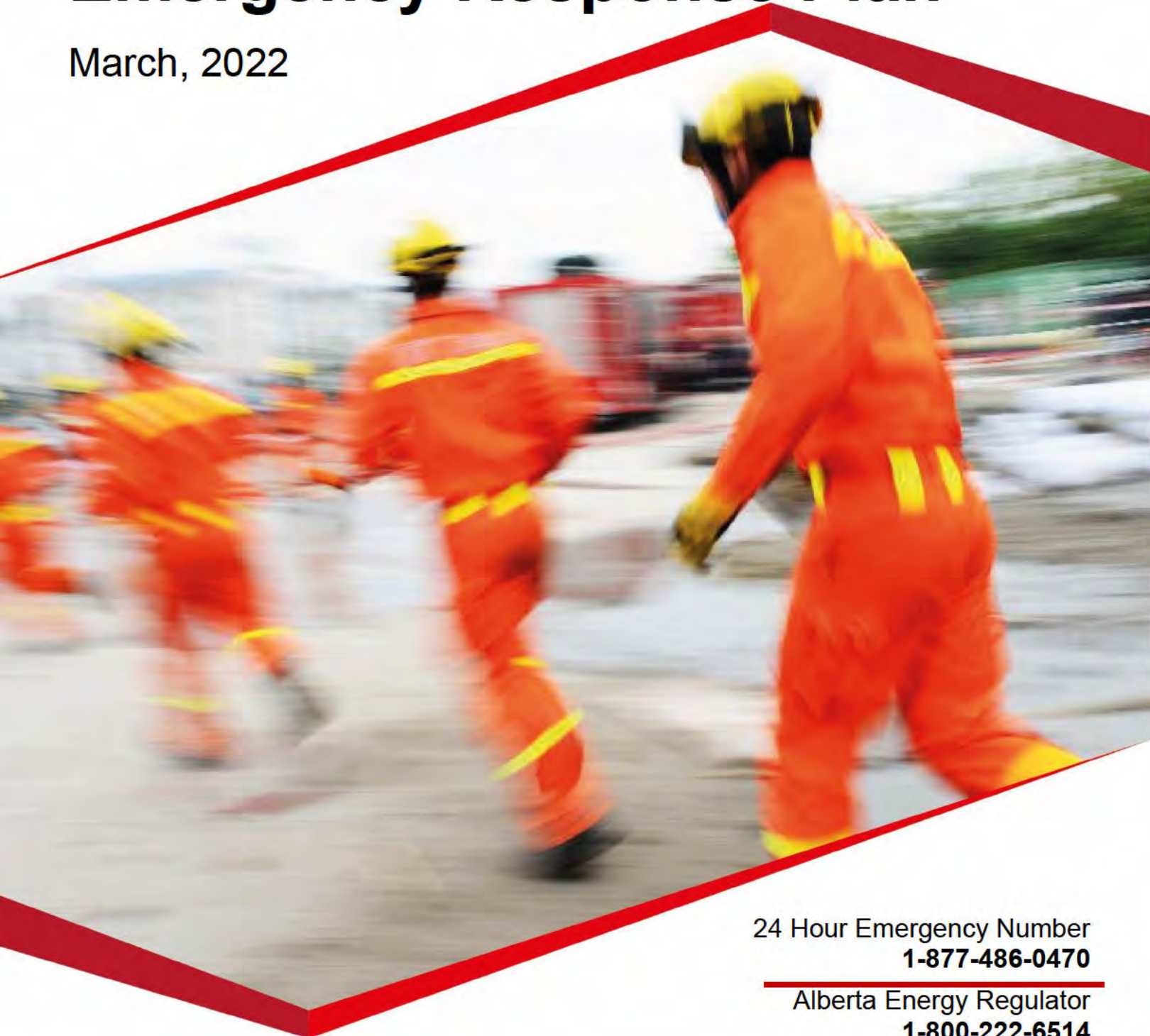


**Pine Cliff Energy Ltd.  
AND PINE CLIFF BORDER PIPELINES LTD.  
(A Wholly Owned Subsidiary  
of Pine Cliff Energy Inc.)**

# **Emergency Response Plan**

March, 2022



24 Hour Emergency Number  
**1-877-486-0470**

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Alberta Energy Regulator  
**1-800-222-6514**



**CORPORATE  
EMERGENCY RESPONSE PLAN**

**PREPARED BY:**



**MARCH, 2022**

**CORPORATE EMERGENCY RESPONSE PLAN  
MANUAL RECEIPT FORM**

Upon receipt of this Corporate Emergency Response Plan Manual, this Receipt Form must be completed and returned to the HSE&R Manager 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):** \_\_\_\_\_

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**Date:** \_\_\_\_\_

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Medicine Hat, AB T1A 8G2

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**Attention:**

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**MANAGEMENT OF CHANGE REQUEST FORM**

**Pine Cliff Energy Ltd.**

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Section Number: \_\_\_\_\_

Page Number: \_\_\_\_\_

Copies of revised pages attached: ☐ yes ☐ no

Description of Amendment:

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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 <sup>1</sup>	Annual Update <sup>2</sup>	Date Inserted into ERP: DD/MM/YYYY	Signature
31/03/2022	7	10.6	Annual Update to the Core ERP		<input checked="" type="checkbox"/>		
31/03/2021	6		Annual Update to the Core ERP		<input checked="" type="checkbox"/>		
31/03/2020	5		Annual Update to the Core ERP		<input checked="" type="checkbox"/>		
31/July/2019	4	9, 10.6	NEB revisions to increase MOP	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
March 2019	3	All	Annual Update to the Core ERP.	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
August 2018	2	All	Annual Update to the Core ERP.	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
March 2017	1	All	Annual Update to the Core ERP	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Feb/March 2016	New	All	Created a new Core ERP for Pine Cliff Energy Ltd.	<input type="checkbox"/>	<input type="checkbox"/>		

<sup>1</sup> **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.

<sup>2</sup> **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 Pine Cliff. 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:



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Office: 403-216-7052  
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**DISTRIBUTION LIST**

Use the Distribution List in the ERP Workbook.

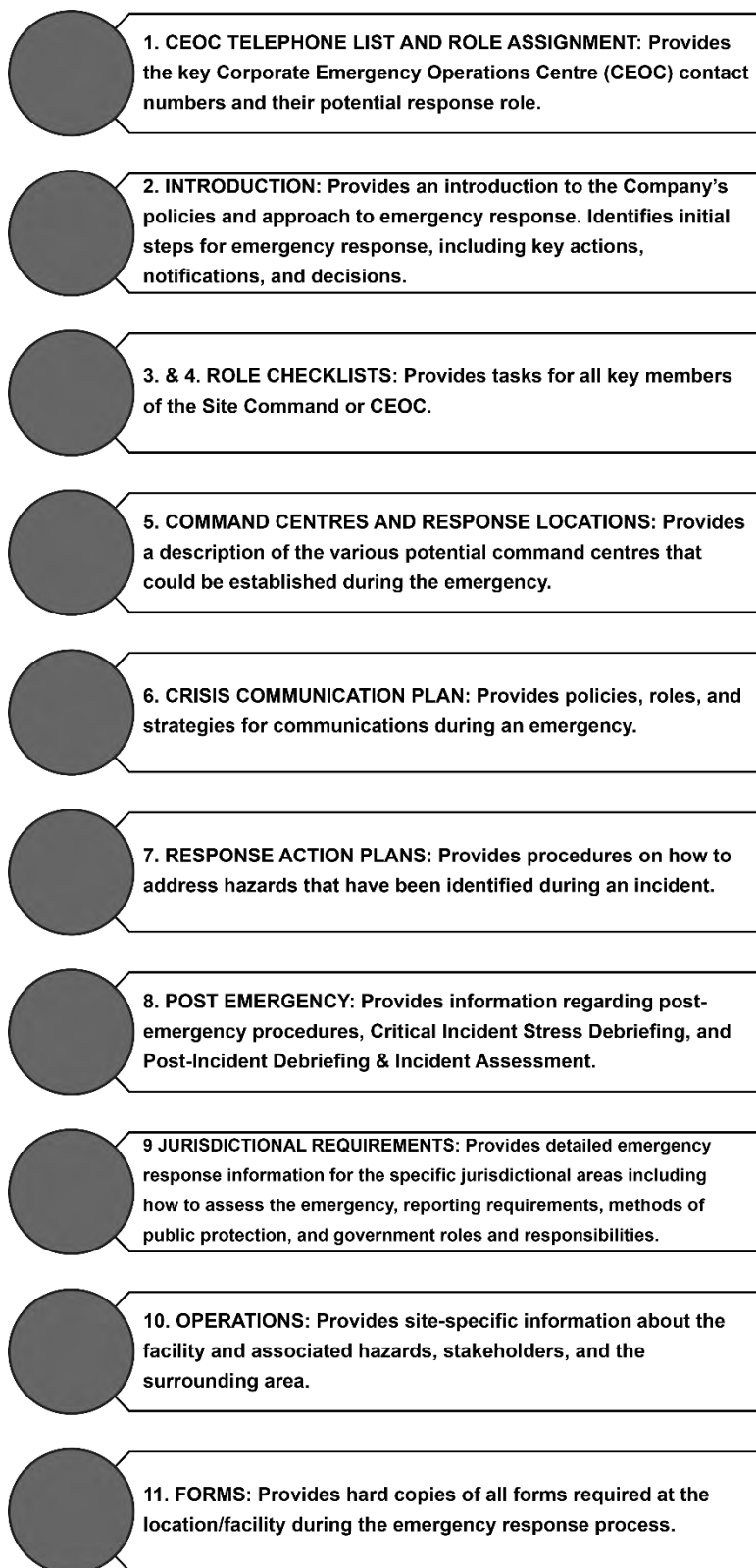


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## 2.0 INTRODUCTION

### 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.

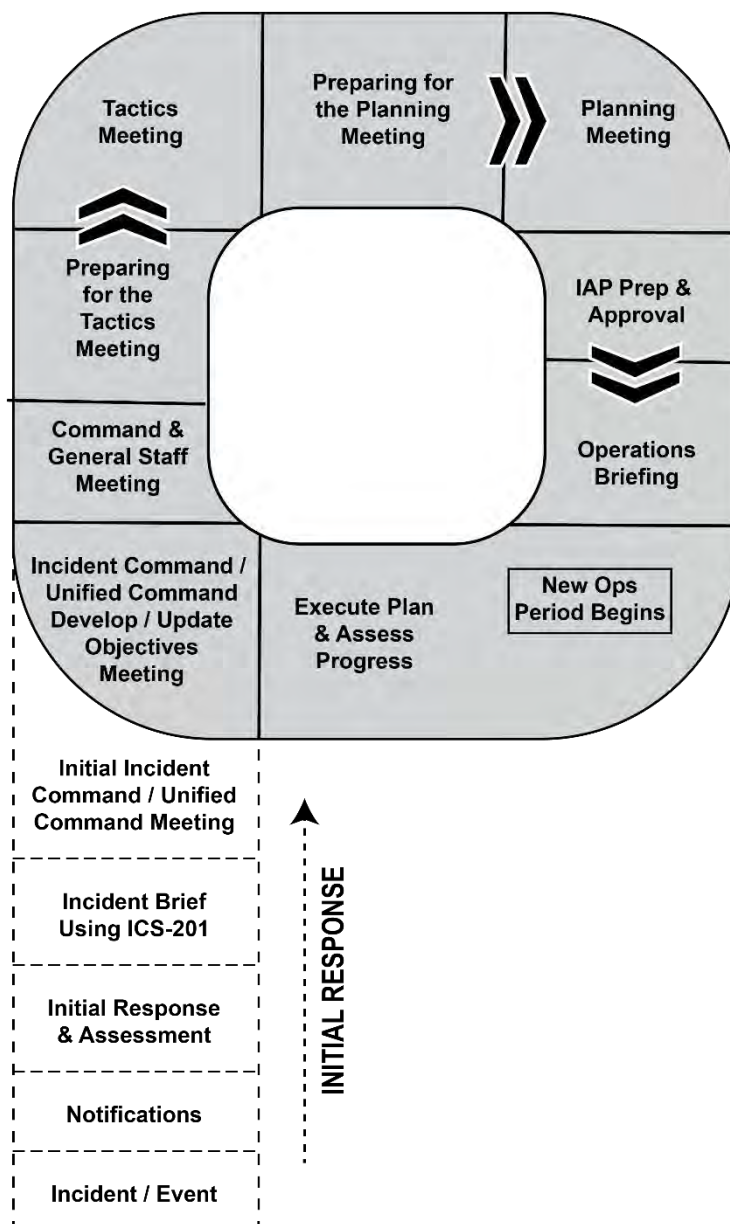
Capture information relating to:

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

### 2.3.1 PEAR Response Priorities and Objectives

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

### 2.3.2 Planning 'P' Process



Pine Cliff 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
<b>ESTABLISH INCIDENT OBJECTIVES</b>	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	
<b>DEVELOP THE INCIDENT ACTION PLAN</b>	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	



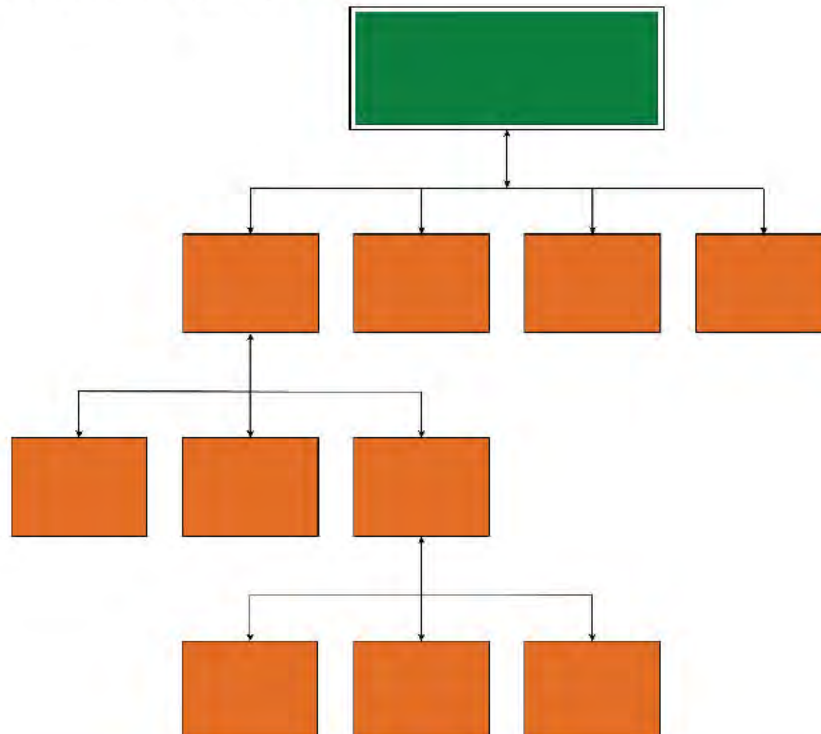
<b>PREPARE &amp; DISSEMINATE IAP</b>	Compile the Incident Action Plan.	Site Planning Section Chief Incident Commander General Staff	Planning Meeting
	Approve the Incident Action Plan.	Incident Commander	
	Distribute the Incident Action Plan to all Incident Command Post members.	Site Planning Section 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	
<b>EXECUTE, EVALUATE, REVIEW</b>	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

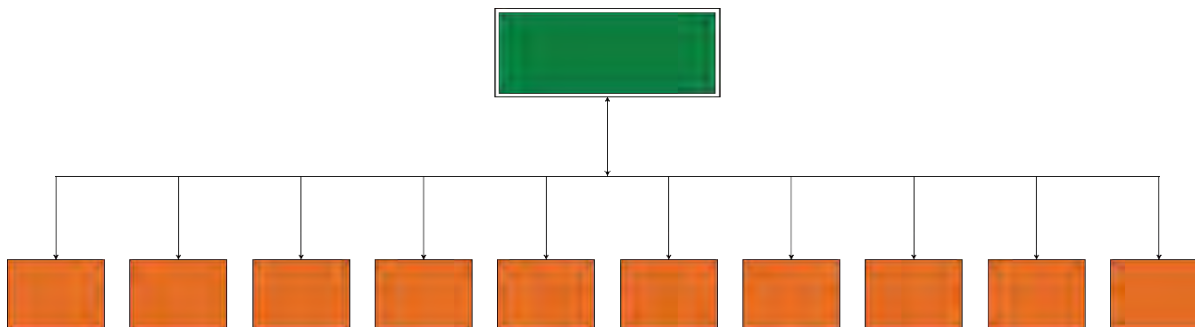
### 2.4.1 Span of Control

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.

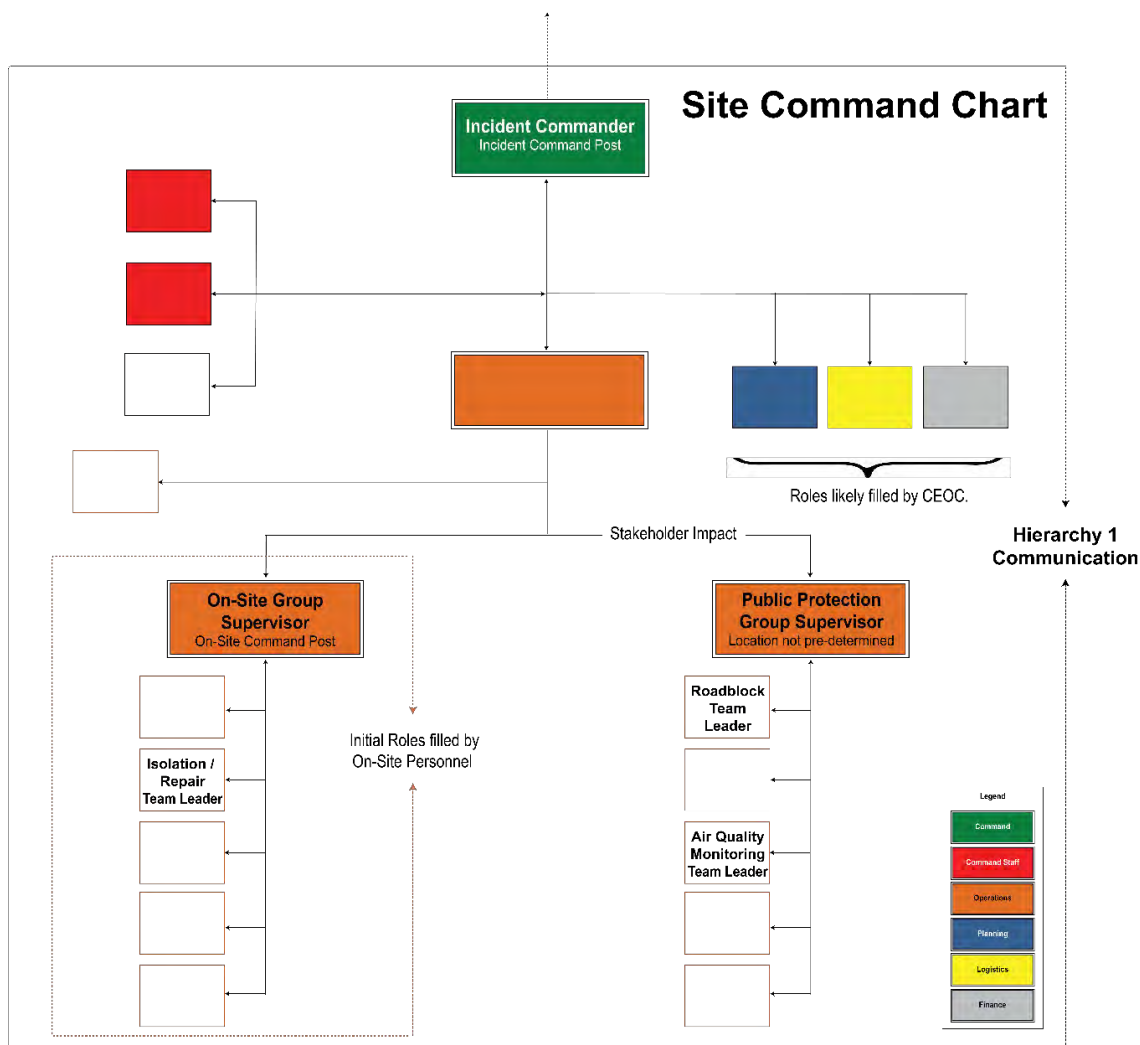


The following diagram shows Span of Control that is considered ineffective and possibly dangerous.



### 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.

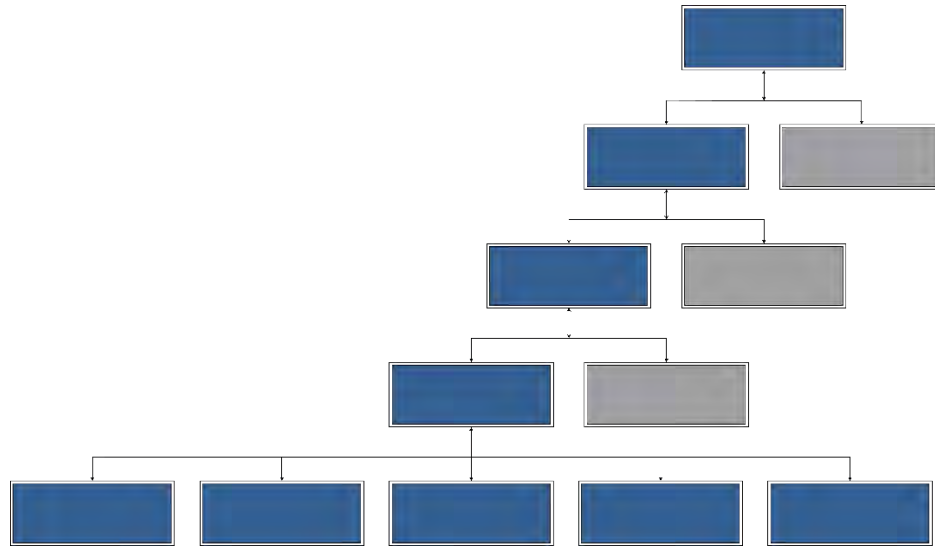


### 2.4.2 Unity and Chain of Command

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 accountability.

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 Pine Cliff'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.

Pine Cliff 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**

Pine Cliff Energy Ltd. (Pine Cliff), 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 HSE&R Manager is responsible for updating the company-wide sections of the manual. Any requests for revisions to these sections should be forwarded to the HSE&R Manager for approval and implementation.
- The HSE&R Manager 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 HSE&R Manager 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 Pine Cliff 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.

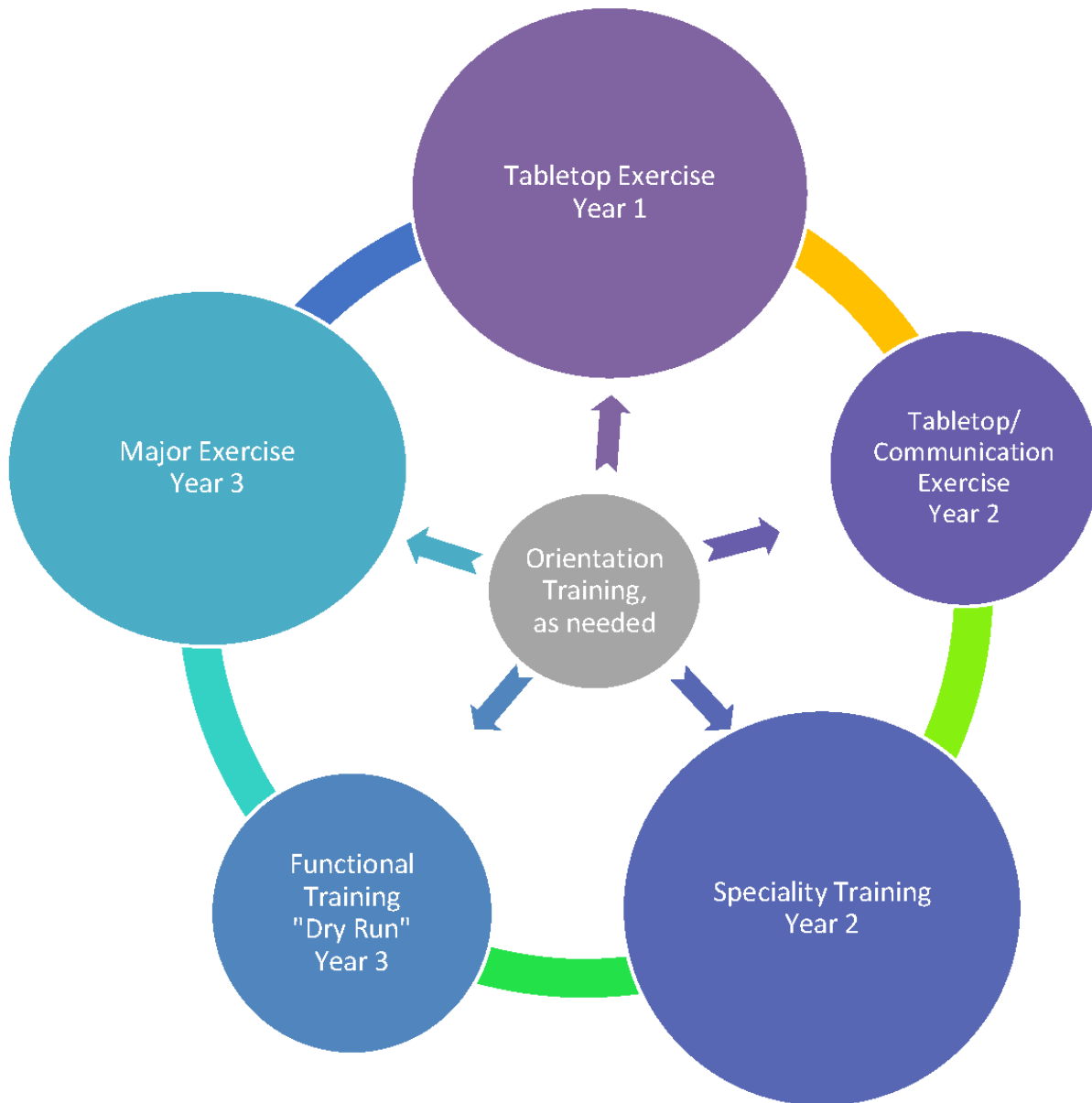
#### **2.11.5 Major Exercise**

As described in CAN/CSA-Z-731 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.

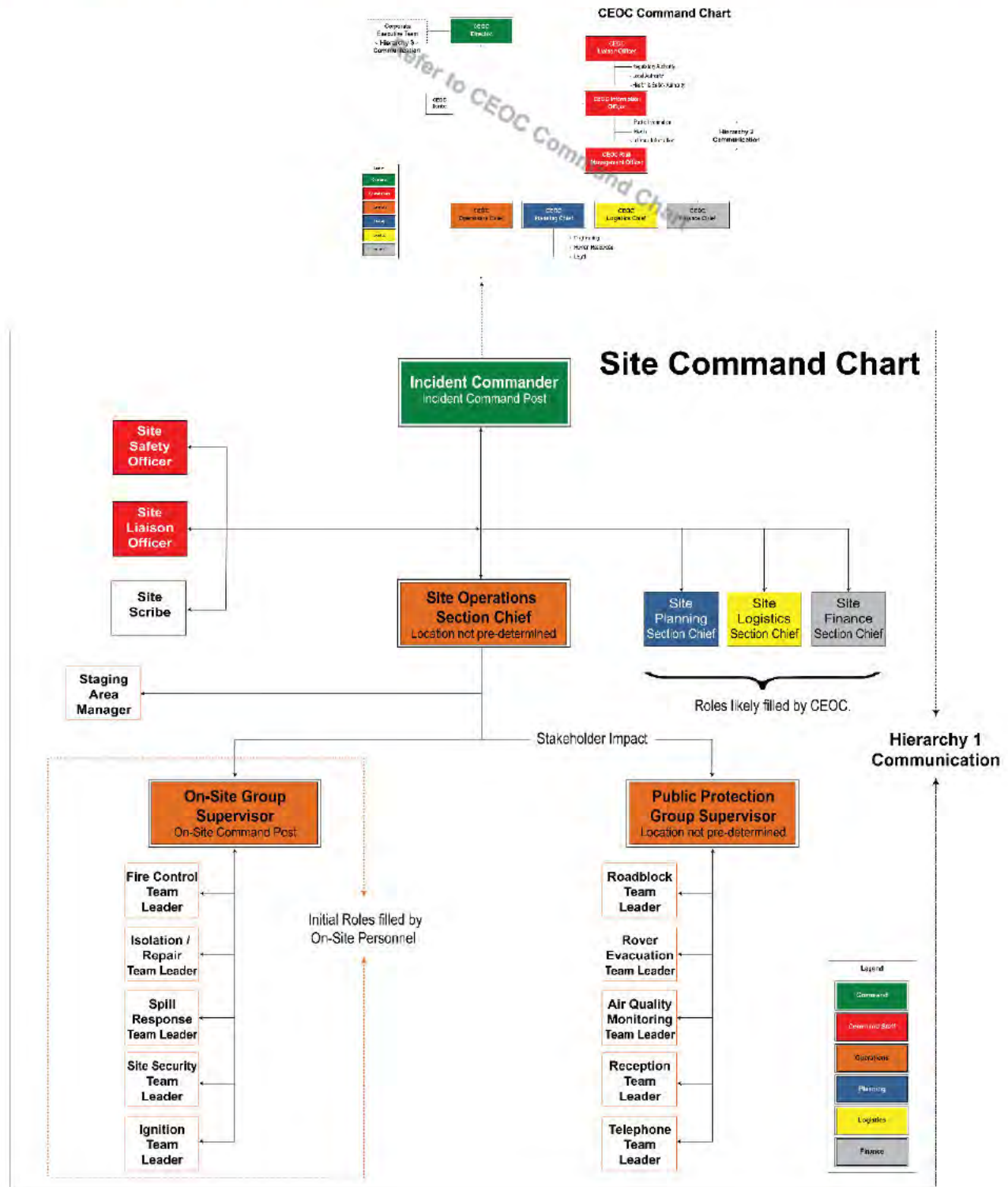
2.11.6 *Training Cycle*





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

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

INCIDENT COMMANDER



### INCIDENT COMMANDER

INCIDENT COMMANDER

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



INCIDENT COMMANDER	
<input type="checkbox"/>	Consult with CEOC Operations Chief and applicable Regulatory Authority, if possible. Initiate ignition procedures as required.
<input type="checkbox"/>	Determine the need for Site Planning Section Chief, Site Logistics Section Chief, and Site Finance Section Chief and activate as required.
<input type="checkbox"/>	Expand the response zones if monitoring indicates it is necessary.
<input type="checkbox"/>	Ensure Site Operations Section Chief has established an appropriate staging area and is providing resource support.
<input type="checkbox"/>	Update previous contacts if there is a change of status.
<b>Deactivation</b>	
<input type="checkbox"/>	Where applicable, commence reclamation activities once the spill has been isolated and the area has been secured.
<input type="checkbox"/>	Coordinate the removal of the impacted waste material and dispose of the waste to an approved facility.
<input type="checkbox"/>	Obtain a sufficient number of samples of the remediated site to demonstrate containment.
<input type="checkbox"/>	Downgrade the emergency in consultation with the CEOC Operations Chief and the applicable Regulatory Authority.
<input type="checkbox"/>	Ensure all appropriate government agencies are notified of the stand-down of the emergency.
<input type="checkbox"/>	Ensure any notified media are updated of the stand-down of emergency.
<input type="checkbox"/>	Ensure all affected stakeholders are notified of the stand-down of emergency.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Ensure evacuee expenses and damage claims are collected.
<input type="checkbox"/>	Ensure post-incident reports are completed and submitted, if applicable.
<input type="checkbox"/>	Ensure all members of the Emergency Response Team and other key participants are invited to the debriefing.
<input type="checkbox"/>	Conduct post-incident debriefing.
<input type="checkbox"/>	Assess the physical and emotional health of responders and make recommendations for Critical Incident Stress Debriefing.
<b>Forms</b>	
<input type="checkbox"/>	ICS 201 – Incident Briefing.
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Issues Board.
<input type="checkbox"/>	Notification Record.

