitoring. Request additional air quality monitoring unit(s) if required.	Continue mobile air quality monitoring. Request additional air quality monitoring unit(s) if required.

7.9 Determining the Response Zone Using Monitoring Equipment

Response personnel required to determine the extent of the response zones with handheld monitoring equipment must take the following precautions to protect their safety:

- Use the buddy system.
- Equip each responder with reliable H_2S detection and respiratory protective equipment.
- Establish and maintain communication with the Incident Command Post.
- If walking a pipeline right-of-way, walk a safe distance apart staying within visual and audible contact. As the lead responder monitors for H_2S, the backup responder will maintain communication and be prepared to rescue.

Detection

- Portable 3 or 4-head gas monitor.
- Mobile Air Monitor Units.

Record all information

- Concentrations in ppm.
- Location and time of readings.
- Wind speed and direction.

Communication and Documentation

- Report all information to Public Protection Group Supervisor or Site Operations Section Chief.
- Notify Roadblock Personnel and Response Teams of changes.

7.9.1 Sour Gas Release from a Manned Operation

For critical sour wells, if the EPZ includes a portion of an urban density development or urban centre, there must be a minimum of two mobile air quality 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 completions, 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 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.

For critical sour wells whose EPZ does not include a portion of an urban density development or urban centre and for all noncritical sour wells, the licensee must:

- Dispatch 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 should be located and what the estimated travel time is to the well site.

Air quality monitoring occurs downwind, with priority being directed to the nearest un-evacuated residence or area where people may be present.

The licensee is expected to provide monitored H_2S and SO_2 information on a regular basis throughout a sour gas emergency to the environmental agency, the applicable Regulatory Authority, local heath authority, and other local authorities.

7.9.2 Sour Gas Release from an Unmanned Operation

If the licensee is notified of a release by an alarm or by a reported odour, the source of the release must be investigated, and air quality monitoring units sent out upon confirmation of the release location.

7.10 Sour Gas Release

7.10.1 Sour Gas Release Site Safety

- Communicate with all workers the potential presence of H_2S, SO_2 and LEL levels.
- Immediately initiate atmospheric monitoring of H_2S, SO_2 and LEL levels.
- Designate a safe muster location based on the extent of the Sour Gas release.
- Initiate immediate evacuation of all non-essential personnel.
- Identify areas of the site with confirmed or potential H_2S, SO_2 and LEL levels.
- Complete a site roll call to account for the safe location of all personnel that were on site prior to the event occurrence.
- Identify any unaccounted-for personnel.
- Attempt to remove or control all ignition sources, where ignition would threaten safety of workers.
- Perform search and rescue for site personnel unaccounted for or overcome by H_2S and SO_2.
- Continue to provide atmospheric monitoring of H_2S, SO_2 and LEL levels to ensure the safety of the Muster Location and emergency responder staging position.

7.10.2 Safety of Response Operations

- Ensure personnel that assist with release control operate only within their specific:
  - Levels of training.
  - Capability.
  - Experience.
- Personnel remaining in proximity to H_2S and SO_2 exposures shall be provided with and shall wear the appropriate PPE and SCBA appropriate to the exposure hazard.
- Ensure that any personnel utilizing SCBA have been properly trained and fitted.
- Monitor and provide control of the operating time of site personnel working in SCBA.
- Establish a decontamination station prior to assigning personnel to enter areas in proximity to H_2S and SO_2, for the safe and timely decontamination of any exposed personnel.

7.10.3 Action Plan Sour Gas Release

- Attempt to stop the release of Sour Gas, when safe to do so.
- Notify local emergency response agencies.
- Notify potentially exposed residential or public areas.
- Determine and implement public protection actions.
- Maintain air monitoring for H_2S and SO_2.
- Activate the Site Command and CEOC Command for support.
- Assist emergency response agencies in organizing area evacuations and access restrictions.

Request Emergency Response Agencies

- Call 911.
  - Request Fire Department, Emergency Medical Responders, and Police.
  - In the event of potential exposure to a sour gas release off-site
- Request that the local Emergency Management Representative and local police agency respond.
- Maintain air monitoring for levels of H_2S and SO_2.
- Designate a safe staging position for responding resources.

Brief Emergency Responders

- Provide emergency responders with an SDS for H_2S and SO_2.
- Brief emergency responders on:
  - Event timeline.
  - Nature of the release; dynamic - static.
  - Hazards of the release; flammable, corrosive, toxic, asphyxia.
  - Status of personnel accountability; search and rescue profile.
  - Other uncontrolled facility hazards.
  - Status of the release control operation.
  - Status of other operating personnel within the facility.
- Identify the number of injured/exposed people due to any inhalation hazard.
- Identify the uncontrolled sources of ignition.
- Identify any confined spaces.
- Identify any low-lying areas where H_2S and SO_2 may pool.

7.11 Sweet Gas (Hydrocarbon) Release

The effectiveness of the following guidelines depends on the judgment exercised by all personnel. To extinguish hydrocarbon fires and prevent further explosions, it is necessary to do at least one of the following:

1. **Remove fuel** by isolating the section of equipment on fire and pumping out or depressurizing the flammable material.
2. **Remove oxygen** by the use of steam, chemicals, foam, dry powder, or CO_2 extinguishers. If the fire is small, the flames can be smothered with a fire blanket, new tarpaulin, or sand.
3. **Cool fuel** so that it no longer produces vapors using water where possible (as a fog) to extinguish fires or as a coolant for equipment, tanks, support columns, etc. or use to provide a protective shield while the fire is being extinguished by foam, chemicals, or power extinguishers.

Response Actions:

- Understand the type of product and its immediate hazards.
- Establish an evacuation route and muster point for workers at the site.
- Shut in all known fuel sources. Do not extinguish a leaking gas flame unless the leak can be stopped.
- Shut off high voltage power supplies to equipment in fire-affected area.
- Shut off fuel to heaters near to or downwind of the fire.
- Observe surrounding area for other possible re-ignition sources and if safe to do so take appropriate steps to eliminate these hazards.
- 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.
- Approach the site from an upwind or crosswind direction.
- Ensure an appropriate on-site and off-site air monitoring strategy is employed.
- Monitor the area for LEL.
- Monitor local weather conditions. Weather conditions such as temperature inversions, fog and wind may affect plume dispersions.
- Do not use water jet. For a small fire, use dry chemical, CO_2, water spray, or foam. For a large fire, use water spray, fog, or foam. Beware of electrical hazards.
- Move containing vessels from the fire area if this can be done without risk.
- Cool containing vessels with flooding quantities of water until long after fire is out.
- Keep unauthorized personnel away.

7.11.1 Flammability Limits

Monitored Flammability Limits (% of LFL)	Comments and Typical Actions
10% of the LFL (LFL/10)	This concentration represents a level at which industry response personnel should leave the area or don fire protective clothing if continuing to work in this environment or if approaching the source of a release.
50% of the LFL (LFL/2)	A concentration level at which ignition and flame propagation through a dispersing plume may be possible due to the non-homogenous nature of dispersion in the atmosphere (i.e., concentration fluctuations). A meteorologically weighted distance to this criterion (as calculated using quantitative hazard analysis methods) is often used as the basis for establishing emergency planning zones for flammable substances. If measured by air monitoring, this concentration represents a level at which public protection measures such as removal of ignition sources, shelter-in-place or evacuation may be warranted.
100% of the LFL (LFL)	A concentration level at which (in the presence of an ignition source) ignition and flame propagation through the dispersing plume is highly probable. Extreme caution should be exercised, and emergency response personnel should withdraw from the area.

Adapted from Best Management Practices, Emergency Air Monitoring, Canadian Association of Petroleum Producers, March 2014

7.12 Hydrocarbon Exposure

Exposure to flame (delayed ignition of a hydrocarbon gas release). Direct exposure to flame occurs when ignition of a flammable gas cloud in the environment is delayed. If ignited, a flame front will move from the point of ignition, through the gas, to the source.

For planning purposes, the flammable region of the plume is assessed by estimating the concentration of fuel in air as the gas is transported and dispersed from the release site. The lower flammable limit (LFL) is the lowest concentration at which the fuel will support combustion in the presence of an ignition source. While hydrocarbon gases cannot burn below the LFL, the distance to one half of the LFL (LFL/2) is used as a conservative basis for establishing the boundaries of the flammable region. For emergency response purposes, responders will use monitors to determine where a flammable gas exists.

Direct exposure to flame can result in third degree burns or death. If you detect a hydrocarbon release, extinguish and reduce all ignition sources and, if possible, move away from the area on foot in a cross-wind direction away from the source. If you cannot leave the area on foot or are uncertain about the source of a release or the wind direction, please shelter indoors.

7.12.1 Exposure to Heat Radiation (ignited hydrocarbon release)

Exposure to thermal radiation can result from a:

- Pool fire or refers to the burning of liquid hydrocarbon at the surface of a liquid hydrocarbon pool (e.g. burning of an oil pool).
- Jet fire: refers to the burning of liquid or gas at the point of the release into the atmosphere (e.g. the flame on the tip of a butane torch).

A number of criteria are used to evaluate the effects to people of heat exposure. These include:

- Thermal Radiation: a measure of the instantaneous level of heat radiation received at a location near a release.
- Thermal Load: a measure of the cumulative heat received at a location near a release and is a better measure of the overall impact to people.

These effects of heat exposure are summarized for these criteria in the tables below.

Thermal Radiation

Radiation Intensity (kW/m^2)	Damage to Equipment	Exposure to People
4	Sufficient to cause pain to personnel if unable to reach cover within 20 seconds; blistering of the skin (second degree burns); 0% lethality.	
12.5	Minimum energy required for piloted ignition of wood; melting of plastic tubing.	1% lethality in 1 minute. First-degree burns in 10 seconds.
25	Minimum energy required to ignite wood at indefinitely long exposures (non-piloted).	1% lethality in 30 seconds. Significant injury in 10 seconds.
37.5	Sufficient to cause damage to process equipment.	100% lethality in 1 minute. 1 % lethality in 10 seconds.

World Bank (1985) in Guidelines for Chemical Process Quantitative Risk Analysis, Center for Chemical Process Safety of the American Institute of Chemical Engineers, 1989.

Thermal Load

Harm Caused	Thermal Dose Units (TDU) $(kW/m^2)^{4/3}$ s
Pain	86 to 103
First Degree Burns	80 to 130
Second Degree Burns	240 to 350
Third Degree Burns	870 to 2600

Health & Safety Laboratory, 2004

For the purposes of establishing HPZs, the maximum distance to a thermal load of 342 $(kW/m^2)^{4/3}$ s is applied.

7.13 Entry Procedures into the EPZ

- Only authorized personnel may enter the response zones.
- Use the "Buddy System" when required.
- Keep in contact with the Incident Commander using two-way radio or mobile telephone.
- Schedule reports every 10 to 15 minutes while in the response zones.
- Wear personal protective equipment (PPE).
- Continuously monitor the concentration of combustible gas (LEL) in the area.

7.14 Roadblocks

7.14.1 Isolating the EPZ with Roadblocks

The response zones are to be isolated by roadblocks to prevent entry of non-essential personnel. Roadblocks are to be established and manned by the Company or contract personnel with possible assistance from the police and/or local disaster services.

An ongoing situation may require the activation of additional contract safety personnel to provide relief at the roadblocks.

When contacting additional roadblock personnel, the following information must be provided:

- The nature, location and extent of the response zones.
- Suggestions on where to establish roadblocks.
- The current weather conditions (such as wind speed and direction).
- The estimated number of people living in the response zones.
- The name, telephone number and location of the Incident Commander.

Each roadblock location should have access to the following equipment:

- Road barricades.
- Radio or mobile communication equipment.
- Personal protective equipment.
- Flares and/or strobe lights.
- Area map.
- Roadblock checklist.
- Air Monitoring detection equipment.

This equipment is available from local contract safety companies.

7.14.2 Suggested Roadblock Equipment

- H_2S, LEL, CO, O_2 detection equipment (handheld instruments).
- High-visibility reflective vests.
- Communication equipment.
- Poisonous gas signs.
- Road barriers.
- ERP maps.
- Reflective triangles or cones.
- Flashlights (with batteries).
- Appropriate forms, such as air monitoring record and roadblock log of people leaving and entering the PAZ.
- Handheld stop signs.
- Personal protective equipment.
- Flares and/or flashing lights.
- First aid equipment.
- SCBA.
- Pens.
- Portable rotating emergency lights.
- Waterproof bag.
- Caution tape.
- Rain suit.

The permit holder must ensure that company equipment is operational meets industry standards.

7.14.3 Setting up a Roadblock

- Park vehicle on an angle across the lane, activating four-way flashers and roof-mounted rotating beacon.
- Put on a reflective vest.
- Take a reading with your handheld monitor for H_2S and lower explosive limit (LEL), ensuring your roadblock is not too close to the edge of the EPZ. Record readings on the Air Quality Monitoring Log.
- Notify the Public Protection Group Supervisor once your roadblock is set up.
- Continue to monitor and record H_2S and LEL levels at scheduled intervals. Report to the Public Protection Group Supervisor at scheduled intervals.
- Maintain roadblock until the emergency is over and the stand down declaration is given or until relieved by other roadblock personnel.

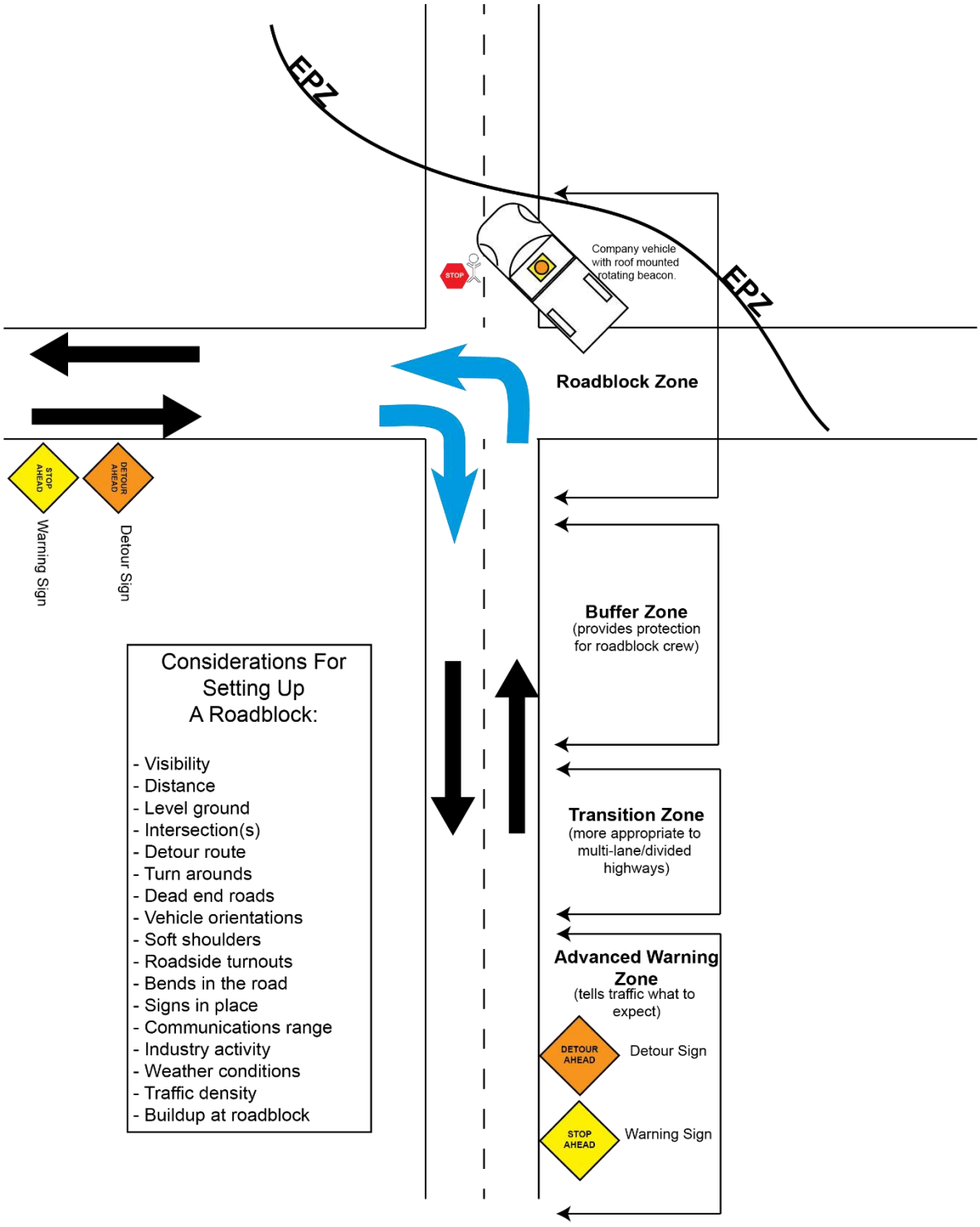
To give motorists time to prepare to come to a stop, it is recommended that the roadblock personnel setup all available reflective triangles 100 metres apart, at a minimum distance of 200 metres before the roadblock.

Roadblock Statement

Hello, my name is _____ (state your name). I am representing Deltawest Energy Ltd.. Deltawest is presently experiencing control problems ahead. This situation is serious enough to warrant restricted access beyond this point and therefore I am requesting you take an alternate route.

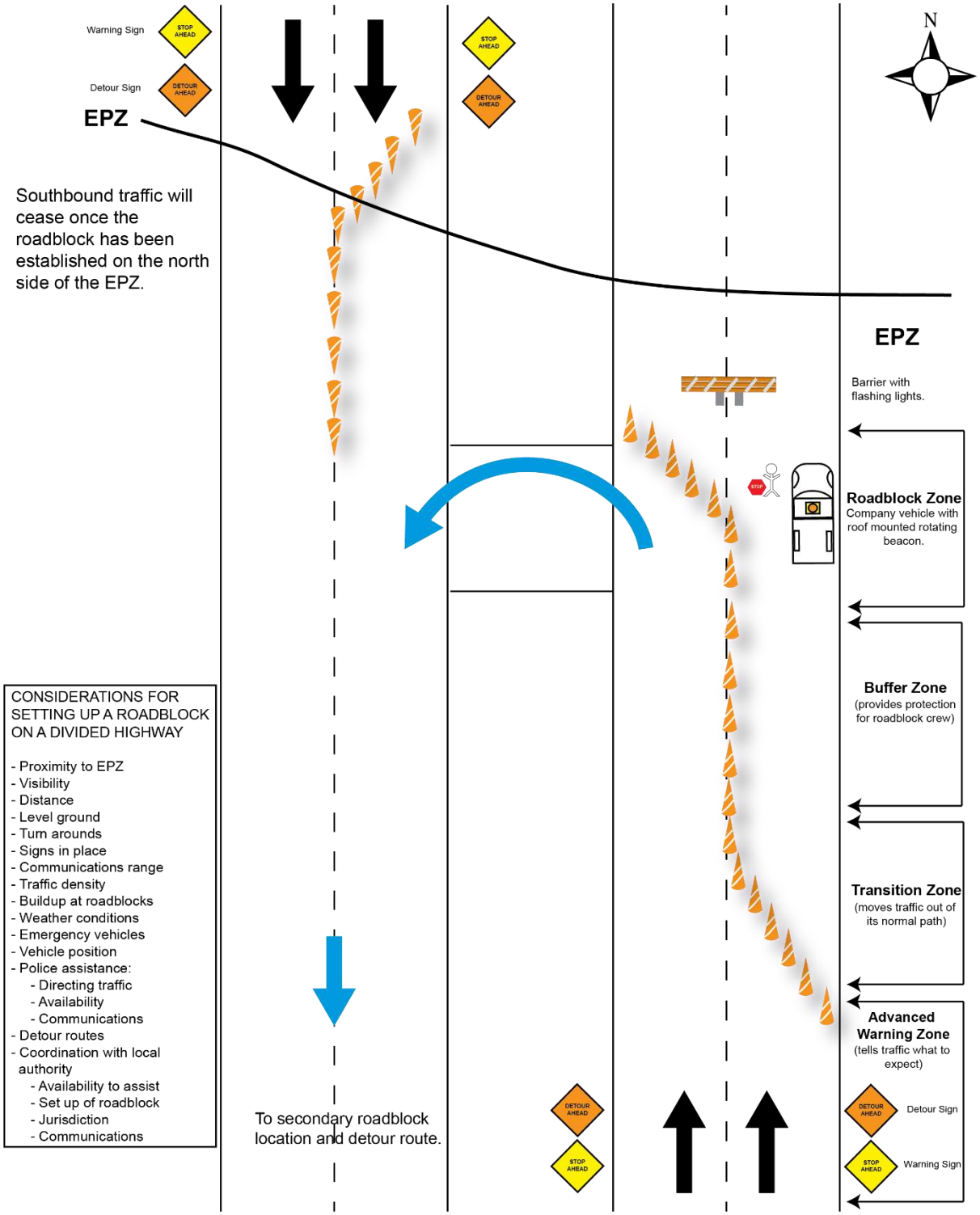
Note: Confirm evacuation route and evacuation orders with Public Protection Group Supervisor prior to directing traffic on an alternate route

Primary Roadblock – Single Lane Roads



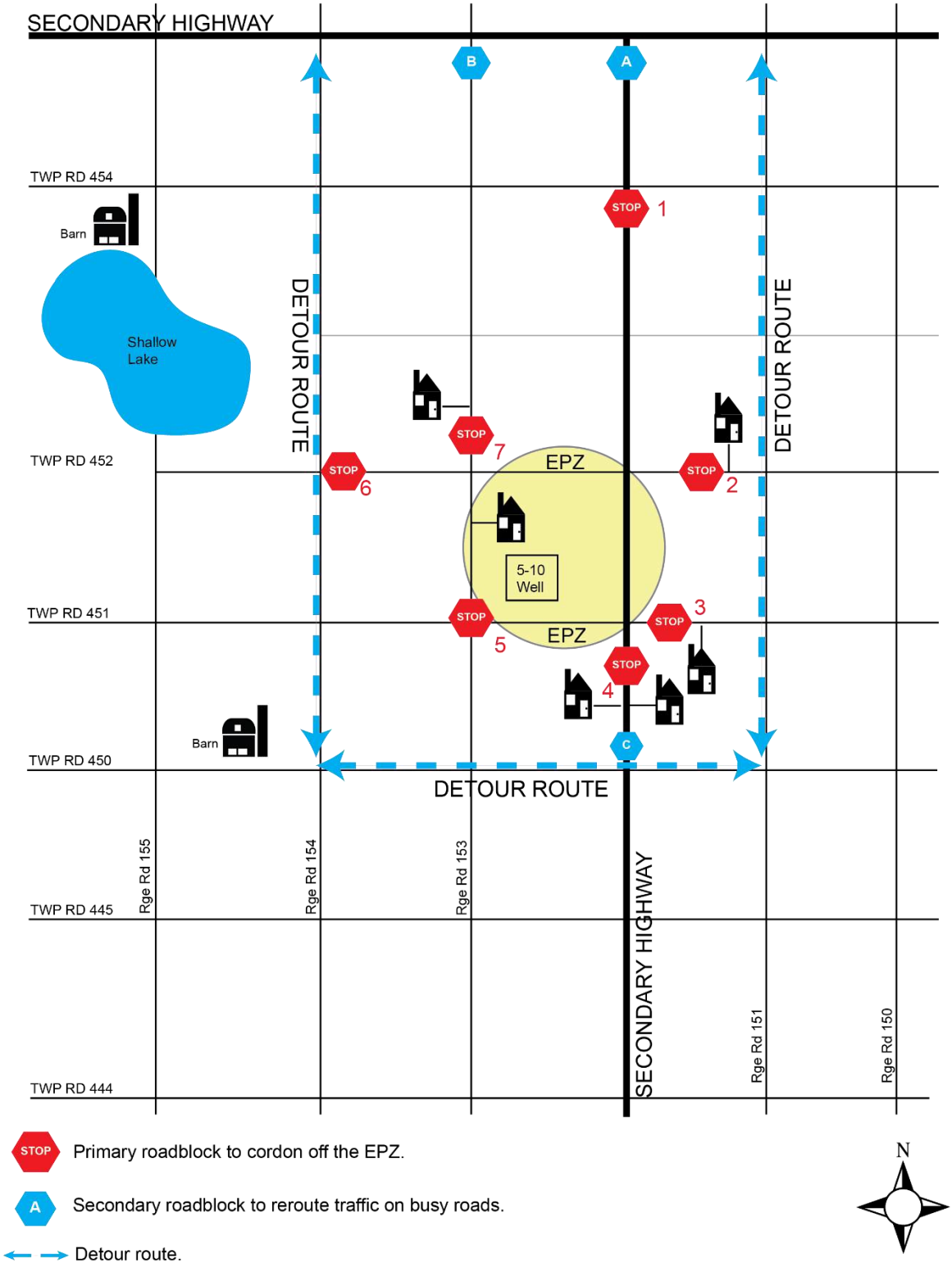
Secondary roadblock locations might be established to facilitate re-routing traffic around the hazard area. All diverted traffic would be re-routed to the secondary roadblock locations.

Primary Roadblock – Multi-Lane/Divided Highway



In this scenario, the roadblock will be set up prior to the arrival and assistance from either the Provincial Authority responsible for primary highways or the Police. Secondary roadblock locations must be established to facilitate re-routing around the EPZ area. All diverted traffic would be re-routed to the secondary roadblock locations.

Secondary Roadblock – Placement Schematic



7.15 Shelter in Place

Shelter in Place is an acceptable public safety action when there is no advanced warning to the incident, or the release is of a short duration (several minutes to half an hour).

Studies have predicted that the indoor concentration of toxic and flammable gases is significantly lower than the expected outdoor concentration levels.

Sheltering will be considered the primary protective measure in limited circumstances when:

- There is not enough time or warning to safely evacuate the public immediately.
- Stakeholders are waiting for evacuation assistance.
- There is a sour gas release of limited duration.
- The location of the release has not been identified.
- The public would be at a higher risk if they were evacuated.

7.15.1 General Shelter in Place Instructions

The following steps should be communicated to the public if individuals are asked to shelter in place:

- Immediately gather everyone indoors and stay inside.
- Close and lock all windows and outside doors.
  - If convenient, tape the gaps around the exterior door frames.
- 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.
    - Gas stoves.
  - Sucks in outside air, such as:
    - Heating ventilation and air conditioning (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.
- Leave open all inside doors.
- Avoid using the telephone, except for emergencies, so that you can be contacted by emergency response personnel.
  - Call the Company emergency number that 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.
- Even if you see people outside, do not leave until instructed by response personnel.
- If you are unable to follow these instructions, please notify the Company's emergency response personnel.

7.15.2 Post Shelter in Place Instructions

Once the emergency situation has been corrected you will receive a communication from the emergency response personnel. Advise the residents/area users/stakeholders to:

- Ventilate the building.
- Open all windows and doors.
- Turn on indoor fans.
- Turn on the furnace.
- Avoid remaining inside during this time (if possible) as the outdoor air may be fresher.
- Once the building is ventilated, return all heating, ventilating and other equipment to normal.

7.16 Liquids Release – Site/Facility

7.16.1 Liquid Release Site Safety

- Activate the site evacuation alarm and establish safety zones to protect workers, residents and public. Reference EPZ map or utilize Emergency Response Guidebook for zoning guidance.
- Where the spill/release is flammable, eliminate any sources of ignition and monitor for Lower Explosive Limits.
- Reference SDS for released material's properties (located in the site office, drilling floor, etc.):
  - Exposures considerations.
  - Handling precautions.
  - Personal Protective Equipment.
  - Clean-up measures.
- Assess the specific hazards associated with exposure and response to the spill.
- Ensure that all site personnel are accounted for.
- Ensure all workers in proximity to the spill, are monitored to ensure their personal safety.
- Countermeasures must only be initiated where hazardous material exposure can be controlled within training levels of workers.

7.16.2 Action Plan for Liquids Release

- Where available consult the site-specific or field area section for an overview of spill potentials and environmental receptors including waterbodies and streams.
- Contain release to the site recovering as much spilled material as possible.
- Protect surface waterbodies, groundwater and other sensitive environmental receptors in the area.
- Notify Company management and notify local emergency response agencies.
- Rapid mobilization of response contractors and any additional technical support.
- Establish decontamination procedures prior to commencing recovery efforts.

Evacuate and Restrict Access

- Evacuate personnel from the facility when required by the scale of the spill.
- Request through 911 roadblocks and or evacuation of residents where indicated.
- Provide facility security at the access points to the facility to:
  - Restrict access to areas in proximity to the spill.
  - Maintain accountability of the personnel on site.
- Initiate the notification and access control to exposed or threatened public areas off-site.
- Coordinate roadblocks.

Identify the Released Material

- Identify the spilled product:
  - Chemical Name.
  - Common name.
  - Class.
  - Type.
  - UN/DOT Number.
- Reference the product's SDS identifying:
  - The flammability of the spilled product.
  - PPE requirements for proximal exposures and handling of the spilled product.
  - Released materials reaction with organic materials.
- Immediately report the release event to the line supervisor, providing all known information available.

Identify the Release Parameters

- Identify the source of the release.
- Identify and remove any known potential ignition sources for the spilled product within the Planning Zones.
- Initiate monitoring of any flammable or combustible material:
  - Identify and monitor elevated LEL areas.
- Identify:
  - The likely spill exposure area.
  - Velocity and volume of the release.
  - Potential to erode or overcome site containment features.
  - The potential worst-case scenarios.
- Consider discontinuing operations for larger dynamic release events.

Identify the Release Exposures

- Reference available site documents.
- Identify the release exposure to the Spill Retention Basins (SRBs).
- Identify the release exposure to Environmental receptors (e.g. waterbodies, streams, ground areas with high permeability, marshes, etc.).
- Identify any public or resident exposures.

Identify the External Resources Required

- Responding agencies.
- Technical personnel.
- Manpower.
- Equipment.
- Specialized materials.

Report Incident Information to the Incident Command Post

- Event timeline.
- Material released.
- Hazards and exposures generated from the released material.
- Volume of release.
- Volume-rate of release.
- Likely total volume of release.
- Worst case release volume.
- Off-site areas of release sensitivity.
- Current release control actions.
- Planned release control actions.
- External resource support required.

Initial Countermeasures

- All response personnel shall wear appropriate PPE.
- Provide a decontamination station for responders and initial containment personnel.
- Stop the flow of product at the source if safe to do so:
  - Close Isolation Valves.
  - Shutdown Transfer Pumps.
  - Transfer materials from leaking tanks into available and compatible undamaged storage tanks, vacuum trucks or lined secondary containment areas.
- Attempt control of the release by:
  - Confining the released materials to on-site areas.
  - Utilize absorbent booms and pads to contain and clean-up smaller release events.
  - Directing the release away from and limiting the negative exposure or spill accumulation in or around critical site facilities and components.
- Utilize the Spill Retention Basins (SRBs) as release control points:
  - Immediately plug off/cap the discharge pipes.
  - Block off drainage ditches, culverts and discharge pipes with sandbags, earthen dikes, and other available materials.
- Where containment is not possible, attempt to divert the release in a direction that may:
  - Allow for containment.
  - Use natural containment (topography).
  - Provide an outfall away from waterways.
  - Limit exposure of sensitive areas.
  - Limit public exposure.
- Adequately monitor Facilities for:
  - Leaks, pressure build-up, and gas generation.
  - Valve, pipe and equipment ruptures.
- Where a material release has entered waterway and cannot be contained, attempt to create control points:
  - In the event that the released material is lighter than water, create a dam with an underflow water passage to allow clean water flow while retaining and controlling the released material at the dam location.
  - In the event that the released material is heavier than water, create a dam with overflow water passage past the dam to allow clean water flow while retaining and controlling the released material at the dam location.

Management of Recovery Operations

- Track and document the areas outside the fence line, with regard to:
  - Release volume.
  - Proximity/exposure monitoring.
  - Control actions – time-based record.
  - Clean-up actions – time-based record.
- Initiate soil sampling and regulatory communication about remediation as maybe required.
- Recover surface fluids and contaminated soil.

- Fence-off release areas to protect people and wildlife until reclamation is complete.
- Contaminated material must be placed in appropriate impermeable storage (steel tank, lined containment area, etc.), sampled and disposed of at an approved licensed disposal facility.
- Plan adequate storage and disposal of any recovered/ contaminated product.
- Follow approved Transportation of Dangerous Goods (TDG) regulations when shipping recovered /contaminated materials.

7.17 Spill Contingency Plan

The purpose of this Spill Contingency Plan is to define procedures for responding to discharges of petroleum or refined products that flow offsite and/or that impact surface water features such as drains, wetlands, ponds, or creeks.

The objective of the procedures described in this Spill Contingency Plan is to protect the public, Company personnel, and other responders during spills or releases and clean-up operations. In addition, the Spill Contingency Plan is intended to minimize damage to the environment, natural resources, and facility installations from a discharge.

This Spill Contingency Plan describes the responsibilities and procedures for responding to a petroleum or refined products discharge and performing clean-up operations.

7.17.1 Spill Preparedness Risk Analysis

The risk analysis is the identification of potential spill sources and product types from a company's operations, the potential hazards that could result from an uncontrolled release and the determination of the vulnerability of an area should a spill occur. The possibility that a spill could occur under all conditions in a given area must be anticipated. In terms of spills, higher risk operations are often linked with having facilities and/or transporting products in close proximity to the public and environmentally sensitive area including those areas that have surface water.

A typical risk analysis of a company's operations includes the following components:

- An evaluation of products handled in terms of their characteristics during an uncontrolled release as well as their impact on people, property and the environment.
- Familiarization with the environmental sensitivities around facilities and in areas where the products are handles and/or transported.
- Compliance with legal and company requirements (i.e. laws and regulations, industry standards, policies, procedures and guidelines).
- Review of construction and maintenance procedures.
- Evaluation of the spill prevention program.
- Review of the company emergency response plan and spill contingency plan.
- Evaluation of the overall company's response capability for each area of operation.

7.17.2 Seven Step Guideline for Spill Response

For specific spill volume thresholds and reporting requirements, see the applicable Jurisdictional Section in this ERP.

Step 1 – Collect and Document Spill Reporting Information

One of the first steps in a spill response will be to collect and document spill-reporting information. This emergency response plan has a spill report form that can be used to collect critical information. Ensure that staff are familiar with the spill report form and know who to pass information on to. Information documented on the spill report form will be used to notify initial spill responders, company contacts and where appropriate, government and land contacts. It is important to ensure that a contact number is recorded for the person that reports the spill and that there is follow-up contact with that person. Typical information on a spill report form includes:

- Person reporting and contact numbers.
- Operator, company and/or licensee information.
- Date and time of incident.
- Type and volume of the spilled product (product identification number if available).
- Incident cause.
- Incident location and site description.
- Safety concerns.
- Environmental issues.
- Level of emergency.
- Public concerns issues.
- Spill response activities.
- Contact information.

Responder tools will depend on the types of spills. If an employee has been identified as having a spill response role, it is important that he/she has quick access to initial response tools including:

- An emergency response plan or key information (e.g. contact lists, resource lists, access and control point maps) extracted from the plan.
- Communications equipment.
- Appropriate personnel protective equipment including a personal and/or electronic monitor (gas detector).
- Recording equipment (e.g. notebook, pens, and camera).
- Portable barriers and/or hazard warning ribbon.
- A compass and measuring equipment (e.g. topofil, tape measurer).
- Personal items (e.g. water, extra clothing, snacks, etc.).
- Wind indicators (e.g. portable windsocks, Teflon tape).

In addition, it may be of value to have access to some basic spill containment and sampling equipment including:

- Shovel.
- Rubber mat and/or plastic to cover storm and/or sewer drains and plywood to block culverts.
- Sorbent booms.
- Basic patching equipment for container leaks.
- Sampling equipment and containers.
- Quantabs for assessing salinity at produced water spills.

Step 2 – Dispatch Initial Responders to the Incident Site

Following the notification of the incident dispatch initial responders to the spill site to:

- Verify that there is a spill.
- Gain site control.
- Assess the incident.
- Make appropriate contacts.
- Develop an incident action plan.
- Isolate the leak.
- Initiate containment and recovery if safe to do so.

On route to the site, responders should consider how they would safely approach the area to minimize exposure. In general, the site should be approached from upwind and from high ground if possible, with appropriate PPE and detection equipment.

Three important things for responders to remember during the initial response are:

1. To protect the lives and well-being of spill responders.
2. Initial responders must only attempt what they are capable of doing safely.
3. Sounding the alarm with a call for help should be anticipated.

HELP! Where from?

- Internal resources.
- Other companies.
- Government agencies.
- Fire departments.
- Police.
- Ambulance.
- Contractors.
- Spill specialists.

It will be important that the response team have pre-determined organizational structure with a spill response team leader and that each member clearly understands his/her role. The initial response team should be organized so that they work in pairs (buddy system) prior to taking any action on-site. Good, clear communications within the initial response team is critical. If additional help is required, the initial responders should identify a practical meeting location that can be used as a staging area for manpower and equipment.

Step 3 – Arriving at the Spill Site – Site Control

One of the most critical steps once the responders arrive on the incident scene is for them to take control of the site. It is essential to keep all personnel out of the hazardous area until the identification of the nature and degree of hazards is known, and the initial assessment completed. This includes not only hazards from the spilled material but other physical hazards such as power lines, etc. Although no two spills are the same and not all of the assessment information is immediately available, the following general sequence of site control techniques is common during a disciplined spill response:

- Verify who is in command.
- Identify the emergency planning zone which is the area of greatest concern related to the hazards associated with the event.
- Secure all non-essential personnel from the emergency planning zone and identify the emergency planning zone with ribbon and/or barricades if possible.

    - This step could include the evacuation of a large number of people and outside assistance will likely be required.
- Identify an entry and exit checkpoint at the periphery of the emergency planning zone to regulate the flow of personnel and equipment.
- Control all access to the emergency site by adding a contamination reduction zone which is a transitional or buffer area and a support zone which is a clean area for the On-Site Command Post (OSCP), equipment, staging, etc.
- Identify a safe area within the contamination reduction zone to remove contamination from response personnel, their clothing, and equipment.
- Eliminate all potential ignition sources if safe to do so.
- Identify an emergency signal, escape routes, and a meeting location for response personnel.
- Place wind indicators at appropriate locations.
- Ensure responders understand the issues related to site management and understand their role.

If there is an injury at the spill site when the responders arrive it may be necessary to provide primary care to the injured persons until medical professionals arrive. In remote areas, it may be advantageous to consult with a physician via radio or phone and provide care for the injured during the transferring of the injured to medical professionals. It is extremely important that responders do not take an unreasonable risk when attempting a rescue operation at the incident site.

Step 4 – Situation Analysis

Following their arrival on-site, the response team will conduct an assessment of the spill, sometimes referred to as a situation analysis. The analysis can be broken down into smaller components as follows:

- What is the problem?
- What variables can affect it?
- What are the potential losses and critical issues?
- What is needed to protect response personnel?

The Problem?

Analyzing the problem means looking at the quantity and nature of the material, type and behavior of the container and stage of incident.

- Identify the spilled substance.
- Identify of the hazards associated with the uncontrolled release.

Sources of Information Include:

Operator Knowledge: The owner of the spilled material is a good source of information related to product identification, characteristics of the material and typical hazards associated with an uncontrolled release. The owner also has access to Safety Data Sheets (SDS) and an emergency response plan.

Shipping Documents: If the spill is linked to a transport vehicle, shipping documents or a waste manifest will be in the road vehicle within reach of the driver (i.e. seat or door pocket). The shipping document will outline contact information, a description of good carried, quantity of goods and an emergency response telephone number.

Safety Marks/Labeling: Placards (250 mm x 250 mm) used to identify loads over 450 litres, labels (100 mm x 100 mm) used to identify product in smaller containers and safety marks provide

visual clues related to the identification and hazards associated with the spilled product. An international system of safety marks that responders should be familiar with includes:

- **Class Number:** Eight classes of dangerous goods are identified including; Class 1-Explosives, Class 2-Gases, Class 3-Flammable Liquids, Class 4-Flammable Substance, Class 5-Oxidizers/Organic Peroxides, Class 6-Toxic/Infectious Substances, Class 7-Radioactives, Class 8-Corrosives, Class 9-Miscellaneous
- **Colour:** The color of the safety mark will also provide clues as to the type and hazard associated with the material; for example, red indicates that the product is flammable.
- **Number:** A United Nations (UN) number, a four-digit number has been assigned to all dangerous goods; for example, gasoline is UN 1203, diesel fuel is UN 1202, and crude oil is UN 1267.
- **Container Identification:** The size and shape of the container involved in an uncontrolled release can also provide responders with a visual clue related to that container's contents.

Emergency Response Guidebooks: These guides help the responder identify the material by listing all of the United Nations (UN) numbers and linking the number with the name if the material and/or listing the materials in alphabetical order. The guidebook also provides a general guideline on potential hazards, public safety issues and emergency response considerations for each of the materials listed in the book. In addition, the guide includes initial isolation and protective action distances that can be used to zone a spill site (i.e. flammable liquids isolate spill for at least 25 to 50 meters in all directions).

Computer databases: Countries maintain emergency response telephone numbers where the responder can obtain specific information regarding the spilled substance.

In terms of quantity, responders should be concerned with both the amount of product spilled and the amount that could be spilled. The type, condition and behavior of the container will help responders estimate spill volumes and forecast potential problems.

Variables That Affect the Spill:
There are three primary variables that have an impact on a spill including the location of the spill, the time the spill occurs, and weather conditions. It is important to remember that no two spills are the same and that these variables can affect the spill in many different combinations.

Spill Location

The spill location will likely have the greatest impact on the number and complexity of issues that a response team is faced with. The following are typical examples of how location can affect the spill's impact:

- **Populated versus Unpopulated areas:** Spills in remote areas will likely have less impact on the general public, as opposed to the same incident occurring in a populated area. Remote areas usually have their own unique characteristics that can present challenges to the responsible party (i.e. communications problems, resource availability, equipment access, exposure to wild animals, etc.).
- **Spills in Surface Water versus Land Based Spills:** Spills that migrate into surface water are much more complex to deal with than land-based spills. The issues become more complex when there is a current carrying the product downstream, particularly when there are downstream water users and the stream or river is abundant in fish and wildlife.

- **Land Uses:** It is not uncommon for there to be several land uses associated with a spill incident. The more land uses affected by the spill, the more issues the response team is usually faced with.
- **Spill Site Characteristics:** The soil structure, vegetation types, presence of storm, and sewer drains, topography, and man-made structures at a spill site are just a few of the potential site characteristics that can have an impact on the incident.

Time

The time of day, day of the week and month of the year all have an impact on the issues related to the incident. For example, a spill that occurs in the middle of the night will probably have a delay in the overall response.

Weather Conditions

Weather conditions can help or hinder the conditions at a spill incident. Wind can have major effect on downwind exposures, it can change directions in a matter of seconds and move spill vapours into highly sensitive areas. In some cases, stronger winds can disperse vapours and reduce the flammable range and toxicity of a hydrocarbon plume migrating from the incident site. Strong winds also have the potential to blow debris around the site and cause dead standing timber to fall. In the absence of wind, vapours can pool in low areas in and around the spill site. Wind can also affect the movement of a spilled substance on surface water by increasing or decreasing the spreading rate and pushing the substance in a downwind direction.

Temperature may have an effect on the behavior of a spilled substance and can reduce or increase vaporization rates. In addition, temperature extremes can present health risks to responders such as heat stress, hypothermia and exposure to lightning strikes. Travel time for responders can also be influenced by weather conditions.

Winter conditions present their own unique problems such as product mixed with or under ice and snow, short days, cold temperatures, equipment limitations, etc.

Identification of Potential Losses and Critical Issues
Generally potential losses resulting from a spill include:

- Health and welfare of people linked with the incident including the spill response team.
- Health and welfare of domestic animals, fish and wildlife.
- Damage to property and equipment.
- Negative impact to the environment.
- Impact on a company's image.
- Costs incurred from losses and response activities.

It is important to identify all land uses and stakeholders that are or could be affected by the spill. In some jurisdictions, a list of land uses can be obtained through an electronic data base. Other sources of information include contingency plans, local residents, regulatory personnel (e.g. lead agency for spills, police, fish, and wildlife and forestry), area operators, utility companies, municipal offices, and unique area experts like trappers and recreational users. Identifying the stakeholders will help responders to identify spill issues and formulate a response plan. Not all this information will be available during the first few critical hours of the incident; however, it will be necessary to obtain it for an effective response. Identifying the stakeholders affected by the spill will help define the critical issues related to the incident and to prioritize those issues based on the spill response priorities; protection of life, property and the environment.

At this stage of the analysis it is advantageous to characterize the spill as stable or unstable. Stabilized means that all fires have been extinguished, all ignition sources have been controlled and all spills have been contained. Unstable means that conditions at the site are changing and control of the incident is pending.

Step 5 – Documentation and Information Management

Documentation of the incident is extremely important and should be initiated early in the response and maintained throughout the event. Documentation requirements will depend on the nature if the incident and should include the following:

First Report: Date and time of release, location of the point of release, composition of the release, quantity of spilled substance, release cause, circumstances leading up to event, and initial response activities.

Spill Response Organizational Structure: Outline of the organizational structure with contact information.

Site Description: Spill sketch, photos, and map.

Event Records: Chronological record of events.

Safety: Findings of initial hazard assessment, safety controls, safety meetings, worker requirements, safety orientation, incident reporting, equipment, and resources.

Environmental Issues: Sensitivities, sampling information, waste management plan, etc.

Negotiations and Agreements: Internal company representatives, regulatory, and third-party contractual agreements. It is also important to maintain detailed records of site visitors, their contact information, reason for visit and specific details related to their involvement.

Incident Action Plan: An overview of the issues and plan to deal with those issues.

Regulatory Spill Reporting: Regulatory spill reporting requirements, located in this ERP, are dictated by the type of spill, the spill volume, and location of the spill. Non-compliance related to spill reporting usually leads to enforcement action and substantial fines.

Type of Spill: In most jurisdictions an upstream petroleum-based spill is reported to the lead Regulatory Authority. Refined product spills and chemical spills are reported to the environmental agency. There is normally a memorandum of understanding between the Regulatory Authority and Environmental Agency related to ensuring that they advise each other of appropriate incidents. If the spill is caused by a transportation incident and the spilled product is regulated under the Transportation of Dangerous Goods Act, it is a requirement to report the incident to police as well.

Spill Volume: Provincial/State legislation identifies the minimum volume of spilled material that must be reported. In transportation-based spills where the product is TDG regulated, the minimum spill volumes are outlined in the Transportation of Dangerous Goods Act and Regulations.

Location of Spill: If the spill is not reportable because the volume is less than the reportable volume, but the spill causes an adverse effect (negatively impacts people, property, and/or environment) it is considered a reportable spill.

Step 6 – Developing the Incident Action Plan

Once the spill responders have control of the site and have completed the assessment, they should develop and document an incident action plan. The plan will identify spill issues and outline tactical objectives for dealing with the issues. The following is an example of some of the issues that could be included in an incident action plan:

- Emergency conditions.
- Hazards, risks and assessment information.
- Issues identification.
- Safety controls.
- Response objectives, tactics and alternative options.
- Resources.
- Organizational structure.
- Names of individuals and agencies participating in discussions.
- Waste management.
- Sampling and analysis.

The incident action plan is subject to change. The response team evaluates the incident on a continuous basis and new spill issues are introduced as the incident progresses. It is important that responders review the plan on a frequent basis, make changes if appropriate and ensure that stakeholders are aware of those changes.

Step 7 – Implementation of Response Objectives

Once the incident action plan has been developed, the response team will implement response objectives. The incident will be handled offensively, defensively or by non-intervention.

- Offensive tactics require responders to control and/or mitigate the incident within the higher risk areas of the event. Safety controls must be in place to undertake offensive tactics.
- Defensive tactics allow responders to control/mitigate the emergency remote from the higher risk (i.e. installing barriers to prevent product from migrating into sensitive areas, deploying boom at downstream control points, etc.).
- Non-intervention refers to responders taking limited action at the emergency site, normally additional resources arrive.

7.17.3 Company Spill Discovery and Response Actions

The Company has the primary responsibility for providing the initial response to spills and releases originating from one of their wells, facilities, or pipelines. To accomplish this, the Company has implemented the Incident Command System (ICS), developed response plans, and completed training to respond to a spill or release event. The Incident Commander plays a central coordinating role in any emergency situation.

The Incident Commander will direct notifications and initial response actions in accordance with the company Emergency Response Plan, training, and capabilities.

Discharge Discovery and Source Control

Upon discovery of a leak or spill the following actions should be taken:

- Immediately report the discharge to the Company Supervisor, providing the following information:
  - Exact location
  - Material involved
  - Quantity involved
  - Topographic and environmental conditions
  - Circumstances that may hinder response
  - Injuries, if any
- Turn off all sources of ignition.
- Locate the source of the discharge.
- Turn off all equipment related to the incident that could add to the impact of the release.
- If safe to do so, isolate the affected equipment by closing off the closest valves upstream and downstream from the discharge source.

Assessment and Notifications

Notifications to the appropriate Regulatory Authority must occur after the discovery of reportable discharges. The reporting clock starts when the first company or contract employee discovers the discharge.

- Investigate the discharge to assess the actual or potential threat to human health or the environment. Also consider:
  - Location of the discharge relative to receiving waterbodies (drainages, creeks, or streams)
  - Quantity of spilled material
  - Ambient conditions (temperature, rain)
  - Other contributing factors such as fire or explosion hazards
  - Sensitive receptors downstream (wetlands, ponds, or reservoirs)
- Request outside assistance from local emergency responders, as needed.
- Evaluate the need to evacuate the facility and evacuate employees, as needed.
- Assess whether community evacuation is needed. Notify the local authority, fire/police for assistance, as needed.
- Contact Company Supervisor to determine if Regulatory Authority notifications are required.
- Communicate with property owners regarding the discharge and actions taken to mitigate the damage.
- If needed, bring in outside contractors and order recovery equipment such as vacuum trucks and backhoes to stop the flow. Mobilize equipment and resources to the spill site as soon as the need is identified.
- If spilled fluids reach (or threaten to reach) any nearby drainages or surface waters, you may need to notify the local authority, Regulatory Authority fire/police

to limit access to the water by local residents until the product has been contained and recovered. Additionally, notify downstream water users of the spill and of actions that will be taken to protect these downstream receptors.

Control and Recovery

The Incident Commander directs the initial control of the release and other contractor personnel. The actions taken will depend on whether the product has reached water or is confined to land. All effort will be made to prevent the release from reaching water.

If the product has not yet reached water:

- Deploy sandbags and absorbent socks down gradient from the product, or erect temporary barriers such as trenches or mounds to prevent the product from reaching water.
- Implement land-based response actions (countermeasure) such as digging temporary containment pits, ponds, or curbs to prevent the flow of product into any water.
- Deploy absorbent sock and absorbent material along the water line to prevent product from entering waters.
- Contact clean-up contractor(s).
- Deploy floating booms immediately downstream from the release point.
- Control product flow on the ground by placing absorbent socks and other absorbent material or physical barriers (e.g., kitty litter, sandbags, earthen berm, trenches) across the product flow path.
- Deploy additional floating booms across the whole width of the affected waters at the next access point downstream from the release point. Plan ahead and access the stream or waters from safe locations.
- Deploy protective booming measures for downstream receptors that may be impacted by the spill.

Spill Clean-up/Mitigation/Reclamation

Once the pipeline break or leak has been located and isolated and the area has been secured, the following procedure should be followed.

- Determine if there are any other pipelines or utilities within 30 metres of the break or leak site. If so, the licensee of these lines must be contacted before any ground disturbance occurs.
- Uncover the affected section(s) of pipeline by the safest method. Hand excavation or hydrovac should be used whenever the break is within 5 metres of the pipeline in question or another pipeline until the break or leak is located.
- Expose the pipeline break or leak, ensuring that the proper trenching, back sloping and shoring techniques are used and that a safe route of access and egress is maintained at all times.
- Obtain a sufficient number of samples of effluent to quantitatively determine its physical and chemical properties.
- Drain effluent into a bell hole and remove the impacted soil and waste to an approved disposal site.
- Photographs are to be taken throughout the operation for documentation.
- Refer to the Environmental Regulatory Authority regarding land reclamation standards and requirements.

Decontamination Guidelines

These guidelines are for personnel directly exposed (or suspected of exposure) to oil or chemicals or their vapours, products of combustion, etc. The intention is to provide a general overview of those decontamination situations most likely to be faced by Company responders.

Decontamination areas:

- Will be set up as needed during response operations.
- These areas are to be used for decontamination at the work site.
- They are not to be used as a substitute for personal hygiene prior to arrival.
- Are designed to protect the health of response personnel and to prevent the spread of contamination into ‘clean’ areas.
- In the field, it will not be possible to remove all contaminated clothing before taking a break from work. It is essential, however, to clean hands and face to avoid inadvertently ingesting oil or spreading contamination to otherwise protected parts of the body.
- In the field, provisions will be made for:
  - Soap, water, paper towels, waterless hand cleaner, and/or other materials for washing hands and feet.
  - Refuse containers.
  - Eyewash station.
  - Safety equipment and clothing as needed.

Full decontamination will be required at the end of the daily shift. Typically, this involves reporting to an area designed for removing contaminated clothing. This must be done carefully to avoid allowing the contaminated clothing to come into contact with the skin or clean clothing. Cleaning stations are used to scrub the body thoroughly in order to remove all traces of chemical or other contaminants. Once fully decontaminated, clean clothing will be put on and contaminated clothing will be cleaned appropriately.

Communications and Control

A Command Post will be set up near the incident site in the event of a discharge. The Command Post will be equipped with a variety of fixed and mobile communication equipment (telephone, cell phones, computers, etc.) to ensure continuous communication with Company management, responders, authorities and other interested parties. Additional equipment will be obtained from the response contractor in the event that more communications equipment is necessary.

The Incident Commander is responsible for communicating the status of the response operations and for sharing relevant information with involved parties, including Company Management; local, provincial and federal authorities.

Disposal of Recovered Product and Contaminated Response Material

The Incident Commander ensures that all contaminated waste materials are disposed of in accordance with all applicable solid and hazardous waste regulations. Contact the Company Supervisor to get guidance on approved disposal locations. In some cases, on-site treatment (bioremediation) may be approved, minimizing costs.

- Place any recovered product that can be recycled into an on-site tank to be separated and recycled.
- Dispose of recovered product not suitable for on-site recycling with the rest of the waste collected at an approved and permitted location.
- Collect all debris in properly labeled waste containers (impervious bags, drums, or buckets or a roll off bin with a liner).
- Collect samples to characterize the waste for shipping and obtain approvals from licensed disposal facilities. Prepare shipping manifests and shipping documents as needed.
- Dispose of contaminated material in accordance with all applicable solid and hazardous waste regulations using a licensed waste hauler and disposal facility.

Termination

The Incident Commander ensures that clean-up has been completed and that the contaminated area has been treated or mitigated according to the applicable regulations and provincial/federal clean-up requirements. In some cases, the spill area soil must be sampled before backfilling can take place. The Incident Commander collaborates with the local, provincial or federal authorities regarding the assessment of damages, as needed.

- Ensure that all repairs to the equipment or pipelines have been completed.
- Review circumstances that led to the spill or release and take all necessary precautions to prevent a recurrence. Apply lessons learned to all operations.
- Evaluate the effectiveness of the response activities and make adjustments as necessary to response procedures and personnel training.
- Carry out personnel and contractor debriefings as necessary to emphasize prevention measures or to communicate changes in operations or response procedures.
- Restock spill response supplies.
- Submit any required follow-up reports to the authorities.

Training Exercises and Updating Procedures

The Company maintains an ongoing training program to ensure that personnel responding to discharges are properly trained and that all necessary equipment is available to them.

Following a response to a discharge, the Incident Commander and Company Management will evaluate the actions taken and identify procedural areas where improvements are needed. The Incident Commander will conduct a briefing with field personnel, contractors, and local emergency responders as needed to discuss lessons learned.

7.17.4 Spill Management Techniques

Spills on Land – Containment

General Containment Procedures

1. If the spill is not flowing or spreading, no containment is required.
2. Use the information gained from the assessment to plan the location of the initial containment measures and determine what type of measures will be required (e.g., booms, sorbents, etc.).
3. Organize and install the containment measures in order of priority to prevent the spill from getting larger and to protect sensitive areas. This will reduce the amount of clean-up work and result in lower clean-up costs and damage settlements. Oil Spill Co-op Contingency manuals should be referred to for the most appropriate containment techniques.
4. Local topography, locations of nearby streams, waterbodies, and sewer outfalls, etc., should be taken into account when planning the location of containment berms and dikes. Appropriate Oil Spill Co-op Contingency manuals should be consulted for more information on this subject.
5. Containment berms and dikes should be deployed on land in a manner that will prevent any spilled material from entering a water source. Contingency back-up plans should be developed in case of a breach or failure of a containment structure.
6. If necessary, topsoil should be stripped from areas that will be affected by a fluid spill prior to the spill reaching that area.
7. If necessary, the area around the spill should be fenced off to prevent wildlife and livestock from entering the spill area.
8. If the material is producing flammable or noxious vapours, apply an appropriate foam suppressant to reduce and control the fire/vapour hazard to the surrounding area.
9. In the event of fluid spills breaching existing containment structures, contingency plans should be immediately implemented to prevent any materials from entering streams or waterbodies.

Containment Techniques

Sorbing Boom and Blanket

Booms and sorbent blankets may readily contain small spills, especially those that have accumulated on the surface and not infiltrated the soil. Judge the amount of boom needed and assess migration potential based on weather conditions and the topography of the spill area.

Earth Berm

1. Where equipment is available for hand or machine digging, earth berms and containment dikes can be used to contain spills.
2. Suitable soil material (i.e., clay, silt) should be used in the construction of containment dikes and berms. Topsoil material should be stripped and preserved for reclamation procedures.
3. Where soils or surface materials are too permeable to provide adequate containment of spilled fluids, berms/dikes can be fortified with plastic sheeting or sorbent blankets to make the berm less permeable.

Subsurface Trenching

1. Trenches may be contoured to direct or funnel spilled fluids towards a bellhole or other collection/containment area. If required, trenches and berms may also be constructed upstream of the spill to direct water or run off away from the spill.
2. Where significant subsurface flow of contaminants is anticipated, subsurface trenching will be required to intercept and contain any subsurface flow and direct it towards a bellhole or other low permeability containment area.
3. The specific pattern of trenching depends on the topography and flow regime in the subsurface materials. Trenches are most effective if they can be dug to the depth of the impermeable cemented hard pan or bedrock.
4. The bellhole containment area must be lined or located in impermeable material.

Liquid Spills on Open Ground

1. Spills on open ground are common to the oil and gas industry. Pipeline ruptures during the course of day-to-day operations and overflows of production fluids during well development/ completion activity account for a large portion of these material spills. Once on the ground, the spread of fluids is influenced by local topography and permeability of the soil. These two (2) factors together can make containment and clean-up operations difficult. Spills in areas of high relief can spread considerable distances in a short period of time causing greater aerial impact.
2. Fluid spills in areas with soils having high permeability should be cleaned up quickly in order to reduce the amount of infiltration into soil layers.
3. Spills should be cleaned up from the perimeter towards the centre. Travel through the affected area by equipment or personnel should be avoided at all times.
4. Universal or specific use absorbents can be used to collect spilled material from the containment area. Spill Co-ops can be contacted for information regarding the appropriate uses of available absorbents.
5. Contaminated soil should be excavated and removed to an area where runoff or leaching of the contaminants into the soil can be prevented.

Liquid Spills on Paved Areas

1. In areas of high relief, fluids spilled on pavement may travel rapidly over considerable distances. The viscosity of the fluid, the local relief, and lack of obstructions on the smooth surface will all affect the rate at which the spill will spread. If not contained, spilled materials may enter sewer outfalls and be transported into the local sewage system or into nearby water sources, which would complicate containment and recovery of the spill. This could potentially result in contamination of water sources and wildlife habitat. In such cases it is imperative that spilled materials are contained immediately and diverted away from any sewer outfalls that are within reach of the spill.
2. Spill Co-op procedure manuals can be consulted for the most effective method of containment and clean-up when dealing with particular fluid spills.
3. Location of downstream sewer outfalls, drainage ditches, streams, or waterbodies should be determined so that they can be plugged or bermed to prevent spilled material from entering.
4. Foam suppressants should be applied on the spill if dangerous vapours are present.
5. Once contained, clean-up should start immediately. Spilled materials should be moved to collection areas utilizing shovels, scoops, squeegees, brooms, etc., and then removed by vacuum trucks.

6. Appropriate absorbent materials can be utilized to accumulate spilled material that cannot be moved to collection areas. Oil Spill Co-ops should be consulted to determine the most appropriate absorbent material.
7. Used absorbent materials should be stored in barrels or another appropriate container and disposed of appropriately.

Solid Materials Spills on Land

1. Solid material spills on the land can lead to extensive environmental impacts. Material spills of this nature spread through wind and surface runoff. If not properly contained and secured, this material can travel considerable distances or become incorporated in local waterbodies, adversely affecting the water quality and associated habitat. Runoff from the spill area can also contaminate these water sources if not properly collected.
2. Appropriate PPE should be donned before attempting to contain and recover spilled materials. Depending on the material, this may require the use of respiratory protection, goggles or facemask, rubber gloves, boots, and/or disposable or other coveralls.
3. No clean-up actions are to take place until the spilled material is identified and the correct safe handling procedures are put in place.
4. Environmental Regulatory Authority, local spill co-ops, and/or the manufacturer can be contacted to determine the appropriate containment and removal methods to use for the type of chemical spilled.
5. Extensive dry chemical spills should be covered immediately with secured plastic sheets to reduce the potential for the material to become wind-borne or leach into the soil from rainfall.
6. Dry chemicals can be removed with a shovel or by mechanical means and disposed of in an appropriate manner.