INCIDENT COMMANDER



### 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	
<b>Location</b>	
<input type="checkbox"/>	Location not pre-determined.
<b>Takes Direction From</b>	
<input type="checkbox"/>	Incident Commander.
<b>Confers With</b>	
<input type="checkbox"/>	Section Chiefs, if applicable.
<input type="checkbox"/>	Site Safety Officer
<b>Gives Direction To</b>	
<input type="checkbox"/>	On-Site Group Supervisor.
<input type="checkbox"/>	Public Protection Group Supervisor.
<input type="checkbox"/>	Staging Area Manager.
<b>Alert/Minor</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Establish method of communications with the Incident Commander and provide support as required.
<input type="checkbox"/>	Schedule regular briefings with the Incident Commander.
<input type="checkbox"/>	Designate Public Protection Group Supervisor and On-Site Group Supervisor, as required.
<b>Level 1</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish On-Site Command Post.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Distribute approved Incident Action Plan to CEOC Director/CEOC.
<input type="checkbox"/>	Participate in the Operations briefing.
<input type="checkbox"/>	Implement Incident Action Plan in coordination with the Incident Commander, On-Site Group Supervisor, Public Protection Group Supervisor, and Staging Area Manager.
<input type="checkbox"/>	Identify EPZ boundaries.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Determine applicable public protection method.
<input type="checkbox"/>	Direct Public Protection Group Supervisor to initiate area resident notifications.
<input type="checkbox"/>	Determine what methods of communication are available to the Team Directors and Team Leaders and schedule regular briefings.
<input type="checkbox"/>	Provide any required voluntary evacuation assistance to residents identified as having special needs.
<input type="checkbox"/>	Review the topographical information, weather data, and weather forecast information.
<input type="checkbox"/>	Ensure an appropriate air quality monitoring strategy is employed.
<input type="checkbox"/>	Develop a roadblock strategy.
<input type="checkbox"/>	Determine resource requirements.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Assess the requirements for on-site safety supervision, personnel, equipment, and other contract services.
<input type="checkbox"/>	Coordinate with the Logistics Section Chief (if assigned) to obtain equipment and resources.
<input type="checkbox"/>	Compile and display incident information.
<input type="checkbox"/>	Assign roles to personnel as appropriate for the size and complexity of the incident.

SITE OPERATIONS SECTION CHIEF



SITE OPERATIONS SECTION CHIEF	
SITE OPERATIONS SECTION CHIEF	<b>Level 2</b>
	<input type="checkbox"/> Continue with previous actions.
	<input type="checkbox"/> Direct Public Protection Group Supervisor to review EPZ boundaries.
	<input type="checkbox"/> Direct Public Protection Group Supervisor to initiate shelter and/or evacuation procedures.
	<input type="checkbox"/> Ensure transient surveys are completed.
	<input type="checkbox"/> Ensure mobile environmental and/or air quality monitoring is taking place.
	<input type="checkbox"/> Ensure roadblocks are established.
	<input type="checkbox"/> 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.
	<input type="checkbox"/> Evaluate Ignition criteria and communicate with the Incident Commander regarding ignition decision.
	<input type="checkbox"/> Ensure field responders are promptly notified of any status updates.
	<input type="checkbox"/> Continually reassess the situation and the risk to life and safety.
	<b>Level 3</b>
	<input type="checkbox"/> Continue with previous actions.
	<input type="checkbox"/> Confirm with Public Protection Group Supervisor that all members of the public in the EPZ have been evacuated and/or sheltered.
	<input type="checkbox"/> Ensure Public Protection Group Supervisor has established a protocol for resident updates and evacuees are provided with updated information.
	<input type="checkbox"/> Maintain security.
	<input type="checkbox"/> Evaluate monitoring data and expand planning zone if required.
	<input type="checkbox"/> Review Ignition Criteria to determine if any one of the conditions have been met and coordinate with the Incident Commander.
	<b>Deactivation</b>
	<input type="checkbox"/> Discuss downgrading of emergency with Incident Commander once it has been determined that the incident site is controlled.
	<input type="checkbox"/> Notify all responders once the decision to downgrade the emergency has been made.
	<input type="checkbox"/> 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.
	<input type="checkbox"/> Ensure that the Public Protection Group Supervisor ventilates residences/businesses as required and that monitoring for gas pockets continues to take place.
	<input type="checkbox"/> Ensure that the Public Protection Group Supervisor notifies all evacuees that the emergency has been downgraded.
	<input type="checkbox"/> Ensure that the Public Protection Group Supervisor assists evacuees in returning to their residences/businesses as required.
	<input type="checkbox"/> Ensure that the Public Protection Group Supervisor collects all Resident Expense Claims forms.
	<input type="checkbox"/> Participate in post-incident debriefing held by Incident Commander.
	<input type="checkbox"/> Participate in any Critical Incident Stress Debriefing, as required.

Forms	
<input type="checkbox"/>	ICS 204 – Assignment List.
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	ICS 215 – Operational Planning Worksheet (to be completed with support from Site Safety Officer and Site Logistics Section Chief or CEOC Logistics Chief).
<input type="checkbox"/>	Issues Board.
<input type="checkbox"/>	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	
<b>Location</b>	
<input type="checkbox"/>	Location not pre-determined.
<b>Takes Direction From</b>	
<input type="checkbox"/>	Site Operations Section Chief.
<b>Gives Direction To</b>	
<input type="checkbox"/>	Roadblock Team Leader.
<input type="checkbox"/>	Rover Evacuation Team Leader.
<input type="checkbox"/>	Air Quality Monitoring Team Leader.
<input type="checkbox"/>	Reception Team Leader.
<input type="checkbox"/>	Telephone Team Leader.
<b>Alert/Minor</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Determine operating location and setup as necessary.
<input type="checkbox"/>	Determine what job aids your position may require.
<input type="checkbox"/>	Review ERP map.
<b>Level 1</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish communication with the Site Operations Section Chief.
<input type="checkbox"/>	Proceed to On-Site Command Post.
<input type="checkbox"/>	Review the Public Protection requirements.
<input type="checkbox"/>	Record the wind direction and speed.
<input type="checkbox"/>	Review EPZ inventory.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Establish and maintain reporting cycles with all of the Public Protection Team Leaders.
<b>Level 2</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Ensure the Telephone Team Leader contacts residents to evacuate by phone.
<input type="checkbox"/>	Designate Reception Centre.
<input type="checkbox"/>	Dispatch Reception Team Leader to the Reception Centre.
<input type="checkbox"/>	Ensure the Rover Evacuation Team contacts residents in person.
<input type="checkbox"/>	Ensure the EPZ has been evacuated in a timely fashion, and roadblocks are in place to isolate the EPZ.
<input type="checkbox"/>	Ensure EPZ has been checked for transients and that they are evacuated as required.
<input type="checkbox"/>	Ensure air quality monitoring occurs downwind, with priority being directed to the nearest unevacuated residence or areas where people may be present.
<input type="checkbox"/>	Record all air quality monitoring results from the Air Quality Monitoring Team Leader.
<input type="checkbox"/>	Ensure field responders are promptly notified of any status updates.
<input type="checkbox"/>	Continually reassess the situation and the risk to life and safety.
<input type="checkbox"/>	Review information from the Roadblock, Rover Evacuation, Air Quality Monitoring and Telephoner Teams.
<input type="checkbox"/>	At pre-determined intervals, report status and discuss responses with Site Operations Section Chief.

PUBLIC PROTECTION GROUP SUPERVISOR

PUBLIC PROTECTION GROUP SUPERVISOR	
<b>PUBLIC PROTECTION GROUP SUPERVISOR</b>	<b>Level 3</b>
	<input type="checkbox"/> Continue with previous actions.
	<input type="checkbox"/> Update the Site Operations Section Chief of status.
	<input type="checkbox"/> Ensure Rover Evacuation Team has successfully evacuated the EPZ.
	<input type="checkbox"/> Ensure the Roadblock Team Leader maintains roadblocks as required.
	<input type="checkbox"/> Ensure the EPZ is being monitored effectively by the Air Quality Monitoring Team Leader.
	<input type="checkbox"/> Ensure Telephone Team Leader is providing ongoing status updates to impacted stakeholders.
	<input type="checkbox"/> Ensure Reception Team Leader has a record of all evacuees.
	<b>Deactivation</b>
	<input type="checkbox"/> Ensure all evacuees are notified of the downgrading of the level of emergency.
	<input type="checkbox"/> Ensure residences/businesses are ventilated as required and that monitoring of gas pockets continues to take place.
	<input type="checkbox"/> Ensure evacuees are assisted in returning to their residences/businesses as necessary.
	<input type="checkbox"/> Ensure evacuee's evacuation expenses and damage claims are collected.
	<input type="checkbox"/> Participate in the post-incident debriefing held by the Incident Commander.
	<input type="checkbox"/> Participate in any Critical Incident Stress Debriefing as required.
	<b>Forms</b>
	<input type="checkbox"/> ICS 214 – Activity Log.
<input type="checkbox"/> Stakeholder Contact Record.	
<input type="checkbox"/> Issues Board.	
<input type="checkbox"/> 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	
<b>Location</b>	
<input type="checkbox"/>	Location not pre-determined.
<b>Takes Direction From</b>	
<input type="checkbox"/>	Public Protection Group Supervisor.
<b>Confers With</b>	
<input type="checkbox"/>	Public Protection Team.
<b>Gives Direction To (via Roadblock Team)</b>	
<input type="checkbox"/>	Road Traffic.
<b>Alert/Minor</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Review the ERP map.
<input type="checkbox"/>	Obtain safety equipment including SCBA, H <sub>2</sub> S and LEL monitors (hand held instruments), barricade tape and radio communication, as required.
<input type="checkbox"/>	Obtain roadblock kit, if not nearby arrange to have it brought to you.
<input type="checkbox"/>	Ensure a sufficient supply of appropriate forms.
<input type="checkbox"/>	Review vehicle requirements to carry out your assignment.
<input type="checkbox"/>	Fill vehicle fuel tank.
<b>Level 1</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish communication with the Public Protection Group Supervisor.
<input type="checkbox"/>	Determine if there are roads and how many lead into a Planning Zone.
<input type="checkbox"/>	Assess weather conditions in and around the area of emergency.
<input type="checkbox"/>	Implement Incident Action Plan in coordination with the Public Protection Group Supervisor.
<input type="checkbox"/>	As required, dispatch roadblock teams to their assigned roadblock locations using a safe route.
<input type="checkbox"/>	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.
<b>Level 2</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish roadblocks at required sites to secure identified EPZ.
<input type="checkbox"/>	Engage the four-way flashers on your vehicle and don illuminated traffic vest so you are visible to traffic.
<input type="checkbox"/>	Do not completely block the road, leave at least one lane open.
<input type="checkbox"/>	Take air quality monitoring readings periodically for your safety and reposition as necessary.
<input type="checkbox"/>	Record any incoming and outgoing vehicles and equipment.
<input type="checkbox"/>	Ask the residents leaving the EPZ to proceed to the designated Reception Centre.
<input type="checkbox"/>	Update the Public Protection Group Supervisor of status at scheduled intervals.
<b>Level 3</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Report any significant or unusual activities.
<b>Deactivation</b>	
<input type="checkbox"/>	Ensure all roadblock equipment is cleaned and returned to its proper location.
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in any Critical Incident Stress Debriefing as required.

ROADBLOCK TEAM LEADER

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

ROVER EVACUATION TEAM LEADER



**ROVER EVACUATION TEAM LEADER**
**ROVER EVACUATION TEAM LEADER**

<input type="checkbox"/>	Account for all members of the household, business or dwelling. Inquire as to the whereabouts of anyone not present.
<input type="checkbox"/>	Review the condition of stakeholders and identify any special requirements.
<input type="checkbox"/>	Relay travel time and directions to the reception centre using safe egress routes.
<input type="checkbox"/>	Check all fields and vacant locations to ensure that they are empty.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Expand transient survey if EPZ is increased.
<input type="checkbox"/>	Update the Public Protection Group Supervisor of status at scheduled intervals.
<b>Level 3</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Ensure EPZ has been evacuated.
<input type="checkbox"/>	Update the Public Protection Group Supervisor of status at scheduled intervals.
<b>Deactivation</b>	
<input type="checkbox"/>	Continue to monitor for gas pockets.
<input type="checkbox"/>	Assist evacuees in returning to their residences/businesses as required.
<input type="checkbox"/>	Ventilate residences/businesses as required.
<input type="checkbox"/>	Provide Company phone number in the event of additional concerns or questions.
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in any Critical Incident Stress Debriefing, as required.

**Forms**

<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Issues Board.
<input type="checkbox"/>	Stakeholder Contact Record.
<input type="checkbox"/>	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	
<b>Location</b>	
<input type="checkbox"/>	Location not pre-determined.
<b>Takes Direction From</b>	
<input type="checkbox"/>	Public Protection Group Supervisor.
<b>Confers With</b>	
<input type="checkbox"/>	Public Protection Team.
<b>Gives Direction To</b>	
<input type="checkbox"/>	Mobile air quality monitoring unit.
<b>Alert/Minor</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Review ERP map, product release rates, wind direction, and safest egress routes.
<input type="checkbox"/>	Review stakeholder locations and proximity to urban developments.
<input type="checkbox"/>	Obtain radio communication equipment, as required.
<input type="checkbox"/>	Verify operational condition and appropriateness of plume monitoring equipment.
<input type="checkbox"/>	Ensure a sufficient supply of appropriate forms.
<input type="checkbox"/>	Review vehicle requirements to carry out your assignment.
<input type="checkbox"/>	Fill vehicle fuel tank.
<b>Level 1</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish communication with the Public Protection Group Supervisor.
<input type="checkbox"/>	Implement Incident Action Plan in coordination with the Public Protection Group Supervisor.
<input type="checkbox"/>	If safe to do so, perform air quality monitoring with hand-held aspirating detectors until mobile air quality monitoring unit arrives.
<input type="checkbox"/>	Confirm dispatch of the mobile air quality monitoring unit, if required.
<b>Level 2</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Track the plume perimeter and record measured concentration.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Air quality monitoring must occur downwind with priority being directed to the nearest un-evacuated residence or area where people may be present.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Update the Public Protection Group Supervisor of status at scheduled intervals.
<b>Level 3</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Ensure the EPZ is being monitored effectively.
<input type="checkbox"/>	Provide Air Quality Monitoring Record reports to the Public Protection Group Supervisor.
<input type="checkbox"/>	Update the Public Protection Group Supervisor of status at scheduled intervals.

AIR QUALITY MONITORING TEAM LEADER



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

RECEPTION TEAM LEADER

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

TELEPHONER TEAM LEADER

TELEPHONE TEAM LEADER		
<b>TELEPHONE TEAM</b>	<b>Deactivation</b>	
	<input type="checkbox"/> As instructed by the Public Protection Group Supervisor, advise all evacuees that they may return.	
	<input type="checkbox"/> Ensure a post-incident telephone message is communicated to the public impacted by the emergency.	
	<input type="checkbox"/> Collect and submit all reports and documents to the Public Protection Group Supervisor.	
	<input type="checkbox"/> Participate in the post-incident debriefing held by the Incident Commander.	
	<input type="checkbox"/> Participate in the Critical Incident Stress Debriefing as required.	
	<b>Forms</b>	
	<input type="checkbox"/> ICS 214 – Activity Log.	
	<input type="checkbox"/> Issues Board.	
	<input type="checkbox"/> 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	
<b>Location</b>	
<input type="checkbox"/>	On-Site Command Post.
<b>Takes Direction From</b>	
<input type="checkbox"/>	Site Operations Section Chief.
<b>Confers With</b>	
<input type="checkbox"/>	Public Protection Group Supervisor.
<b>Gives Direction To</b>	
<input type="checkbox"/>	Fire Control Team Leader.
<input type="checkbox"/>	Isolation/Repair Team Leader.
<input type="checkbox"/>	Spill Response Team Leader.
<input type="checkbox"/>	Site Security Team Leader.
<input type="checkbox"/>	Ignition Team Leader.
<b>Alert/Minor</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Identify hazards.
<input type="checkbox"/>	Attend to medical needs.
<input type="checkbox"/>	Request emergency medical services, as required.
<input type="checkbox"/>	Isolate the scene.
<b>Level 1</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish communication with the Site Operations Section Chief.
<input type="checkbox"/>	Discuss the incident situation and actions to be taken with the Site Operations Section Chief.
<input type="checkbox"/>	Release non-essential personnel.
<input type="checkbox"/>	Isolate the immediate area until the Public Protection Group Supervisor assumes this responsibility.
<input type="checkbox"/>	Activate appropriate Source Control Team Leaders to address the incident.
<input type="checkbox"/>	Ensure all on-site personnel follow the appropriate safe work procedures.
<input type="checkbox"/>	Ensure all on-site personnel have the appropriate training and personal protective equipment.
<input type="checkbox"/>	Assess the requirements for on-site safety supervision, equipment, and personnel.
<input type="checkbox"/>	Coordinate on-site responses to gain control, shutdown, isolate, and depressure equipment, as required.
<input type="checkbox"/>	Review dangerous conditions near the incident site. For example; fuel leaks, toxic gas releases, oxygen deficiency, BLEVE, ignition sources, and chemical leaks.
<input type="checkbox"/>	Build dykes with available materials to stop leaks from travelling off-lease or into waterways.
<input type="checkbox"/>	Evaluate ignition criteria and communicate with the Site Operations Section Chief regarding ignition decision.
<input type="checkbox"/>	Obtain spill samples as required and monitor environment for adverse effects.
<input type="checkbox"/>	Record and report all readings at established intervals to the Site Operations Section Chief.
<b>Level 2</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Update the Site Operations Section Chief of status.
<input type="checkbox"/>	Continue spill sampling.
<input type="checkbox"/>	Ensure field responders are promptly notified of any status updates.
<input type="checkbox"/>	Continually reassess the situation and the risk to life and safety.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Confirm with the Site Operations Section Chief that you have the authority to ignite, if required.

ON-SITE GROUP SUPERVISOR

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

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

FIRE CONTROL TEAM LEADER



### 3.6.2 Isolation/Repair Team Leader

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

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

ISOLATION/REPAIR TEAM LEADER

### 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	
<b>Location</b>	
<input type="checkbox"/>	On-Site Command Post.
<b>Takes Direction From</b>	
<input type="checkbox"/>	On-Site Group Supervisor.
<b>Confers With</b>	
<input type="checkbox"/>	On-Site Team.
<b>Gives Direction To</b>	
<input type="checkbox"/>	Spill Responders.
<b>Alert/Minor</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Collect date, time, name, and contact numbers from the person who reports the spill.
<input type="checkbox"/>	Dispatch initial responders to incident site.
<input type="checkbox"/>	Establish site control.
<input type="checkbox"/>	Analyse the situation.
<input type="checkbox"/>	Establish a muster point.
<input type="checkbox"/>	Identify the type and volume of spill product.
<input type="checkbox"/>	Report the incident to the On-Site Group Supervisor.
<input type="checkbox"/>	Implement spill response objectives in coordination with the On-Site Group Supervisor.
<b>Level 1</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Dispatch spill responders and equipment to the incident site.
<input type="checkbox"/>	Control all access to the incident site.
<input type="checkbox"/>	Identify the contamination zone, support zone, and equipment staging area.
<input type="checkbox"/>	Identify an emergency signal, escape routes, and meeting location for response personnel.
<input type="checkbox"/>	Place a wind indicator at appropriate locations.
<input type="checkbox"/>	Establish an entry and exit checkpoint at the periphery of the incident site.
<input type="checkbox"/>	Monitor weather conditions that could hinder the spill response.
<input type="checkbox"/>	Identify area stakeholders and environmental sensitivities.
<input type="checkbox"/>	Identify designated spill control points.
<input type="checkbox"/>	Initiate containment and recovery operations.
<input type="checkbox"/>	Develop a waste management plan.
<input type="checkbox"/>	Develop sampling and analysis strategy.
<b>Level 2</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish a bulletin board.
<input type="checkbox"/>	Post site safety plan, SDS, crew roster sheets, status reports, and other relevant information.
<input type="checkbox"/>	Obtain radios and megaphones to direct communications on-site.
<input type="checkbox"/>	Establish first aid station in a visible area with appropriate facilities and supplies.
<input type="checkbox"/>	Establish a decontamination area where responders can remove contaminated clothing, wash up, and return clean equipment.
<input type="checkbox"/>	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	
<b>SPILL RESPONSE TEAM LEADER</b>	<b>Level 3</b>
	<input type="checkbox"/> Continue with previous actions.
	<b>Deactivation</b>
	<input type="checkbox"/> Ensure site is safe.
	<input type="checkbox"/> Ensure all work areas, safety and spill equipment, machinery, and tools are cleaned, repaired, and returned to their proper location.
	<input type="checkbox"/> Complete and submit all documents to the On-Site Group Supervisor.
	<input type="checkbox"/> Participate in the post-incident debriefing held by the Incident Commander.
	<input type="checkbox"/> Participate in any Critical Stress Incident Debriefing, as required.

Forms	
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Issues Board.
<input type="checkbox"/>	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 unauthorised entry.

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

SECURITY TEAM LEADER



### 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	
<b>Location</b>	
<input type="checkbox"/>	On-Site Command Post.
<b>Takes Direction From</b>	
<input type="checkbox"/>	On-Site Group Supervisor in coordination with the Site Operations Section Chief and Incident Commander.
<b>Confers With</b>	
<input type="checkbox"/>	On-Site Team.
<b>Gives Direction To</b>	
<input type="checkbox"/>	Ignition Team Members.
<b>Alert/Minor</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Consider safety and health risks to emergency personnel.
<input type="checkbox"/>	Consider proximity of release to public areas.
<input type="checkbox"/>	Consider availability of air monitoring equipment and personnel.
<input type="checkbox"/>	Consider detectable concentrations of H <sub>2</sub> S and/or flammable gases near the source of the release and within the EPZ.
<input type="checkbox"/>	Consider weather conditions.
<input type="checkbox"/>	Consider duration of the release and potential volume.
<input type="checkbox"/>	Consider impacts to livestock.
<input type="checkbox"/>	Consider impacts to other values at risk including property, timber, or infrastructure.
<b>Level 1</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Establish communication with the On-Site Group Supervisor.
<input type="checkbox"/>	Implement Incident Action Plan in coordination with the On-Site Group Supervisor.
<input type="checkbox"/>	Review ignition procedures.
<input type="checkbox"/>	Review ignition criteria.
<input type="checkbox"/>	Review flare gun manufacturer's loading instructions and specifications.
<input type="checkbox"/>	Prepare ignition equipment.
<input type="checkbox"/>	Review training of ignition team members.
<b>Level 2</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Carry out pre-ignition planning.
<input type="checkbox"/>	Monitor the area for combustible gas.
<input type="checkbox"/>	Erect wind sock and streamers, if time permits.
<input type="checkbox"/>	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.
<b>Level 3</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Carry out pre-ignition planning.

IGNITION TEAM LEADER

IGNITION TEAM LEADER	
IGNITION TEAM LEADER	<input type="checkbox"/> Monitor the area for combustible gas.
	<input type="checkbox"/> 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.
	<b>Deactivation</b>
	<input type="checkbox"/> Ensure all work areas, safety equipment, machinery and tools are cleaned, repaired and returned to their proper location.
	<input type="checkbox"/> Complete and submit all documents to the On-Site Group Supervisor.
	<input type="checkbox"/> Participate in the post-incident debriefing held by the Incident Commander.
	<input type="checkbox"/> Participate in any Critical Stress Incident Debriefing, as required.

Forms	
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Stakeholder Contact Record.
<input type="checkbox"/>	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	
<b>Location</b>	
<input type="checkbox"/>	Location not pre-determined.
<b>Takes Direction From</b>	
<input type="checkbox"/>	Site Operations Section Chief.
<b>Confers With</b>	
<input type="checkbox"/>	On-Site Team.
<b>Gives Direction To</b>	
<input type="checkbox"/>	Contractors and suppliers.
<b>Alert/Minor</b>	
<input type="checkbox"/>	No assigned duties during an alert/minor.
<b>Level 1</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Proactively review area map to identify potential staging areas near the incident site and outside of the EPZ.
<input type="checkbox"/>	Ensure potential staging area has an adequately sized site that is stable and level with suitable access roads.
<input type="checkbox"/>	Ensure potential staging area has no entry problems such as narrow approach ways, gates, power lines, etc.
<input type="checkbox"/>	Ensure potential staging area has adequate communication reception.
<b>Level 2</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Ensure approval has been obtained from landowner.
<input type="checkbox"/>	Establish a staging area.
<input type="checkbox"/>	Erect staging area information and directional signs to the staging area, if required.
<input type="checkbox"/>	Flag the perimeter of the staging area.
<input type="checkbox"/>	Obtain an office trailer and emergency lighting, if required.
<input type="checkbox"/>	Advise the Site Operations Section Chief about the location and directions to the staging area.
<input type="checkbox"/>	Respond to Site Operations Section Chief's request for resources.
<input type="checkbox"/>	Coordinate and maintain a log of personnel and services.
<input type="checkbox"/>	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.
<b>Level 3</b>	
<input type="checkbox"/>	Continue with previous actions.
<input type="checkbox"/>	Continue coordinating staging area operations support requirements until incident is concluded.
<b>Deactivation</b>	
<input type="checkbox"/>	Demobilize or move staging area in accordance with incident demobilization plan.
<input type="checkbox"/>	Remove all equipment and supplies and coordinate cleanup of the staging area.
<input type="checkbox"/>	Participate in post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in any Critical Incident Stress Debriefing, as required.
<b>Forms</b>	
<input type="checkbox"/>	ICS 211 – Check-In List
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Issues Board.

STAGING AREA MANAGER



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

SITE SAFETY OFFICER

Forms	
<input type="checkbox"/>	ICS 206 – Medical Plan.
<input type="checkbox"/>	ICS 208 – Safety Message / Plan.
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	ICS 215A – Incident Action Plan Safety Analysis.
<input type="checkbox"/>	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	
<b>Location</b>	
<input type="checkbox"/>	Incident Command Post.
<input type="checkbox"/>	Government Emergency Operations Centre (Level 2 and 3).
<b>Takes Direction From</b>	
<input type="checkbox"/>	Incident Commander.
<b>Confers With</b>	
<input type="checkbox"/>	Site Section Chiefs.
<input type="checkbox"/>	Site Safety Officer.
<b>All Levels</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Receive briefing from Incident Commander.
<input type="checkbox"/>	Evaluate which government agencies have jurisdiction inside the planning zone.
<input type="checkbox"/>	In coordination with the Incident Commander, ensure Regulatory Authority notification according to the applicable requirements.
<input type="checkbox"/>	Refer to the Notification Requirements for Key Government Agencies and Resources in the Jurisdictional section of this document.
<input type="checkbox"/>	Determine which government and regulatory notifications have been completed
<input type="checkbox"/>	Receive representatives from the Regulatory Authority, the local authority, and local regional health authority, at the Incident Command Post, if they arrive on-scene.
<input type="checkbox"/>	Coordinate the flow of information to and from the government agencies who are present.
<input type="checkbox"/>	Update the Incident Commander.
<input type="checkbox"/>	Travel to the Government Emergency Operations Centre, if necessary.
<b>Deactivation</b>	
<input type="checkbox"/>	Participate in post-incident debriefing held by Incident Commander.
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.
<b>Forms</b>	
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Issues Board.
<input type="checkbox"/>	Status Board.

SITE LIAISON OFFICER



### 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		SITE SCRIBE
<b>Location</b>		
<input type="checkbox"/>	Incident Command Post.	
<b>Takes Direction From</b>		
<input type="checkbox"/>	Incident Commander.	
<b>All Levels</b>		
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.	
<input type="checkbox"/>	Maintain a chronological summary of the incident response activities.	
<input type="checkbox"/>	Record names of personnel in each assigned response position and their location utilizing ICS 211 – Check-In List and ICS 207 – Incident Organization Chart.	
<input type="checkbox"/>	Record control and containment measures.	
<input type="checkbox"/>	Record environmental monitoring information.	
<input type="checkbox"/>	Record injuries, deaths, and missing persons.	
<input type="checkbox"/>	Record phone calls.	
<input type="checkbox"/>	Record decisions.	
<input type="checkbox"/>	Record actions.	
<input type="checkbox"/>	Record status of the public protection actions.	
<input type="checkbox"/>	Collect documentation from response team members.	
<input type="checkbox"/>	Maintain a consistent system for organizing the data.	
<b>Deactivation</b>		
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.	
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.	
<b>Forms</b>		
<input type="checkbox"/>	ICS 207 – Incident Organization Chart (may be completed by Site Planning Section Chief, if assigned)	
<input type="checkbox"/>	ICS 211 – Check-In List.	
<input type="checkbox"/>	ICS 214 – Activity Log.	
<input type="checkbox"/>	Environmental Monitoring Record.	
<input type="checkbox"/>	Issues Board.	
<input type="checkbox"/>	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	
<b>Location</b>	
<input type="checkbox"/>	Incident Command Post.
<b>Takes Direction From</b>	
<input type="checkbox"/>	Incident Commander.
<b>Confers With</b>	
<input type="checkbox"/>	Site Section Chiefs.
<input type="checkbox"/>	Site Liaison.
<input type="checkbox"/>	Site Safety Officer.
<b>Gives Direction To</b>	
<input type="checkbox"/>	Site Section Chiefs.
<b>All Levels</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Assess current operations effectiveness and resource efficiency, gather information to support incident management decisions.
<input type="checkbox"/>	Facilitate Planning Meeting with Command and General Staff. Review. Validate the operational plan as proposed by the Site Operations Section Chief.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Distribute Incident Action Plan to the Incident Commander for approval prior to disseminating to Command and General Staff.
<input type="checkbox"/>	Assess the current situation and prepare an incident response strategy considering “what if” scenarios.
<input type="checkbox"/>	Assemble information and propose alternative strategies.
<input type="checkbox"/>	Compile and display incident information on the Status Board.
<input type="checkbox"/>	Using the information contained within the ICS 203 – Organization Assignment List, continuously monitor and update ICS 207 – Incident Organization Chart.
<input type="checkbox"/>	In a prolonged incident, ensure site response strategies are considered. Develop the ICS 209 – Incident Status Summary, as required.
<b>Deactivation</b>	
<input type="checkbox"/>	Develop plan for demobilization. Utilize ICS 221 – Demobilization Check-Out Form.
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.