Spills on Land – Recovery and Removal

Sorbents
Sorbents can be used for small spills of oils, fuels, and lubricating oils that have not infiltrated the ground surface, or any other location where free product is floating or ponded.

Shovel and Barrel
Small crude/lubricating oil spills that have soaked into the ground can be dug out with a shovel. If the spill occurs on lease, spread the oil-soaked soil on a designated treatment area and work it into the first 5 cm of clean soil along with some manure and straw or other fibrous material. This can be worked in with a shovel and rake if the amount is small.

Vacuum Truck and Pumps
Hydrocarbons and saltwater can be recovered from containment areas or from standing water using vacuum trucks. The material is then transferred to holding tanks, sumps, or other approved facilities. Alternatively, 400 bbl tanks can be hauled to the site and set near the collection bell holes. Recovered fluids can then be pumped directly from the bellholes.

Earth Moving Equipment
Large earth moving equipment such as graders, scrapers, hoes, and front-end loaders may be utilized to contain and move oil contaminated sediments to a pre-approved storage, treatment, or disposal area. If the amount of oily sediment is small, it can be spread on a designated treatment area with some manure and straw or other fibrous material to bio-degrade the contaminated material.

Recovery Wells

Where spilled hydrocarbon or saltwater has infiltrated subsurface permeable materials and removal of the contaminated material is not desirable, it may be necessary to drill recovery wells around the spill area to the necessary depth, so the fluid can be intercepted and pumped to the surface.

Spills on Water – Containment, Recovery, and Removal

In situations where a substance that may be deleterious to the health and/or safety of humans and/or livestock or irrigated crops has been spilled into a watercourse it is necessary to notify regulators immediately and warn downstream users to take appropriate actions.

General Containment Procedures

1. In stagnant waterbodies, floating booms should be deployed in a manner that will utilize winds and currents to help reduce the spreading of the spill.
2. Shorelines should be protected with floating booms, sorbent booms, or sorbent mats before the spill is moved to shore for removal.
3. In slow flowing watercourses (less than 1 km/h), floating booms should be placed downstream to accumulate spilled material. At higher rates of flow, booms should be angled in a manner that will divert floating material to an area of low flow velocity for removal.
4. Do not place booms in areas where the flow rate is greater than 6 km/h as they will be ineffective in containing the spill. If the flow rate is too high, try to locate a more suitable containment location downstream. Refer to an Oil Spill Co-op Contingency manual for more information on this subject. Flow rates can be determined by measuring the time it takes for an object to float a known distance downstream. The use of elongated objects (such as sticks) may produce erroneous results (on the low side), as they tend to align themselves in the direction of the current, which allows water to slip past them.

Floating Spills

1. Materials that float on water such as oil, diesel fuel, or gasoline, if left to spread, may have serious environmental implications. The rate and direction at which such a spill will spread is dependent on wind, currents, and rate of flow. Spills into stagnant waterbodies are generally affected by wind currents and can spread to form complex configurations making containment more difficult. Spills into watercourses such as rivers or streams are often more difficult to handle. Materials may be transported considerable distances by the stream flow before they are contained. High rates of flow or large debris being transported by the stream (i.e., ice, logs, and branches) may damage floating booms or render boom deployment ineffective. It is essential that immediate containment and clean-up be initiated for floating spills in order to limit adverse environmental affects and to reduce clean-up costs.
2. Floating debris in the stream course should be removed or contained upstream. This will prevent floating booms that are located downstream from being damaged and reduce the potential for clogging or damage of skimming or vacuum equipment.
3. Accumulated spill material should be removed by vacuum truck, skimmers, trash pump, or suitable absorbents as quickly as possible.

Floating Spills Under Ice

1. Oil spilled under ice will collect in pockets. In stagnant waterbodies, oil will concentrate near the spill area. Holes should be drilled into these pockets and the oil removed by suction equipment.
2. Oil spilled under ice that has formed over moving water is best recovered by constructing an ice slot or trench angled to the stream bank. Oil should be removed by suction equipment on a continual basis to prevent build-up and escape.
3. If ice is too thin to support men or equipment, holes can be formed by dropping large inanimate objects using a helicopter (which requires prior approval from Environmental Regulatory Authority).

Insoluble Liquids Denser than Water

1. Materials that are heavier than water and do not dissolve, such as oily sludges or heavy oils, present unique problems when spilled into waterbodies, rivers, or streams. These materials tend to flow and accumulate in low spots due to their greater density. Because they do not dissolve, contaminants can mix with bottom sediments and damage these shallow nutrient rich zones. The spread of these types of spills is dependent on such factors as bottom relief, currents, and flow rate. Containment and clean-up of such spills can be difficult, depending on site-specific factors. Speed and effectiveness of containment and clean-up procedures are critical in reducing the negative impacts associated with these types of spills.
2. Oil Spill Co-op Contingency manuals should be referred to for the most appropriate method of containment and clean-up when dealing with a specific type of spill.
3. If the material has entered a water body or watercourse, natural low areas into which the material will flow and accumulate, should be identified.
4. Natural low areas should be pumped free of spilled material. Any contaminated bottom sediments should be transferred by vacuum lines to corresponding holding tanks. Sediments can then be removed to an appropriate disposal or reclamation facility.
5. Dredging low areas to accumulate spilled material in fast flowing watercourses should only be done when determined necessary, and upon proper authorization from Environmental Regulatory Authority.
6. Construction of a dam or dam system downstream, and diversion of upstream flow should be done only when determined necessary, and upon proper authorization from Environmental Regulatory Authority.

Soluble Chemical Spills into a Water Course

1. Chemicals that dissolve in water, such as “caustic” and other process chemicals, can result in serious environmental impacts when spilled into waterbodies. Depending on the toxicity and concentration of the substance, local water quality could be severely affected, and downstream users placed at considerable risk. Once incorporated in the aqueous environment, tracing these contaminants can be difficult. Wind, currents, flow rate, and sometimes bottom relief influence the spread of contaminated water. It is imperative that all reasonable effort be made to prevent soluble chemicals from entering water sources, and land based clean-up operations be initiated immediately. If spilled chemicals do enter a watercourse, a quick and effective response will help to limit the environmental impact.
2. Immediate notification should be given to the appropriate Oil Spill Co-ops, Regulators, and the affected landowners to ensure public safety and an expeditious clean-up operation.
3. Oil Spill Co-op Contingency manuals should be consulted for the most effective method of containment and clean-up method for particular spills.
4. Clean-up of the spilled material should be initiated immediately in order to minimize the area affected and the degree of environmental impact.

5. If chemicals have entered the watercourse, a dam should be constructed downstream from the spill site. If possible, water upstream of the spill should be diverted upon proper authorization from Environmental Regulatory Authority.
6. If damming and diversion are not feasible, then an accepted method for in-situ treatment of the contaminated water should be considered (i.e., activated carbon absorption, precipitation, neutralization, etc.).

Procedures for Obtaining Initial Soil Samples After a Spill

Sample Labelling and Storage

1. Store samples below 4°C and send them to the laboratory within 48 hours of sampling.
2. Clearly label all samples with the:
    - company name
    - well name/location
    - dates
    - sample location
    - unique sample identifier number, and
    - the name of the person who obtained the sample.
3. Store samples for transport in a secure travel container (i.e., a cooler).
4. In summer months pack the cooler with some frozen ice packs or ice to keep the samples below 4°C.
5. Wrap samples kept in glass jars individually in “bubble wrap” prior to packing in the cooler.

Laboratory Details

1. A chain-of-custody (CoC) or laboratory supplied Analysis Request Form should be completed and sent with the samples.
2. Ensure that all of the samples being sent to the lab are documented on the form, and that the proper analyses are requested for each sample.
3. Ensure that the required turnaround time for results is indicated. Normally these forms are in triplicate.
4. Retain one (1) copy for filing and send the other two (2) copies along with the samples.
5. The laboratory should be instructed to sign the CoC form when the samples are received and send one (1) of the copies back to confirm that they received the samples.
6. Keep both copies of the CoC form on file.
7. The laboratory will supply the sample containers, labels, CoC/Analysis Request forms, and the shipping container.

7.18 Well Kick Incident

Possible warning signs of a well kick.

- Change in flow rate from well.
- Change in the rate of drilling.
- Change in pump pressure.
- Rapid change in mud properties.
- Fluctuations in weight indicator readings and/or erratic torque.

7.18.1 Well Kick Site Safety

- Well operations shall be monitored for the warning signs of a well kick.
- Never allow a crew member to look down the hole during a flow check.

Action Plan for Well Kick Incident

- Drill plan to include realistic kick tolerance(s); rig drills to ensure tolerances can be detected and shut-in.
- Once the well is shut-in the choke should remain closed.
- If the pressure exceeds maximum allowable, prepare for possible remedial actions.

Flow Check

- Call an alert.
- Pick up off bottom to clear the Kelly and ensure there are no tool joints across the rams.
- Stop the pump.
- Divert the flow line to the trip tank.
- Read and record the trip tank volume.
- Record the flow check and its results in the tour report.

Shut-In Procedures

- Call an alert.
- Pick up off bottom to clear the Kelly and ensure there are no tool joints across the rams.
- Stop the pump.
- Shut-in process is to open the hydraulic valve at the BOP/ HCR (hydraulically operated gate valve) and close a pipe ram.
- Let the pressure stabilize for 5 – 15 minutes.
- Read and record SIDPP.
- Read and record SICP.
- Read and record any gain in the trip tank.
- Prepare to kill the well.

Post-Incident Inspection/Function Testing

- Once a well kick has been detected and resolved a post kick inspection/integrity check of all operating equipment is to be completed.

7.19 Blow Out Incident

7.19.1 Blow Out Incident Safety

Immediate Site Safety Procedures:

- Initiate site alarm/evacuation alarm/control ignition sources.
- Complete a headcount of all personnel on location.
- Report any missing personnel to the On-Site Group Supervisor.
- Where possible, determine who is missing and the last known location or work area.
- Coordinate rescue and treatment of workers exposed as required.
- If gas release is sour (or other toxic contaminant), ensure Public Protection Group Supervisor role is activated including air monitoring and roadblocks.
- Develop and communicate planning zones based on release rate and escalation potentials. Consider:
  - Well – time duration of liquid returns (if any).
  - Pipeline – time duration of pipeline isolation and de-pressuring.
  - Environmental conditions – wind speed/direction, nearby structures, forested, etc.
- Develop and communicate PPE and personal gas detector requirements.
- Avoid personal exposure to pressurized gas jets and all flammable areas.
- Identify a new and safe post evacuation mustering location.

7.19.2 Action Plan for Blowout Incident

- Isolate the leak/release and reduce back flow potential.
- Isolate pipeline to reduce back flow potential.
- Initiate air monitoring, roadblocks, resident notifications and prepare for media/public concern.
- Coordinate spill response and clean-up plan.

Request Emergency Response Agencies

- Call 911.
  - Request fire department, emergency medical responders and police.
  - Designate a safe staging position for responding resources.
- In the event of potential exposure to the public request that the local Emergency Management Representative and local police agency respond.
- Maintain air monitoring for levels Natural Gas.

Brief Emergency Responders

- Provide external emergency responders with an SDS.
- Brief emergency responders on the:
  - Event timeline.
  - Status of personnel accountability; search and rescue profile.
  - Status of the release control operations.
  - Nature of the release: dynamic - static.
  - Other uncontrolled facility hazards.
  - Status of other operating personnel within the facility.
  - Hazards of the release: e.g. flammable, corrosive, toxic, asphyxia.
- Identify the number of injured/exposed people due to any inhalation hazard.
- Identify the uncontrolled sources of ignition.
- Identify any confined spaces where lighter than air gases and/or heavier than air gases from liquids could accumulate.

Implement Release Control Actions

- Identify the release point and point(s) of control.
- Identify any buildings, facilities or residences near the release point and point(s) of control.
  - Gas detected inside a building – evacuate all occupants to the muster point or reception centre. Shut off all ignition sources if safe to do so.
  - Gas detected near a building – determine if occupants should shelter in place or evacuate to the reception centre. Shut off all ignition sources if safe to do so.
  - If the gas test readings indicate rising LEL, evacuate all occupants to the reception centre.

Small scale hydrocarbon releases from the wellhead/pipeline/facility or equipment.

- Approach from upwind of release point.
- Isolate leak by closing isolation valve(s).
- Isolate leak by plugging/patching/stabbing valve or other approved method.

Large scale hydrocarbon releases that remain on-site (in addition to above items):

- Request external manpower and equipment.
- Initiate LEL monitoring.
- Shut-in to reduce formation pressure.
- Consider tying in tanks or flare line to control/direct the release.
- Develop waste clean-up and storage plan.

Large scale hydrocarbon releases from the well head that remains on the lease site.

- Request external manpower and equipment.
- Identify injection wells in same zone.
- Shut-in to reduce formation pressure.
- Consider tying in tanks or flare line to control/direct the release.
- Develop waste clean-up and storage plan.

Large scale hydrocarbon off site releases, or releases not controlled by site personnel or equipment (in addition to above items):

- Request external manpower and equipment.
- Initiate down-wind LEL/H_2S/SO_2 monitoring, roadblocks and resident notifications as required.
- Secure the facility area.
- Determine plume ignition plan if required.
- Develop contingency plan.
- Consider tying in tanks or flare line to control/direct the release.

Implement Fire Control Actions where ignition has occurred

- If the fire is located near or directly involving a pipeline facility isolate and de-pressure the line as needed.
- If the fire is located near pressurized vessels, evacuate and prepare for a potential BLEVE.
- Before extinguishing a pressurized gas fire, ensure readiness plan is in place to address the gas plume and potential migration.

Post-Incident Actions - Securement of affected equipment

- Consider keeping equipment operators and supervisors to assist as required.
- Contact Hierarchy 1 Incident Command Post and request post-incident instructions including:
  - Internal accident Investigation.
  - Equipment impoundment/security.
  - Critical Incident Stress Debriefing.
  - Government Investigations.
  - Site Security.

7.20 General Fire Response

Extinguish fires and protect property impacted from fire without putting responders at risk. Control or eliminate product release and extinguish ignition sources to prevent a fire or explosion.

- Shut-in source (if safe to do so).
- Ensure personal safety.
- Call emergency services as required - 911 - Police, Fire, or Ambulance.
- Conduct a risk assessment.
- Determine the level of emergency.
- If practical, implement a fire attack strategy to extinguish fire or cool equipment/facilities from the fire.
- Order resources such as water tanker, local fire department equipment and/or fire response contractor to assist in the response.
- Implement off site monitoring for LEL, hazardous gas and/or smoke particulates.
- If the public is at risk from smoke or hazardous gas, implement a public communication and protection plan.
- Make the appropriate notifications.
- If safe to do so, remove ignitable products from the fire scene.
- Consider off-site fire hazard conditions (dry vegetation, etc.) and implement a response plan to prevent the spread of the fire.
- Maintain ICS 214 – Activity Log.
- Restrict access to site.
- Preserve the site so that a follow-up investigation can be conducted.
- Participate in debriefing and share learning.

7.20.1 Volunteer Fire Personnel

Company personnel can only expect the volunteer fire department to assist with public safety issues (road closures, grass fires, fire containment).

The Company can assist volunteer fire departments by providing a list of fire detection equipment on-site: high level shutdowns, call out alarms, personnel response times to alarms, and basic fire suppression on lease.

Operators should be trained to shut-in any sources of fuel and conduct reasonable and prudent fire suppression when it is safe.

Volunteer fire departments have a duty to provide an adequate level of public safety services such as rescue, fire suppression, and first aid. Keep in mind the level of training that the volunteers have and the type and condition of their equipment. Do not expect them to attempt fire suppression in unsafe conditions with inappropriate or inadequate equipment.

If you have any question of what types of services your volunteer fire department can supply, feel free to contact them and ask.

7.21 Facility Fires

7.21.1 Facility Fires Safety

- Ensure effective evacuation and identification of trapped and/or missing workers.
- Establish response zones and PPE requirements.

The conducting of rescue operations, product isolation or fire suppression operations during facility fire events are restricted to:

- Activities that are consistent with the experience and reasonable capability of the utilized personnel.
- Activities within the level of training and PPE utilized by the personnel involved.
- Activities that are deemed consistent and appropriate for the scale of the fire event and the conditions present.

All operations must be evaluated relative to their risk potential vs. the benefit to be gained:

- The gain that may be achieved.
- Versus the potential exposure to risk that may or will be present.

Pressurized fuel fires that contain heavier than air components (typically all liquids) pose a significant risk to personnel in the event that the fire is extinguished.

Lighter than air fuels (typically natural gas) pose a significant risk if extinguished inside a closed space e.g. compressor building.

In all cases, personnel shall not be committed to operations or locations that may expose them to any of the following hazardous conditions (this includes the direct positioning, the proximity positioning or the positioning of personnel in locations that may create an exposure to incident escalation, fire growth or event escalation):

- Direct fire contact.
- Heat exposure.
- Smoke and products of combustion.
- Areas of diminished oxygen content.
- Confining or restrictive spaces.
- Locations in proximity to buildings or structures that have been weakened by fire exposure, heat exposure or significant water application.

7.21.2 Action Plan for Facility Fires

- Conduct an assessment to identify all the hazards, conditions, and facets of the event.
- Call for additional internal and external resources as required.
- Develop the Incident Action Plan.
- Initiate remote isolation where facility/local isolation is not possible.
- Close Site Retention Basin outlet valve where applicable.
- Do not direct fire suppression operations where run-off may cause environmental damage.
- Initiate Unified Command with emergency responders; ensure safety guidance is reviewed and adhered to before commencing response operations.
- Execute Incident Action plan.

Conduct an Extensive Assessment

Gather event information to identify all the hazards, conditions and facets of the event, including but not limited to:

- Location of the fire and the areas involved in fire.
- Location and accountability of all personnel – rescue requirement.
- Type of fuel involved.
- Source of the fuel.
- Wind direction.
- Critical escalation potentials – BLEVE potential, chemical fire, catastrophic failure, high valve assets.
- Fire growth exposures.

Call for additional resources as required

Inventory personnel, fire suppressant resources (fire extinguishers, water supplies) and fire suppression appliances.

- Identify the resources required and not present on scene.
- Request the resources required.

Establish Response Zones

Establish Response Zones and the PPE requirements per zone.

- No Entry Zone - perimeter.
- Emergency Planning Zone - perimeter and PPE requirement.

Develop the Incident Action Plan

Develop the Incident Action Plan consistent with appropriate event management priorities:

- Rescue or protection of life.
- Protection of critical escalation potentials.
- Protection of uninvolved structures, machinery or assets.
- Confinement of fire to currently involved locations.
- Extinguishment of fire.

The Incident Action Plan once developed shall identify:

- Incident objectives.
- Strategies.
- Safety.
- Weather.
- Resource allocation.

- Critical support requirements.

Brief Personnel

Brief site personnel to identify the parameters of the incident and to set initial expectations with regard to safety and assignments. Identify:

- Assessment information.
- Response Zones and PPE requirements.
- Incident Action Plan.
- Provide personnel assignments.

Ensure Critical Command Issues are established

Ensure any fire event activities conducted must be done so with the following critical emergency event command issues fully established and in place prior to initiating any proximity operations:

- An organized ICS deployment structure.
- An effective communication system.
- An established personnel accountability system.
- A risk versus benefit-based Incident Action Plan.
- Identified strategies, tactics and operational applications to support the Incident Action Plan.
- The presence and full availability of all required resources.
- A comprehensive air management system to control SCBA operations.
- Resource allocation providing a 2-man team appropriately equipped and supported to protect, maintain and ensure the safe egress route of every 2-man proximity team.

Execute the Incident Action Plan

- Conduct, direct, monitor and adjust the application of the Incident Action Plan.
- Re-evaluate the appropriateness of the Incident Action Plan and its strategies, tactics and operational applications.
- Ensure adherence to appropriate event management priorities.
- Re-evaluate the resource requirements of the event.
- Ensure the completion and adherence to the critical command issues.

7.22 High Vapour Pressure (HVP) Release

7.22.1 HVP Product Release Monitoring

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 throughout the emergency to the environmental agency, the Regulatory Authority, local health authority, and other local authorities and on request to the public.

Air Quality Monitoring equipment will be used to:

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

The type of air quality monitoring units and the number of monitors required are based on site specific information, including:

- Access and egress points.
- Population density and proximity to urban density developments.
- Local conditions.

Deltawest will dispatch mobile air quality monitoring equipment from contract service companies located in the area to monitor and record air quality.

Ambient air quality data from the monitoring unit(s) will be communicated by cell phone or mobile radio to the On-Site Command Post.

If a sour gas release has been ignited, the permit holder should continue to monitor response zones for H_2S from incomplete combustion as well as SO_2.

7.22.2 Ignition Considerations

Company and Contract Operators should be familiar with the guidelines for igniting a high vapour pressure release. ERP procedures should be reviewed as part of a pre-job safety meeting whenever work begins on or near HVP pipelines or wells.

The following items must be considered:

- **Immediate Ignition:** If Company personnel are on-site when a release occurs, and a qualified company representative is present they may ignite the release.
- **Delayed Ignition:** If Company personnel are not on-site when a product release occurs a vapour plume may form.

The following items should be considered before ignition:

- Has the perimeter of the EPZ been established?
- Have all persons been evacuated from the area?
- Will ignition worsen the situation by endangering the environment, public, private property, equipment or facilities?
- Has the wind direction been established and is it being continually monitored?

Following an initial assessment, the Incident Commander must decide if plume ignition is a viable option. Once ignited, the dangers inherent with the vapour cloud are eliminated. The Response

Team should prepare for potential problems as a result of ignition by placing fire fighters on standby.

If trees, buildings, or any obstructions are in the product plume, these items may ignite explosively. All people should be moved to a safe distance.

Controlled ignition eliminates the potential of vapours finding an unsuspected ignition source. Typical issues that may affect high vapour pressure releases include:

- Time of release (day, night, weekend).
- Injuries requiring medical attention.
- Identification of the release boundaries.
- Estimate product volume and plume size.
- Wind direction and speed.
- Topography.
- Vegetation.
- Road access.

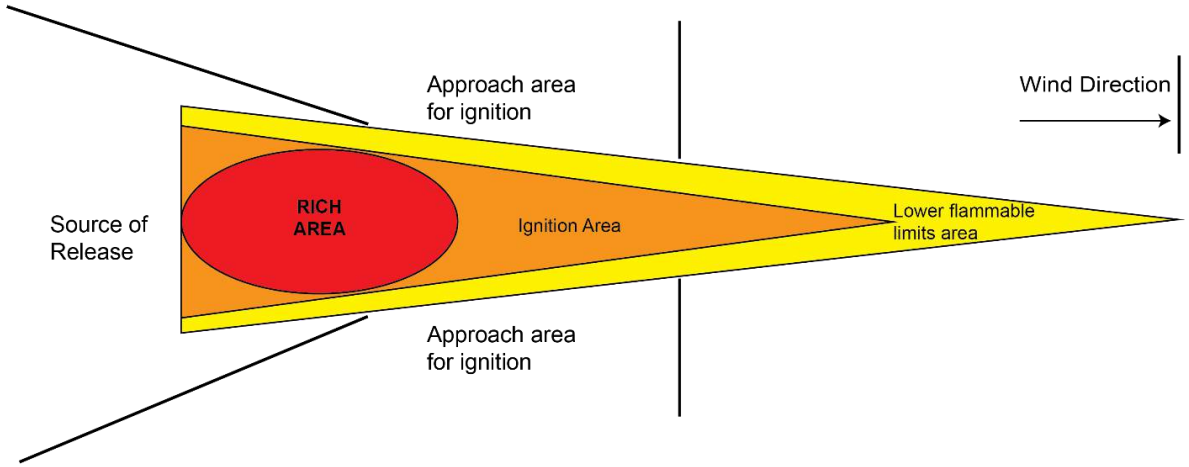
7.22.3 Guideline for Igniting HVP Plume

The following steps are a guideline to igniting a high vapour pressure plume:

1. Conduct a complete assessment that includes the identification of the plume perimeter.
2. Take steps to prevent injury including evacuation (if necessary) and the protection of the response team.
3. Approach wearing flame resistant clothing, eye protection, hard hat and a flammable gas detector.
4. Approach the plume from up-wind and slightly cross wind (as there is a greater area of the plume to hit with a flare).

Refer to figure below

- Stop 200 metres (minimum) from the suspected perimeter of the vapour plume.
- Remember that the flammable perimeter may extend beyond the visible portion of the plume.
- Remember that the heat affected zone extends beyond the flammable perimeter.
- Test for flammable vapour in the atmosphere using a flammable gas detector.
- Use the manufacturer’s procedures for loading the flare shell and always point the pistol or launching device at the ground during loading (and until fired).
- Ensure that you begin outside the defined hazardous area.
- Attempt to hit the perimeter of the vapour cloud where the air to fuel mixture is correct for ignition (near outer edge and ground level).
- If no ignition takes place it can be assumed that the flare did not pass through the flammable vapour range of the plume.
- Make the appropriate trajectory adjustments and shoot again. Proceed in this manner until ignition is accomplished.
- Upon ignition, proceed with preventative steps to control unwanted fire.
- Do not extinguish the burning vapour plume.



7.23 Pressurized Fuel Fire

The Company strategy is to isolate the fuel, remotely if practical, while protecting exposures (compressor buildings, forests, etc.) and controlling any damage to the environment.

Where local/direct isolation is to be undertaken, the appropriate safety requirements are to be met e.g. responders trained in pressurized fuel firefighting tactics.

- Pressure fires must not be extinguished unless immediate isolation is assured (typically with a dry chemical extinguisher), as the resulting gas release will endanger personnel.
- Pressurized fuel fires with liquids may involve a ground fire, potentially with burning liquids raining down. Suppressing these fires with water streams could result in run-off that causes environmental damage.
- Where the fuel is sour, some portion of the SO_2 emitted from the fire can be knocked down by the use of water sprays. The benefit must be weighed against the potential environmental damage of entrained SO_2 in the run-off i.e. run-off may require collection and neutralization.
- Typically, pressure fires can be quenched with water streams without fear of extinguishment. As depressurization occurs, caution needs to be exercised that the fire is not extinguished, which would lead to flammable vapours being released into the incident area.

7.24 Propane or LPG Tank Fire

The Company strategy is to evacuate as far as possible, as soon as possible; up to the distances recommended below. Many factors affect the failure time of a propane tank and as such are outside the expertise of non-professional responders. Site personnel are to assume a catastrophic tank failure is imminent (e.g. > 5 minutes) regardless of the tank size.

Evacuation distances are based on predicted fire ball and fragmentation areas as expressed by the radius of the fire ball and based on size of the propane tank.

- Recommended evacuation for a propane tanker truck is 1.6 km (1 mile) in all directions.
- Recommended evacuation for a small propane tanker truck is 1,000 m (2/3 mile) in all directions.

- Recommended evacuation for a 500-lb tank is 350 m or 1,200 feet in all directions.
- Recommended evacuation for a 100-lb Tank is 200 m or 650 feet in all directions.
- Recommended Evacuation for a 20-lb Tank is 150 m or 500 feet in all directions.

7.24.1 Boiling Liquid Expanding Vapour Explosion (BLEVE)

A BLEVE occurs when a sealed container of liquefied gas (e.g. propane tank) is accidentally exposed to and enveloped by fire. The internal pressure of the containment vessel rapidly rises. At the same time, the container wall temperature rises, and the wall strength deteriorates. Even though a pressure relief valve may be operating, the stress applied by the increased pressure exceeds the strength of the containment wall.

The container eventually ruptures, and extremely heated liquid is released, expands and vaporizes in seconds resulting in catastrophic damage, as well as the spread of ignited vapours. The ruptured vessel or tank could propel dangerous shrapnel significant distances.

It is important that vessels or tanks are kept cool and the external fires extinguished quickly with water sprays or natural fluoroprotein-based foams.

Propane is naturally in the gaseous phase with a boiling point of -42º C (-44º F). One gallon of liquid propane will expand to 270 gallons of propane gas.

- Isolate spill or leak area immediately.
- Stay upwind, and out of low areas.
- Eliminate all ignition sources.
- All equipment used when handling the product must be grounded.
- Do not walk through spilled material.
- Keep unauthorized personnel away.
- If required, wear positive pressure self-contained breathing apparatus.
- Do not extinguish a leaking gas fire unless leak can be stopped.

7.24.2 How big is the fireball from a Propane or LPG BLEVE?

If the propane or LPG release is ignited immediately then a fireball will result. The size of the fireball depends on the mass of the tank contents at the time the tank fails. The shape of the fireball depends on how the tank fails and on the lading temperature. LPGs include the following flammable gases: Butane UN1011, Butylene UN1012, Isobutylene UN1055, Propylene UN1077, Isobutane UN1969 and Propane UN1978.

If we consider a spherical fireball, then an approximate equation for the fireball maximum radius is:

$$R_{fireball} = 3m^{1/3}$$

where,

$R_{fireball}$ = radius of fireball in metres

m = mass of propane in kg

However, keep in mind that fireballs are not always spherical. In some cases, when the tank fails a large ground fire can result that has a radius larger than that predicted above. Don't assume if you are just beyond the predicted fireball radius that you will be outside of the fire envelope.

Fireball sizes and durations for a range of tank sizes

WARNING The data given are approximate and should only be used with extreme caution. These times can vary from situation to situation. LPG tanks have been known to BLEVE within minutes. Therefore, never risk life based on these times.

BLEVE
(USE WITH CAUTION)

Capacity		Diameter		Length		Propane Mass		Minimum time to failure for severe	Approx. time to empty for engulfing fire	Fireball radius		Emergency response distance		Minimum evacuation distance		Preferred evacuation distance		Cooling water flowrate	
Litres	(Gallons)	Meters	(Feet)	Meters	(Feet)	Kilograms	(Pounds)	Minutes	Minutes	Meters	(Feet)	Meters	(Feet)	Meters	(Feet)	Meters	(Feet)	Litres/min	US gal/min
100	(26.4)	0.3	(1)	1.5	(4.9)	40	(88)	4	8	10	(33)	90	(295)	154	(505)	307	(1007)	97	26
400	(106)	0.61	(2)	1.5	(4.9)	160	(353)	4	12	16	(53)	90	(295)	244	(801)	488	(1601)	195	51
2000	(528)	0.96	(3.2)	3	(9.8)	800	(1764)	5	18	28	(92)	111	(364)	417	(1368)	834	(2736)	435	115
4000	(1057)	1	(3.3)	4.9	(16.1)	1600	(3527)	5	20	35	(115)	140	(459)	525	(1722)	1050	(3445)	615	163
8000	(2113)	1.25	(4.1)	6.5	(21.3)	3200	(7055)	6	22	44	(144)	176	(577)	661	(2169)	1323	(4341)	870	230
22000	(5812)	2.1	(6.9)	6.7	(22)	8800	(19400)	7	28	62	(203)	247	(810)	926	(3038)	1852	(6076)	1443	381
42000	(11095)	2.1	(6.9)	11.8	(38.7)	16800	(37037)	7	32	77	(253)	306	(1004)	1149	(3770)	2200	(7218)	1994	527
82000	(21662)	2.75	(9)	13.7	(45)	32800	(72310)	8	40	96	(315)	383	(1257)	1435	(4708)	2200	(7218)	2786	736
140000	(36984)	3.3	(10.8)	17.2	(56.4)	56000	(123457)	9	45	114	(374)	457	(1499)	1715	(5627)	2200	(7218)	3640	962

Emergency Response Guidebook
U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Transport Canada, Secretariat of Transport and Communications, 2024

Safe Standoff Distance

Liquefied Petroleum Gas (LPG – Butane or Propane)	Threat Description	LPG Mass/Volume [1]		Fireball Diameter [2]		Safe Distance [3]	
	Small LPG Tank	20 lbs/ 5 US gal	9 kg/19 L	40 ft	12 m	160 ft	48 m
	Large LPG Tank	100 lbs/ 25 US gal	45 kg/95 L	69 ft	21 m	276 ft	84 m
	Commercial/ Residential LPG Tank	2,000 lbs/ 500 US gal	907 kg/1 893 L	184 ft	56 m	736 ft	224 m
	Small LPG Truck	8,000 lbs/ 2,000 US gal	3 630 kg/7 570 L	292 ft	89 m	1,168 ft	356 m
	Semi tanker LPG	40,000 lbs/ 10,000 US gal	18 144 kg/37 850 L	499 ft	152 m	1,996 ft	608 m

[1] Based on the maximum amount of material that could reasonably fit into a container or

[2] Assuming efficient mixing of the flammable gas with ambient air.

[3] Determined by U.S. firefighting practices wherein safe distances are approximately 4 times the flame height. Note that an LPG tank filled with high explosives would require a significantly greater standoff distance than if it were filled with LPG.

Adapted from: Emergency Response Guidebook
U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Transport Canada, Secretariat of Transport and Communications, 2020

7.24.3 Fire Fighting a BLEVE

Fire fighters should do the following:

- Fight the fire from the maximum distance possible. If possible, use unmanned equipment such as a fixed fire monitor (deluge gun) or a ground fire monitor. These pieces of equipment are used to direct up to 7500 litres per minute onto a vessel or facility.
- Cool the container by flooding it with large amounts of water. Continue to cool after the fire is out.
- Do not direct water at the source of leak or at the pressure relief device (icing may occur).
- Leave the area immediately if you hear venting from the safety device or see discoloration of the tank.

7.25 Transportation Incident

7.25.1 Transportation Incident Safety

- Intervene to initiate the development of a safe and static incident scene.
- Identify the current and immediate hazards within the incident scene.
- Identify any hazards outside of the incident scene created by the accident.
- In the event of incidents involving or damaging electric service poles or transformer vaults:
  - Remain back an absolute minimum distance of 9 metres (30 feet) in all directions.
  - Restrict access to the area, permitting no entrance regardless of the need.
- In the event of uncontrolled fuel releases:
  - Restrict access and evacuate personnel from areas where an ignition and/or fire exposure is possible.

7.25.2 Action Plan for Transportation Incident

- Call 911.
- Establish roadway notification of the emergency incident.
- Survey the accident site from a safe distance and attempt to identify hazards.
- Isolate any present controllable hazards within the incident scene.
- Secure the incident scene and vehicles depending upon severity of incident (e.g. fatality).
- Assess and treat the injured, within level of training.
- Notify TDG if accident involves Dangerous Goods.

Identify the Accident Site to Roadway Users

- Utilize vehicles and or barriers to identify the roadway hazard and create an exclusion zone to prevent further accident occurrence:
  - Position a vehicle far enough back from the incident site, in both directions, such that on coming roadway users have the opportunity to identify the hazard and slow down to a safe stop.
  - Engage hazard lights of positioned vehicles.
  - Place additional vehicles in closer proximity to protect the incident scene from additional vehicle contact.
- Position traffic cones or road markers, as are available, to identify the accident site.
- Utilize accident bystanders who are uninvolved and uninjured to take positions safely off the roadway in high visibility vests close to the perimeter vehicles to wave down oncoming traffic alerting them to an incident scene.

Perform an Outside Accident Site Survey

- Survey the accident site from a minimum 9 metres (30 feet) safe distance, identifying all hazards outside of the accident site including:
  - Damaged utility poles.
  - Ground level power transformer vaults.
  - Any additional vehicles involved and not initially identified.
  - Location of injured; involved and uninvolved persons.
  - Discharged vehicle or transported fluids or materials.
  - Identify the discharge of gasoline or diesel fuel.
  - Identify any waterways or sources of fluids that could enter sewers etc.
  - Suspended loads or vehicles precariously positioned.

Perform an Inside Accident Site Survey

- Survey the incident scene within the 9 metres (30 feet) perimeter identifying all hazards inside the incident scene while maintaining a safe distance from any identified hazards including:
  - Damaged utility poles.
  - Ground level power transformer vaults.
  - Any additional vehicles.
  - Location of the injured.
  - Discharged vehicle or transported fluids or materials.
  - Suspended loads or vehicles precariously positioned.

Any tampering and/or altering of a vehicle's original position and/or controls (e.g. putting in park or out of gear, moving debris, letting air out of tires, etc.) should be documented and provided to

investigators in order that investigation findings are not compromised (preferably with before and after photographs).

Stabilize the Accident Site

- Identify and restrict access to areas of uncontrollable hazard.
- Attempt to access each vehicle individually, assessing to ensure vehicle(s):
  - Ignition system is disengaged.
  - Automatic transmissions are in the “park” position.
  - Manual transmissions are in neutral gear, once the ignition is disengaged.
  - Parking brakes are engaged.
- Where access to the vehicle is not possible to secure the vehicle in a disengaged position:
  - Place larger debris or available materials under the wheels to provide a makeshift wheel block.
  - If possible, mark the location of vehicle component debris prior to moving, as this will assist any required investigations.
- If materials are not present to provide wheel blocking, pull the valve stems of each tire to secure the vehicle and document for investigators.
- Control any hazardous condition as is possible:
- Dilute or suppress fuel leaks.
- Identify exclusion zones due to uncontrollable hazards.

Triage and Treat the Injured Personnel

- Provide medical treatment only within level of training.
- Identify the location and injuries sustained by each individual involved in the accident.
- Remove persons slightly injured, uninjured or uninvolved from the immediate accident site to a safe controlled holding location away from any hazards of the accident site and on-coming roadway traffic.
- Protect in place any injured persons found within the vehicles.
- Gather uninjured personnel from the scene to assist with medical treatment as is available.
- Assess the safety of field medical treatment in the position found:
  - Where the injured person’s safety is threatened, they may be moved to prevent further significant injury.
- Identify and prioritize the injury treatment based on criticality of need.
- Ensure qualified personnel provide medical treatment within prioritized medical aid protocols.
- Treat for shock.
- Closely monitor the injured until relieved by arriving emergency responders.

Meet and Brief Emergency Responders

- Position personnel to meet and direct emergency responders to the accident site.
- Provide a scene safety and hazard briefing.
- Identify the number of injured.
- Identify the location of the injured and from which vehicle they belong.
- Identify the initial position found and condition of each of the injured.
- Identify the injuries sustained by each victim.
- Identify the medical treatment provided.
- Provide personal information on each victim as is available.
- Monitor the safety of the scene.
- Assist emergency responders within ability and level of training.
- Gather information regarding the medical treatment provider, the transport provider and the destination of medical treatment center.

7.26 Product *Transportation* Incident

The first priority of a product transportation incident is to protect the driver and the public from risk as well as containing and preventing the product from impacting the environment.

If a transportation incident involves propane, see BLEVE requirements.

The party in charge or control of the product (carrier) is responsible to remedy the dangerous occurrence. However, the ultimate responsibility remains with the Company (shipper). Products that may be shipped include produced water or higher risk Liquefied Petroleum Gas (LPG).

Response actions include:

- On public roadways, the Company will not assume the on-site command but will act on behalf of local police to respond to the incident.
- Notify/activate police and report incident.
- If applicable, Implement ERAP by contacting Emergency Response Assistance Canada, see Section 9 Federal Government Support Agencies.
- Notify Transportation of Dangerous Goods Spill Department and provide the following information:
  - Location of incident and directions to site.
  - Name and contact number.
  - On-site response actions implemented.
  - Type of vehicle involved.
  - Type of container(s) involved and volumes.
  - Type of Dangerous Goods or environmentally sensitive products involved and volumes.
  - Copy of Safety Data Sheet (SDS).
- Secure the incident scene from on-coming traffic.
- Provide medical aid to the driver and passengers involved in the incident.
- If possible, interview the driver and review the manifest for products, volumes and carrier company name.
- Review SDS with the Emergency Response Guidebook for product hazards, PPE requirements, response action and public protection measures.
- Assess the container integrity and secure the leak (if safe to do so).
- Respond to public safety by reviewing the public protection plan.
- Contain and clean up spilled product.
- Keep a log of the time and sequence of events.
- Record information on a Company incident report form.
- Stay at site until relieved by additional Company personnel (if required).
- Restrict access to the site immediately and preserve site for follow-up investigations.
- Clean up and repair as directed by the Incident Commander.

7.27 Hazardous Materials Incident

7.27.1 Hazardous Material Safety

- Ensure the safety of site personnel and the public.
- Assess the potential exposure to human life.
- Assess the harm created by exposure to human life.
- Restrict the access to areas of potential exposure.
- Ensure the hazards associated with any product release are fully communicated.
- Activate emergency response agencies.
- Establish a safe incident scene.
- Decontaminate exposed personnel.

7.27.2 Action Plan for Hazardous Material Incident

- Identify the released material.
- Assess the hazard associated with the release.
- Identify any environmental impacts.

Initiating Incident Response

- Notify local emergency response agencies.
- Notify Company management.
- Establish a safe incident scene perimeter.
- Secure and restrict access to the area.
- Contain persons requiring decontamination.
- Evacuate persons from the area.
- Designate a holding area for evacuees.
- Identify safe access routes and communicate clearly and promptly to the responding agencies.
- Identify appropriate staging locations.
- Account for all personnel:
  - Number of persons involved.
  - Injured persons.
  - Injured employees.
  - Injured contractors.
  - Injured public.

Decontaminate Exposed Personnel

- Identify, contain and hold exposed personnel requiring decontamination in a safe location.
- Provide decontamination by removing clothing and thoroughly rinsing with large volumes of water.
- Control the runoff of the decontamination water.
- Remove person’s clothing and shelter in a safe isolated location.
- Medically treat exposed personnel as is possible and only as trained.

Identify the Released Material

- Identify the material carrier.
- Identify vehicle number.
- Identify the trailer number(s).
- Identify the placard number.

- Acquire the shipping papers reference number.
- Identify the SDS reference number.
- Reference the CANUTEC Emergency Response Guide.
- Reference the AAR Guide, if applicable.

Assess the Hazards Associated with the Release

- Inhalation.
- Flammability.
- Toxicity.
- Water reactivity.
- Contact exposure hazard.
- Organic reactivity.

Evaluate the Release

- Identify the release type: static or dynamic.
- Maximum potential-volume of release.
- Current volume and rate of release.
- Outfall direction of the release.
- Identify the outfall exposure potentials.
  - Public exposures.
  - Natural waterways.
  - High impact environmental outfalls.
  - Low impact environmental outfalls.
  - Natural containment characteristics.

Identify Environmental Impacts

- Identify the current weather and potential impacts:
  - Temperature.
  - Chance of precipitation.
  - Wind conditions: strength and direction.
  - General grade of topography.
- Brief emergency responders on their arrival.
- Identify the medical treatment provider.
- Identify the receiving medical treatment center.

Meet and Brief Arriving Emergency Responders

- Position personnel to meet and direct emergency responders to the incident site.
- Provide a scene safety and hazard briefing.
- Identify the event timeline.
- Identify the released material(s) involved.
- Identify the hazards associated with the released material(s).
- Identify the personnel accountability.
- Identify the injuries present.
- Identify the chemical exposures present.
- Identify the decontamination procedures undertaken.
- Identify the environmental exposure and impacts.
- Identify the containment actions undertaken.
- Identify the current operational status of the facility.

7.28 Injury/Fatality

All personnel must be prepared to provide timely and effective response to preserve the health and safety of personnel injured due to an emergency event. Always consider the consequences and risks prior to taking response actions to assist a victim and providing medical assistance. Ensure that the rescuer does not become a victim.

If an incident involving equipment results in the death of a worker, the person who is in charge of the equipment must ensure the site of incident is not disturbed, unless:

- Protecting the health and safety of other personnel.
- Aiding an injured person involved in an incident.
- Taking essential action to make the scene safe or to prevent a further occurrence of the incident.

The On-Site Group Supervisor has the obligation to preserve the site intact until:

- An OHS inspector or police officer arrives at the site of incident.
- Or an OHS inspector or police officer directs otherwise at the time of notification.

7.28.1 Serious Injury/Fatality Safety

- Assess the incident site for hazards, consider the following hazards before proceeding to the victim:
- Hazardous gases (H_2S, carbon monoxide, etc.).
- Electrical.
- Uncontrolled pressure.
- Unsecured mechanical.
- Liquid.
- Fire and explosion.
- Unsecured suspended loads.
- Other unsafe conditions.

If at any time the scene is deemed unsafe to enter:

- Do not enter or approach the victim.
- Responders are to immediately return to a confirmed safe area.
- Conduct any mitigating actions that are possible from a safe area.
- Wait for assistance if unsafe conditions remain.
- Identify the mechanism of injury and establish control mechanisms (water spray, electrical de-energizing, etc.).
- Identify the victims that will require decontamination prior to medical treatment.

7.28.2 Action Plan for a Serious Injury/Fatality

Identify the Emergency Event Occurrence

- Notify facility personnel of an emergency event occurrence.
- Sound a facility wide alert.
- Identify the location of the emergency event.
- Provide initial personnel actions to ensure their safety.

Direct Facility Personnel

- Communicate the presence of uncontrolled hazards to facility personnel.
- Provide direction to facility personnel for ensuring their safety.
- Specify and assign personnel to safe mustering positions.
- Identify the safe access routes from, or around, areas of hazard, to the safe mustering positions.
- Account for all facility personnel.

Initiate External Emergency Response

- Call 911.
- Request medical aid and transport.
- Identify incident location.
- Provide a call back number.
- Provide basic injury information.
- Provide known event timeline.
- Identify hazards present.

Brief Personnel Tasked to Assist in Hazard Stabilization

- Current incident site conditions.
- Uncontrolled hazards.
- Hazard control priorities.
- Provide individual assignments.
- Identify personnel safety considerations during stabilization operations.
- Specify communication and coordination protocols for stabilization operations.
- Review critical considerations of individual tasks.
- Specify emergency evacuation plan.

Stabilize Hazards and the Incident Site

- Remove or control incident scene hazards.
- De-energize/safety equipment and power supplies.
- Isolate uncontrolled material releases.
- Remove sources of ignition.
- Lower elevated or suspended loads.
- Identify any areas of, or remaining scene hazards.
- Monitor, direct and coordinate stabilization operations.
- Monitor safety conditions in areas of stabilization operations.
- Monitor condition of and impact on the injured.
- Maintain effective communication with all intervening personnel.
- In the event that significant hazardous conditions remain uncontrolled, consider the activation and assignment of the Site Safety Officer.

Approach and Assess the Injured

- Approach the injured and check for signs of life.
- Confirm the total number of injured.
- Identify injuries present.
- Triage the injured: identify and prioritize the injury treatment based on criticality of need.
- Assess the safety of field treatment in the position found.
- Assess the ability or effectiveness of field medical treatment in the position found.
- Confirm the accountability of facility personnel versus known numbers on site:
  - Safe mustering position.
  - Tasked for stabilization.
  - Medical treatment.
  - Injured.

Assess the Need for Chemical Decontamination

- Identify the need to decontaminate injured prior to initiating field medical treatment.
- Identify the chemical exposure.
- Reference applicable SDS.
- Contact the chemical manufacturer to obtain additional decontamination/ neutralization information.
- Contact Company Corporate Health to advise.
- Contact the Canadian Transport Emergency Centre (CANUTEC) for assistance.

Provide Field Medical Treatment

- Provide chemical decontamination/neutralization prior to initiating field medical treatment.
- Stabilize injured in position found if possible.
- In the event that the injured must be moved:
  - Mark the position found.
  - Create a sketch.
- Provide medical treatment only within level of training.
- Ensure qualified personnel provide field medical treatment within prioritized medical aid protocols.
- Closely monitor injured until relieved by arriving emergency responders.
- Maintain appropriate confidentiality of incident, medical and injured personal information.

Provide Company Management with Incident Notification

- Provide event timeline.
- Provide total number of injured.
- Provide names of injured.
- Provide specific injuries.
- Provide ages of injured.
- Provide employers of injured.
- Provide job description of injured.
- Provide contact information of injured.
- Provide current medical status.
- Identify field medical treatment provider.
- Identify medical transport provider.
- Identify receiving hospital – trauma center.
- Provide next of kin contact information.

Meet and Brief Emergency Responders

- Position personnel to meet and direct emergency responders to the incident site.
- Provide a scene safety and hazard briefing.
- Identify the mechanism(s) of injuries.
- Provide an event timeline.
- Identify the number of injured.
- Identify the initial position and condition of each victim.
- Identify the injuries sustained by each victim.
- Identify the medical treatment provided.
- In the event of a victim chemical exposure:
- Identify any decontamination provided.
- Provide an SDS.
- Provide personal information for each victim.
- Assist emergency responders within ability and level of training.
- Monitor the safety of the incident site.
- Gather information regarding the medical treatment provider, the transport provider and the destination medical center, hospital or trauma center.

Special Considerations for Fatality Events

- The deceased must not be moved unless:
  - Doubt of death exists, or
  - Authorized/requested to do so by the medical examiner or designate.
- If the victim's injuries are obviously fatal no additional risk shall be taken to recover the body.
- The recovery of suspected fatalities does not take priority over the rescue of the living and incident control activities.
- Scene preservation is critical – lawful movement of a fatality is only permitted to rescue a person in danger or to establish area safety.
- Once the emergency event has been controlled, the area of a suspected fatality is to be cleared of all personnel and cordoned off.
- Institute a tracking log to account for all persons with access to the cordoned off area.
- Non-authorized pictures are prohibited.
- Police and OHS will attend to conduct investigations.

Provide Field Management of the Incident

- Isolate and maintain the incident site undisturbed until custody is handed over to the investigating agency.
- Re-evaluate the overall safety of the facility.
- Assess, monitor, and manage the individual condition of the uninjured facility employees.
- Interview witnesses to the incident, providing a written statement, immediately if possible, or delayed if the witness is physically or emotionally unable.
- Receive approval from Company management prior to re-establishing site operations.

7.28.3 Next of Kin Notification

If any personnel are seriously injured, missing or killed, it is the responsibility of the Incident Commander to ensure that Deltawest provides prompt notification to a senior Company representative so that the immediate family can be notified as quickly as possible.

Next of Kin Notifications should be made in the following instances:

- A serious injury.
- A fatality.
- Instances where personnel may be involved in an emergency and are unharmed, but are not able to contact family members to advise of their status.

Death should never be declared by Deltawest no matter how obvious. Death notifications are not to occur until a medical doctor or medical examiner with the local authorities has pronounced the casualty legally dead.

If the incident involves the death or serious injury of a member of the public, local police or RCMP will be contacted by the Incident Commander (or designate) and asked to identify and notify the next of kin.

Under no circumstances are the names of casualties or missing persons to be released to the public or media unless next of kin are notified and their consent is obtained.

Contractor Next of Kin Notification

If an employee of a contractor employed by Deltawest is injured, the Incident Commander and a senior Company representative will ensure that the contractor's head office is notified. The Contract Company is responsible for their own employees' notification of Next of Kin. In the case where a contractor is a small operation, or with no office, Deltawest will request that the RCMP or local police identify and notify the next of kin.

Employee Next of Kin Notification

If an employee or contract employee employed by Deltawest is injured, a senior Company representative or the most senior company field representative known by the family will make Next of Kin notifications in conjunction with a Victims Services representative from the local police or RCMP detachment.

7.29 Air Ambulance

7.29.1 Command and Control

Air Ambulances are dispatched based on flight conditions, aircraft availability/capability and criticality of the injured. Once you believe that an air ambulance is needed, call the appropriate number identified in the Telephone Directory in this binder and provide:

- Description of the patient's condition.
- Severity of injury.
- Type of injury.
- Level of consciousness.
- Exposure to hazardous materials.

If possible, establish contact with helicopter crew on a secure, dedicated radio frequency and remain in contact until touchdown. Identify the pre-designated Landing Zone if available.

All Landing Zone personnel must wear full PPE including, helmet, glasses, ear protection and a high-visibility vest.

7.29.2 Pre-Landing Checklist:

The flight crew will contact ground units via a prearranged radio frequency, ambulance radio frequency, or phone line for the following information.

TERRAIN	HAZARDS	LZ Markings
Level or sloping	Street signs	Four turbo flares
Type of surface	Vehicles	Four road flares
Dust or loose snow	Towers	Four reflective flares
Rocks, bushes, stumps, etc.	Poles	Four highway cones (days only)
	Wires	(Extra strobes/flares/cones on upwind side)

7.29.3 Landing Zone

When choosing a landing zone, look for the following:

- Flat or relatively level surface.
- Approximately 35 metres (120 feet) downwind from the scene to protect the incident from any downwash and exhaust.
- Ideally 30 metres (100 feet) square in size.

Sweep the site for all foreign unsecured and loose debris and wet the area down to reduce dust or lose debris from dislodging.

Communicate hazards (typically through the Air Ambulance dispatch) using the mnemonic **HOTSAW**:

- Hazards.
- Obstructions.
- Terrain.
- Surface.
- Animals.
- Wind/weather.

The landing zone should be marked on all four corners by either bright LED lights, or traffic cones.

7.29.4 Ground Operations

- Designate a Landing Zone Operator (LZO).
- When helicopter approaches the LZO will extend both arms straight above their head, giving the ‘all-clear’ signal.
- If there are any sudden changes or if any hazards arise the LZO simply waves off the landing, communicates the hazards to the crew and then the helicopter crew will assume a holding pattern until it is clear to land.
- The LZO remains in place, in a kneeling position, to act as a horizontal reference point for the pilot.
- For helicopter departure, the LZO again assumes a kneeling position at 12 o’clock giving the ‘all-clear’ signal for takeoff.

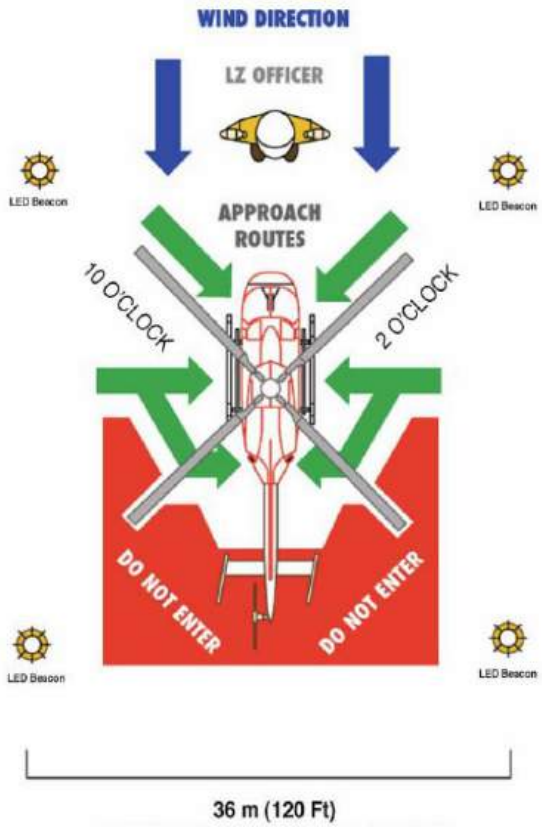
7.29.5 Loading and Unloading

- Do not approach the helicopter.
- The co-pilot will guide all crews nearing the helicopter for patient loading.
- For loading patients, crews must approach the helicopter in the 10 - 2 o’clock positions avoiding the tail rotor of the aircraft.

7.29.6 Hazards and Special Situations

- Landing zone operations and practices are the same for day and night operations.
- For night landings, all emergency personnel in the vicinity of the landing zone must don high visibility vests throughout operations.
- Nearby vehicles can focus lights on hazards in the immediate area but must not direct the lights at the helicopter as they could potentially obscure vision for the crew.
- If the incident is in a remote area turn nearby vehicles lights on to aluminate the landing zone, preferably vehicles should be located at the four corners of the landing zone.
- If the landing zone is covered in snow or partially obscured take up position in the centre of the landing zone and the pilot will land directly beside the LZO using them as a reference point.
- For road landings, all single lane highways or roads, traffic must be blocked in both directions throughout both the aircrafts' landing and take-off procedures work with the local police or highway authorities with jurisdiction.

7.29.7 Approach Routes



7.30 Missing Worker

If a member(s) of staff does not attend work during a scheduled shift and contact cannot be made, the On-Site Group Supervisor should assess the situation and decide whether to activate the Emergency Response Team.

Where it is determined that a worker is potentially missing the Emergency Response Team is to be activated to assist in determining their whereabouts and in mobilizing company personnel.

7.30.1 Response Plan for Missing Worker

- Attempt to establish contact with the missing person(s) by phone.
  - Leave a voicemail message with a provided call back number.
- Establish a history of the missing person(s) last known movements, by contacting colleagues, friends, family, contacts, and work associates.
- Identify the missing person(s) personal vehicle and attempt to locate vehicle on site or in proximity to his/her last known movements.
- Make enquiries with local/county/regional/state hospitals.
- Make enquiries with local/county/regional/state police.
- Continue to try to establish contact with the missing person using:
  - Mobile telephone number(s).
  - Home telephone number.
  - Text messages.
  - Email messages.
- If the missing person is a contractor:
  - The contracting company shall be contacted to determine if they know of the person's whereabouts or movements.
  - Continue to maintain regular contact with contracting company.

7.31 Severe Weather Incidents

Wildfires, thunderstorms, tornadoes, hail, blizzards, high winds, and heavy rain can develop quickly and hit hard posing a threat to life and property. Municipal governments are responsible for informing the public and providing detailed information about the nature of the emergency.

7.31.1 Severe Weather Safety

Identify the immediate hazards associated with the impact of a severe weather incident to the facility or any facility egress routes. If at any time the facility is threatened by a severe weather incident, prioritize the preparations in accordance with:

- Safety of personnel.
- Environmental protection.
- Protection of facility assets.

Identify the safety risk associated with facility personnel weathering the severe weather within the protection of the facility vs. the risks of evacuation.

Effectively use of the lead time prior to the arrival of the severe weather to achieve either:

- Early evacuation to prevent exposure to unsafe conditions.
- Shelter in Place preparations including adequate food and water supplies.

Minimize personnel exposure to hazardous conditions by rescheduling services, deliveries and non-essential activities.

Account for secondary effects of severe weather e.g. icy roads, toppled trees, flooding etc. in risk assessments.

Response Plan for Severe Weather

- Prepare a virtual or mobile Command Post to sustain operations in the event of power loss or building damage including:
  - Pre-printed maps.
  - ICS wall charts.
  - Communication devices (satellite and cell phones, chargers etc.).
  - Portable generators and heaters.
- Sustain Command Post operations by hardening the building against storm damage.
- Identify the current status of any potential or impending severe weather.
- Identify the safety of the facility location with regard to severe weather impact.
- Assess the appropriateness of continuing current facility operations.
- Maintain personnel accountability throughout any facility evacuation process.
- Identify the facility's ability to provide protection for personnel during the severe weather.
- Brief facility personnel to provide incident information and current status.
- Identify incident contingency plan(s) for the timely and safe shutdown of facility operations and the protection of facility assets.

7.31.2 Wildfire

A wildfire is an uncontrolled fire in an area of combustible vegetation that occurs in the countryside or a wilderness area. A wildfire differs from other fires by its extensive size, the speed at which it can spread out from its original source, its potential to change direction unexpectedly, and its ability to jump gaps such as roads, rivers and fire breaks. Wildfires are characterized in terms of the cause of ignition, their physical properties such as speed of propagation, the combustible material present, and the effect of weather on the fire.

Action Plan for Wildfire Response

- Make contact with supervision to obtain current fire statuses and fire spread predictions:
  - Location.
  - Spread direction.
  - Rate of growth.
  - Evacuation areas, evacuation routes, and proximity of facility areas under mandatory evacuation orders.
  - Provide and obtain contact numbers for periodic information and status updates.
- Identify actions and time required to safely shutdown the facility operations:
  - The safe evacuation of the personnel remains paramount.
  - Protect company assets by shutting down early in a managed and organized fashion.
  - Consult Company management for guidance.
- Brief all personnel as to the current status of the wildfire and its:
  - Location.
  - Direction and rate of fire growth/spread.
  - Potential shutdown procedures.
  - Contingent evacuation procedures.
- Identify and specify the safe egress route including any new safe mustering location for all evacuating personnel.
- Maintain a common communication link with all evacuating personnel groups.
- Maintain a tracking and accountability system during the evacuation to:

  - Identify the current location of each evacuating individual.
  - Identify and confirm the safety of each evacuating individual.
- Contact the supervisor and provide the current status of the facility and evacuation status of the personnel.

7.31.3 Tornadoes

Tornadoes form suddenly, are often preceded by warm humid weather, and are always produced by thunderstorms, although not every thunderstorm produces a tornado. Choose an appropriate shelter.

Tornado warning signs:

- Severe thunderstorms with frequent thunder and lightning.
- An extremely dark sky sometimes highlighted by green or yellow clouds.
- A rumbling sound, such as a freight train might make or a whistling sound such as a jet aircraft might make.
- A funnel cloud at the rear base of a thunder cloud often behind a curtain of heavy rain or hail.

What to do in case of a tornado:

- Take cover immediately, if you are in a building seek shelter under a heavy table or desk, stay away from windows and outside walls and doors.
- Do not get into your car. Seek shelter in a building with a strong foundation. If no shelter is available, then lie down in a ditch away from automobiles or mobile homes.
- In all cases, get as close to the ground as possible, protect your head, and watch out for flying debris.

7.31.4 Lightning

Lightning is a powerful sudden flow of electricity (an electrostatic discharge) accompanied by thunder that occurs during an electric storm. To estimate how far away the lightning is count the seconds between the flash of lightning and the thunderclap. If you count fewer than five seconds, take shelter immediately, you do not want to be the tallest object in the area.