SITE PLANNING SECTION CHIEF

Forms	
<input type="checkbox"/>	ICS 202 – Incident Objectives
<input type="checkbox"/>	ICS 203 – Organization Assignment List
<input type="checkbox"/>	ICS 207 – Incident Organization Chart
<input type="checkbox"/>	ICS 209 – Incident Status Summary (to be completed following a significant incident)
<input type="checkbox"/>	ICS 214 – Activity Log
<input type="checkbox"/>	ICS 221 – Demobilization Check-Out

### 3.12 Site Logistics Section Chief

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

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

SITE LOGISTICS SECTION CHIEF



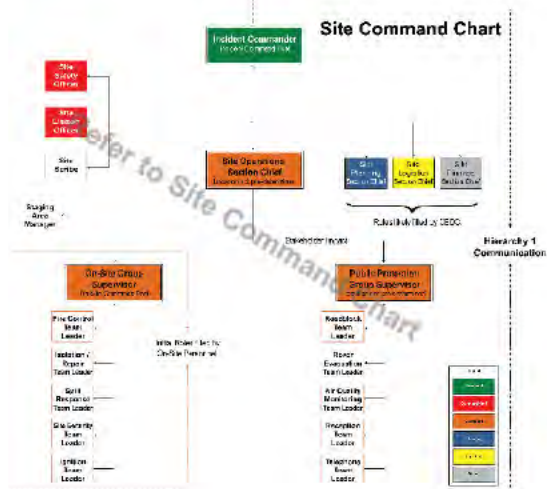
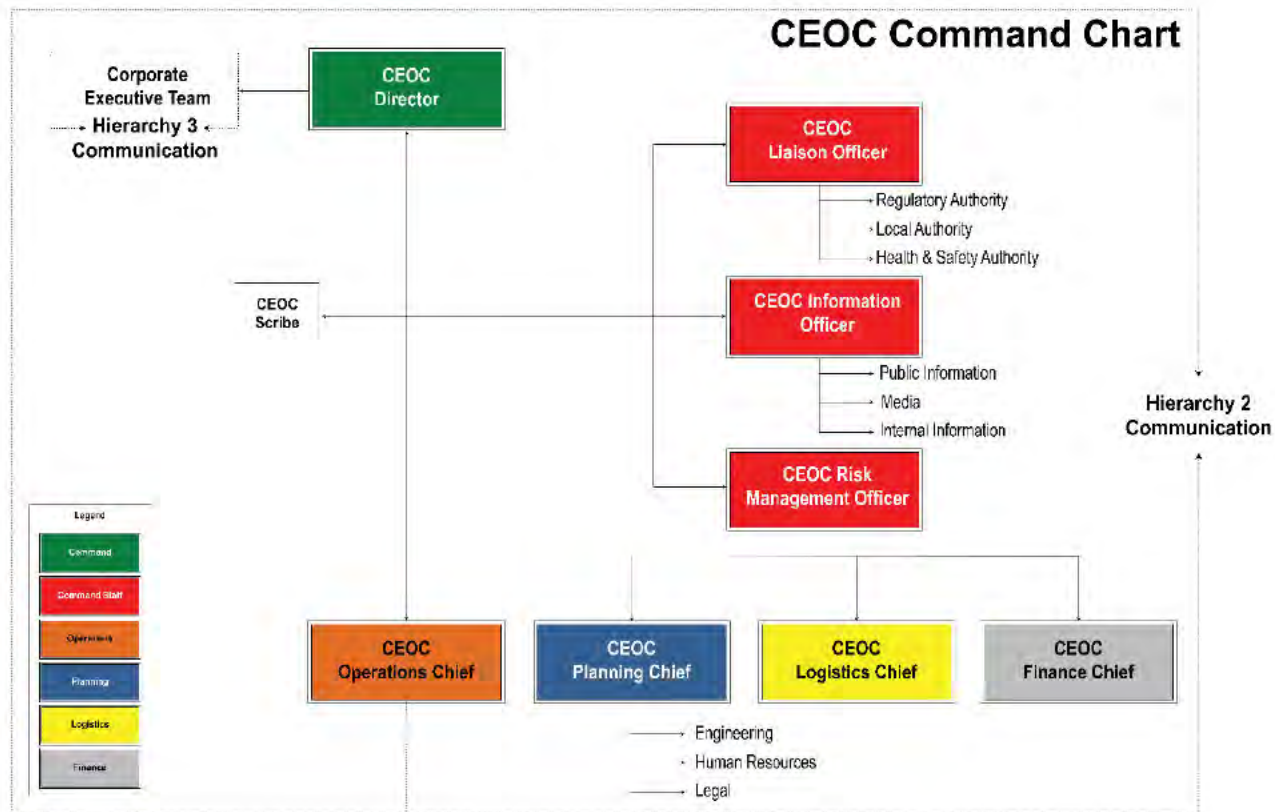
### 3.13 Site Finance Section Chief

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		SITE FINANCE SECTION FINANCE
<b>Location</b>		
<input type="checkbox"/>	Incident Command Post.	
<b>Takes Direction From</b>		
<input type="checkbox"/>	Incident Commander.	
<b>Confers With</b>		
<input type="checkbox"/>	Site Section Chiefs.	
<input type="checkbox"/>	Site Liaison.	
<input type="checkbox"/>	Site Safety Officer.	
<b>All Levels</b>		
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.	
<input type="checkbox"/>	Obtain briefings from the Incident Commander.	
<input type="checkbox"/>	Account for costs.	
<input type="checkbox"/>	Track time.	
<input type="checkbox"/>	Adhere to procurement procedures.	
<input type="checkbox"/>	Track compensation and claims.	
<input type="checkbox"/>	Attend planning meetings.	
<input type="checkbox"/>	Submit reports and expense claims to the CEOC Financial Department.	
<b>Deactivation</b>		
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.	
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.	
<b>Forms</b>		
<input type="checkbox"/>	ICS 214 – Activity Log.	
<input type="checkbox"/>	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	
<b>Location</b>	
<input type="checkbox"/>	Corporate Emergency Operations Centre.
<b>Confers With</b>	
<input type="checkbox"/>	Corporate Executive Team.
<b>Gives Direction To</b>	
<input type="checkbox"/>	CEOC Chiefs.
<input type="checkbox"/>	CEOC Liaison Officer.
<input type="checkbox"/>	CEOC Risk Management Officer.
<input type="checkbox"/>	CEOC Information Officer.
<b>All Levels</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Advise the Corporate Executive Team.
<input type="checkbox"/>	In consultation with the CEOC Operations Chief, develop and implement a comprehensive response plan for the incident.
<input type="checkbox"/>	Evaluate the CEOC Operations Chief's actions.
<input type="checkbox"/>	Make CEOC Operations Chief aware of external expertise and services that can be provided.
<input type="checkbox"/>	Ensure personnel and expertise from Engineering, Human Resources, and Legal are available as required to support the incident response activities.
<input type="checkbox"/>	Confirm the status of the incident.
<input type="checkbox"/>	Estimate the maximum impact and duration of the incident.
<input type="checkbox"/>	Determine the impact on the public.
<input type="checkbox"/>	Determine business continuity issues.
<input type="checkbox"/>	Advise on corporate responsibilities.
<input type="checkbox"/>	Advise on any internal company policies.
<input type="checkbox"/>	Identify agencies (government and regulatory) with jurisdiction related to the incident.
<input type="checkbox"/>	If incident escalates ensure that the CEOC Liaison Officer role is filled.
<input type="checkbox"/>	Ensure that CEOC Liaison Officer is coordinating communication between government agencies and company personnel as required.
<input type="checkbox"/>	Ensure ongoing internal communication, as appropriate.
<input type="checkbox"/>	Approve major capital financial support as required.
<input type="checkbox"/>	Advise and support the CEOC Information Officer regarding media and public statements.
<b>Deactivation</b>	
<input type="checkbox"/>	Ensure the CEOC Liaison Officer, in coordination with the Regulatory Authority agree that there is consensus to downgrade emergency.
<input type="checkbox"/>	Ensure the CEOC Liaison Officer has notified all previously contacted government agencies of the decision to downgrade the emergency.
<input type="checkbox"/>	Ensure all records and reports are gathered in their original state, for accurate post-incident review.
<input type="checkbox"/>	Ensure all CEOC Team Members are notified.
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.
<input type="checkbox"/>	Approve final release of incident reports in coordination with the legal department.
<b>Forms</b>	
<input type="checkbox"/>	ICS 214 – Activity Log.

**CEOC DIRECTOR**



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

CEOC OPERATIONS CHIEF



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

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

CEOC LIAISON OFFICER



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

**CEOC INFORMATION OFFICER**

Use this template following the onset of an incident.

EMERGENCY COMMUNICATION PLANNING TEMPLATE	
EMERGENCY COMMUNICATION PLANNING TEMPLATE	<input type="checkbox"/> Identify the Communication Team.
	<input type="checkbox"/> Activate Communication Team.
	<input type="checkbox"/> Communication Team meets to assess the situation and develop communication strategies.
	<input type="checkbox"/> CEOC Information Officer meets with CEOC Director to determine the response and message.
	<input type="checkbox"/> Communication Team prepares initial internal and external communication statements.
	<input type="checkbox"/> Ensure communication statements and strategy are reviewed and approved by CEOC Director.
	<input type="checkbox"/> CEOC Information Officer delivers initial internal and external messages in coordination with the applicable Regulatory Authority.
	<input type="checkbox"/> Communication Team updates company website information regarding the emergency.
	<input type="checkbox"/> Communication Team coordinates meetings with media and delivers approved messages.
	<input type="checkbox"/> Communication Team obtains regular status reports from CEOC Director.
	<input type="checkbox"/> Communication Team prepares and distributes status reports regularly on the communication situation.
	<input type="checkbox"/> Communication Team prepares and delivers regular updates to stakeholders, government agencies and other relevant entities.
	<input type="checkbox"/> Communication Team prepares and delivers messages on resolution of the emergency.
	<input type="checkbox"/> Communication Team provides ongoing updates to internal and external parties as the situation is resolved.
	<input type="checkbox"/> Communication Team is advised by CEOC Director that the emergency is over.
	<input type="checkbox"/> Communication Team stands down once the emergency has been resolved.
	<input type="checkbox"/> Communication Team prepares, and issues post-incident reports as needed to internal and external parties.
	<input type="checkbox"/> 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	
<b>Location:</b>	
<input type="checkbox"/>	Corporate Emergency Operations Centre.
<b>Takes Direction From</b>	
<input type="checkbox"/>	CEOC Director.
<b>Confers With</b>	
<input type="checkbox"/>	CEOC Chiefs.
<input type="checkbox"/>	CEOC Liaison Officer.
<input type="checkbox"/>	CEOC Information Officer.
<b>All Levels</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Review the Incident Action Plan for risk management implications.
<input type="checkbox"/>	Determine the severity and impact of business interruption to the company; loss of service, supply chain interruptions, catastrophic loss of critical infrastructure, etc.
<input type="checkbox"/>	Establish which critical services/functions may be required for the response to the emergency.
<input type="checkbox"/>	Identify the critical functions that need to be reinstated within 24 hours or are time-dependent; IT recovery, supply chain, procurement, vendors, etc.
<input type="checkbox"/>	Aim to maintain the Company's minimum level of service.
<b>Deactivation</b>	
<input type="checkbox"/>	Implement business/disaster/IT recovery procedures.
<input type="checkbox"/>	Acquire the additional resources necessary for restoring business operations.
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing if required.
<b>Forms</b>	
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Issues Board.

CEOC RISK MANAGEMENT OFFICER



#### 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 role may be allocated to CEOC Planning Chief dependant on the emergency level. See Site Planning Section Chief role in the previous section.

CEOC PLANNING CHIEF	
<b>Location</b>	
	Corporate Emergency Operations Centre.
<b>Takes Direction From</b>	
<input type="checkbox"/>	CEOC Director.
<b>Confers With</b>	
<input type="checkbox"/>	CEOC Chiefs.
<input type="checkbox"/>	CEOC Liaison Officer.
<input type="checkbox"/>	CEOC Risk Management Officer.
<input type="checkbox"/>	CEOC Information Officer.
<b>All Levels</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Assess the current situation and prepare an incident response strategy considering 'what if' scenarios.
<input type="checkbox"/>	Develop and implement Incident Action Plan.
<input type="checkbox"/>	Gather specialists (Human Resources, Engineering, Environmental, or Legal) required for the response.
<input type="checkbox"/>	Ensure incident information is documented, current, and disseminated to the CEOC.
<input type="checkbox"/>	Utilize the Status Board, Issues Board and Response Organizational Chart.
<input type="checkbox"/>	Review the degree of success of the previous actions.
<input type="checkbox"/>	Post charts, plot plans, surveys, and maps as they are developed.
<input type="checkbox"/>	In a prolonged incident, ensure corporate response strategies are considered.
<input type="checkbox"/>	Notify and assemble replacement personnel if the incident lasts longer than 24 hours.
<b>Deactivation</b>	
<input type="checkbox"/>	Compile the overall post-incident action plan.
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.
<b>Forms</b>	
<input type="checkbox"/>	ICS 202 – Incident Objectives
<input type="checkbox"/>	ICS 203 – Organization Assignment List
<input type="checkbox"/>	ICS 207 – Incident Organization Chart
<input type="checkbox"/>	ICS 209 – Incident Status Summary (to be completed following a significant incident)
<input type="checkbox"/>	ICS 214 – Activity Log
<input type="checkbox"/>	ICS 221 – Demobilization Check-Out

CEOC PLANNING CHIEF

### 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		ENGINEERING
<b>Location</b>		
<input type="checkbox"/>	Corporate Emergency Operations Centre.	
<b>Takes Direction From</b>		
<input type="checkbox"/>	CEOC Planning Chief.	
<b>All Levels</b>		
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.	
<input type="checkbox"/>	Gather the necessary information needed to resolve the emergency situation (down-hole diagrams, facility schematics, etc.).	
<input type="checkbox"/>	Provide engineering analysis and recommend solutions.	
<input type="checkbox"/>	Assist with the development of control and containment procedures.	
<b>Deactivation</b>		
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.	
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.	
<b>Forms</b>		
<input type="checkbox"/>	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		HUMAN RESOURCES
<b>Location</b>		
<input type="checkbox"/>	Corporate Emergency Operations Centre.	
<b>Takes Direction From</b>		
<input type="checkbox"/>	CEOC Planning Chief.	
<b>All Levels</b>		
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.	
<input type="checkbox"/>	Mobilize additional Human Resource staff as required.	
<input type="checkbox"/>	Sort and compile information about insurance and benefits for affected employees.	
<input type="checkbox"/>	As required, mobilize counsellors to provide Critical Incident Stress Debriefing to employees and families.	
<input type="checkbox"/>	Clarify the nature and extent of injuries to any employees or contract personnel.	
<input type="checkbox"/>	Coordinate next of kin notification by the police in the event of death.	
<input type="checkbox"/>	Coordinate any follow up next of kin notification on behalf of the Company.	
<input type="checkbox"/>	Ensure compliance with all regulations for employment and human resource issues.	
<b>Deactivation</b>		
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.	
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.	
<b>Forms</b>		
<input type="checkbox"/>	ICS 214 – Activity Log	



### 4.7.3 Legal

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

LEGAL		LEGAL
<b>Location</b>		
<input type="checkbox"/>	Corporate Emergency Operations Centre.	
<b>Takes Direction From</b>		
<input type="checkbox"/>	CEOC Planning Chief.	
<b>All Levels</b>		
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.	
<input type="checkbox"/>	Council on legal matters.	
<input type="checkbox"/>	Evaluate liability implications of the incident.	
<input type="checkbox"/>	Ensure that proper documentation is gathered and preserved.	
<input type="checkbox"/>	Assist with legal settlement activities.	
<input type="checkbox"/>	Review press releases.	
<b>Deactivation</b>		
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.	
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.	
<b>Forms</b>		
<input type="checkbox"/>	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 dependant on the emergency level. See Site Logistics Section Chief role in the previous section.

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

CEOC LOGISTICS CHIEF



#### 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 dependant on the emergency level. See Site Finance Section Chief role in the previous section.

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

CEOC FINANCE CHIEF



#### 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	
<b>Location</b>	
<input type="checkbox"/>	Corporate Emergency Operations Centre.
<b>Takes Direction From</b>	
<input type="checkbox"/>	CEOC Director.
<b>All Levels</b>	
<input type="checkbox"/>	Document all activities utilizing the ICS 214 – Activity Log.
<input type="checkbox"/>	Maintain a chronological summary of the incident response activities.
<input type="checkbox"/>	Record names of personnel in each assigned response position and their location utilizing ICS 211 – Check-In List and ICS 207 – Incident Organization Chart.
<input type="checkbox"/>	Record control and containment measures.
<input type="checkbox"/>	Record environmental monitoring information.
<input type="checkbox"/>	Record injuries, deaths, and missing persons.
<input type="checkbox"/>	Record phone calls.
<input type="checkbox"/>	Record decisions.
<input type="checkbox"/>	Record actions.
<input type="checkbox"/>	Record status of the public protection actions.
<input type="checkbox"/>	Collect documentation from response team members.
<input type="checkbox"/>	Maintain a consistent system for organizing the data.
<b>Deactivation</b>	
<input type="checkbox"/>	Participate in the post-incident debriefing held by the Incident Commander.
<input type="checkbox"/>	Participate in the Critical Incident Stress Debriefing as required.
<b>Forms</b>	
<input type="checkbox"/>	ICS 207 – Incident Organization Chart (may be completed by CEOC Planning Chief, if assigned)
<input type="checkbox"/>	ICS 211 – Check-In List.
<input type="checkbox"/>	ICS 214 – Activity Log.
<input type="checkbox"/>	Environmental Monitoring Record.
<input type="checkbox"/>	Issues Board.
<input type="checkbox"/>	Status Board.

CEOC SCRIBE

## **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

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

## 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.

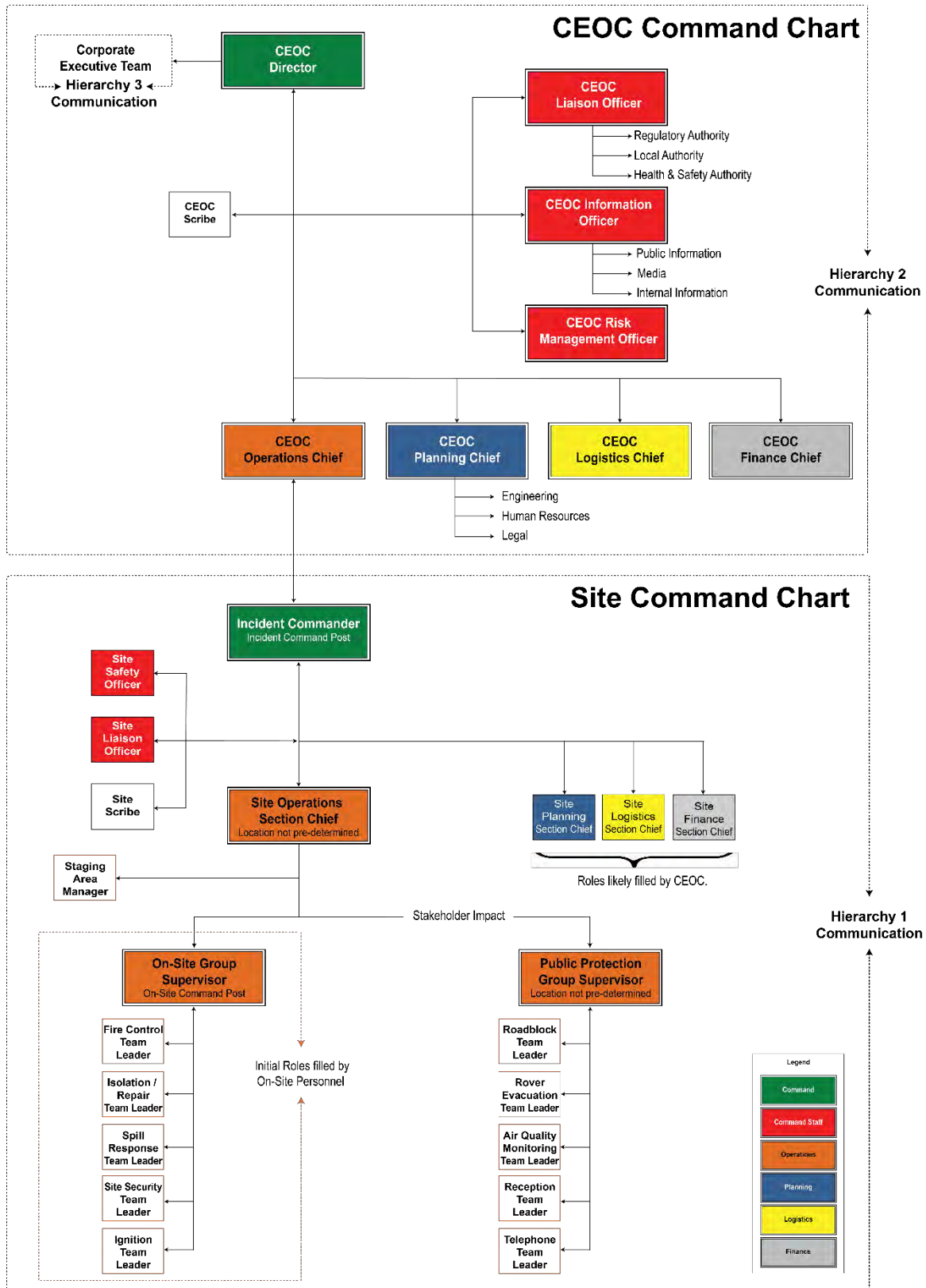
### 5.8.2 Municipal Emergency Operations Centre (MEOC)

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.

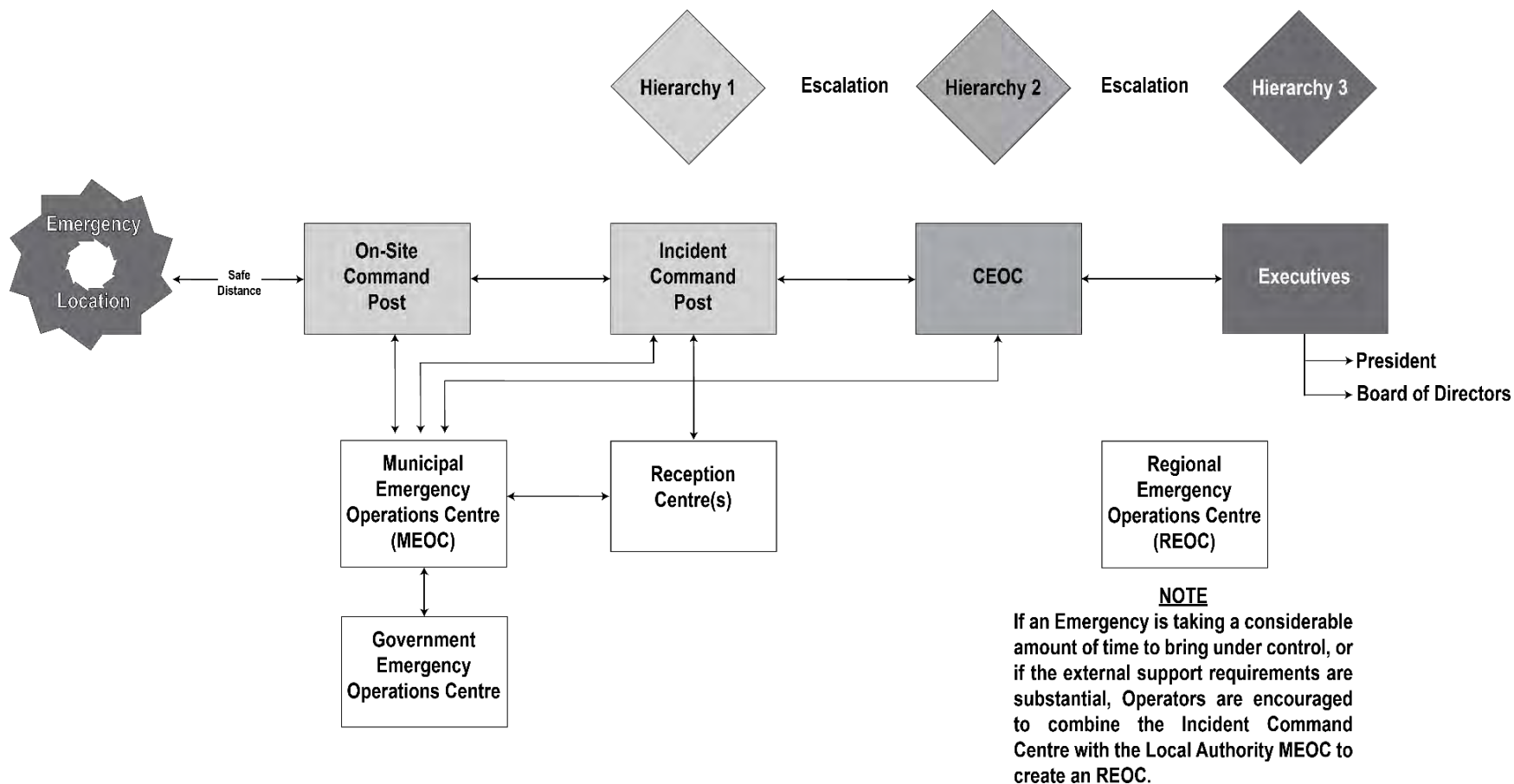
During an emergency, the CEOC Information Officer must contact the Emergency 24-hour number attendant to ensure all media enquiries are directed appropriately.

### **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
<ul style="list-style-type: none"> <li>Type and status of the incident.</li> <li>Location and proximity of the incident to people in the vicinity.</li> <li>Public protection measures to follow, evacuation instructions, and any other emergency response measures to consider.</li> <li>Actions being taken to respond to the situation, including anticipated time period.</li> <li>Contacts for additional information.</li> </ul>	<ul style="list-style-type: none"> <li>Description of the products involved and their short-term and long-term effects.</li> <li>Effects the incident may have on people in the vicinity.</li> <li>Areas impacted by the incident.</li> <li>Actions the affected public should take if they experience adverse effects.</li> </ul>	<ul style="list-style-type: none"> <li>Type and status of the incident.</li> <li>Location of the incident.</li> <li>Areas impacted by the incident.</li> <li>Description of the products involved.</li> <li>Contacts for additional information.</li> <li>Actions being taken to respond to the situation, including anticipated time period.</li> </ul>

## **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:

<b>Nature of Emergency:</b>	General description of what happened. Do not give an opinion of the cause. Do not speculate. Use non-technical language.
<b>Where, When:</b>	Location of the site from the nearest major centre and the time the incident began.
<b>Injuries/Fatalities/Damages:</b>	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.
<b>Status:</b>	Indicate the nature of the situation: what is being done and by whom.
<b>When to Expect More Information:</b>	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, Pine Cliff 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, Pine Cliff Energy Ltd. is directing emergency procedures at this time and steps are being taken by Pine Cliff Energy Ltd. to control this incident.
For additional information about this incident, please call: _____. Pine Cliff 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
<ul style="list-style-type: none"> <li>• Ensure individuals present for any media communication are authorized to be there.</li> <li>• 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.</li> <li>• Have one person locally and one at the head office as designated spokespersons (all others will defer questions to them).</li> <li>• Keep your commitments. If you say you will check something, ensure you do.</li> <li>• If there is an important development, provide an information update immediately.</li> <li>• Show yourself as caring and concerned.</li> <li>• Reinforce that the Company has active safety, prevention, and response programs.</li> <li>• As soon as the Company can confirm, provide: <ul style="list-style-type: none"> <li>○ Estimate of when production or flow can be resumed.</li> <li>○ Estimate of cleanup details (e.g. cost, time frame).</li> <li>○ After notification of families, names of those injured.</li> </ul> </li> <li>• Keep your answers brief.</li> <li>• Maintain strong eye contact with those asking questions. Wandering or averted eyes will make you seem dishonest.</li> <li>• Immediately provide the CEOC Information Officer with details of what you have said.</li> <li>• Keep a record of all media representatives' organizations and when you talk with them.</li> <li>• Politely correct reporters who have carried inaccurate information.</li> </ul>	<ul style="list-style-type: none"> <li>• 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".</li> <li>• Do not speculate or guess.</li> <li>• 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).</li> <li>• Do not accuse anyone of negligence.</li> <li>• Do not discuss anything "off the record".</li> <li>• Do not discuss liability.</li> <li>• Do not get flustered by hostile questions: control any anger you may want to return.</li> <li>• Do not play favourites with reporters. Be consistent with the information you provide.</li> <li>• 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.</li> <li>• Do not answer hypothetical questions. Comment that the question is hypothetical and that every effort is being made to contain the situation.</li> <li>• Do not fall victim to the either/or question. Repeat your facts.</li> <li>• 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.</li> </ul> <p><b>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.</b></p>



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 doesn't 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.

- Don't 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 Pine Cliff will remain the primary emergency responder, and that any assistance provided by third parties must be under the supervision of a Pine Cliff representative. Furthermore, the party providing mutual aid must comply with all applicable Pine Cliff 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 Pine Cliff 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 Pine Cliff 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 Pine Cliff 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. Pine Cliff 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 Pine Cliff 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 Pine Cliff 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 Pine  
Cliff 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.**

## **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.

**Health Hazards and Risks:**

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

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

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

**Other:****Risk of Fire or Explosion:**

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

**Exposure Limits (ACGIH – if other specify):**

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

#### **Responder Safety and Protection**

**Responder Qualifications/Training Requirements:**

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**Recommended Level of Personal Protective Equipment (PPE):**

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

**First Aid Measures:**

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### 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<sub>2</sub>S 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<sub>2</sub>S, 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<sub>2</sub>S and SO<sub>2</sub> information on a regular basis throughout a sour gas emergency to the environmental agency, the applicable Regulatory Authority, local health 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<sub>2</sub>S, SO<sub>2</sub> and LEL levels.
- Immediately initiate atmospheric monitoring of H<sub>2</sub>S, SO<sub>2</sub> and LEL levels.
- Designate a safe muster location based on the extent of the Sour Gas release.
- Initial immediate evacuation of all non-essential personnel.
- Identify areas of the site with confirmed or potential H<sub>2</sub>S, SO<sub>2</sub> 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<sub>2</sub>S and SO<sub>2</sub>.
- Continue to provide atmospheric monitoring of H<sub>2</sub>S, SO<sub>2</sub> 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<sub>2</sub>S and SO<sub>2</sub> 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<sub>2</sub>S and SO<sub>2</sub>, 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<sub>2</sub>S and SO<sub>2</sub>.
- 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<sub>2</sub>S and SO<sub>2</sub>.
- Designate a safe staging position for responding resources.

**Brief Emergency Responders**

- Provide emergency responders with an SDS for H<sub>2</sub>S and SO<sub>2</sub>.
- 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<sub>2</sub>S and SO<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub>, 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 <sup>2</sup> )	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 <sup>2</sup> ) <sup>4/3</sup> 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<sup>2</sup>)<sup>4/3</sup> 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<sub>2</sub>S, LEL, CO, O<sub>2</sub> 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<sub>2</sub>S 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<sub>2</sub>S 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.

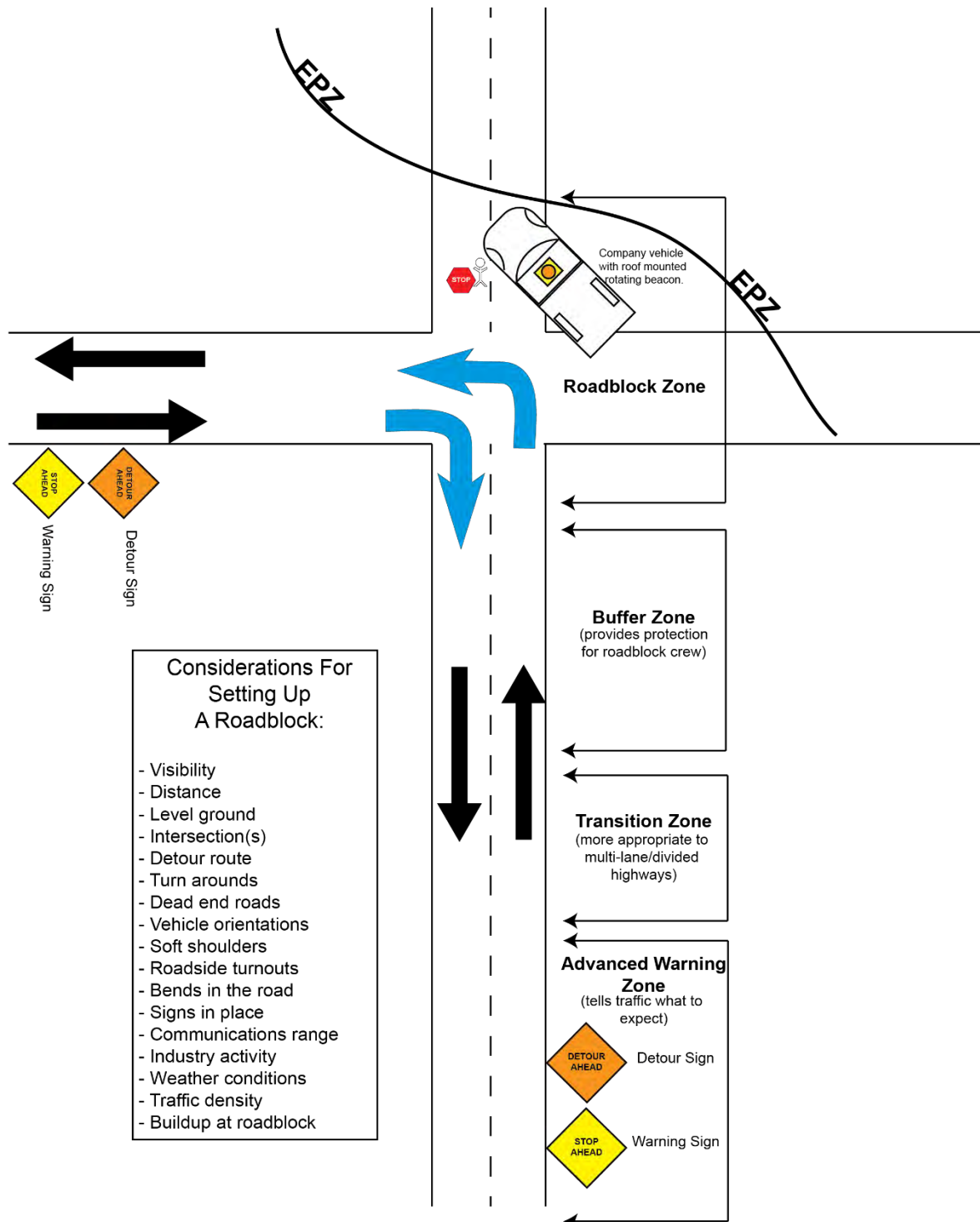
**Roadblock Statement**

Hello, my name is \_\_\_\_\_ (state your name).

I am representing Pine Cliff Energy Ltd.. Pine Cliff 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.

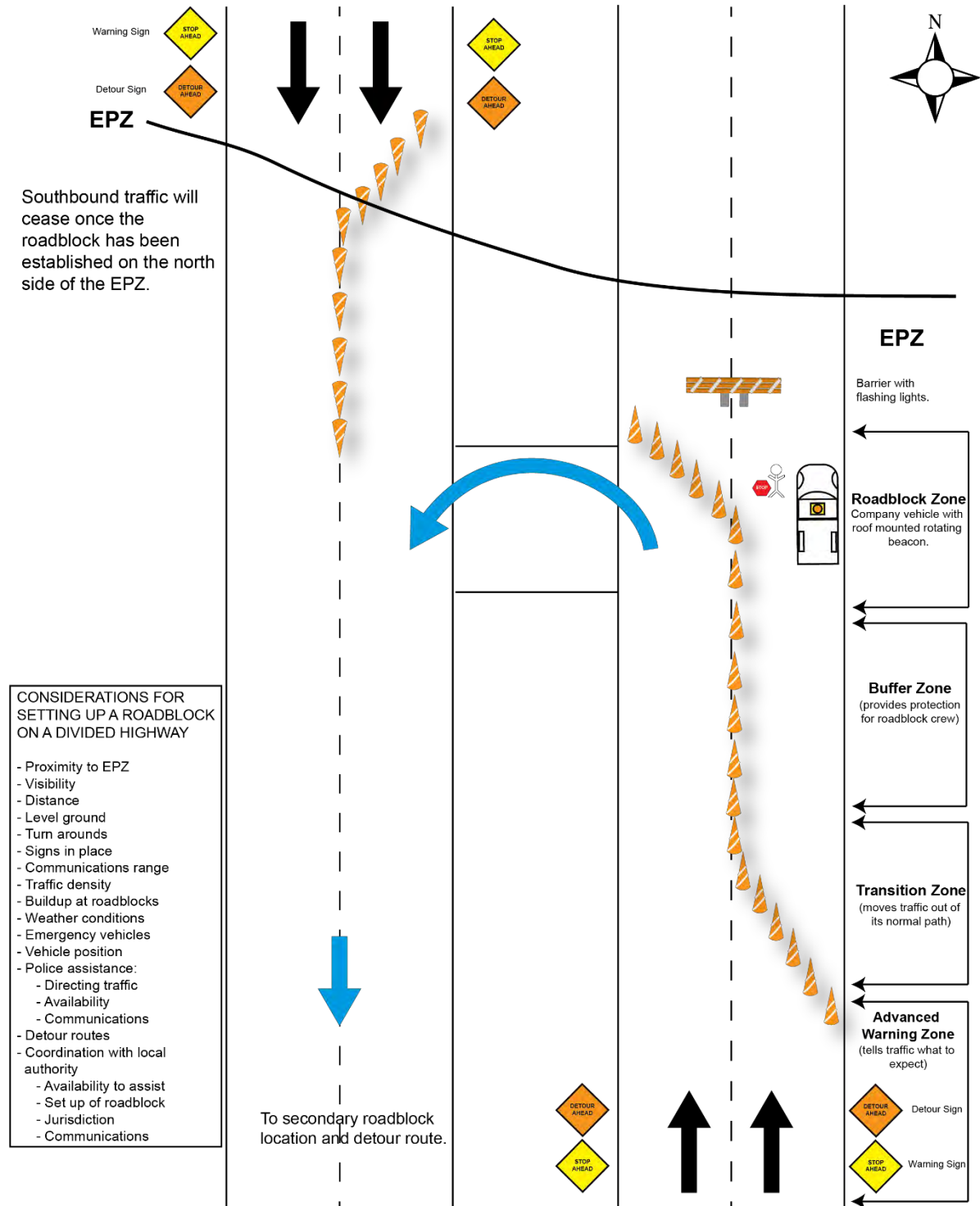
**Note:** Confirm evacuation route and evacuation orders with Public Protection Group Supervisor prior to directing traffic on an alternate route

*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.

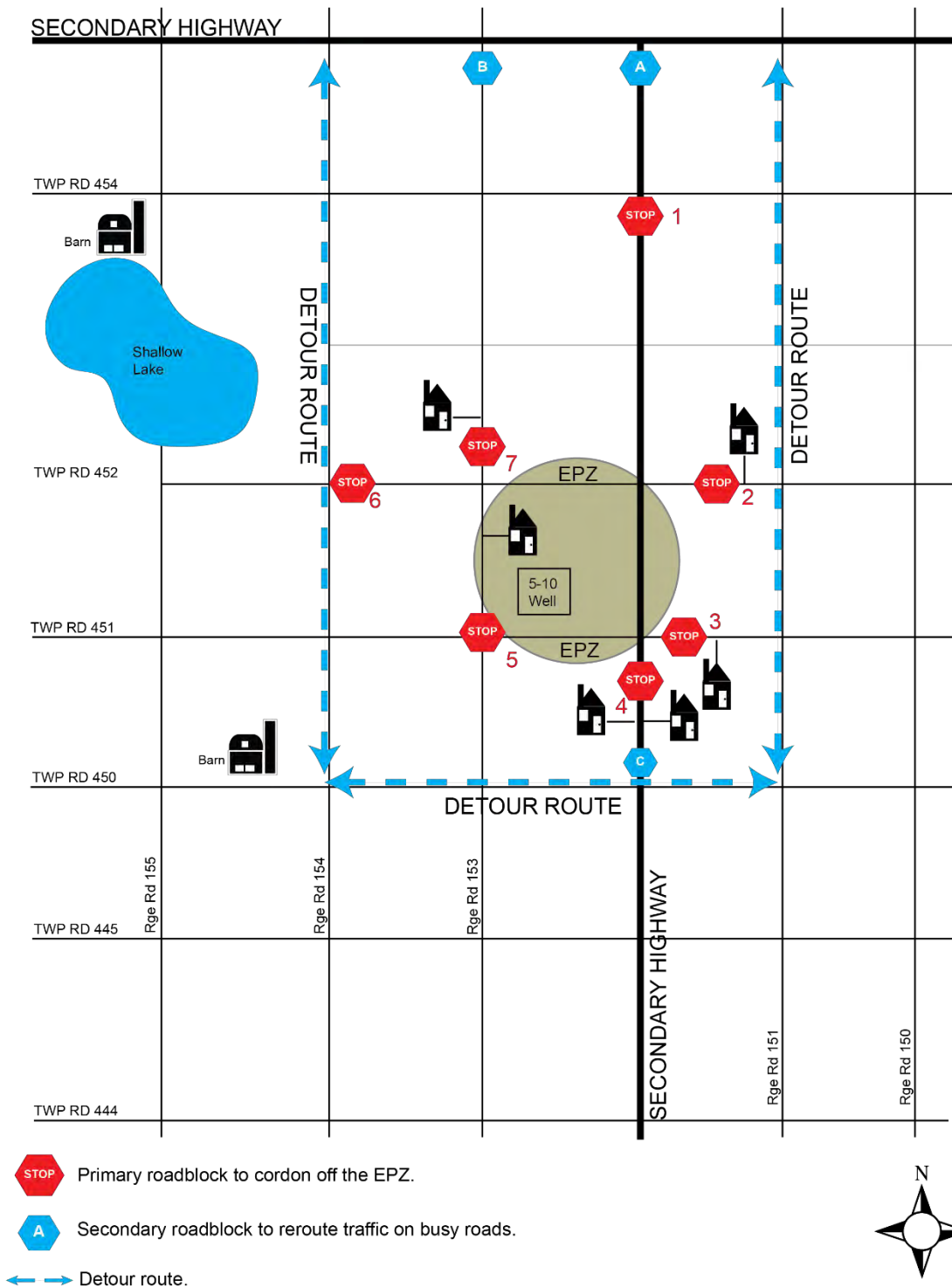
**Primary Roadblock – Multi-Lane/Divided Highway**



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 water bodies and streams.
- Contain release to the site recovering as much spilled material as possible.
- Protect surface water-bodies, 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. water bodies, 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 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.

#### **7.17.1 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.

**7.18 Blow Out Incident****7.18.1 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.

#### **7.18.2 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 cleanup 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 gasses 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<sub>2</sub>S/SO<sub>2</sub> 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.



### **7.19 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.

#### **7.19.1 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.

### **7.20 Facility Fires**

#### **7.20.1 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.

#### **7.20.2 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.

## **7.21 High Vapour Pressure (HVP) Release**

### **7.21.1 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.

Pine Cliff 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<sub>2</sub>S from incomplete combustion as well as SO<sub>2</sub>.

### **7.21.2 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.

### **7.21.3 Guideline for Igniting HVP Plume**

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

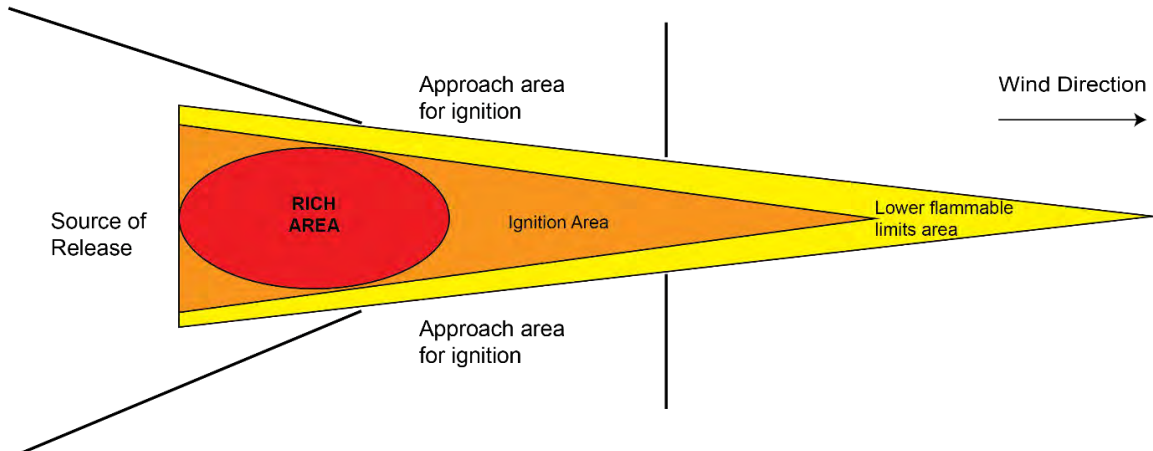
1. Conduct a complete assessment that includes the identification of the plume perimeter.
2. Take steps to prevent injury including evacuation (if necessary) and the protection of the response team.
3. Approach wearing flame resistant clothing, eye protection, hard hat and a flammable gas detector.
4. 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.



### 7.22 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<sub>2</sub> 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<sub>2</sub> 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.

### 7.23 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.

### **7.23.1 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 -42° C (-44° 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.

### **7.23.2 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:

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

where,

$R_{\text{fireball}}$  = 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

<b>WARNING</b> 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.											
<b>BLEVE</b> (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)	94.6	25
400 (106)	0.61 (2)	1.5 (4.9)	160 (353)	4	12	16 (53)	90 (295)	244 (801)	488 (1601)	189.3	50
2000 (528)	0.96 (3.2)	3 (9.8)	800 (1764)	5	18	28 (92)	111 (364)	417 (1368)	834 (2736)	424	112
4000 (1057)	1 (3.3)	4.9 (16.1)	1600 (3527)	5	20	35 (115)	140 (459)	525 (1722)	1050 (3445)	598	158
8000 (2113)	1.25 (4.1)	6.5 (21.3)	3200 (7055)	6	22	44 (144)	176 (577)	661 (2169)	1323 (4341)	848	224
22000 (5812)	2.1 (6.9)	6.7 (22)	8800 (19400)	7	28	62 (203)	247 (810)	926 (3038)	1852 (6076)	1404	371
42000 (11095)	2.1 (6.9)	11.8 (38.7)	16800 (37037)	7	32	77 (253)	306 (1004)	1149 (3770)	2200 (7218)	1938	512
82000 (21662)	2.75 (9)	13.7 (45)	32800 (72310)	8	40	96 (315)	383 (1257)	1435 (4708)	2200 (7218)	2710	716
140000 (36984)	3.3 (10.8)	17.2 (56.4)	56000 (123457)	9	45	114 (374)	457 (1499)	1715 (5627)	2200 (7218)	3539	935

Emergency Response Guidebook  
U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Transport Canada, Secretariat of Transport and Communications, 2016



### Safe Standoff Distance

Liquefied Petroleum Gas (LPG – Butane or Propane)	Threat Description	LPG Mass/Volume <sup>1</sup>		Fireball Diameter <sup>2</sup>		Safe Distance <sup>3</sup>	
	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

<sup>1</sup> Based on the maximum amount of material that could reasonably fit into a container or

<sup>2</sup> Assuming efficient mixing of the flammable gas with ambient air.

<sup>3</sup> 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, 2016

#### 7.23.3 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.

#### 7.24 Transportation Incident

##### 7.24.1 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.

#### **7.24.2 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 make shift 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.

**7.25 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.
- 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.

## **7.26 Hazardous Materials Incident**

### **7.26.1 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.

### **7.26.2 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 DOT 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.

**7.27 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 OH&S inspector or police officer arrives at the site of incident.
- Or an OH&S inspector or police officer directs otherwise at the time of notification.

**7.27.1 Serious Injury/Fatality Safety**

Assess the incident site for hazards, consider the following hazards before proceeding to the victim:

- Hazardous gases (H<sub>2</sub>S, 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.

### **7.27.2 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 OH&S 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.

**7.27.3 Next of Kin Notification**

Next of kin notification of a seriously injured employee must be made as soon as possible. A senior Company representative or police will make the notification.

In the case of death, notification by police must precede company notification.

Contractors working for Pine Cliff will be notified by their appropriate Company personnel. Pine Cliff should be notified by contracting personnel when the next of kin notification has been done.

**7.28 Air Ambulance****7.28.1 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.

### 7.28.2 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)

### 7.28.3 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.

### 7.28.4 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.

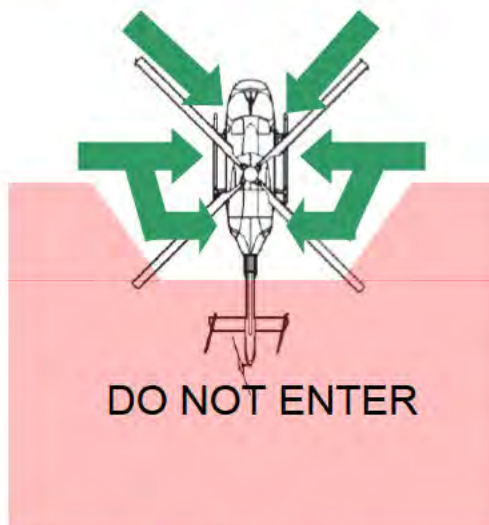


**7.28.5 Loading and Unloading**

- 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.

**7.28.6 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 illuminate 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.

**7.28.7 Approach Routes****7.29 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.

### **7.29.1 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.

### **7.30 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.

#### **7.30.1 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.

### **7.30.2 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.



### **7.30.3 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.

### **7.30.4 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.

### **7.30.5 Floods**

A flood is an overflow of water that submerges land which is usually dry. Flooding may occur as an overflow of water from water bodies, 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.

**7.30.6 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/hzd/rthqks-drng-en.aspx>



## **7.31 Wildlife**

### **7.31.1 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).

### **7.31.2 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.

### **7.31.3 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.

### **7.31.4 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.

*7.31.5 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.

*7.31.6 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 100m 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.

### **7.32 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.

#### **7.32.1 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.

#### **7.32.2 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.

### **7.33 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.

#### **7.33.1 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).

#### **7.33.2 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.

### **7.33.3 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.

### **7.33.4 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.

### **7.33.5 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.

### **7.33.6 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.

### **7.33.7 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.

### **7.33.8 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.
- Cleanup 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 OH&S 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 cleanup 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 cleanup 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 cleanup?
- 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

Pine Cliff'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	<ul style="list-style-type: none"> <li>No worker injuries.</li> <li>Nil or low media interest.</li> <li>Liquid release contained on lease.</li> <li>Gas release impact on lease only.</li> </ul>
2	Moderate	<ul style="list-style-type: none"> <li>First aid treatment required for on-lease worker(s).</li> <li>Local and possible regional media interest.</li> <li>Liquid release not contained on lease.</li> <li>Gas release impact has potential to extend beyond lease.</li> </ul>
3	Major	<ul style="list-style-type: none"> <li>Worker(s) require hospitalization.</li> <li>Regional and national media interest.</li> <li>Liquid release extends beyond lease – not contained.</li> <li>Gas release impact extends beyond lease – public health/safety could be jeopardized.</li> </ul>
4	Catastrophic	<ul style="list-style-type: none"> <li>Fatality.</li> <li>National and international media interest.</li> <li>Liquid release off lease not contained – potential for, or is impacting water or sensitive terrain.</li> <li>Gas release impact extends beyond lease – public health/safety jeopardized.</li> </ul>

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?		

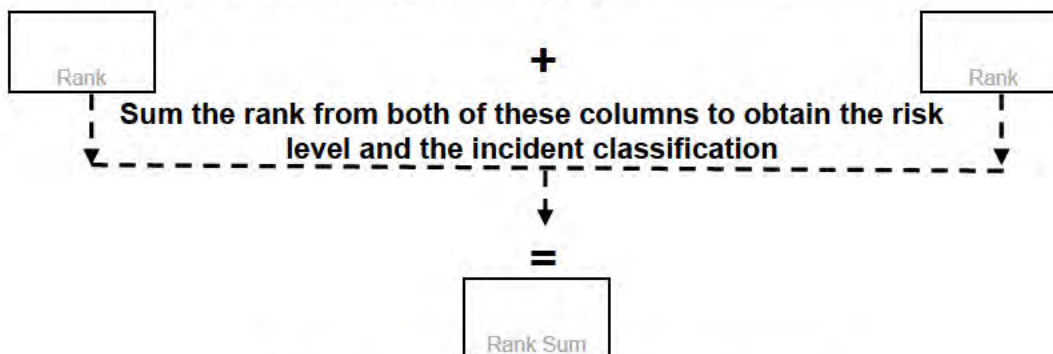


Table 3 Incident Classification	
Risk Level	Assessment results
Very Low 2-3	Alert
Low 4-5	Level – 1 Emergency
Medium 6	Level – 2 Emergency
High 7-8	Level – 3 Emergency



### 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.



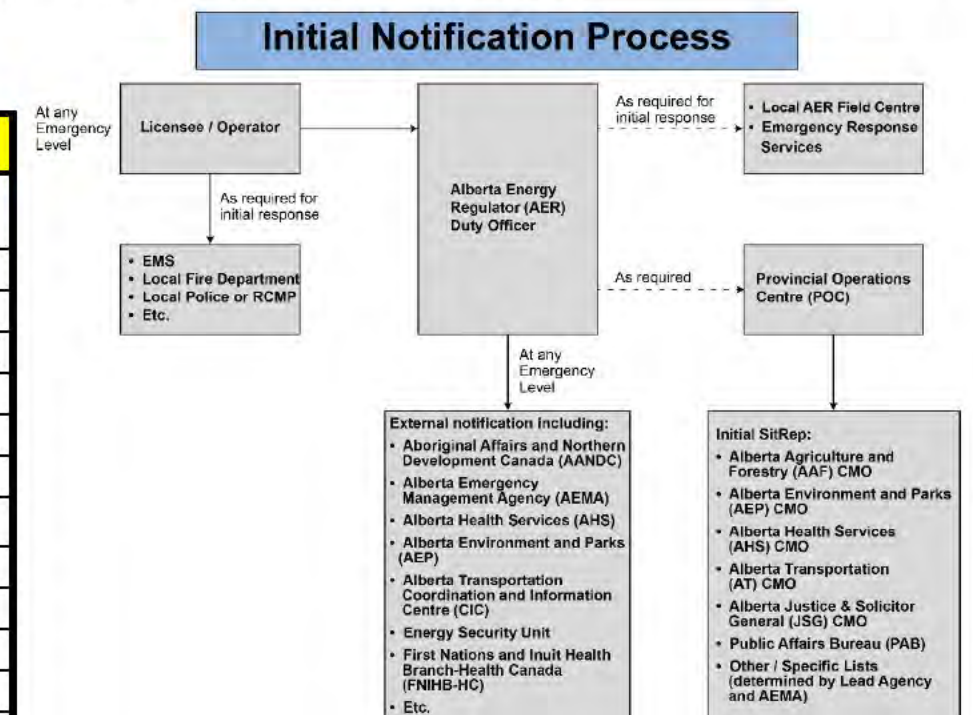
### 9.1.2 Notification Requirements for Key Government Agencies and Local Resources

INCIDENT TYPE	AGENCY OR RESOURCE	Initial Responders			Lead Agencies				Other Government Contacts							Support Services
		Ambulance Services	Local Fire Department or Industrial Fire Service	Police	AER	Local Authorities (i.e. urban centres, MDs, and first nations reserves)	AEP - Spill Reporting Line	AHS - Alberta Health Services <sup>1</sup>	Alberta Occupational Health and Safety	Workers' Compensation Board	AEMA - Alberta Emergency Management Agency	ABSA - Alberta Boilers Association	Alberta Agriculture and Forestry <sup>2</sup>	Alberta Safety Services - Electrical Branch	Alberta Ministry of Transportation <sup>3</sup>	Oil Spill Cooperative (WCSS)
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		✓ <sup>4</sup>	✓	✓	✓		✓	✓		✓		✓		✓		
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			✓	✓										✓		

- ✓ Compulsory contact      ✓ Request that the AER notify these agencies and services as required.      \* Refer to the Alberta Petroleum Industry Release Reporting Requirements chart included in the ERP.
- <sup>1</sup> Contact Alberta Health Services (AHS) if the incident has the potential to impact public health.  
<sup>2</sup> Contact Alberta Agriculture and Forestry for any event that could affect forested areas.  
<sup>3</sup> Contact Alberta Ministry of Transportation or the RCMP if the emergency affects a highway designated by 1, 2, or 3 digits (e.g. Hwy 2, Hwy 47, Hwy 837).  
<sup>4</sup> Contact Local Fire Department or Industrial Fire Service in a BLEVE scenario to be a backup to ERAC.

INCIDENT TYPE	AGENCY OR RESOURCE	Initial Responders	Lead Agencies	Other Government Contacts					Support Services	
		RCMP	CER <sup>1</sup>	Transportation Safety Board (TSB)	Environment and Climate Change Canada <sup>2</sup>	Indian Oil and Gas Canada <sup>4</sup>	DFO	CANUTEC <sup>3</sup>	ERAC - Emergency Response Assistance Canada <sup>5</sup>	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		✓	✓							

- ✓ Compulsory contact
- <sup>1</sup> Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for emergencies involving CER regulated sites and inter-provincial pipelines.  
<sup>2</sup> 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.  
<sup>3</sup> Contact the Canadian Transport Emergency Centre (CANUTEC) if information is required about handling procedures for toxic material releases.  
<sup>4</sup> Contact Indian Oil and Gas Canada for incidents affecting First Nation reserves and Metis settlements.  
<sup>5</sup> Contact ERAC for emergencies related to specific ERAP products for vessels containing over 450 liters or greater by road, rail and stationary tank..





### 9.1.3 Spill Reporting

Pine Cliff 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 Alberta Environment and Parks (AEP) and Environment and Climate Change Canada.

#### Notification Requirements

For both refined and unrefined products, upon becoming aware of a reportable release, Pine Cliff **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:** Pine Cliff **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 (AEP), 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, Pine Cliff 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](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](http://www.qp.alberta.ca/documents/Regs/1988_076.pdf)

AER's FAQ: Release Reporting, [http://www.aer.ca/documents/forms/FAQ\\_Release\\_Reporting.pdf](http://www.aer.ca/documents/forms/FAQ_Release_Reporting.pdf)  
 April 2018  
 AER's Release Reporting <http://www.aer.ca/documents/directives/AER-ReleaseReportingBrochure.PDF>  
 Brochure, February 2016

### 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 <i>Water Act</i> )	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 <ul style="list-style-type: none"> <li>the release is at or in excess of the quantity or emission levels set out in the second column of the schedule or</li> <li>the substance is released into a watercourse, groundwater, or surface water</li> </ul>	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 <sup>3</sup> on site	X	X	X	X	X	X
A liquid spill (as defined in the <i>Oil Sands Conservation Rules</i> )		X	X			
Release of a liquid hydrocarbon exceeding 2 m <sup>3</sup>		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 <sup>3</sup>	X	X	X	X	X	X
Well flowing uncontrolled	X	X	X			

### Common Unrefined Product Releases

Common Unrefined Product	Chemical Class*	Reportable Criteria
<ul style="list-style-type: none"> <li>Condensate</li> <li>Crude oil</li> <li>Crude emulsion</li> <li>Bitumen</li> </ul>	Possibly Class 3 Flammable liquids	<ul style="list-style-type: none"> <li>Any release that has caused, is causing, or may cause an adverse effect</li> <li>Any release into a water body (as defined in the <i>Water Act</i>) or a watercourse, groundwater, or surface water (as stated in the Release Reporting Regulation).</li> <li>Releases greater than 2 m<sup>3</sup> on site.</li> <li>Any release off site.</li> </ul>
<ul style="list-style-type: none"> <li>Produced water</li> <li>Oilfield waste</li> <li>Drilling waste</li> </ul>	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	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).	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	Methane Propane Butane H <sub>2</sub> S Natural Gas	All releases which could pose a danger, or any sustained release of 10 minutes or more.	Any quantity.
Class 2.2 Non-Flammable, Non-Toxic, Non-Corrosive Gases	Compressed Air O <sub>2</sub> N <sub>2</sub> CO <sub>2</sub>		
Class 2.3 Toxic Gases (Poisonous or Corrosive)	SO <sub>2</sub> Anhydrous Ammonia Carbon Monoxide		
Class 3 Flammable Liquids	Demulsifiers† Diesel Gasoline Methanol† – use UN # to determine subclasses Scale Inhibitors† Condensate	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 m³) 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.	Any quantity of Category A or B.
Class 6.2 Infectious Substances	Infectious substances affecting humans / animals.	All releases	
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 m³ or 30,000 m³ 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 least protective packaging within the transportation requirement.



#### **9.1.4 TDG Reporting**

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.

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.

Public Safety means the safety of human life and health and of property and the environment.