If caught outdoors:

- Avoid putting yourself above the surrounding landscape. Seek shelter in low-lying areas such as valleys, ditches, and depressions but be aware of flooding.
- Stay away from water. Get to land as quickly as possible if you are on the water. Lightning can strike the water and travel a substantial distance from its point of contact.
- Stay away from objects that conduct electricity, such as tractors and metal fences.
- Avoid being the highest point in an open area or holding an object that can make you the tallest object and a target for lightning.
- You are safe inside a car during lightning but be aware of downed power lines which may be touching your car. You are safe inside the car, but you may receive a shock if you step outside.
- In a forest, seek shelter in a low-lying area under a thick growth of small trees or bushes.
- Keep alert for flash floods, sometimes caused by heavy rainfall, if seeking shelter in a ditch or low-lying area.

7.31.5 Floods

A flood is an overflow of water that submerges land which is usually dry. Flooding may occur as an overflow of water from waterbodies, such as a river or lake, in which the water overtops or breaks levees, resulting in some of that water escaping its usual boundaries, or it may occur due to an accumulation of rainwater on saturated ground.

What to do in case of flooding:

- For information listen to the radio, watch television, check Government Agency websites or follow Social Media.
- Be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move.
- Be aware of stream, drainage channels, canyons and other areas known to flood suddenly. Flash floods can occur in these areas with or without typical warnings such as rain clouds or heavy rain.
- Do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you.
- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground when water is not moving or not more than a few inches deep. You and the vehicle can be swept away quickly. If your vehicle is trapped in rapidly moving water, stay in the vehicle. If the water is rising inside the vehicle, seek refuge on the roof.
- Do not park your vehicle along streams, rivers or creeks, particularly during threatening conditions.
- Sandbag and/or build a dike if possible.

7.31.6 Seismicity

Earthquakes are caused by subsurface breaking and/or shifting of rock, which will release small to extremely large forces of energy through the Earth's lithosphere creating seismic waves. These seismic waves can cause severe damage to drilling rigs, well-sites, pipelines, facility buildings etc. Gas, electricity and phone services are also in danger of being affected. Landslides, avalanches, and flash floods can also be triggered. Earthquakes can occur at any time of the year. After an earthquake there is the possible danger of an "After-shock" which can occur in the hours, days weeks or even months after the initial wave. Some earthquakes could actually be foreshocks and a larger earthquake could occur.

During an earthquake

Wherever you are when an earthquake starts, take cover immediately. Move to a nearby safe place if need be. Stay there until the shaking stops.

If you are indoors: "DROP, COVER, HOLD ON"

- Stay inside.
- **Drop** under heavy furniture such as a table, desk or any solid furniture.
- **Cover** your head and torso to prevent being hit by falling objects.
- **Hold** onto the object that you are under so that you remain covered.
- If you can't get under something strong, or if you are in a hallway, flatten yourself or crouch against an interior wall.
- Stay away from windows and shelves with heavy objects.

If you are outdoors

- Stay outside.
- Go to an open area away from buildings.

If you are in a vehicle

- Pull over to a safe place where you are not blocking the road. Keep roads clear for rescue and emergency vehicles.
- Avoid bridges, overpasses, underpasses, buildings or anything that could collapse.
- Stop the car and stay inside.
- Listen to your car radio for instructions from emergency officials.
- Do not attempt to get out of your car if downed power lines are across it. Wait to be rescued.
- Place a HELP sign in your window if you need assistance.

AVOID the following in an earthquake

- Doorways. Doors may slam shut and cause injuries.
- Windows, bookcases, tall furniture and light fixtures. You could be hurt by shattered glass or heavy objects.
- Downed power lines - stay at least 10 metres away to avoid injury.

After an earthquake

Stay calm. Help others if you are able.

- Be prepared for aftershocks.
- Listen to the radio or television for information from authorities. Follow their instructions. Place telephone receivers back in their cradles; only make calls if requiring emergency services.
- Put on sturdy shoes and protective clothing to help prevent injury from debris, especially broken glass.
- Check your building for structural damage and other hazards. If you suspect the building is unsafe, do not re-enter.
- If you have to leave the building, take your emergency kit and other essential items with you. Post a message in clear view, indicating where you can be found. Do not waste food or water as supplies may be interrupted.
- Do not light matches or turn on light switches until you are sure there are no gas leaks or flammable liquids spilled. Use a flashlight to check utilities and do not shut them off unless damaged. Leaking gas will smell.
- If tap water is still available immediately after the earthquake, fill a bathtub and other containers in case the supply gets cut off. If there is no running water, remember that you may have water available in a hot water tank (make sure water is not hot before touching it) and toilet reservoir (not the bowl).
- Carefully clean up any spilled hazardous materials. Wear proper hand and eye protection.
- Check on your co-workers. Organize rescue measures if people are trapped or call for emergency assistance if you cannot safely help them.
- Place a HELP sign in a window if you need assistance.
- Beware of secondary effects. Although ground shaking is the major source of earthquake damage, secondary effects can also be very destructive. These include landslides, saturated sandy soils becoming soft and unstable, and flooding of low-lying areas.

Department of Public Safety and Emergency Preparedness Canada
https://www.getprepared.gc.ca/cnt/rsrcs/pblctns/rthqks-wtd/index-en.aspx

7.32 Wildlife

7.32.1 Wildlife Incidents and Mortalities

Wildlife observations should be tracked on a daily basis (nuisance or not) to determine which wildlife are in the area and whether activities are attracting wildlife. Mitigations may need to be incorporated to reduce the potential risk to workers and wildlife.

Wildlife mortalities should be reported to your supervisor and appropriate Company Representative immediately.

The following information should be recorded and reported:

- Nature of the incident (i.e., road collision).
- Type of species and number of individuals.
- Location of incident/collision.
- Time of incident/collision.
- Details of incident/collision (e.g., if animal was clipped or hit directly).

7.32.2 Wildlife Awareness

There are a number of different species of wildlife that can present hazards to workers.

Wildlife awareness is not limited only to working in remote areas but should be oriented to the habitat of the work area and included into local hazard assessments. Workers are required to follow the practices developed to manage local wildlife hazards.

7.32.3 Working in wildlife habitat

- Make enough noise to prevent surprising wildlife.
- Watch for tracks and signs.
- Young animals are usually well-hidden. However, if you do stumble upon babies, do not approach or attempt to pick them up. Leave the area immediately, as a female will defend her young.

If you meet wildlife:

- Never approach wildlife. Although animals will normally avoid a confrontation, animals are unpredictable. Animals feeding may be dangerous.
- Always give animals an avenue of escape.
- Stay calm. Talk in a confident voice.
- Do not run. Try to back away slowly.
- Do not turn your back on wildlife.
- Do all you can to enlarge your image. Don’t crouch down or try to hide. Pickup sticks or branches and wave them about.

7.32.4 Bears

All employees should be informed of the following:

- types of bears in the area
- recent bear activity
- general policies and procedures in place to mitigate potential conflict with bears
- actions to be taken if a bear is sighted including reporting procedures

Monitoring Work Sites

Employees working away from the main site may occasionally find themselves working in an area of high bear hazard. Normally work should be halted and workers removed until the bear hazard is no longer present. However, if work can not be shut down, a qualified bear monitor should be assigned to alert workers when bears are present and move people out of harms way. Only in extreme cases would bear monitors displace the bears in order for work to continue.

Monitoring Camps

Problem encounters with bears are more likely in a camp situation than a chance encounter in the field or at work sites. When bears are active in the area, monitors may be called upon to provide bear detection services and to alert personnel of the presence of a bear on site. If necessary, the bear monitor will attempt to deter the bear. Bear monitors may also advise on preventative measures within a camp, including altering camp locations or configurations as appropriate.

What to do if you see a Bear

If It does not approach:

- If spotted in the distance, do not approach the bear. Make a wide detour or leave the area immediately.
- If you are at close range, do not approach the bear. Remain calm, keep it in view. Avoid direct eye contact. Move away without running.

If the bear approaches:

- If the bear is standing up, it is usually trying to identify you. Talk softly so it knows what you are. If it is snapping its jaws, lowering its head, flattening its ears, growling or making 'woofing' signs, it is displaying aggression.
- Do not run unless you are very close to a secure place. Move away, keeping it in view. Avoid direct eye contact. Dropping your pack or an object may distract it to give you more time. If it is a grizzly, consider climbing a tree.

What to do if a Bear Attacks

Your response depends on the species and whether the bear is being defensive or offensive. Bears sometimes bluff their way out of a confrontation by charging then turning away at the last moment. Generally, the response is to do nothing to threaten or further arouse the bear. While fighting back usually increases the intensity of an attack, it may cause the bear to leave.

Every encounter is unique, and the following are offered as guidelines to deal with unpredictable animals and potentially complex situations.

Grizzly Attacks from Surprise (defensive)

- Do nothing to threaten or further arouse the bear.
- Play dead. Assume the 'cannonball position' with hands clasped behind neck and face buried in knees.
- Do not move until the bear leaves the area. Such attacks seldom last beyond a few minutes.

Black Bear Attacks from Surprise (defensive)

- Playing dead is not appropriate. Try to retreat from the attack.

Grizzly or Black Bear Attacks Offensively (including stalking you or when you are sleeping)

- Do not play dead.

- Try to escape to a secure place (car or building) or climb a tree unless it is a black bear.
- If you have no other option, try to intimidate the bear with deterrents or weapons such as tree branches or rocks.

Equipment/Deterrent

Bear Spray

- Must be used at very close range and should be used downwind only to avoid getting on yourself.
- It is indiscriminate and can cause extreme irritation to both the bear and the user.
- Will only work if fired at a bear, IT IS NOT A REPELLENT.
- If discharged, wash all your clothing, packs and any exposed skin with soap to help avoid attracting more bears with the smell.
- Works on cougars.

Bear Bangers.

- Should be fired up into the air between you and the bear.
- Do not fire the bear bangers at or behind the bear.

7.32.5 Elk

Elk can be aggressive and attack without warning. During the fall mating season (August – September) male are particularly belligerent. During the spring calving season (May – June) female elk aggressively defend their young. DO NOT approach elk in any season as they are DANGEROUS.

7.32.6 Moose

A moose encounter has the potential to be just as dangerous as a bear encounter. Therefore, similar measures must be taken to avoid these large ungulates. Moose are especially aggressive in the spring (calving season) and the fall (rutting season). Moose are most active in the early hours of the morning. However, one can expect to meet a moose any time of the day, especially in marshy woodland and around lakes. The best method of avoiding unwanted encounters with wildlife is to make a lot of noise. Hence, while practicing good bear-avoidance measures, moose will also be alerted of your presence. As harmless as a moose encounter may seem, it is important to have a high level of respect for the damage and injury these animals can incur if they feel threatened. Hence, if a moose is encountered, a minimum of 100 m must be put between yourself and the animal. If the moose remains stationary, you should cautiously move away from the animal, monitoring its behaviour in the process. Signals such as whether its ears are forward or back, or a lowering of the head are good indicators of aggressiveness (forward and erect is the animal being alert, back and down over the head is aggressive). React according to the signals being sent by the animal. Also, the direction you use in moving away should not interfere with any natural escape routes the moose may want to take. Similarly, it is very important not to position yourself between two moose (cow and calf or two rutting males).

If a moose feels threatened, it may charge at the person that has invaded its space. Moose are not predatory animals. Some examples of aggressive behaviour that may be exhibited are flattening of the ears and approaching humans. Unlike in a bear encounter, walking quickly, or if safe to do so, running away from an angry moose will not lead to a sustained attack; it will likely prevent it. Should the moose charge regardless, the best method of defense is to move behind a big tree, light standard or other large stationary object. Continue to try to get away from the animal while always keeping large solid objects between yourself and the moose. It is imperative that no

false sense of security is attained once a large solid object is between a person and an angry moose, as moose are very capable of kicking accurately with their forelegs around a tree trunk. Although it is best to try to get away from the animal, this is sometimes difficult, particularly if the area is challenging to move through.

7.33 Site Security

Site security describes security measures that are designed to deny unauthorized access to facilities, equipment and resources, and to protect personnel and property from damage or harm (such as espionage, theft, or terrorist attacks). Site security involves the use of multiple layers of interdependent systems which includes Closed-Circuit Television surveillance, security guards, protective barriers, locks, access control protocols, and many other techniques.

7.33.1 Safety

The safety of facility personnel is paramount during periods of elevated security risk. Facility personnel have the right to ensure the safety of their fellow employees, prevent damage to facility property and prevent harm to trespassers but do not have the authority or permission to confine persons trying to leave the property.

7.33.2 Response Plan for Site Security

- Call 911.
- Assess the threat risk versus the ability to safely continue the facility operations.
- Conduct a team meeting to include all facility personnel apprising them of the threat potential, an assessment of its legitimacy and include precautionary and egress measures.
- Advise facility support companies and contractors of the threat potential and the precautionary measures.
- Remain and operate in pairs during periods of elevated security risk, each team should be provided with a reliable means of communication.
- The facility gates should be closed and remain closed.
- When risk assessment deems it appropriate, anyone entering or exiting must be identified and the date and time documented by security.
- During periods of elevated security risk and continued operation, facility management shall coordinate the travel plans of personnel to and from the facility.
- In the event that the threat is assessed to be credible and provides potential for injury to facility personnel, consider operational shutdown and the initiation of either a controlled proactive evacuation or shelter in place.
- Consider the initiation of two-person security patrols throughout the facility.
- Confer with Company management with regard to acquiring security support.
- Do not attempt to challenge unauthorized persons who appear to be armed or significantly distraught.
- Ensure that none of the security measures restricts safe and immediate egress from the facility in the event of an emergency evacuation.
- Consider the postponement of all non-essential facility activities until an appropriate reduction in the security risk has occurred.

In the event of civil disobedience or ideological protest, facility personnel are directed as follows:

- Do not attempt to engage the protestors in anyway.
- Do not enter into discussions or verbal conversation.

- The On-Site Group Supervisor is to identify and communicate alternate egress routes from the facility in the event of emergency.
- Facility personnel should be sheltered away from the protestors as is possible to limit exposure.

7.34 Bomb Threat

A bomb threat is generally defined as a threat, usually verbal or written, to detonate an explosive or incendiary device to cause property damage, death, or injuries, whether or not such a device actually exists.

7.34.1 Evaluating the Threat

The assessment of the threat is primarily made on the basis of the nature, tone, and specifics of the call or letter.

The following conditions increase the threat credibility:

- Details of type, size and location of device.
- Detonation timing provided.
- Ideological rhetoric, citing of political or social cause.
- Identified with known terrorist organization.
- Threat towards a company individual, specific position or job function or process.

The following conditions decrease the threat credibility:

- Vague threat to “bomb the whole facility”.
- Immature speech, voice or mannerisms.
- Background of laughter, trivial conversation, etc.
- Tendency to continue conversation, harangue, over-stress on obvious point.
- A non-specific threat (from a seemingly intoxicated individual, giggler, child or incoherent person).

7.34.2 Action Plan for Bomb Threat

- Employee will notify On-Site Group Supervisor.
- On-Site Group Supervisor will notify Incident Commander.
- Incident Commander will notify police.
- Incident Commander will review the information, assess the situation and make critical event management decisions including the activation of the Emergency Response Team, as appropriate.
- Incident Commander will evacuate non-essential personnel from the concerned area.
- Emergency Response Team will collect information and evaluate the threat and decide whether to shut in the facility.
- Emergency Response Team, in the event of an explosion, will support the activities of the On-Site Group Supervisor.

7.34.3 Critical Event Decisions

- Police notification is mandated due to the criminal aspect of a bomb threat.
- Identify if a full or partial evacuation (or none at all) is warranted.
- Identify if a search is warranted and can be done safely.
- Identify when it is safe to reoccupy the site.

7.34.4 Bomb Search Considerations

If a credible threat is received, use the available time to evacuate the immediate area.

If assisting the authorities in the search effort, it is imperative that personnel do not move, jar, or handle any suspicious object, or anything attached to the object.

7.34.5 Bomb Search Procedures

Emergency Response Team may work with the Police as a resource as the Police are not familiar with the facility.

The following points relate to teams and search methods:

- Work with a designated police officer.
- Once a room has been searched and nothing has been found, close and mark the door with a piece of tape in the shape of an X. This will indicate to other teams that the room has been search and it will eliminate repetition.
- Let the police assume responsibility.

7.34.6 Discovery of Suspect Device

- DO NOT TOUCH OR MOVE THE OBJECT!
- Evacuate all people from the bomb location.
- Notify the Incident Commander.
- Designate an assembly area far enough away from possible flying debris or other effects of a possible detonation.
- Instruct people on actions to be taken in view of the location of the bomb.
- Do everything possible to minimize any damage from an explosion:
  - Deploy firefighting equipment and personnel to a safe area.
  - Shutdown construction activities, lower suspended loads.

7.34.7 No Suspected Devices Found

After a thorough search of the site and no bomb is found, the police, Emergency Response Team and Incident Commander will decide if operational activities are to resume. A minimum of one hour should have elapsed from any stated detonation time prior to resuming normal operations. Review all details and actions with police prior to resuming normal operations.

7.34.8 Explosion Occurrence

- Have rescue personnel administer first aid and remove any injured personnel.
- Secure scene with the assistance of the police.
- Preserve any and all evidence; even the smallest pieces could be used for investigation and court proceedings.
- Only when authorised to do so, have maintenance personnel begin salvage and damage control operations.

8.0 POST EMERGENCY

8.1 Overview

The decision to stand-down the emergency, allow stakeholders to return to the incident area and resume normal operations is made by the Incident Commander and CEOC Director in conjunction with the Regulatory Authority.

The CEOC Director and Incident Commander ensure that the CEOC Command Team and Site Command Team carry out post-incident activities as required, including the following tasks:

- Emergency stand-down notification.
- Public assistance and support.
- Clean-up and repair.
- Ongoing media communication.
- Post-incident documentation.
- Post-incident Investigation.
- Critical Incident Stress Debriefing.
- Post-incident Report.

8.2 Responsibility

The Incident Commander and CEOC Director manage the following post-incident activities:

- Deactivate the emergency response operations.
- Establish post-incident goals.
- Delegate the responsibility for the completion of post-incident tasks.
- Ensure that all contacts are notified about the emergency stand-down.
- Ensure all post-incident activities are documented.
- Arrange for critical incident stress debriefing sessions as necessary.
- Conduct a debriefing meeting for all response team members.

8.3 Critical Incident Stress Debriefing (CISD)

Any individual directly involved in a critical incident and/or experiencing strong feelings relating to the event should be debriefed to encourage communication about their feelings and reactions without being judged or blamed.

Individuals include:

- Operating Personnel directly involved.
- Co-workers.
- Management.
- Contractors.
- Family Members.
- Community Members.

The Incident Commander and CEOC Director ensure the following actions are completed:

- When practical after a serious incident, mobilize professionals who are trained in CISD.
- Explain to the participants that the debriefing is confidential. CISD meetings do not judge or lay blame. Recording devices at these meetings is prohibited.
- Do not schedule more than 20 people to do a debriefing session. Advise the CISD professional about the size of the session and provide information about the attendees before the session starts.
- Debriefing should occur 24-72 hours post-incident.

Objectives of the debriefing are to:

- Minimize the severity and duration of the trauma.
- Normalize feelings and reactions.
- Acknowledge each individual's personal experience.
- Provide support.
- Provide information on crisis reactions and stress management.

8.3.1 Key Reactions to Stress

PHYSICAL	COGNITIVE (PERCEIVED)
Headaches	Poor Concentration
Dizziness	Slow Thinking
Disorientation	Memory Lapses
Fatigue	Loss of Objectivity
Digestive Problems	Flashbacks
Frozen Fright	Abnormal Pondering
Loss of Control over Body Functions	Difficulty Processing Information
Numbness	Distorted Thinking
Increased Heart Rate	
Heightened Sensory Perception	
Sleep Disruptions	

8.4 Public Assistance and Support

The Incident Commander oversees the following actions:

- Verifies that the incident area is safe to re-enter in consultation with applicable Regulatory Authorities, if required.
- This may involve ensuring all equipment and debris are removed from public roadways. Any remaining hazardous areas must be cordoned off.
- Ensures that all sheltered or evacuated residents are contacted and informed that the incident is over.
- Secures the evacuated area until the evacuees have returned to their homes and businesses.
- Confers with the CEOC Director about sending a company representative to visit all members of the public who were affected.
- Ensures that the residents are provided with post-incident contacts and telephone numbers.
- Confers with the CEOC Director to schedule a follow-up meeting(s) with the residents to clearly explain the incident and address their concerns.
- Ensures resident expense and damage claims are addressed.

8.5 Investigation

Site and evidence preservation is extremely important after an unplanned event. Senior Company Management must be contacted, and a decision will be made whether to send personnel or a third-party contractor to the site to conduct an investigation.

If an incident involving equipment at a site results in a death, the site must be secured. The Incident Commander must ensure that the location is not disturbed (unless protecting the health or safety of other workers or aiding an injured person) until the police have investigated the accident and an OHS inspector directs otherwise.

Third party investigations by police, insurance companies, and others may be required. It is important to co-operate with all third-party investigators; therefore, the following guidelines will apply:

- Do not allow third party investigators on-site, unless authorized by the Incident Commander; this is to ensure everyone's safety. Obtain the name, title, address, and telephone number of all inspectors.
- If access is granted to the site, ensure that third party investigators are escorted while on company property and, for their safety, denied access to any hazardous areas. Inspectors must not be left unattended.
- Ensure inspectors receive only the information they request and limit tours to the specific area the investigator has asked to investigate.
- Always tell the truth. Do not speculate.
- Wait until legal counsel is present before answering questions if the inspector suggests that the statements may be used as evidence or indicates that you have the right to counsel.
- Copy all documents given to third parties, including investigators.

An internal investigation can be a valuable learning experience. The findings can be applied to other operations and improve the emergency response system. An investigation can also result in improved incident prevention methods and operating practices.

8.6 Clean Up and Repair

The Incident Commander oversees the following actions:

- Ensures that site clean-up is managed in a timely manner. The remediation phase of the site clean-up may be filled by an environmental specialist.
- Ensures that all hazardous waste is disposed appropriately according to applicable regulations.
- Ensures the priority is given to clearing debris and restoring the site to normal operating conditions after the government and company investigations are complete.
- Ensures that all equipment is demobilized, cleaned and inspected for contamination.
- Ensures all roadblocks, staging area and detour equipment is demobilized.
- Ensures that all clean-up and repair actions follow safety and environment policies and safe-work procedures.

8.7 Post-Incident Notifications

The objective in post-incident notifications is to ensure that the best possible communication with stakeholders are made; to sustain Company core value commitments and capture any outstanding or legacy issues.

All affected parties are to be advised of the post-incident status of the incident:

- Company employees and contractors.
- Joint Venture Owners.
- Mutual Aid partners.
- Evacuees.
- Members of the Public who were involved.
- Government Agencies.
- Non-Governmental Organizations (NGOs).

Typically, this should be done through personal calls (supported by media releases) by the CEOC Information Officer.

All communications are to be approved by the CEOC Director and Legal.

8.8 Incident Documentation/Company Records

The Incident Commander and the CEOC Director instruct their teams to complete the following duties:

- Collect and compile all forms and documentation for the incident, including all electronic records.
- Securely store all incident documentation. The protection of records is extremely important to ensure the evidence is complete and unchanged.
- Obtain all photographs and videos of the incident site and response. All photographs of the incident site which have been taken are considered Company material and are to be properly documented.
- Ensure that pages and checklists from all emergency response manuals are replaced.
- Prepare letters thanking support agencies, groups and individuals who provided assistance. Mention names of key individuals in correspondence.
- Company records must be reviewed by legal counsel before they are released.

8.9 Post-Incident Debriefing and Incident Assessment

The Incident Commander should follow the checklist below to ensure the following items and/or personnel are available at the debriefing session:

- A comfortable classroom/conference area large enough to conduct a post-incident debriefing.
- Refreshments.
- Map of Response Area.
- Copy of Incident Logs and all other Response Forms.
- Any Video Tape and/or Photos of the incident that may be helpful during the debriefing.
- If videotape is used, secure a video player and monitor.
- Flip chart or white board.
  - Masking tape to hang flip chart pages.
  - Drawing markers (various colors).
- Copy of Company's ERP.
- Note-taking materials for attendees (pads, writing instruments).
- Copies of any planning cycle plan(s).
- Copies of Daily Site-Specific Safety and Health Plans.

8.9.1 Session Guidelines

The debriefing should be facilitated by the Incident Commander. The following provides some session guides:

- Awareness on room safety e.g. emergency alarms, evacuation procedures for those participants not familiar with the facility.
- Objective and agenda of meeting.
- Need for openness and honesty.
- Emphasize that the debriefing is to provide learning and response improvement opportunities - not fault finding.

- Conduct session in a non-confrontational manner.
- Allow everyone involved in the response to have an opportunity for input.
- Have a Scribe available to document comments and action items.
- Do not solve the issues but record as action items to be reviewed and addressed later.
- Participants should not try to justify their actions but can provide clarification if requested by the facilitator(s).
- Introduce the participants and the organizations they represent e.g. location and role.
- Conclude the meeting by communicating future action plans e.g. "where do we go from here?"

8.9.2 Site Response Team Debriefing Questions

- Did pre-emergency planning efforts occur relating to this particular incident?
- Did pre-emergency training take place relating to this particular type of incident?
- Was the Incident Command System (ICS) promptly activated?
- Was ICS terminology implemented early on during the incident and utilized throughout the incident?
- Was the location of the Command Post established early on?
- Was a safe Staging Area established early on during the incident?
- Did responders receive thorough initial briefings before assignment?
- Was a Check-In/Check-Out area established early on (preferably at Staging)?
- Were all employees accounted for early on during the incident?
- Did responders preplan which escape or egress routes to utilize during emergency operations?
- Was there necessary command and control of resources to prevent freelancing?
- Were all hazardous substances and conditions identified before responders took direct action?
- Were the planning zones established by responders before action was taken?
- Did the On-Site Group Supervisor take action to ensure that all responders utilized the proper PPE?
- Were adequate resources ordered early on?
- Were planning cycle time guidelines utilized?
- Was employee evacuation undertaken?
- Were all required permits obtained prior to hazardous operations?
- Was site security and control provided?
- Were Incident goals and objectives established?
- Did emergency medical treatment occur in a timely fashion?
- Was PPE utilized in a safe and effective manner?
- Were direct mitigation efforts taken?
- Was action taken early enough to provide resources to perform monitoring?
- Was action taken early enough to provide resources to adequately complete source control efforts?
- Was a Site-Specific Health and Safety Plan completed?

8.9.3 CEOC Team Debriefing Questions

- Did someone establish a CEOC early on and implement the Incident Command System (ICS)?
- Were public notifications made in a timely manner?
- Were governmental notifications made in a timely manner?
- Was action taken early on to make required telephone notifications other than public and government?
- Was ICS terminology implemented early enough during the incident?
- Was action taken early enough to provide resources for Public Affairs and Community Relations Assistance?
- Was action taken to provide a 12-Hour Plan?

Response Actions Debriefing Questions

Detection

- Was the incident detected promptly?
- How was it detected?
- By whom?
- Could it have been detected earlier? How?
- Are there any instruments or procedures which might aid in detection?

Notification

- Was Management notified promptly?
- Was Management response appropriate?
- Was Head Office notified promptly?
  If so, why, how and who? If not, why not?

Evaluation

- Was the magnitude of the problem assessed correctly at the start?
- What means were used for this assessment?
- Are there any guides or aids to assist evaluation?
- What sources of information were available on public/structures in the area that could be at risk?
- What sources of information were available on winds and on water currents?
- Was information adequate?
- Was the information useful (and used) for trajectory forecasts?
- Were the forecasts realistic?
- Do we have adequate information on product properties?
- Do we need additional information on changes of product properties with respect to time (e.g. as a result of weathering) and other processes?

Mobilization

- What steps were taken to mobilize incident countermeasures?
- What resources were used?
- Was mobilization prompt?
- Could it have happened faster, or should it have been?
- What about mobilization of manpower resources - timely?
- Were the local response co-operatives or contractors used appropriately?
- How could this be improved?

- Was it appropriate to mobilize Head Office resources and was this effected promptly?
- What other corporate resources were available and were they identified and used adequately?

Response - Strategy

- Is the Company ERP an adequate response plan?
- Is it flexible enough to cope with unexpected events?
- Does the plan include clear understanding of local environmental sensitivities?
- What was the initial strategy for response to the incident?
- Is the strategy defined in the response plan?
- How did the strategy evolve during the incident and how were the changes implemented?
- What caused the changes?
- Are there any improvements needed? More training?

Response – Resources Used

- What resources were mobilized?
- How were they mobilized?
- How did utilization change with time? Why?
- Were the following resources used effectively:
  - Contractors?
  - Government agencies?
  - Company resources?
  - Co-operatives?
  - Mutual Aid?
  - Volunteers?
  - Consultants?
  - Others?
- What changes would have been useful?
- Is there adequate knowledge of resource availability?

Response – Effectiveness

- Was containment effective and prompt?
- How could it have been improved?
- Are additional resources required for containment?
- Was recovery effective and prompt?
- How could it have been improved?
- Are additional resources required for recovery?

Command Structure

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

Measurement

- Was there adequate measurement or estimation on the magnitude of the incident or volume of material released?
- Was there adequate measurement or estimation of the volume of product recovered?
- Should better measurement procedures be developed for either phase of operations?
- What would be appropriate and acceptable?

Government Relations

- What are the roles and effects of the various government agencies involved?
- Was there a single point of contact for the government agencies?
- Should there have been better communication with the agencies?
- Were the agencies adequately informed at all stages?
- Were too many agencies involved?
- Are any procedural changes needed to manage government relations?
- Was there agreement with the agencies on criteria for clean-up?
- How was this agreement developed?

Public Relations

- How were relations with the media handled?
- What problems were encountered?
- Are improvements needed?
- Was public outcry serious? How could it have been reduced?
- What communication systems were engaged by public and media (e.g. social media?)

8.10 Post-Incident Reports

The severity of an incident determines the report requirements.

Post-incident reports that are restricted to facts are limited to indisputable information such as the location of the incident, when the incident occurred, who responded, the number of injuries or casualties, and other information of this nature.

The report should include the following:

- A general description of the incident.
- Description of the response, containment, and recovery efforts.
- Area and site rehabilitation program.
- Recommendations for preventive measures in the future.
- Copy of personnel statements.
- Photographs illustrating the incident.
- Cost analysis for lost production, facility repairs, land reclamation, and community compensation.

A post-incident report contains analyses and evaluation of the incident. The report provides advice on how to prevent a recurrence and makes emergency preparedness recommendations. In addition, it may identify the immediate and basic causes.

Issues related to liability and responsibility may arise from the analysis of the report.

Reports that define responsibility, liability or corrective actions may have to be presented during legal proceedings. In such cases, however, the report may be protected from the disclosure by the legal doctrine of privilege. Any report that relates to the causation or liability of the company for an incident should be privileged and not given to a plaintiff in legal proceedings. A report that is not reviewed by a Company lawyer and that has been requested by a third-party legal counsel; should be addressed to Company legal counsel.

In addition to company reports, independent report(s) may be prepared by government agencies.

8.11 Cause and Liability Report

Cause and Liability Reports are privileged and confidential. They are prepared at the request of legal counsel in contemplation of litigation.

Cause and liability reports should be clearly separated from the reports that document factual matters and set out the remedial actions.

Privileged reports may include the following information:

- A description of the sequence of events that led up to the incident, during the incident and following the incident.
- Details related to the potential severity and the potential for frequency of recurrence. This suggests the importance of investigation and priority for action.
- An analysis including a logical determination of the cause of the incident.
- Evaluation of the emergency response:
  - On-site remedial procedures.
  - Safety standards that were applied during the response.
  - Internal notification and communication systems.
  - Effectiveness of media, government liaison or community relations efforts.
  - Public safety actions.
  - Actions taken to temporarily reduce the risk.
- An assessment of any potential legal or environmental issues that may be raised because of the incident or because of the company's responses.
- A plan to reduce the risk of a similar incident, including recommendations for the following actions:
  - Future actions.
  - Design changes and operating procedure changes.
  - Improvements to the emergency preparedness program.

8.12 Incident Investigations

Incidents in the work environment must be thoroughly investigated and reported to ensure every effort is made to identify and correct underlying causes. In every emergency involving a fatality, serious injury and loss or significant damage to Company property, corporate officials will either provide assistance with or take the lead in an incident investigation.

Particular care must be exercised to ensure that all evidence is preserved in its original state.

Where loss or damage to Company property or loss of revenue has occurred, evidence will not be disturbed until permission has been received from the Insurance Company adjuster and/or any government agencies involved.

Work within the incident area is only permitted in order to make an incident scene safe or to preserve equipment against loss.

Examples: Lowering a suspended load or draining water from equipment to prevent freezing damage.

All such work must be done in a manner that preserves the incident scene as much as possible.

Where an injury or fatality has occurred, the incident scene may be disturbed to preserve life and/or prevent catastrophic loss but must be proportional to the disruption of evidence.

Example: Isolation of equipment to prevent a spill to water shed.

Every attempt should be made to obtain permission for re-entry to an incident scene from the Jurisdiction Having Authority.

8.12.1 Serious Injury/Fatality Investigations

Following an incident where a fatality or a serious injury has occurred, government agency representatives will likely decide to carry out an investigation into either the extent or cause of the injury/fatality.

After presenting their credentials, these representatives are to be afforded full co-operation in the performance of their duties. Work at the scene of the injury/fatality may not be resumed until permission has been obtained from the various agencies involved.

8.12.2 Insurance Investigations

Insurance companies may wish to conduct investigations of their own into an incident. Once they have shown their credentials, they must be accompanied by a senior Company employee.

Access to an incident scene is predicated on the scene being safe and the persons entering the scene following Company Health and Safety requirements (e.g. PPE, etc.).

9.0 JURISDICTIONAL REQUIREMENTS

Federal and provincial/state specific emergency response regulations and guidelines are identified in the following sections.

9.1 ALBERTA

9.1.1 Assessment Matrix for Classifying Incidents

Deltawest's ERP will be implemented as deemed necessary in response to either an alert or an emergency (Level 1, 2, 3).

Table 1. Consequence of Incident

Rank	Category	Example of consequence in category
1	Minor	• No worker injuries. • Nil or low media interest. • Liquid release contained on lease. • Gas release impact on lease only.
2	Moderate	• First aid treatment required for on-lease worker(s). • Local and possible regional media interest. • Liquid release not contained on lease. • Gas release impact has potential to extend beyond lease.
3	Major	• Worker(s) require hospitalization. • Regional and national media interest. • Liquid release extends beyond lease – not contained. • Gas release impact extends beyond lease – public health/safety could be jeopardized.
4	Catastrophic	• Fatality. • National and international media interest. • Liquid release off lease not contained – potential for or is impacting water or sensitive terrain. • Gas release impact extends beyond lease – public health/safety jeopardized.

Table 2. Likelihood of incident escalating*

Rank	Descriptor	Description
1	Unlikely	The incident is contained or controlled, and it is unlikely that the incident will escalate. There is no chance of additional hazards. Ongoing monitoring required.
2	Moderate	Control of the incident may have deteriorated but imminent control of the hazard by the licensee is probable. It is unlikely that the incident will further escalate.
3	Likely	Imminent and/or intermittent control of the incident is possible. The licensee has the capability of using internal and/or external resources to manage and bring the hazard under control in the near term.
4	Almost Certain or currently occurring	The incident is uncontrolled and there is little chance that the licensee will be able to bring the hazard under control in the near term. The Licensee will require assistance from outside parties to remedy the situation.

* What is the likelihood that the incident will escalate, resulting in an increased exposure to public health, safety or the environment?

Rank + Rank

Sum the rank from both of these columns to obtain the risk level and the incident classification

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=

Rank Sum

Table 3 Incident Classification

Risk Level	Assessment results
Very Low 2-3	Alert
Low 4-5	Level – 1 Emergency
Medium 6	Level – 2 Emergency
High 7-8	Level – 3 Emergency

Incident Response

Incident Classification				
Responses	**Alert**	**Level 1 Emergency**	**Level 2 Emergency**	**Level 3 Emergency**
Communications				
Internal	Discretionary, depending on licensee policy.	Notification of off-site management.	Notification of off-site management.	Notification of off-site management.
External Public	Courtesy, at licensee discretion.	Mandatory for individuals who have requested notification within the EPZ.	Planned and instructive in accordance with the specific ERP.	Planned and instructive in accordance with the specific ERP.
Media	Reactive as required.	Reactive as required.	Proactive media management to local or regional interest.	Proactive media management to national interest.
Government	Reactive, as required. Notify the AER 24-Hour Response Line if public or media is contacted.	Notify the AER 24-Hour Response Line. Call local authority and AHS if public or media is contacted.	Notify the AER 24-Hour Response Line, local authority and AHS.	Notify the AER 24-Hour Response Line, local authority, and AHS.
Actions				
Internal	On site as required by licensee.	On site as required by licensee. Initial response undertaken in accordance with the specific or corporate level ERP.	Predetermined public safety actions are under way. Corporate management team alerted and may be appropriately engaged to support on-site responders.	Full implementation of incident management system.
External	On site as required by licensee.	On site as required by licensee.	Potential for multi-agency (operator, municipal, provincial or federal) response.	Immediate multi-agency (operator, municipal, provincial or federal) response.
Resources				
Internal	Immediate and local. No additional personnel required.	Establish what resources would be required.	Limited supplemental resources or personnel required.	Significant incremental resources required.
External	None.	Begin to establish resources that may be required.	Possible assistance from government agencies and external support services required.	Assistance from government agencies and external support services required.

Levels of Emergency Definitions

ALERT

An incident that can be handled on site by the licensee through normal operating procedures and is deemed to be a very low risk to members of the public.

LEVEL 1 EMERGENCY

There is no danger outside the licensee's property, there is no threat to the public, and there is minimal environmental impact. The situation can be handled entirely by licensee personnel. There will be immediate control of the hazard. There is little or no media interest.

LEVEL 2 EMERGENCY

There is no immediate danger outside the licensee's property or the right-of-way, but there is potential for the emergency to extend beyond the licensee's property. Outside agencies must be notified. Imminent control of the hazard is probable but there is a moderate threat to the public and/or the environment. There may be local and regional media interest in the event.

LEVEL 3 EMERGENCY

The safety of the public is in jeopardy from a major uncontrolled hazard. There are likely significant and ongoing environmental impacts. Immediate multi-agency municipal and provincial government involvement is required.

Downgrading the Emergency Levels and Stand-Down

Any discussions regarding downgrading of the incident Emergency Level classification must be preceded by a thorough review of the following considerations:

- Has the release been stopped?
- Is the hazard mitigated?
- Have all public safety threats been eliminated?
- Are there any remaining risks that could escalate if the Emergency Level was downgraded?
- Has an appropriate environmental monitoring plan been initiated (surface water, groundwater, soils, wildlife, vegetation, air quality monitoring)?
- Has environmental data been collected, analyzed and is it available to be submitted to the Regulatory Authority?
- Has an environmental mitigation plan been developed based on the data collected and has it been evaluated relative to potential residual impacts?

If there is agreement on the above points between the Incident Commander, CEOC Director and the Regulatory Authority then a coordinated discussion with the Regulatory Authority can be held to obtain approval to downgrade the emergency to the appropriate level.

Once site restoration is deemed appropriate and incident facts justify the relaxation from a state of readiness or alert, the Company must make the decision to stand-down the emergency in consultation with the Regulatory Authority.

The Company must keep all notified stakeholders and evacuated persons informed of the status of an emergency.

9.1.2 *Notification Requirements for Key Government Agencies and Local Resources*

Alberta

INCIDENT TYPE / AGENCY OR RESOURCE	Initial Responders			Lead Agencies				Other Government Contacts							Support Services
	Ambulance Services	Local Fire Department or Industrial Fire Service	Police/ RCMP [2]	AER	EPA	Local Authorities (i.e. urban centres, MDs, and first nations reserves)	AHS - Alberta Health Services [3]	Alberta Occupational Health and Safety	Workers' Compensation Board	AEMA - Alberta Emergency Management Agency	ABSA - Alberta Boilers Association	Alberta Agriculture and Forestry [4]	Alberta Safety Services - Electrical Branch	Alberta Transportation EDGE [5]	Oil Spill Cooperative (WCSS)
				Energy/Environmental Emergency and Operations Complaint Line											
Sour Gas Release			✓	✓	✓	✓	✓	✓		✓		✓		✓	
Sweet Combustible Gas Release			✓	✓	✓	✓	✓	✓		✓		✓		✓	
Spill - Unrefined Products*				✓	✓	✓	✓	✓		✓		✓		✓	✓
Spill - Refined Products*				✓	✓	✓	✓	✓		✓		✓		✓	✓
Trucking/Motor Vehicle Incident	✓	✓	✓	✓	✓	✓		✓						✓	
Serious Injury or Fatality (including sour gas exposure)	✓		✓	✓			✓	✓	✓						
Fire/Explosion		✓	✓	✓		✓	✓	✓		✓		✓		✓	
Boiling Liquid Vapour Explosion - BLEVE		✓ [1]	✓	✓		✓	✓	✓		✓		✓		✓	
Collapse or upset of a crane, derrick or hoist Collapse or failure of any component of a building or structure								✓							
Pressure Vessel or Piping Incident				✓				✓			✓			✓	
Electrical Incident		✓		✓				✓					✓	✓	
Security Incident			✓	✓				✓						✓	

✓ Mandatory contact ✓ Contact consideration based on emergency event details.

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

1 Contact Local Fire Department or Industrial Fire Service in a BLEVE scenario to be a backup to ERAC.
2 Contact RCMP if the emergency affects a highway designated by 1, 2, or 3 digits (e.g. Hwy 2, Hwy 47, Hwy 837).
3 Contact Alberta Health Services (AHS) if the incident has the potential to impact public health (i.e. sour gas release impacting stakeholders.)
4 Contact Alberta Agriculture and Forestry for any event that could affect forested areas.
5 Alberta Transportation EDGE is the first call for all transportation related spills/incidents.

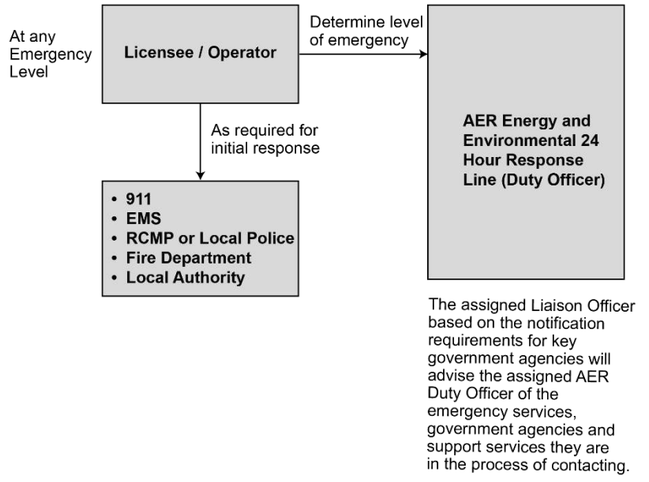
Federal

INCIDENT TYPE / AGENCY OR RESOURCE	Initial Responders	Lead Agencies	Other Government Contacts					Support Services	
	RCMP	CER [1]	Transportation Safety Board (TSB)	Environment and Climate Change Canada [2]	Indian Oil and Gas Canada [3]	DFO [4]	CANUTEC [5]	ERAC - Emergency Response Assistance Canada [6]	NAV Canada
Sour Gas Release	✓	✓	✓	✓	✓				✓
Sweet Combustible Gas Release	✓	✓	✓	✓	✓				✓
Spill - Unrefined Products*		✓	✓	✓	✓	✓	✓	✓	
Spill - Refined Products*		✓	✓	✓	✓	✓	✓	✓	
Trucking/Motor Vehicle Incident	✓		✓	✓		✓	✓	✓	
Marine, pipeline, rail and air modes			✓			✓			
Serious Injury or Fatality (including sour gas exposure)	✓	✓	✓		✓				
Fire/Explosion	✓	✓	✓	✓	✓				✓
Boiling Liquid Vapour Explosion - BLEVE		✓					✓	✓	
Pressure Vessel or Piping Incident		✓		✓		✓		✓	
Electrical Incident		✓		✓					
Security Incident	✓	✓	✓						

✓ Mandatory contact ✓ Contact consideration based on emergency event details.

1 Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for emergencies involving CER regulated sites and inter-provincial pipelines.
2 Contact Environment and Climate Change Canada for incidents involving spills on First Nation's lands, in National Parks, into river or lake systems containing fish or onto railway rights-of-way.
3 Contact Indian Oil and Gas Canada for incidents effecting First Nation reserves and Metis settlements.
4 Contact the DFO to report any spill that occurs in or around fresh, marine, or fish bearing waters.
5 Contact the Canadian Transport Emergency Centre (CANUTEC) if information is required about handling procedures for toxic material releases.
6 Contact ERAC for emergencies related to specific ERAP products for vessels containing over 450 liters or greater by road, rail and stationary tank.

Initial Notification Process



The assigned Liaison Officer based on the notification requirements for key government agencies will advise the assigned AER Duty Officer of the emergency services, government agencies and support services they are in the process of contacting.

9.1.3 Spill Reporting

Deltawest must report all spills or releases that are or may cause an adverse effect as defined in the Responsible Energy Act and the Alberta Environmental Protection and Enhancement Act (EPEA) regarding the Energy Industry. The AER must be notified through the 24-Hour Response Line. This system is designed to streamline and standardize the reporting of spills and to ensure a coordinated, integrated response from different government agencies. The AER 24-Hour Response Line notifies both Ministry of Environment and Protective Areas (EPA) and Environment and Climate Change Canada.

Notification Requirements

For both refined and unrefined products, upon becoming aware of a reportable release, Deltawest **must orally** notify the AER at the first available opportunity.

Upon completing the oral notification, the AER sends the licensee the Field Inspection System Number (FIS) along with the Initial Incident Report which is to be completed **within seven days** of receiving the document from the AER.

Note: Deltawest must notify the landowner of any release that occurs off lease, or that occurs on an easement or right-of-way (Landowners can be private or any of the following: on Crown land (EPA), on reserves (First Nations), in provincial parks (tourism, parks and recreation). Landowner cooperation is essential in being able to quickly respond to a release.

For the purposes of reporting, Deltawest shall use the following guidelines and considerations to assess whether the release may cause, is causing or has caused an adverse effect.

- Any third-party impact (off lease) e.g. crop damage, vegetation damage and livestock impact.
- Spilled substance likely to contaminate surface or ground water.
- Groundwater and/or surface water is contaminated.
- Release or spill has potential for offsite odour complaints.
- Toxic or flammable release to air going offsite.
- Chemical and physical characteristics of the substance released.
- Receiving or potential to receive media attention.
- Location of the release.

The onus is on the party who causes the release and has control of the situation to assess the adverse effect.

Adverse effect is defined in the EPEA as “impairment of or damage to the environment, human health or safety, or property”.

Unrefined products include conventional crude oil, LPG, diluents, condensate, synthetic crude, sour gas, produced water, and other produced fluids), pipeline breaks and incidents involving oilfield wastes.

Refined Product includes diesel, gasoline, sulphur, and solvents.

For further Alberta spill release reporting guidelines please refer to the following:

Alberta Water Act, revised December 15, 2017	http://www.qp.alberta.ca/documents/Acts/w03.pdf
Alberta Provincial Release Reporting Regulation, 2018	http://www.qp.alberta.ca/documents/Regs/1993_117.pdf
Oil Sands Conservation Rules, amended 2017	http://www.qp.alberta.ca/documents/Regs/1988_076.pdf

AER's Release Reporting Brochure, February 2016 https://static.aer.ca/prd/documents/directives/AER-ReleaseReportingBrochure.pdf

Release Reporting Requirements – Alberta

Reportable Release	Oil and Gas	Mining – Oil Sands	In situ – Oil Sands	Pipelines	Pipeline installations	Pipeline-Related Activities and Equipment
Any leak or break from a pipeline				X		
Release of a substance that may cause, is causing, or has caused an adverse effect	X	X	X	X	X	X
Release of a substance into a water body (as defined in the Water Act)	X	X	X	X	X	X
Release of a substance falling within the class set out in the first column of the schedule in the Release Reporting Regulation that may cause, is causing, or has caused an adverse effect and • the release is at or in excess of the quantity or emission levels set out in the second column of the schedule or • the substance is released into a watercourse, groundwater, or surface water	X	X	X	X	X	X
Release of oil, water, or unrefined product off site	X	X	X	X	X	X
Release of oil, water, or unrefined product exceeding 2 m^3 on site	X	X	X	X	X	X
A liquid spill (as defined in the Oil Sands Conservation Rules)		X	X			
Release of a liquid hydrocarbon exceeding 2 m^3		X	X	X	X	X
Release of gas exceeding approved volume limits or potential for adverse conditions						X
Release of gas or gas equivalent exceeding 30 000 m^3	X	X	X	X	X	X
Well flowing uncontrolled	X	X	X			

Common Unrefined Product Releases

Common Unrefined Product	Chemical Class*	Reportable Criteria
• Condensate • Crude oil • Crude emulsion • Bitumen	Possibly Class 3 Flammable liquids	• Any release that has caused, is causing, or may cause an adverse effect • Any release into a water body (as defined in the Water Act) or a watercourse, groundwater, or surface water (as stated in the Release Reporting Regulation). • Releases greater than 2 m^3 on site. • Any release off site.
• Produced water (saltwater & brine) • Oilfield waste • Drilling waste	Substances not regulated by TDG	

* Chemical class is defined by the federal Transportation of Dangerous Goods Act (TDG). Refer to the United Nations number on the Safety Data Sheet (SDS) to determine applicable class.

TDG and Provincial Reportable Releases of Common Products at Energy Sites

Chemical Class	Common Refined Product	Alberta Reporting Requirements	TDG Reporting Requirements Road, Rail or Marine
Substances Not Regulated by TDG	Glycol Hydraulic Oil Ammonia	25 kg or 25 L	Not regulated.
Class 1 Explosives	Ammunition Nitro-glycerine	All releases that could pose a danger or 50 kg.	Any quantity of Packing Group II.
Class 2.1 Flammable Gases	H_2S	Any volume at any concentration	Any quantity.
	Methane Propane Butane Natural Gas	All releases which could pose a danger, or any sustained release of 10 minutes or more.	
Class 2.2 Non-Flammable, Non-Toxic, Non-Corrosive Gases	Compressed Air O_2 N_2 CO_2		
Class 2.3 Toxic Gases (Poisonous or Corrosive)	SO_2 Anhydrous Ammonia Carbon Monoxide		
Class 3 Flammable Liquids	Demulsifiers† Diesel Gasoline Methanol† – use UN # to determine subclasses Scale Inhibitors†	Any release which is causing, may cause, or has caused an adverse effect. Any release into a water body. Releases greater than 200 L (0.2 m^3) on land.	Any quantity of Packing Group I or II. More than 30 L or 30 kg of Packing Group III.
Class 4 Flammable Solids	Activated carbon Calcium carbide Molten sulphur Sodium	Any release which is causing, may cause, or has caused an adverse effect. Any release into a water body. Releases greater than 25 kg on land.	
Class 5.1 Oxidizing Substances	Ammonium Nitrate Bleaches Calcium Nitrate	Any release which is causing, may cause, or has caused an adverse effect. Any release into a water body. Releases greater than 50 kg or 50 L on land.	
Class 5.2 Organic Peroxides	Peroxide	1 kg or 1 L	
Class 6.1 Poisonous Toxic Substances	Methanol Arsenic Lead Acetate Mercuric Chloride Pesticides†	Any release which is causing, may cause, or has caused an adverse effect. Any release into a water body. Releases greater than 5 kg or 5 L on land.	
Class 6.2 Infectious Substances	Infectious substances affecting humans / animals.	All releases	Any quantity of Category A or B.
Class 7 Radioactive Materials	Uranium Plutonium Naturally Occurring Radioactive Materials (NORM)	Any releases that could pose a danger to public safety or - Discharge or radiation level exceeding 10 msv/h at package surface and 200 uSV/h, 1 m from package surface.	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.
Class 8 Corrosives	Acids† Amines† Bases† Batteries† Caustics† Nitric Acid	Any release that has caused, is causing, or may cause an adverse effect. Any release into a water body (as defined in the Water Act) or a watercourse, groundwater, or surface water (as stated in the Release Reporting Regulation). 5 kg or 5 L	Any quantity of Packing Group I or II. More than 30 L or 30 kg of Packing Group III.
Class 9 Miscellaneous Products, Substances and Organisms (Environmentally Hazardous Substances)	PCB Asbestos Polystyrene Beads Gas Plant Filters Benzoic Acid Chromic Acetate Cupric Sulphate	25 kg or 25 L Report any release from a pipeline	30 L or 30 kg of Packing Group II or III, or without Packing Group.
Class 9.1 Miscellaneous (except with PCB mixtures)		50 kg	
Class 9.2 Aquatic Toxic		1 kg	
Class 9.3 Wastes (Chronic Toxics)		5 kg or 5 L	
Other	Any well flowing uncontrolled, any burning of effluent from a well or facility and any fire where loss exceeds 2 m^3 or 30,000 m^3 of gas where damage to the wellhead occurs.		

† Product names that are commonly used to refer to a number of products that have various classifications. Refer to the product's SDS to confirm TDG classification.

Packing Group I: great danger and most protective packing required. Some combinations of different classes of dangerous goods on the same vehicle or in the same container are forbidden if one of the goods is Group I.
Packing Group II: medium danger.
Packing Group III: minor danger among regulated goods and lease protective packaging within the transportation requirement.

9.1.4 TDG Reporting – Alberta Environmental and Dangerous Goods Emergencies (EDGE)

Alberta EDGE is a 24-hour centre that supplies technical information to industry, the public and enforcement officials about the Transportation of Dangerous Goods (TDG) Regulations and all associated standards. They are also the emergency response centre for reporting releases or anticipated releases of dangerous goods during any aspect of transport as outlined in the Regulations.

In addition, Alberta Transportation has agreements with Ministry of Environment and Protective Areas (EPA) and Alberta Energy Regulator (AER), serving as a contact point for contraventions, spills, and complaints.

Whether a release or emission originated from the oil, gas, chemical, or manufacturing industry, Albertans can feel assured that the correct departments are informed of the situation immediately and actions are taken to minimize any impact on the public, the environment or public infrastructure.

Alberta Transportation is the only jurisdiction in Canada that has dually appointed Provincial and Federal Dangerous Goods Inspectors that inspect dangerous goods facilities, monitor highway tank facilities and respond to incidents involving dangerous goods.

The Safety and Compliance Services Branch is responsible for the compliance and enforcement of the Provincial Dangerous Goods Transportation and Handling Act and Dangerous Goods Transportation and Handling Regulation as well as the Federal Transportation of Dangerous Goods Regulation which has been adopted by Alberta. Both regulations set safety standards and shipping requirements for thousands of dangerous goods, in addition to providing a means of communicating the nature and level of danger associated with various chemicals and other products.

Part 8 of the TDG Regulations details the situations and requirements for reporting of specific events involving dangerous goods. These are briefly discussed in this document. Specific sections of the Regulations have been referenced.

Any person who has the charge, management or control of the Dangerous Goods must report a release or anticipated release of dangerous goods that are being offered for transport, handled or transported by road vehicle, railway vehicle or ship as soon as possible, after a release or anticipated release. The verbal report has to be made to any local authority that is responsible for responding to emergencies at the location of the release or anticipated release. The report must be made if the dangerous goods are, or could be, in excess of the quantity set out in the following table AND if the release endangers or could endanger public safety.

TDG Reporting Requirements

Types of Report	Who must make the report?	When is the report required?	Who should receive the report?	Method of Reporting	Is a 30-day follow-up report required?
Emergency Report	Person who has the charge, management or control of the dangerous goods (DG).	• As soon as possible; • In the case of a release or an anticipated release of DG that are or could be in excess of the quantity set out in Section 8.2 of the TDG Regulations and if it endangers or could endanger public safety.	• Local authority responsible for emergency response. • 911 (or local police; relevant provincial authorities). • Alberta Transportation • Canadian Coast Guard.	Telephone (Verbal)	No
Release or Anticipated Release Report	Person who made the Emergency Report.	• The report is required in these situations: • the death of a person; • a person sustaining injuries requiring immediate medical treatment by a health care provider; • an evacuation of people or their shelter-in-place; • the closure of a facility, road, main railway line or main waterway; • a means of containment has been damaged; • the centre sill or stub sill of a tank car is broken or there is a crack in the metal < 15 cm (6 inches).	• CANUTEC; • the consignor (shipper); And, if applicable, • The Canadian Nuclear Safety Commission (CNSC); or • A Vessel Traffic Services Centre, or the Canadian Coast Guard.	Telephone Followed by Written Report	Yes
Loss or Theft Report	Any person who had the charge, management or control of the dangerous goods before the loss of theft.	• As soon as possible. • In case of loss or theft if the quantity of DG is greater than the quantities indicated in Subsection 8.16(2) of the TDG Regulations.	• CANUTEC; And, if applicable, • Natural Resources Canada, or • CNSC.	Telephone (Verbal)	No
Unlawful Interference Report	Person who has the charge, management or control of the dangerous goods (DG).	• As soon as possible after it is discovered that dangerous goods have been unlawfully interfered with.	• CANUTEC; And, if applicable, • Natural Resources Canada; or • CNSC.	Telephone (Verbal)	No

For a detailed description of the information required in the report, refer to the Emergency Release or Anticipated Release Report Requirements (Alberta Government, February 2020).

Emergency, Release or Anticipated Release Report Requirements (alberta.ca)

9.1.5 Flaring Reporting

AER is the primary contact for flaring from approved facilities. Flared volumes at an AER approved facility need to be reported to the AER 24-Hour Response Line when exceeding an approved limit which results in smoke or odours, or that extends over a long duration (24-hours).

Temporary Flaring, Venting, and Incineration Notification Requirements 1

Type of operation (applies to sweet and sour streams)	Duration of event (hrs in 24-hr period)		Gas volume [2] (10^3 m^3 in a 24-hr period)	Notification [3,4]
Temporary (i.e., for well clean-up, testing, or maintenance)	< 4	and	< 30	No notification [5]
Temporary (i.e., for well clean-up, testing, or maintenance) if gas contains ≤ 10 mol/kmol H_2S	> 4	or	> 30	Residents, schools, 1.5 km radius; AER field centre
Temporary (i.e., for well clean-up, testing, or maintenance) if gas contains >10 mol/kmol H_2S	> 4	or	> 30	Residents, schools, 3 km radius; AER field centre
Temporary (i.e., for well clean-up, testing, or maintenance) through permanent battery or plant flare or incinerator	< 4		--	No public notification; [5] Notify the AER if flaring >30 10^3 m^3
Temporary (i.e., for well clean-up, testing, or maintenance) through permanent battery or plant flare or incinerator	> 4		--	Residents, schools, 0.5 km radius; AER field centre

1 See section 1.6 of Directive 060 for information on the AER DDS system and how to notify the appropriate AER field centre via the DDS system.

2 Notification requirements include duration and volume from flowback operations. These gases may be hydrocarbon or gases used in fracturing fluids (carbon dioxide or nitrogen) in any mixture. For reporting purposes, hydrocarbon volumes must be distinguished from fracture gas volumes (see section 3.9 of Directive 060).

3 24 to 72 hours in advance of planned flaring, venting, or incineration operations, the licensee, operator, or approval holder must notify the appropriate AER field centre via the DDS system, all rural residents outside towns, villages, and urban centres and within the specified radius, and the chief administrative officer or equivalent of a town, village, or urban centre within the specified radius. Note that for incorporated centres and hamlets, it is sufficient to contact only the appropriate administrator. Advance notification of more than 72 hours (but not longer than 90 days) must also offer the option for renotification 24 to 72 hours before the start of operations. After 90 days, renotification is mandatory.

4 The AER recommends additional "good neighbour" notification for short-duration events for residents and schools that have identified themselves to the licensee, operator, or approval holder as being sensitive to or interested in emissions from the facility within the same notification radius as specified for events of more than four hours.

5 The AER recommends additional "good neighbour" notification for longer duration events (of more than four hours) for residents and schools that have identified themselves to the licensee, operator, or approval holder as being sensitive to or interested in emissions from the facility.

Alberta Energy Regulator
Directive 60: Upstream Petroleum Industry Flaring, Incinerating, and Venting
April 2022

9.1.6 Emergency Planning and Response Zones

Various factors will determine the extent of the EPZ:

- The nature of the product released.
- The volume released.
- The product flow rate.
- Weather or meteorological conditions.
- Topography.

For sour gas/emulsion properties the calculated EPZ is the distance to the time weight average of 100-ppm H_2S over a 60-minute period which is equivalent to 235 ppm for 3 minutes. This pre-calculated zone serves as the initial defined spatial area of response efforts until the sour gas hazard can be assessed using gas monitoring equipment to determine actual conditions.

To determine the size of the response zones, response personnel should approach the perimeter of the response zone cautiously so as not to exceed personal exposure limits and begin monitoring with handheld equipment at the nearest residence. Note that the H_2S personal exposure limit in Alberta is 10 ppm (8-hour exposure limit) and 15 ppm (ceiling exposure limit).

From this location, the response personnel should continue to approach any additional downwind residences that may be closer to the release until the outer boundary of the response zone is determined.