### 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).	<ul style="list-style-type: none"> <li>As soon as possible;</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Local authority responsible for emergency response.</li> <li>911 (or local police; relevant provincial authorities).</li> <li>Alberta Transportation</li> <li>Canadian Coast Guard.</li> </ul>	Telephone (Verbal)	No
Release or Anticipated Release Report	Person who made the Emergency Report.	<p>The report is required in these situations:</p> <ul style="list-style-type: none"> <li>the death of a person;</li> <li>a person sustaining injuries requiring immediate medical treatment by a health care provider;</li> <li>an evacuation of people or their shelter-in- place;</li> <li>the closure of a facility, road, main railway line or main waterway;</li> <li>a means of containment has been damaged;</li> <li>the centre sill or stub sill of a tank car is broken or there is a crack in the metal &lt; 15 cm (6 inches).</li> </ul>	<ul style="list-style-type: none"> <li>CANUTEC;</li> <li>the consignor (shipper);</li> </ul> <p>And, if applicable,</p> <ul style="list-style-type: none"> <li>The Canadian Nuclear Safety Commission (CNSC); or</li> <li>A Vessel Traffic Services Centre, or the Canadian Coast Guard.</li> </ul>	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.	<ul style="list-style-type: none"> <li>As soon as possible.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>CANUTEC;</li> </ul> <p>And, if applicable,</p> <ul style="list-style-type: none"> <li>Natural Resources Canada, or</li> <li>CNSC.</li> </ul>	Telephone (Verbal)	No
Unlawful Interference Report	Person who has the charge, management or control of the dangerous goods (DG).	<ul style="list-style-type: none"> <li>As soon as possible after it is discovered that dangerous goods have been unlawfully interfered with.</li> </ul>	<ul style="list-style-type: none"> <li>CANUTEC;</li> </ul> <p>And, if applicable,</p> <ul style="list-style-type: none"> <li>Natural Resources Canada; or</li> <li>CNSC.</li> </ul>	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) <https://open.alberta.ca/dataset/7740f423-5afd-490e-8200-5852074b6d95/resource/b1ec5c30-9926-4f6a-b5f6-96bd99efb55b/download/trans-emergency-release-or-anticipated-release-report-requirements-2020.pdf>



### 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 <sup>1</sup>

Type of operation (applies to sweet and sour streams)	Duration of event (hrs in 24-hr period)		Gas volume <sup>2</sup> (10 <sup>3</sup> m <sup>3</sup> in a 24-hr period)	Notification <sup>3,4</sup>
Temporary (i.e., for well cleanup, testing, or maintenance)	< 4	and	< 30	No notification <sup>5</sup>
Temporary (i.e., for well cleanup, testing, or maintenance) if gas contains ≤ 10 mol/kmol H <sub>2</sub> S	> 4	or	> 30	Residents, schools, 1.5 km radius; AER field centre
Temporary (i.e., for well cleanup, testing, or maintenance) if gas contains > 10 mol/kmol H <sub>2</sub> S	> 4	or	> 30	Residents, schools, 3 km radius; AER field centre
Temporary (i.e., for well cleanup, testing, or maintenance) through permanent battery or plant flare or incinerator	< 4		--	No public notification; <sup>5</sup> Notify the AER if flaring > 30 10 <sup>3</sup> m <sup>3</sup>
Temporary (i.e., for well cleanup, testing, or maintenance) through permanent battery or plant flare or incinerator	> 4		--	Residents, schools, 0.5 km radius; AER field centre

<sup>1</sup> 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.

<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> 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 2021



### **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<sub>2</sub>S 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<sub>2</sub>S 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.

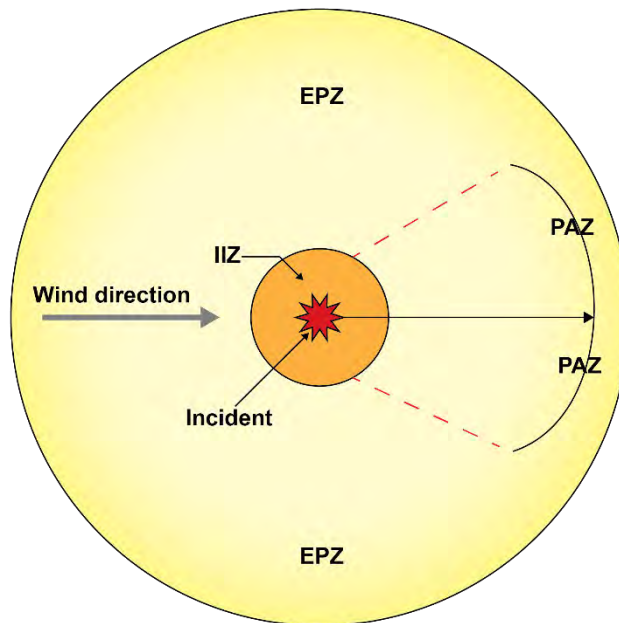
Whereas the EPZ is used for planning purposes and it reflects an area where significant exposure could result without prompt action, actual conditions during an incident need to be assessed to ensure an appropriate initial response. The response zones are where resources are focused during an incident 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<sub>2</sub>S 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 ERCBH<sub>2</sub>S 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<sub>2</sub>S 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

#### 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<sub>2</sub> 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

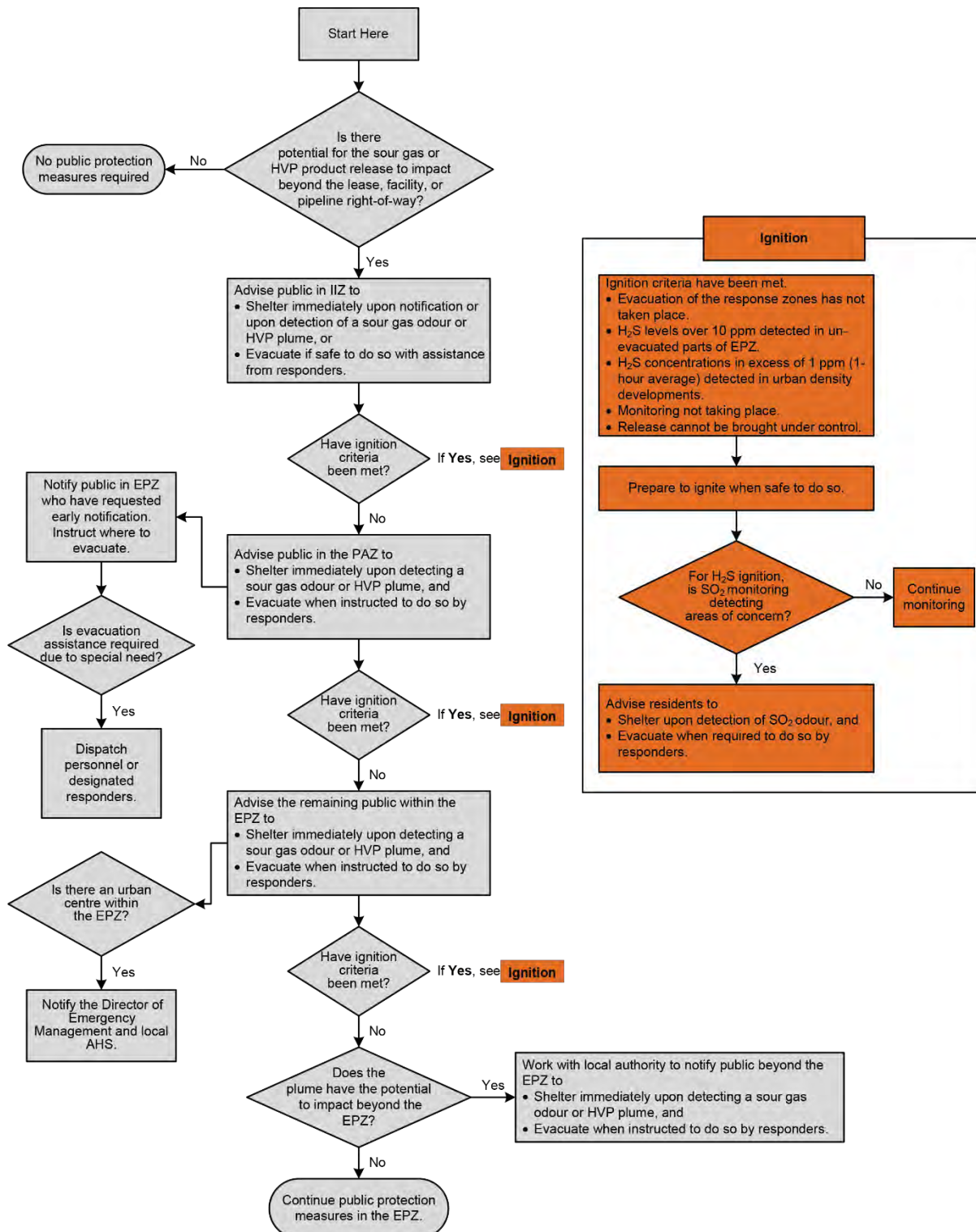
- Permanent and part-time residents, including those residing on dead-end roads, beyond a predetermined EPZ, where occupants are required to egress through the EPZ.
- Business owners and/or operators and industrial operators, including oil and gas operators with manned facilities inside a predetermined 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<sub>2</sub>S, SO<sub>2</sub>, 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<sub>2</sub>S, SO<sub>2</sub>, 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<sub>2</sub>S or other toxic gases.



### Evacuation Requirements

H <sub>2</sub> S 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 <sub>2</sub> S 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 <sub>2</sub> 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<sub>2</sub>S, SO<sub>2</sub>, 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<sub>2</sub> or H<sub>2</sub>S in the surrounding area would determine if public evacuation becomes necessary.

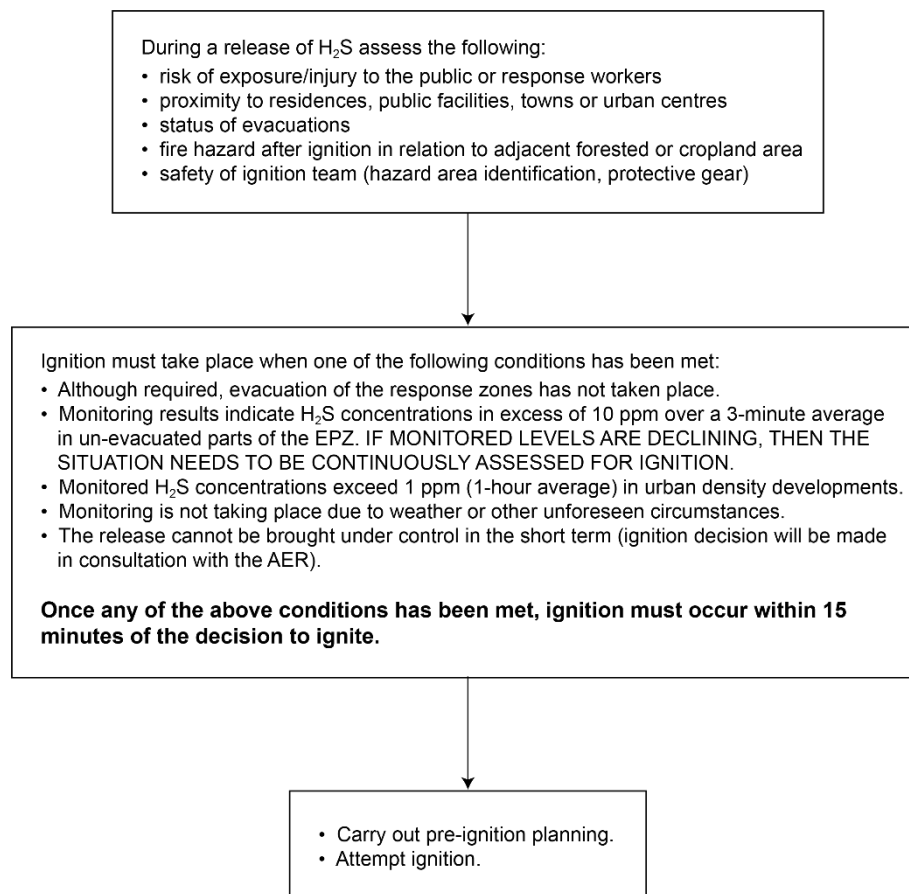
The ignition team must be certified in sour well ignition and properly equipped to ignite the well within the planned time limits for which the EPZ was designed. Certification in ignition training may be obtained from Enform or from other training facilities that have a comparable program.

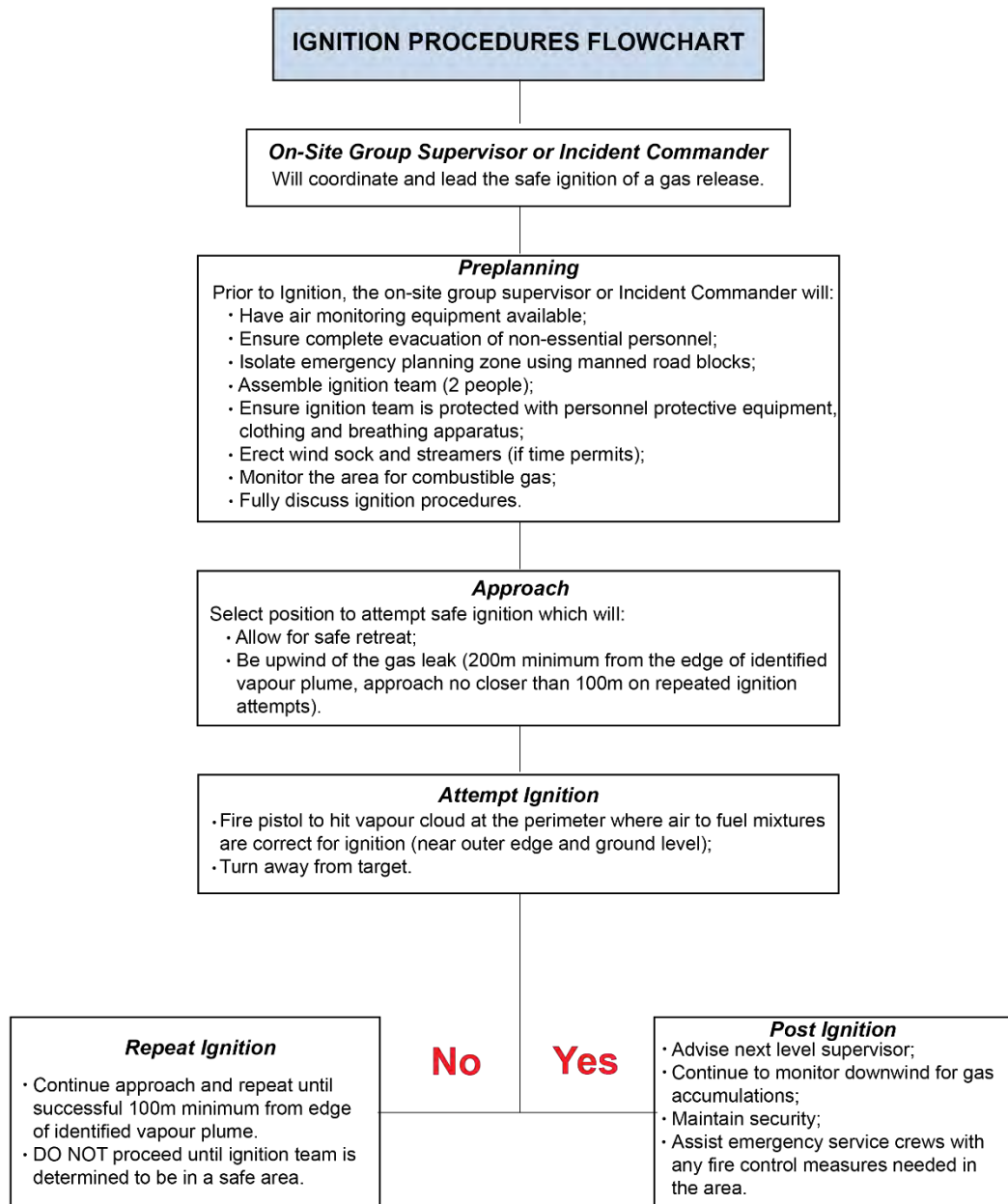
AER senior staff may make the decision to ignite a release if the licensee does not agree to ignite the release or is not prepared to take the necessary steps.

Ignition doesn't negate the need for continuing with evacuation as there may be residual pockets of H<sub>2</sub>S or SO<sub>2</sub> 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 Fire Hazard Order and NOTAM

In an emergency situation requiring isolation of the response zones, contact the AER to discuss the issuance of a Fire Hazard Order.

It may be necessary to obtain a Fire Hazard Order or to declare a Local State of Emergency to restrict access to a designated area. A local state of emergency may be declared by the local authority should the incident escalate beyond the defined EPZ.

It also 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 Operations Centre (POC)**

The Provincial Operations Centre (POC) serves as a communication and response coordination centre that is staffed 24 hours a day, 7 days a week. The POC is a central point for the collection, evaluation and dissemination of information concerning a single incident or multiple incidents in the province of Alberta. The POC is responsible for coordinating the initial response and maintaining support for a response to a natural or human-induced disaster.

The Alberta Provincial Emergency Operations Centre (POC) set up under the Government's Response Readiness Plan will provide notification by radio, television, or other practical means. The Company shall have a representative at the POC to assist as liaison. The broadcast media (radio, television) will be used to notify residents outside the EPZ in the event of an immediate evacuation of the area.



### 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	
<input type="checkbox"/>	Acts as lead provincial government organization in petroleum industry emergency responses.
<input type="checkbox"/>	Review and approve licensee ERPs.
<input type="checkbox"/>	Participate in selected licensee ERP exercises.
<input type="checkbox"/>	Review and recommend changes to ERPs.
<input type="checkbox"/>	Participate in validation and testing of ERPs.
<input type="checkbox"/>	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
<input type="checkbox"/>	Receive information pertaining to petroleum industry incidents.
<input type="checkbox"/>	Determine the emergency level of an incident through consultation with the licensee.
<input type="checkbox"/>	Dispatch AER representative to the site of the incident, as required.
<input type="checkbox"/>	Confirm that local resources have been notified as appropriate.
<input type="checkbox"/>	Identify and request initial provincial resources to support the incident, to be coordinated at the regional level if necessary through the REOC.
<input type="checkbox"/>	Notify CIC to carry out notification in accordance with this plan.
<input type="checkbox"/>	Confirm, plan and/or implement public safety actions taken to ensure the safety of the public and the environment, including issuing fire hazard orders or requesting NOTAMs.
<input type="checkbox"/>	Provide Situation Reports to AEMA if requested.
<input type="checkbox"/>	Send AER representative to the On-Site Command Post.
<input type="checkbox"/>	Establish an EOC at the local AER Field Centre until the licensee or local authority establishes a MEOC.
<input type="checkbox"/>	Dispatch an AER Regulatory Liaison to the MEOC or POC and issue timely media releases in conjunction with the licensee and PAB.
<input type="checkbox"/>	Request, through AEMA, the deployment of the other provincial Government staff be sent to the MEOC or the local Field Centre EOC.
<input type="checkbox"/>	Request a local authority liaison officer to be present at the MEOC if necessary.
<input type="checkbox"/>	Carry out investigations.
<input type="checkbox"/>	Provide timely situation reports, through AEMA, to other Government departments activated by this plan.
<input type="checkbox"/>	Notify all participants when the event has concluded and there is no longer any hazard to the public.
<input type="checkbox"/>	Complete reporting protocols.
<input type="checkbox"/>	As part of the lessons-learned process, recommend any mitigating actions that may reduce the event from re-occurring.
<input type="checkbox"/>	Establish processes to receive and address community concerns.
<input type="checkbox"/>	In consultation with AEMA, review and recommend updates for the ERP.

ALBERTA ENERGY REGULATOR

### Alberta Environment and Parks

ALBERTA ENVIRONMENT AND PARKS		ALBERTA ENVIRONMENT AND PARKS
<input type="checkbox"/>	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	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.	
<input type="checkbox"/>	Ensure the air quality monitoring log is being maintained.	
<input type="checkbox"/>	Participate in the evaluation of the incident and the potential area at risk from product releases.	
<input type="checkbox"/>	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.	
<input type="checkbox"/>	Assist in notifying Fish and Wildlife personnel of the hazard.	
<input type="checkbox"/>	Monitor environmental recovery, when required.	
<input type="checkbox"/>	Compile and maintain environment related records and log.	
<input type="checkbox"/>	Request and review environmental impact assessment if necessary.	
<input type="checkbox"/>	Carry out investigation, when required, having regard for the existing investigative protocols and procedures.	
<input type="checkbox"/>	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		ALBERTA AGRICULTURE AND FORESTRY
<input type="checkbox"/>	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Assist the industrial operator and/or the local authority in establishing and maintaining roadblocks. If requested.	
<input type="checkbox"/>	Assist in notifying Forestry personnel of the hazard.	
<input type="checkbox"/>	Assist in locating transients for evacuation in cooperation with licensee and local authority.	
<input type="checkbox"/>	Inform transients within the hazard area of the incident and safety measures to take including evacuation details as applicable.	
<input type="checkbox"/>	Fight any fires started as the result of the product release within the Forest Protection Area.	
<input type="checkbox"/>	Compile and maintain event records and log.	
<input type="checkbox"/>	Conduct forest impact assessment.	
<input type="checkbox"/>	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		OH&S
<input type="checkbox"/>	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Maintain the capacity to send an OH&S officer to the POC on a 24 hour a day, 7 day a week basis.	
<input type="checkbox"/>	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.	
<input type="checkbox"/>	Compile and maintain health and safety related records and log.	
<input type="checkbox"/>	Monitor lease holder/contractor's plan to determine if site is safe for recovery workers.	
<input type="checkbox"/>	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		LOCAL AUTHORITY
<input type="checkbox"/>	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Conduct a hazard assessment of petroleum facilities and operations.	
<input type="checkbox"/>	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).	
<input type="checkbox"/>	Include preparedness and response information concerning facilities and operations in the MEP.	
<input type="checkbox"/>	Train personnel to carry out function as assigned by the MEP or procedures.	
<input type="checkbox"/>	Assess emergency incident and evaluate operator response with the AER.	
<input type="checkbox"/>	Activate the emergency public warning system to alert people to life threatening hazards, as required.	
<input type="checkbox"/>	Initiate public protection option, as required if resources are available.	
<input type="checkbox"/>	Maintain communication with industrial operator during emergency.	
<input type="checkbox"/>	Activate the MEP, in accordance with local authority policy.	
<input type="checkbox"/>	Manage the local authority's emergency response.	
<input type="checkbox"/>	Dispatch a representative to the incident command post, if resources are available.	
<input type="checkbox"/>	Activate the MEOC, as required by the municipality.	
<input type="checkbox"/>	Coordinate with the industrial operator, the establishment and the administration of reception centres for evacuees, as required.	
<input type="checkbox"/>	Assist with the establishment of roadblocks and maintain them if resources are available.	
<input type="checkbox"/>	Assist with fire protection (secondary fires only).	
<input type="checkbox"/>	If necessary, declare a local state of emergency, as determined by the local authority.	
<input type="checkbox"/>	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.	
<input type="checkbox"/>	Provide timely news releases.	
<input type="checkbox"/>	Inform Municipal Affairs, Emergency Management Alberta and the public when the emergency is over in accordance with the Energy Resources Industry Emergency Support Plan.	
<input type="checkbox"/>	Conduct a damage assessment to the extent of government infrastructure (roads/bridges).	
<input type="checkbox"/>	Compile a municipal log.	
<input type="checkbox"/>	Properly shutdown MEOC as appropriate.	
<input type="checkbox"/>	Conduct municipal incident debriefing.	
<input type="checkbox"/>	Participate in multi-agency debriefings if resources are available.	
<input type="checkbox"/>	Review and update the municipal emergency plan.	
<input type="checkbox"/>	Communicate any changes to the plan to all plan holders.	
<input type="checkbox"/>	Track costs associated with the response.	



*Emergency Services: Police, EMS, and Fire Fighting*

<b>EMERGENCY SERVICES</b>		<b>EMERGENCY SERVICES</b>
<input type="checkbox"/>	Understand the hazards associated with the petroleum facilities and operations within the area.	
<input type="checkbox"/>	Work with the operator to effectively prepare for a petroleum industry incident.	
<input type="checkbox"/>	Understand the response role when there is a private and public-sector response.	
<input type="checkbox"/>	Train personnel to carry out their functions when there is an incident.	
<input type="checkbox"/>	Establish contact with the industrial operator.	
<input type="checkbox"/>	Prior to dispatching staff to scene, determine the hazards associated with the incident.	
<input type="checkbox"/>	Determine where roadblocks are established.	
<input type="checkbox"/>	Where applicable, maintain roadblocks as necessary.	
<input type="checkbox"/>	Determine the direction of approach to the incident.	
<input type="checkbox"/>	Determine if there are any injuries.	
<input type="checkbox"/>	Find out what response and public protection actions have been taken by the operator.	
<input type="checkbox"/>	Initiate public protection option, when necessary.	
<input type="checkbox"/>	Identify what resources are required and where they should be staged.	
<input type="checkbox"/>	Determine the location of the On-Site Command Post.	
<input type="checkbox"/>	Respond and assess emergency incident.	
<input type="checkbox"/>	Communicate to REOC and provide situation reports as required.	
<input type="checkbox"/>	Dispatch a representative to the REOC, when it is established to coordinate the response.	
<input type="checkbox"/>	Assist with fire protection, where applicable.	
<input type="checkbox"/>	Provide emergency medical assistance, as required.	
<input type="checkbox"/>	Compile response logs.	
<input type="checkbox"/>	Participate in municipal incident debriefing.	
<input type="checkbox"/>	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	
<input type="checkbox"/>	Act as the provincial coordinating agency in petroleum industry emergency responses as per the Emergency Management Act.
<input type="checkbox"/>	Make the plan available to stakeholders.
<input type="checkbox"/>	Train provincial personnel to carry out functions as assigned by their emergency plan or procedures.
<input type="checkbox"/>	Communicate changes to the plan with plan holders.
<input type="checkbox"/>	Maintain 24 hour a day, 7 day a week duty manager system.
<input type="checkbox"/>	Assist in the planning and coordination of exercises with the AER.
<input type="checkbox"/>	Confirm AER has been notified.
<input type="checkbox"/>	Conduct the Initial Response Report (IRR) notification.
<input type="checkbox"/>	Obtain a situation report from the AER, AEP, local authority, etc.
<input type="checkbox"/>	Confirm the level of emergency.
<input type="checkbox"/>	Activate the Provincial Operations Centre (POC) as required.
<input type="checkbox"/>	Notify the appropriate provincial officials as per standard operating procedures.
<input type="checkbox"/>	Release consolidated SITREPs in accordance with the Energy Resources Industry Emergency Support Plan.
<input type="checkbox"/>	Coordinate the Government of Alberta response including requests for provincial/federal resources.
<input type="checkbox"/>	Provide ongoing situation reports or briefing notes to appropriate provincial officials.
<input type="checkbox"/>	Notify partners and stakeholders when the event is over.
<input type="checkbox"/>	Conduct the post-incident assessment.
<input type="checkbox"/>	Communicate any changes to the plan to all plan holders.
<input type="checkbox"/>	Complete documentation or reporting in relation to the activation of the Energy Resources Industry Emergency Support Plan and the incident.

ALBERTA EMERGENCY  
MANAGEMENT AGENCY

**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	
<b>Before the Event.</b>	
<input type="checkbox"/>	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.
<input type="checkbox"/>	Participate in provincial and industrial operators' preparatory training and exercises where feasible.
<input type="checkbox"/>	Liaise with other federal departments where needed.
<b>During the Event</b>	
<input type="checkbox"/>	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.
<input type="checkbox"/>	Investigate environmental public health related complaints from on-reserve aboriginal communities.
<input type="checkbox"/>	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:
<input type="checkbox"/>	Provide representation at the off-site REOC or when established, if requested and if available
<input type="checkbox"/>	Assist with messaging to provide accurate information to the public concerning the incident
<input type="checkbox"/>	Provide guidance and assistance at Evacuation Centre(s) to help ensure that public health standards are being met.
<input type="checkbox"/>	Provide health related information about toxic chemicals and by-products when the products or their make-up are known and reported.
<input type="checkbox"/>	Provide guidance on rescinding and declaration of public evacuation and on allowing re-occupancy – consultative capacity only.
<input type="checkbox"/>	Provide advice to the REOC on existing or potential health effects associated with the incident where possible
<input type="checkbox"/>	When possible work with all other responders to establish a single Regional Emergency Operations Centre (REOC).
<b>After the Event</b>	
<input type="checkbox"/>	Compile and maintain environmental public health related documents on inspected facilities.
<input type="checkbox"/>	Participate in PIA (Post Incident Assessments).
<input type="checkbox"/>	Provide guidance on assessing and mitigating public health risks following an upstream petroleum incident.

FIRST NATIONS AND INUIT HEALTH

### Alberta Transportation

ALBERTA TRANSPORTATION		ALBERTA TRANSPORTATION
<input type="checkbox"/>	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Respond to Dangerous Goods transportation emergencies in Alberta.	
<input type="checkbox"/>	Manage transportation route closures.	
<input type="checkbox"/>	Provide assistance with the closure of provincial highways in the establishment of suitable detour routes.	
<input type="checkbox"/>	Provide advice and assistance with the procurement of roadblock equipment.	
<input type="checkbox"/>	Ensure that all requests and reports are completed.	
<input type="checkbox"/>	Work with the appropriate local authority to facilitate the restoration of roadways.	

### Public Affairs Bureau

PUBLIC AFFAIRS BUREAU		PAB
<input type="checkbox"/>	Maintain a team of trained Public Affairs personnel.	
<input type="checkbox"/>	Confirm distribution of AER messaging. Provide support as required.	
<input type="checkbox"/>	Activate Crisis Communication Plan and Crisis Communications Response.	
<input type="checkbox"/>	Advise AEMA if media boardroom will be required for media events.	
<input type="checkbox"/>	Coordinate key messaging with the AER.	

*Alberta Justice and Solicitor General*

<b>ALBERTA JUSTICE AND SOLICITOR GENERAL</b>	
<input type="checkbox"/>	Maintain the list of critical infrastructure in the Province of Alberta.
<input type="checkbox"/>	Maintain and regularly test the emergency notification system.
<input type="checkbox"/>	Maintain awareness of threats, vulnerabilities, and risks related to human induced intentional hazards.
<input type="checkbox"/>	Notify Government department of concerns arising from the effects of the incident on critical infrastructure.
<input type="checkbox"/>	Advise other Government departments of modifications to procedures if the incident was intentionally caused.
<input type="checkbox"/>	Provide technical expertise to all stakeholders in the event of an intentional incident and advise appropriate Government officials of potential future targets.
<input type="checkbox"/>	Ensure that effects on critical infrastructure have been resolved.
<input type="checkbox"/>	Recommend changes to critical infrastructure plans to mitigate future events.

**SOLICITOR  
GENERAL**

*9.1.10 Alberta Pressure Equipment Incidents*

<b>ALBERTA BOILERS SAFETY ASSOCIATION</b>	
<input type="checkbox"/>	Review, accept and register pressure equipment designs and construction procedures that relate to pressure equipment.
<input type="checkbox"/>	Issue certification of inspection permits for pressure equipment before the equipment is placed into service.
<input type="checkbox"/>	Ensure that regular inspection of in-service pressure equipment is conducted.
<input type="checkbox"/>	Keep records for pressure equipment that has been registered for use, or manufactured, in Alberta.
<input type="checkbox"/>	Examine, certify and register Pressure Welders and Welding Examiners, Power Engineers, and Pressure Equipment Inspectors.
<input type="checkbox"/>	Authorize and monitor, through quality management system, organizations that have been permitted to conduct some of the activities subject to the regulations.
<input type="checkbox"/>	Conduct safety education and training.
<input type="checkbox"/>	Receive notification of an incident.
<input type="checkbox"/>	Investigate accidents or unsafe conditions that involve pressure equipment.