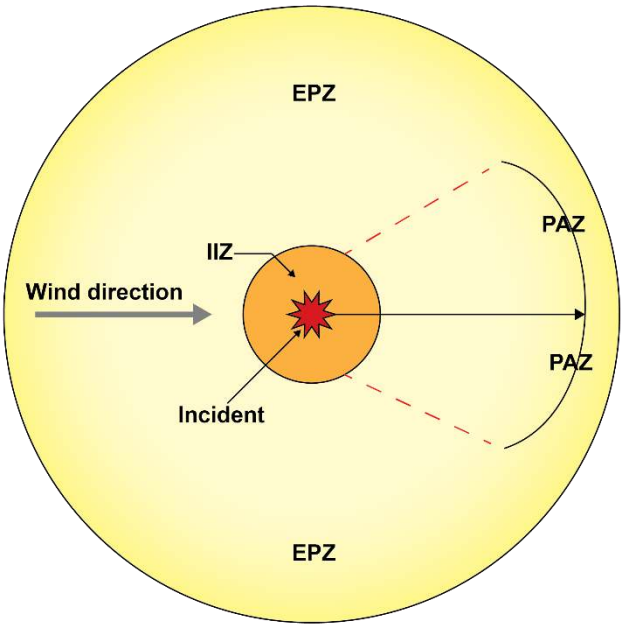
Whereas the EPZ is used for planning purposes and it reflects an area where significant exposure could result without prompt action, actual conditions during an incident need to be assessed to ensure an appropriate initial response. The response zones are where resources are focused during an incident to protect public safety. A licensee should also be aware that a different type and size of response zone could be established by the police if a bomb has been confirmed at the pipeline, well, or facility.

Response Zones

The Emergency Planning Zone (EPZ) is a geographical area surrounding a licensed well, pipeline and/or facility containing hazardous product that requires specific emergency response planning by the licensee. During any operations involving H_2S or HVP product, the licensee must ensure that on-site personnel are aware of the size of the EPZ. In the case of a sour gas or toxic hazardous gas release the initial hazard area is the predefined EPZ determined using the ERCBH2S model shown on the area maps. The size and shape of the hazard area or EPZ may change with the nature of the incident and any related data from the incident, such as air or environmental monitoring results.

The Initial Isolation Zone (IIZ) defines an area in close proximity to a continuous hazardous release where indoor sheltering may provide temporary protection due to proximity of the release. If safe to do so, the licensee must attempt to evacuate the residents from the IIZ.

The Protective Action Zone (PAZ) is an area downwind of a hazardous release where outdoor concentration levels may result in life threatening or serious and possibly irreversible health effects to the public. Immediately following a release of the H_2S or HVP product, the approximate size and direction of the PAZ can be determined using actual conditions at the time. The PAZ is a triangular area that starts at the IIZ and runs outwards to the edge of the EPZ. The PAZ is estimated to initiate priority response actions within the EPZ.



Initial Isolation and Protective Action Zones for illustration purposes only

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9.1.7 Methods of Public Protection

If the health and safety of the public cannot be assured, then the Company must determine the best approach for protecting the public. Depending on the severity of the emergency, the Company will implement one of three approaches to public protection: sheltering, evacuation, or ignition.

The purpose of public protection measures is to proactively address public health and safety concerns and to take appropriate response actions to protect the public from harm. This may include removing or reducing the hazards and asking public stakeholders to shelter and/or evacuate as required.

It is the Company's responsibility to initiate public protection measures in the EPZ for any incident involving a release of sour gas product if there is potential for the release to impact members of the public. This could also include SO_2 if the sour gas release was ignited.

The type of public protection measure employed depends on the severity of the incident and/or on the monitored results in the unevacuated areas. The licensee is responsible for ensuring that appropriate emergency response procedures are in place and can be implemented, including for areas of potential impact beyond the EPZ.

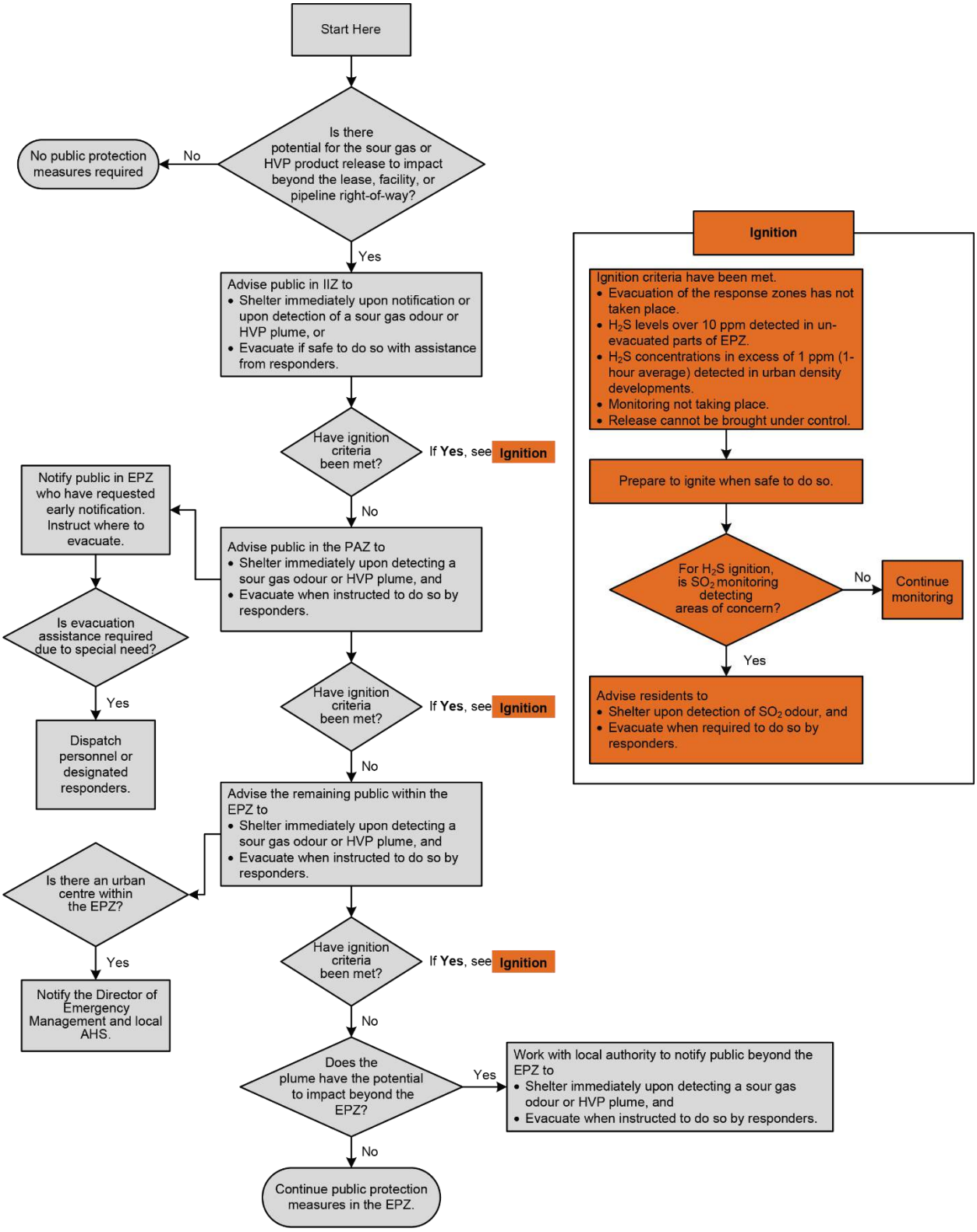
Affected Parties within a Predetermined EPZ

- Permanent and part-time residents, including those residing on dead-end roads, beyond a predetermined EPZ, where occupants are required to egress through the EPZ.
- Business owners and/or operators and industrial operators, including oil and gas operators with manned facilities inside a predetermined EPZ.
- Private and public recreational property owners and/or operators (e.g. campgrounds, trapper cabin, private cabins, etc.) in and adjacent to a predetermined EPZ.

- Public facilities and publicly used development, such as schools and community centres in or adjacent to a predetermined EPZ.
- Non-resident landowners or farmers renting land who do not dwell on the property but whose lands are within a predetermined EPZ. These persons must be considered in the development of the ERP and be advised their property lies within the EPZ.
- First Nation reserves, registered trappers, guides, outfitters, and registered grazing lease rights holders or any other rights holders if the EPZ impacts the safety or livelihood of these stakeholders.
- Oil and gas operators with unmanned assets (e.g. wells, pipelines, facilities, etc.) in a predetermined EPZ whose activities may be impacted in the event of an emergency.

Public Protection Decision Tree

Use the following Public Protection Decision Tree for all planning and response zones:



Sheltering

Sheltering may be the safest and most viable public protection measure in avoiding exposure to toxic or combustible gases in the following situation:

- Incident is of relatively short duration.
- Source of a release is uncertain.
- Residents are waiting for evacuation and transportation assistance.
- Not enough time is available to safely evacuate residents.
- Evacuation poses a higher risk to evacuees.

Residents will be asked to remain inside and ensure that all windows and doors are closed and that all air intakes (furnace, stove, bathroom, and dryer vents) are plugged to limit exposure to outside air until the situation is rectified or they are further notified.

Note: For general Shelter in Place Instructions, refer the Response Action Plans Section in this document.

Evacuation

Safe evacuation is the primary public protection measure for long term H_2S, SO_2, or other toxic releases. Evacuation begins in the IIZ and radiates outward into the PAZ downwind of the release.

Evacuation must begin at the declaration of a Level 2 Emergency. The licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H_2S, SO_2, and other toxic releases.

Public within the IIZ must be evacuated or sheltered first. Once the IIZ has been secured, responders will address the public within the PAZ, downwind of the incident site. Once the PAZ has been secured, responders will address the public in the rest of the EPZ as necessary.

Evacuation of occupants inside the defined IIZ, PAZ and EPZ shall be prioritized as above and in the following manner:

1. Individuals located immediately downwind or adjacent to the incident site.
2. Individuals who have indicated they have special needs or require assistance.
3. Individuals who cannot be contacted by telephone.

Should area users be affected by an emergency involving Company operations, the response personnel will notify stakeholders by telephone or by personal contact with Rovers. A notice of evacuation is also placed on any unattended vehicles in the evacuation area and on doors of residences who are not home and cannot be contacted by phone.

Note: Individuals who have been identified as having special needs should be treated with priority and may choose to evacuate an area at an earlier time than other residents. These individuals may be highly responsive or sensitive to H_2S or other toxic gases.

Evacuation Requirements

H_2S concentrations in unevacuated areas	Requirements
1 to 10 ppm (3-minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H_2S must be notified.
Above 10 ppm (3-minute average) *	Local conditions must be assessed, and all persons must be advised to evacuate and/or shelter.
*If monitored levels over the 3-minute interval are declining (e.g., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3-minute interval would be 11 ppm. The company should use proper judgement in determining if evacuation is required.	
SO_2 concentrations in unevacuated areas	**Requirements**
5 ppm (15-minute average) 1 ppm (3-hour average) 0.3 ppm (24-hour average)	Immediate evacuation of the area must take place.

If evacuation is initiated, the Company will establish a Reception Centre at a designated location. The Public Protection Group Supervisor will dispatch a representative to open the Reception Centre and record the arrival of evacuated stakeholders.

To ensure public safety, Company personnel will coordinate their public safety actions with the Local Authority.

Evacuation outside of the EPZ

The evacuation of the public outside of the EPZ may be required if the incident cannot be controlled and/or H_2S, SO_2, or other toxic releases concentrations reach the maximum allowable limits adjacent to the EPZ boundary. In the unlikely event that public protection measures are required beyond the EPZ, they will be conducted in accordance with the licensee's arrangement with the local authority.

Alberta Municipal Affairs and Alberta Emergency Management Agency, local Disaster Services and the Alberta Regional Health Authority, in conjunction with the industrial operator, shall coordinate the evacuation outside the EPZ in accordance with the Energy Resources Industry Emergency Support Plan. The Company shall provide the necessary personnel and equipment deemed necessary to assist. The AER shall be available for assistance if required.

Ignition

Ignition is the final means of protecting the public when evacuation is impractical, and the safety of the public/Company personnel is threatened. The decision to ignite a release will be made in conjunction with the Incident Commander and an AER Representative, if time permits.

If an immediate threat to human life exists and there is not sufficient time, the Incident Commander is authorized to ignite the release. This decision to ignite will be fully supported by Management.

Company personnel are expected to take immediate steps to prepare for ignition at the earliest signs of a release or a well control problem to ensure there will be no delay.

The company must:

- Ensure that appropriate ignition equipment is available during all operations.

- Assign the decision-making authority to ignite the release to a licensee representative on-site.
- Ignite a sour gas flow to atmosphere in accordance with the Assessment and Ignition Criteria Flowchart.
- If an uncontrolled release is ignited to protect the public, continuous monitoring for SO_2 or H_2S in the surrounding area would determine if public evacuation becomes necessary.

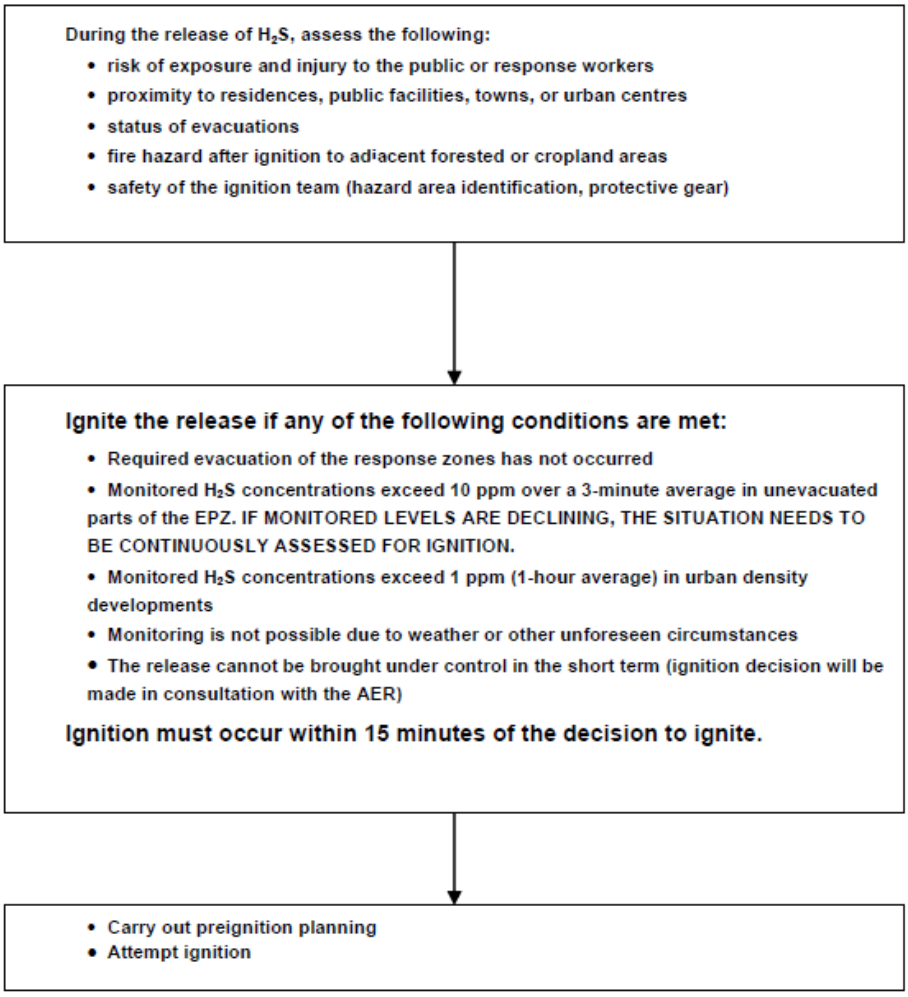
The ignition team must be certified in sour well ignition and properly equipped to ignite the well within the planned time limits for which the EPZ was designed. Certification in ignition training may be obtained from Enform or from other training facilities that have a comparable program.

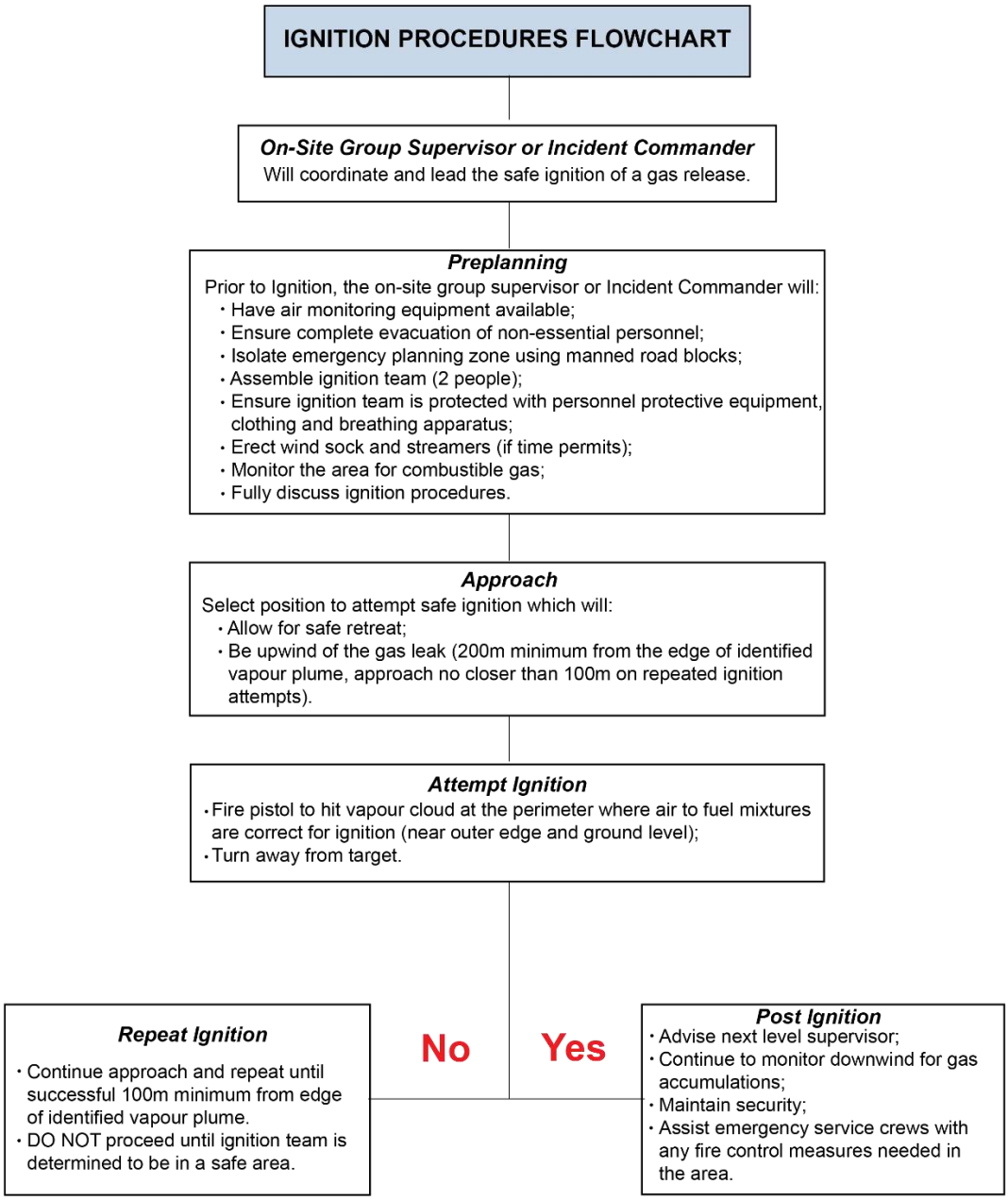
AER senior staff may make the decision to ignite a release if the licensee does not agree to ignite the release or is not prepared to take the necessary steps.

Ignition doesn't negate the need for continuing with evacuation as there may be residual pockets of H_2S or SO_2 in the area.

It is important that mobile air quality monitoring be dispatched as quickly as possible to the emergency site because specialized monitoring equipment can more accurately record readings in the emergency area.

Assessment and Ignition Criteria Flowchart





9.1.8 NOTAM

It may be necessary for NAV Canada 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 or closure of airspace may be requested by the AER at a Level 2 or 3 emergency.

9.1.9 Government Roles and Responsibilities

Provincial Emergency Coordination Centre (PECC)

The Provincial Emergency Coordination Centre (PECC) plays a crucial role in managing and coordinating emergency responses at the provincial level. Its primary function is to provide leadership, support, and resources to local governments and emergency management agencies during emergencies. to ensure an effective disaster response.

PROVINCIAL EMERGENCY COORDINATION CENTRE	
❑	Acts as the central hub for coordinating emergency response efforts across municipalities and regional authorities.
❑	Supports local Emergency Operations Centres (EOCs) when incidents exceed local capacity by providing resources, guidance, and reinforcements as needed.
❑	Coordinates with federal agencies, municipal governments, and Indigenous communities.
❑	Ensures a unified provincial response during major disasters.
❑	Identifies and distributes critical resources such as personnel, equipment, and financial aid to affected areas.
❑	Coordinates transportation and supply chain logistics to deliver emergency relief efficiently.
❑	Works with public and private sector partners to ensure rapid deployment of emergency supplies.
❑	Facilitates inter-agency communication to ensure a consistent flow of information.
❑	Acts as the official provincial source for emergency updates, warnings, and advisories to the public, media, and government leaders.
❑	Maintains situational awareness through GIS mapping, weather tracking, and damage assessments.
❑	Advises the provincial government on emergency response strategies.
❑	Helps in declaring states of emergency when required.
❑	Ensures emergency response aligns with provincial laws, regulations, and emergency management frameworks.
❑	Works with federal agencies (e.g. Public Safety Canada) to comply with national emergency protocols.
❑	Develops and enforces emergency response policies, including evacuation procedures and disaster relief measures.
❑	Oversees response efforts during emergencies, such as natural disasters, pandemics, or industrial incidents.
❑	Supports evacuation coordination, sheltering, and emergency aid distribution.
❑	Assists in long-term recovery efforts, including rebuilding infrastructure, financial aid distribution, and community support programs.
❑	Works on resilience planning to mitigate future risks and improve disaster preparedness.
❑	Coordinates emergency alerts and public service announcements.
❑	Provides safety guidelines and preparedness training to communities.
❑	Engages with media, stakeholders, and the public to ensure clear and accurate communication.
❑	Works with municipal governments, Indigenous communities, NGOs, and private sector partners.
❑	Liaises with the federal government for additional support and funding.
❑	Collaborates with law enforcement, military, health agencies, and emergency services.

Alberta Energy Regulator

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 all Albertans.

The AER will provide full-lifecycle regulatory oversight of energy resource development in Alberta - from application and construction to abandonment and reclamation, and everything in between.

The AER is the lead government agency that initiates and oversees government response. The AER can provide assistance to alert other applicable government and emergency response agencies.

ALBERTA ENERGY REGULATOR	
❑	Acts as lead provincial government organization in petroleum industry emergency responses.
❑	Review and approve licensee ERPs.
❑	Participate in selected licensee ERP exercises.
❑	Review and recommend changes to ERPs.
❑	Participate in validation and testing of ERPs.
❑	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
❑	Receive information pertaining to petroleum industry incidents.
❑	Determine the emergency level of an incident through consultation with the licensee.
❑	Dispatch AER representative to the site of the incident, as required.
❑	Confirm that local resources have been notified as appropriate.
❑	Identify and request initial provincial resources to support the incident, to be coordinated at the regional level if necessary, through the REOC.
❑	Notify EDGE to carry out notification in accordance with this plan.
❑	Provide Situation Reports to AEMA if requested.
❑	Send AER representative to the On-Site Command Post.
❑	Establish an EOC at the local AER Field Centre until the licensee or local authority establishes a MEOC.
❑	Dispatch an AER Regulatory Liaison to the MEOC or POC and issue timely media releases in conjunction with the licensee and PAB.
❑	Request, through AEMA, the deployment of the other provincial Government staff be sent to the MEOC or the local Field Centre EOC.
❑	Request a local authority liaison officer to be present at the MEOC if necessary.
❑	Carry out investigations.
❑	Provide timely situation reports, through AEMA, to other Government departments activated by this plan.
❑	Notify all participants when the event has concluded and there is no longer any hazard to the public.
❑	Complete reporting protocols.
❑	As part of the lessons-learned process, recommend any mitigating actions that may reduce the event from re-occurring.
❑	Establish processes to receive and address community concerns.
❑	In consultation with AEMA, review and recommend updates for the ERP.

Ministry of Environment and Protective Areas

MINISTRY OF ENVIRONMENT AND PROTECTIVE AREAS	
❑ Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	MINISTRY OF ENVIRONMENT AND PROTECTIVE AREAS
❑ Provide oversight role in ensuring air quality monitoring needs and activities associated with public safety around the event site are adequately addressed by the licensee.	
❑ Ensure the air quality monitoring log is being maintained.	
❑ Participate in the evaluation of the incident and the potential area at risk from product releases.	
❑ Provide assistance in 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.	
❑ Assist in notifying Fish and Wildlife personnel of the hazard.	
❑ Monitor environmental recovery, when required.	
❑ Compile and maintain environment related records and log.	
❑ Request and review environmental impact assessment if necessary.	
❑ Carry out investigation, when required, having regard for the existing investigative protocols and procedures.	
❑ Investigate non-compliance with the EPEA and the Water Act. The investigation may be coordinated with, or independent of any other investigation in relation to the incident.	

Alberta Agriculture and Forestry

ALBERTA AGRICULTURE AND FORESTRY	
❑ Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	ALBERTA AGRICULTURE AND FORESTRY
❑ Assist the industrial operator and/or the local authority in establishing and maintaining roadblocks. If requested.	
❑ Assist in notifying Forestry personnel of the hazard.	
❑ Assist in locating transients for evacuation in cooperation with licensee and local authority.	
❑ Inform transients within the hazard area of the incident and safety measures to take including evacuation details as applicable.	
❑ Fight any fires started as the result of the product release within the Forest Protection Area.	
❑ Compile and maintain event records and log.	
❑ Conduct forest impact assessment.	
❑ Complete reports concerning the incident.	

Occupational Health and Safety

The Occupational Health and Safety Branch operates within the Ministry of Jobs, Skills, Training, and Labour. OHS promotes health and safety through partnerships, resources, education and enforcement of the Occupational Health and Safety Act.

The Occupational Health and Safety Act sets standards for the protection of workers throughout the Province. Employers are required to ensure the health and safety of workers on the site.

OHS is responsible for the compliance policy and procedures implemented as a result of employee injuries/or death. Compliance policies and procedures are updated periodically.

OCCUPATIONAL HEALTH AND SAFETY	
❑ Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	OHS
❑ Maintain the capacity to send an OHS officer to the POC on a 24-hour a day, 7 day a week basis.	
❑ Monitor the health and safety aspect of applicable occupations within the hazard area to ensure that the necessary precautions are taken to protect worker safety.	
❑ Compile and maintain health and safety related records and log.	
❑ Monitor lease holder/contractor's plan to determine if site is safe for recovery workers.	
❑ Investigate non-compliance with the Occupational Health and Safety Act. The investigation may be coordinated with, or independent of, any other investigation in relation to the incident.	

Local Authority

Municipal Emergency Plans

Municipal Emergency Plans vary depending on the circumstances of each community. Generally, they deal with the following:

- Authority of the Plan.
- Implementation.
- Direction and Control.
- Organization and Functions.
- Tasks.
- Communications.
- Transportation.
- Health Units.
- Hazard Analysis.
- Medical Service.
- Police.
- Fire Service.
- Public Works.
- Social Services.
- Evacuation and Reception.

LOCAL AUTHORITY	
❑	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
❑	Conduct a hazard assessment of petroleum facilities and operations.
❑	Work with the operator to effectively prepare for a petroleum industry incident. Provide input to the industrial operator's Emergency Response Plan to ensure it is compatible with the municipal emergency plan (MEP).
❑	Include preparedness and response information concerning facilities and operations in the MEP.
❑	Train personnel to carry out function as assigned by the MEP or procedures.
❑	Assess emergency incident and evaluate operator response with the AER.
❑	Activate the emergency public warning system to alert people to life threatening hazards, as required.
❑	Initiate public protection option, as required if resources are available.
❑	Maintain communication with industrial operator during emergency.
❑	Activate the MEP, in accordance with local authority policy.
❑	Manage the local authority's emergency response.
❑	Dispatch a representative to the incident command post, if resources are available.
❑	Activate the MEOC, as required by the municipality.
❑	Coordinate with the industrial operator, the establishment and the administration of reception centres for evacuees, as required.
❑	Assist with the establishment of roadblocks and maintain them if resources are available.
❑	Assist with fire protection (secondary fires only).
❑	If necessary, declare a local state of emergency, as determined by the local authority.
❑	Coordinate 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.
❑	Provide timely news releases.
❑	Inform Municipal Affairs, Emergency Management Alberta and the public when the emergency is over in accordance with the Energy Resources Industry Emergency Support Plan.
❑	Conduct a damage assessment to the extent of government infrastructure (roads/bridges).
❑	Compile a municipal log.
❑	Properly shutdown MEOC as appropriate.
❑	Conduct municipal incident debriefing.
❑	Participate in multi-agency debriefings if resources are available.
❑	Review and update the municipal emergency plan.
❑	Communicate any changes to the plan to all plan holders.
❑	Track costs associated with the response.

Emergency Services: Police, EMS, and Fire Fighting

EMERGENCY SERVICES	
❑	Understand the hazards associated with the petroleum facilities and operations within the area.
❑	Work with the operator to effectively prepare for a petroleum industry incident.
❑	Understand the response role when there is a private and public-sector response.
❑	Train personnel to carry out their functions when there is an incident.
❑	Establish contact with the industrial operator.
❑	Prior to dispatching staff to scene, determine the hazards associated with the incident.
❑	Determine where roadblocks are established.
❑	Where applicable, maintain roadblocks as necessary.
❑	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 by the operator.
❑	Initiate public protection option, when necessary.
❑	Identify what resources are required and where they should be staged.
❑	Determine the location of the On-Site Command Post.
❑	Respond and assess emergency incident.
❑	Communicate to REOC and provide situation reports as required.
❑	Dispatch a representative to the REOC, when it is established to coordinate the response.
❑	Assist with fire protection, where applicable.
❑	Provide emergency medical assistance, as required.
❑	Compile response logs.
❑	Participate in municipal incident debriefing.
❑	Participate in multi-agency debriefings.

Alberta Emergency Management Agency

The Alberta Emergency Management Agency is a division of the Ministry of Municipal Affairs and Housing. AEMA leads the coordination, collaboration and co-operation of all organizations involved in the prevention, preparedness, and response to disasters and emergencies.

AEMA has its headquarters in Edmonton and incorporates several domains of practise which encompass; emergency response, disaster recovery programs, business continuity, government ERPs, grants and funding, and municipal wildfire assistance programs.

The AEMA management structure is divided into two divisions: Provincial Operations, and Public Safety initiatives. Each separate division has five separate branches who report to an executive director. A Director oversees all activities of the Agency.

AEMA maintains a 24-hour a day, 7 day a week Agency Response and Readiness Centre (AARC) that monitors and maintains contact with various regional and local authorities. This centre is the central point of contact for the collection, evaluation, and dissemination concerning a single incident or for multiple incidents. The centre is responsible for co-ordinating an initial response at which time it will change roles into an active management centre known as the Provincial Operations Centre (POC). The POC is responsible for establishing and maintaining contacts with federal assistance and agencies.

ALBERTA EMERGENCY MANAGEMENT AGENCY	
❑ Act as the provincial coordinating agency in petroleum industry emergency responses as per the Emergency Management Act.	ALBERTA EMERGENCY MANAGEMENT AGENCY
❑ Make the plan available to stakeholders.	
❑ Train provincial personnel to carry out functions as assigned by their emergency plan or procedures.	
❑ Communicate changes to the plan with plan holders.	
❑ Maintain 24-hour a day, 7 day a week duty manager system.	
❑ Assist in the planning and coordination of exercises with the AER.	
❑ Confirm AER has been notified.	
❑ Conduct the Initial Response Report (IRR) notification.	
❑ Obtain a situation report from the AER, EPA, local authority, etc.	
❑ Confirm the level of emergency.	
❑ Activate the Provincial Operations Centre (POC) as required.	
❑ Notify the appropriate provincial officials as per standard operating procedures.	
❑ Release consolidated SITREPs in accordance with the Energy Resources Industry Emergency Support Plan.	
❑ Coordinate the Government of Alberta response including requests for provincial/federal resources.	
❑ Provide ongoing situation reports or briefing notes to appropriate provincial officials.	
❑ Notify partners and stakeholders when the event is over.	
❑ Conduct the post-incident assessment.	
❑ Communicate any changes to the plan to all plan holders.	
❑ Complete documentation or reporting in relation to the activation of the Energy Resources Industry Emergency Support Plan and the incident.	

Alberta Health Services

ENVIRONMENTAL PUBLIC HEALTH ROLES AND RESPONSIBILITIES

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.
- 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.

http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-oil-gas-epr-roles.pdf
Updated: February 2016

First Nations and Inuit Health

FIRST NATIONS AND INUIT HEALTH	
Before the Event.	FIRST NATIONS AND INUIT HEALTH
❑ Maintain 24-hour emergency contact numbers where resources can be accessed to carry out a response related to the Energy Resources Industry Emergency Support Plan.	
❑ Participate in provincial and industrial operators' preparatory training and exercises where feasible.	
❑ Liaise with other federal departments where needed.	
During the Event	
❑ Provide environmental public health advice to health care or special care facilities on First Nation reserves related to adverse environmental conditions resulting from a petroleum incident.	
❑ Investigate environmental public health related complaints from on-reserve Indigenous communities.	
❑ Provide guidance on public health advisories, public evacuation and sheltering for first nation communities.	
In addition to the primary roles above, the following assistance will be provided during an event:	
❑ Provide representation at the off-site REOC or when established, if requested and if available	
❑ Assist with messaging to provide accurate information to the public concerning the incident	
❑ Provide guidance and assistance at Evacuation Centre(s) to help ensure that public health standards are being met.	
❑ Provide health related information about toxic chemicals and by-products when the products or their make-up are known and reported.	
❑ Provide guidance on rescinding and declaration of public evacuation and on allowing re-occupancy – consultative capacity only.	
❑ Provide advice to the REOC on existing or potential health effects associated with the incident where possible	
❑ When possible work with all other responders to establish a single Regional Emergency Operations Centre (REOC).	
After the Event	
❑ Compile and maintain environmental public health related documents on inspected facilities.	
❑ Participate in PIA (Post Incident Assessments).	
❑ Provide guidance on assessing and mitigating public health risks following an upstream petroleum incident.	

Alberta Transportation

ALBERTA TRANSPORTATION	
❑ Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	ALBERTA TRANSPORTATION
❑ Respond to Dangerous Goods transportation emergencies in Alberta.	
❑ Manage transportation route closures.	
❑ Provide assistance with the closure of provincial highways in the establishment of suitable detour routes.	
❑ Provide advice and assistance with the procurement of roadblock equipment.	
❑ Ensure that all requests and reports are completed.	
❑ Work with the appropriate local authority to facilitate the restoration of roadways.	

Public Affairs Bureau

PUBLIC AFFAIRS BUREAU	
❑ Maintain a team of trained Public Affairs personnel.	PAB
❑ Confirm distribution of AER messaging. Provide support as required.	
❑ Activate Crisis Communication Plan and Crisis Communications Response.	
❑ Advise AEMA if media boardroom will be required for media events.	
❑ Coordinate key messaging with the AER.	

Alberta Justice and Solicitor General

ALBERTA JUSTICE AND SOLICITOR GENERAL	
❑ Maintain the list of critical infrastructure in the Province of Alberta.	SOLICITOR GENERAL
❑ Maintain and regularly test the emergency notification system.	
❑ Maintain awareness of threats, vulnerabilities, and risks related to human induced intentional hazards.	
❑ Notify Government department of concerns arising from the effects of the incident on critical infrastructure.	
❑ Advise other Government departments of modifications to procedures if the incident was intentionally caused.	
❑ Provide technical expertise to all stakeholders in the event of an intentional incident and advise appropriate Government officials of potential future targets.	
❑ Ensure that effects on critical infrastructure have been resolved.	
❑ Recommend changes to critical infrastructure plans to mitigate future events.	

9.1.10 Alberta Pressure Equipment Incidents

ALBERTA BOILERS SAFETY ASSOCIATION	
❑ Review, accept and register pressure equipment designs and construction procedures that relate to pressure equipment.	ABSA
❑ Issue certification of inspection permits for pressure equipment before the equipment is placed into service.	
❑ Ensure that regular inspection of in-service pressure equipment is conducted.	
❑ Keep records for pressure equipment that has been registered for use, or manufactured, in Alberta.	
❑ Examine, certify and register Pressure Welders and Welding Examiners, Power Engineers, and Pressure Equipment Inspectors.	
❑ Authorize and monitor, through quality management system, organizations that have been permitted to conduct some of the activities subject to the regulations.	
❑ Conduct safety education and training.	
❑ Receive notification of an incident.	
❑ Investigate accidents or unsafe conditions that involve pressure equipment.	

Accidents that must be reported include:

- All accidents involving pressure equipment (boiler, pressure vessel, pressure piping system, fitting, or thermal liquid heating system) that result in damage to property or injury to, or death of, a person.
- Accidents not caused by pressure equipment but having some impact on pressure equipment.

Incidents above must be immediately reported to the following:

- The Company's Pressure Equipment Chief Inspector.
- Alberta Boilers Safety Association (ABSA) Office or ABSA Safety Codes Officer. After hours, call the Edmonton Switchboard. The message will provide after-hours phone numbers for contact.

For non-critical incidents, notify the Company's Chief Inspector and ABSA by the next business day. As soon as possible, send a full written report via mail (See ABSA Accident Reporting Form AB-97).

Form 97:

https://www.absa.ca/unsafe-condition-accident-fire-reporting/ab-97-accident-report-form/

9.1.11 Reporting Electrical Incidents

Section 15 of the Administrative Items Regulation requires that electrical incidents, as well as fires which are suspected to be of an electrical origin, be reported as soon as practicable to the technical Administrator for the electrical discipline: either directly or via a safety codes officer. The regulation also requires that nothing be tampered with at the scene of an incident until a safety codes officer has granted permission and determined whether further investigation is required.

Incidents should be reported to a safety codes officer representing the inspection authority having jurisdiction (i.e. accredited municipality, accredited corporation or Alberta Municipal Affairs for non-accredited areas of the province).

In addition to reporting an electrical incident, Section 48 of the Safety Codes Act also requires that when an incident is investigated, the corresponding investigation report must be submitted to the technical Administrator for the electrical discipline.

9.1.12 List of Abbreviations

Acronym	Name
AAF	Alberta Agriculture and Forestry
ABSA	Alberta Boilers Safety Association
AEMA	Alberta Emergency Management Agency
AER	Alberta Energy Regulator
AHS	Alberta Health Services
AT	Alberta Transportation
CMO	Consequence Management Officer
EPA	Ministry of Environment and Protective Areas
EPEA	Environmental Protection and Enhancement Act
Local Authority	County, Municipal District, Special Areas
MEP	Municipal Emergency Plan
MOH	Medical Officer of Health
PAB	Public Affairs Bureau
POC	Provincial Operations Centre
Regulatory Authority	Alberta Energy Regulator
SOLGEN	Alberta Justice and Solicitor General.

9.2 CANADIAN FEDERAL GOVERNMENT

9.2.1 Royal Canadian Mounted Police (RCMP)

The RCMP is both a federal and a national police force of Canada. The RCMP provides policing services to all of Canada at a federal level, and also on a contract basis to the three territories, eight of Canada's provinces (the RCMP does not provide provincial or municipal policing in either Ontario or Quebec), more than 190 municipalities, 184 Indigenous communities, and three international airports.

RCMP	
❑ May assist in the initial area isolation, security traffic and crowd control.	RCMP
❑ In conjunction with transportation, local authorities and Company personnel, may provide assistance with closure of roadways.	
❑ If available, assist company personnel with resident evacuation.	
❑ Clarify responsibilities when fatalities are involved. Police must be notified in the case of a fatality.	
❑ Assist the coroner in the event of a fatality in which there is no criminal wrong-doing.	
❑ Notify next-of-kin in the event of a fatality of a member of the public.	

9.2.2 Environment and Climate Change Canada

Environment and Climate Change Canada is responsible for coordinating environmental policies and programs as well as preserving and enhancing the natural environment and renewable resources. The powers, duties and functions of the Minister of the Environment extend to and include matters relating to: preserve and enhance the quality of the natural environment, including water, air, soil, flora and fauna; conserve Canada's renewable resources; conserve and protect Canada's water resources; forecast daily weather conditions and warnings, and provide detailed meteorological information to all of Canada; enforce rules relating to boundary waters; and coordinate environmental policies and programs for the federal government.

Under the Canadian Environmental Protection Act (CEPA 1999), Environment and Climate Change Canada is the lead federal department to ensure the clean-up of hazardous waste and oil spills for which the government is responsible, and to provide technical assistance to other jurisdictions and the private sector as required.

ENVIRONMENT AND CLIMATE CHANGE CANADA	
❑ Identify actions required under the Fisheries Act and the Canadian Environmental Protection Act (CEPA).	ENVIRONMENT AND CLIMATE CHANGE CANADA
❑ Work together with provincial environmental protection agencies.	
❑ Provide advice on environmental implications as a result of operational decisions.	
❑ Work together with provincial environmental protection agencies.	
❑ Assign inspectors where appropriate.	
❑ Assist with plume monitoring.	
❑ Provide advice on the characteristics of substances and how they might affect human health and environment; weather forecasting and spill modeling to identify where these substances are likely to move in the environment.	
❑ Provide sampling and laboratory analytical support.	
❑ Advise about clean up technology and techniques.	
❑ May develop damage assessment and restoration tools and techniques.	

Canadian Environmental Protection Act (CEPA)

Under the Canadian Environmental Protection Act (CEPA), the Government of Canada is required to take preventive and remedial measures to protect, enhance and restore the environment.

An environmental emergency is defined as an incident that:

1. may have an immediate or long-term harmful effect on the environment or its biological diversity,
2. may constitute a danger to the environment on which human life depends or
3. may constitute a danger in Canada to human life or health.

Any person in Canada who owns or manages a listed substance in a quantity at or over the prescribed minimum quantity is required to provide Environment and Climate Change Canada with information on the quantity of the substance, along with the facility location and an emergency plan. Any existing emergency plan may be used to satisfy the requirements of the regulations.

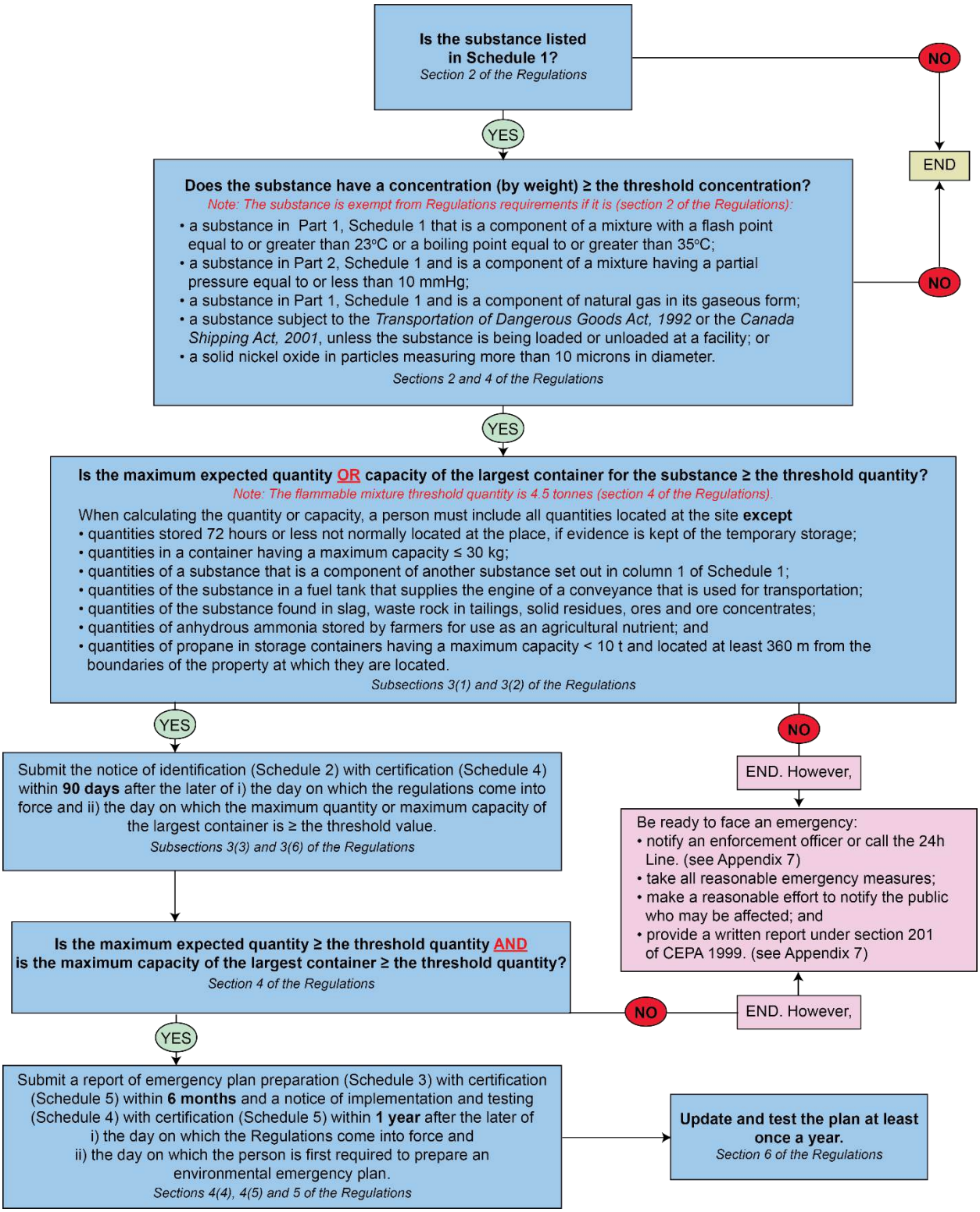
Environment and Climate Change Canada requires any responsible person who has charge, management or control of substances within a facility in excess of threshold limits listed in Schedule 1 of the Environmental Emergency Regulations to:

- File a declaration with the minister.
- Prepare an environmental emergency (E2) plan.
- Implementation by yearly maintenance and testing of the plan.

Exemptions

- Amounts temporarily stored for 72 hours or less in a container not normally located at the site.
- Quantities in a container with capacity of 30 kg or less.
- Quantities of substance when it is a component of another substance in Schedule 1.
- Quantities of a substance when it is a component of natural gas.
- A substance that is used to fuel a heating appliance or to generate power at the facility where it is located and is present in a quantity that is less than the quantity set out in column 4 or Part 1 of Schedule 1.
- Quantities of a substance in fuel tank supplying engine of conveyance.
- Quantities of a substance regulated under Transportation of Dangerous Goods Act or the Canada Shipping Act.
- A substance that is in a pipeline located entirely within a province and that is on a property where there are no fixed onshore installations other than pipelines, compressor stations or pump stations.

Environmental Emergencies Regulations – Quick Reference



Overview of Environmental Emergency Regulations Schedules

The CEPA schedules can be found via the Environment and Climate Change Canada website link found here:

http://gazette.gc.ca/rp-pr/p2/2019/2019-03-06/html/sor-dors51-eng.html

The schedules submitted by the company should be reviewed during the annual ERP update to ensure all contact and technical information is correct.

Schedule 1 – List of toxic substances

Schedule 2 – Company name and substances located at a facility

Schedule 3 – E2 Plan preparation

Schedule 4 – E2 Plan brought into effect

Schedule 5 – Full Scale Exercise of E2 plan

Schedule 6 – Notice of change in circumstances (quantity or capacity)

Schedule 7 – Notice of cessation of operations or transfer of ownership

Schedule 8 – Written report of environmental emergency

Environmental Emergency (E2) Plan

The objectives of the Environmental Emergency Regulations (2019) under the Canadian Environmental Protection Act, 1999 are to reduce the frequency and consequences of uncontrolled, unplanned or accidental releases of hazardous substances into the environment. The objective is obtained through proper environmental emergency planning so that companies are able to prevent, prepare for, respond to and recover from an environmental emergency.

Essential Features of an Environmental Emergency (E2) Plan

The E2 Plan must address the types of emergencies that might reasonably occur, including both on-site and off-site consequences, and the associated prevention, preparedness, response and recovery issues.

Persons involved with an E2 Plan along with their respective roles and responsibilities will have to be identified in the plan.

Environmental emergency plans may address:

- Prevention
- Preparedness
- Response
- Recovery

Prevention Plan

Preventing environmental emergencies means taking action to reduce or eliminate the environmental risks. The Company recognizes that prevention is by far the most important area for focus.

To qualify as an approved petroleum operator the Company is required to meet strict government standards. These legislated standards govern the construction, maintenance and operations of petroleum assets throughout Canada and help ensure the safe operation of petroleum industry infrastructure, limiting the impact on the public and the environment.

The Company has in place the following key elements of a maintenance program and safety management system:

- The operations are designed and constructed to specific industry standards.
- The Company has preventative maintenance checks and programs that include using: An Owners Inspection Program that meets Boilers Safety Association regulations. This includes a maintenance tracking system to schedule preventative maintenance work.
- The Company is committed to maintaining effective operating procedures and facility documentation.
- Operator competency is reviewed to determine the type and amount of training each employee requires upon hiring.
- Process and procedures are in place to ensure that changes in design, service or staff are effectively managed to minimize impacts on operations.
- Incident investigation and analysis is conducted to minimize reoccurrence of accidents and incidents are tracked through the Company workplace tracking system.
- The Company is committed to conducting regular reviews to assess compliance to standards.

Preparedness Plan

Being prepared for an emergency is critical to mounting a quick and effective response that will help minimize impacts on the health of people and the environment.

The Company's Environmental Emergency Plan will work in partnership with government, other industry members and communities to:

- Identify potential risks and sensitive resource environments.
- Develop contingency plans that outline how to deal with emergencies.
- Train personnel to apply this plan.
- Review and exercise this plan to strengthen their effectiveness and ensure continuous improvement.

The Company has conducted a risk assessment and identified the most reasonable worst-case scenarios to be:

- An uncontrolled release.
- A fire/explosion.

The potential consequences of an emergency may include:

- Negative environmental impact caused by a hazardous substance.
- Serious injury or fatality.

The purpose of an ERP is to establish an action plan structure so that the Company can quickly and effectively respond to an emergency. This ERP outlines the criteria for assessing an emergency situation. The document also lists procedures for mobilizing response personnel (including government agencies) and provides procedures for establishing communication and coordination amongst the vested parties.

Refer to the facilities on-site information/plot plans showing:

- Tanks and vessels.
- Process equipment.
- Worker muster points.
- Safety equipment.
- Fire prevention/protection/suppression/equipment.

- Surface run-off control points and off-lease control points.
- Spill kits.

Facilities also have well marked signs for containers, hazardous substances, operating procedures and site-specific emergency information.

Response Plan

Key sections in this ERP that define the emergency response protocol include:

- Assessment Matrix for Classifying Incidents
- Roles and Responsibilities
- Command Centres
- Crisis Communication Plan
- Response Action Plans

The roles and procedures to carry out response activities are described in the Roles and Responsibilities section of this manual. The Telephone Directory contains government agency and support service contact information who could be involved in the response to an environmental emergency. The stakeholder information in the Field Specific Section identifies members of the public or industry that could be affected by an environmental emergency. Each site-specific section also contains an area summary. The area summary includes pertinent area information that may be relevant during an environmental emergency such as topography, spill receptors, and land use.

When it comes to environmental emergencies, no single organization can do it all. Effective emergency response requires teamwork among industry, governments, communities and local organizations.

Environment and Climate Change Canada's Emergency officers have HAZMAT (Hazardous Materials) expertise, backed by scientific support, which enables response in the event of spills involving hazardous materials. The role of Environment and Climate Change Canada's environmental emergency response team is to provide advice and support on:

- Hazardous material properties, behaviour, fate and environmental effects.
- Spill-behaviour and spill-movement modeling using the latest-generation models and techniques.
- Training in personnel protection at pollution emergencies.
- Advice and direct support on state-of-the-art, on-site monitoring of human and environmental hazard levels at pollution emergencies.
- Sample collection at spill sites.
- The contract administration of airborne services for the remote sensing of spills.
- The evaluation of spill countermeasures, particularly those relating to containment and recovery, treatment and disposal techniques.
- Priority assessment for shoreline protection and clean-up using its Shoreline Clean-up and Assessment Technique (SCAT).

Recovery Plan

It is important to clean-up and recover from environmental damage after an emergency. Environmental damage is the impact pollution causes to the bio-physical environment. It can affect survival, growth, reproduction, behaviour, community composition, ecological process functions, physical and chemical habitat quality and structure. There can also be impacts on socio-economic services.

The two key parts of recovery are environmental damage assessment and restoration. The Company’s end goal is to restore the environment after a spill.

The Company will shut-in the impacted facility, assess and respond to the environmental impacts in compliance with regulation. The Company will conduct an assessment of the incident with the appropriate government agencies to decide if the site is safe for operations to continue. The Company will ensure the site is safe for normal work resumption. Workers affected by the incident will be informed of work resumption dates and times. Work resumption, investigation and critical incident stress debriefing procedures are outlined in the Post Emergency section of this manual.

Once the immediate emergency has ended and the initial clean-up has been done, there may be lingering environmental impacts. Recovery activities are designed to examine these possible impacts through damage assessment. During this phase, the Company will determine the nature and extent of the environmental pollution and develop strategies to restore injured natural resources, ecological service flows and socio-economic service flows.

ERP Exercises and Training

CEPA E2 regulations require than an E2 plan be updated and tested at least once each calendar year by a simulation exercise in respect of one substance from each of the hazard categories referred to in column 5 of Parts 1 and 2 of Schedule 1, using an environmental emergency identified under paragraph 4(2)(d) as the emergency being simulated. Environment and Climate Change Canada recognizes that a full-scale simulation exercise may not be achievable every year. Therefore, facilities may conduct a full-scale simulation exercise at least once within a five-year period must respect the yearly testing requirement by testing different components of their E2 plan at least once each calendar year.

The exercise design process for E2 training must be composed of the following four main steps:

1) Planning the annual ERP exercise;
2) Conducting the exercise;
3) Evaluating and reporting on the outcomes; and
4) Correcting and updating the E2 plan.

Testing must reflect a credible type of environmental emergency that can be reasonably be expected to occur for the place in question and that would likely cause harm to the environment or constitute a danger to human life or health. Testing or exercising enables critical aspects of the plan to be examined in a structural way, simulating conditions to reveal major mistakes and / or omissions so that they can be subsequently corrected before real emergencies occur. Once every five years a Major exercise must be held on the regulated site and should test their facilities' E2 plan. Documentation of all exercises must be kept for a period of seven years.

Simulation Exercise means an exercise simulating the response to an environmental emergency involving the release of a substance.

Full-Scale Simulation Exercise means an action-based simulating exercise requiring the deployment of personnel, resources and equipment.

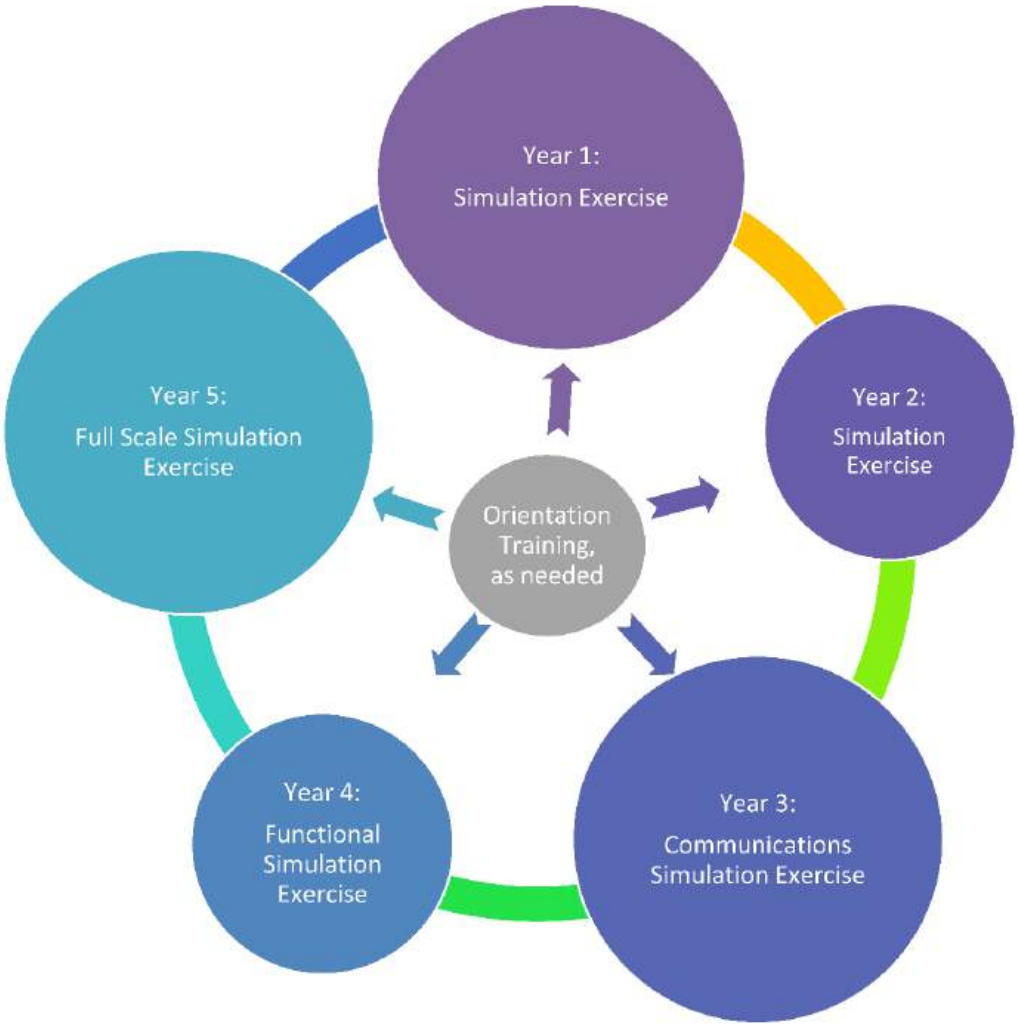
Record of Simulation Exercise

After each Simulation Exercise is conducted in relation to the environmental emergency plan, a responsible person must prepare a record that contains the date, a summary and the results of the simulation exercise and any modifications to be made to the plan as a result of the simulation exercise.

Notice – Simulation Exercises Conducted

A responsible person must, within five years after the day on which the environmental emergency plan is brought into effect, submit a notice to the Minister containing the information referred to in Schedule 5 concerning the simulation exercises conducted in relation to an environmental emergency plan.

Training Cycle



CEPA Compliance and Enforcement

Environment and Climate Change Canada may request copies of environmental emergency plans. In addition to facility visits by enforcement officers, violations of CEPA Sections 199 and 200 may result in warnings, directions, compliance orders, and prosecution.

Environmental Emergencies Program

The Environmental Emergencies Program protects Canadians and their environment from the effects of environmental emergencies through the provision of science-based expert advice and regulations. The Environmental Emergencies Program provides expert advice during the environmental assessment process of large development projects to improve mitigation measures that prevent accidents from occurring and improve emergency response plans so that effective and timely actions can be taken when accidents occur.

Note: The Federal government and Provinces have reciprocal harmonization agreements to share information as required to protect human life, health and environmental protection.

Who to Contact:

Province	Agency
Alberta	Alberta Ministry of Environment and Parks
British Columbia	Emergency Management British Columbia – Ministry of Justice
Saskatchewan	Saskatchewan Ministry of Environment
Manitoba	Manitoba Agriculture and Resource Development – Petroleum Branch

9.2.3 Department of Fisheries and Oceans (DFO)

The department within the government of Canada that is responsible for developing and implementing policies and programs in support of Canada's economic, ecological and scientific interests in oceans and inland waters. Its mandate includes responsibility for the conservation and sustainable use of Canada's fisheries resources while continuing to provide safe, effective and environmentally sound marine services that are responsive to the needs of Canadians in a global economy.

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.

DEPARTMENT OF FISHERIES AND OCEANS	
❑ Design and develop related regulations, policies, strategies and tools.	DFO
❑ Review, assess and monitor activities associated with fish habitat to ensure their compliance with the Fisheries Act and Species at Risk Act.	
❑ Conduct environmental assessments under the Canadian Environmental Assessment Act.	
❑ Design, develop, and implement communication and education strategies.	
❑ Work together with provincial environment protection agencies.	
❑ Receive notification from Environment and Climate Change Canada.	
❑ May send personnel to the site if there has been or could potentially be an impact to fish or fish habitat.	
❑ Work closely with Environment and Climate Change Canada, The Canadian Coast Guard and other provincial environmental agencies.	

9.2.4 Public Safety Canada

Public Safety Canada formerly known as Public Safety and Emergency Preparedness Canada, legally incorporated as the federal Department of Public Safety and Emergency Preparedness, is the department of the government of Canada with responsibility for protecting Canadians and helping to maintain a peaceful and safe society.

Public Safety Canada houses the Government Operations Centre at the hub of the national emergency management system. The Government Operations Centre is an advanced centre for monitoring and coordinating the federal response to an emergency.

In the event of a large-scale natural disaster where response and recovery costs exceed what individual provinces and territories could reasonably be expected to bear on their own, Public Safety Canada provides financial assistance to the provincial and territorial governments through the Disaster Financial Assistance Arrangements (DFAA). Assistance is paid to the province or territory – not directly to individuals or communities. The provincial or territorial governments design, develop, and deliver disaster financial assistance, determining the amounts and types of assistance that will be provided to those who have experienced losses.

PUBLIC SAFETY CANADA	
❑ Ensure first responders and emergency management personnel are well-prepared through education, support, and exercises.	PUBLIC SAFETY
❑ Work with provincial response agencies.	
❑ Monitor and coordinate the Federal response to an emergency.	
❑ Provide financial assistance to the provincial and territorial governments through the Disaster Financial Assistance Arrangements (DFAA).	

9.2.5 Transport Canada – Transportation of Dangerous Goods

The department within the government of Canada which is responsible for developing regulations, policies and services of transportation in Canada. It is part of the Transportation, Infrastructure and Communities (TIC) portfolio. The federal Transportation of Dangerous Goods (TDG) Regulations regulate the transportation of dangerous goods for the road, rail, air and marine transport modes.

The purpose of the TDG legislation is to reduce the risk to emergency response personnel, the public and the environment. One secondary objective is to collect data on accidents which involve dangerous goods either directly or indirectly. This data will allow the measurement of the influence of this legislation on safety.

The Surface Transport Dangerous Goods Directorate of Transport Canada may assume federal Lead Agency status for land-based spills involving rail cars or tank trucks. It also administers and enforces the requirements of the Transportation of Dangerous Goods (TDG) Act following a transportation emergency incident.

The Marine Safety Branch also administers and enforces the pollution provisions and regulations of the Canada Shipping Act (CSA) and has the legal authority to board vessels, draw samples, and collect evidence. This work is performed by an authorized Pollution Prevention Officer.

Transport Canada also staffs and manages the Canadian Transport Emergency Centre (CANUTEC) which provides 24-hour advice on chemical spill response, TDG requirements, and also serves as a 24-hour emergency reporting centre for hazardous materials incidents anywhere in Canada. The Directorate's overall mandate is to promote public safety in the transportation of dangerous goods by all modes.

Federal regulations require that CANUTEC be contacted in the event of an incident or accident involving dangerous goods and infectious substances.

CANUTEC staff does not go to the site of an incident, however, should on-site assistance be required, CANUTEC can assist in the implementation or industry Emergency Response Assistance Plans.

TRANSPORT CANADA	
❑ Regulate the handling, offering for transport and the transport of dangerous goods by all modes in order to ensure public safety.	**TRANSPORT CANADA**
❑ Maintain a 24-hour emergency telephone service.	
❑ Assist emergency response personnel in handling dangerous good emergencies.	
❑ Provide advice on chemical, physical and toxicological properties and incompatibilities of the dangerous goods.	
❑ Provide advice on health, hazards, and first aid.	
❑ Provide advice on fire, explosion, spill, or leak hazards.	
❑ Provide advice on remedial actions for the protection of life, property, and the environment.	
❑ Provide advice on evacuation distances.	
❑ Provide advice on personal protective clothing and decontamination.	
❑ Provide communication links with the appropriate industry, government, or medical specialists.	

CANUTEC – Public Safety Measures

CANUTEC is the Canadian Transport Emergency Centre operated by the Transportation of Dangerous Goods (TDG) Directorate of Transport Canada. The Directorate's overall mandate is to promote public safety in the transportation of dangerous goods by all modes. CANUTEC was established in 1979 and is one of the major safety programs Transport Canada delivers to promote the safe movement of people and goods throughout Canada.

The 2024 Emergency Response Guidebook (ERG2024) was developed, in an international effort between Argentina, Canada, Mexico and the United States for use by fire fighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving dangerous goods. It is primarily a guide to aid first responders in quickly identifying the specific or generic hazards of the material(s) involved in the incident and protecting themselves and the general public during the initial response phase of the incident. For the purposes of the ERG2024, the "initial response phase" is that period following arrival at the scene of an incident during which the presence and/or identification of dangerous goods is confirmed, protective actions and area securement are initiated, and assistance of qualified personnel is requested. It is not intended to provide information on the physical or chemical properties of dangerous goods.

The ERG2024 is designed to assist responders in making initial decisions upon arriving at the scene of a dangerous goods incident. It should not be considered as a substitute for emergency response training, knowledge or sound judgment. ERG2024 does not address all possible circumstances that may be associated with a dangerous goods incident. It is primarily designed for use at a dangerous goods incident occurring on a highway or railroad. Be mindful that there may be limited value in its application at fixed facility locations.

In the event of an emergency involving dangerous goods, call CANUTEC at 1-888-CAN-UTEC (226-8832), 613-996-6666 or *666 on a cellular phone. CANUTEC's emergency response advisors provide immediate advice over the phone about the actions to take and to avoid during a dangerous goods emergency. They can also send technical information to local authorities responsible for responding to emergencies by email or fax during an incident.

ID No.	Guide No.	Name of Material	Public Safety (Immediate precautionary measures)	Evacuation	
				Large Spill	Fire
1971	115	• Methane • Methane, compressed • Natural gas, compressed	100 m (330 ft)	Consider initial downwind evacuation for at least 800 metres (1/2 mile)	If tank, rail car or tank truck is involved in a fire, isolate for 1600 metres (1 mile) in all directions; also, consider initial evacuation for 1600 metres (1 mile) in all directions.
1075	115	• Butane • Liquefied Petroleum Gas (LPG) • Propane • Propane mixture	100 m (330 ft)	Consider initial downwind evacuation for at least 800 metres (1/2 mile)	
1071	119	• Oil gas • Oil gas, compressed	100 m (330 ft)	Increase, in the downwind direction, as necessary, the isolation distance shown under “PUBLIC SAFETY”.	
1267	128	• Petroleum crude oil	50 m (150 ft)	Consider initial downwind evacuation for at least 300 metres (1000 ft).	If tank, rail car or tank truck is involved in a fire, isolate for 800 metres (1/2 mile) in all directions; also, consider initial evacuation for 800 metres (1/2 mile) in all directions.
1114	130	• Benzene	50 m (150 ft)	Consider initial downwind evacuation for at least 300 metres (1000 ft).	

ID No.	Guide No.	Name of Material	Public Safety (Immediate precautionary measures)	Initial Isolation and Protective Action Distances					Fire
				Small Spills			Large Spills		
				First Isolate in all directions	Then protect persons downwind during		First Isolate in all directions	Then protect persons downwind during	
					Day	Night		Day	Night	
1053	117	• Hydrogen Sulphide	100 m (330 ft)	30 m	0.1 km	0.4 km	400 m	2.1 km	5.4 km	If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.
3494	131	• Petroleum sour crude oil, flammable, toxic	50 m (150 ft)	30 m	0.1 km	0.2 km	60 m	0.5 km	0.7 km	If tank, rail car or tank truck is involved in a fire, isolate for 800 metres (1/2 mile) in all directions; also, consider initial evacuation for 800 metres (1/2 mile) in all directions.
1017	124	• Chlorine	100 m (330 ft)	60 m	0.3 km	1.1 km	See table below			

Toxic Inhalation Hazardous Materials	Transport Container	First ISOLATE in all Directions	Initial Isolation and Protective Action Distances					
			Day			Night		
			Low wind < 6 mph = < 10 km/h	Moderate wind 6-12 mph = 10 - 20 km/h)	High wind > 12 mph = > 20 km/h	Low wind < 6 mph = < 10 km/h	Moderate wind 6-12 mph = 10 - 20 km/h)	High wind > 12 mph = > 20 km/h
Chlorine (UN 1017) Sulphur Dioxide (UN 1079)	Rail Tank Car	1000 m (3000 ft)	9.9 km (6.2 mi)	6.4 km (4.0 mi)	5.1 km (3.2 mi)	11+ km (7+ mi)	9.0 km (5.6 mi)	6.7 km (4.2 mi)
	Highway tank truck or trailer	600 m (2000 ft)	5.8 km (3.6 mi)	3.4 km (2.1 mi)	2.9 km (1.8 mi)	6.7 km (4.3 mi)	5.0 km (3.1 mi)	4.1 km (2.5 mi)
	Multiple ton cylinders	300 m (1000 ft)	2.1 km (1.3 mi)	1.3 km (0.8 mi)	1.0 km (0.6 mi)	4.0 km (2.5 mi)	2.4 km (1.5 mi)	1.3 km (0.8 mi)
	Multiple small cylinders or single ton cylinder	150 m (500 ft)	1.5 km (0.9 mi)	0.8 km (0.5 mi)	0.5 km (0.3 mi)	2.9 km (1.8 mi)	1.3 km (0.8 mi)	0.6 km (0.4 mi)

Emergency Response Guidebook
U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Transport Canada, Secretariat of Transport and Communications, 2020

Reporting Requirements

The Transportation of Dangerous Goods Act, 1992 (TDG Act) requires reporting dangerous goods incidents which meet or exceed established reporting criteria listed in the Transportation of Dangerous Goods Regulations (TDG Regulations).

Who should report:

The report must be made by the person who has the charge, management or control of a means of containment (e.g. a driver, a company representative, a shipmaster, a train operator etc.) at the time of the incident if the release or anticipated release (e.g. spills, accidents), loss or theft of dangerous goods that is or could be in excess of a quantity or concentration specified by regulation from the means of containment if it endangers, or could endanger, public safety.

When to report:

Part 8 of the TDG Regulations (Reporting Requirements) requires a number of different report types. When certain conditions are met, persons subject to the TDG Regulations must submit one of the report types below.

Reports for the Transport of Dangerous Goods by Road, Rail and Marine

- Emergency Report – Road, Rail or Marine (Section 8.2 of the TDG Regulations)
- Release or Anticipated Release Report – Road, Rail or Marine (Section 8.4 of the TDG Regulations)
- 30-Day Follow-Up Report (Section 8.6 of the TDG Regulations)

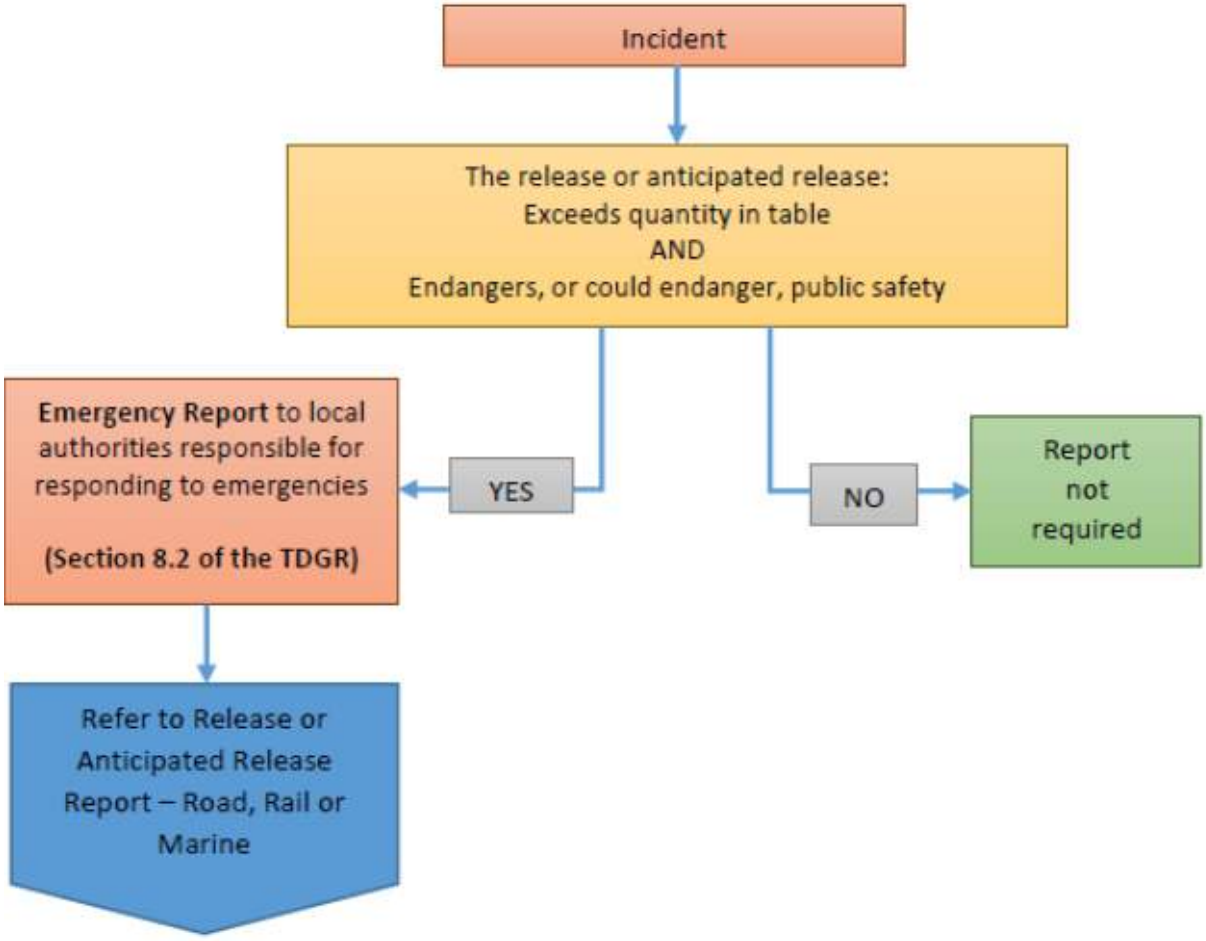
Reports for the Transport of Dangerous Goods by Air

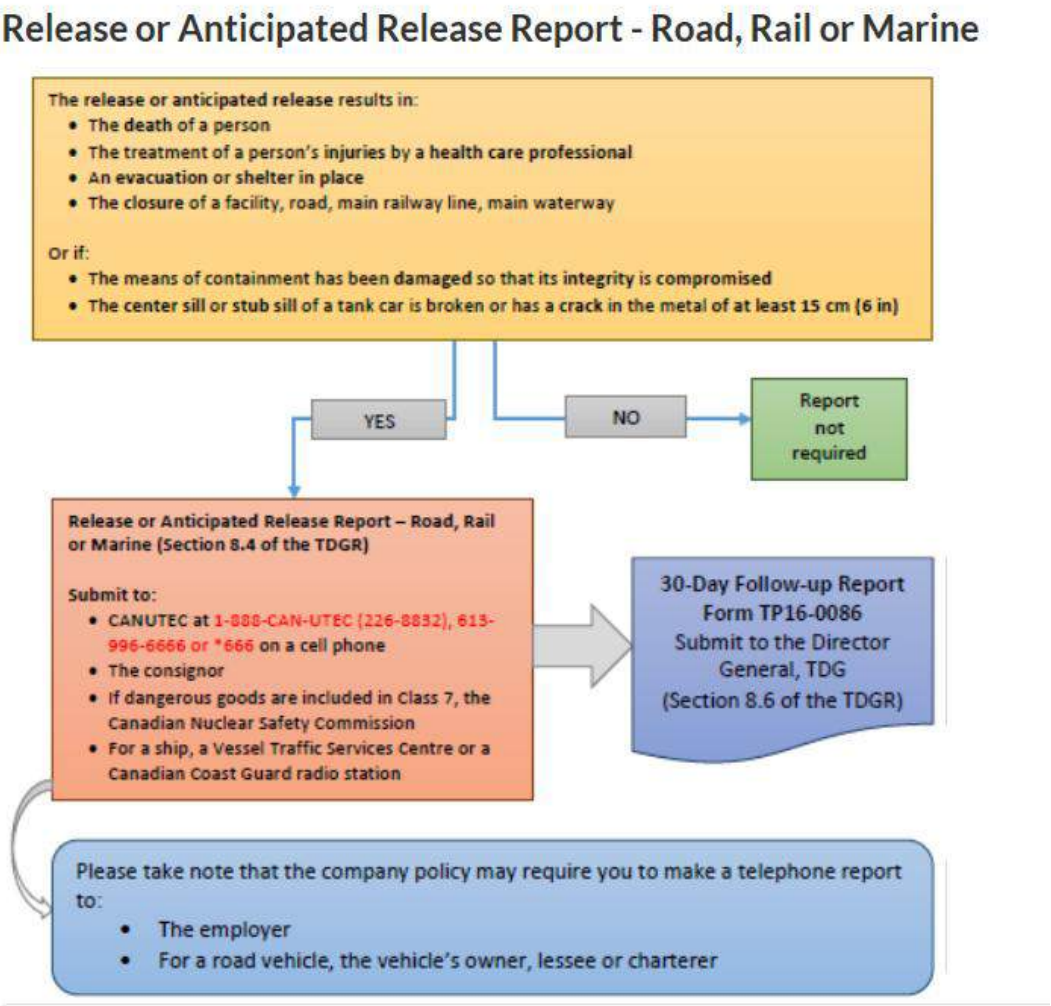
- Dangerous Goods Accident or Incident Report — Air (Section 8.9 of the TDG Regulations)
- 30-Day Follow-up Report (Section 8.11 of the TDG Regulations)
- Undeclared or Mis-declared Dangerous Goods Report (Section 8.14 of the TDG Regulations)

Reports Relating to Security – All Modes of Transport

- Loss or Theft Report (Section 8.16 of the TDG Regulations)
- Unlawful Interference Report (Section 8.18 of the TDG Regulations)

Emergency Report – Road, Rail or Marine Transport





Transportation of Dangerous Goods ERAP

The TDG Act requires any person importing or offering for transport certain higher risk dangerous goods (for example chlorine, propane, crude oil) in quantities specified by the TDG Regulations to have an approved Emergency Response Assistance Plan (ERAP) and ERAP number.

The ERAP number is found on the shipping document. If you call the ERAP telephone number, you will be connected with someone who can implement the plan. They will: provide technical and/or emergency response advice promptly.

An ERAP describes what to do in the event of a release or anticipated release of certain higher-risk dangerous goods while they are in transport. The plan is intended to assist local emergency responders by providing them with technical experts and specially trained and equipped emergency response personnel at the scene of an incident.

ERAPs may be used along with emergency response plans from other organizations (for example, carriers and local or provincial authorities). An incident management system, usually the Incident Command System (ICS), ensures coordination between the ERAP and other emergency response plans.

9.2.6 Transportation Safety Board

The Transportation Safety Board of Canada (TSB) has a mandate to advance transportation safety in the marine, pipeline, rail and air modes of transportation.

The CER and the TSB have adopted a single window reporting approach for inter-provincial or cross border pipelines. The new Online Event Reporting System (OERS) automates the single-window pipeline occurrence notification process that was established by the TSB and the CER.

Roles and Responsibilities

TRANSPORTATION SAFETY BOARD	
❑ Conduct independent investigations, including public inquiries when necessary, into selected transportation occurrences in order to make findings as to their causes and contributing factors.	TSB
❑ Identify safety deficiencies, as evidenced by transportation occurrences.	
❑ Make recommendations designed to eliminate or reduce any such safety deficiencies.	
❑ Report publicly on their investigations and on the findings in relation thereto.	

TSB Pipeline Occurrence Reporting

Requirement to Report

A "pipeline occurrence" must be reported if it results directly from the operation of the pipeline, where

1. a person is killed or sustains a serious injury;
2. the safe operation of the pipeline is affected by
    1. damage sustained when another object came into contact with it, or
    2. a fire or explosion or an ignition that is not associated with normal pipeline operations;
3. an event or an operational malfunction results in
    1. an unintended or uncontrolled release of gas,
    2. an unintended or uncontrolled release of HVP hydrocarbons,
    3. an unintended or uncontained release of LVP hydrocarbons in excess of 1.5 m^3, or
    4. an unintended or uncontrolled release of a commodity other than gas, HVP hydrocarbons or LVP hydrocarbons;
4. there is a release of a commodity from the line pipe body;
5. the pipeline is operated beyond design limits or any operating restrictions imposed by the Canada Energy Regulator;
6. the pipeline restricts the safety operation of any mode of transportation;
7. an unauthorized third-party activity within the safety zone poses a threat to the safe operation of the pipeline;
8. a geotechnical, hydraulic or environmental activity poses a threat to the safe operation of the pipeline;
9. the operation of a portion of the pipeline is interrupted as a result of a situation or condition that poses a threat to any person, property or the environment; or
10. an unintended fire or explosion has occurred that poses a threat to any person, property or the environment.

Source: Transportation Safety Board Regulations Section 4(1)

Input the information you have as soon as possible after the occurrence

As soon as possible after the occurrence, enter the information you have about it into the Online Event Reporting System (OERS). When the information is submitted, the OERS will automatically notify the TSB and the CER.

Information must be entered in the OERS even if you have reported the occurrence by telephone.

Enter factual information only. Information that is considered a witness statement and/or personal information must not be entered in the OERS.

Submit additional information as soon as available

Provide the remainder of the information required by the TSB through the OERS as soon as it becomes available and no later than 30 days after the occurrence.

If you have any questions or concerns about using the Online Event Reporting System for reporting occurrences to the TSB, call the TSB.

Online Event Reporting System (OERS)

https://apps.cer-rec.gc.ca/ERS/Home/Index/

9.2.7 Health Canada

Health Canada is the department of the Government of Canada with responsibility for national public health.

HEALTH CANADA	
❑ Communicates information about health and wellness and disease prevention to protect Canadians from avoidable risks.	HEALTH CANADA
❑ 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.	
❑ 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.	

9.2.8 Public Health Agency of Canada

Public Health Agency of Canada is an agency of the Government of Canada that is responsible for public health, emergency preparedness, and response and infectious and chronic disease control and prevention.

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.

PUBLIC HEALTH AGENCY OF CANADA	
❑ Facilitate national approaches to public health policy and planning.	PUBLIC HEALTH
❑ If a public health emergency grows beyond one province and/or territory activate response actions.	
❑ Deploy health emergency response teams (HERT) as part of the federal response to emergencies that have health repercussions.	
❑ Work with Health Canada to test ways in which the Canadian health care system can be improved and ensure its sustainably for the future.	

9.2.9 Indigenous Services Canada (ISC)

The department of the Government of Canada with responsibility for policies relating to Indigenous peoples in Canada, that comprise the First Nations, Inuit, and Metis.

INDIGENOUS SERVICES CANADA	
❑ Ensure that the First Nation communities have emergency management services comparable to those of Canadian in similar situations.	ISC
❑ Work to establish an all-hazard approach for responding to emergencies that impact First Nation communities.	
❑ Mitigation of the effects of emergencies on First Nations reserves for which the department has legal responsibility, including arrangements for community evacuation, temporary shelter, and provision of territorial support.	
❑ Coordination of federal assistance and response to emergencies in response to requests from territorial government authorities.	
❑ Provide funding to cover costs related to emergency assistance in First Nations communities.	
❑ Mitigate the effects of an emergency on First Nationals people in the area.	
❑ Work with the Chief and Council to assess the situation, determine the most effective way to report damage.	
❑ Work with the Chief and Council to assess the situation, determine the most effective way to repair damage and ensure delivery of programs and services to the community.	

9.2.10 Indian Oil and Gas Canada

Indian Oil and Gas Canada's (IOGC) mandate is to further First Nation initiatives to manage and control their oil and gas resources (i.e. governance).

According to the Indian Oil and Gas Regulations, every operator must adhere to all provincial laws applicable to non-Indian lands. This includes the environment, exploration, development, treatment, conservation or equitable production of oil and gas and that are not in conflict with the (Indian Oil and Gas) Act or Regulations.

Note: First Nations reserves and Métis settlements within the EPZ are considered to be local authorities and are required to be notified and consulted as a local authority.

Indian Oil and Gas Spill Reporting Regulations

Indian Oil and Gas Canada, 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 1 m^3 must be reported to Indian Oil and Gas Canada (IOGC) immediately.

9.2.11 ERAC – A Not-For Profit Organization

Emergency Response Assistance Canada (ERAC) is a not-for-profit corporation created by industry for industry and is a subsidiary of the Canadian Propane Association (CPA). As a co-operative emergency preparedness and response organization, ERAC is instrumental in assisting hundreds of industry and transportation organizations requiring Emergency Response Assistance Plans (ERAPs).

ERAC's Emergency Response Assistance Plan (ERAP) provides emergency response support to road, rail and stationary tank incidents for vessels.

ERAC Response TDG (ERAP) and CEPA (E2)

ERAC's emergency responders are available 24/7 through their Emergency Call Centre (ECC) telephone number.

When the ECC number has been called, the Emergency Call Centre Operator (ECCO) connects with a Home Base Coordinator (HBC) to provide details on the incident. The HBC assesses the situation based on the information provided and then determines the closest Remedial Measures Advisor (RMA) or Technical Advisor (TA) to be sent to the scene of the emergency. A response team may be dispatched if necessary. If your company is involved in an emergency, the HBC will contact you for permission to implement the plan.

Home Base Coordinator

The Home Base Co-ordinator (HBC) performs the vital function of keeping the ECCO, RMA's, TA's response teams once they assess the situation based on the information that is provided by the ECCO. Their role then throughout is provide constant communication to your company designate(s). This starts from the moment ERAC gets the call and continues until the emergency has been handled successfully. If your company is involved in an emergency, the HBC will contact you for permission to activate the plan.

Remedial Measures Advisors and Technical Advisors – First on the scene

Once the RMA or Technical Advisor is determined which is based on geographic location to the incident the arrival time is an estimated 6 hours or less from the original callout to being on-site. Once at scene this role provides technical and product subject matter expertise by providing advice and assistance in handling the incident. In some instances, they may also conduct minor repairs.

Response Teams – Hand on expertise

These teams will be activated if necessary and dispatched through the HBC. Once activated they'll bring all necessary equipment and expertise to perform remedial measures. ERAC emergency responders are experts in initial containment, confinement, transferring, flaring products and purging LPG and flammable liquids containers.

ERAP Response

Who completes the following tasks, the Plan Participant and / or the ERAC?

Question	Answer
1. Secure accident site upon arrival?	ERAC
2. Call ERAC to advise of Incident by phone and take direction from Home Base Co-ordinator?	Plan Participant
3. Conduct site assessment to identify hazards?	ERAC
4. Implement emergency response procedures as outlined in the ERAP?	ERAC
5. Conduct formal accident assessment (including inspect damaged transport vehicle, etc.)?	ERAC
6. Notify appropriate regulatory authorities? Answer: Person(s) in care and control e.g. Trucker.	Plan Participant
7. Contact local residents?	Plan Participant
8. Transfer dangerous goods from damaged containment?	ERAC
9. Responsible for obtaining and providing the recovery means of containment (e.g. Truck tank(s) or Rail car(s))?	Plan Participant
10. Person (s) responsible for any communications e.g. Media, public, corporate?	Plan Participant
11. Provides transportation to incidents which cannot be accessed by land. (e.g. barge offshore)?	Plan Participant

ERAP Tiered response levels

Two response tiers are based on the level of response needed to address the release or anticipated release of dangerous goods.

A person who implements an ERAP to tier 1 must:

- provide technical or emergency response advice as soon as possible after a request for advice; and
- remotely monitor the response to the release or anticipated release.

A person who implements an ERAP to tier 2 must:

- provide technical or emergency response advice as soon as possible after a request for advice;
- monitor the response to the release or anticipated release; and
- send ERAP emergency response resources to the location of the release or anticipated release.

ERAP implementation report

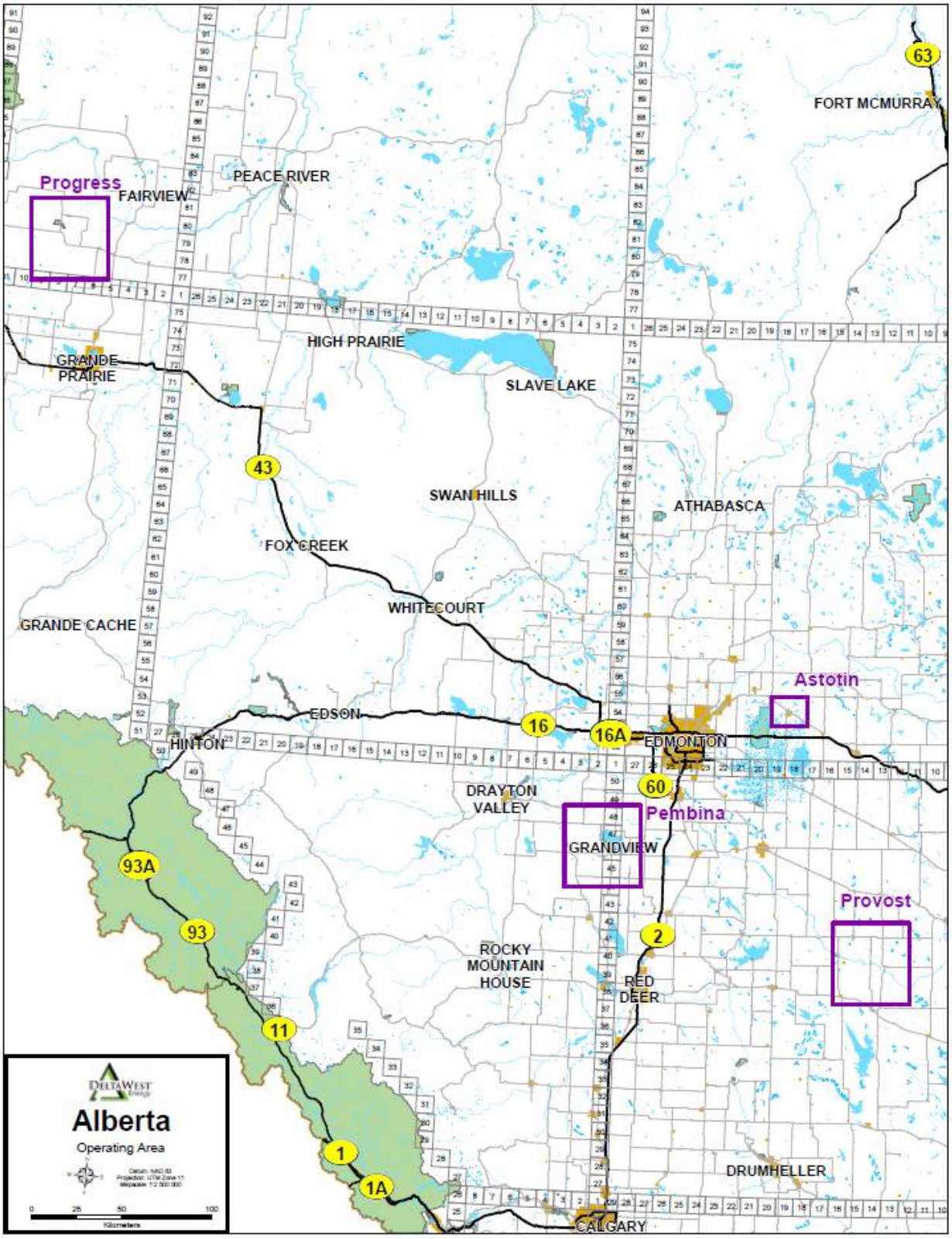
Each time an ERAP is implemented to tier 1 or tier 2, an ERAP implementation report must be made by the person listed in the ERAP to the Canadian Transport Emergency Centre (CANUTEC) at 1-888-CANUTEC (1-888‑226‑8832) or 613‑996‑6666 as soon as possible.

ERAP Response Parameters

As Canada's emergency preparedness and response organization, ERAC assists Plan Participant members who transport specified products by road or rail, or those who store these products in tanks with capacities of 450 litres or greater. See link for details on ERAP specified products https://erac.org/en/services/emergency-response-assistance-plans/

10.0 OPERATIONS

Overview Map



10.1 Pembina Field Area

10.1.1 Pembina Telephone Directory

Deltawest 24-Hour Emergency Number
1-833-738-7747

Deltawest Main Number
1-587-392-7762

Name	Position	Office	Cell
Trevor Filewich	Contract Operator	--	1-780-898-1689

Government Agencies

Resource	Contact	Office	Cell/24 Hour
Alberta Energy Regulator	Energy and Environmental Emergency 24-Hour Response Line	--	1-800-222-6514
	Central Field Operations - Edmonton	1-780-642-9310	1-800-222-6514
County of Wetaskiwin No. 10	Mike Zajac, Director of Emergency Services/DEM	1-780-352-3321	1-780-352-0005
Leduc County	Keven Lefebvre, Fire Chief and Director of Fire Services Ivana Irwin, Deputy Fire Chief and DDEM	1-780-955-7099	911
RCMP - Breton Detachment	NCO In Charge	1-780-696-3520	911
RCMP - Thorsby Detachment	NCO In Charge	1-780-789-3951	911
Alberta Health Services	Province-wide	Administration: 1-833-476-4743 edp@ahs.ca	1-844-755-1788
Alberta Emergency Management Agency	Provincial Emergency Coordination Centre (PECC)	1-780-644-5428 pses.pecc@gov.ab.ca	1-866-618-2362
	Sandra Zarate, Manager, Public Alerting and Communication Team	1-587-341-0298	1-587-341-0298
Alberta Emergency Management Agency, Central Region	Lorne Thompson, Emergency Management Field Officer	Cell: 1-587-591-1874 Email: lorne.f.thompson@gov.ab.ca	24 Hour: 1-866-618-2362
Ministry of Environment and Protective Areas (EPA)	Energy & Environment Response Line	--	1-800-222-6514
	Red Deer / North Saskatchewan Region (Edmonton)	1-780-427-7617	1-800-222-6514

Resource	Contact	Office	Cell/24 Hour
Alberta Agriculture and Irrigation	Provincial Resource Agents	310-FARM (3276)	--
Alberta Wildfire - Report a Wildfire	Province-wide	--	310-FIRE (3473)
Alberta Occupational Health and Safety	Province-wide	1-866-415-8690	1-866-415-8690
Alberta Edge (Environment and Dangerous Goods Emergencies)	Province-wide	1-780-422-9600	1-800-272-9600
Highway Maintenance Contractors	Mainroad	1-403-340-5166	1-877-875-3263
Utility Safety Partners	Province-wide	1-800-242-3447	--
Poison & Drug Information Service	Province-wide	--	1-800-332-1414
Alberta Boilers Safety Association (ABSA)	Edmonton	1-780-437-9100	1-780-437-9100
Government of Alberta Toll-Free Dialing	Province-wide	310-0000 then 10 digit number or 0 for Operator	--
Government of Canada - DFO (Department of Fisheries and Ocean)	Canadian Coast Guard Western Region	--	1-800-889-8852
Environment and Climate Change Canada	Canada-wide	1-800-668-6767	--
CN Railway Co. - Police Service	Canada-wide	--	1-800-465-9239
Canadian Pacific Kansas City (CPKC) - Police Service	Canada-wide	--	1-800-716-9132
CANUTEC TDG - Emergency Reporting Line	Canada-wide	--	1-888-226-8832 *666 Cell Phone
Transportation Safety Board (CER Regulated Emergencies)	Canada-wide	Non-Pipeline Emergencies 1-403-299-2773	Pipeline Emergencies 1-819-997-7887
NAV Canada - Notice to Airmen	Canada-wide	--	1-866-992-7433

Emergency Services

Contact	Location	Telephone
Ambulance - Municipal		
Alberta Health Services - EMS	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Ambulance - Oilfield		
Davis Safety Consulting	St. Albert	1-780-460-2696
Trojan Safety Services Ltd.	Sylvan Lake	1-403-309-3025
CIS Safety & Rentals	Alberta-wide	1-780-834-7992
Air Ambulance		
STARS	Alberta-wide	1-888-888-4567 or 1-403-299-0932
Hospitals		
Emergency Services will determine the nearest hospital to transport patient(s) to in the event of an injury or fatality		
Fire Fighters - Municipal		
Alberta Municipal Fire Department	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Fire Fighters - Oilfield		
Trojan Safety Services Ltd.	Sylvan Lake	1-403-309-3025
Safety Boss	Alberta-wide	1-800-882-4967
Superior Fire Control	Alberta-wide	1-877-882-0035

Industry Support Services

Contact	Location	Telephone
Air Quality Monitoring Equipment		
Davis Safety Consulting	St. Albert	1-780-460-2696
Trojan Safety Services Ltd.	Sylvan Lake	1-403-309-3025
Alexander Safety	Alberta-wide	1-780-286-4072
Backhoes		
Jones Trucking & Backhoe Service Ltd.	Winfield	1-780-202-2712
Silvertip Oilfield Services Inc.	Alberta-wide	1-780-836-3792
MasTec Canada Inc.	Alberta-wide	1-877-525-8867
Communication Equipment (Radio/Telephones)		
Ralcomm Ltd.	Drayton Valley	1-780-542-5200
Williams Wireless	Edmonton	1-780-489-3882
BearCom Canada Corp.	Edmonton	1-780-732-3400

Contact	Location	Telephone
Construction Company		
Newforce Energy Services	Drayton Valley	1-780-514-7882
Silvertip Oilfield Services Inc.	Alberta-wide	1-780-836-3792
MasTec Canada Inc.	Alberta-wide	1-877-525-8867
Cranes / Picker Services		
North West Crane	Leduc	1-780-980-2227
Indent Oilfield Trucking	Leduc	1-780-986-7140
DFI Corporation	Alberta-wide	1-877-334-7453
Helicopters		
Range Helicopters Inc.	Drayton Valley	1-780-542-8222
Remote Helicopters Limited	Edmonton	1-800-340-1179
Mustang Helicopters Inc.	Blackfalds	1-403-885-5220
Hotels / Potential Reception Centres		
Quality Inn & Suites	Rimbey	1-403-843-2999
Ramada Inn	Drayton Valley	1-780-514-7861
Best Western	Leduc	1-780-986-2241
Safety Equipment / Personnel		
Total Oilfield Rentals Ltd.	Alberta-wide	1-866-701-7700
United Safety	Alberta-wide	1-800-432-1809
Safety Boss	Alberta-wide	1-800-882-4967
Spill Response / Environmental Services		
WCSS	Alberta-wide	1-866-541-8888
Vertex Resource Group Ltd.	Leduc	1-780-999-8635
Parkland Geotechnical Ltd.	Edmonton	1-780-416-1755
Supply Stores		
Wolseley Industrial	Rimbey	1-403-843-2661
National Oilwell Varco (NOV)	Leduc	1-780-666-1698
DistributionNOW	Drayton Valley	1-780-542-5110
Tank Rentals		
Vertex Resource Group Ltd.	Leduc	1-780-999-8635
Attack Oilfield Services Inc.	Drayton Valley	1-780-836-3609
Precision Rentals Ltd.	Drayton Valley	1-780-542-2232
Tank Trucks		
Wilf Brandt Trucking	Warburg	1-780-542-0797
Legend Oilfield Service	Devon	1-780-987-3154
Attack Oilfield Services Inc.	Drayton Valley	1-780-836-3609
Vac and Steam Trucks		
Wilf Brandt Trucking	Warburg	1-780-542-0797
Legend Oilfield Service	Devon	1-780-987-3154
LV Energy Services	Rimbey	1-403-843-6772

Contact	Location	Telephone
Well Control Equipment		
Tryton Tool Services	Nisku	1-780-955-9420
Firefly Critical Well Safety Equipment Ltd.	Red Deer	1-403-342-1050
Superior Fire Control	Alberta-wide	1-877-882-0035
Wellsite Accommodations		
Vertex Resource Group Ltd.	Leduc	1-780-999-8635
Precision Rentals Ltd.	Drayton Valley	1-780-542-2232
Hart Oilfield Rentals Ltd.	Drayton Valley	1-780-514-8854

Note: The above listed corporate entities are subject to change without notice. Information regarding support services is accurate at time of printing.

10.1.2 Pembina Area Summary

Deltawest's Pembina field is an oil/gas producing property located central Alberta, approximately 35 km from Leduc, AB. It is located in Townships 46-47, Ranges 1-2 W5M, in Leduc County and Wetaskiwin County.

Pipeline Information	
Licensed Maximum Operating Pressure	4960 kPa
Licensed H_2S Concentrations	0.00% H_2S
Emergency Planning Zones	N/A
Maximum H_2S Release Volumes	N/A
Well Information	
Maximum H_2S Concentrations	0.00% H_2S
Emergency Planning Zones	N/A
Maximum H_2S Release Rate	0.000000 m^3/sec

Geography and Area Use

The Pembina area is primarily agricultural with oil and gas activities throughout.

Pigeon Lake and Pigeon Lake Provincial Park borders the Pembina area land holdings.

Highways / Area Roads / Railways

Highway 771 runs through the field area.

There are several petroleum development roads in the area. The roads are a combination of pavement and gravel, and not all are all-weather roads. Access to the area is dependent on weather.

Creeks / Rivers / Lakes

Pigeon Lake, Battle Lake, Battle Creek, and other unnamed waterbodies flow within the field area.

In the event of an emergency near a waterbody, Deltawest will determine if they need to call WCSS to aid in response activities.

10.1.3 Hazard Summary

Pembina Field Area – Hazard Summary					
Hazardous Product	**General Description**	**Health Effects**	**Downwind Evacuation**	**Fire**	**HPZ** **Public Safety** (immediate precautionary measures)
Methane Methane, compressed Natural gas, compressed	• Often referred to as “sweet gas”. • Flammable. • Lighter than air. • At room temperature and standard pressure, methane is a colorless, odorless gas. • It is the simplest alkane and the main component of natural gas.	• Vapors may cause dizziness or asphyxiation without warning. • Some may be irritating if inhaled at high concentrations. • Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. • Fire may produce irritating and/or toxic gases.	**Large Spill** Consider initial downwind evacuation for at least 800 metres (1/2 mile)	If tank, rail car or tank truck is involved in a fire, isolate for 1600 metres (1 mile) in all directions; also, consider initial evacuation for 1600 metres (1 mile) in all directions.	100 m (330 ft)
Petroleum Crude Oil	• Brown to black. • Viscous liquid. • May contain or release poisonous hydrogen sulfide gas. • Extremely flammable liquid and vapour	• Inhalation or contact with material may irritate or burn skin and eyes. • Fire may produce irritating, corrosive and/or toxic gases. • Vapors may cause dizziness or suffocation.	**Large Spill** Consider initial downwind evacuation for at least 300 metres (1000 ft).	If tank, rail car or tank truck is involved in a fire, isolate for 800 metres (1/2 mile) in all directions; also, consider initial evacuation for 800 metres (1/2 mile) in all directions.	50 m (150 ft)

10.1.4 Public Summary

Pembina Operations Area	
Number of First Nations:	1
Number of Trappers:	None
Number of Guides and Outfitters:	2 WMU 224 (6 guides and outfitters) WMU 334 (11 guides and outfitters)
Number of Oil & Gas operators:	7
Number of Other Area Users:	1
Other surface facilities that were noted:	None

First Nations

Name	Location	Telephone
Pigeon Lake 138A via Samson Cree Nation	PO Box 159 Maskwacis, AB	1-780-585-3793

Area Trappers

There are no trappers near Deltawest operations in the Pembina field.

Guides and Outfitters

Outfitter	Telephone
WMU 224 - Rimbey	
Alberta Trophy Hunts Stanley F. Reiser	1-403-850-3292
Alberta Wild Wings Outfitters Ltd. Clinton Reiser	1-780-678-6399
Deer Creek Lodge Hal Christiansen	1-403-963 2825
Double Diamond Wilderness Hunts Ltd. Jeremy Hatala	1-403-357-4499
Ole Dog Outfitters Albert Thomas Gilpin III	1-803-315-3238
Venture North Outfitting Ltd. Aaron Sauer	1-780-919-5116
WMU 334 - Strawberry	
Alberta Trophy Hunts Stanley F. Reiser	1-403-850-3292
Alberta Wild Wings Outfitters Ltd. Clinton Reiser	1-780-678-6399
Canadian Outfitting Company Ltd. Ken Megill	1-780-288-9362
Dallas Pittman	1-780-514-4133
Garrett Bros. Outfitting Ltd. Patrick (Pat) A. Garrett	1-780-621-7989
Imperial Iron Inc. Tyler Lawson	1-587-338-2708

Outfitter	Telephone
Liquid Logic Ltd. Darcy Amendt	1-780-298-3537
Pierce Outfitting Cody Pierce	1-403-813-8894
Ram Head Outfitters Ltd. Stanley D. Simpson	1-780-446-8774
Trophy Buck Outfitters Brian Kuny	1-780-446-3824
Wizard Lake Outfitting Inc. Gunther Tondeleir	1-780-984-4868

Other Area Users

Name	Location	Telephone
Pigeon Lake Provincial Park	15072 Township Rd 470, County of Wetaskiwin No. 10, AB T0C 2V0	1-780-586-2644

Oil & Gas Operators

Name	Location	Telephone
Gas Alberta Inc.	24 Hour Number Calgary, AB	1-403-509-2600 1-888-982-7222
HWN Energy Ltd.	24 Hour Number Calgary, AB	1-403-648-4908 1-403-648-4900
InPlay Oil Corp.	24 Hour Number Calgary, AB	1-587-955-9570 1-403-648-8201
Pembina Pipeline Corporation	24 Hour Number Calgary, AB	1-403-231-7500 1-800-360-4706
Repsol Oil & Gas Canada Inc.	24 Hour Number Edson, AB	1-780-723-9800 1-888-723-9576
Sinopec Canada Energy Ltd.	24 Hour Number Calgary, AB	1-403-266-6900 1-866-616-6300
Whitecap Resources Inc.	24 Hour Number Calgary, AB	1-403-266-0767 1-866-590-5289

Note: The above listed corporate entities are subject to change without notice owing to mergers, acquisitions, re-licensing, etc. Information regarding industrial operators is updated in conjunction with map updates.

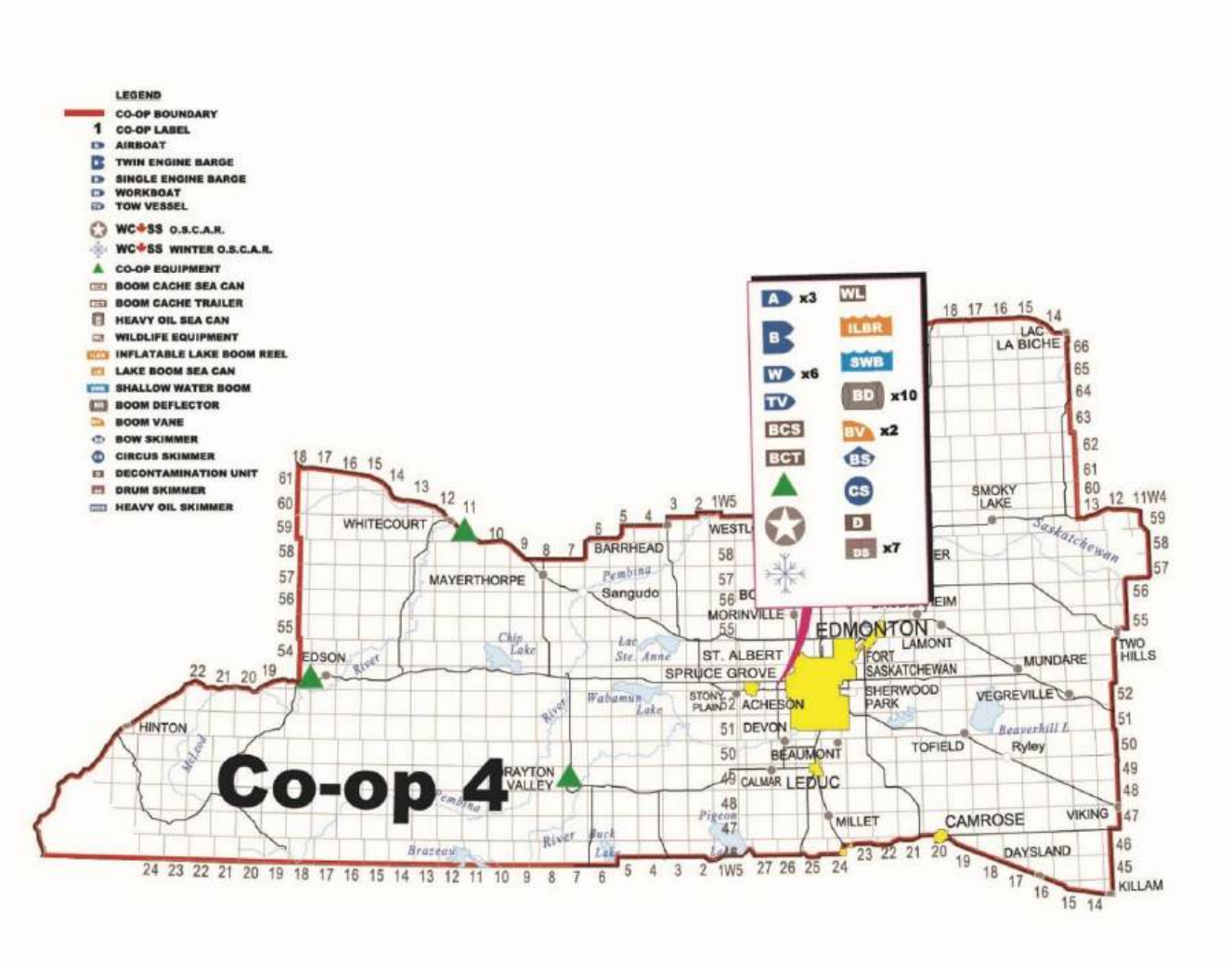
10.1.5 Spill Support Services

WCSS – Coop 4

Area	Chairman	Contact Information
WCSS Emergency 24-Hour Number		1-866-541-8888
Coop 4 Chairman	Ryan Bauer Plains Midstream Canada ULC	Ph: 1-780-400-2680 Cell: 1-780-222-9345 ryan.bauer@plains.com
Coop 4 Alternate Chairman	Ryan Pearson Obsidian Energy	Cell: 1-780-268-4072 ryan.pearson@obsidianenergy.com
Coop 4 Alternate Chairman	Terry Willoughby Saturn Oil & Gas Inc.	Cell: 1-780-621-0724 t.willoughby@obsidianenergy.com

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
10499 David Rd. Acheson, AB T7X 6A4	JVC Group	24hr: 1-780-455-0776 David King: 1-780-514-0092 Rob Ferretti 1-780-237-6682	52’ OSCAR Sea Can (14,500kg) 20’ ISRU Sea Can 16’ Winter OSCAR Trailer 45’ Boom Cache Trailer 40’ Boom Cache Sea Can Work Boats (7) Twin Engine Barge w/ Bow Skimmer Air Boats (3) 16’ Wildlife Trailer 20’ Decontamination Sea Can Inflatable Lake Boom Reel Trailer Tow Vessel Shallow Draft Boom Vane (2) Drum Skimmers (7) w/ Power Paks Circus Skimmer w/ Power Pak Boom Deflectors (8) 400’ Shallow Water Boom	Winch Tractor/Trailer Winch Tractor/Trailer ¾ ton Truck w/ 2-5/16” Ball Hitch Semi-Tractor Winch Tractor/Trailer ½ Ton Truck w/ 2” Ball Hitch 1-Ton Truck w/ 2-5/16” Ball Hitch, Elec. brakes ¾ Ton Truck w/ 2-5/16” Ball Hitch ½ Ton Truck w/ 2-5/16” Ball Hitch Winch Tractor/Trailer 1-Ton Truck w/ 2-5/16” Ball Hitch, Elec. Brakes ½ Ton Truck w/ 2” Ball Hitch ½ Ton Truck ½ Ton Truck ½ Ton Truck w/ Deck ½ Ton Truck ½ Ton Truck

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
5612 – 58 Ave Drayton Valley, AB	Hell Hounds Hauling	Calvin Hlushak Ph: 1-780-621-6301	20’ ISRU Sea Can 9’6” high	Winch Tractor/Low-Boy Trailer
Edson 01-13-053-18 W5M 53206 RR 180 Yellowhead County	Formula Powell	Sean Smith 24hr: 1-780-712-6110,3 for dispatch Cell: 1-780-712-3564	20’ ISRU Sea Can	Winch Tractor/Trailer
Whitecourt 5920 – 11A RR114B SE-17-59-11 W5M	Mega C	Carl Lehman Cell: 1-780-778-1781 Pat Lehman Cell: 1-780-778-0633 Terry Sekulich 1-780-779-7046	20’ ISRU Sea Can	Winch Tractor/Trailer



Waterway Control Points

There is one waterway control point. These waterway control points are all accessible by road to allow for rapid deployment of spill control equipment.

Control Point	LSD	Latitude	Longitude
G410	09-14-047-02 W5M	53.055719	-114.175634

The waterway control points in red are considered critical control points by Ministry of Environment and Protective Areas (EPA). Deltawest Energy Ltd. will need to inform the AER immediately via the 24-hour incident line (who will notify EPA) should any spilled or released product impact these critical waterway control points.

Critical Control Points are defined as being:

- Upstream or within major urban centres.
- Upstream of significant environmentally sensitive areas.
- Downstream of major pipeline crossings or high-risk facilities.
- Lakes with pipelines, facilities or high volume or road transportation of hydrocarbons in close proximity.

10.1.6 Asset Data: Wells, Pipelines & Facilities

Asset tables on following pages.

Wells

LICENSEE	UNIQUE WELL IDENTIFIER (UWI)	SURFACE LOCATION	STATUS	SUBSTANCE CODE	WELL NAME (UWI)	WELL LICENSE #	ASSIGNED WELL H_2S (%)	H_2S RELEASE RATE (m^3/s)	EPZ (KM)	IIZ (KM)	PAZ (KM)	LAND USE SETBACK LEVEL
SWEET ASSETS												
DELTAWEST ENERGY LTD.	100/01-23-047-02W5/00	02-22-047-02W5	PMP	OIL	DELTAWEST HZ PEMBINA 1-23-47-2	0496865	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/08-23-047-02W5/00	02-22-047-02W5	PMP	OIL	DELTAWEST HZ PEMBINA 8-23-47-2	0496866	0.00	0.000000	na	na	na	na

Notes:

***Well Substance Codes**: Acid GAS, GAS, Fuel GAS, OIL, WATER, CO2 - Carbon Dioxide, CBM - Coalbed Methane*

***Status Codes**: ABD - Abandoned, ABZ - Abandoned Zone, CMG - Comingled, DISP - Disposal, DR&C - Drilled & Cased, FLW - Flowing, INJ - Injection, OBS - Observation, POT - Potential, PMP - Pumping, STD - Standing, SUS - Suspended, TEST - Testing*

Pipelines

LICENSEE	LICENSE	LINE	SUBSTANCE CATEGORY (D56)	STATUS CODE (D56)	FROM	FROM FACILITY	UP STREAM VALVE TYPE (CV/ESD/OPEN FLOW (–))	TO	TO FACILITY	DOWN STREAM VALVE TYPE (CV/ESD/OPEN FLOW (–))	LICENSED MOP (KPA)	MAX EXPECTED MOP (KPA)	OD (mm)	WT (mm)	LICENSED H_2S CONTENT (%)	MAX EXPECTED H_2S CONTENT (%)	LENGTH (KM)	EPZ (KM)	IIZ (KM)	PAZ (KM)	LAND USE SETBACK AND OLD EPZ H_2S RELEASE RATE (m^3) OR VOLUME AT LICENSED CONDITIONS	SET BACK LEVEL	H2S Volume Released for new EPZ Calculation (m^3) *(reportable spill volume)
SWEET ASSETS																							
DELTAWEST ENERGY LTD.	061608	001	OE	O	02-22-047-02W5	WE	--	01-22-047-02W5	S	--	4960	na	101.0	12.0	0.00	na	0.14	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	061608	002	OE	O	02-22-047-02W5	WE	--	01-22-047-02W5	S	--	4960	na	101.0	12.0	0.00	na	0.14	na	na	na	na	na	na

Notes:

Substance Category Codes - table 6.6 D-5t*: CO - Crude Oil, FG - Fuel Gas, FW - Fresh Water, HVP - HVP Products, LV - LVP Products, MG - Miscellaneous Gases, ML - Miscellaneous Liquids, NG - Natural Gas, OE - Oil Effluent, SG Sour Natural Gas, SW - Salt Wate*

Status Codes - table 6.15 D-5t*: A - Abandoned, N - Not Constructed, D - Discontinued, O - Operating, P - To be constructed, R - Remove*

Facility Codes - table 6.14 D5t*: B - Battery, BE - Blind End, CP - Chemical Plant, CS - Compressor Station, GP - Gas Plant, IP - Injection / Disposal Facility, MR - Meter / Regulation Station, MS - Meter Station, PP - Petrochemical Plant, PL - Pipeline PS - Pump Station, R - Riser, RF - Refinery, RS - Regulator Station, S - Satellite, ST - Storage Tank, TF - Tank Farm, WE - Well, H - Header*

Valve Codes*: CV - Check Valve, ESD - Emergency Shutdown Valve, -- - No valve*

10.1.7 Maps

ERP Map

Area map on following page:

Rge 2 W5M

Rge 1 W5M

Twp 47

Twp 46

ALBERTA HEALTH SERVICES: EDMONTON ZONE

ALBERTA HEALTH SERVICES: CENTRAL ZONE

LEDUC COUNTY
COUNTY OF WETASKIWIN NO. 10

AER FIELD OPERATIONS WEST

AER FIELD OPERATIONS CENTRAL

047-01

047-02

046-01

046-02

MISSION BEACH

SUNDANCE BEACH

ITASKA BEACH

GOLDEN DAYS

POPLAR BAY

GRANDVIEW

CRYSTAL SPRINGS

NORRIS BEACH

PIGEON LAKE

BATTLE LAKE

PIGEON LAKE PROVINCIAL PARK

THORSBY RCMP
WETASKIWIN RCMP
BRETON RCMP

NO TRAPPERS

WCSS COOP 4

WCSS COOP 3

WMU 334
Strawberry

WMU 224
Rimbey

South
23-047-02W5

South
21-046-02W5

35-046-02W5

31-046-01W5

G410

61608-1

61608-2

02-22

Twp. Rd. 475

Twp. Rd. 474

Twp. Rd. 474B

Twp. Rd. 474A

Twp. Rd. 472

Twp. Rd. 470

Twp. Rd. 470A

Twp. Rd. 465

Twp. Rd. 465A

Twp. Rd. 464

Twp. Rd. 464A

Twp. Rd. 463A

Twp. Rd. 462

Sunset Blvd Road

1 Ave.

1 Ave. North

6 St.

Ironhorse Drive

Beach Ave

Day Drive

Bernice Ave

Wicks St.

Lake Drive

Lakeview Drive

Snell Ave.

Lakeland Road

Poplar Bay

Rge. Rd. 25

Rge. Rd. 24

Rge. Rd. 23

Rge. Rd. 22

Rge. Rd. 21

Rge. Rd. 20

Rge. Rd. 15

Rge. Rd. 14

Rge. Rd. 13

Rge. Rd. 12

Rge. Rd. 11

Rge. Rd. 15A

Rge. Rd. 15B

PEMBINA

BATTLE CREEK

778

616

771

13

LEDUC COUNTY
COUNTY OF WETASKIWIN NO. 10

Notes
Location of residence in LSD is approximate.
Well and Pipeline information is provided by IHS and must be considered approximate.

Surface Developments
Surface developments outside an EPZ have not been verified.

Contact Information - Alberta

Alberta Energy Regulator - **AER:** 1-800-222-6514
Local Authority - **County of Wetaskiwin No. 10:** 780-352-0005
Leduc County: 780-955-7099 / 911
RCMP Detachment - **Breton RCMP:** 780-696-3520
Thorsby RCMP: 780-789-3951
Alberta Health Services - **AHS Zone:** 1-844-755-1788

DeltaWest Energy

PEMBINA AREA

DeltaWest Wells
Gas
Oil
Standing
Injection
Suspended Gas
Suspended Oil
Water
Bottom Hole
Well EPZ

DeltaWest Pipelines
Sour Gas
Natural Gas / Fuel Gas
Oil
Water
HVP / LVP
Block Valves
Pipeline EPZ
Major Transmission Lines

DeltaWest Facilities
Battery
Compressor Station
Gas Plant
Gathering Point
Injection Plant
Meter Station
Pump Station
Satellite
Facility EPZ

Transportation
High Grade Roads
Resource Roads
Low Grade / Seasonal
Secondary Highway
Primary Highway
Radio Controlled Roads
Railways
Dead Ends

Locked Gates
Road Blocks
Bridge

Residents
Surface Development
Occupied
Sensitive
Business
Cabin
Occupied Part-Time
Vacant / Abandoned
Campground
Cemetery
Church
Community Hall
Farm/Ranch
Gravel Pit
School
Shop
Tower
Work Camp
Hospitals

Other Symbols
Urban Area
Hydrology
Intermittent Waterbody
Permanent Waterbody
Airfields
Municipal District
Health Region
RCMP
WCSS Cooperative
AER Boundary
Parks
First Nations
Trapper Boundaries
Grazing Reserves
Water Control Point
Critical Water Control Point
Contours (m)
Egress Area
FMA
WMU
Land Holdings

Other Operator Wells and Pipelines represented in BROWN.

Map Created by DM
June 13, 2019

Revised by LN
April 11, 2025

0 0.5 1 2
Kilometers

Datum: NAD 83
Projection: UTM Zone 11
Mapscale: 1:40 000

DeltaWest Energy Ltd.

Pembina

Land Holdings Map

BLACK GOLD EMERGENCY PLANNERS INC.