**ABSA**

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:

[http://www.absa.ca/wp-content/uploads/2015/04/AB-097\\_Accident\\_Reporting\\_Form.pdf](http://www.absa.ca/wp-content/uploads/2015/04/AB-097_Accident_Reporting_Form.pdf)

### 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
AEP	Alberta Environment and Parks
AER	Alberta Energy Regulator
AHS	Alberta Health Services
AT	Alberta Transportation
CMO	Consequence Management Officer
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 SASKATCHEWAN

### 9.2.1 Assessment Matrix for Classifying Incidents

Pine Cliff's ERP will be implemented as deemed necessary in response to either an alert or an emergency (Level 1, 2, 3). The Province of Saskatchewan's oil and gas regulator, Ministry of Energy and Resources, currently has no standardized method for classifying incidents and has adopted the theory of AER's Directive 71 Assessment Matrix and Incident Response Table.

Table 1. Consequence of Incident		
Rank	Category	Example of consequence in category
1	Minor	<ul style="list-style-type: none"> <li>No worker injuries.</li> <li>Nil or low media interest.</li> <li>Liquid release contained on lease.</li> <li>Gas release impact on lease only.</li> </ul>
2	Moderate	<ul style="list-style-type: none"> <li>First aid treatment required for on-lease worker(s).</li> <li>Local and possible regional media interest.</li> <li>Liquid release not contained on Lease.</li> <li>Gas release impact has potential to extend beyond lease.</li> </ul>
3	Major	<ul style="list-style-type: none"> <li>Worker(s) require hospitalization.</li> <li>Regional and national media interest.</li> <li>Liquid release extends beyond lease – not contained.</li> <li>Gas release impact extends beyond lease – public health/safety could be jeopardized.</li> </ul>
4	Catastrophic	<ul style="list-style-type: none"> <li>Fatality.</li> <li>National and international media interest.</li> <li>Liquid release off lease not contained – potential for, or is impacting water or sensitive terrain.</li> <li>Gas release impact extends beyond lease – public health/safety jeopardized.</li> </ul>

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?		

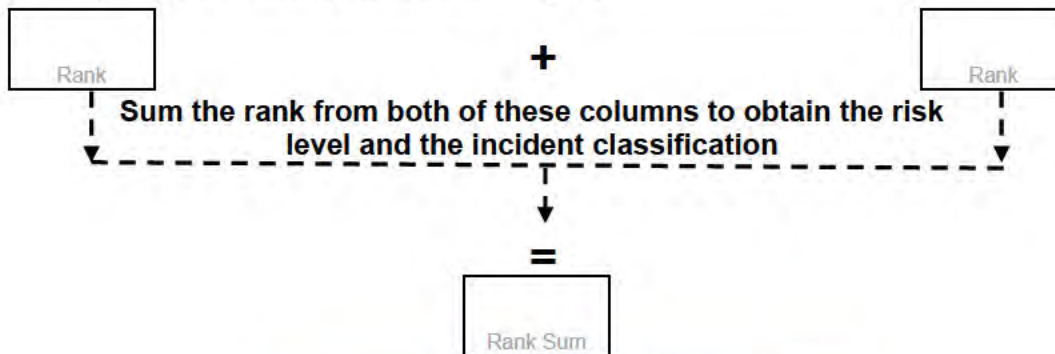


Table 3 Incident Classification	
Risk Level	Assessment results
Very Low 2-3	Alert
Low 4-5	Level – 1 Emergency
Medium 6	Level – 2 Emergency
High 7-8	Level – 3 Emergency



*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 Ministry of Energy and Resources if public or media is contacted.	Notify Ministry of Energy and Resources. Call local authority and Reg Health Authority if public or media is contacted.	Notify Ministry of Energy and Resources, local authority and Reg Health Authority.	Notify Ministry of Energy and Resources, local authority, and Reg Health Authority.
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.



## 9.2.2 Notification Requirements for Key Government Agencies and Local Resources

Saskatchewan	AGENCY OR RESOURCE	Initial Responders			Lead Agencies				Other Government Contacts						Support Services
		Ambulance Services	Local Fire Department or Industrial Fire Service	Police	Ministry of Energy and Resources	Sask Ministry of Environment	Local Authorities	RHA - Health Authority <sup>1</sup>	Sask Occupational Health and Safety	Emergency Management and Fire Safety	Sask Ministry of Health	Technical Safety Authority of Sask	Ministry of Highways and Infrastructure <sup>2</sup>	Electrical Provider - SaskPower	Spill Cooperative (WCSS or Sask Spills)
INCIDENT TYPE				✓	✓	✓	✓	✓	✓	✓		✓			
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			✓ <sup>3</sup>	✓	✓		✓	✓	✓	✓			✓		
Pressure Vessel or Piping Incident					✓							✓	✓		
Electrical Incident					✓	✓							✓	✓	
Security Incident				✓	✓								✓		

✓ Compulsory contact

\* Refer to the Saskatchewan Incident Reporting Requirements included in the ERP.

<sup>1</sup> Contact RHA - Health Authority (RHA) if the incident has the potential to impact public health

<sup>2</sup> Contact Ministry of Highways and Infrastructure or the RCMP if the emergency affects a highway designated by 1, 2, or 3 digits (e.g. Hwy 2, Hwy 47, Hwy 837).

<sup>3</sup> Contact Local Fire Department or Industrial Fire Service in a BLEVE scenario to be a backup to ERAC.

Federal	AGENCY OR RESOURCE	Initial Responders	Lead Agencies	Other Government Contacts					Support Services	
		RCMP	CER <sup>1</sup>	Transportation Safety Board (TSB)	Environment and Climate Change Canada <sup>2</sup>	Indian Oil and Gas Canada <sup>4</sup>	DFO	CANUTEC <sup>3</sup>	ERAC - Emergency Response Assistance Canada <sup>5</sup>	NAV Canada
INCIDENT TYPE										
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		✓	✓							

✓ Compulsory contact

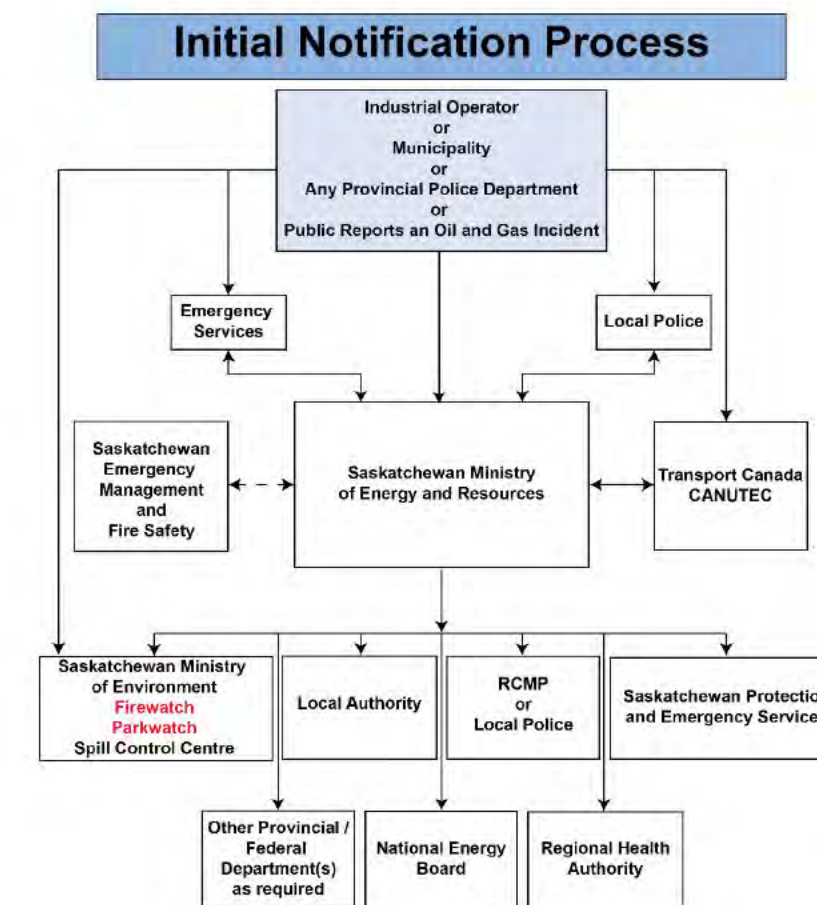
<sup>1</sup> Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for emergencies involving CER regulated sites and inter-provincial pipelines.

<sup>2</sup> Contact Environment and Climate Change Canada for incidents involving spills on first nations lands, in National Parks, into river or lake systems containing fish or onto railway rights-of-way.

<sup>3</sup> Contact the Canadian Transport Emergency Centre (CANUTEC) if information is required about handling procedures for toxic material releases.

<sup>4</sup> Contact Indian Oil and Gas Canada for incidents affecting First Nation reserves and Metis settlements.

<sup>5</sup> Contact ERAC for emergencies related to specific ERAP products for vessels containing over 450 liters or greater by road, rail and stationary tank.



### **9.2.3 Saskatchewan Incident Reporting Requirements**

Directive PNG014: Incident Reporting Requirements has set out the requirements of the Ministry of Energy and Resources for regulating the reporting of spills and other incidents in relation to wells, facilities, and pipelines. Refer to the Incidents Subject to Notification and Reporting Table for the types of incidents that are subject to notification and reporting requirements as per Directive PNG014, Version 3.0, April 2018.

<http://publications.gov.sk.ca/documents/310/85293-Directive%20PNG014%20-%20Incident%20Reporting%20Requirements%20v.3.pdf>

#### **Incident Response Process**

An operator must carry out the following actions in relation to any of the listed incidents:

1. **NOTIFY** ER in accordance with the requirements of this Directive;
2. **ACTIVATE** its ERP where required and take immediate steps to resolve the incident;
3. **REMEDiate** or, where necessary, reclaim the affected area to the satisfaction of ER officials; and,
4. **SUBMIT** detailed information and reports in the Integrated Resource Information System (IRIS) on the incident and the actions taken to resolve the matter.

Refer to the *Incident Reporting Flow Chart* for incident response reporting process and time lines.

Once an operating event occurs, the operator must first determine whether it is an incident subject to notification and reporting. If it is a reportable incident, the operator must implement its ERP and provide Immediate Telephone Notification where required. In addition, the operator is required to submit a notification in IRIS within five (5) business days and a Detailed Incident Report in IRIS within 90 days. Depending on the nature of the incident, the operator may be required to submit an Incident Reclamation Report or a metallurgical report.

#### **Initial Incident Notification**

##### **Immediate Telephone Notification by Operator**

An operator is required to immediately notify ER's Emergency Support line at 1-844-764-3637 of the discovery of any incident listed in *Incidents Subject to Notification and Reporting Table* except for the following types of incidents:

- Contact damage to a flowline or pipeline that does not result in a break or leak; or
- Any on-lease release of oil, condensate, emulsion or salt water that is less than 10 m<sup>3</sup>.

On-lease releases or contact damage that are exempt from immediate telephone notification still require ER notification using IRIS.

**Note:** The Emergency Support line is available 24 hours per day, seven days per week. Operators are to call this number as soon as they discover an incident subject to immediate telephone notification.



The following information is required when providing immediate telephone notification of an incident:

- The name and contact information of parties involved in the incident (e.g., well owner, well operator, contractor, etc.);
- A description of the incident and location (LSD-SEC-TWP-RGE-M);
- The substance(s) involved in the incident;
- The action undertaken to mitigate the incident;
- Has an ERP been triggered?
- Have emergency services been notified or are en-route?
- Are any injuries/fatalities known to have occurred in connection with the incident? (not necessary to provide any personal information);
- Is the incident known to have affected a significant water body (i.e. lake, river, stream or slough)?
- Is the incident known to have impacted any wildlife?
- Has the incident occurred on First Nation reserve lands?
- Has the incident resulted in the evacuation of the local area or notification to residents to stay indoors?
- Does the incident involve fire of free phase product not yet contained?
- Is an incident command required?

Please note that providing ER with information relating to the above bullet list does not absolve an operator of their responsibility to also notify the proper authorities in accordance with other regulations or as required pursuant to their ERP.

### **IRIS Notification by Operator**

All incidents listed in *Incidents Subject to Notification and Reporting Table* must be promptly reported in IRIS not later than five (5) business days after the discovery of the incident. This requirement is in **addition** to the requirement for *Immediate Telephone Notification by Operator*.

**Note:** Operators reporting incidents into IRIS are responsible for the *Detailed Incident Report and Incident Reclamation Report* unless the wellsite, facility site or pipeline is transferred to another party. Once an incident is recorded in IRIS, the operator must comply with reporting requirement timelines set out in Directive PNG014 as established from the date of discovery.

The following information must be submitted in IRIS:

- The name of the ER Field Office responsible for the geographic area in which the incident occurred.
- The date of the incident (if known).
- The date the incident was discovered.
- Information on whether the ERP was initiated and whether the field office was notified.
- Information on whether any substances were spilled or released.
- Information on whether a reclamation report is required for the incident.
- A brief description of the incident.
- The name of the contact, their job title, business phone number and email address who is responsible for dealing with the incident.
- The surface location of the incident (LSD-SEC-TWP-RGE-M).
- Surface coordinates (latitude and longitude, in rads or degrees) described in accordance with North American Datum 83 (NAD83) with the zone indicated.
- Information about any surface water impacted by the incident and the type of surface water affected.



**Notification by Person Other than an Operator**

If a spill or other incident occurs while a product or waste is being transported, the owner of the product or waste must report the incident by *Immediate Telephone Notification and IRIS Notification*.

In the event of an incident of unknown origin, any person who witnesses or has information on the incident may provide notification to the Emergency Support line at 1-844-764-3637.

**Detailed Incident Report**

Within 90 days of the submission of the *Initial Incident Report* notification, the operator must submit the following details in IRIS:

- Impacted Surface Information:
  - size of spill (m<sup>2</sup>)
  - percentage (%) off-lease impacted by the incident
- Substance Information:
  - substance type(s)
  - substance spilled or released (m<sup>3</sup>)
  - amount of substance recovered (m<sup>3</sup>)
  - amount and type of other materials recovered during remedial activities
- Source Information:
  - source of the incident – well, pipeline, facility, flowline, other
  - licence identifier – licence number of the source
  - incident cause (e.g., break, malfunction, human error, act of nature, etc.)
- Attachments:
  - site sketch, photos, report, lab results

**Root Cause Analysis Reports**

In the event of a break, leak or malfunction relating to a well, facility, pipeline or flowline or associated equipment, ER may require the operator to complete a written technical report analyzing the root cause of the incident. This report, including any associated sub-reports and supporting documentation, must be submitted into IRIS and is in addition to an IRR submission.

**Ministry of Energy and Resources – Integrated Resource Information System (IRIS)**

<https://iris.gov.sk.ca/Portal/Security/Credentials/Login.aspx?ReturnUrl=%2fPortal>

### Incidents Subject to Notification and Reporting Table

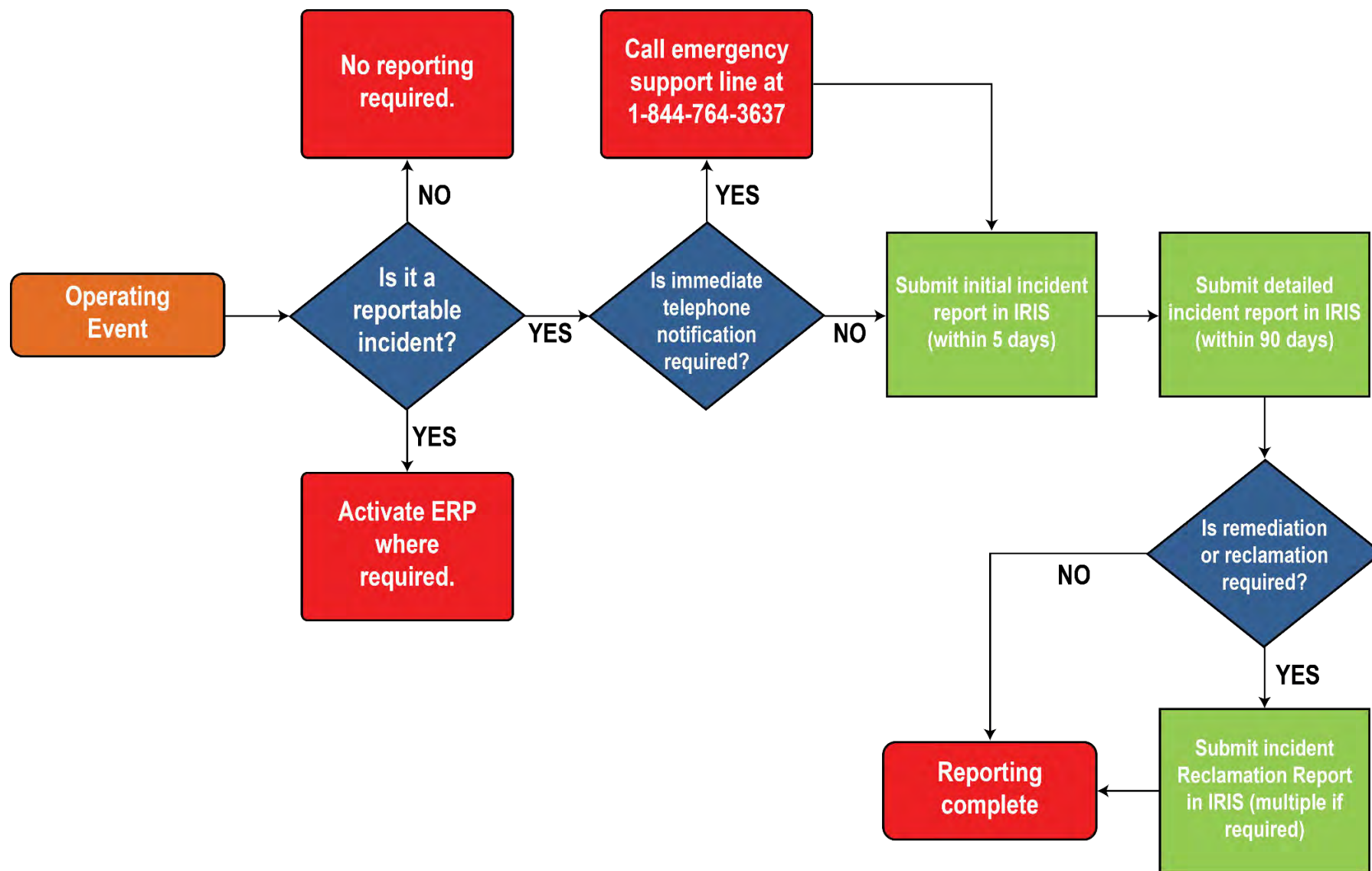
Type	Incident	Substance	Location	Description
General Field Operations	Fire	All	All	Any fires resulting from the operation of a licensed well, facility, pipeline or flowline.
	Release or Spill	Naturally Occurring Radioactive Materials (NORM)	All	Any volumes
		Oil by-products or oily produced sands	All	Any volume released that is not approved under GL97-02 <sup>1</sup>
	Blow-out	All	All	Any uncontrolled release of gases or fluid from a well
	Kicks	All	All	Any controlled diversion of gases or fluid from the well to a flare tank.
Pipeline or Flowline Operation	Contact Damage	All	All	Any contact damage to a flowline or pipeline
	Break	All	All	Any break to a flowline or pipeline
	Leak, malfunction of any equipment or a worker error resulting in the escape or release of a substance	Oil, salt water, condensate or other product	Off Lease	Any volume
			On Lease	All releases that are > 2.0 cubic meters (m <sup>3</sup> ) of fluid.
		Gas Containing Hydrogen Sulfide (H <sub>2</sub> S)	All	Any volume at any concentration.
		Natural Gas	All	Any volumes where: 1. the released volume exceeds 30 000 m <sup>3</sup> ; 2. the release is within a road or railway right-of- way; or 3. the release is within 150 metres of any dwelling.
Horizontal Directional Drilling (Pipeline/Flowline Installation)	Release, Spill or Frac-Out	Drilling Fluid	All	Any volume
Drilling or Fracturing Operation	Release or Spill	Drilling wastes	All	Any volume released that is not approved under GL99-010 <sup>2</sup>
		Fracturing Wastes	All	Any volume released that is not approved under GL2000-01 <sup>3</sup>
Well or Facility Operation	Break, leak, malfunction of any equipment or intentional or unintentional action resulting in an escape or release	Oil, salt water, condensate, oil and gas waste, emulsion or product	On-lease	All volumes ≥2.0 m <sup>3</sup> or 2000 liters requires reporting but only volumes ≥10.0 m <sup>3</sup> or 10000 liters require notification
			Off-lease	Any volume
		Refined Chemical	On-lease	All volumes ≥0.5 m <sup>3</sup> or 500 liters
	Escape or Release	Gas Containing H <sub>2</sub> S	All	Any volumes where: 1. The concentration of H <sub>2</sub> S exceeds 0.1 % or 1000 ppm or 1.0 mole 2. H <sub>2</sub> S/kilomole from solids, liquids or gas during production or transportation (truck or transmission via pipeline/flowline); 3. The released volume poses a danger to human health, domestic animals, wildlife or the environment.

Note: Please refer to the following guidelines for reference.

1. GL 97-02. Guideline for the Application of Oily Byproducts to Municipal Roads in Saskatchewan  
<http://www.publications.gov.sk.ca/details.cfm?p=75542>
2. GL 99-01. Saskatchewan Drilling Waste Management Guideline  
<http://www.publications.gov.sk.ca/details.cfm?p=75536>
3. GL 2000-01. Saskatchewan Hydraulic Fracturing Fluids and Propping Agents Containment and Disposal Guidelines  
<http://www.publications.gov.sk.ca/details.cfm?p=76209>



### Incident Reporting Flowchart



#### **9.2.4 Spill Reporting**

When pollutants are spilled into the environment, Ministry of Environment's primary role is to ensure the safety of the public and protection of the environment from the discharge of environmentally dangerous substances. In addition, the ministry will make sure that whoever is responsible for the discharge contains it, cleans up the site and notifies any impacted third parties. The regulations are designed to safeguard the physical and living environment in the event of a release of hazardous materials.

Spills may, in a broad sense, be determined as **releases of pollutants into the natural environment originating from a structure, vehicle, or other container**. Spills must be reported immediately when the quantity of the material spilled equals or exceeds the reportable quantity set out in Table 1 of the Discharge and Discovery Reporting Standard of the Saskatchewan Environment Code or when they cause, or may cause an adverse effect, including any of the following:

- Impairment to the quality of the natural environment - air, water, or land.
- Injury or damage to property or animal life.
- Adverse health effects.
- Safety risk.
- Making property, plant, or animal life unfit for use.
- Loss of enjoyment of normal use of property.
- Interference with the normal conduct of business.

Spill Reporting is to be completed as follows:

- License holders for oil and gas wells will report all incidents to Ministry of Energy and Resources (ER) only by calling the ER Emergency Support line at **1-844-764-3637**.
- Following the initial report, license holders are still expected to complete the necessary reports through the Integrated Resource Information System as outlined in Directive PNG014.

#### **Notification Requirements**

Any spill, release or emergency that may harm the environment or pose a risk to public health or safety must be reported immediately.

- the substance may cause or is causing an adverse effect.
- the substance meets the criteria set out in Table 1 of the *Discharge and Discovery Reporting Standard* for that substance.

**NOTE: If the discharge is reported in accordance with the Directive PNG014, the reporting obligation for the above is met.**

If you're unsure if a spill is reportable, you should still call it in right away. The consequences for failing to report, or delaying, can be significant.

For spills exceeding reportable limits as defined by legislation, the responsible party must also submit a [Written Spill Report](#) within 30 days.

The *Oil and Gas Conservation Regulations*, 2012 and The *Pipelines Regulations*, 2000, require the company to take immediate steps to contain and clean up spilled material. The regulations require the company to notify the appropriate Ministry of Energy and Resources field office the particulars of the following:

- A fire or blow-out.
- The escape or release of more than 28,000 m<sup>3</sup> of natural gas (from a pipeline).
- Any off-lease escape or release of a substance that contains hydrogen sulphide.
- Contact damage to a pipeline.
- Any on-lease escape or release in an amount equal to or greater than 2.0 cubic metres
- Pipeline or flowline failure(s) including a break in, contact damage to or leak.
- A break, leak, malfunction of any equipment, or intentional or unintentional action that results in the escape or release of oil, salt water, condensate, oil and gas waste or product if any volume.
- Refined chemicals used in or in association with the maintenance, production or operation of a well, facility, pipeline or flowline if any volume escapes or is released in an amount equal to or greater than 0.5 cubic metres and is contained within the property that the licensee or operator owns or leases.
- The release occurs within a road or railway right of way or within 150 metres of any dwelling (from a pipeline)

Refer to the Table 1 Discharge Reporting Quantities from the Discharge and Discovery Reporting Standard Chapter of Saskatchewan's *Environment Code* for a list of discharged substances required to be reported. The table has been created to align with federal Transportation of Dangerous Goods legislation, as well as the addition of substances common in Saskatchewan.

For further Saskatchewan spill reporting information please refer to the following:

*Discharge and Discovery Reporting Standard, October 2017*

<http://publications.gov.sk.ca/documents/66/91859-Discharge%20and%20Discovery%20Reporting%20Standard.pdf>

*Reporting Discharges and Spills, October 2015*

<http://www.environment.gov.sk.ca/Reporting+Discharges+and+Spills.pdf>

Report Hazardous Spills

<https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/hazardous-materials-and-safe-waste-management/report-hazardous-spills#guidance>



### Release Reporting Requirements - Saskatchewan

#### Common Unrefined Product Releases

Substance / Example	Saskatchewan Reporting Requirements		TDG Reporting Requirements Road, Rail or Marine
	On-Site	Off-Site	
Natural Gas	500 L	Any quantity.	Any quantity
Hydrogen Sulphide	1,000 ppm or 1 mol/kmol	1,000 ppm or 1 mol/kmol	Any quantity
Emulsion	2,000 L	Any quantity.	See Class 3
Oil, condensate, oil and gas waste or product.	2,000 L	Any quantity.	
Salt water	2,000 L	Any quantity.	N/A
Drilling Wastes/Frac Wastes/Oil By-products (Oily Produced Sands)	2,000 L	Any quantity.	See Class 3
Glycols (inhibited and uninhibited such as antifreeze, heat transfer fluids).	100 L	50 L	
Non-Class 3 Petroleum Substances (e.g. new and used lubricating oils, mineral oils, hydraulic fluids)	500 L	200 L	



**TDG and Provincial Reportable Releases of Common Products at Energy Sites**

Chemical Class	Substance / Example	Saskatchewan Reporting Requirements		TDG Reporting Requirements Road, Rail or Marine
		On-Site Reportable Quantity (in 24 hours unless otherwise noted)	Off-Site Reportable Quantity (in 24 hours unless otherwise noted)	
<b>Class 1</b> Explosives	Ammunition Nitro-glycerine	Any quantity that could pose a public safety risk or 50 kg.	Any quantity that could pose a public safety risk or 50 kg.	Any quantity of Packing Group II.
<b>Class 2.1</b> Flammable Gas	Methane Propane Butane H <sub>2</sub> S Natural Gas	Any quantity that could pose a public safety risk, 50 kg, or a sustained release of 10 minutes or more.	Any quantity that could pose a public safety risk, 50 kg, or a sustained release of 10 minutes or more.	Any quantity.
<b>Class 2.2</b> Non-Flammable, Non-Toxic, Non-Corrosive Gases	Compressed Air O <sub>2</sub> N <sub>2</sub> CO <sub>2</sub>	Any quantity that could pose a public safety risk or a sustained release of 10 minutes or more.	Any quantity that could pose a public safety risk or a sustained release of 10 minutes or more.	
<b>Class 2.2</b> Compressed Gas: Halocarbon containing		Any quantity that could pose a public safety risk or 100 kg.	Any quantity that could pose a public safety risk or 100 kg.	
<b>Class 2.3</b> Toxic Gases (Poisonous or Corrosive)		Any quantity any time.	Any quantity.	
<b>Class 3</b> Flammable Liquids	Demulsifiers <sup>†</sup> Diesel Gasoline Methanol <sup>†</sup> – use UN # to determine subclasses Scale Inhibitors <sup>†</sup>	500 L or any subsurface loss.	200 L or any subsurface loss.	Any quantity of Packing Group I or II.  More than 30 L or 30 kg of Packing Group III.
<b>Class 4</b> Flammable Solids	Activated Carbon Calcium Carbide Molten Sulphur Sodium	100 kg	25 kg	
<b>Class 5.1</b> Oxidizing Substances	Calcium Nitrate Ammonium Nitrate Bleaches	50 kg or 50 L Packing Group I or II.  100 kg or 100 L Packing Group III.	2.5 kg or 2.5 L Packing Group I or II.  50 kg or 50 L Packing Group III.	
<b>Class 5.2</b> Organic Peroxides	Peroxide	2.5 kg or 2.5 L	1 kg or 1 L	
<b>Class 6.1</b> Toxic Substances	Methanol Arsenic Hydrogen Cyanide Lead Acetate Mercuric Chloride Pesticides <sup>†</sup>	2.5 kg or 2.5 L Packing Group I. 10 kg or 10 L Packing Group II or III.	1 kg or 1 L Packing Group I. 5 kg or 5 L Packing Group II or III.	Any quantity of Category A or B.
<b>Class 6.2</b> Infectious Substances	Infectious substances affecting humans / animals.	Any quantity.	Any quantity.	
<b>Class 7</b> Radioactive Materials	Uranium Plutonium Naturally Occurring Radioactive Materials (NORM)	As per permit/approval conditions for the operation/ facility. Where there is no permit/approval, consider discharge as offsite.	A discharge of any quantity of a Class 7 substance from a means of containment being used to store, handle or transport the substance.	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.
<b>Class 8</b> Corrosives	Acids <sup>†</sup> Amines <sup>†</sup> Bases <sup>†</sup> Batteries <sup>†</sup> Caustics <sup>†</sup> Nitric Acid	10 kg or 10 L	5 kg or 5 L	Any quantity of Packing Group I or II.  More than 30 L or 30 kg of Packing Group III.
<b>Class 9.1</b> Miscellaneous Products, except PCB mixtures.	PCB Asbestos Polystyrene Beads Gas Plant Filters Benzoic Acid Chromic Acetate Cupric Sulphate	100 kg	25 kg or 25 L	30 L or 30 kg of Packing Group II or III, or without Packing Group.
<b>Class 9.1</b> PCB mixtures.		50 g net PCB content	50 g net PCB content	
<b>Class 9.2</b> Aquatic Toxic		1 kg or 1 L	1 kg or 1 L	
<b>Class 9.3</b> Wastes (Chronic Toxic)		10 kg or 10 L	5 kg or 5 L	

<sup>†</sup> 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 least protective packaging within the transportation requirement.



### **9.2.5 Flaring Reporting**

The standards specified the Directive S-20 apply to wells and facilities licensed or approved under the Oil and Gas Conservation Act and/or *The Oil and Gas Conservation Regulations*, 1985.

Portable incinerator or flare stack used during drilling, servicing, turn-around or tests and located and used on the site for less than one year is exempt from these requirement with exception of applicable equipment spacing. Ministry of Energy and Resources may at any time require the licensee to meet these requirements or shut-down the incineration or flaring operations, if in the opinion of the Ministry of Energy and Resources, that environmental, public safety or valid public complaints or concerns are present.

No person shall flare, incinerate and/or vent a volume of associated gas greater than 900 m<sup>3</sup> per day from any oil well or facility to the atmosphere unless the activity meets the requirements of S-10.