10.2 Provost Field Area

10.2.1 Provost Telephone Directory

Deltawest 24-Hour Emergency Number
1-833-738-7747

Deltawest Main Number
1-587-392-7762

Name	Position	Office	Cell
Trevor Lewis	Contract Operator	--	1-780-385-4051

Government Agencies

Resource	Contact	Office	Cell/24 Hour
Alberta Energy Regulator	Energy and Environmental Emergency 24-Hour Response Line	--	1-800-222-6514
	East Field Operations - Bonnyville	1-780-826-5352	1-800-222-6514
County of Paintearth No. 18	Todd Pawsey, Director of Emergency Management	1-403-882-3211	1-403-740-3527
Flagstaff County	Kim Cannady, Regional Emergency Services Coordinator	1-780-384-4100	1-780-390-0117
RCMP - Coronation Detachment	NCO In Charge	1-403-578-3666	911
RCMP - Killam Detachment	NCO In Charge	1-780-385-3509	911
Alberta Health Services	Province-wide	Administration: 1-833-476-4743 edp@ahs.ca	1-844-755-1788
Alberta Emergency Management Agency	Provincial Emergency Coordination Centre (PECC)	1-780-644-5428 pses.pecc @gov.ab.ca	1-866-618-2362
	Sandra Zarate, Manager, Public Alerting and Communication Team	1-587-341-0298	1-587-341-0298
Alberta Emergency Management Agency, South Central Region	Peter Genereux, Emergency Management Field Officer	Cell: 1-780-999-3812 Email: peter.genereux @gov.ab.ca	24 Hour Number: 1-866-618-2362
	Cheyenne Shubert, Emergency Management Field Officer	Cell: 1-587-357-6843 Email: cheyenne.shubert @gov.ab.ca	24 Hour Number: 1-866-618-2362

Resource	Contact	Office	Cell/24 Hour
Ministry of Environment and Protective Areas (EPA)	Energy & Environment Response Line	--	1-800-222-6514
	Red Deer / North Saskatchewan Region (Edmonton)	1-780-427-7617	1-800-222-6514
Alberta Agriculture and Irrigation	Provincial Resource Agents	310-FARM (3276)	--
Alberta Wildfire - Report a Wildfire	Province-wide	--	310-FIRE (3473)
Alberta Occupational Health and Safety	Province-wide	1-866-415-8690	1-866-415-8690
Alberta Edge (Environment and Dangerous Goods Emergencies)	Province-wide	1-780-422-9600	1-800-272-9600
Highway Maintenance Contractors	Emcon Services Inc.	1-800-390-2242	1-800-390-2242
Utility Safety Partners	Province-wide	1-800-242-3447	--
Poison & Drug Information Service	Province-wide	--	1-800-332-1414
Alberta Boilers Safety Association (ABSA)	Edmonton	1-780-437-9100	1-780-437-9100
Government of Alberta Toll-Free Dialing	Province-wide	310-0000 then 10 digit number or 0 for Operator	--
Government of Canada - DFO (Department of Fisheries and Ocean)	Canadian Coast Guard Western Region	--	1-800-889-8852
Environment and Climate Change Canada	Canada-wide	1-800-668-6767	--
CN Railway Co. - Police Service	Canada-wide	--	1-800-465-9239
Canadian Pacific Kansas City (CPKC) - Police Service	Canada-wide	--	1-800-716-9132
CANUTEC TDG - Emergency Reporting Line	Canada-wide	--	1-888-226-8832 *666 Cell Phone
Transportation Safety Board (CER Regulated Emergencies)	Canada-wide	Non-Pipeline Emergencies 1-403-299-2773	Pipeline Emergencies 1-819-997-7887
NAV Canada - Notice to Airmen	Canada-wide	--	1-866-992-7433

Emergency Services

Contact	Location	Telephone
Ambulance - Municipal		
Alberta Health Services - EMS	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Ambulance - Oilfield		
CIS Safety & Rentals	Alberta-wide	1-780-834-7992
Bravo Target Safety	Alberta-wide	1-866-513-3779
Trojan Safety Services Ltd.	Alberta-wide	1-780-567-3440
Air Ambulance		
STARS	Alberta-wide	1-888-888-4567 or 1-403-299-0932
Hospitals		
Emergency Services will determine the nearest hospital to transport patient(s) to in the event of an injury or fatality		
Fire Fighters - Municipal		
Alberta Municipal Fire Department	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Fire Fighters - Oilfield		
Trojan Safety Services Ltd.	Alberta-wide	1-780-567-3440
Superior Fire Control	Alberta-wide	1-877-882-0035
Rapid Response Industrial Group	Alberta-wide	1-844-774-4911

Industry Support Services

Contact	Location	Telephone
Air Quality Monitoring Equipment		
Alexander Safety	Alberta-wide	1-780-286-4072
United Safety	Alberta-wide	1-800-432-1809
Trojan Safety Services Ltd.	Alberta-wide	1-780-567-3440
Backhoes		
GCS Energy Services	Hardisty	1-780-88-3845
Wally's Backhoe Services Ltd.	Stettler	1-403-741-7347
Aable Directional Boring Ltd.	Alberta-wide	1-888-310-2253
Communication Equipment (Radio/Telephones)		
Electro Tel Cellular Ltd.	Camrose	1-780-679-0822
Prairie Storm Controls Inc.	Consort	1-403-577-2238
RigSat Communications Inc.	Alberta-wide	1-403-250-5417

Contact	Location	Telephone
Construction Company		
GCS Energy Services	Hardisty	1-780-88-3845
SK Welding Ltd.	Coronation	1-403-578-4138
Strait Projects Ltd.	Alberta-wide	1-403-451-5322
Cranes / Picker Services		
Heartland Industries Inc.	Stettler	1-403-742-3397
Al's Hotshot & Trucking Services Ltd.	Wainwright	1-780-842-7990
DFI Corporation	Alberta-wide	1-877-334-7453
Helicopters		
Delta Helicopters Ltd.	Alberta-wide	1-800-665-3564
Canadian Helicopters Limited	Alberta-wide	1-780-429-6900
Taiga Helicopters	Alberta-wide	1-877-242-4211
Hotels / Potential Reception Centres		
Western Budget Motel	Killam	1-780-385-6611
Coronation Motel	Coronation	1-403-578-3700
Ramada Inn	Stettler	1-403-742-6555
Safety Equipment / Personnel		
Safety First Industrial Canada	Hardisty	1-888-384-3601
Contact Safety Service Ltd.	Stettler	1-403-742-2035
Bravo Target Safety	Alberta-wide	1-866-513-3779
Spill Response / Environmental Services		
WCSS	Alberta-wide	1-866-541-8888
Environmental 360 Solutions	Alberta-wide	1-833-477-4557
Badger Daylighting	Alberta-wide	1-877-322-3437
Supply Stores		
DNOW	Coronation	1-403-578-4661
Heartland Auto & Industrial Supply	Stettler	1-403-742-8889
Swift Oilfield Supply Inc.	Alberta-wide	1-888-423-6979
Tank Rentals		
Al's Hotshot & Trucking Services Ltd.	Wainwright	1-780-842-7990
Apex Oilfield Services (2000) Inc.	Alberta-wide	1-877-347-1628
Total Oilfield Rentals Ltd.	Alberta-wide	1-866-701-7700
Tank Trucks		
TWH Oilfield Services Ltd.	Alberta-wide	1-888-443-4717
Terroco Group	Alberta-wide	1-800-670-1100
PVT Group	Alberta-wide	1-780-830-0045
Vac and Steam Trucks		
TWH Oilfield Services Ltd.	Alberta-wide	1-888-443-4717
Silvertip Oilfield Services Inc.	Alberta-wide	1-780-836-3792
Clean Harbors Inc.	Alberta-wide	1-800-645-8265

Contact	Location	Telephone
Well Control Equipment		
Superior Fire Control	Alberta-wide	1-877-882-0035
Safety Boss	Alberta-wide	1-800-882-4967
Firefly Critical Well Safety Equipment Ltd.	Alberta-wide	1-403-342-1050
Wellsite Accommodations		
Apex Oilfield Services (2000) Inc.	Alberta-wide	1-877-347-1628
ATCO Structures & Logistics Ltd.	Alberta-wide	1-800-575-2826
Auburn Rentals	Alberta-wide	1-888-832-8102

Note: The above listed corporate entities are subject to change without notice. Information regarding support services is accurate at time of printing.

10.2.2 Provost Area Summary

Deltawest's Provost field is an oil/gas producing property located eastern Alberta, approximately 36 km from Hardisty, AB. It is located in Township 40, Ranges 13-14 W4M, in Flagstaff County.

Deltawest has no pipelines in this field area.

Well Information	
Maximum H_2S Concentrations	0.00% H_2S
Emergency Planning Zones	N/A
Maximum H_2S Release Rate	0.000000 m^3/sec

Geography and Area Use

The Provost area is primarily agricultural with oil and gas activities throughout.

Highways / Area Roads / Railways

Highway 36 runs through the field area.

CN Rail runs through the field area.

There are several petroleum development roads in the area. The roads are a combination of pavement and gravel and not all are all-weather roads. Access to the area is dependent on weather.

Creeks / Rivers / Lakes

Battle River, Paintearth Creek, and other unnamed waterbodies flow within the field area.

In the event of an emergency near a waterbody, Deltawest will determine if they need to call WCSS to aid in response activities.

10.2.3 Hazard Summary

Provost Field Area – Hazard Summary					
Hazardous Product	**General Description**	**Health Effects**	**Downwind Evacuation**	**Fire**	**HPZ Public Safety** (immediate precautionary measures)
Methane Methane, compressed Natural gas, compressed	• Often referred to as “sweet gas”. • Flammable. • Lighter than air. • At room temperature and standard pressure, methane is a colorless, odorless gas. • It is the simplest alkane and the main component of natural gas.	• Vapors may cause dizziness or asphyxiation without warning. • Some may be irritating if inhaled at high concentrations. • Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. • Fire may produce irritating and/or toxic gases.	**Large Spill** Consider initial downwind evacuation for at least 800 metres (1/2 mile)	If tank, rail car or tank truck is involved in a fire, isolate for 1600 metres (1 mile) in all directions; also, consider initial evacuation for 1600 metres (1 mile) in all directions.	100 m (330 ft)
Petroleum Crude Oil	• Brown to black. • Viscous liquid. • May contain or release poisonous hydrogen sulfide gas. • Extremely flammable liquid and vapour	• Inhalation or contact with material may irritate or burn skin and eyes. • Fire may produce irritating, corrosive and/or toxic gases. • Vapors may cause dizziness or suffocation.	**Large Spill** Consider initial downwind evacuation for at least 300 metres (1000 ft).	If tank, rail car or tank truck is involved in a fire, isolate for 800 metres (1/2 mile) in all directions; also, consider initial evacuation for 800 metres (1/2 mile) in all directions.	50 m (150 ft)

10.2.4 Public Summary

Provost Operations Area	
Number of First Nations:	None
Number of Trappers:	None
Number of Guides and Outfitters:	2 WMU 203 (7 guides and outfitters) WMU 204 (5 guides and outfitters)
Number of Oil & Gas operators:	None
Number of Other Area Users:	None
Other surface facilities that were noted:	None

Area Trappers

There are no trappers near Deltawest operations in the Provost field.

Guides and Outfitters

Outfitter	Telephone
WMU 203 - Alliance	
Alberta Waterfowl, LLC Brennan Hudson	1-409-926-6042
Ameri-Cana Expeditions Inc. Daniel M. Frederick	1-780-469-0579
Blue Buck Guiding & Outfitting Brian Gilbertson	1-780-856-2475
King West Outfitters Boyd R.G. King	1-403-578-3187
Ongaro Outdoor Outfitters Claudio Ongaro	1-800-465-6227
P.N.D. Frederick Holdings Inc. Nicholas P. Frederick	1-780-469-0579
Wild Goose Guiding Ltd. Mike Golka	1-780-914-9889
WMU 204 - Paintearth	
Big Knife Outfitters Curtis Cassidy	1-403-742-9699
Boss Guiding, AB Ltd 1576469 Bob Byers	1-403-742-3140
Cody Rowledge Outfitting Cody Rowledge	1-403-740-5696
King West Outfitters Boyd R.G. King	1-403-578-3187
Ongaro Outdoor Outfitters Claudio Ongaro	1-800-465-6227

Oil & Gas Operators

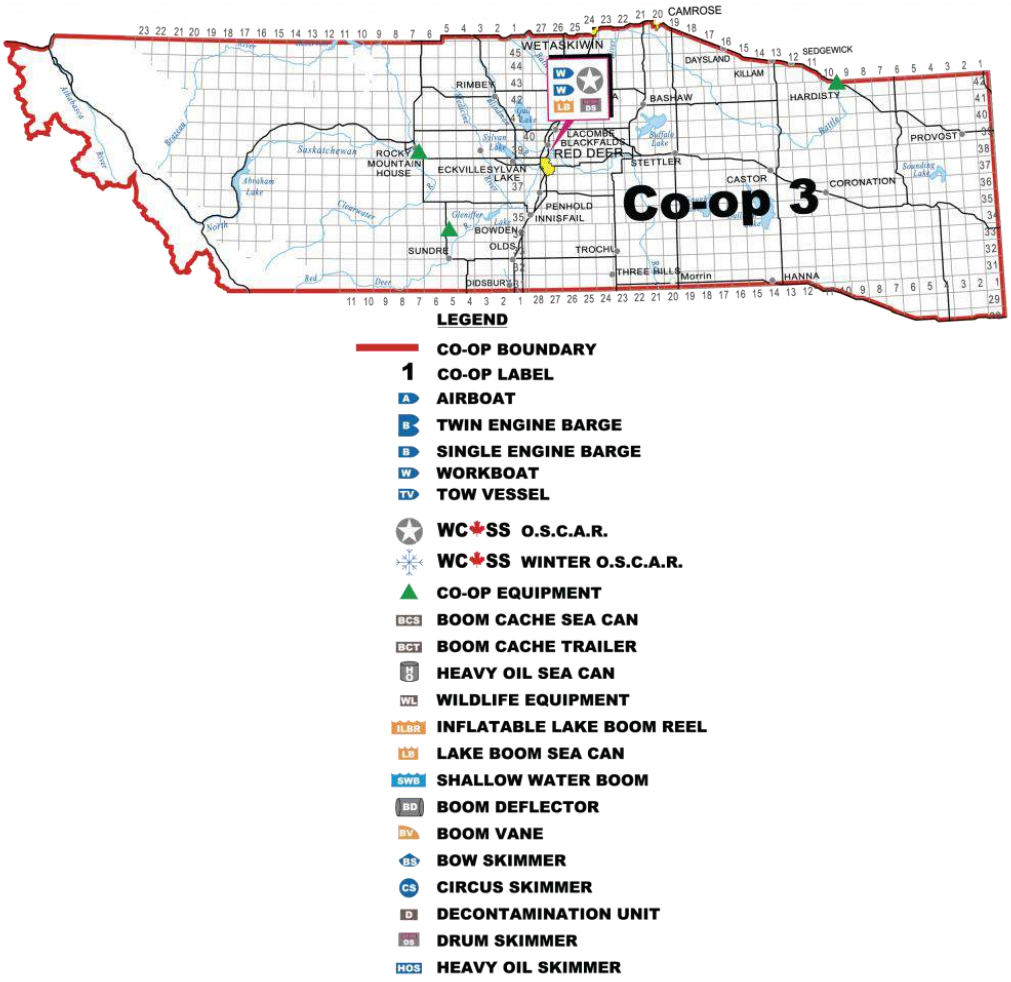
There are no oil & gas operators near Deltawest operations in the Provost field.

10.2.5 Spill Support Services

WCSS – Coop 3

Area	Chairman	Contact Information
WCSS Emergency 24-Hour Number		1-866-541-8888
Coop 3 Chairman	Tim Abel Inter Pipeline Ltd.	Ph: 1-780-888-2606 Cell: 1-780-888-1900 tim.abel@interpipeline.com
Coop 3 Alternate Chairman	Sheldon Burns BTG Energy	Cell: 1-403-318-8091 sheldon.burns@btgenergy.com
Coop 3 Alternate Chairman	Jack Dawbin Ember Resources Ltd.	Ph: 1-403-788-2350 Cell: 1-403-620-1107 jdawbin@emberresources.com
Coop 3 Alternate Chairman	Matt Martens Gibson Energy	Cell: 1-780-888-7606 matt.martens@gibsonenergy.com

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
Garnet's Oilfield Trucking Inc 4025 Charles Street Red Deer County, AB T4S 2B3	GWG Investments Inc	Danny Conn Cell: 1-403-391-6904 24hr: 1-403-346-7668 Fax: 1-403-340-3848	52' OSCAR Trailer Work Boats (2) (in Acheson for the Winter) 40' Lake Boom Sea Can Hydraulic Drum Skimmer w/ Power Pak & Pump 52' OSCAR Trailer	Semi-Tractor ½ Ton Truck w/ 2" Ball Hitch Winch Tractor/Trailer ½ Ton Truck Semi-Tractor
71031 Twp Rd 39-2 Rocky Mountain House, AB T4T 1B4	Challand Excavating Ltd.	Clint Challand 24hr: 1-403-845-2469 Cell: 1-403-845-0018 Fax: 1-403-845-4844	20' ISRU Sea Can	Winch Tractor/Trailer
Sundre NE ¼ 21-34-5 W5M Hamlet at James River Bridge, AB T0M 1C0	Al Saunders Contracting Inc.	Monica Lavery Cell: 1-587-998-3705 24hr: 1-403-638-4261 Kent Saunders (alt) Ph: 1-403-638-8111	24' ISRU Trailer	1-Ton w/ 2-5/16" Ball Hitch
Range Rd 100A Hardisty, AB T0B 1V0	Bromby Welding	Gary Bromby 24hr/Cell: 1-780-888-1095 Office: 1-780-888-0005	20' ISRU Sea Can	Winch Tractor/Trailer



Waterway Control Points

There are two waterway control points. These waterway control points are all accessible by road to allow for rapid deployment of spill control equipment.

Control Point	LSD	Latitude	Longitude
U103	01-22-040-14 W4M	52.450245	-111.927317
U104	08-04-040-13 W4M	52.410277	-111.807373

The waterway control points in red are considered critical control points by Ministry of Environment and Protective Areas (EPA). Deltawest Energy Ltd. will need to inform the AER immediately via the 24-hour incident line (who will notify EPA) should any spilled or released product impact these critical waterway control points.

Critical Control Points are defined as being:

- Upstream or within major urban centres.
- Upstream of significant environmentally sensitive areas.
- Downstream of major pipeline crossings or high-risk facilities.
- Lakes with pipelines, facilities or high volume or road transportation of hydrocarbons in close proximity.

10.2.6 Asset Data: Wells, Pipelines & Facilities

Asset tables on following pages.

Wells

LICENSEE	UNIQUE WELL IDENTIFIER (UWI)	SURFACE LOCATION	STATUS	SUBSTANCE CODE	WELL NAME (UWI)	WELL LICENSE #	ASSIGNED WELL H_2S (%)	H_2S RELEASE RATE (m^3/s)	EPZ (KM)	IIZ (KM)	PAZ (KM)	LAND USE SETBACK LEVEL
SWEET ASSETS												
DELTAWEST ENERGY LTD.	100/13-27-040-14W4/00	13-22-040-14W4	PMP	OIL	DELTAWEST HZ 100 PROVOST 13-27-40-14	0496489	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/13-27-040-14W4/00	13-22-040-14W4	PMP	OIL	DELTAWEST HZ 102 PROVOST 13-27-40-14	0496766	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/14-27-040-14W4/00	13-22-040-14W4	PMP	OIL	DELTAWEST HZ 100 PROVOST 14-27-40-14	0496490	0.00	0.000000	na	na	na	na

Notes:

Well Substance Codes *: Acid GAS, GAS, Fuel GAS, OIL, WATER, CO2 - Carbon Dioxide, CBM - Coalbed Methane*

Status Codes *: ABD - Abandoned, ABZ - Abandoned Zone, CMG - Comingled, DISP - Disposal, DR&C - Drilled & Cased, FLW - Flowing, INJ - Injection, OBS - Observation, POT - Potential, PMP - Pumping, STD - Standing, SUS - Suspended, TEST - Testing*

Facilities

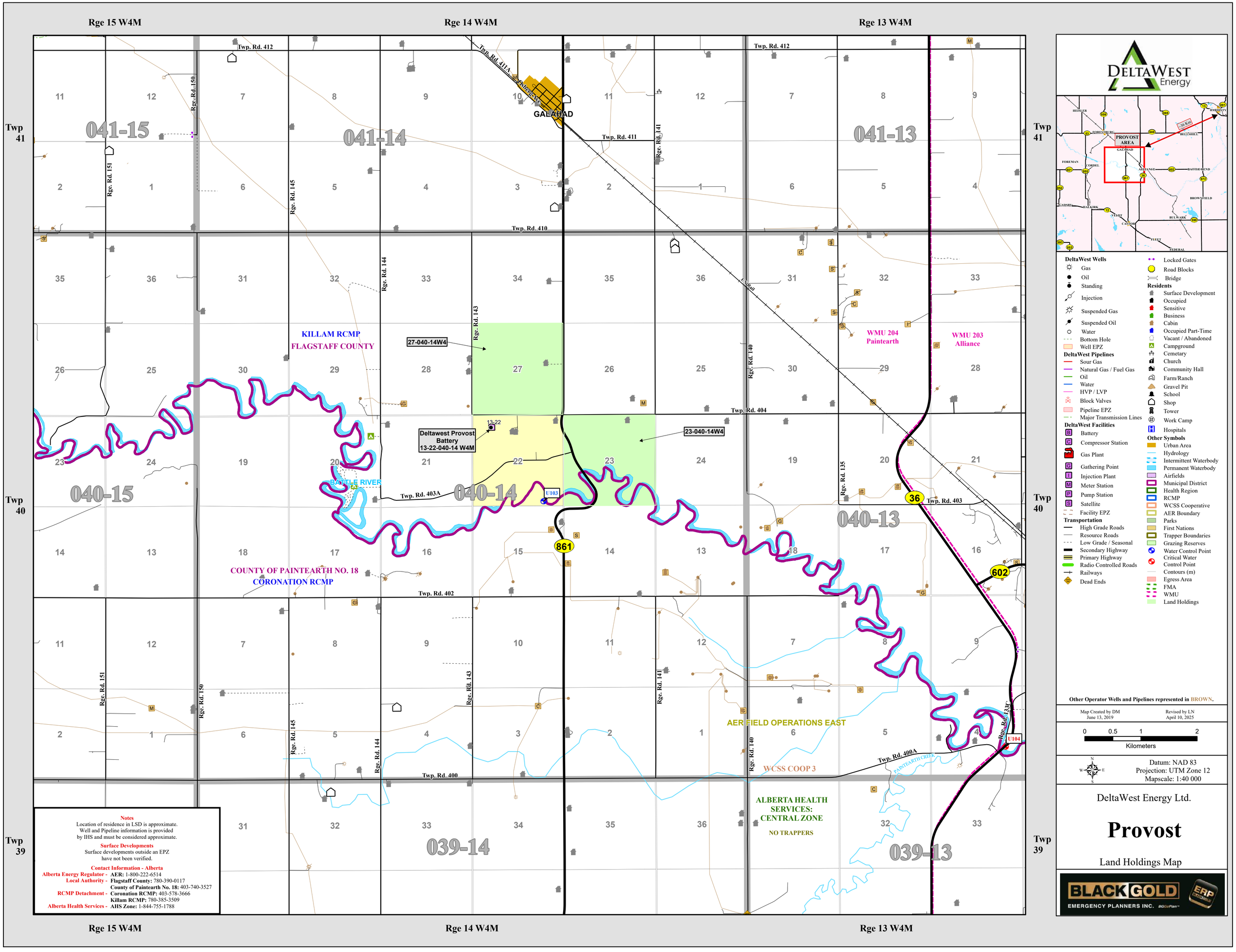
LICENSEE	LICENSE OR FACILITY CODE	FACILITY TYPE	LOCATION	STATUS	NAME	EPZ (KM)	IIZ (KM)	PAZ (KM)	EPZ Based on Pipeline	Pipeline Licensed H2S % content
OPERATING ASSETS										
DELTAWEST ENERGY LTD.	F51838	BATTERY	13-22-040-14W4	ACTIVE	DELTAWEST 13-22-040-14W4	na	na	na	Well 100/13-27-040-14W4/00	0.00

Notes:
The EPZ for a facility that handles or processes sour fluids is the largest EPZ of any pipeline entering or leaving the facility measured outward in all directions from the facility lease boundary.
If the facility has a sour gas well, sour water disposal well, or acid gas disposal well on site, the EPZ for the well may determine the size of the EPZ for the facility.

10.2.7 Maps

ERP Map

Area map on following page



Rge 15 W4M
Rge 14 W4M
Rge 13 W4M
Twp 41
Twp 40
Twp 39
041-15
041-14
041-13
040-15
040-14
040-13
039-14
039-13
Twp. Rd. 412
Twp. Rd. 411A
Twp. Rd. 411
Twp. Rd. 410
Twp. Rd. 404
Twp. Rd. 403A
Twp. Rd. 403
Twp. Rd. 402
Twp. Rd. 400
Twp. Rd. 400A
Rge. Rd. 150
Rge. Rd. 151
Rge. Rd. 145
Rge. Rd. 144
Rge. Rd. 143
Rge. Rd. 141
Rge. Rd. 140
Rge. Rd. 135
Rge. Rd. 133C
GALAHAD
KILLAM RCMP
FLAGSTAFF COUNTY
27-040-14W4
Deltawest Provost Battery 13-22-040-14 W4M
13-22
23-040-14W4
BATTLE RIVER
U103
U104
COUNTY OF PAINTEARTH NO. 18
CORONATION RCMP
WMU 204 Paintearth
WMU 203 Alliance
AER FIELD OPERATIONS EAST
WCSS COOP 3
PAINTEARTH CREEK
ALBERTA HEALTH SERVICES: CENTRAL ZONE
NO TRAPPERS
861
36
602
Notes
Location of residence in LSD is approximate.
Well and Pipeline information is provided by IHS and must be considered approximate.
Surface Developments
Surface developments outside an EPZ have not been verified.
Contact Information - Alberta
Alberta Energy Regulator - AER: 1-800-222-6514
Local Authority - Flagstaff County: 780-390-0117
County of Paintearth No. 18: 403-740-3527
RCMP Detachment - Coronation RCMP: 403-578-3666
Killam RCMP: 780-385-3509
Alberta Health Services - AHS Zone: 1-844-755-1788
DeltaWest Energy
PROVOST AREA
DeltaWest Wells
Gas
Oil
Standing
Injection
Suspended Gas
Suspended Oil
Water
Bottom Hole
Well EPZ
DeltaWest Pipelines
Sour Gas
Natural Gas / Fuel Gas
Oil
Water
HVP / LVP
Block Valves
Pipeline EPZ
Major Transmission Lines
DeltaWest Facilities
Battery
Compressor Station
Gas Plant
Gathering Point
Injection Plant
Meter Station
Pump Station
Satellite
Facility EPZ
Transportation
High Grade Roads
Resource Roads
Low Grade / Seasonal
Secondary Highway
Primary Highway
Radio Controlled Roads
Railways
Dead Ends
Locked Gates
Road Blocks
Bridge
Residents
Surface Development
Occupied
Sensitive
Business
Cabin
Occupied Part-Time
Vacant / Abandoned
Campground
Cemetary
Church
Community Hall
Farm/Ranch
Gravel Pit
School
Shop
Tower
Work Camp
Hospitals
Other Symbols
Urban Area
Hydrology
Intermittent Waterbody
Permanent Waterbody
Airfields
Municipal District
Health Region
RCMP
WCSS Cooperative
AER Boundary
Parks
First Nations
Trapper Boundaries
Grazing Reserves
Water Control Point
Critical Water
Control Point
Contours (m)
Egress Area
FMA
WMU
Land Holdings
Other Operator Wells and Pipelines represented in BROWN.
Map Created by DM June 13, 2019
Revised by LN April 10, 2025
0 0.5 1 2
Kilometers
Datum: NAD 83
Projection: UTM Zone 12
Mapscale: 1:40 000
DeltaWest Energy Ltd.
Provost
Land Holdings Map
BLACK GOLD EMERGENCY PLANNERS INC.

10.3 Progress Field Area

10.3.1 Progress Telephone Directory

Deltawest 24-Hour Emergency Number
1-833-738-7747

Deltawest Main Number

1-587-392-7762

Name	Position	Office	Cell
Patrick Kam	VP Development	--	1-403-818-2393

Government Agencies

Resource	Contact	Office	Cell/24 Hour
Alberta Energy Regulator	Energy and Environmental Emergency 24-Hour Response Line	--	1-800-222-6514
	Northwest Field Operations - Grande Prairie	1-780-538-5138	1-800-222-6514
Saddle Hills County	Brice Daly, Manager of Protective Services	1-780-864-3760	Duty officer Cell: 1-780-876-3930
RCMP - Spirit River Detachment	NCO In Charge	1-780-864-3525	911
Alberta Health Services	Province-wide	Administration: 1-833-476-4743 edp@ahs.ca	1-844-755-1788
Alberta Emergency Management Agency	Provincial Emergency Coordination Centre (PECC)	1-780-644-5428 pses.pecc @gov.ab.ca	1-866-618-2362
	Sandra Zarate, Manager, Public Alerting and Communication Team	1-587-341-0298	1-587-341-0298
Alberta Emergency Management Agency, Northwest Region	Alan Stebbing, Emergency Management Field Officer	Cell: 1-587-783-9201 Email: Alan.Stebbing @gov.ab.ca	24-Hour: 1-866-618-2362
	Chris Graham, Emergency Management Field Officer	Cell: 1-825-993-4235 Email: Chris.Graham @gov.ab.ca	24-Hour: 1-866-618-2362
Ministry of Environment and Protective Areas (EPA)	Energy & Environment Response Line	--	1-800-222-6514
	Peace Region (Peace River)	1-780-624-7133	1-800-222-6514
Alberta Agriculture and Irrigation	Provincial Resource Agents	310-FARM (3276)	--
Alberta Wildfire - Report a Wildfire	Province-wide	--	310-FIRE (3473)

Resource	Contact	Office	Cell/24 Hour
Alberta Occupational Health and Safety	Province-wide	1-866-415-8690	1-866-415-8690
Alberta Edge (Environment and Dangerous Goods Emergencies)	Province-wide	1-780-422-9600	1-800-272-9600
Highway Maintenance Contractors	LaPrairie Works	1-800-828-3908	1-800-828-3908
Utility Safety Partners	Province-wide	1-800-242-3447	--
Poison & Drug Information Service	Province-wide	--	1-800-332-1414
Alberta Boilers Safety Association (ABSA)	Edmonton	1-780-437-9100	1-780-437-9100
Government of Alberta Toll-Free Dialing	Province-wide	310-0000 then 10 digit number or 0 for Operator	--
Government of Canada - DFO (Department of Fisheries and Ocean)	Canadian Coast Guard Western Region	--	1-800-889-8852
Environment and Climate Change Canada	Canada-wide	1-800-668-6767	--
CN Railway Co. - Police Service	Canada-wide	--	1-800-465-9239
Canadian Pacific Kansas City (CPKC) - Police Service	Canada-wide	--	1-800-716-9132
CANUTEC TDG - Emergency Reporting Line	Canada-wide	--	1-888-226-8832 *666 Cell Phone
Transportation Safety Board (CER Regulated Emergencies)	Canada-wide	Non-Pipeline Emergencies 1-403-299-2773	Pipeline Emergencies 1-819-997-7887
NAV Canada - Notice to Airmen	Canada-wide	--	1-866-992-7433

Emergency Services

Contact	Location	Telephone
Ambulance - Municipal		
Alberta Health Services - EMS	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Ambulance - Oilfield		
911 Industrial Response	Dawson Creek	1-866-694-9111
Davis Safety Consulting	Grande Prairie	1-780-831-6176
Airsafe Consulting Ltd.	Grande Prairie	1-780-296-6489
Air Ambulance		
STARS	Alberta-wide	1-888-888-4567 or 1-403-299-0932(Sat phone)
Hospitals		
Emergency Services will determine the nearest hospital to transport patient(s) to in the event of an injury or fatality		
Fire Fighters - Municipal		
Alberta Municipal Fire Department	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Fire Fighters - Oilfield		
HSE Integrated	Grande Prairie	1-888-346-8260
Trojan Safety Services Ltd.	Alberta-wide	1-780-567-3440
Superior Fire Control	Alberta-wide	1-877-882-0035

Industry Support Services

Contact	Location	Telephone
Air Quality Monitoring Equipment		
Davis Safety Consulting	Grande Prairie	1-780-831-6176
HSE Integrated	Grande Prairie	1-888-346-8260
Bravo Target Safety	Alberta-wide	1-866-513-3779
Backhoes		
H.F. Nodes Construction	Pouce Coupe	1-250-786-5474
R/T Rentals	Grande Prairie	1-780-518-2400
Silvertip Oilfield Services Inc.	Alberta-wide	1-780-836-3792
Communication Equipment (Radio/Telephones)		
Quintel Communications Ltd.	Fairview	1-780-835-5022
Epscan Communications	Dawson Creek	1-250-782-9656
Astro Oilfield Rentals	Grande Prairie	1-866-539-9645

Contact	Location	Telephone
Construction Company		
Mehlsen Energy Projects Inc.	Fairview	1-780-835-2424
Sundown Oilfield Services Ltd.	Sexsmith	1-780-897-9097
Silvertip Oilfield Services Inc.	Alberta-wide	1-780-836-3792
Cranes / Picker Services		
North West Crane	Clairmont	1-780-539-0059
Capstan Hauling Ltd.	Clairmont	1-780-402-3110
Hurst Anchors & Rentals Ltd.	Dawson Creek	1-250-784-1887
Helicopters		
Advanced Heli-Flight Ltd.	Grande Prairie	1-780-512-1168
Mustang Helicopters Inc.	Grande Prairie	1-780-882-9182
Heli Source Ltd.	Grande Prairie	1-403-886-8601
Hotels / Potential Reception Centres		
Dunvegan Inn & Suites	Fairview	1-780-835-5100
Grand Marshal Inn	Hythe	1-780-356-2151
Ramada Inn	Clairmont	1-780-814-7448
Safety Equipment / Personnel		
Total Oilfield Rentals Ltd.	Dawson Creek	1-250-719-0505
911 Industrial Response	Dawson Creek	1-866-694-9111
Davis Safety Consulting	Grande Prairie	1-780-831-6176
Spill Response / Environmental Services		
WCSS	Alberta-wide	1-866-541-8888
Vertex Resource Group Ltd.	Dawson Creek	1-250-719-0353
Badger Daylighting	Alberta-wide	1-877-322-3437
Supply Stores		
Gregg Distributors Ltd.	Spirit River	1-780-864-3333
Baron Oilfield Supply	Fairview	1-780-835-5744
Swift Oilfield Supply Inc.	Alberta-wide	1-888-423-6979
Tank Rentals		
Cinch Oilfield Hauling Ltd.	Sexsmith	1-780-876-3632
Strad Inc.	Dawson Creek	1-866-778-2552
Apex Oilfield Services (2000) Inc.	Alberta-wide	1-877-347-1628
Tank Trucks		
Why Not Energy Services	Clairmont	1-780-512-8504
Swamp Donkey Inc.	Dawson Creek	1-250-219-8370
Avenge Energy Services Inc.	Grande Prairie	1-780-539-0980
Vac and Steam Trucks		
Why Not Energy Services	Clairmont	1-780-512-8504
Vertex Resource Group Ltd.	Dawson Creek	1-780-532-7707
Avenge Energy Services Inc.	Grande Prairie	1-780-539-0980

Contact	Location	Telephone
Well Control Equipment		
Superior Fire Control	Alberta-wide	1-877-882-0035
Firefly Critical Well Safety Equipment Ltd.	Alberta-wide	1-403-342-1050
Safety Boss	Alberta-wide	1-800-882-4967
Wellsite Accommodations		
Vertex Resource Group Ltd.	Dawson Creek	1-780-532-7707
Longhorn Oilfield Services	Dawson Creek	1-855-855-7353
Precision Rentals Ltd.	Grande Prairie	1-780-532-0788

Note: The above listed corporate entities are subject to change without notice. Information regarding support services is accurate at time of printing.

10.3.2 Progress Area Summary

Deltawest's Progress field is an oil/gas producing property located northwestern Alberta, approximately 12 km from Spirit River, AB. It is located in Township 79, Range 8 W6M, in Saddle Hills County.

Deltawest has no pipelines in this field area.

Well Information	
Maximum H_2S Concentrations	0.00% H_2S
Emergency Planning Zones	N/A
Maximum H_2S Release Rate	0.000000 m^3/sec

Geography and Area Use

The Progress area is primarily agricultural with oil and gas activities throughout.

Highways / Area Roads / Railways

Highway 49 and Highway 725 run through the field area.

There are several petroleum development roads in the area. The roads are a combination of pavement and gravel and not all are all-weather roads. Access to the area is dependent on weather.

Creeks / Rivers / Lakes

Ksituan River and Howard Creek flow within the field area.

In the event of an emergency near a waterbody, Deltawest will determine if they need to call WCSS to aid in response activities.

10.3.3 Hazard Summary

Progress Field Area – Hazard Summary					
Hazardous Product	**General Description**	**Health Effects**	**Downwind Evacuation**	**Fire**	**HPZ Public Safety** (immediate precautionary measures)
Methane Methane, compressed Natural gas, compressed	• Often referred to as “sweet gas”. • Flammable. • Lighter than air. • At room temperature and standard pressure, methane is a colorless, odorless gas. • It is the simplest alkane and the main component of natural gas.	• Vapors may cause dizziness or asphyxiation without warning. • Some may be irritating if inhaled at high concentrations. • Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. • Fire may produce irritating and/or toxic gases.	**Large Spill** Consider initial downwind evacuation for at least 800 metres (1/2 mile)	If tank, rail car or tank truck is involved in a fire, isolate for 1600 metres (1 mile) in all directions; also, consider initial evacuation for 1600 metres (1 mile) in all directions.	100 m (330 ft)
Petroleum Crude Oil	• Brown to black. • Viscous liquid. • May contain or release poisonous hydrogen sulfide gas. • Extremely flammable liquid and vapour	• Inhalation or contact with material may irritate or burn skin and eyes. • Fire may produce irritating, corrosive and/or toxic gases. • Vapors may cause dizziness or suffocation.	**Large Spill** Consider initial downwind evacuation for at least 300 metres (1000 ft).	If tank, rail car or tank truck is involved in a fire, isolate for 800 metres (1/2 mile) in all directions; also, consider initial evacuation for 800 metres (1/2 mile) in all directions.	50 m (150 ft)

10.3.4 Public Summary

Progress Operations Area	
Number of First Nations:	None
Number of Trappers:	1
Number of Guides and Outfitters:	2 WMU 358 (10 guides and outfitters) WMU 359 (6 guides and outfitters)
Number of Oil & Gas operators:	8
Number of Other Area Users:	2
Other surface facilities that were noted:	None

Area Trappers

Trapline #	Name	Location	Telephone
2717	Jim Menzies	Box 445 Spirit River, AB T0H 3G0	1-780-864-0690

Guides and Outfitters

Outfitter	Telephone
WMU 358 – Saddle Hills	
Big Tine Adventures Blake Shmyr	780-864-0250
Brad Kercher Guiding & Outfitting Brad Kercher	1-403-575-1002
Diamond T Outfitters Byron Tofteland	1-780-356-2361
Dry Creek Outfitters Daniel Coward	1-360-708-0136
Eagle Lakes Ranch Lodge LLC Ryan Bernsen	1-509-528-8754
Jason R. Frank	1-780-500-1146
Mike's Outfitting Ltd. Mike Ukrainetz	1-780-864-3770
MLP Scouting Service Inc. Blake Shmyr	1-780-864-0250
Promise Land Outfitters Inc. Robert E. Reynolds	1-780-210-0411
Red Willow Outfitters Ltd. Taylor Loewen	1-780-300-1111
WMU 359 - Blueberry	
Bear Canyon Outfitters Larry Smith	1-780-834-0186
Dale McKinnon Alberta Guide & Outfitter Ltd. Dale McKinnon	1-780-645 8092
Jason R. Frank	1-780-500-1146
Mike's Outfitting Ltd. Mike Ukrainetz	1-780-864-3770

Outfitter	Telephone
Promise Land Outfitters Inc. Robert E. Reynolds	1-780-210-0411
Red Willow Outfitters Ltd. Taylor Loewen	1-780-300-1111

Other Area Users

Name	Location	Telephone
Moonshine Lake Provincial Park	Hwy 49, Blueberry Mountain, AB T0H 3G0	1-780-538-5350
FMA GO3 Canadian Forest Products Ltd.	9401 - 108 Street Grande Prairie, AB T8V 3A3	1-780-538-7756

Oil & Gas Operators

Name	Location	Telephone
Birchcliff Energy Ltd.	24 Hour Number Calgary, AB	1-403-261-6401 1-866-566-2923
Canadian Natural Resources Ltd.	24 Hour Number Calgary, AB	1-403-517-6700 1-888-878-3700
Central Peace Natural Gas Co-op Ltd.	24 Hour Number / Spirit River, AB	1-780-864-3873
Grizzly Resources Ltd.	24 Hour Number Calgary, AB	1-403-237-9600 1-888-474-0059
NorthRiver Midstream Inc.	24 Hour Number Calgary, AB	1-587-747-6500 1-844-667-8477
Prairie Provident Resources Ltd.	24 Hour Number Calgary, AB	1-403-292-8000 1-866-405-4854
TC Energy Corporation	24 Hour Number Calgary, AB	1-403-920-2000 1-888-982-7222
Tourmaline Oil Corporation	24 Hour Number Calgary, AB	1-403-266-5992 1-877-504-4252

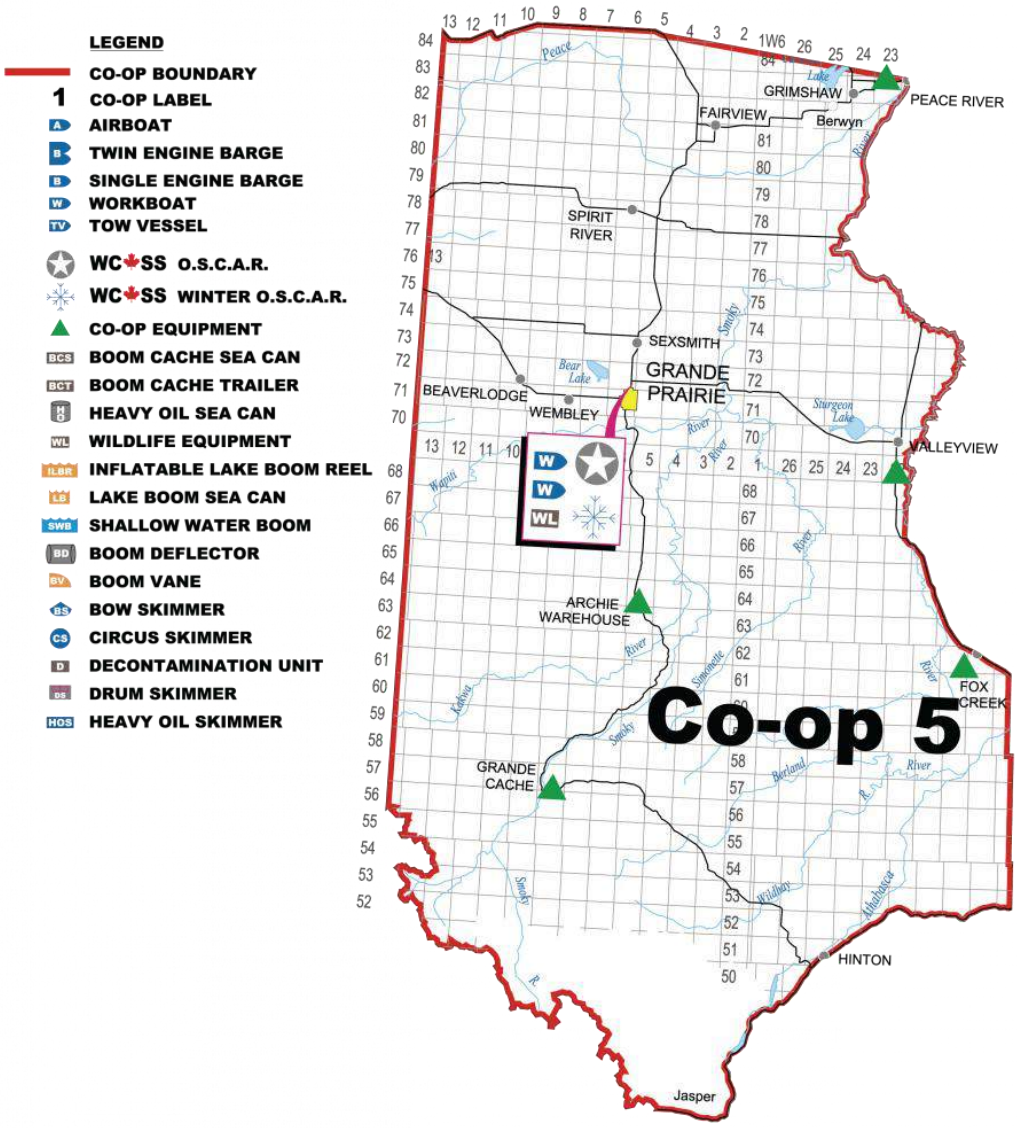
Note: The above listed corporate entities are subject to change without notice owing to mergers, acquisitions, re-licensing, etc. Information regarding industrial operators is updated in conjunction with map updates.

10.3.5 Spill Support Services

WCSS – Coop 5

Area	Chairman	Contact Information
WCSS Emergency 24-Hour Number		1-866-541-8888
Coop 5 Chairman	Sandra Miller ARC Resources Ltd.	Ph: 1-587-202-0637 Cell: 1-780-296-5822 smiller@arcresources.com
Coop 5 Alternate Chairman	Mike Doerksen PGI Processing ULC	Cell: 1-780-622-7358 mdoerksen@pembina.com
Coop 5 Alternate Chairman	Megan Bridger Paramount Resources Ltd.	Ph: 1-403-303-1957 Cell: 1-780-926-6339 megan.bridger@paramountres.com

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
9402 117 Street Grande Prairie, AB	ARC Resources Ltd.	Ron Toly 24hr: 1-250-219-8180 Sandra Miller: 1-587-202-0637	52’ OSCAR Trailer 16’ Winter OSCAR Trailer Workboats (2) 14’ Wildlife Trailer	Semi-Tractor ¾ Ton Truck w/ 2-5/16” Ball Hitch ½ Ton Truck w/ 2” Ball Hitch ½ Ton Truck w/ 2-5/16” Ball Hitch
Archie Warehouse 07-04-64-05-W6M	ARC Resources Ltd.	24hr: 1-587-343-5824 Sandra Miller: 1-587-202-0637	20’ ISRU Sea Can	Winch Tractor/Trailer
97 Street & Hoppe Avenue Grande Cache, AB	Silver Peak Services	Martin Danny 24hr: 1-780-827-4776 Cell: 1-780-827-8739	20’ ISRU Sea Can	Winch Tractor/Trailer
#21 Cessna Road, Airport Industrial Park Westhill Peace River, AB	Avenge Energy Services Inc.	24hr Dispatch: 1-780-617-0555	20’ ISRU Sea Can	Winch Tractor/Trailer
Pembina Valleyview Pump Station 12-10-69-22-W5M	Pembina Pipelines	24hr: 1-780-524-3938 Dwayne Jones Cell: 1-780-524-8877 Office: 1-780-524-3392 ext. 2844	20’ ISRU Sea Can	Winch Tractor/Trailer
Fox Creek 14-01-62-20 W5M	PGI Processing ULC - Kaybob Amalgamated Gas Plant	Michael Doerksen 24hr: 1-780-622-6274 Ph: 1-780-622-6250 Cell: 1-780-622-7358	20’ ISRU Sea Can (9’6” high)	Winch tractor & low boy trailer



Waterway Control Points

There are three waterway control points. These waterway control points are all accessible by road to allow for rapid deployment of spill control equipment.

Control Point	LSD	Latitude	Longitude
T421	12-10-079-08 W6M	55.834318	-119.171876
T431	07-34-078-08 W6M	55.801347	-119.147873
T436	03-26-078-08 W6M	55.783073	-119.128458

10.3.6 Asset Data: Wells, Pipelines & Facilities

Asset tables on following pages.

Wells

LICENSEE	UNIQUE WELL IDENTIFIER (UWI)	SURFACE LOCATION	STATUS	SUBSTANCE CODE	WELL NAME (UWI)	WELL LICENSE #	ASSIGNED WELL H_2S (%)	H_2S RELEASE RATE (m^3/s)	EPZ (KM)	IIZ (KM)	PAZ (KM)	LAND USE SETBACK LEVEL
SWEET ASSETS												
DELTAWEST ENERGY LTD.	100/15-01-079-08W6/00	16-02-079-08W6	PMP	OIL	DELTAWEST HZ 100 PROGRESS 15-1-79-8	0495473	0.00	0.000000	na	na	na	na

Notes:

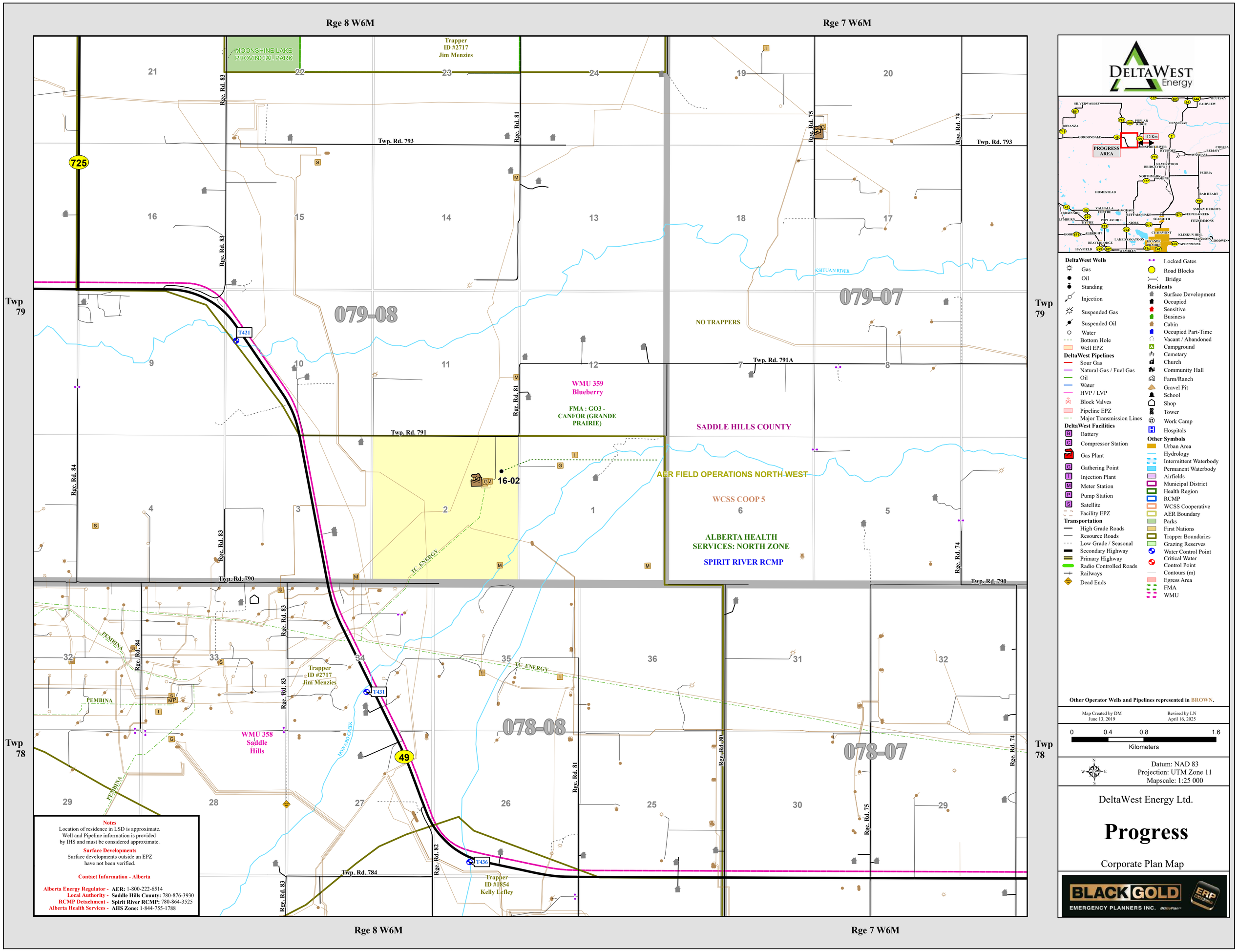
Well Substance Codes *: Acid GAS, GAS, Fuel GAS, OIL, WATER, CO2 - Carbon Dioxide, CBM - Coalbed Methane*

Status Codes *: ABD - Abandoned, ABZ - Abandoned Zone, CMG - Comingled, DISP - Disposal, DR&C - Drilled & Cased, FLW - Flowing, INJ - Injection, OBS - Observation, POT - Potential, PMP - Pumping, STD - Standing, SUS - Suspended, TEST - Testing*

10.3.7 Maps

ERP Map

Area map on following page:



Rge 8 W6M
Rge 7 W6M
Twp 79
Twp 78
MOONSHINE LAKE PROVINCIAL PARK
Trapper ID #2717 Jim Menzies
Twp. Rd. 793
Twp. Rd. 791A
Twp. Rd. 791
Twp. Rd. 790
Twp. Rd. 784
Rge. Rd. 83
Rge. Rd. 81
Rge. Rd. 75
Rge. Rd. 74
Rge. Rd. 84
Rge. Rd. 82
Rge. Rd. 80
725
49
079-08
079-07
078-08
078-07
T421
T431
T436
16-02
KSITUAN RIVER
NO TRAPPERS
WMU 359 Blueberry
FMA : GO3 - CANFOR (GRANDE PRAIRIE)
SADDLE HILLS COUNTY
AER FIELD OPERATIONS NORTH WEST
WCSS COOP 5
ALBERTA HEALTH SERVICES: NORTH ZONE
SPIRIT RIVER RCMP
TC ENERGY
PEMBINA
HOWARD CREEK
WMU 358 Saddle Hills
Trapper ID #1854 Kelly Lefley
Notes
Location of residence in LSD is approximate.
Well and Pipeline information is provided by IHS and must be considered approximate.
Surface Developments
Surface developments outside an EPZ have not been verified.
Contact Information - Alberta
Alberta Energy Regulator - AER: 1-800-222-6514
Local Authority - Saddle Hills County: 780-876-3930
RCMP Detachment - Spirit River RCMP: 780-864-3525
Alberta Health Services - AHS Zone: 1-844-755-1788
DeltaWest Energy
PROGRESS AREA
DeltaWest Wells
Gas
Oil
Standing
Injection
Suspended Gas
Suspended Oil
Water
Bottom Hole
Well EPZ
DeltaWest Pipelines
Sour Gas
Natural Gas / Fuel Gas
Oil
Water
HVP / LVP
Block Valves
Pipeline EPZ
Major Transmission Lines
DeltaWest Facilities
Battery
Compressor Station
Gas Plant
Gathering Point
Injection Plant
Meter Station
Pump Station
Satellite
Facility EPZ
Transportation
High Grade Roads
Resource Roads
Low Grade / Seasonal
Secondary Highway
Primary Highway
Radio Controlled Roads
Railways
Dead Ends
Locked Gates
Road Blocks
Bridge
Residents
Surface Development
Occupied
Sensitive
Business
Cabin
Occupied Part-Time
Vacant / Abandoned
Campground
Cemetary
Church
Community Hall
Farm/Ranch
Gravel Pit
School
Shop
Tower
Work Camp
Hospitals
Other Symbols
Urban Area
Hydrology
Intermittent Waterbody
Permanent Waterbody
Airfields
Municipal District
Health Region
RCMP
WCSS Cooperative
AER Boundary
Parks
First Nations
Trapper Boundaries
Grazing Reserves
Water Control Point
Critical Water Control Point
Contours (m)
Egress Area
FMA
WMU
Other Operator Wells and Pipelines represented in BROWN.
Map Created by DM June 13, 2019
Revised by LN April 16, 2025
0 0.4 0.8 1.6
Kilometers
Datum: NAD 83
Projection: UTM Zone 11
Mapscale: 1:25 000
DeltaWest Energy Ltd.
Progress
Corporate Plan Map
BLACK GOLD EMERGENCY PLANNERS INC.

10.4 Astotin Field Area

10.4.1 Astotin Telephone Directory

Deltawest 24-Hour Emergency Number
1-833-738-7747

Deltawest Main Number

1-587-392-7762

Name	Position	Office	Cell
Roger Peyton	Contract Operator	--	1-587-988-2407
Kevin Lazowski	Contract Operator	--	1-780-656-0853

Government Agencies

Resource	Contact	Office	Cell/24 Hour
Alberta Energy Regulator	Energy and Environmental Emergency 24-Hour Response Line	--	1-800-222-6514
	Central Field Operations - Edmonton	1-780-642-9310	1-800-222-6514
Lamont County	Shayne Milliken, Director of Emergency Management	1-780-895-2233 ext 236	1-780-818-5914
RCMP - Fort Saskatchewan Detachment	NCO In Charge	1-780-997-7900	911
Alberta Health Services	Province-wide	Administration: 1-833-476-4743 edp@ahs.ca	1-844-755-1788
Alberta Emergency Management Agency	Provincial Emergency Coordination Centre (PECC)	1-780-644-5428 pses.pecc @gov.ab.ca	1-866-618-2362
	Sandra Zarate, Manager, Public Alerting and Communication Team	1-587-341-0298	1-587-341-0298
Alberta Emergency Management Agency, Northeast Region	Ian Fox, Emergency Management Field Officer	Cell: 1-780-646-0180 Email: ian.fox@gov.ab.ca	24 Hour: 1-866-618-2362
	Anne Chambers, Emergency Management Field Officer	Cell: 1-587-252-4865 Email: anne.chambers@ gov.ab.ca	24 Hour: 1-866-618-2362
Ministry of Environment and Protective Areas (EPA)	Energy & Environment Response Line	--	1-800-222-6514
	Red Deer / North Saskatchewan Region (Edmonton)	1-780-427-7617	1-800-222-6514

Resource	Contact	Office	Cell/24 Hour
Alberta Agriculture and Irrigation - 310-FARM	Provincial Resource Agents	310-FARM (3276)	--
Alberta Wildfire - Report a Wildfire	Province-wide	--	310-FIRE (3473)
Alberta Occupational Health and Safety	Province-wide	1-866-415-8690	1-866-415-8690
Alberta Edge (Environment and Dangerous Goods Emergencies)	Province-wide	1-780-422-9600	1-800-272-9600
Highway Maintenance Contractors	Emcon Services Inc.	1-800-390-2242	1-800-390-2242
Utility Safety Partners	Province-wide	1-800-242-3447	--
Poison & Drug Information Service	Province-wide	--	1-800-332-1414
Alberta Boilers Safety Association (ABSA)	Edmonton	1-780-437-9100	1-780-437-9100
Government of Alberta Toll-Free Dialing	Province-wide	310-0000 then 10 digit number or 0 for Operator	--
Government of Canada - DFO (Department of Fisheries and Ocean)	Canadian Coast Guard Western Region	--	1-800-889-8852
Environment and Climate Change Canada	Canada-wide	1-800-668-6767	--
CN Railway Co. - Police Service	Canada-wide	--	1-800-465-9239
Canadian Pacific Kansas City (CPKC) - Police Service	Canada-wide	--	1-800-716-9132
CANUTEC TDG - Emergency Reporting Line	Canada-wide	--	1-888-226-8832 *666 Cell Phone
Transportation Safety Board (CER Regulated Emergencies)	Canada-wide	Non-Pipeline Emergencies 1-403-299-2773	Pipeline Emergencies 1-819-997-7887
NAV Canada - Notice to Airmen	Canada-wide	--	1-866-992-7433

Emergency Services

*Preferred Services indicated in **Bold**

Contact	Location	Telephone
Ambulance - Municipal		
Alberta Health Services - EMS	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Ambulance - Oilfield		
HSE Integrated	**Alberta-wide**	**1-888-346-8260**
Davis Safety Consulting	St. Albert	1-780-460-2696
Firemaster Oilfield Services	Alberta-wide	1-877-342-3473
Air Ambulance		
STARS **6222** Landing Site Number 13-27-054-18 W4	Alberta-wide	1-888-888-4567 or 1-403-299-0932
Hospitals		
Emergency Services will determine the nearest hospital to transport patient(s) to in the event of an injury or fatality		
Fire Fighters - Municipal		
Alberta Municipal Fire Department	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Fire Fighters - Oilfield		
HSE Integrated	**Alberta-wide**	**1-888-346-8260**
Firemaster Oilfield Services	Alberta-wide	1-877-342-3473
Trojan Safety Services Ltd.	Alberta-wide	1-780-567-3440

Industry Support Services

*Preferred Services indicated in **Bold**

Contact	Location	Telephone
Air Quality Monitoring Equipment		
HSE Integrated	**Alberta-wide**	**1-888-346-8260**
Davis Safety Consulting	St. Albert	1-780-460-2696
Firemaster Oilfield Services	Alberta-wide	1-877-342-3473
Backhoes		
K G Enterprises Ltd.	**Lamont**	**1-780-940-9832**
Wildhorse	**Lamont**	**1-780-914-2408**
Noyen Construction Ltd.	Fort Saskatchewan	1-780-998-3974
Communication Equipment (Radio/Telephones)		
Williams Wireless	Redwater	1-780-942-4055
BearCom Canada Corp.	Edmonton	1-780-732-3400
Tridon Communications - Vtelecom	Edmonton	1-780-436-5566

Contact	Location	Telephone
Construction Company		
Ed-Lam Industrial Contracting	Fort Saskatchewan	1-780-998-7822
PME Inc.	Fort Saskatchewan	1-780-992-2280
Noyen Construction Ltd.	Fort Saskatchewan	1-780-998-3974
Cranes / Picker Services		
Revolution Crane & Transport	**Edmonton**	**1-780-612-5144**
NOV - Tuboscope	**Nisku**	**1-780-955-2266**
Sterling Crane	Fort Saskatchewan	1-780-998-7531
Helicopters		
Remote Helicopters Limited	Edmonton	1-800-340-1179
Delta Helicopters Ltd.	Alberta-wide	1-800-665-3564
Canadian Helicopters Limited	Alberta-wide	1-780-429-6900
Hotels / Potential Reception Centres		
Days Inn	Lamont	1-780-579-2001
Vista Motel	Vegreville	1-780-632-3288
Vegreville Garden Inn	Vegreville	1-780-632-2895
Safety Equipment / Personnel		
Safety First Industrial Canada	Sherwood Park	1-888-384-3601
Davis Safety Consulting	St. Albert	1-780-460-2696
Firemaster Oilfield Services - AB	Alberta-wide	1-877-342-3473
Spill Response / Environmental Services		
WCSS	Alberta-wide	1-866-541-8888
Vertex Resource Group Ltd.	Alberta-wide	1-780-464-3295
Vertex Resource Group Ltd.	Leduc	1-780-999-8635
Supply Stores		
67 Supply	**Leduc**	**1-780-975-8538**
Grainger Canada	Fort Saskatchewan	1-888-602-0000
Wolseley Industrial	Edmonton	1-780-468-7161
Tank Rentals		
Vertex Resource Group Ltd.	Alberta-wide	1-780-464-3295
Vertex Resource Group Ltd.	Leduc	1-780-999-8635
RBS Bulk Systems	Fort Saskatchewan	1-780-998-1833
Tank Trucks		
WK Trucking	**Mundare**	**1-780-632-5555**
RKS Canada	**Redwater**	**1-780-916-9102**
Oculus Transport	Fort Saskatchewan	1-780-263-8302
Vac and Steam Trucks		
RKS Canada	**Redwater**	**1-780-916-9102**
Solution Services	**Fort Saskatchewan**	**1-780-446-0391**
K G Enterprises Ltd.	**Lamont**	**1-780-940-9832**

Contact	Location	Telephone
Well Control Equipment		
Tryton Tool Services	Nisku	1-780-955-9420
Firemaster Oilfield Services	Alberta-wide	1-877-342-3473
Superior Fire Control	Alberta-wide	1-877-882-0035
Wellsite Accommodations		
Vertex Resource Group Ltd.	Alberta-wide	1-780-464-3295
Vertex Resource Group Ltd.	Leduc	1-780-999-8635
Precision Rentals Ltd.	Alberta-wide	1-403-716-4500

Note: The above listed corporate entities are subject to change without notice. Information regarding support services is accurate at time of printing.