The licensee shall install a vapour recovery unit to prevent the emission of volatile gases from storage devices and associated processing equipment at a facility or well site when H<sub>2</sub>S is equal to or greater than 10 mol//kmol as measured at the source of emission or 0.01 mol/kmol as measured at the edge of the lease.

### **9.2.6 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<sub>2</sub>S 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<sub>2</sub>S personal exposure limit in Saskatchewan is 10 ppm (8-hour exposure limit) and 15 ppm (time-weighted average).

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.

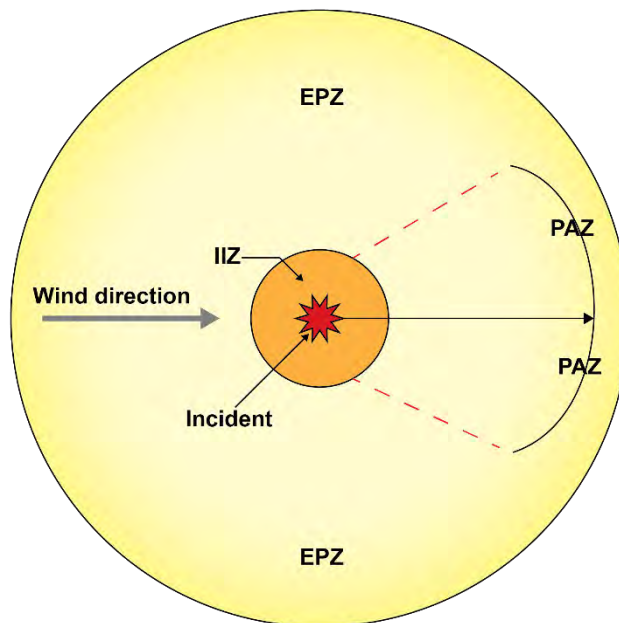


### **Response Zones**

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<sub>2</sub>S 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 ERCBH<sub>2</sub>S 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<sub>2</sub>S 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

#### **9.2.7 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<sub>2</sub> if the sour gas release was ignited.

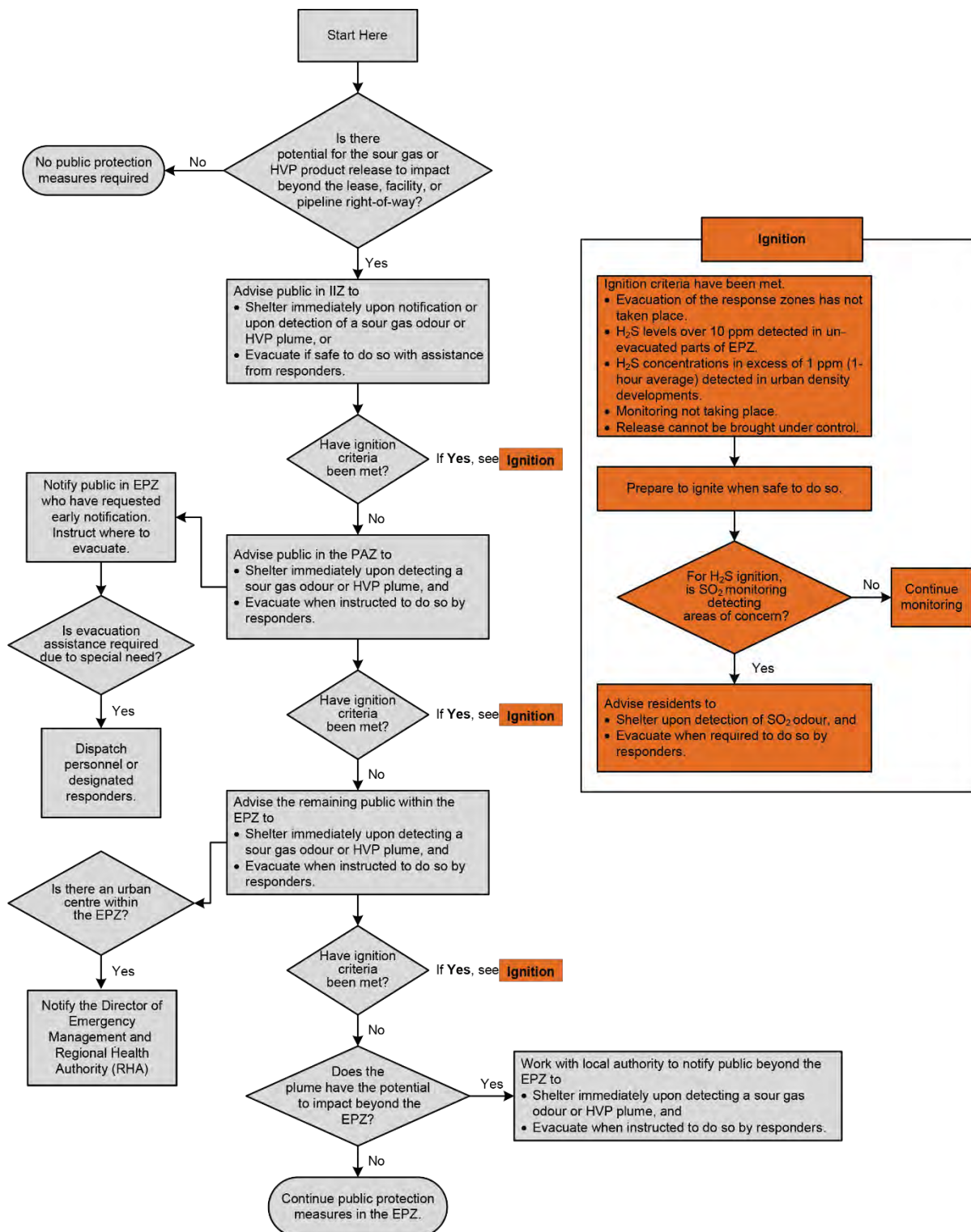
The type of public protection measure employed depends on the severity of the incident and/or on the monitored results in the unevacuated areas. The licensee is responsible for ensuring that appropriate emergency response procedures are in place and can be implemented, including for areas of potential 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<sub>2</sub>S, SO<sub>2</sub>, 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<sub>2</sub>S, SO<sub>2</sub>, 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<sub>2</sub>S or other toxic gases.

### Evacuation Requirements

H <sub>2</sub> S 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 <sub>2</sub> S 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 judgment in determining if evacuation is required.	
SO <sub>2</sub> 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<sub>2</sub>S, SO<sub>2</sub>, 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.

Saskatchewan Emergency Management and Fire Safety, local Disaster Services and the Saskatchewan Regional Health Authority, in conjunction with the industrial operator, shall coordinate the evacuation outside the EPZ. The Company shall provide the necessary personnel and equipment deemed necessary to assist. The Ministry of Energy and Resources 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 The Ministry of Energy and Resources 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<sub>2</sub> or H<sub>2</sub>S 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.

Ministry of Energy and Resources 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.

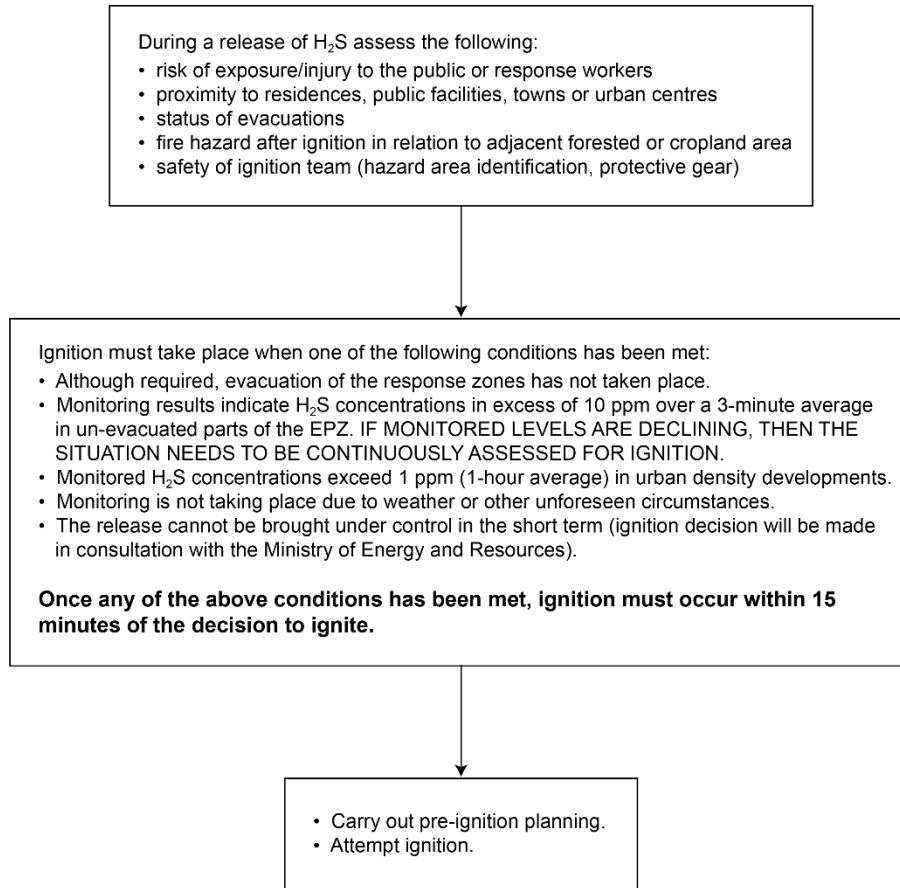
Ignition doesn't negate the need for continuing with evacuation as there may be residual pockets of H<sub>2</sub>S or SO<sub>2</sub> in the area.

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.

All sour wells must have an ignition system such as a flare gun on site during all drilling, completion, well testing, or workover operations in the sour zone.

Company personnel are required to ensure that all critical sour wells have a dual ignition system on site during all drilling operations in the critical zone(s) and during all completions, well testing, or work-over operations when the wellhead is off. The primary ignition system should be installed such that remote activation can be achieved from a safe location through a triggering device. The secondary system may be a manual system, such as a flare gun.



**Assessment and Ignition Criteria Flowchart**

**9.2.8 Fire Hazard Order and NOTAM**

In an emergency situation requiring isolation of the response zones, contact the Ministry of Energy and Resources to discuss the issuance of a Fire Hazard Order.

It may be necessary to obtain a Fire Hazard Order or to declare a Local State of Emergency to restrict access to a designated area. A local state of emergency may be declared by the local authority should the incident escalate beyond the defined EPZ.

It also 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 Ministry of Energy and Resources at a Level 2 or 3 emergency.

## 9.2.9 Government Roles and Responsibilities

### Ministry of Energy and Resources

The Ministry of Energy and Resources is the primary agency responsible for developing, monitoring and enforcing environmental protection and public safety regulations, programs, policies, standards, and guidelines with respect to the construction, operations, decommissioning, abandonment, and reclamation of oil and gas wells and facilities.

MINISTRY OF ENERGY AND RESOURCES		MINISTRY OF ENERGY AND RESOURCES
<input type="checkbox"/>	Act as the lead provincial government organization in petroleum industry emergency responses.	
<input type="checkbox"/>	Participate in selected licensee ERP exercise.	
<input type="checkbox"/>	Review and recommend changes to Emergency Response Plans.	
<input type="checkbox"/>	Maintain a 24 hour telephone contact where petroleum industry incidents can be reported.	
<input type="checkbox"/>	Maintain 24 hour emergency contact numbers where resources can be accessed to carry out a response to Emergency Response plans.	
<input type="checkbox"/>	Receive information pertaining to petroleum incidents.	
<input type="checkbox"/>	Initiate notification to other government agencies.	
<input type="checkbox"/>	Alert RCMP detachment nearest the scene, as required.	
<input type="checkbox"/>	Alert Ministry of Environment, as required.	
<input type="checkbox"/>	Alert Occupational Health and Safety, as required.	
<input type="checkbox"/>	Alert Local Authorities whose geographic area is, or may be, affected by a release, as required.	
<input type="checkbox"/>	Determine extent of immediate hazard, issue Hazard Order if necessary.	
<input type="checkbox"/>	Arrange for security within the closure of airspace as required.	
<input type="checkbox"/>	Ensure the operator is advising public in immediate or potential danger of released contamination.	
<input type="checkbox"/>	Ensure the operator is conducting an evacuation or in-place sheltering notification by house-to-house contact with assistance from RCMP and Local Authorities.	
<input type="checkbox"/>	Dispatch representative to the Government Emergency Operations Centre, as required.	



### *Emergency Management and Fire Safety*

Emergency Management and Fire Safety is a division of Emergency, Public Health and Safety which is responsible for coordinating overall provincial emergency planning, training and response operations for the safety of Saskatchewan residents, and for the protection of property and the environment before, during and after an emergency or a disaster.

<b>EMERGENCY MANAGEMENT AND FIRE SAFETY</b>		<b>EMERGENCY MANAGEMENT AND FIRE SAFETY</b>
<input type="checkbox"/>	Maintain the provincial government's emergency plan and related contingency plans.	
<input type="checkbox"/>	Coordinate provincial government resources during an emergency.	
<input type="checkbox"/>	Assist government Ministries, Crown Corporation and agencies with their emergency planning.	
<input type="checkbox"/>	Encourage the formation of local government emergency measures organizations and assisting in the development of local emergency plans.	
<input type="checkbox"/>	Provide on-site consultation with municipal officials during government states of emergency.	
<input type="checkbox"/>	Coordinate federal government emergency preparedness programs within the province.	
<input type="checkbox"/>	Maintain GEOC readiness.	
<input type="checkbox"/>	If notified of an upstream emergency, inform the Ministry of Energy and Resources, Ministry of Environment, and the local authority of the notification.	
<input type="checkbox"/>	Upon notification of a Level 2 or Level 3 impact, complete the provincial government notification and call down.	
<input type="checkbox"/>	The Emergency Management and Fire Safety duty manager obtains a SitRep from the Ministry of Energy and Resources, industrial operator or the local authority and confirms the level if impact.	
<input type="checkbox"/>	The duty manager notifies the appropriate provincial officials as per operating procedure.	
<input type="checkbox"/>	Prepare briefing note, as appropriate.	
<input type="checkbox"/>	When requested by the local authority, dispatch Emergency Management and Fire Safety district officer (liaison officer) to the municipal EOC.	
<input type="checkbox"/>	When requested, activate the GEOC for the Ministry of Energy and Resources to use as the off-site REOC until the REOC is established near the incident site.	
<input type="checkbox"/>	Upon request of the Ministry of Energy and Resources or the local authority, activate the GEOC to coordinate and support response activities to the incident with provincial resources.	
<input type="checkbox"/>	Provide ongoing SitReps or briefing notes to appropriate provincial officials.	

### *Ministry of Environment*

The Ministry of Environment is responsible for government programs associated with environmental protection in the province of Saskatchewan.

<b>MINISTRY OF ENVIRONMENT</b>		<b>MINISTRY OF ENVIRONMENT</b>
<input type="checkbox"/>	Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Ensure that adequate equipment is available for monitoring.	
<input type="checkbox"/>	Determine the area at risk from the release.	
<input type="checkbox"/>	Manage all monitoring of gas release and compiles data for plume modeling.	
<input type="checkbox"/>	Establish a weather-monitoring facility, when required, in the vicinity of a product release.	
<input type="checkbox"/>	Monitor, discharge, and mitigate impact of release-related liquids entering watercourses.	
<input type="checkbox"/>	Provide advice regarding the effects of contaminant on livestock, plants and soil.	

### Ministry of Government Relations

MINISTRY OF GOVERNMENT RELATIONS		GOVERNMENT RELATIONS
<input type="checkbox"/>	Maintain a team of trained Public Affairs personnel.	
<input type="checkbox"/>	Implement the Government's telephone "fan-out" to alert all affected departments and agencies.	
<input type="checkbox"/>	Notify local municipal disaster services.	
<input type="checkbox"/>	Advise on the priority of emergency communications.	
<input type="checkbox"/>	Make recommendations to the government regarding assistance to disaster victims and the sharing of costs of emergency or disaster operations.	
<input type="checkbox"/>	Coordinate key messaging with the Ministry of Energy and Resources.	

### Ministry of Health

The Ministry of Health has a mandate to support Saskatchewan residents in achieving their best possible health and well-being. With direction from the Minister of Health, Saskatchewan Health establishes policy direction, sets and monitors standards, supports regional health authorities and other organizations, and ensures the provision of essential and appropriate services.

MINISTRY OF HEALTH		MINISTRY OF HEALTH
<input type="checkbox"/>	Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Provide advice on health and safety levels for the more vulnerable residents, including those in health care or special facilities.	
<input type="checkbox"/>	Establish health and safety levels for the escaping of contaminants.	
<input type="checkbox"/>	Advise on appropriate remedial measures.	
<input type="checkbox"/>	Ensure appropriate data is collected to monitor the health effects of the incident.	
<input type="checkbox"/>	Recommend further investigation or research after the event is warranted	

### Occupational Health and Safety (OH&S)

Occupational Health and Safety is a Division of the Saskatchewan Ministry of Labour and Workplace Safety. 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		OH&S
<input type="checkbox"/>	Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Dispatch representatives to monitor compliance of regulations and provide support and advice regarding safety of workers and responders.	
<input type="checkbox"/>	Monitor the health and safety aspect of applicable occupations within the hazard area to ensure the necessary precautions are taken to protect worker safety.	
<input type="checkbox"/>	Compile and maintain health and safety related records and log.	
<input type="checkbox"/>	Monitor lease holder/contractor's plan to determine if site is safe for recovery workers.	
<input type="checkbox"/>	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		LOCAL AUTHORITY
<input type="checkbox"/>	Maintain a 24 hour emergency contact number.	
<input type="checkbox"/>	Conduct a hazard assessment of petroleum facilities and operations.	
<input type="checkbox"/>	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).	
<input type="checkbox"/>	Include preparedness and response information concerning facilities and operations in the MEP.	
<input type="checkbox"/>	Train personnel to carry out function as assigned by the MEP or procedures.	
<input type="checkbox"/>	Assess emergency incident and evaluate operator response with the Ministry of Energy and Resources.	
<input type="checkbox"/>	Activate the emergency public warning system to alert people to life threatening hazards, as required.	
<input type="checkbox"/>	Initiate public protection option, as required if resources are available.	
<input type="checkbox"/>	Maintain communication with industrial operator during emergency.	
<input type="checkbox"/>	Activate the MEP, in accordance with local authority policy.	
<input type="checkbox"/>	Manage the local authority's emergency response.	
<input type="checkbox"/>	Dispatch a representative to the incident command post, if resources are available.	
<input type="checkbox"/>	Activate the MEOC, as required by the municipality.	
<input type="checkbox"/>	Coordinate with the industrial operator, the establishment and the administration of reception centres for evacuees, as required.	
<input type="checkbox"/>	Assist with the establishment of roadblocks and maintain them if resources are available.	
<input type="checkbox"/>	Assist with fire protection (secondary fires only).	
<input type="checkbox"/>	If necessary, declare a local state of emergency, as determined by the local authority.	
<input type="checkbox"/>	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.	
<input type="checkbox"/>	Provide timely news releases.	
<input type="checkbox"/>	Inform Municipal Affairs, Saskatchewan Emergency Management and Fire Safety and the public when the emergency is over.	
<input type="checkbox"/>	Conduct a damage assessment to the extent of government infrastructure (roads/bridges).	
<input type="checkbox"/>	Compile a municipal log.	
<input type="checkbox"/>	Properly shutdown MEOC as appropriate.	
<input type="checkbox"/>	Conduct municipal incident debriefing.	
<input type="checkbox"/>	Participate in multi-agency debriefings if resources are available.	
<input type="checkbox"/>	Review and update the municipal emergency plan.	
<input type="checkbox"/>	Communicate any changes to the plan to all plan holders.	
<input type="checkbox"/>	Track costs associated with the response.	



*Emergency Services: Police, EMS, and Fire Fighting*

<b>EMERGENCY SERVICES</b>		<b>EMERGENCY SERVICES</b>
<input type="checkbox"/>	Understand the hazards associated with the petroleum facilities and operations within the area.	
<input type="checkbox"/>	Work with the operator to effectively prepare for a petroleum industry incident.	
<input type="checkbox"/>	Understand the response role when there is a private and public-sector response.	
<input type="checkbox"/>	Train personnel to carry out their functions when there is an incident.	
<input type="checkbox"/>	Establish contact with the industrial operator.	
<input type="checkbox"/>	Prior to dispatching staff to scene, determine the hazards associated with the incident.	
<input type="checkbox"/>	Determine where roadblocks are established.	
<input type="checkbox"/>	Where applicable, maintain roadblocks as necessary.	
<input type="checkbox"/>	Determine the direction of approach to the incident.	
<input type="checkbox"/>	Determine if there are any injuries.	
<input type="checkbox"/>	Find out what response and public protection actions have been taken by the operator.	
<input type="checkbox"/>	Initiate public protection option, when necessary.	
<input type="checkbox"/>	Identify what resources are required and where they should be staged.	
<input type="checkbox"/>	Determine the location of the On-Site Command Post.	
<input type="checkbox"/>	Respond and assess emergency incident.	
<input type="checkbox"/>	Communicate to REOC and provide situation reports as required.	
<input type="checkbox"/>	Dispatch a representative to the REOC, when it is established to coordinate the response.	
<input type="checkbox"/>	Assist with fire protection, where applicable.	
<input type="checkbox"/>	Provide emergency medical assistance, as required.	
<input type="checkbox"/>	Compile response logs.	
<input type="checkbox"/>	Participate in municipal incident debriefing.	
<input type="checkbox"/>	Participate in multi-agency debriefings.	

*Highways and Infrastructure*

<b>HIGHWAYS AND INFRASTRUCTURE</b>		<b>HIGHWAYS AND INFRASTRUCTURE</b>
<input type="checkbox"/>	Maintain a 24-hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.	
<input type="checkbox"/>	Respond to Dangerous Goods transportation emergencies in Saskatchewan.	
<input type="checkbox"/>	Provide advice and assistance in procurement of roadblock equipment.	
<input type="checkbox"/>	Provide authorization/assistance for establishing road closures and emergency roadblocks.	
<input type="checkbox"/>	Manage transportation route closures.	
<input type="checkbox"/>	Provide assistance with the closure of provincial highways in the establishment of suitable detour routes.	
<input type="checkbox"/>	Work with the appropriate local authority to facilitate the restoration of roadways.	
<input type="checkbox"/>	Ensure that all requests and reports are completed.	

**9.2.10 Saskatchewan Pressure Equipment Incidents**

For an incident involving pressure equipment that result in property damage or injury to, or death of, a person or accidents not caused by pressure equipment but having some impact on pressure equipment; immediately report the incident to the Technical Safety Authority of Saskatchewan (TSASK). For minor or no-injury/damage incidents, notify TSASK the following day. Next day notification can be made at the TSASK website using the Report an Incident automated form.

Report an Incident Address:

<http://www.tsask.ca/contact-us/report-an-incident>

**9.2.11 List of Abbreviations**

Acronym	Name
ENV	Ministry of Environment
ER	Ministry of Energy and Resources
IRIS	Integrated Resource Information System, Ministry of Energy and Resources
Local Authority	Rural Municipality
PAB	Public Affairs Bureau
Regulatory Authority	Saskatchewan Ministry of Energy and Resources
RHA	Regional Health Authority
TSASK	Technical Safety Authority of Saskatchewan

## 9.3 CANADIAN FEDERAL GOVERNMENT

### 9.3.1 *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 aboriginal communities, and three international airports.

RCMP		RCMP
<input type="checkbox"/>	May assist in the initial area isolation, security traffic and crowd control.	
<input type="checkbox"/>	In conjunction with transportation, local authorities and Company personnel, may provide assistance with closure of roadways.	
<input type="checkbox"/>	If available, assist company personnel with resident evacuation.	
<input type="checkbox"/>	Clarify responsibilities when fatalities are involved. Police must be notified in the case of a fatality.	
<input type="checkbox"/>	Assist the coroner in the event of a fatality in which there is no criminal wrong-doing.	
<input type="checkbox"/>	Notify next-of-kin in the event of a fatality of a member of the public.	

### 9.3.2 *Environment and Climate Change Canada*

Environment and Climate Change Canada is the Ministry responsible for the clean-up of all hydrocarbon or other hazardous materials into a watercourse or fish bearing stream. They provide sensitivity mapping for flora and fauna.

Although the Regional Environmental Emergency Team (REET) model ended in 2012 ECCC continues to provide scientific and technical advice to responders, leads, and other implicated agencies in the event of an emergency pollution incident, including marine spills, through its National Environmental Emergencies Centre. The Incident Command System, for use during emergencies, is well established and follows the Incident Command System principles and doctrine.

Under the Incident Command System structure, Department of Fisheries and Oceans (DFO) has a range of technical and scientific experts that will be mobilized as required to support the Environmental Unit under the Planning Section of the Incident Command System, including habitat biologists, oceans planning staff, marine mammal experts, contaminated sites biologists, resource management biologists, and science staff covering a wide range of disciplines and expertise. It draws on expertise from various sources including other government agencies, the scientific and academic communities, industry and consultants, local experts, and First Nations representatives as required by the circumstances of the incident.

Environment and Climate Change Canada is the Lead Agency for any spill on Federal Government land.

ENVIRONMENT AND CLIMATE CHANGE CANADA		ENVIRONMENT AND CLIMATE CHANGE CANADA
<input type="checkbox"/>	Identify actions required under the Fisheries Act and the Canadian Environmental Protection Act (CEPA).	
<input type="checkbox"/>	Work together with provincial environmental protection agencies.	
<input type="checkbox"/>	Provide advice on environmental implications as a result of operational decisions.	
<input type="checkbox"/>	Work together with provincial environmental protection agencies.	
<input type="checkbox"/>	Assign inspectors where appropriate.	
<input type="checkbox"/>	Assist with plume monitoring.	
<input type="checkbox"/>	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.	
<input type="checkbox"/>	Provide sampling and laboratory analytical support.	
<input type="checkbox"/>	Advise about clean up technology and techniques.	
<input type="checkbox"/>	May develop damage assessment and restoration tools and techniques.	



### 9.3.3 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		DFO
<input type="checkbox"/>	Design and develop related regulations, policies, strategies and tools.	
<input type="checkbox"/>	Review, assess and monitor activities associated with fish habitat to ensure their compliance with the Fisheries Act and Species at Risk Act.	
<input type="checkbox"/>	Conduct environmental assessments under the Canadian Environmental Assessment Act.	
<input type="checkbox"/>	Design, develop, and implement communication and education strategies.	
<input type="checkbox"/>	Work together with provincial environment protection agencies.	
<input type="checkbox"/>	Receive notification from Environment and Climate Change Canada.	
<input type="checkbox"/>	May send personnel to the site if there has been or could potentially be an impact to fish or fish habitat.	
<input type="checkbox"/>	Work closely with Environment and Climate Change Canada, The Canadian Coast Guard and other provincial environmental agencies.	

### 9.3.4 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		PUBLIC SAFETY
<input type="checkbox"/>	Ensure first responders and emergency management personnel are well-prepared through education, support, and exercises.	
<input type="checkbox"/>	Work with provincial response agencies.	
<input type="checkbox"/>	Monitor and coordinate the Federal response to an emergency.	
<input type="checkbox"/>	Provide financial assistance to the provincial and territorial governments through the Disaster Financial Assistance Arrangements (DFAA).	

### 9.3.5 Transport Canada (CANUTEC)

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 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 activation or industry Emergency Response Plans.

TRANSPORT CANADA		TRANSPORT CANADA
<input type="checkbox"/>	Regulate the handling, offering for transport and the transport of dangerous goods by all modes in order to ensure public safety.	
<input type="checkbox"/>	Maintain a 24-hour emergency telephone service.	
<input type="checkbox"/>	Assist emergency response personnel in handling dangerous good emergencies.	
<input type="checkbox"/>	Provide advice on chemical, physical and toxicological properties and incompatibilities of the dangerous goods.	
<input type="checkbox"/>	Provide advice on health, hazards, and first aid.	
<input type="checkbox"/>	Provide advice on fire, explosion, spill, or leak hazards.	
<input type="checkbox"/>	Provide advice on remedial actions for the protection of life, property, and the environment.	
<input type="checkbox"/>	Provide advice on evacuation distances.	
<input type="checkbox"/>	Provide advice on personal protective clothing and decontamination.	
<input type="checkbox"/>	Provide communication links with the appropriate industry, government, or medical specialists.	
<input type="checkbox"/>	Maintain voice communication and written information records for two years.	

***CANUTEC – Public Safety Measures***

The 2016 Emergency Response Guidebook (ERG2016) 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 this guidebook, 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.

This guidebook will 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. ERG2016 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. The guidebook is published every 4 years, new editions reflect changes in emergency response procedures, dangerous goods, UN numbers and shipping names.



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	
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			800 metres (1/2 mile) in all directions.

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, 2016



***Emergency Response Assistance Plan – Emergency Response Assistance Canada (ERAC) and Plan Participant Relationship***

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.

Transportation of Dangerous Goods Act states that before offering for transport or importing any quantity or concentration of dangerous goods, a person shall have an emergency response assistance plan that is approved and outlines what is to be done if there is an accident in transporting the dangerous goods.

LPG Emergency(ies) means:

- a) An incident in Canada involving a potential or actual discharge of LPG during land transportation (including the marine transport of LPG by rail tank car, tank truck, intermodal container or in a tank being transported on a barge or ferry), or
- b) An incident in Canada involving a potential or actual discharge of LPG from a stationary tank.

ERAC provides emergency response support to LPG related road, rail and stationary tank incidents greater than 450 litres. As a member plan participant of Emergency Response Assistance Canada and upon activation of your ERAP, Technical Advisors and Response Teams will respond on your behalf.

Who completes the following tasks, the Plan Participant and / or the ERAC?

Question	Answer
1 Secure accident site upon arrival?	ERAC
2 Call ERAP activation phone and take direction from Response Managers?	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 off shore)?	Plan Participant

**Activating an Emergency Response**

ERAC emergency responders are constantly available through a 24-hour activation telephone number.

Providing the initial contact are the Response Managers (RMs). These RMs decide the closest Remedial Measures Advisor (RMA) or Technical Advisor to the scene of any emergency and dispatch them and a Response Team when necessary. If your company is involved in an emergency, the RM will contact you for permission to activate the Plan.

**Remedial Measures Advisors and Technical Advisors - First on the scene**

Arrival time: within 6 hours or less of being called out.

These technical and product experts provide advice and assistance in handling the incident. In some instances, they also may conduct minor repairs.

**Response Teams - Hands-on expertise**

Arrival time: within 12 hours or less of being called out.

The Response Teams bring all the necessary equipment and expertise to perform remediation procedures. These fully hands-on emergency responders are, among other things, experts in initial containment, transferring, flaring products and purging LPG and Flammable Liquids containers.



### 9.3.6 *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	
<input type="checkbox"/>	Conduct independent investigations, including public inquiries when necessary, into selected transportation occurrences in order to make findings as to their causes and contributing factors.
<input type="checkbox"/>	Identify safety deficiencies, as evidenced by transportation occurrences.
<input type="checkbox"/>	Make recommendations designed to eliminate or reduce any such safety deficiencies.
<input type="checkbox"/>	Report publicly on their investigations and on the findings in relation thereto.