10.4.2 Astotin Area Summary

Deltawest's Astotin field is an oil/gas producing property located central Alberta, approximately 12 km from Lamont, AB. It is located in Townships 53-55, Ranges 18-19 W4M, in Lamont County.

Pipeline Information	
Licensed Maximum Operating Pressure	8270 kPa
Licensed H_2S Concentrations	0.00% H_2S
Emergency Planning Zones	N/A
Maximum H_2S Release Volumes	N/A
Well Information	
Maximum H_2S Concentrations	0.00% H_2S
Emergency Planning Zones	N/A
Maximum H_2S Release Rate	0.000000 m^3/sec

Geography and Area Use

The area surrounding the Astotin operating field is comprised of the Village of Chipman and surrounding farmland. The Chipman Airport / Gliderport is operated by the Edmonton Soaring Club. The northeast boundary of Elk Island National Park is approximately 12 km west.

Highways / Area Roads / Railways

Highway 15 and Highway 834 run through the field area

CN Rail runs through the field area.

There are several petroleum development roads in the area. The roads are a combination of pavement and gravel and not all are all-weather roads. Access to the area is dependent on weather.

Creeks / Rivers / Lakes

Beaverhill Creek, along with several unnamed waterbodies flow within the field area.

In the event of an emergency near a waterbody, Deltawest will determine if they need to call WCSS to aid in response activities.

10.4.3 Hazard Summary

Astotin Field Area – Hazard Summary					
Hazardous Product	**General Description**	**Health Effects**	**Downwind Evacuation**	**Fire**	**HPZ Public Safety** (immediate precautionary measures)
Methane Methane, compressed Natural gas, compressed	• Often referred to as “sweet gas”. • Flammable. • Lighter than air. • At room temperature and standard pressure, methane is a colorless, odorless gas. • It is the simplest alkane and the main component of natural gas.	• Vapors may cause dizziness or asphyxiation without warning. • Some may be irritating if inhaled at high concentrations. • Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. • Fire may produce irritating and/or toxic gases.	**Large Spill** Consider initial downwind evacuation for at least 800 metres (1/2 mile)	If tank, rail car or tank truck is involved in a fire, isolate for 1600 metres (1 mile) in all directions; also, consider initial evacuation for 1600 metres (1 mile) in all directions.	100 m (330 ft)
Methanol	• Alcohol type small at high concentrations. • Flammable.	• TOXIC; may be fatal if inhaled, ingested, or absorbed through skin. • Inhalation or contact with some of these materials will irritate or burn skin and eyes. • Fire will produce irritating, corrosive and/or toxic gases. • Vapors may cause dizziness or suffocation. • Runoff from fire control or dilution water may cause pollution.	As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions	If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.	50 meters (150 feet)
Petroleum Crude Oil	• Brown to black. • Viscous liquid. • May contain or release poisonous hydrogen sulfide gas. • Extremely flammable liquid and vapour	• Inhalation or contact with material may irritate or burn skin and eyes. • Fire may produce irritating, corrosive and/or toxic gases. • Vapors may cause dizziness or suffocation.	**Large Spill** Consider initial downwind evacuation for at least 300 metres (1000 ft).	If tank, rail car or tank truck is involved in a fire, isolate for 800 metres (1/2 mile) in all directions; also, consider initial evacuation for 800 metres (1/2 mile) in all directions.	50 m (150 ft)

Facilities - Hazardous Products

13-27-054-18 W4M Astotin Battery							
		Latitude		Longitude	Easting		Northing
UTM Zone 11 NAD83		53° 41' 59.8 N		112° 34' 44.9 W	395749.95		5951296.62
Type	**Capacity**	**Substance**	**United Nations (UN) ID Number**	**Transport Canada ER Guide Number**	**Downwind Evacuation**	**Fire**	**HPZ Public Safety (immediate precautionary measures)**
Tank	2x 158.5 m^3 (1000 bbl)	Water	N/A	N/A	N/A	N/A	N/A
Tank							
Tank	119.2405m^3 (750 bbl)						
Tank	119.2405m^3 (750 bbl)	Emulsion	1267	128 – Flammable Liquids (Water-Immiscible)	**Large Spill** - 300 metres (1000 feet)	800 metres (1/2 mile)	50 m (150 ft)
Tank	119.2405m^3 (750 bbl)	Emulsion (out of service)					
Tank	4x 119.2405m^3 (750 bbl)	Oil (Shipping)	1267	128 – Flammable Liquids (Water-Immiscible)	**Large Spill** - 300 metres (1000 ft)	800 metres (1/2 mile)	50 m (150 ft)

10.4.4 Public Summary

Astotin Operations Area	
Number of First Nations:	None
Number of Trappers:	None
Number of Guides and Outfitters:	2 WMU 242 (12 guides and outfitters) WMU 252 (6 guides and outfitters)
Number of Oil & Gas operators:	9
Number of Other Area Users:	1
Other surface facilities that were noted:	None

Area Trappers

There are no trappers near Deltawest operations in the Astotin field.

Guides and Outfitters

Outfitter	Telephone
WMU 242 - Beaverhill	
925879 Alberta Ltd. Jonathan McMahon	1-780-818-6201
Alberta Hunting Adventures Kevin G. Wilson	1-780-913-1021
Bear Creek Outfitters Dan Eason	1-780-232-8344
Black Dog Outfitters Ltd. Kyler Harms	1-780-603-7950
Branta Farms Sahara Burns	1-780-905-3550
Horn & Hide Trophy Hunts Delores Cossey	1-780-896-2222
Lock N Load Outfitting Ltd. Kevin D. Loades	1-780-385-8246
Outdoor Pastimes Unlimited Beth Mahoney	1-780-524-3250
Phantom Outfitting Kevin Rolfe	1-780-263-6209
Brent Reil	1-780-490-9430
Ryk Visscher's Hunting Adventures Ltd. Ryk Visscher	1-780-445-0327
Wingshot Guiding Service Ltd. Chris J. Dumbleton	1-780-275-2020
WMU 252 - Whitford	
925879 Alberta Ltd. Jonathan McMahon	1-780-818-6201
Black Dog Outfitters Ltd. Kyler Harms	1-780-603-7950
Diamond Willow Trophy Hunts William Machura	1-780-210-0800

Outfitter	Telephone
Great White Holdings Ltd. Lloyd A. McMahon	1-780-205-0701
Ranchland Outfitters Inc. Robert E. Reynolds	1-780-210-0411
Wingshot Guiding Service Ltd. Chris J. Dumbleton	1-780-275-2020

Other Area Users

Name	Location	Telephone
Chipman Airport / Gliderport (operated by the Edmonton Soaring Club)	185020, Township Rd 550, Chipman, AB Note: Itinerant air traffic frequency 123.4	1-780-363-3860

Oil & Gas Operators

Name	Location	Telephone
Alliance Pipeline Ltd.	24 Hour Number Calgary, AB	1-403-231-3900 1-800-884-8811
AlphaBow Energy Ltd.	24 Hour Number Calgary, AB	1-587-393-5059 1-844-858-8038
ATCO Gas	24 Hour Number Calgary, AB	AB: 310-5678 1-800-511-3447
ATCO Pipelines	24 Hour Number Calgary, AB	1-877-924-9382 1-877-496-9380
Axiom Oil and Gas Inc.	24 Hour Number Calgary, AB	1-587-315-1468 1-403-357-3919
Long Run Exploration Ltd.	24 Hour Number Calgary, AB	1-403-261-6012 1-866-574-7085
Point Bar Resources Inc.	24 Hour Number Calgary, AB	1-587-430-0523 1-877-245-2111
Sinopec Canada Energy Ltd.	24 Hour Number Calgary, AB	1-403-266-6900 1-866-616-6300
Wolf Carbon Solutions Inc.	24 Hour Number Calgary, AB	1-403-781-8181 1-888-919-9653

Note: The above listed corporate entities are subject to change without notice owing to mergers, acquisitions, re-licensing, etc. Information regarding industrial operators is updated in conjunction with map updates.

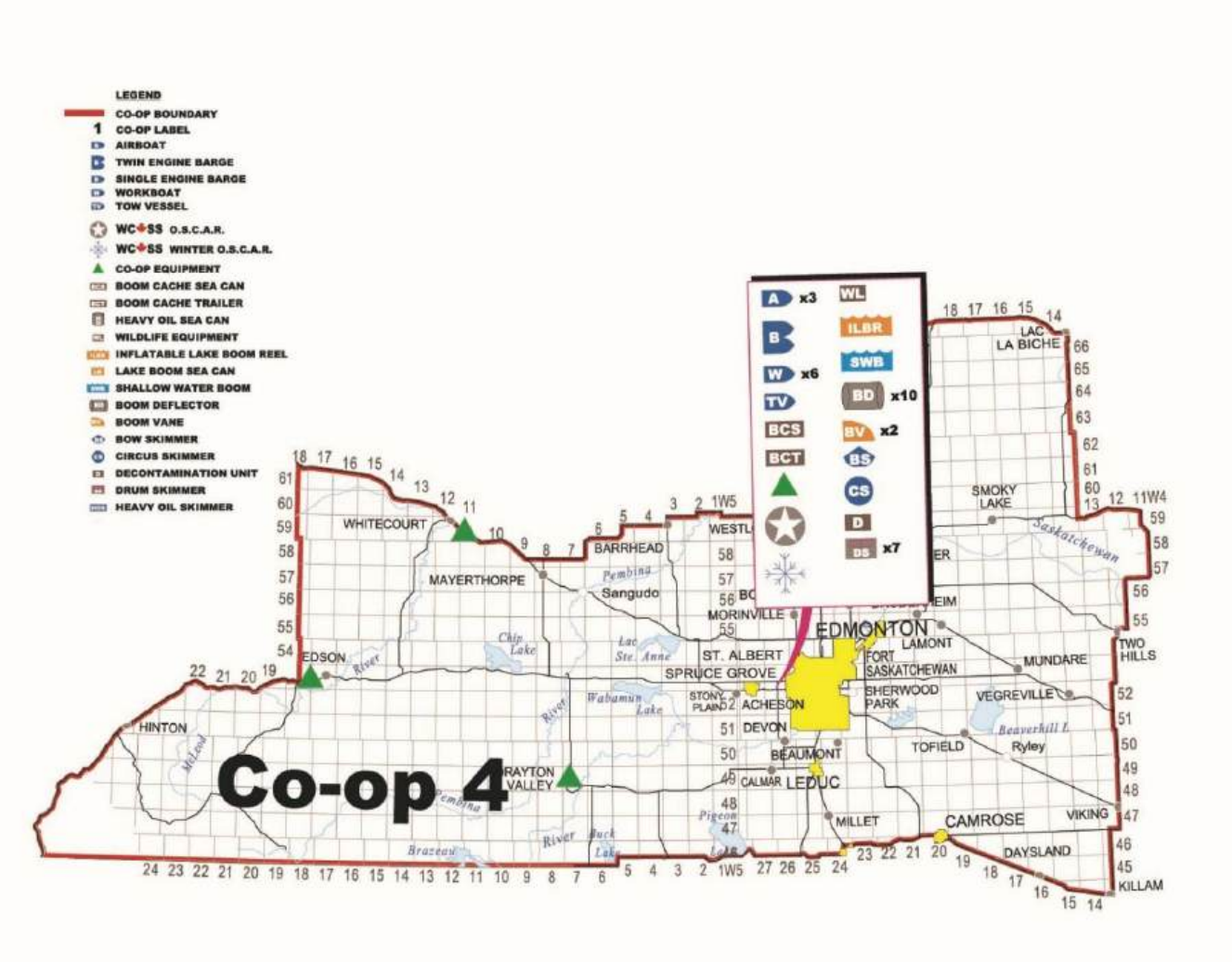
10.4.5 Spill Support Services

WCSS – Coop 4

Area	Chairman	Contact Information
WCSS Emergency 24-Hour Number		1-866-541-8888
Coop 4 Chairman	Ryan Bauer Plains Midstream Canada ULC	Ph: 1-780-400-2680 Cell: 1-780-222-9345 ryan.bauer@plains.com
Coop 4 Alternate Chairman	Ryan Pearson Obsidian Energy	Cell: 1-780-268-4072 ryan.pearson@obsidianenergy.com
Coop 4 Alternate Chairman	Terry Willoughby Saturn Oil & Gas Inc.	Cell: 1-780-621-0724 t.willoughby@obsidianenergy.com

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
10499 David Rd. Acheson, AB T7X 6A4	JVC Group	24hr: 1-780-455-0776 David King: 1-780-514-0092 Rob Ferretti 1-780-237-6682	52’ OSCAR Sea Can (14,500kg) 20’ ISRU Sea Can 16’ Winter OSCAR Trailer 45’ Boom Cache Trailer 40’ Boom Cache Sea Can Work Boats (7) Twin Engine Barge w/ Bow Skimmer Air Boats (3) 16’ Wildlife Trailer 20’ Decontamination Sea Can Inflatable Lake Boom Reel Trailer Tow Vessel Shallow Draft Boom Vane (2) Drum Skimmers (7) w/ Power Paks Circus Skimmer w/ Power Pak Boom Deflectors (8) 400’ Shallow Water Boom	Winch Tractor/Trailer Winch Tractor/Trailer ¾ ton Truck w/ 2-5/16” Ball Hitch Semi-Tractor Winch Tractor/Trailer ½ Ton Truck w/ 2” Ball Hitch 1-Ton Truck w/ 2-5/16” Ball Hitch, Elec. brakes ¾ Ton Truck w/ 2-5/16” Ball Hitch ½ Ton Truck w/ 2-5/16” Ball Hitch Winch Tractor/Trailer 1-Ton Truck w/ 2-5/16” Ball Hitch, Elec. Brakes ½ Ton Truck w/ 2” Ball Hitch ½ Ton Truck ½ Ton Truck ½ Ton Truck w/ Deck ½ Ton Truck ½ Ton Truck

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
5612 – 58 Ave Drayton Valley, AB	Hell Hounds Hauling	Calvin Hlushak Ph: 1-780-621-6301	20’ ISRU Sea Can 9’6” high	Winch Tractor/Low-Boy Trailer
Edson 01-13-053-18 W5M 53206 RR 180 Yellowhead County	Formula Powell	Sean Smith 24hr: 1-780-712-6110,3 for dispatch Cell: 1-780-712-3564	20’ ISRU Sea Can	Winch Tractor/Trailer
Whitecourt 5920 – 11A RR114B SE-17-59-11 W5M	Mega C	Carl Lehman Cell: 1-780-778-1781 Pat Lehman Cell: 1-780-778-0633 Terry Sekulich 1-780-779-7046	20’ ISRU Sea Can	Winch Tractor/Trailer



Waterway Control Points

There are no waterway control points in the Astotin operating area.

10.4.6 Asset Data: Wells, Pipelines & Facilities

Asset tables on following pages.

Wells

LICENSEE	UNIQUE WELL IDENTIFIER (UWI)	SURFACE LOCATION	STATUS	SUBSTANCE CODE	WELL NAME (UWI)	WELL LICENSE #	ASSIGNED WELL H_2S (%)	H_2S RELEASE RATE (m^3/s)	EPZ (KM)	IIZ (KM)	PAZ (KM)	LAND USE SETBACK LEVEL
SWEET ASSETS												
DELTAWEST ENERGY LTD.	104/09-21-054-18W4/00	05-27-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 9-21-54-18	0476544	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	103/10-21-054-18W4/00	12-22-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 10-21-54-18	0476557	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/15-21-054-18W4/00	12-22-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 15-21-54-18	0284729	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/16-21-054-18W4/00	05-27-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 16-21-54-18	0273038	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/16-21-054-18W4/00	05-27-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 16-21-54-18	0275737	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	103/16-21-054-18W4/02	05-27-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 1-28-54-18	0279611	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	106/16-21-054-18W4/00	05-27-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 16-21-54-18	0476480	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/01-22-054-18W4/03	09-22-054-18W4	INJ	WATER INJ	LONGSHORE ASTOTIN 1-22-54-18	0254774	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/06-22-054-18W4/00	10-22-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 6-22-54-18	0271548	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	103/10-22-054-18W4/04	10-22-054-18W4	INJ	WATER INJ	LONGSHORE ASTOTIN 10-22-54-18	0247800	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/11-22-054-18W4/00	10-22-054-18W4	ABZ	OIL	LONGSHORE ASTOTIN 11-22-54-18	0261893	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/14-22-054-18W4/00	10-22-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 14-22-54-18	0254370	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/14-22-054-18W4/00	10-22-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 14-22-54-18	0256492	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	105/14-22-054-18W4/00	10-22-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 14-22-54-18	0478716	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/15-22-054-18W4/04	10-22-054-18W4	ABZ	N/A	LONGSHORE ASTOTIN 14-22-54-18	0271134	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/07-24-054-18W4/03	10-24-054-18W4	ABZ	GAS	LONGSHORE NORRIS 7-24-54-18	0294210	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/01-26-054-18W4/00	11-26-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 1-26-54-18	0283663	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/08-26-054-18W4/00	11-26-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 8-26-54-18	0280210	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/09-26-054-18W4/00	11-26-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 9-26-54-18	0322951	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/10-26-054-18W4/05	11-26-054-18W4	ABZ	N/A	LONGSHORE ASTOTIN 9-26-54-18	0325881	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/05-27-054-18W4/00	15-21-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 5-27-54-18	0492597	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/09-27-054-18W4/00	11-26-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 9-27-54-18	0478991	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/12-27-054-18W4/00	12-27-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 12-27-54-18	0479843	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	1S0/02-28-054-18W4/00	08-28-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 2-28-54-18	0479990	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/06-28-054-18W4/00	12-27-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 6-28-54-18	0271932	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/06-28-054-18W4/00	08-28-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 6-28-54-18	0273631	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	103/07-28-054-18W4/00	08-28-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 7-28-54-18	0478727	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/10-28-054-18W4/03	10-28-054-18W4	INJ	WATER INJ	LONGSHORE ASTOTIN 10-28-54-18	0253770	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/10-28-054-18W4/00	12-27-054-18W4	PMP	OIL	LONGSHORE ASTOTIN 10-28-54-18	0260614	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	105/10-28-054-18W4/03	12-27-054-18W4	ABZ	N/A	LONGSHORE ASTOTIN 15-28-54-18	0269162	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/14-28-054-18W4/00	14-28-054-18W4	INJ	WATER INJ	LONGSHORE ASTOTIN 14-28-54-18	0253867	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/15-28-054-18W4/00	04-34-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 15-28-54-18	0268453	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/15-28-054-18W4/00	04-34-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 15-28-54-18	0269114	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/02-33-054-18W4/00	04-34-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 2-33-54-18	0271364	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	102/04-34-054-18W4/00	01-33-054-18W4	SUS	OIL	LONGSHORE ASTOTIN 4-34-54-18	0295015	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/12-34-054-18W4/02	12-34-054-18W4	ABZ	GAS	LONGSHORE ASTOTIN 12-34-54-18	0266707	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/02-02-054-19W4/03	02-02-054-19W4	ABZ	GAS	LONGSHORE NORRIS 2-2-54-19	0350793	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/12-06-055-18W4/03	08-01-055-19W4	ABZ	GAS	LONGSHORE ASTOTIN 12-6-55-18	0318498	0.00	0.000000	na	na	na	na
DELTAWEST ENERGY LTD.	100/15-09-055-18W4/05	15-09-055-18W4	ABZ	GAS	LONGSHORE ASTOTIN 15-9-55-18	0288272	0.00	0.000000	na	na	na	na

Notes:

***Well Substance Codes**: Acid GAS, GAS, Fuel GAS, OIL, WATER, CO2 - Carbon Dioxide, CBM - Coalbed Methane*

***Status Codes**: ABD - Abandoned, ABZ - Abandoned Zone, CMG - Comingled, DISP - Disposal, DR&C - Drilled & Cased, FLW - Flowing, INJ - Injection, OBS - Observation, POT - Potential, PMP - Pumping, STD - Standing, SUS - Suspended, TEST - Testing*

Pipelines

LICENSEE	LICENSE	LINE	SUBSTANCE CATEGORY (D56)	STATUS CODE (D56)	FROM	FROM FACILITY	UP STREAM VALVE TYPE (CV/ESD/OPEN FLOW (--))	TO	TO FACILITY	DOWN STREAM VALVE TYPE (CV/ESD/OPEN FLOW (--))	LICENSED MOP (KPA)	MAX EXPECTED MOP (KPA)	OD (mm)	WT (mm)	LICENSED H_2S CONTENT (%)	MAX EXPECTED H_2S CONTENT (%)	LENGTH (KM)	EPZ (KM)	IIZ (KM)	PAZ (KM)	LAND USE SETBACK AND OLD EPZ H_2S RELEASE RATE (m^3) OR VOLUME AT LICENSED CONDITIONS	SET BACK LEVEL	H2S Volume Released for new EPZ Calculation (m^3) *(reportable spill volume)
SWEET ASSETS																							
DELTAWEST ENERGY LTD.	057192	002	NG	O	10-22-054-18W4	S	--	13-27-054-18W4	B	--	1380	na	114.3	4.0	0.00	na	2.49	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	005	NG	O	12-27-054-18W4	S	--	13-27-054-18W4	B	--	1380	na	60.3	5.5	0.00	na	0.06	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	007	NG	O	10-22-054-18W4	WE	--	10-22-054-18W4	S	--	1380	na	60.3	3.2	0.00	na	0.36	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	013	NG	O	08-28-054-18W4	WE	--	05-27-054-18W4	S	--	1380	na	60.3	3.2	0.00	na	0.37	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	014	NG	O	11-26-054-18W4	S	--	13-27-054-18W4	B	--	1380	na	88.9	4.0	0.00	na	2.17	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	015	NG	O	12-22-054-18W4	WE	--	05-27-054-18W4	S	--	4960	na	88.9	3.2	0.00	na	1.55	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	001	OE	O	10-22-054-18W4	S	--	13-27-054-18W4	B	--	4960	na	168.3	4.8	0.00	na	2.40	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	002	OE	O	12-27-054-18W4	S	--	13-27-054-18W4	B	--	4960	na	168.3	4.8	0.00	na	0.07	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	005	OE	O	10-22-054-18W4	WE	--	10-22-054-18W4	S	--	4960	na	114.3	4.6	0.00	na	0.36	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	006	OE	O	05-27-054-18W4	S	--	13-27-054-18W4	B	--	4960	na	169.4	6.1	0.00	na	0.75	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	007	OE	O	08-28-054-18W4	WE	--	05-27-054-18W4	S	--	4960	na	114.3	4.6	0.00	na	0.42	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	008	OE	O	11-26-054-18W4	S	--	13-27-054-18W4	B	--	4960	na	169.4	6.1	0.00	na	2.17	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	009	OE	O	12-22-054-18W4	WE	--	05-27-054-18W4	S	--	4960	na	108.2	4.3	0.00	na	1.55	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	010	OE	O	12-22-054-18W4	WE	--	14-22-054-18W4	PL	--	4960	na	161.0	6.4	0.00	na	0.50	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	012	OE	O	15-21-054-18W4	WE	--	05-27-054-18W4	S	--	4960	na	105.8	3.2	0.00	na	1.39	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	037865	001	SW	O	13-27-054-18W4	B	--	10-22-054-18W4	PL	--	8270	na	114.3	4.0	0.00	na	2.40	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	037865	002	SW	O	13-27-054-18W4	B	--	14-28-054-18W4	WE	--	8270	na	112.5	6.7	0.00	na	1.22	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	037865	003	SW	O	10-22-054-18W4	PL	--	09-22-054-18W4	WE	--	8270	na	114.3	4.0	0.00	na	0.55	na	na	na	na	na	na
DISCONTINUED ASSETS																							
DELTAWEST ENERGY LTD.	036901	003	OE	D	04-34-054-18W4	BE	--	12-27-054-18W4	BE	--	0	na	169.4	6.1	0.00	na	0.35	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	004	OE	D	04-34-054-18W4	BE	--	12-27-054-18W4	BE	--	0	na	114.3	4.6	0.00	na	0.50	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	036901	011	OE	D	01-33-054-18W4	BE	--	04-34-054-18W4	BE	--	0	na	114.3	4.6	0.00	na	0.36	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	038356	001	FG	D	13-27-054-18W4	BE	--	12-27-054-18W4	BE	--	0	na	60.3	3.9	0.00	na	0.06	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	045635	001	NG	D	08-01-055-19W4	BE	--	07-05-055-18W4	BE	--	0	na	114.3	3.2	0.00	na	2.75	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	011	NG	D	11-26-054-18W4	BE	--	10-26-054-18W4	BE	--	0	na	88.9	3.2	0.00	na	0.14	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	012	NG	D	07-32-054-19W4	BE	--	06-04-055-19W4	BE	--	0	na	88.9	3.2	0.00	na	1.76	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	001	NG	D	14-28-054-18W4	BE	--	03-32-054-18W4	BE	--	0	na	114.3	12.7	0.00	na	1.62	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	003	NG	D	12-34-054-18W4	BE	--	13-27-054-18W4	BE	--	0	na	88.9	3.2	0.00	na	1.30	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	004	NG	D	04-34-054-18W4	BE	--	13-27-054-18W4	BE	--	0	na	114.3	12.7	0.00	na	0.40	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	008	NG	D	04-28-054-18W4	PL	--	07-29-054-18W4	BE	--	0	na	114.3	3.2	0.00	na	1.06	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	010	NG	D	14-28-054-18W4	PL	--	04-28-054-18W4	PL	--	0	na	114.3	3.2	0.00	na	1.10	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	020	NG	D	10-26-054-18W4	BE	--	11-26-054-18W4	BE	--	0	na	88.9	3.2	0.00	na	0.47	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	022	NG	D	10-26-054-18W4	BE	--	10-24-054-18W4	BE	--	0	na	114.3	3.2	0.00	na	2.92	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	023	NG	D	01-33-054-18W4	BE	--	04-34-054-18W4	BE	--	0	na	60.3	3.2	0.00	na	0.36	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	025	NG	D	09-32-054-18W4	BE	--	14-28-054-18W4	BE	--	0	na	114.3	3.2	0.00	na	1.54	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	028	NG	D	14-28-054-18W4	PL	--	13-27-054-18W4	BE	--	0	na	168.3	4.0	0.00	na	0.94	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	029	NG	D	04-28-054-18W4	PL	--	14-28-054-18W4	PL	--	0	na	168.3	4.0	0.00	na	1.10	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	032	NG	D	07-29-054-18W4	BE	--	04-28-054-18W4	PL	--	0	na	168.3	4.0	0.00	na	1.06	na	na	na	na	na	na
DELTAWEST ENERGY LTD.	057192	038	NG	D	13-27-054-18W4	BE	--	14-28-054-18W4	PL	--	0	na	114.3	4.0	0.00	na	1.36	na	na	na	na	na	na

Notes:

Substance Category Codes - table 6.6 D-56: *CO - Crude Oil, FG - Fuel Gas, FW - Fresh Water, HVP - HVP Products, LV - LVP Products, MG - Miscellaneous Gases, ML - Miscellaneous Liquids, NG - Natural Gas, OE - Oil Effluent, SG Sour Natural Gas, SW - Salt Water*

Status Codes - table 6.15 D-56: *A - Abandoned, N - Not Constructed, D - Discontinued, O - Operating, P - To be constructed, R - Removed*

Facility Codes - table 6.14 D56: *B - Battery, BE - Blind End, CP - Chemical Plant, CS - Compressor Station, GP - Gas Plant, IP - Injection / Disposal Facility, MR - Meter / Regulation Station, MS - Meter Station, PP - Petrochemical Plant, PL - Pipeline, PS - Pump Station, R - Riser, RF - Refinery, RS - Regulator Station, S - Satellite, ST - Storage Tank, TF - Tank Farm, WE - Well, H - Header*

Valve Codes: *CV - Check Valve, ESD - Emergency Shutdown Valve, -- - No valve*

Facilities

LICENSEE	LICENSE OR FACILITY CODE	FACILITY TYPE	LOCATION	STATUS	NAME	EPZ (KM)	IIZ (KM)	PAZ (KM)	EPZ Based on Pipeline	Pipeline Licensed H2S % content
OPERATING ASSETS										
DELTAWEST ENERGY LTD.	F26313	INJECTION PLANT	10-22-054-18W4	ACTIVE	LONGSHORE 10-22-054-18W4	na	na	na	57192-002	0.00
DELTAWEST ENERGY LTD.	F49734	SATELLITE	11-26-054-18W4	ACTIVE	LONGSHORE 11-26-054-18W4	na	na	na	57192-011	0.00
DELTAWEST ENERGY LTD.	F27524	SATELLITE	05-27-054-18W4	ACTIVE	LONGSHORE 05-27-054-18W4	na	na	na	36901-006	0.00
DELTAWEST ENERGY LTD.	F26642	SATELLITE	12-27-054-18W4	ACTIVE	LONGSHORE 12-27-054-18W4	na	na	na	57192-005	0.00
DELTAWEST ENERGY LTD.	F26314	BATTERY	13-27-054-18W4	ACTIVE	LONGSHORE 13-27-054-18W4	na	na	na	37865-001	0.00
DISCONTINUED / SUSPENDED ASSETS										
DELTAWEST ENERGY LTD.	F34515	BATTERY	06-05-054-18W4	SUSPENDED	LONGSHORE 06-05-054-18W4	na	na	na	na	na
DELTAWEST ENERGY LTD.	F30456	GAS GATHERING SYSTEM	10-24-054-18W4	SUSPENDED	SCEL 10-24-054-18W4	na	na	na	na	na
DELTAWEST ENERGY LTD.	F30455	BATTERY	14-04-055-18W4	SUSPENDED	LONGSHORE 14-04-055-18W4	na	na	na	na	na

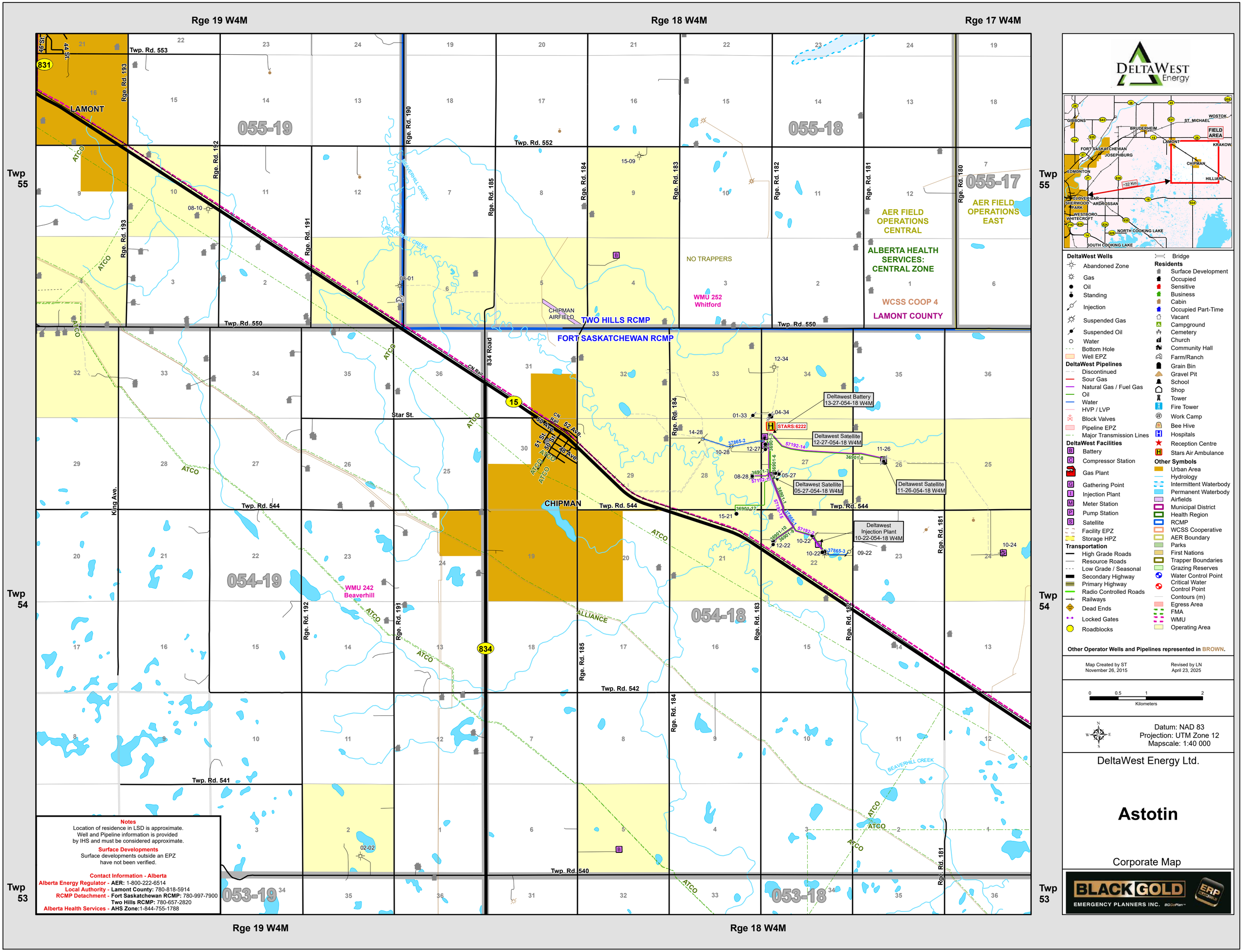
Notes:

The EPZ for a facility that handles or processes sour fluids is the largest EPZ of any pipeline entering or leaving the facility measured outward in all directions from the facility lease boundary.
If the facility has a sour gas well, sour water disposal well, or acid gas disposal well on site, the EPZ for the well may determine the size of the EPZ for the facility.

10.4.7 Maps

ERP Map

Area map on following page:



Rge 19 W4M
Rge 18 W4M
Rge 17 W4M
Twp 55
Twp 54
Twp 53
LAMONT
CHIPMAN
055-19
055-18
055-17
054-19
054-18
053-19
053-18
AER FIELD OPERATIONS CENTRAL
AER FIELD OPERATIONS EAST
ALBERTA HEALTH SERVICES: CENTRAL ZONE
WCSS COOP 4
LAMONT COUNTY
NO TRAPPERS
WMU 252 Whitford
WMU 242 Beaverhill
TWO HILLS RCMP
FORT SASKATCHEWAN RCMP
CHIPMAN AIRFIELD
Deltawest Battery 13-27-054-18 W4M
Deltawest Satellite 12-27-054-18 W4M
Deltawest Satellite 05-27-054-18 W4M
Deltawest Satellite 11-26-054-18 W4M
Deltawest Injection Plant 10-22-054-18 W4M
STARS:6222
Twp. Rd. 553
Twp. Rd. 552
Twp. Rd. 550
Twp. Rd. 544
Twp. Rd. 542
Twp. Rd. 541
Twp. Rd. 540
Star St.
King Ave.
Rge. Rd. 193
Rge. Rd. 192
Rge. Rd. 191
Rge. Rd. 190
Rge. Rd. 185
Rge. Rd. 184
Rge. Rd. 183
Rge. Rd. 182
Rge. Rd. 181
Rge. Rd. 180
834 Road
BEAVERHILL CREEK
ATCO
ALLIANCE
Notes
Location of residence in LSD is approximate.
Well and Pipeline information is provided by IHS and must be considered approximate.
Surface Developments
Surface developments outside an EPZ have not been verified.
Contact Information - Alberta
Alberta Energy Regulator - AER: 1-800-222-6514
Local Authority - Lamont County: 780-818-5914
RCMP Detachment - Fort Saskatchewan RCMP: 780-997-7900
Two Hills RCMP: 780-657-2820
Alberta Health Services - AHS Zone:1-844-755-1788
DeltaWest Energy
DeltaWest Wells
Abandoned Zone
Gas
Oil
Standing
Injection
Suspended Gas
Suspended Oil
Water
Bottom Hole
Well EPZ
DeltaWest Pipelines
Discontinued
Sour Gas
Natural Gas / Fuel Gas
Oil
Water
HVP / LVP
Block Valves
Pipeline EPZ
Major Transmission Lines
DeltaWest Facilities
Battery
Compressor Station
Gas Plant
Gathering Point
Injection Plant
Meter Station
Pump Station
Satellite
Facility EPZ
Storage HPZ
Transportation
High Grade Roads
Resource Roads
Low Grade / Seasonal
Secondary Highway
Primary Highway
Radio Controlled Roads
Railways
Dead Ends
Locked Gates
Roadblocks
Bridge
Residents
Surface Development
Occupied
Sensitive
Business
Cabin
Occupied Part-Time
Vacant
Campground
Cemetery
Church
Community Hall
Farm/Ranch
Grain Bin
Gravel Pit
School
Shop
Tower
Fire Tower
Work Camp
Bee Hive
Hospitals
Reception Centre
Stars Air Ambulance
Other Symbols
Urban Area
Hydrology
Intermittent Waterbody
Permanent Waterbody
Airfields
Municipal District
Health Region
RCMP
WCSS Cooperative
AER Boundary
Parks
First Nations
Trapper Boundaries
Grazing Reserves
Water Control Point
Critical Water Control Point
Contours (m)
Egress Area
FMA
WMU
Operating Area
Other Operator Wells and Pipelines represented in BROWN.
Map Created by ST November 26, 2015
Revised by LN April 23, 2025
Kilometers
Datum: NAD 83
Projection: UTM Zone 12
Mapscale: 1:40 000
DeltaWest Energy Ltd.
Astotin
Corporate Map
BLACK GOLD EMERGENCY PLANNERS INC.

11.0 FORMS

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11.1 Jurisdictional Forms

11.1.1 Alberta Forms

Release Report

Initial verbal notification of the release to the AER is required prior to completing this release report

General Information			
AER FIS incident no.:	EDGE reference no.:		
Date AER notified:	Time: ☐ p.m. ☐ a.m.	AER contact:	
Type of report:	Projected date for final report:		
Incident date:	Time: ☐ p.m. ☐ a.m.	Incident location:	W
Licensee/Company name:			
Licence no.:	Public lands disposition no.:		
EPEA approval no.:	Scheme/Permit approval no.:	Other AER approval no.:	
Form completed by:	Phone number:		

Release Volume Details

If volumes change from what was initially reported, then verbal notification to the AER is required.

Released Substance*	**Volume released**	**Free Fluids recovered**	**Shipped to (waste receiver) ***	**Licence/ approval no.***	**Location**
	m^3	m^3			W
	m^3	m^3			W
	m^3	m^3			W
Gas	10^3 m^3				
Release rate:	Duration of release:				

*If the released substance is “Emulsion” the crude oil, produced water, and gas must all be reported

*Refer to ST107 for the list of AER approved oilfield waste management (WM) facilities

Waste Recovery Volume Details

Waste substance	**Volume recovered**	**Shipped to (waste receiver) ***	**Licence/ approval no.***	**Location**
Excavated soil/solids removed	m^3			W
	m^3			W
Contaminated surface water and/or snow removed	m^3			W
	m^3			W
Washwater and/or freshwater used	m^3			W
	m^3			W
Vegetation/crop bagged and/or removed	m^3			W
	m^3			W

*Refer to ST107 for the list of AER approved oilfield waste management (WM) facilities

Contaminated soils storage: ☐ Yes ☐ No ☐ On site ☐ Off site – If off site, enter location: W

On-site waste treatment: ☐ Yes ☐ No Waste Treatment Description:

Release Containment Details

☐ Within well/facility lease boundary – Contained to working surface of lease boundary: ☐ Yes ☐ No

☐ Outside well/facility lease boundary

Release contained by berm: ☐ Yes ☐ No Release contained by liner: ☐ Yes ☐ No Liner type (Directive 055):

Release onto land/soil: ☐ Yes ☐ No Surface soil type: Subsurface soil type:

Release Site Details

Land jurisdiction type: Environment affected: Area affected: m^2

☐ Within public lands disposition boundary ☐ Outside public lands disposition boundary – TFA number:

Distance to closest water body: m Distance to nearest town: km Name of nearest town:

Distance to closest water well: m Distance to nearest permanent dwelling: km

Release Impacts Details

Incident/release H_2S concentration: Unit of measurement: ☐ % ☐ ppm ☐ mol/kmol

Wildlife/livestock affected: Equipment loss:

Emergency response plan (ERP) activated: ☐ Yes ☐ No

☐ Public affected ☐ Public evacuation ☐ Number evacuated:

☐ Landowner notified* ☐ Leaseholder notified*

☐ WH&S notified* Number of injuries: Number of fatalities:

*Provide details in Additional Notifications box

Pipeline Details (fill in for AER licensed-pipeline incident)

Pipeline is not to be returned to service without permission from the AER. See www.aer.ca for definitions for incident type and cause.

Incident type: Incident cause:

Licence number: Line number: Installation cause (if applicable):

Start location: W End location: W ABSA registration number (if applicable):

Associated facility location: W Associated facility licence number:

☐ Test failure ☐ Retest segment ☐ Pipeline repair pretested ☐ Cathodic protection

Type of external coating: ☐ Corrosion mitigation/monitoring program:

Normal operating pressure: kPa Maximum operating pressure kPa

Date line shut in: Pipeline returned to service: ☐ No ☐ Yes Date:

Clean-up/Remediation Details

All releases must be remediated or managed in a matter satisfactory to the AER.

Clean-up status: Final clean-up/remediation completion date:

☐ In-situ remediation implemented

Remediation guidelines used (choose all applicable):

☐ Tier 1 ☐ Tier 2 ☐ SST ☐ SCARG ☐ CCME ☐ Exposure control

Method of subsurface delineation: Confirmatory samples taken: ☐ Number of samples:

Remediation certificate applied for: ☐ Yes ☐ No

Environmental contractor: Phone number:

Additional Incident Notification Details			
Name of agency/landowner	**Person notified / reference no.**	**Phone number**	**Date**

Incident Details

Submit photos of the incident and clean-up/remediation to the AER. Fill in all text boxes below:

Detailed description of circumstances leading up to the release:

How release was identified:

Steps/procedures taken to minimize, control, or stop release:

Steps taken to contain release:

If release was on lease steps taken to ensure no migration off lease (including subsurface migration):

Description of how release volume(s) was determined and verified (include any calculations used):

How the affected area was determined (include any calculations used):

Description of environmental impact:

Clean-up operation details:

Remediation operation details

Release cause:

Description of root cause:

Steps/procedures taken to prevent similar future releases:

Additional comments:

the pressure equipment safety authority

AB-097
2016-08-11

ACCIDENT REPORTING FORM

Head Office
ABSA, the pressure equipment safety authority
9410 20th Avenue
Edmonton, AB T6N 0A4
Telephone: (780) 437-9100
Fax: (780) 437-7787

Grande Prairie District Office
ABSA, the pressure equipment safety authority
#203, 10109 97 Avenue
Grande Prairie, AB T8V 0N5
Telephone: (780) 538-9922
Fax: (780) 538-9400

Fort McMurray District Office
ABSA, the pressure equipment safety authority
30C Suncor Energy Industrial Campus
Keyano College
160 MacKenzie Boulevard
Ft McMurray, AB T9H 4B8
Telephone: (780) 714-3067
Fax: (780) 714-2380

Calgary District Office
ABSA, the pressure equipment safety authority
Deerfoot Atria South
Suite 380, 6715 - 8 Street NE Calgary, AB T2E 7H7
Telephone: (403) 291-7070
Fax: (403) 291-4545

Lethbridge District Office
ABSA, the pressure equipment safety authority
Unit 19, 1274 – 3 Ave South
Lethbridge, AB T1J 0J9
Telephone: (403) 394-1011
Fax: (403) 329-0089

Medicine Hat District Office
ABSA, the pressure equipment safety authority
#103, 346-3rd Street S.E.
Medicine Hat, AB T1A 0G7
Telephone: (403) 529-3514
Fax: (403) 529-3632

Red Deer District Office
ABSA, the pressure equipment safety authority
#304, 4406 Gaetz Avenue
Red Deer, AB T4N 3Z6
Telephone: (403) 341-6677
Fax: (403) 341-3377

Accidents do occur. And when they do, the result is injury, loss of life or damage to property. Keeping accidents to a minimum, especially where boilers, pressure vessels and pressure piping systems are concerned should be everyone's safety objective. But when a boiler, pressure vessel or pressure piping system accident does occur, the owner or the person in charge must report the accident to ABSA, the pressure equipment safety authority.

The first step is to telephone the nearest ABSA office listed on this page. Until an ABSA Safety Codes Officer completes an investigation of the accident scene, or the ABSA Safety Codes Officer advises otherwise, nothing should be touched or removed from the accident site or the surrounding area, unless it is absolutely necessary to prevent further injury, loss of life or property damage.

The ABSA Safety Codes Officer will investigate an accident scene and file a report. However, Section 35 of the Pressure Equipment Safety Regulation under the Safety Codes Act requires that, as soon as possible, the owner or person in charge must also send a full report in writing to the Administrator. This report is required whenever injury, death or property damage results from an accident involving boilers, pressure vessels, power plants, heating plants, pressure plants or pressure piping systems.

For your convenience, a format for completing this written accident report is provided on the following pages. Your report may be in a different format however, the report must include the required information.

To report an accident, or to obtain further information about ABSA, the pressure equipment safety authority, please contact one of the offices listed.

ACCIDENT REPORT

To be completed by the owner or person in charge whenever injury, loss of life or property damage results from an accident involving a boiler, pressure vessel or pressure piping system. (Please Print).

Contact Information

Name of owner/person in charge: _____

Title: _____

Mailing address: _____

Telephone number: _____

Email address: _____

Chief Inspector/Management Representative (if applicable)

Name: _____

Mailing address: _____

Telephone Number: _____

Email address: _____

Site Contact: _____

Name: _____

Phone Number _____

Synopsis of Accident

Name and address of plant: _____

Type of Plant: _____

Specific location of accident: _____

Date of accident: _____

Time: _____

Name of Victims
(if possible, please describe injuries or cause of death.)

Damage to Property
(list all pressure equipment involved including title description of items, “A” Number, model number, CRN, service, description, severity of damage, etc.)

Description of Accident
Brief plant description, chronological sequence of events; clear understanding of what happened; root cause; preventative measures taken.
(Sequence of event before, during and after the event).

Supporting Material
Please list all appropriate drawings, sketches, photographs signed statements, Engineer Reports, Root Cause Analysis, etc., that you have included with this report.

Notification
The following relevant authorities have been notified

Probable Cause of Accident
List major contributing causes in order of their importance.

Actions and Preventative Measure Taken by Owner
Steps to prevent occurrences of similar accidents.

Accident Notification Details

Reported to ABSA by: _____

Name of ABSA Contact: _____

Date and Time of Notification: _____

When completed, this form should be sent to:
Administrator (Chief Inspector)
ABSA, the pressure equipment safety authority
9410 20th Avenue
Edmonton, AB T6N 0A4

Alberta Government

ELECTRICAL INCIDENT REPORT FORM

LOCAL FILE NUMBER _____
DATE

DETAILS OF ACCIDENT

Human Fatality ☐ Yes ☐ No		Human Injury ☐ Yes ☐ No		Animal Fatality ☐ Yes ☐ No					
Date of Accident		Time of Day							
Exact Location of Accident									
		LSD	Section	Township	Range	West of			
Name of Person Injured or Involved		Occupation		Age	Phone No.				
Address					Postal Code				
Description of Injury (if any)									
Employer					Phone No.				
Address					Postal Code				
Description of Accident (state facts only)									

ELECTRICAL EQUIPMENT INVOLVED

Description of Electrical Equipment Involved in Accident (including power lines) -	
	Voltage (to gnd. or ∅-∅)
Owner of Equipment	Operator of Equipment (if different from owner)

OTHER EQUIPMENT INVOLVED

Description of Other Equipment Involved in Accident -	
License No. of Equipment (if applicable)	Make and/or Type of Equipment (if applicable)
Owner of Equipment	Phone No.
Address	Postal Code
Operator of Equipment	Phone No.
Address	Postal Code

Reported By	Firm Name	Location	Phone No.

SUBMIT COPIES TO:

Technical Administrator for the Electrical Discipline
16th Floor, 10155 – 102 Street, Edmonton, Alberta T5J 4L4
Email: safety.services@gov.ab.ca Fax: 780-427-8686 Phone: 1-866-421-6929

TO REPORT AN ALBERTA WILDFIRE CALL:
310-FIRE (3473)

NOTE: For facility / operation site **within** an urban / community boundary, **call 911**.
For facility / operation / site **outside** an urban / community boundary, **call 310-FIRE (3473)**.

Date (YY/MM/DD):			**Caller's Name:**	
Recorder's Name:			**Caller's Contact Number:**	
Recorder's Contact Number:			**Caller's Location:**	
Time Call Received: (HH:MM – 24 Hr Local Clock)			**Time Fire First Observed: (HH:MM – 24 Hr Local Clock)**	
CALLER	Company:			
	Address:			
	In area because:	☐ Local Resident:	☐ Recreation	☐ Working
	☐ Other (Describe): _____			
LOCATION OF FIRE	LSD: Section: Township: Range: W__M			
	Other Description (GPS):			
ON SITE INFORMATION	☐ Fire is burning in the:		☐ Rate of spread is:	
	☐ Ground:		☐ Not Moving:	
	☐ Bush (probe-timber type?):		☐ Moderate (less than normal walk):	
	☐ Agricultural Land (stubble, windrows, etc):		☐ Fast (more than normal walk):	
	☐ Other:			
	☐ Any people at the fire?	☐ Yes	☐ No	☐ Don't Know
	☐ Is property threatened?	☐ Yes	☐ No	☐ Don't Know
	☐ Is road access available?	☐ Yes	☐ No	☐ Don't Know
	☐ Is water readily available?	☐ Yes	☐ No	☐ Don't Know
	Other observations: (Lightning, recreation, vehicles, children in area)			
SMOKE INFORMATION	Unable to see fire, only smoke is visible			
	Colour:		**Column:**	
	☐ Light Grey:		☐ Intermittent:	
	☐ Medium Grey:		☐ Scattered:	
	☐ Dark Grey:		☐ Light:	
	☐ Black:		☐ Heavy:	

FPD Contacts:
_____Fire Centre (___) ___-____(DUTY ROOM)

FPD Industry Liaison: _____

Contact Number: (___) ___-____

SIGNATURE:	**NAME:**

11.2 ICS Forms

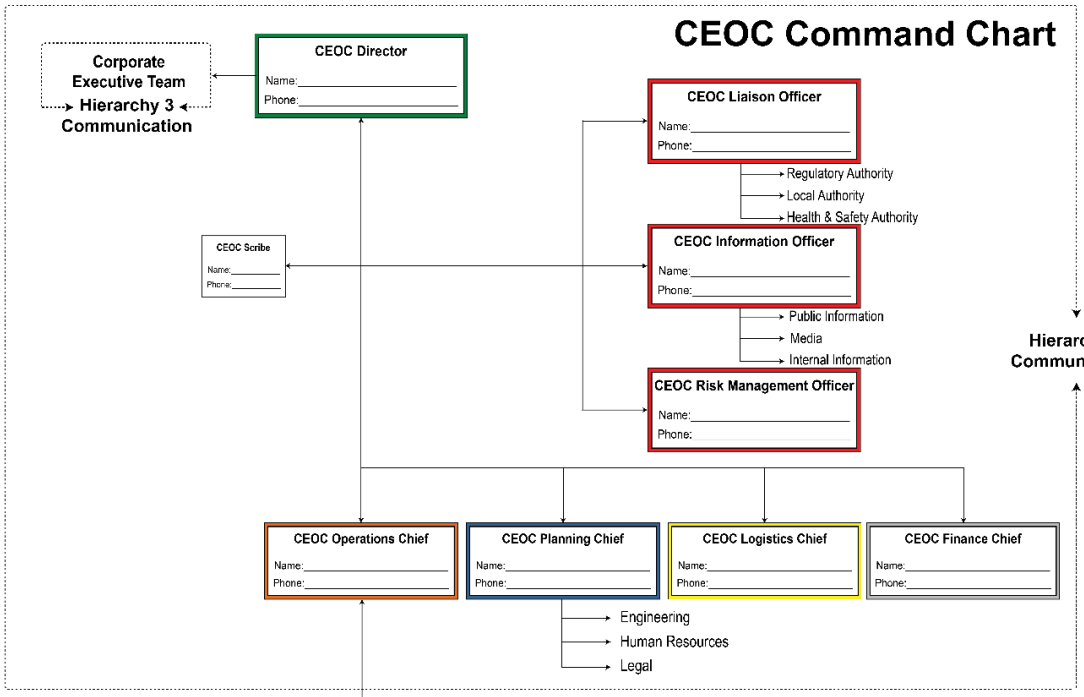
ICS 201 - Incident Briefing

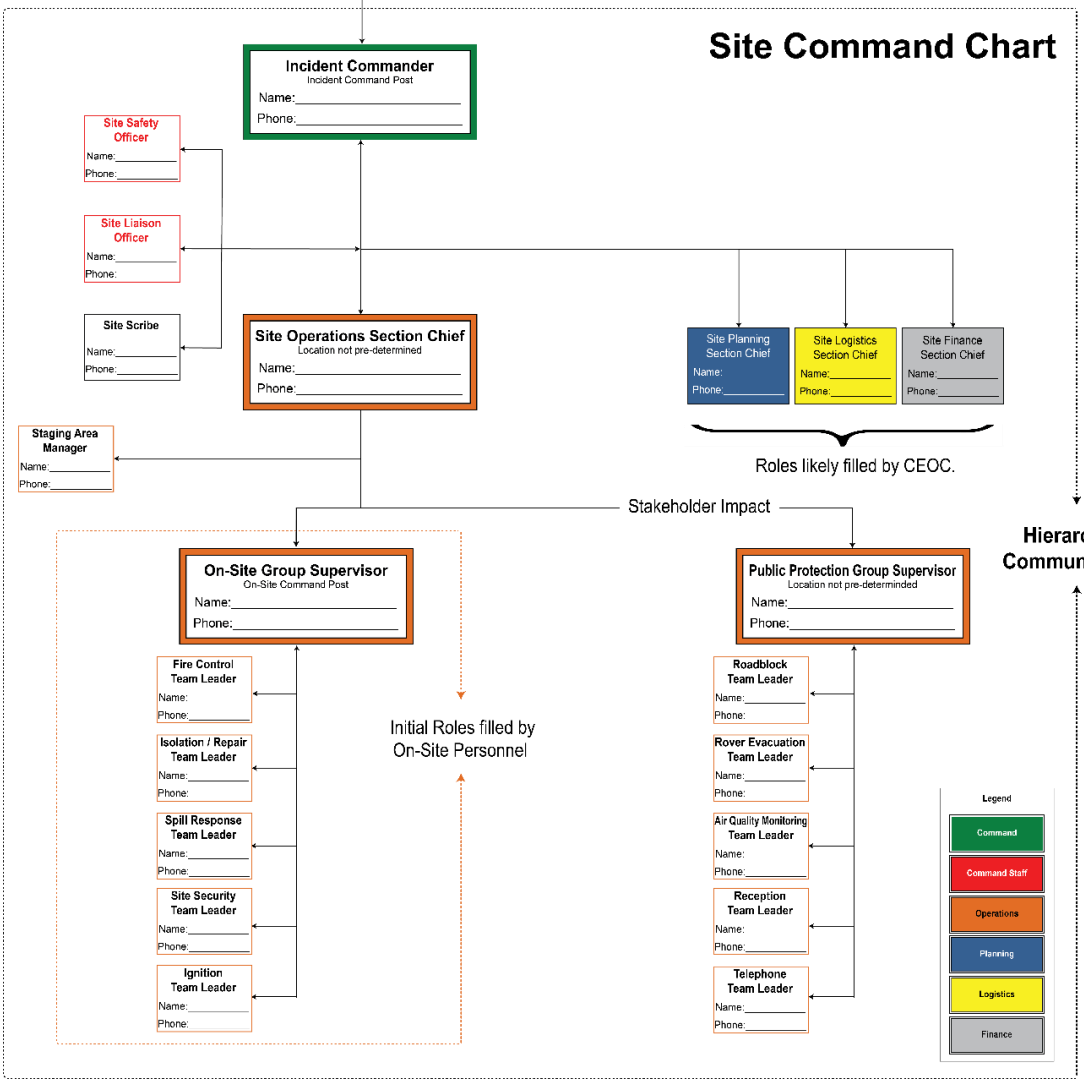
DETAILS	**Incident:**	
	Date:	
	Time (0-2400 hrs):	**Time Zone:**
	Prepared by (Name and Position):	**Signature:**
MAP SKETCH		
SITUATION SUMMARY AND SAFETY BRIEFING		

CURRENT AND PLANNED OBJECTIVES	

CURRENT AND PLANNED ACTIONS, STRATEGIES AND TACTICS		
	Time:	**Actions:**

CURRENT ORGANIZATION





RESOURCES SUMMARY

RESOURCES ORDERED	RESOURCE NAME	ETA	ON SCENE (Yes/No)	LOCATION/ ASSIGNMENT

ICS 202 - Incident Objectives

DETAILS	**Incident:**	
	Date:	
	Time (0-2400 hrs):	**Time Zone:**
	Operational Period (Date/Time) Date From: _____ Date To: _____ Time From: _____ Time To: _____	
	Prepared by (Site Planning Section Chief or CEOC Planning Chief):	**Signature:**
	Approved by (Incident Commander):	**Signature:**
GENERAL CONTROL OBJECTIVES FOR THE INCIDENT	(Include alternatives)	
WEATHER FORECAST		
GENERAL SAFETY MESSAGE		
ATTACHMENTS	☐ ICS 203 - Organization List ☐ ICS 204 - Assignment List	☐ Medical Plan (ICS 206) ☐ ERP Map

☐ _____
☐ _____
☐ _____

ICS 203 - Organization Assignment List

DETAILS	**Incident:**				
	Date:				
	Time (0-2400 hrs):				**Time Zone:**
	Operational Period (Date/Time)	**Date From:** _____		**Date To:** _____	
		Time From: _____		**Time To:** _____	
	Prepared by (Site-Planning Section Chief or CEOC Section Chief):		**Signature:**		
INCIDENT COMMAND STAFF	Incident Commander		**OPERATIONS SECTION**	Site Operations Section Chief	
	Deputy IC			a. Staging Area Manager	
	Site Safety Officer			b. Public Protection Group Supervisor	
	Site Liaison Officer			Roadblock Team Leader	
	Unified Commander(s)			Rover Evacuation Team Leader	
				Air Monitoring Team Leader	
				Reception Team Leader	
				Telephone Team Leader	
AGENCY/ ORGANIZATION REPRESENTATIVES	Agency/Organization	Representative			
				c. On-Site Group Supervisor	
				Fire Control Team Leader	
				Isolation Repair Team Leader	
				Spill Response Team Leader	
				Site Security Team Leader	
				Ignition Team Leader	
SITE / CEOC PLANNING SECTION	Site Planning Section Chief				
	CEOC Planning Section Chief			d. Additional Support	
	Engineering				
	Human Resources				
	Legal				
				e. Additional Services	
SITE / CEOC LOGISTICS SECTION	Site Logistics Section Chief		**CEOC / SITE FINANCE /ADMIN SECTION**	Site Finance Section Chief	
	CEOC Logistics Chief			CEOC Finance Chief	
	a. Additional Support				
	b. Additional Services				

ICS 204 - Assignment List

DETAILS

Incident:

Operational Period (Date/Time)

Date From: _____ **Date To:** _____

Time From: _____ **Time To:** _____

Prepared by (Site Operations Section Chief):	**Signature:**	**Date/Time**
Approved by (Planning Section Chief):	**Signature:**	**Date/Time**

OPERATING PERSONNEL

Site Operations Section Chief: _____ Staging Area Manager: _____

Public Protection Group Supervisor: _____ On-Site Group Supervisor: _____

RESOURCES ASSIGNED TO THIS PERIOD

Resource Identifier	Leader	No. of Persons	Contact Cell #, radio freq. etc.	Reporting Location, Special Equipment and Supplies, Remarks

WORK ASSIGNMENTS

SPECIAL INSTRUCTION

COMMUNICATION

Function:	Frequencies:	System:	Chan:	Function:	Frequencies:	System:	Chan:
Command				Logistics			
Tactical (Field Operations)				Air to Ground			

ICS 206 - Medical Plan

DETAILS

Incident:		
Date:		
Time (0-2400 hrs):		**Time Zone:**
Operational Period (Date/Time)	**Date From:** _____ **Time From:** _____	**Date To:** _____ **Time To:** _____
Prepared by (Site Safety Officer):	**Signature:**	**Date/Time**
Approved by (Incident Commander):	**Signature:**	**Date/Time**

INCIDENT MEDICAL AID STATION

Medical Aid Stations	Location	Contact (number or frequency)	Paramedics	
			Yes	No
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐

TRANSPORTATION

Ambulance Service	Location	Contact (number or frequency)	Level of Serv.	
			ALS	BLS
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐

HOSPITALS

Hospital Name	Address (lat/long if helipad)	Travel Time		Contact (number or frequency)	Helipad		Burn Centre	
		Air	Ground		Yes	No	Yes	No
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

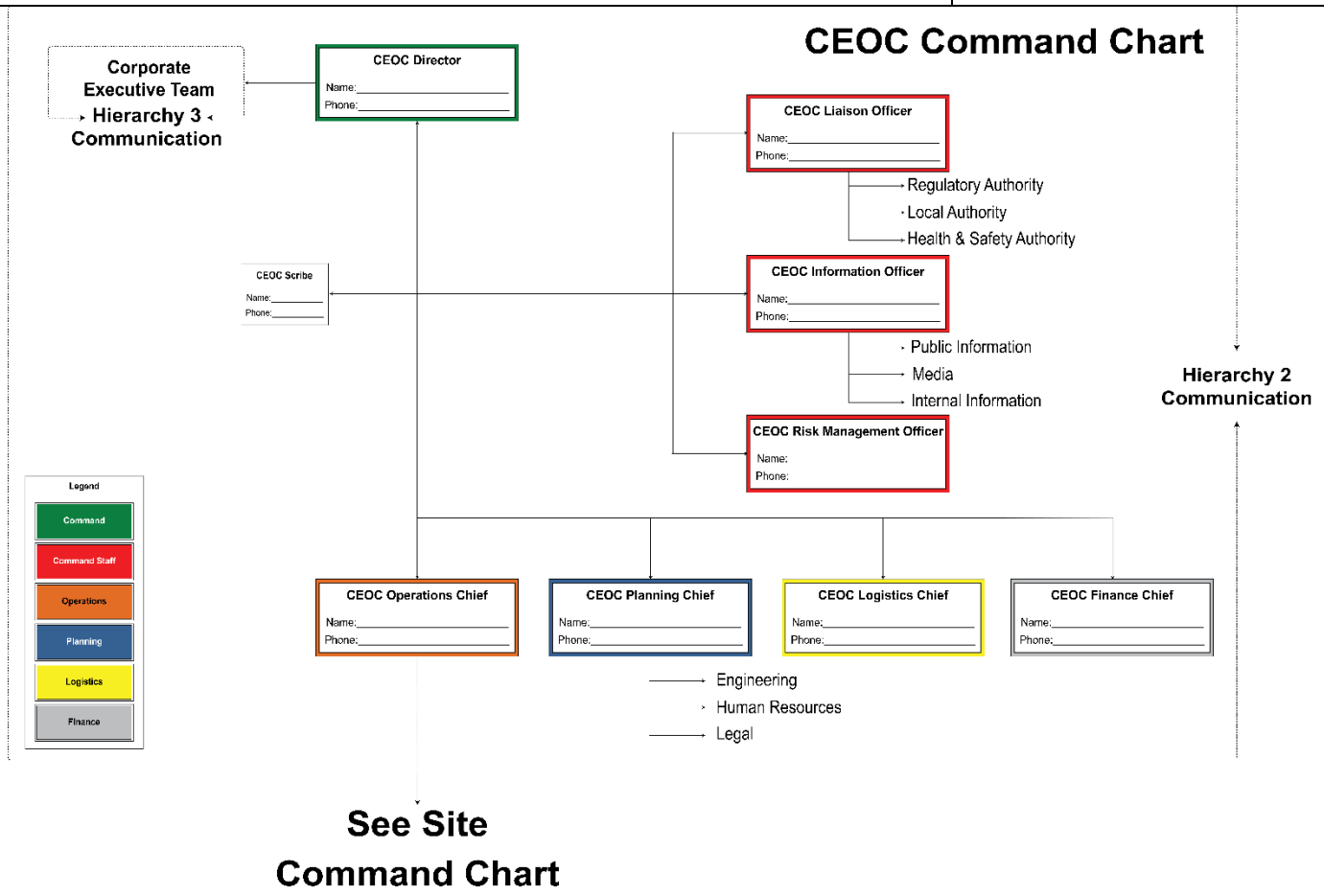
SPECIAL MEDICAL EMERGENCY PROCEDURES

ICS 207 - Incident Organization Chart

DETAILS

Incident:		
Date:		
Time (0-2400 hrs):		Time Zone:
Operational Period (Date/Time)	Date From: _____ Time From: _____	Date To: _____ Time To: _____
Prepared by (Name & Position):		Signature

ORGANIZATION CHART

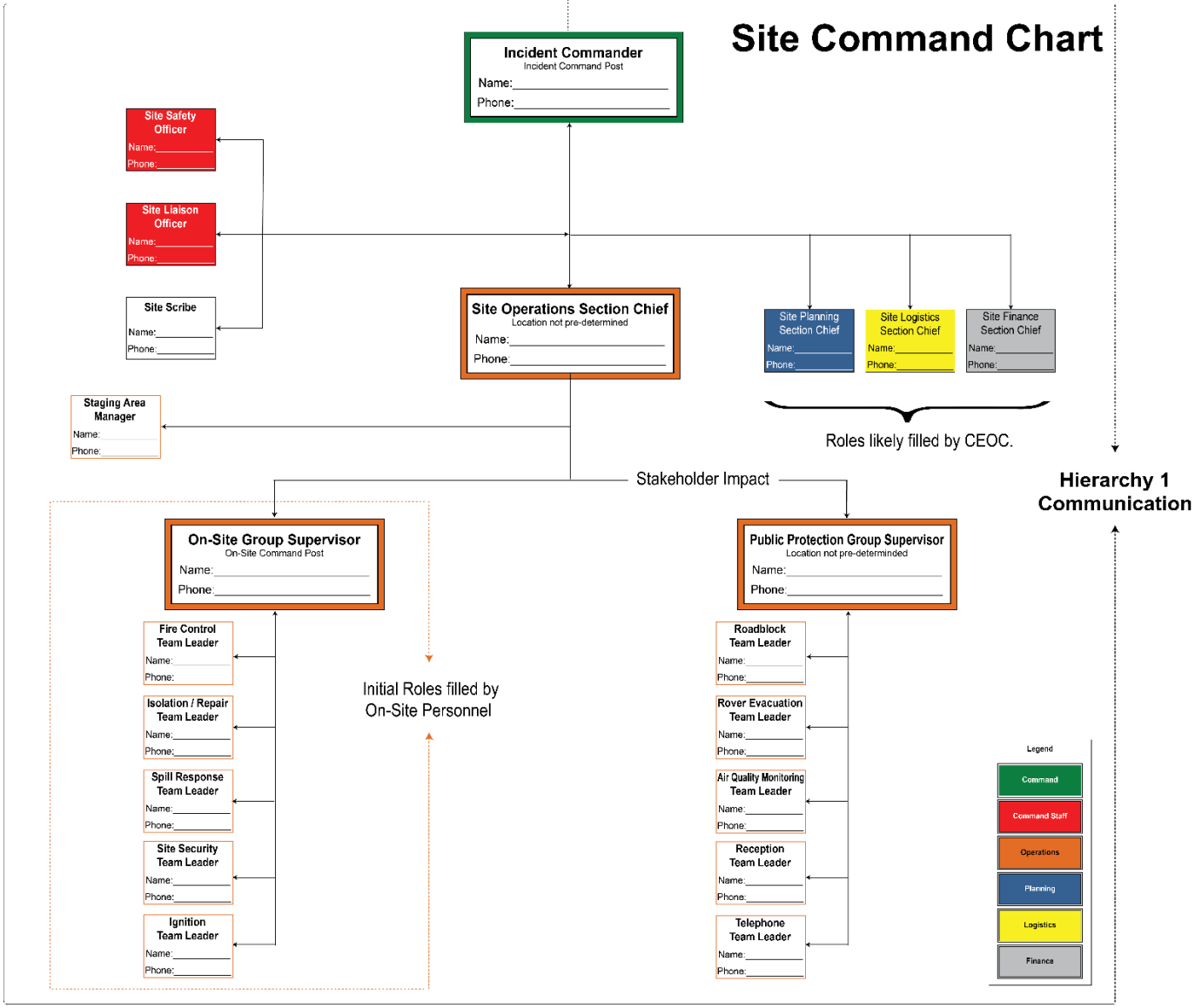


Page:

ORGANIZATION CHART

See CEOC Command Chart

Site Command Chart



Page:

ICS 208 - Safety Message / Plan

DETAILS

Incident:

Date:

Time (0-2400 hrs): | **Time Zone:**

Operational Period (Date/Time)

Date From: _____ **Date To:** _____

Time From: _____ **Time To:** _____

Prepared by (Site Safety Officer): | **Signature:**

SAFETY MESSAGE/EXPANDED SAFETY MESSAGE, SAFETY PLAN, SITE SAFETY PLAN

SAFETY PLAN

Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) located at: _____

ICS 209 - Incident Status Summary

DETAILS

*Incident Name:		Incident No:	
***Report Version** Check one box on left): ☐ Initial Rpt# ☐ Update (if used) ☐ Final _____	***Incident Commander(s) & Agency or Organization**	**Incident Management Organization**	***Incident Start Date/Time** Date: Time:
Current Incident Size or Area Involved (Use unit label – e.g. 'sq km', 'city block')	**% Contained** **Completed** / ***Incident Definition**	**Incident Complexity Level**	***For Time Period** From Date/Time: To Date/Time:

APPROVAL & ROUTING INFORMATION

***Prepared by:**	**ICS Position:**	**Signature:**	***Date/Time**
Approved by:	**ICS Position:**	**Signature:**	***Date/Time**
***Date/Time Submitted:**			
***Primary Location, Organization, or Agency Sent To:**			

INCIDENT LOCATION INFORMATION

***Province/Territory**		***County, Regional/Rural Municipality, Regional/Municipal District**	***City**
Unit or Other		***Incident Jurisdiction**	**Incident Location Ownership** (if different than jurisdiction)
Longitude	**Latitude**	**Datum**	**Legal Description** (twp, range, section)
***Short location or area description** (list all affected areas or a reference point)			***UTM Coordinates**
Note any electronic geospatial data included or attached (indicate data format, content, and collection time information and labels)			

INCIDENT SUMMARY

***Significant events for the time period reported** (summarize significant progress made, evacuations, incident growth, etc.)

Primary materials or hazards involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.)

Damage Assessment Information (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)

Structural Summary	# Threatened (72 hrs)	# Damaged	# Destroyed
Single Residences			
Non-residential Commercial Property			
Other Minor Structures			
Other			

*required when applicable

DETAILS

*Incident Name:	Incident No:

ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION

*Public Status Summary	# This Reporting Period	Total # To Date
Indicate number of Stakeholders (public) below		
Fatalities		
With Injuries/Illness		
Trapped/In Need of Rescue		
Missing (note if estimated)		
Evacuated (note if estimated)		
Sheltering in Place (note if estimated)		
In Reception Centres (note if estimated)		
Total # Stakeholders (Public) Affected		

*Responder Status Summary	# This Reporting Period	Total # To Date
Indicate number of responders below		
Fatalities		
With Injuries/Illness		
Trapped/In Need of Rescue		
Missing (note if estimated)		
Evacuated (note if estimated)		
Sheltering in Place (note if estimated)		
In Reception Centres (note if estimated)		
Total Responders Affected		

Life, Safety, and Health Status/Threat Remarks

Weather Concerns (synopsis of current and predicted weather, discuss related factors that may cause concern)

*Life, Safety, and Health Threat Mgmt	Check if active
No likely threat	☐
Potential Future Threat	☐
Mass notifications in progress	☐
Mass notifications completed	☐
No evacuation(s) imminent	☐
Planning for evacuation	☐
Planning for shelter-in-place	☐
Evacuation(s) in progress	☐
Shelter-in-Place in Progress	☐
Area restriction in effect	☐
	☐
	☐
	☐
	☐
	☐
	☐
	☐
	☐
	☐
	☐
	☐
	☐

Project Incident Activity, Potential, Movement, Escalation, or Spread and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes

12 hours

24-hours

48 hours

72 hours

Anticipated after 72 hours

Objectives (define planned end-state for incident)

*required when applicable

DETAILS	*Incident Name:	Incident No:

ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION (continued)

CURRENT INCIDENT THREAT SUMMARY AND RISK INFORMATION IN 12-, 24-, 48-, AND 72-HOUR TIMEFRAMES AND BEYOND
Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business.
Identify corresponding incident-related potential economic or cascading impacts.

12 hours

24-hours

48 hours

72 hours

Anticipated after 72 hours

Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives.
List resource category, kind, and/or type, and amount needed, in priority order:

12 hours

24-hours

48 hours

72 hours

Anticipated after 72 hours

Strategic discussion: explain in relation to overall strategy, constraints, and current available information to:
1) critical resource needs identified above,
2) the Incident Action Plan and management objectives,
3) anticipated results.
Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.

Planned Actions for Next Operational Period

Projected final incident size/area (Use Unit Label – e.g., "sq km")

Anticipated Incident Management Completion Date

Projected Significant Resource Demobilization Start Date

Estimated Incident Costs to Date

Projected Final Incident Cost Estimate

Remarks (or continuation of any blocks above – list block number in notation)

*required when applicable

DETAILS

*Incident Name:	Incident No:

INCIDENT RESOURCE COMMITMENT SUMMARY

Agency or Organization	RESOURCES (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box)	Additional Personnel (not assigned to a resource)	Total Personnel (includes those associated with resources - e.g. aircraft or engines - and individual overhead)
Total Resources			

Additional cooperating and assisting organizations not listed above

*required when applicable

ICS 211 - Check-In List

DETAILS

Incident Name:	Incident Number (if assigned):	Check-In Location	Start Date/Time
		☐ OSCP ☐ ICP ☐ Staging Area ☐ CEOC ☐ Helibase ☐ Other _____	Date: Time:

Prepared by (Name & Position): Signature

CHECK-IN INFORMATION (use reverse of form for remarks or comments)

List Personnel (overhead) by Agency & Name – OR List Resources by the Following Format							LDW	Order Request Number	Date/Time Check-In	Leader's Name	Total Number of Personnel	Contact Information	Home Unit/ Base	Departure Point	Method of Travel	Incident Assignment	Other Qualifications	Sent to Resource Unit
P/T	AGENCY	CAT.	KIND	TYPE	ST/TF	Resource Name or ID #												

Remarks or Comments

Page:

ICS 214 - Activity Log

DETAILS

Incident:		
Date:		
Time (0-2400 hrs):		**Time Zone:**
Operational Period (Date/Time)	**Date From:** _____ **Time From:** _____	**Date To:** _____ **Time To:** _____
Prepared by:	**ICS Position:**	**Signature:**

PERSONNEL ASSIGNED

Name	ICS Position	Command Centre (OSCP, ICP, CEOC)

ACTIVITY LOG

Time	Major Events

PAGE __ OF __

DETAILS

Incident:		
Date:		
Time (0-2400 hrs):		**Time Zone:**
Operational Period (Date/Time)	**Date From:** _____ **Time From:** _____	**Date To:** _____ **Time To:** _____
Prepared by:	**ICS Position:**	**Signature:**

ACTIVITY LOG

Time	Major Events

ICS 215 - Operational Planning Worksheet

DETAILS

Incident:			
Date:			
Time (0-2400 hrs):			Time Zone:
Operational Period (Date/Time)	Date From: _____ Time From: _____		Date To: _____ Time To: _____
Prepared by (Site Operations Section Chief)):			Signature

OPERATIONAL PLANNING

Branch	Division, Group, or Other	Work Assignment & 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															
			Req.															
			Have															
			Need															
Total Resources Required																		
Total Resources – Have on Hand																		
Total Resources Need to Order																		

ICS 215a - Incident Action Safety Plan Analysis

DETAILS	**Incident:**		
	Date:		
	Time (0-2400 hrs):		**Time Zone:**
	Operational Period (Date/Time)	**Date From:** _____ **Time From:** _____	**Date To:** _____ **Time To:** _____
	Prepared by (Site Safety Officer):	**Name:**	**Signature:**
	Prepared by (Site Operations Section Chief):	**Name:**	**Signature:**

INCIDENT ACTION SAFETY PLAN	**Incident Area**	**Hazards/Risks**	**Mitigations**

ICS 221 - Demobilization Checkout

DETAILS

Incident Name/Number:	**Date/Time:**	**Demob Number:**	
Prepared by (Site Planning Section Chief or CEOC Planning Chief):		Signature	
Approved by (Incident Commander):		Signature	
Unit/Personnel Released:			
Transportation Type/Number:			
Actual Release Date/Time:		Manifest Completed ☐ Yes ☐ No	

Destination:	Notify	ICP ☐	Agency ☐	Region ☐	Area ☐	Dispatch ☐
	Name					
	Date					

UNIT/PERSONNEL

You and your resources have been released subject to Sign-Off from the following:
Site Planning Section Chief or CEOC Planning Chief - Check the appropriate box

LOGISTICS SECTION	**COMMENTS**
☐ Site Logistics Section Chief	
☐ CEOC Logistics Section Chief	
☐ a. Additional Support	
☐	
☐ b. Additional Services	
☐	
PLANNING SECTION	
☐ Planning Section Chief	
☐ CEOC Planning Section Chief	
☐ Engineering	
☐ Human Resources	
☐ Legal	
OPERATIONS SECTION	
☐ Site Operations Section Chief	
☐ Staging Area Manager	
☐ Public Protection Group Supervisor	
☐ Roadblock Team Leader	
☐ Rover Evacuation Team Leader	

DETAILS			
	Incident Name/Number:	**Date/Time:**	**Demob Number:**
	Prepared by (Site Planning Section Chief or CEOC Planning Chief):		Signature
	Approved by (Incident Commander):		Signature

UNIT/PERSONNEL Continued		
	☐ Air Monitoring Team Leader	
	☐ Reception Team Leader	
	☐ Telephone Team Leader	
	☐ On-Site Group Supervisor	
	☐ Fire Control Team Leader	
	☐ Isolation Repair Team Leader	
	☐ Spill Response Team Leader	
	☐ Site Security Team Leader	
	☐ Ignition Team Leader	
	☐ a. Additional Support	
	☐	
	☐ b. Additional Services	
	☐	
	FINANCE / ADMIN SECTION	
	☐ Site Finance Section Chief	
	☐ CEOC Finance Chief	
	CORPORATE EMERGENCY OPERATIONS CENTRE (CEOC)	
	☐ CEOC Director	
	☐ CEOC Operations Chief	
	☐ CEOC Liaison Officer	
	☐ CEOC Risk Management Officer	
	REMARKS:	

ICS 230 – Daily Meeting Schedule

DETAILS

Incident:

Operational Period (Date/Time)

Date From: _____ **Date To:** _____

Time From: _____ **Time To:** _____

Prepared by (Planning Chief):	**Signature:**	**Date/Time**

MEETING SCHEDULE

Date/Time	Meeting Name	Purpose	Attendees	Location

ICS 234 – Work Analysis Matrix

DETAILS			
	Incident:		
	Operational Period (Date/Time)	**Date From:** _____ **Time From:** _____	**Date To:** _____ **Time To:** _____
	Prepared by (Operations Chief):	**Signature:**	**Date/Time**

Operation's Objectives DESIRED OUTCOME	**Strategies HOW**	**Tactics/Work Assignments WHO, WHAT, WHERE, WHEN**

11.3 ERP Forms

Environmental Monitoring Record

DETAILS

Incident:	
Date:	
Time (0-2400 hrs):	Time Zone:
Completed by:	Response Team Position:

ENVIRONMENTAL MONITORING RECORD

Time	Location of Sample:	LEL (%)	O_2 (%)	H_2S (ppm)	SO_2 (ppm)	Other	Temp. (C/F°)	Wind Conditions	
								From	Speed (km/h/mph)

Page:

Notification Record

DETAILS	**Incident:**			
	Date:			
	Time (0-2400 hrs):			Time Zone:
	Completed by:			
INCIDENT COMMANDER		**Who was notified?**	**Date/Time**	**Who did notification?**
	Supervisor:			
	Ambulance:			
	Police:			
	Fire Department:			
	Forestry Service:			
	Local Authority:			
	Prime Contractor:			
	Area Stakeholder:			
	Other:			
CEOC OPERATIONS CHIEF		**Who was notified?**	**Date/Time**	**Who did notification?**
	Executive Team:			
	President:			
	Disaster Services:			
	Regulatory Authority:			
	Workplace Health and Safety			
	Authority:			
	Health Authority:			
	Hospital/Health Care Facility:			
	Environmental Agency:			
	Other:			

Roadblock Checkpoint Record

DETAILS		
	Incident:	
	Date:	
	Time (0-2400 hrs):	Time Zone:
	Completed by:	Response Team Position:

ROADBLOCK CHECKPOINT RECORD

Vehicle Type	Licence Plate Number & Province/State	Name of Driver (if available)	Number of People in Vehicle	Time Entering EPZ	Time Exiting EPZ	Comments (Record all vehicles turned away)

Page:

Note: The licensee has the responsibility to protect the public but without the assistance of the police cannot legally prevent the public from entering the secured area. If someone insists on going through the roadblock, ask him or her for emergency contact numbers, this may encourage the driver to stop.

Spill/Release Written Report Form

DETAILS	**Incident:**						
	Date of Notification:						
	Time of Notification (0-2400 hrs):				Time Zone:		
	Completed by:			Phone Number:			
DISCOVERY	Name of person who discovered release:			Phone number:			
	Date of Release (Estimate if necessary):			Time of Release (Estimate if necessary):			
	Date Release Discovered:			Time Release Discovered:			
LOCATION	Nearest Town/Road Intersection:						
	Directions:						
	Facility Name (any signs indicating well name, rig number, etc.?):						
	LSD, if known:						
	Additional Location Information:						
WEATHER CONDITIONS	Temperature °C						
	Wind speed and direction:						
	Precipitation:						
SPILL/RELEASE	Name of product/substance:						
	Volume (m^3)/Quantity (bbl) Spilled/Released:			Volume/Quantity Recovered:			
	☐ Sweet gas	☐ LVP	☐ HVP	☐ Toxic substance	☐ Sour gas	☐ Produced water	☐ Oil	☐ Other
	Was there a fire? ☐ Yes ☐ No			Was there an explosion? ☐ Yes ☐ No			

RELEASE INFORMATION

	Yes	No	Details
Is the health or safety of any individuals (residences, communities, etc.) in imminent danger?	☐	☐	
Are any specially designated environmental areas (wetland, preserves, etc.) in imminent danger?	☐	☐	
Was any waterway affected?	☐	☐	If yes, provide name of waterway:
Was release contained? If no, describe dimensions of release (length, width depth). If yes, describe containment (within firewall, booms, etc.).	☐	☐	

Description of release and impacts, including wells and/or facilities involved, and the source of release (stuffing box rubber on well head burned up, internal corrosion on flow line, etc.):

RESPONSE ACTIONS

Resource	Contractor/Equipment	Estimated Cost
List contractors summoned to assist in containment:		$
		$
		$
List contractors summoned to assist in clean-up:		$
		$
		$
List special clean-up equipment used:		$
		$
		$

Describe remedial action taken and current status:

STARS Remote Site Landing Zone Reference Card

STARS®

Site Number _____

Location _____

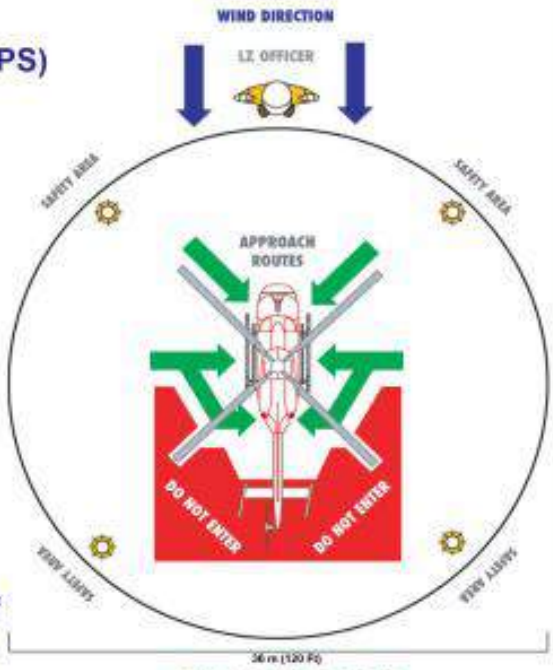
Remote Site Landing Zone Reference Card

In the event of a SITE EMERGENCY
PHONE the STARS Emergency Link Centre®

TOLL FREE	OR	DIRECT
1-888-888-4567		403-299-0932

BE PREPARED WITH THE FOLLOWING INFORMATION

1. STARS Site Number
2. Location of site (Legal Land Description or GPS)
3. Contact phone number at the site
4. Known hazards on-site
5. If applicable, is there a monitor on-site confirming the presence of H_2S



STARS LANDING ZONE

SAFETY GUIDELINES

- the landing zone should be on level ground, (less than 5% slope) at least 36 x 36 metres (120 x 120 ft) and more, if possible, to include a safety zone
- check for loose debris in landing zone THIS IS OF VITAL IMPORTANCE
- ensure no one approaches the helicopter STARS crew will approach you when safe to do so
- everyone should be at least 30 metres from landing zone during landing and takeoff, due to possibility of injury from loose debris caused by rotor downwash
- movement around aircraft is to be in safe areas only
- if necessary, provide road blocks approximately 500 metres on either side of the landing zone

PRE-LANDING CHECKLIST

The STARS Emergency Link Centre will require the following information from the site:

TERRAIN	LANDING ZONE MARKINGS	HAZARDS
level or sloping	4 turbo flares or strobe flares (no chemical flares)	signs
type of surface	4 highway cones (days only)	vehicles
dust, loose snow, rocks, bushes, stumps, etc.	Extra strobes, flares, or cones on upwind side	trees
		equipment
		wires

Status Board

DETAILS	**Incident:**	
	Date:	
	Time (0-2400 hrs):	Time Zone:
	Operational Period Start:	Operational Period End:
	Level of emergency:	
	Completed by:	

EMERGENCY PLANNING ZONE DATA	Size of the EPZ:	
	Number of residences:	
	Number of businesses:	
	Number of public facilities:	
	Number of school children:	
	Number of rivers and streams:	
	Number of industry operators:	
	Number of trappers:	
	Number of grazing lessees:	
	Number of roadblocks:	
	Mobile air monitoring:	
	Media:	
	Mutual Aid:	
	Weather:	
	Injuries/Fatality:	
	Other:	

NOTES	

Telephone Checklist for Threatening Calls

DETAILS

Date:

Time (0-2400 hrs):

Time Zone:

Completed by:

CALL DETAILS

When a threat is received:

- Have someone listen in on the call and have call traced, if possible.
- Listen.
- Be calm and courteous.
- Do not interrupt the caller.
- Obtain as much information as you can.

Questions to ask for bomb threats:

- When is the bomb going to explode?
- Where is it right now?
- Why did you place the bomb?
- What does it look like?
- What will cause it to explode?
- What is your name and address?

Exact wording of the threat:

BACKGROUND SOUNDS

☐ Street Noises	☐ PA System	☐ Motor	☐ Animal noises
☐ Local	☐ Crockery	☐ Music	☐ Office machinery
☐ Clear	☐ Long distance	☐ Voices	☐ House noises
☐ Factory	☐ Static	☐ Booth	☐ Other

THREATENING LANGUAGE

☐ Well spoken (educated)	☐ Foul	☐ Irrational
☐ Message being read by threat maker	☐ Taped	☐ Incoherent

CALLER DETAILS

Distinguishing accent:

Age:

Sex:

Length of call:

Number called:

CALLER'S VOICE

☐	Calm	☐	Angry	☐	Excited	☐	Slow
☐	Rapid	☐	Soft	☐	Loud	☐	Laughter
☐	Crying	☐	Normal	☐	Distinct	☐	Slurred
☐	Nasal	☐	Stutter	☐	Lisp	☐	Raspy
☐	Deep	☐	Ragged	☐	Clearing throat	☐	Deep breathing
☐	Cracking	☐	Disguised	☐	Accent	☐	Familiar

If familiar, who did it sound like:

NOTES

Report call immediately to your supervisor, corporate security, or administrative services.

11.4 Stakeholder Forms

Stakeholder Contact Record

DETAILS

Incident:	
Date:	
Time (0-2400 hrs):	Time Zone:
Completed by:	Response Team Position:

STAKEHOLDER CONTACT RECORD

Resident ID	Name	Shelter in Place or Evacuate	Number of People		Assistance or Transportation Required	Comments
			Inside	Outside		

Notice of Evacuation

Notice of Evacuation

for

_____

(Location)

_____(Company) has experienced a _____ at the above mentioned facility, which has created an emergency in the area.
As a safety precaution we have implemented our Emergency Response Plan. Please proceed immediately out of the area by the most direct route.
To ensure your safety please check-in with our Reception Centre Representative at the _____(Reception Centre) of _____(City), _____(Phone).

If you have access to a telephone please call our Evacuation Team Leader immediately at _____(Phone).

_____(Company)Representatives have secured the hazardous area with road blocks. If you have any questions or concerns contact our head office at _____.

Notice of Evacuation

for

_____

(Location)

_____(Company) has experienced a _____ at the above mentioned facility, which has created an emergency in the area.
As a safety precaution we have implemented our Emergency Response Plan. Please proceed immediately out of the area by the most direct route.
To ensure your safety please check-in with our Reception Centre Representative at the _____(Reception Centre) of _____(City), _____(Phone).

If you have access to a telephone please call our Evacuation Team Leader immediately at _____(Phone).

_____(Company)Representatives have secured the hazardous area with road blocks. If you have any questions or concerns contact our head office at _____.

Notice of Evacuation

for

_____

(Location)

_____(Company) has experienced a _____ at the above mentioned facility, which has created an emergency in the area.
As a safety precaution we have implemented our Emergency Response Plan. Please proceed immediately out of the area by the most direct route.
To ensure your safety please check-in with our Reception Centre Representative at the _____(Reception Centre) of _____(City), _____(Phone).

If you have access to a telephone please call our Evacuation Team Leader immediately at _____(Phone).

_____(Company)Representatives have secured the hazardous area with road blocks. If you have any questions or concerns contact our head office at _____.

Reception Centre Registration Form (to be filled out by evacuees)

DETAILS

Incident:

Date:

Time (0-2400 hrs):

Time Zone:

Completed by:

EVACUEE INFORMATION

Last Name		First Name	Middle Initial:
Sex:	Age:	Address:	
City:		Province:	Phone Number:

EVACUATED FAMILY MEMBERS

First Name	Middle Initial	Last Name	Relationship to above	Gender	Age

ALTERNATE CONTACT INFO

SPECIAL MEDICAL NEEDS

ADDITIONAL INFO

CHECK IN/OUT

Arrival Time:

Departure Time:

Evacuee Expense Claim Form

DETAILS	**Incident:**		
	Date:		
EVACUEE INFORMATION	Last Name	First Name	Middle Initial:
	Address:		Phone Number:
	City:	Province:	Postal Code:
	Location of Residence, Business, etc.		
EXPENSES	Accommodation:	$	Details:
	Meals	$	Details:
	Other Reasonable Expenses:	$	Details:
	Other:	$	Details:
	Other:	$	Details:
	Other:	$	Details:
		Total:	
	Evacuee Signature:		
ADMINISTRATION	Company Contact:	Company Phone Number:	
	Approved by:		

11.5 Media Forms

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 - 0-2400 hrs) _____ 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 _____ (shutdown, 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 CEOC Information Officer.

Any further inquiries should be directed to the CEOC Information Officer, who will issue a press release at a later time.

Contact:

_____ (Name): _____ (Phone)

Note: Only the CEOC Information Officer designated by the CEOC Director is to provide any specific information to the public or the media.

Media Contact Log

Date:	Responder Name:
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.

"Deltawest Energy Ltd. has a CEOC Information Officer to answer all media questions."

"May I request the following information to expedite your request?" (complete the form below).

"Thank you. Deltawest 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	

Page:

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.

Government Agency Contact Log

Date:	Responder Name:
Responder Position:	Responders Phone No.:

If you feel you are not the appropriate person to be answering the government agency representative's questions, use the following series of statements.

"Deltawest Energy Ltd. has a CEOC Liaison Officer to answer your media questions."

"May I request the following information to expedite your request?" (complete the form below).

"Thank you. Deltawest 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 / Information Required
					Work	Fax	

Page:

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.

Media Centre Site

Address:	City / Town:	Phone #:
Contact Name:	Office #:	Cell #
Map or directions to site:		

12.0 APPENDIX

12.1 Properties of Hydrogen Sulphide (H_2S)

H_2S gas (also commonly referred to as sour gas) is naturally occurring, colourless, flammable, and toxic and is slightly heavier than air. At very low concentrations, it has an offensive odour (similar to rotten eggs), but at higher concentrations or with prolonged exposure it deadens the sense of smell. Concentrations of H_2S are generally measured in parts per million (ppm). 1 ppm means that there is one part of H_2S gas in one million parts of air (1% H_2S gas concentration equals 10,000 ppm). It affects people differently depending on concentration and length of exposure.

Concentration (ppm)	Health Effects
0.01 - 0.3	Odour threshold
1-20	Offensive odour, possible nausea, tearing of the eyes or headaches with prolonged exposure
20-50	Nose, throat and lung irritation; digestive upset and loss of appetite; sense of smell starts to become fatigued; acute conjunctivitis may occur (pain, tearing and light sensitivity)
100-200	Severe nose, throat and lung irritation; ability to smell odour completely disappears.
250-500	Pulmonary edema (buildup of fluid in the lungs)
500	Severe lung irritation, excitement, headache, dizziness, staggering, sudden collapse (knockdown), unconsciousness and death within a few hours, loss of memory for the period of exposure
500-1000	Respiratory paralysis, irregular heartbeat, collapse and death without rescue.
>1000	Rapid collapse and death

12.2 Properties of Sulphur Dioxide (SO_2)

SO_2 gas is a colourless, non-flammable, non-explosive gas, and has a pungent odour such as a burning match. SO_2 is a by-product from the combustion of hydrogen sulphide and would only be present if the source of H_2S was ignited.

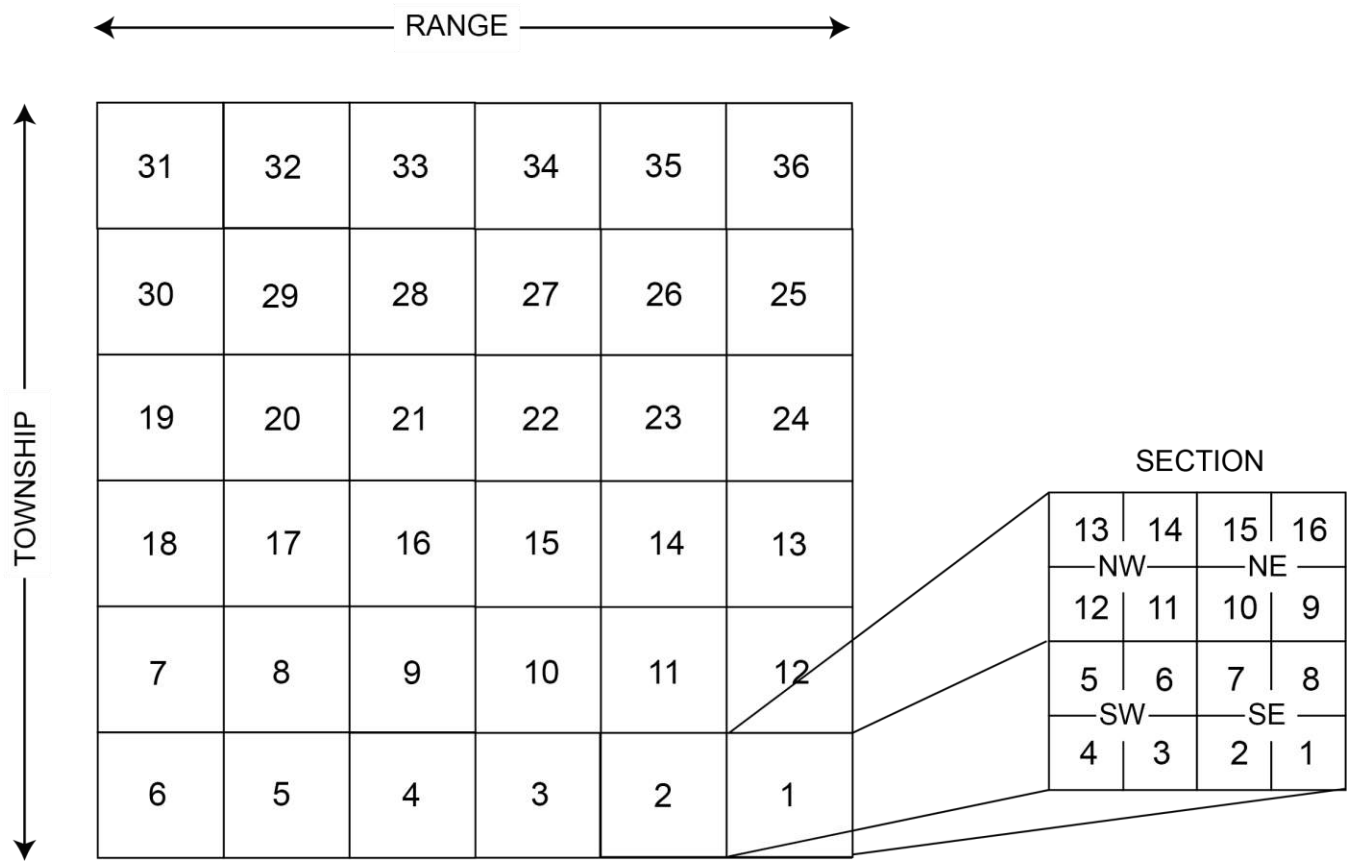
In its normal state SO_2 is heavier than air, however during the combustion process, the heat from the fire will carry the SO_2 and smoke upwards resulting in rapid dispersion and low concentration values.

Toxicity Information	
Concentration (ppm)	**Effects**
2	• 8-hour exposure limit
3 – 5	• Odour detection threshold
5	• 15-minute exposure limit
6 – 50	• Exposure for 5 to 15 minutes irritates the eyes and may irritate the respiratory system (e.g. choking and coughing) • Possible nosebleed under extended exposure
50 – 100	• Irritation increase may become unbearable and vision impossible
Over 100	• Immediately dangerous to life • Immediate feeling of suffocation

12.3 Legal Survey Description (LSD) Reference Tool (Alberta)

- 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 (LSD)
- Each section is divided into four quarters (N.W., N.E., S.W., and S.E.)

The numbering of sections and LSDs 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 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:

	LSD	Section	Township	Range	Meridian
Example:	02	01	38	09	West of the 4th

12.4 HVP - Proposed EPZ Distances for Selected Diameters

Pipeline Size		Ethane, Propane, and Butane Mix (no Ethylene)	Ethylene
3”	88.9 mm	250 m	250 m
4”	114.3 mm	300 m	350 m
6”	168.3 mm	500 m	550 m
8”	219.1 mm	700 m	750 m
10”	273.1 mm	900 m	1000 m
12”	323.9 mm	1100 m	1200 m
16”	403.4 mm	1600 m	1600 m

CAPP Companion Planning Guide to ERCB Directive 071, July 2008

12.5 Conversion Table

H_2S	10 moles	1%	10,000 ppm	14,000 mg/m^3
Pressure	1 PSI	6.895 kPa	1 kPa	0.15 PSI
Length	1 inch	2.54 cm	1 cm	0.39 inches
	1 foot	0.31 m	1 m	3.281 feet
	1 yard	0.914 m	1 m	1.09 yards
	1 mile	1.609 km	1 km	0.62 miles
	1 mile	5280 feet	-	-
	1 mile	1760 yards	-	-
	1 km	1000 m		
Volume	1 litre	0.22 gallon (imp)	1 gallon (imp)	4.546 litres
	1 barrel	42 gallon (US)	1 gallon (US)	0.024 barrels
	1 barrel	0.16 cubic metres	1 cubic metre	6.29 barrels
	1 cubic metre	35.31 cubic ft	1 cubic ft	0.028 cubic metres
	1 cubic yard	0.76 cubic metre	1 cubic metre	1.31 cubic yards
	1 gallon (US)	0.83 gallon (imp)	1 gallon (imp)	1.2 gallon (US)
	1 gallon (US)	3.785 litres	1 litre	0.26 gallon (US)
	1 sq mile	2.59 sq km	1 sq km	0.39 sq miles
	1 cu inch	16.39 cu cm	1 cu cm	0.06 cu inches
Weight	1 pound	0.454 kg	1 kg	2.2 pounds
	1 ton	2000 pounds	1 pound	0.0005 tons
	1 ton	907 kg	-	-
	1 tonne	1.102 tons	1 ton	0.907 tonnes
Area	1 acre	.404 hectare	1 hectare	2.471 acres
	1 section	640 acres	-	-
	¼ section	160 acres	-	-
	1 LSD	40 acres	-	-
Temperature	0° Celsius	32° Fahrenheit	0° Fahrenheit	-18° Celsius
Other	1 dek	10^3m^3	-	-

12.6 NATO Phonetic Alphabet

Letter	Code word
A	Alpha
B	Bravo
C	Charlie
D	Delta
E	Echo
F	Foxtrot
G	Golf
H	Hotel
I	India
J	Juliet
K	Kilo
L	Lima
M	Mike

Letter	Code word
N	November
O	Oscar
P	Papa
Q	Quebec
R	Romeo
S	Sierra
T	Tango
U	Uniform
V	Victor
W	Whiskey
X	X-ray
Y	Yankee
Z	Zulu
- (hyphen)	Dash

12.7 Glossary

10^3m^3 (e^3m^3):	1000 cubic metres per day.
Absolute Open Flow:	The rate at which a well would produce against a zero sandface back pressure.
Adjacent to:	For the purpose of this plan, refers to the immediate 25 metres.
Adverse Effect:	The impairment of or damage to the environment, human health or safety, or property.
Agency:	A division of government with a specific function offering a particular kind of assistance. Agencies are defined as jurisdictional (having statutory responsibility for incident management) or as assisting or cooperating (providing resources or other assistance).
Air Quality Monitoring:	The measurement of atmospheric concentrations of a gas such as H_2S or SO_2.
ALS	An abbreviation for Advance Life Support.
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.
Battery:	A group of tanks in the gathering system, they receive oil directly from the wells.
bbl:	An abbreviation for barrel.
BLS	An abbreviation for Basic Life Support.

Boiling Liquid Expanding Vapour Explosion (BLEVE):	A boiling liquid expanding vapour explosion is usually associated with natural gas liquids and high vapour pressure liquids. This is a type of explosion that can occur when a vessel containing a pressurized liquid is ruptured.
Booster Pump:	A small pump that pulls product from the source of supply and pumps it into the suction, or input of the main pump unit.
Businesses:	Industrial operators, retail suppliers, service providers, trappers, loggers and other entities who normally operate within the EPZ, but do not necessarily reside in the EPZ.
Camp:	A geographical site equipped and staffed to provide sleeping, food, water, and sanitary services to personnel.
Ceiling – Recommended Exposure Limit:	The concentration that should not be exceeded during any part of the working exposure. An employee's exposure to a hazardous substance shall at no time exceed the ceiling value.
CER	Canada Energy Regulator
Chain of Command:	A series of command, control, executive, or management positions in hierarchical order of authority.
Command Staff:	In an incident management organization, the Command Staff consists of the Incident Command and the special staff positions of Officer, Chief and other positions as required, who report directly to the Incident Commander. They may have assistants as needed.
Condensate:	The liquid formed by the condensation of a vapour or gas; specifically, the hydrocarbon liquid separated from natural gas because of changes in temperature and pressure when the gas from the reservoir was delivered to the surface separators.
Control Valve:	A valve that will automatically maintain a predetermined pressure upstream or downstream of the valve or will maintain a controlled flow rate through the valve.
Corporate Emergency Operations Centre (CEOC):	Focal point for the communication of support functions provided by Head Office personnel and (potentially) contract specialists. They should provide advice, direction and logistical support to the Site Command personnel.
Downstream:	With reference to a pumping station, indicates the discharge side of that station.
Emergency Planning Zone (EPZ):	An EPZ is a geographical area surrounding a well, pipeline, or facility containing hazardous product that requires specific emergency response planning by the licensee.
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 Shutdown Valve (ESD):	A valve that blocks the passage of material from both directions and can automatically close when the amount of material passing through the valve exceeding allowable limits.
ERAC:	An abbreviation for Emergency Response Assistance Canada. A not-for-profit emergency preparedness and response organization who develops, implements and responds to Emergency Response Assistance Plans (ERAPs) for more than 300 Plan Participant Members of ERAC.
ERAP:	An ERAP or Emergency Response Assistance Plan is a plan that describes what is to be done in the event of a transportation accident involving certain higher risk dangerous goods. The ERAP is required by the Transportation of Dangerous Goods Regulations (TDGR) for dangerous goods that require special expertise and response equipment to respond to an incident. The plan is intended to assist local emergency responders by providing them with technical experts and specially trained and equipped emergency response personnel at the scene of an incident.
Explosive Limit:	Each gaseous hydrocarbon substance has a minimum lower explosive limit (LEL) and a maximum upper explosive limit (UEL) percentage in the 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 over which the Regulatory Authority has jurisdiction and that is connected to or associated with the recovery, development, production, handling, processing, treatment or disposal of hydrocarbon-based resources or any associated substances or wastes. This term does not refer to or include wells or pipelines.
Field Separator:	A vessel in the oil and gas field for separating gas, hydrocarbon liquid, and water from each other.
Flammability Limit:	The lower flammability limit is the minimum percentage volume of a combustible gas in an air mixture that will support combustion at certain pressure and temperature conditions. The higher flammability limit is the maximum percentage volume of a combustible gas in an air mixture that will support combustion at certain pressure and temperature conditions. Note: Data for flammability limits is often published for standard atmospheric and temperature conditions. Refer to the Safety Data Sheet (SDS) for specific product information.
Flaring/Venting:	The controlled burning (flare) or release (vent) of natural gas that can't be processed for sale or use because of technical or economic reasons.

Flash Point:	The lowest temperature at which vapours over a volatile combustible substance will ignite when exposed to an external source of ignition (and will continue to burn after the source is removed).
Flexibility:	A principle of ICS that provides a consistent and adjustable framework within which government and private entities at all levels can work together to manage domestic incidents, regardless of their cause, size, location, or complexity. This flexibility applies across all phases of the incident management: prevention, preparedness, response, recovery, and mitigation.
Flow Rate:	The speed in which the product is flowing, computed in cubic metres per second (m^3/s).
Gathering System:	The network of pipelines, pumps, tanks and other equipment that carry oil and gas to a processing plant or to other separation equipment.
Government Emergency Operations Centre (GEOC):	An operations centre with the capacity to accommodate representatives from each government department.
Hazard:	A situation with potential to cause harm to persons, property, or the environment.
High Vapour Pressure (HVP):	HVP products have a vapour pressure greater than 240 kPa at a temperature of 38º C (34.8 psig at 100 ºF). They include ethane, propane, butane, and pentanes plus either as individual products or as a mixture. A leak from a vessel or pipe containing HVP products can result in a BLEVE.
High Vapour Pressure (HVP) Pipeline:	A pipeline system conveying hydrocarbons mixtures or hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure greater than 100 kPa absolute at 38°C, as determined using the Reid method. Some examples are liquid ethane, ethylene, propane, butanes, and pentanes plus.
Hazard Planning Zone (HPZ):	Hazard planning distances are used to identify a geographical area (a hazard planning zone) within which persons, property or the environment may be affected by an emergency. The combined geographic areas of hazard planning zones are used by the applicant or permit holder to identify an EPZ where immediate response actions are required in the event of an emergency. The HPZ has been determined by CANUTEC as the area that requires immediate precautionary measures whereby the spill or leak is to be isolated in all directions for the specified distance.
Hydrogen Sulphide (H_2S):	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. H_2S is colourless, heavier than air, and extremely toxic. In small concentrations it has a rotten egg smell and causes eye and throat irritation.

Hydrogen Sulphide (H_2S) Release Rate:	The rate at which the sour gas escapes into the atmosphere is calculated for sour gas wells. The rate is usually given in cubic metres per second (m^3/s). The size of the EPZ is calculated based on the H_2S release rate.
Hydrogen Sulphide (H_2S) Release Volume:	The volume of sour gas that escapes into the atmosphere is calculated for facilities that have a defined retention volume. It is usually defined in cubic metres (m^3). EPZ sizes are calculated using the volume of gas that may be released from a facility.
Ignition Team:	A two person team assigned the responsibility of igniting a sour gas plume.
Incident:	An unexpected occurrence or event that requires action by emergency response personnel to prevent or minimize the impacts on the safety and health of people as well as on property and the environment.
Incident Action Plan (IAP):	An Incident Action Plan formally documents incident goals, operations period objectives and the response strategy defined by incident command during emergency response planning.
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 System (ICS):	The incident command system is a standardized response protocol. It is a combination of facilities, equipment, personnel, procedures and communications operating with a common organization structure with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to the incident.
Incident Commander:	The Incident Commander role should be assigned to the most experienced company supervisor or representative at the incident site. The Incident Commander has the responsibility to manage the on-site activities and the implementation of a safe and effective tactical response.
Incident Objectives:	Statements of guidance and direction necessary for selecting the appropriate strategy and tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed. Incident objectives must be achievable and measurable, yet flexible enough to allow strategic and tactical alternatives.
Joint Venture Partner:	Two companies working together to combine resources to complete a capital project.
Kick:	A situation where the formation pressure exceeds the static pressure in the well bore allowing formation fluid to enter.
Km:	An abbreviation for kilometre; a unit of length in the metric system, equal to one thousand metres.

kPa:	An abbreviation for kilopascal; it is a measure of force per unit area, defined as one newton per square metre. One kilopascal is about 1% of atmospheric pressure.
Leader:	The ICS title for an individual responsible for a Task Force, Strike Team, or functional unit.
Liaise:	A form of communication for establishing and maintaining mutual understanding and cooperation.
Licensee:	A term used to designate the responsible duty holder (e.g. licensee, operator, company, and applicant).
Liquefied Petroleum Gas (LPG):	Mixture of heavier, gaseous hydrocarbons (butane and propane), liquefied as a portable source of energy.
Local Authority:	Council of a city, town, village, or municipal district. An improvement district or special area. The Settlement Council or a settlement under the Métis Settlements Act. The Band Council of an Indian Band if an agreement has been entered into with the Government of Canada in which it is agreed that the Band Council is a local authority for the purposes of the Disaster Services Act.
Local State of Emergency:	A local state of emergency is authorized for a limited period of time and limited geographical area by members of the municipal authority (city, town, municipal district or county). A local state of emergency grants extraordinary powers to the authorities such as forcibly removing public from an area or preventing the public from entry into a designated area.
Logistics:	Providing resources, material support and other services to support incident management.
Lower Explosive/Flammable Limit (LEL/LFL):	The lowest concentration of gas of vapour (per cent by volume in air) that burns or explodes if an ignition source is present at ambient temperatures.
m^3:	An abbreviation for cubic metres.
MAWP:	An abbreviation for “maximum actual or allowable working pressure”.
Maximum Operating Pressure (MOP):	The maximum licensed operating pressure for a vessel or pipeline.
mcf:	An abbreviation for one thousand cubic feet of gas.
Mercaptans:	A sulphur containing organic compound with the general formula RSH where R is any radical, especially ethyl mercaptan, C2H5SH.
Mmcf:	An abbreviation for one million cubic feet of gas.

mSv/h	The sievert (symbol: Sv) is a derived unit of ionizing radiation dose in the International System of Units (SI). It is a measure of the health effect of low levels of ionizing radiation on the human body. In the SI system, a millisievert (mSv) is defined as "the average accumulated background radiation dose to an individual for 1 year, exclusive of radon, in the United States." 1 mSv is the dose produced by exposure to 1 milligray (mG) of radiation.
Mobile Air Monitoring Unit:	Personnel with sophisticated portable equipment capable of tracking substances such as H_2S or SO_2 and of measuring very low (ppb) atmospheric concentrations.
MOU:	An abbreviation for Memorandum of Understanding.
Multi-Agency Incident:	An incident where one or more agencies assist a jurisdictional agency or agencies. May be single or Unified Command.
Municipal Emergency Operations Centre (MEOC):	The centre from which responsible municipal officials manage and support operations within their jurisdiction. The MEOC personnel will formulate protective actions and provide public information. The centre should have adequate workspace, maps, status boards, and communications capability.
Mutual Aid Understanding:	An understanding between two or more public and (or) private parties, such as oil and gas companies, service companies, and local authorities that defines each party’s commitment to provide aid and support during an incident.
Natural Gas Liquid (NGL):	These are hydrocarbons liquefied under pressure in field facilities or in gas processing plants. Natural gas liquids include ethane, propane, butanes and pentanes plus, and normally occur as a mixture of these compounds.
Notice to Airmen (NOTAM):	This is a notice issued by Transport Canada. A NOTAM restricts access to airspace in a defined area. NOTAMs are generally issued through the nearest flight service station.
Odour Complaint:	A member of the public has submitted either a written or verbal complaint of an odour problem due to a gas release or venting incident.
Off-Site:	The area beyond the asset property boundary.
OHS:	An abbreviation for Occupational Health and Safety.
Oil Spill Containment and Recovery Unit (OSCAR):	A trailer or truck style unit which contains recovery equipment to assist in spill containment and recovery.
On-Site:	The area within the asset property boundary.
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 company personnel.
Operating Personnel:	Refers to the people working in a given field area.

Operations Section:	The section responsible for all tactical incident operations. In ICS, it normally includes subordinate branches, divisions, and/or groups.
Parts Per Million (ppm):	The unit for measuring the concentration of a particular substance equal to one (1) unit combined with 999,999 other units.
Personal Consultation:	Consultation through face-to-face visits or telephone conversations with identified parties and providing the required information packages.
Personal Protective Equipment (PPE):	Safety equipment used for an individual's protection.
Plain Language:	Common terms and definitions that can be understood by individuals for all responder disciplines. The intent of plain language is to ensure the clear and accurate communication of information during the incident.
Planning Section:	Responsible for the collection, evaluation, and dissemination of operational information related to the incident, and for the preparation and for the documentation of the Incident Action Plan. This section also maintains information on the current and forecasted situation and on the status of resources assigned to the incident.
Plume:	An elongated mobile column of gas or smoke. The term plume is often used to describe the area in which hazardous gas, such as sour gas, disperses into the atmosphere from a facility, well or pipeline. Eventually gases will dilute (with distance away from the source) to concentrations that are not considered hazardous. Plumes are generally elongated shapes that are oriented downwind of the point of the gas release.
ppb:	An abbreviation for parts per billion.
Preparedness:	The range of deliberate, critical tasks and activities necessary to build, sustain, and improve the operational capability to prevent, protect against, respond to, and recover from domestic incidents. Preparedness is a continuous process. Preparedness involves efforts at all levels of government and between government, the private sector and non-government organizations to identify threats and determine vulnerabilities and required resources. Preparedness is operationally focused on establishing guidelines, protocols, and standards for planning, training and exercises, personnel qualification and certification, equipment certification, and publication management.
Public:	Individuals (or groups of people) who may be impacted by an emergency. Example: employees, contractors, nearby residents, emergency response organizations, regulatory agencies, the media, appointed or elected officials, visitors, customers, etc.
Pump Unit:	Consists of an electric motor or engine connected to a centrifugal pump, either directly as in the case of constant speed units, or through a fluid drive, as in the variable speed pump units.

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 off-site location near the emergency to manage the large-scale aspects of the emergency response. It is manned jointly by government and industry personnel.
Regulatory Authority:	The local petroleum Regulatory Authority will participate in the emergency response to all situations involving or threatening oilfield wells, production facilities, or pipelines.
Relief System:	The system for safely relieving excess pressure to avoid exceeding equipment design pressure.
Residence:	A dwelling that is occupied full time or part time.
Response:	Activities that address the short term, direct effects of an incident. Response includes immediate actions to save lives, protect property, and meet basic human needs. Response also includes the execution of emergency operations plans and incident mitigation activities designed to limit the loss of life, personal injury, property damage, and other unfavourable outcomes.
Roadblock Team:	Operator or Contract personnel responsible for controlling access to the EPZ.
Rover:	Individual responsible for assisting the evacuation of the Emergency Planning Zone.
Safety Officer:	A member of the Command Staff responsible for monitoring and assessing safety hazards or unsafe situations and for developing measures for ensuring personnel safety.
SCADA:	Acronym for Supervisory Control and Data Acquisition.
SCBA:	Acronym for Self Contained Breathing Apparatus.
Serious Injury:	Can be defined as any of the following: • An injury that results in death. • A fracture or crush of a major bone. • Penetrating injury to eye, head, neck, chest, abdomen or groin. • Amputation other than a portion of a finger or toe. • Severe haemorrhaging - internal or external. • Third degree burn or any other degree burn with complications. • Unconsciousness. • An injury that results in paralysis (permanent loss of function or sense).
SDS:	Acronym for Safety Data Sheets. A Safety Data Sheet (SDS) is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with a chemical product.

Shelter in Place:	The use of a structure and its indoor atmosphere to temporarily separate individuals from a hazardous outdoor atmosphere. It entails closing all household doors, windows and vents and taking immediate shelter in a readily accessible location that puts as much indoor air and mass between the individual and the hazardous outside air, such as a basement or centrally located medium to small room, and trying to make it as airtight as possible by shutting off all ventilation/HVAC systems and extensively sealing the shelter's doors and windows from all outside air contaminants with damp towels, or if available, plastic sheeting and adhesive tape.
SITREP:	An abbreviation for Situation Report.
Solution Gas:	Gas that originates from the liquid phase in an oil reservoir.
Sour:	Liquids and gases are said to be “sour” if they contain hydrogen sulphide (H_2S), carbon dioxide (CO_2), and/or mercaptans over a specified level.
Sour Gas:	Natural gas, including solution gas, containing hydrogen sulphide (H_2S).
Sour Gas Facility:	Any facility that produces, processes, or transports sour gas.
Span of Control:	The number of individuals a supervisor is responsible for, usually expressed as a ratio of supervisors to individuals. Under ICS an appropriate span of control is between 1:3 and 1:7 with 1:5 being established as optimum.
Spill:	Means a release or discharge of a substance into the natural environment.
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.
Staging Area:	Location established where the resources can be placed while awaiting a tactical assignment. The Operations Section manages Staging Areas.
Stakeholders:	Industry activities often affect surrounding areas and populations. People with an interest in these activities are considered stakeholders. They may include nearby landowners, municipalities, Indigenous communities, recreational land users, other industries, environmental groups, governments and regulators.
Substance:	Any matter that is capable of being dispersed in the environment and that is capable of causing transformations in the environment.
Sulphur:	A yellow, non-metallic chemical element. In its elemental state, it has a crystalline or amorphous form. In many gas streams, sulphur may be found in volatile sulphur compounds, e.g. hydrogen sulphide,

	sulphur oxides, mercaptans, carbonyl sulphide. Reduction of their concentration levels is necessary for corrosion control and, in many cases, necessary for health and safety reasons.
Sulphur Dioxide (SO_2):	A colorless, water soluble, suffocating gas formed by burning sulphur in air; also used in the manufacture of sulphuric acid. SO_2 has a pungent smell similar to a burning match. SO_2 is extremely toxic at higher concentrations. The molecular weight of SO_2 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.
Sump:	An underground tank located at each pump station used to catch products that leak through valves, meters, pump units, seal housing, etc.
Sweet:	Gas containing essentially no objectionable sulphur compounds. Also, the term sweet is used to describe treated gas leaving a sweetening unit.
Tabletop Exercise:	An informal exercise generally used to review resource allocation, roles and procedures for emergency response. It also serves to orientate new personnel to emergency operations without the stress and time constraints of a full scale exercise.
Technical Specialist:	Personnel with special skills that can be used anywhere within the ICS organization.
Telephoner(s):	Personnel assigned the responsibility to contact the area residents and/or users in the event of an Emergency.
Transient:	A person who is temporarily in the response zones (examples: camper, cross-country skier, and hunter).
Trapper:	Holder of a licensed and registered trapline for the purpose of hunting and trapping fur-bearing animals.
Uncontrolled Flow:	A release of product that the licensee cannot shut off at the licensee's discretion.
Unified Command:	The Unified Command is a structure that brings together the "Incident Commanders" of all major organizations involved in the incident in order to coordinate an effective response while at the same time carrying out their own jurisdictional responsibilities. The Unified Command links the organizations responding to the incident and provides a forum for these entities to make consensus decisions.
Urban Center:	A city, town, new town, village, summer village, hamlet, with no fewer than 50 separate buildings, each of which must be an occupied

	dwelling or any similar development the AER may designate as an urban centre.
Vapour Density:	A measure of the weight of the gas compared to air (air = 1).
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.
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.
Workovers:	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.