TSB

#### *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<sup>3</sup>, 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/>

### 9.3.7 Health Canada

Health Canada is the department of the Government of Canada with responsibility for national public health.

HEALTH CANADA		HEALTH CANADA
<input type="checkbox"/>	Communicates information about health and wellness and disease prevention to protect Canadians from avoidable risks.	
<input type="checkbox"/>	During a health emergency or disaster, Health Canada and the Public Health Agency of Canada are responsible for supporting emergency health and social services in the provinces and territories.	
<input type="checkbox"/>	Work collaboratively with the provinces and territories to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.	

### 9.3.8 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		PUBLIC HEALTH
<input type="checkbox"/>	Facilitate national approaches to public health policy and planning.	
<input type="checkbox"/>	If a public health emergency grows beyond one province and/or territory activate response actions.	
<input type="checkbox"/>	Deploy health emergency response teams (HERT) as part of the federal response to emergencies that have health repercussions.	
<input type="checkbox"/>	Work with Health Canada to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.	

### 9.3.9 Aboriginal Affairs and Northern Development Canada (AANDC)

The department of the Government of Canada with responsibility for policies relating to Aboriginal peoples in Canada, that comprise the First Nations, Inuit, and Metis.

ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA		AANDC
<input type="checkbox"/>	Ensure that the First Nation communities have emergency management services comparable to those of Canadian in similar situations.	
<input type="checkbox"/>	Work to establish an all-hazard approach for responding to emergencies that impact First Nation communities.	
<input type="checkbox"/>	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.	
<input type="checkbox"/>	Coordination of federal assistance and response to emergencies in response to requests from territorial government authorities.	
<input type="checkbox"/>	Provide funding to cover costs related to emergency assistance in First Nations communities.	
<input type="checkbox"/>	Mitigate the effects of an emergency on First Nations people in the area.	
<input type="checkbox"/>	Work with the Chief and Council to assess the situation, determine the most effective way to report damage.	
<input type="checkbox"/>	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.	



### **9.3.10 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<sup>3</sup> must be reported to Indian Oil and Gas Canada (IOGC) immediately.

### **9.3.11 Canadian Environmental Protection Act (CEPA)**

The Canadian Environmental Protection Act (CEPA) requires the Government of Canada 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 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 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 unless it does not entirely comply with the regulations.

Environment and Climate Change Canada requires any petroleum operator who has charge, management or control of substances in excess of threshold limits listed in the Environmental Emergency Regulations under Part 8 of CEPA 1999 Schedule 1 to:

- File a declaration with the minister.
- Prepare an environmental emergency (E2) plan.
- Test and maintain the plan.

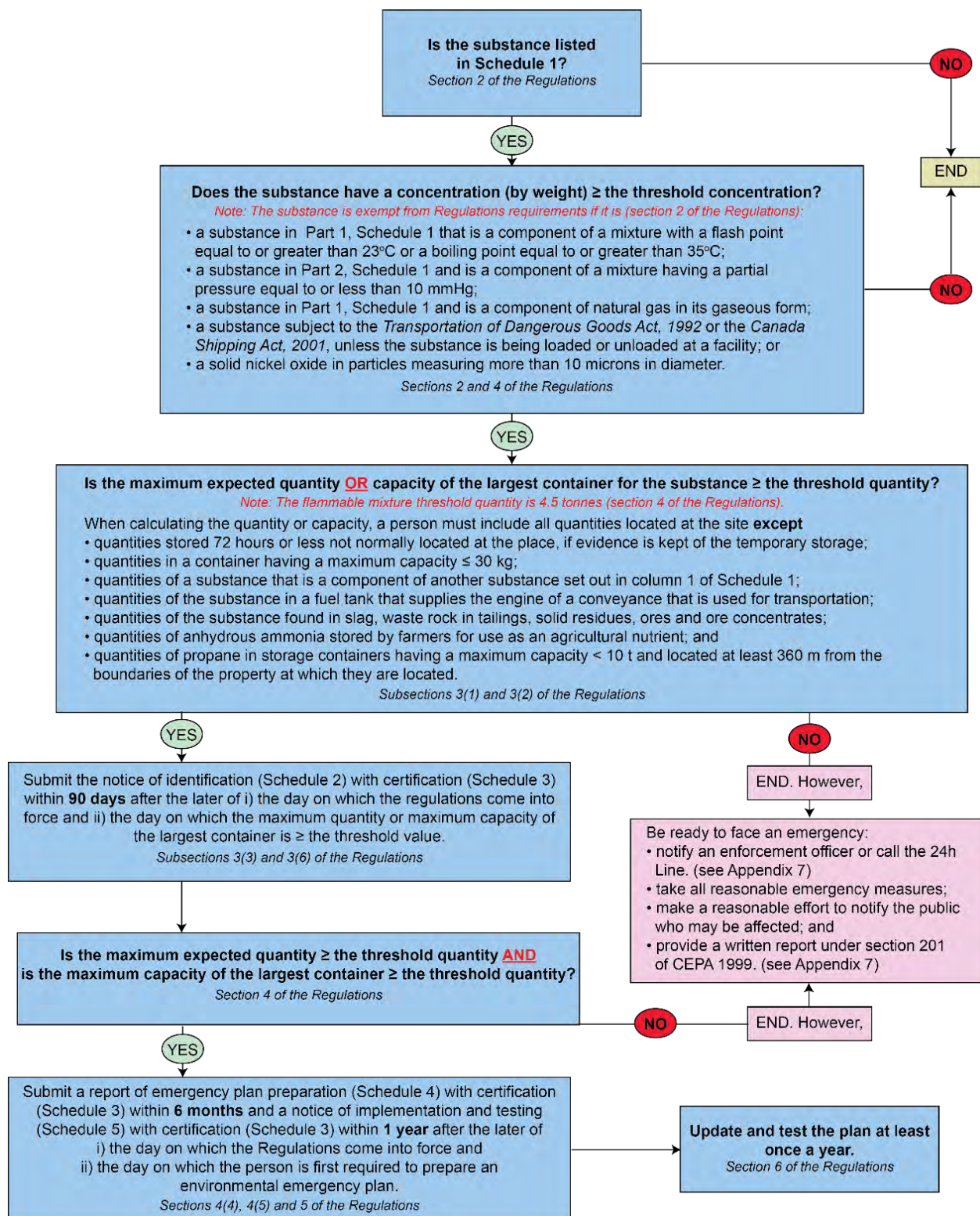
Preparation and implementation of an E2 plan is required if the:

- Maximum expected quantity equals or exceeds the threshold, and/or
- Largest container capacity equal or exceeds the threshold.

#### **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.
- Quantities of a substance in fuel tank supplying engine of conveyance.
- Quantities of a substance regulated under Transportation of Dangerous Goods Act.

*Environmental Emergencies Regulations – Quick Reference*





### **Overview of Environment Canada Schedules**

The CEPA regulations schedules can be found via the Environment 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 2 – Notice of Identification and Substance and Place**

The company is to ensure registration of tanks / vessels that meet the registration criteria. Periodically review this to ensure that all information is updated. If information has changed please submit a revised copy into your Environment Canada Regional office or inquire for assistance. Do not create a new ID and submit a new notice for an already registered vessel.

Within this form the following must be outlined:

- Place where one or more substances are located.
- Field primary contact.
- Field alternate contact.
- Head office (if different from facility).
- Head office primary contact.
- Head office alternate contact.
- Substance located at the place (vessel details).
  - Name of the substance.
  - CAS & UN Number.
  - Maximum expected quantity of substance at any time during the calendar year.
  - Maximum capacity of the largest container in which the substance is stored.
  - Is the substance pure, in a flammable or non-flammable mixture?
- Schedule 3.

**Note #1:** The maximum expected quantity must have the tank quantity reported for 100% capacity, even though by law the tank can only be filled to 80%.

**Note #2:** The maximum expected quantity of substance will be the same as the maximum capacity of the largest container on-site, while two or more tanks, the maximum expected quantity of substance will be the sum of two or more tanks maximum capacity.

### **Schedule 3 - Certification**

After schedule 2, 4 and 5 are completed (if applicable) the main or field primary contact must, sign, print name, title and date that each schedule has been updated. Once that is completed the registration notice must be sent to Environment Canada's general email inbox [ec.ue-pn-e2.ec@canada.ca](mailto:ec.ue-pn-e2.ec@canada.ca) ( for Alberta / Manitoba / Saskatchewan / Northwest Territories & Nunavut) and [ec.ue-py-e2.ec@canada.ca](mailto:ec.ue-py-e2.ec@canada.ca) (BC & Yukon) or a direct Environmental Emergencies Officer.

**Schedule 4 – Notice of Preparation**

Once an ERP is created for a registered substance that meets the criteria to have a plan in place a Notice of Preparation must be completed. This preparation notice should be completed during each revision or annual update and provided to Environment Canada.

Within this form the following must be outlined:

- Place where one or more substances are located.
- Use of prior plans (i.e. Voluntary basis, prepared for another government and prepared for another act of parliament).
- Local – level Involvement (i.e. Local authority's involvement, community or interest groups involvement and is the plan applicable to relevant parties such as police and fire departments).
- Environmental Emergency Plan Information (i.e. CAS registry number and nature of activities).
- Completed date of the Environmental Emergency Plan.
- Plan Location (i.e. Is the plan available at where the substance is located?)
- Schedule 3.

**Schedule 5 – Notice of Implementation and Testing**

Once an Environmental Emergency Plan is exercised on a registered substance a Notice of Implementation and Testing should be completed and provided to Environment Canada.

Within this form the following must be outlined:

- Place where one or more substances are located.
- Implementation and testing of the environmental emergency plan (i.e. Date of testing of the plan, list of local authorities or community organizations that were involved in the testing of the plan.
- Schedule 3.

***Environmental Emergency (E2) Plan***

The objectives of the Environmental Emergency Regulations (E2 Regulations) under the Canadian Environmental Protection Act, 1999 (CEPA 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.

***Environmental Emergencies Program (EEP) Support***

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 primary role of Environment and Climate Change Canada's National Environmental Emergencies Centre (NEEC) is to provide the Department's unique technical and scientific environmental advice and assistance to the lead agency in the event of an environmental emergency. Environment and Climate Change Canada helps to identify the environmental protection priorities and provide advice on ways to reduce the pollution's impact on the environment. This advice can include weather forecasts, location of wildlife and sensitive ecosystems, and expertise on spill countermeasure and remediation options.

**Note:** The Federal government and Provinces have reciprocal harmonization agreements to share information as required to protect human life, health and environmental protection.

### **National Environmental Emergencies Centre (NEEC)**

In the event of an environmental emergency, the National environmental emergencies centre (NEEC) is Environment and Climate Change Canada's (ECCC) 24/7 hub for providing scientific and technical advice aimed at reducing impacts and ensuring measures are taken to protect the environment. ECCC will provide its expertise to all partners that have requested it and where ECCC's support can enhance the protection of the environment. NEEC's Environmental emergencies officers can be quickly deployed on-site to help at the scene of an emergency.

NEEC can supply a range of expertise and services to the organization leading the response, including:

- Spill and air trajectory and dispersion modelling to track the path and intensity of air, water and ground pollutants.
- Behaviour analysis of hazardous substances in the environment to understand the range of impacts.
- Site-specific weather forecasts to coordinate response efforts.
- Environmental sensitivity mapping (e.g. wildlife and sensitive ecosystems) to understand priority ecosystems and wildlife.
- Shoreline clean-up assessment and remediation advice to determine environmental recovery steps.

### ***Essential Features of an Environmental Emergency (E2) Plan***

Environmental emergency planning is not just about compliance with the E2 Regulations. For today's modern enterprise, effective planning for emergency events is an essential part of good business management.

When E2 planning is properly developed and implemented, benefits to the environment, human health and industry ensue.

E2 planning provides measurable benefits by:

- Saving lives and reducing human injury.
- Reducing property damage costs, preventing the sometimes-extreme costs of a major industrial incident.
- Shortening business interruptions, which can be four times as costly as the property damage mentioned above.
- Lessening loss of market share, which continues after an incident until the company's production and reputation are restored.
- Lowering litigation costs, which are unavoidable after an incident and can total five times the cost of the regulatory fines.
- Reducing incident investigation costs, as well as corrective actions can cost millions of dollars.
- Reducing regulatory penalties.

The ERP 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 ERP along with their respective roles and responsibilities will have to be identified in the plan.

Any increase equal to or greater than 10 percent of the quantity originally reported will require the person to notify the Minister within 90 days after the change occurred.

The construction of a new facility by the Company will require a declaration to Environment and Climate Change Canada with information on the quantity of the CEPA regulated substance, along with the facility location, and confirmation that an environmental emergency plan has been prepared.

Facilities being abandoned or decommissioned will have to notify Environment and Climate Change Canada when they no longer have a substance in a quantity equal to or exceeding the minimum reportable quantity.

Environmental emergency plans must 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.

Also, as an active member of the Western Canadian Spill Services Ltd. (WCSS), the Company can obtain the equipment support and expertise to respond to an environmental emergency.

### *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 •Emergency Duties 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 cleanup using its Shoreline Cleanup 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 that an E2 plan be updated and tested at least once each calendar year. Environment Canada recognizes that a full-blown, operational emergency response exercise may not be achievable every year. Therefore, facilities may conduct a full-blown test 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 five years.

### ***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, tickets, ministerial orders, injunctions, and prosecution.

### ***Emergency Response Assistance Canada***

Emergency Response Assistance Canada (ERAC) is an emergency preparedness and response organization that develops, implements and responds to Emergency Response Assistance Plans (ERAPs) and Environmental Emergency (E2).

Emergency Response Assistance Canada's Emergency Response Assistance Plan (ERAP) provides emergency response support to road, rail and stationary tank incidents for vessels over 450 liters.

ERAC as Canada's Emergency Response provider, provide emergency response to Plan Participants who transport the following products by road or rail, or those who store these products in tanks with capacities of 450 litres or greater. These products are gases at standard temperatures and pressure, and include:

- Propane (UN1978)
- Butane (UN1011)
- Propylene (UN1077)
- Butylene (UN1012)
- Isobutene (UN1969)
- Isobutylene (UN1055)

It is recognized that these products may contain a concentration of condensate and/or minute quantities of other elements including hydrogen sulphide.

Under the Plan, response is also provided to emergencies involving Butadiene – 1,3 (stabilized) (UN1010).

In addition, ERAC responds to the following Flammable Liquids transported by rail only:

- UN1170 Ethanol
- UN1202 Diesel Fuel
- UN1203 Gasoline
- UN1267 Petroleum Crude Oil
- UN1268 Petroleum Distillates N.O.S.
- UN1863 Fuel Aviation, Turbine Engine
- UN1987, Alcohols, N.O.S.;
- UN1993 Flammable Liquid, N.O.S.
- UN3295 Hydrocarbons, Liquid, N.O.S.
- UN3475 Ethanol and Gasoline Mixture
- UN3494, Petroleum Sour Crude Oil, Flammable, Toxic

Many dangerous goods classes may not require an Emergency Response Assistance Plan (ERAP). However, there is still a need to have an effective emergency response plan (ERP) for these non-ERAPable products in the event of an incident.

Dangerous goods classes with specific volumes may be regulated as an ERAPable or non-ERAPable product under the Transport Canada Dangerous Goods Regulations. ERAC responds to the following 10 products by road, rail and stationary tank:

- Fuel oil
- LPG
- Anhydrous ammonia
- Gasoline
- Petroleum crude oil
- Sulphuric acid, more than 51% acid
- Corrosive liquid
- Sodium hydroxide solution
- Flammable liquids
- Paints and paint related material

When the ERAC number has been notified, they have three main response positions that are activated by the Emergency Call Centre Operator (ECCO)

### **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. Our emergency responders are experts in initial containment, confinement, transferring, flaring products and purging LPG and flammable liquids containers.



## **9.4 CANADA ENERGY REGULATOR**

The Canada Energy Regulator (CER or Board) is an independent federal agency established to regulate international and interprovincial aspects of the oil, gas and electric utility industries.

CER-regulated companies have the primary responsibility for ensuring safety and environmental protection because they are the owners, designers, builders and operators of the facilities. The CER recognizes this responsibility in the ongoing development of goal-oriented regulation that places the onus on companies to ensure their facilities are safe and secure and are operated in an environmentally responsible manner. The CER plays a significant role by ensuring that the companies maintain or improve their safety and environmental performance. The Board ensures that companies:

- Identify and manage the potential hazards associated with their facilities and operations.
- Conduct a risk analysis of those hazards.
- Eliminate, reduce and manage the risks in order to protect the public and regulated company personnel, the safety and security of the facilities and operations, and the protection of property and the environment.

All companies under the Board's jurisdiction are responsible for developing and maintaining an Emergency Response and Preparedness Program generically referred to as “Emergency Management Program” for all aspects of their operations. In the event an emergency occurs, the regulated company is responsible for responding to the emergency and coordinating emergency response activities.

- That result in death or serious injury.
- Involve a significant release of hydrocarbons.
- Could result in potential or real impact due to loss of service.
- Attract significant media attention.
- On the advice of Natural Resources Canada (NRCan) or other federal Agencies.

All inter-provincial and cross border pipelines are regulated by the CER and require an Emergency Response Plan. To fully comply with the CER Onshore Pipeline Regulations (OPR) and meet CER expectations for an effective emergency preparedness program, Pine Cliff is required to have an emergency procedures section for the field operations and conduct emergency response training and exercises.

#### 9.4.1 Contact Information

All incidents, accidents and occurrences as defined by the Onshore Pipeline Regulations (OPR), the Canada Labour Code, and the Transportation Safety Board (TSB) Regulations should be reported.

<b>CALL</b>
For emergencies involving inter-provincial or cross border pipelines, the CER is the Regulatory Authority. In the event of an CER regulated pipeline emergency, call the TSB's 24 hour hotline (collect calls accepted). The TSB will contact the CER to notify them of the incident.
<b>1-819-997-7887</b>

<b>ONLINE REPORTING</b>
Report all events on the CER's Online Event Reporting System.
This system is intended for use by regulated companies to provide notification to the Canada Energy Regulator (CER) and Transportation Safety Board (TSB) of various events that are defined in regulation including incidents, unauthorized activities, and operations and maintenance activities.
<b><a href="https://apps.cer-rec.gc.ca/ers/home/index">https://apps.cer-rec.gc.ca/ers/home/index</a></b>

#### 9.4.2 Roles and Responsibilities

<b>CANADA ENERGY REGULATOR</b>	
<input type="checkbox"/>	Monitors, observes and assesses the overall effectiveness of the company's emergency response in terms of: <ul style="list-style-type: none"> <li>• Emergency Management</li> <li>• Safety</li> <li>• Security</li> <li>• Environment</li> <li>• Integrity of operations and facilities, and</li> <li>• Energy Supply.</li> </ul>
<input type="checkbox"/>	Investigates the event, either in cooperation with the Transportation Safety Board of Canada, under the Canada Labour Code, or as per the Canada Energy Regulator Act or Canada Oil & Gas Operations Act (whichever is applicable).
<input type="checkbox"/>	Inspects the pipeline or facility.
<input type="checkbox"/>	Examines the integrity of the pipeline or facility
<input type="checkbox"/>	Requires appropriate repair methods are being used.
<input type="checkbox"/>	Requires appropriate environmental remediation of contaminated areas is conducted.
<input type="checkbox"/>	Coordinate stakeholders and Aboriginal community feedback regarding environmental clean-up and remediation.
<input type="checkbox"/>	Confirms that a company is following its Emergency Procedures Manual(s), commitments, plans, procedures, and CER regulations and identifies non-compliances.
<input type="checkbox"/>	Initiates enforcements action as required.
<input type="checkbox"/>	Approves the restart of the pipelines.

**CANADA ENERGY REGULATOR**

#### 9.4.3 CER Definitions of Incident and Emergency

##### *Incident*

Incidents and releases reportable to the CER under sections 1 and 52 of the OPR are:

- The death of or serious injury to a person.
- A significant adverse effect on the environment.
- Unintended fire or explosion.



- Unintended or uncontained release of low-vapour pressure (LVP) hydrocarbons in excess of 1.5 m<sup>3</sup>.
- Unintended or uncontained release of gas or high-vapour pressure (HVP) hydrocarbons.
- Operation of a pipeline beyond its design limits as determined under CSA Z662, CSA Z276 or any operating limits imposed by the CER.

Although incidents are defined in the OPR, it is also necessary for companies to have a clear understanding of what constitutes incidents and emergencies at their facilities, as well as methods or procedures for determining the magnitude and levels of an emergency as circumstances change.

### *Emergency*

Can/CSA – Z731 and CSA Z246 defines an emergency as “a present or imminent event that requires prompt co-ordination of actions or special regulation of persons or property to protect the health, safety or welfare of people or to limit damage to property and the environment”.

Companies must consider all probable emergencies and have applicable procedures in place to deal with potential effects and treats to people, property and the environment, as determined through a formal hazard assessment.

Level 1	Level 2	Level 3
<ul style="list-style-type: none"> <li>• No effects outside company property</li> <li>• Control of Hazardous substance completed or pending</li> <li>• No immediate threat to the public or company personnel</li> <li>• Minimal environmental effects</li> <li>• Incident/Spill handled by company personnel</li> <li>• Low potential to escalate</li> </ul>	<ul style="list-style-type: none"> <li>• No immediate threat outside company property but potential exists to extend beyond property boundaries</li> <li>• Outside services and government agencies likely to be directly involved</li> <li>• Imminent control of hazardous substance probable</li> <li>• Some injury or threat to the public and company personnel</li> <li>• Moderate environmental effects</li> </ul>	<ul style="list-style-type: none"> <li>• Serious injury to the public and company personnel and ongoing threat to the public</li> <li>• Uncontrolled release of hazardous substance continuing</li> <li>• Significant and ongoing environmental effects</li> <li>• Immediate and significant government agency involvement</li> <li>• Assistance from outside parties required</li> <li>• Effects extend beyond company property</li> </ul>



#### **9.4.4 CER Event Reporting**

The task of completing the notifications will be completed by the Company's CEOC Liaison Officer. For the detailed report use the CER Detailed Reporting Form on the following pages.

The Transportation Safety Board of Canada (TSB) has the option to choose to be the lead investigator for determining the cause and contributing factors leading to an incident/emergency.

For the CER's Event Reporting Guidelines, please refer to the following:

*Canada Energy Regulator Event Reporting Guidelines Revised October 2020.*

<https://www.cer-rec.gc.ca/bts/ctrq/gnnb/rprtnggdlns/index-eng.html>

#### **Canada Energy Regulator Online Event Reporting System (OERS)**

<https://apps.cer-rec.gc.ca/ers>

#### **Precautionary Approach**

It is the Board's expectation that each company take a precautionary approach to the reporting of events. This means that even if there is some doubt as to whether an event should be reported, the company is to report the event. In other words, companies should adopt a "when in doubt, report" approach. This approach to event reporting is consistent with CER-regulated companies' responsibility for anticipating, preventing, mitigating and managing incidents of any size or duration.

The CER's Online Event Reporting System (OERS) now contains a field where the company must indicate that it is reporting an incident on a precautionary basis. In these cases, the CER will determine whether the incident is reportable based on information provided by the company. In cases where an event was reported using the precautionary approach and subsequent information indicates that it was not reportable, the CER records will reflect this and the event will not be included on the company's compliance record and will not be posted on the CER Interactive Incident Map.

#### **Immediately Reportable Events**

Where regulations require an event to be reported "immediately", companies must also consider whether the event meets any of the following definitions:

- An Incident that Harms People or the Environment:
  - a death;
  - a serious injury (as defined in the OPR or TSB regulations);
  - an unintended or uncontrolled LVP hydrocarbon release in excess of 1.5 m<sup>3</sup> that leaves company property or occurs on or off the right of way;
  - an unintended or uncontrolled sweet natural gas or HVP release >30,000 m<sup>3</sup>;
  - any unintended or uncontrolled release of sour natural gas or hydrogen sulfide; and/or
  - a significant adverse effect on the environment.
- A Rupture:
  - an instantaneous release that immediately impacts the operation of a pipeline segment such that the pressure of the segment cannot be maintained.
- A Toxic Plume:
  - a band of service fluid or other contaminant (e.g. hydrogen sulfide or smoke) resulting from an incident that causes people, including employees, to take protective measures (e.g. muster, shelter-in-place or evacuation).

Where an event meets any of the above definitions, companies are required to notify the TSB Reporting Hotline at **1-819 997-7887**. Subsequently, the company is required to input the details required by both the TSB and the CER into the OERS. The phone notification and the input of information into OERS are required to occur **as soon as possible and no later than three hours** of the incident being discovered. The goal of the initial phone notification is to allow the relevant agencies to mobilize a response to an incident, if required. Note that OERS will automatically determine whether the event meets the definition of an “Incident that Harms People or the Environment”, however the company will be responsible for specifically indicating whether the incident meets the definitions of “Rupture” and “Toxic Plume”.

For all other events that do not meet any of the definitions in this section, companies are not required to phone the TSB Reporting Hotline but must report the event as soon as possible and no later than twenty-four hours after the event was discovered.

### ***Multiple Incident Types***

It is possible that a single occurrence may result in multiple incident types. If multiple incident types occur as a result of a single occurrence, companies are expected to report those incident types under a single incident report.

Examples of situations where this might be the case include but are not limited to:

- a pipeline rupture (occurrence) where there is a release of gas (incident type) and an explosion (incident type);
- an industrial accident (occurrence) that causes a death (incident type), a serious injury (incident type) and a fire (incident type);
- an operational malfunction (occurrence) that causes an overpressure (incident type) and a release of product (incident type); or
- an operational malfunction (occurrence) that causes several concurrent or immediately consecutive overpressures (incident types).

In cases where an incident has occurred, and a second incident occurs during the response to the initial incident (e.g. a fire occurs during the clean-up of a spill), the second incident is considered distinct and should be reported separately.

### ***9.4.5 Notifications and Preliminary Incident Reports***

For initial notifications for all incidents and Preliminary Incident Reports, companies must provide, via the OERS, the following information:

- company contact information;
- date and time of occurrence and/or discovery;
- how the incident was discovered (e.g., routine patrol, landowner/public reported);
- type of incident being reported (e.g. death, release of substance, fire/explosion);
- type of substance released and initial release volume estimate, if applicable;
- qualitative details of incident type (e.g., broken bone if serious injury, exposure of a pipeline in a water body if operation beyond design limits, etc.);
- nearest populated center;
- GPS coordinates of the event in decimal degrees;
- facility name/pipeline name;
- narrative that includes a description of the events leading up to the occurrence or discovery and any immediate actions taken to protect the safety of the public, the company’s employees, and/or the environment (e.g., evacuation, containment of product);

- initial narrative information on the component that failed, if applicable; and
- affected lands (e.g., restricted to company owned land, right-of-way, private land, crown land).

#### **9.4.6 Detailed Incident Reports**

For Detailed Incident Reports, companies must provide, via the OERS, the following information:

- any relevant updates to the information contained in the notification and/or preliminary incident reports;
- detailed information on the pipeline/facility component that failed (e.g., equipment type, such as gate valve, and the component that failed, such as the valve packing), if applicable;
- operating conditions of the pipeline/facility at the time of incident discovery (e.g. operating pressure, product type, depth of cover, etc.), if applicable;
- maintenance history of failed component (e.g., date of last inspection/maintenance, type of inspection such as visual or non-destructive examination, etc.), if applicable;
- corrective actions completed by the company to prevent reoccurrence of the incident at local level;
- preventative actions completed by the company to prevent the similar incidents across its systems (if applicable, see appendix 1 for additional guidance);
- root cause analysis that includes at least one immediate cause (e.g., equipment/component failure), as well as at least one basic (root) cause (e.g., normal wear and tear); and
- supporting information (e.g., metallurgical reports), if applicable.

#### **9.4.7 Incident Costs**

The Board now expects companies to report on costs, as described below, for any incident that meets the following definition under any of the Board's regulations:

- i. An unintended or uncontrolled release of low-vapour pressure (LVP) hydrocarbons in excess of 1.5 m<sup>3</sup> that extends beyond a company's property;
- ii. Significant adverse effect on the environment;
- iii. A rupture;
- iv. A toxic plume; and/or
- v. A loss of containment of any fluid from a well.

Companies will be expected to report categorized costs related to the incident as follows:

- Category 1 – Actual costs (to be reported separately) related to:
  - The emergency response, including containment of the incident;
  - The clean-up and remediation of the incident; and
  - The repair or replacement of regulated facilities.
- Category 2 – Actual or estimated value of losses or damages not included in Category 1.

Companies are expected to provide the above costs annually (calendar) beginning the year the incident was reported and ending either when there are no further costs related to the incident or 5 years after the incident was reported (inclusive of the year that is was reported), whichever occurs first.



Reporting of costs will be integrated into the OERS at a later date and at that time OERS will automatically determine when companies are required to report costs. However, until the system changes are made, the CER will contact companies on an as-needed basis and will provide instructions and a standard form to report costs.

#### **9.4.8 Published Manuals**

All companies operating an oil or a gas pipeline under the jurisdiction of the Board must:

1. Unless the Board otherwise directs, publish the entirety of their emergency procedures manuals on their company's public internet site; provided however, manuals are not required to be published for pipelines described in the exemption clause below.  
Companies may protect from publication the following information:
  - a. an identifiable individual, including their name, phone number, email address, mailing address and medical condition;
  - b. the vulnerability of particular structures, including methods employed to protect those structures;
  - c. that could prejudice their competitive position or reasonably be expected to result in a material loss or gain to a person affected by publication; and
  - d. about a person, such as a daycare, school or hospital, that was requested by that person to be withheld from publication;
2. Describe information that is protected from publication; and
3. File a written confirmation from the company's accountable officer that the company's emergency procedures manuals have been published and provide a link to the published manuals to the Board and to any interested person that has expressed an interest to the company in the published manuals.

#### **Exemption Clause**

Pipelines described in this section are exempt from publication.

High vapour pressure pipelines that are:

1. 168 millimeters or less in outside nominal diameter;
2. 10 kilometres or less in length; and
3. Outside of class 2 or greater locations, as determined by CSA Z662.

Liquid pipelines that are:

1. 168 millimeters or less in outside nominal diameter;
2. 10 kilometres or less in length; and
3. Located more than 500 metres from a navigable water, public drinking water source or a designated environmentally sensitive area.

## **10.0 OPERATIONS**

### Overview Map

Overview map of field areas on following pages:

## 10.5 CER Regulated Pipelines

### 10.5.1 Contact Information

All incidents, accidents and occurrences as defined by the Onshore Pipeline Regulations (OPR), the Canada Labour Code, and the Transportation Safety Board (TSB) Regulations should be reported.

#### CALL

For emergencies involving inter-provincial or cross border pipelines, the CER is the Regulatory Authority.

In the event of an CER regulated pipeline emergency, call the TSB's 24 hour hotline (collect calls accepted). The TSB will contact the CER to notify them of the incident.

**1-819-997-7887**

#### ONLINE REPORTING

Report all events on the CER's Online Event Reporting System.

This system is intended for use by regulated companies to provide notification to the Canada Energy Regulator (CER) and Transportation Safety Board (TSB) of various events that are defined in regulation including incidents, unauthorized activities, and operations and maintenance activities.

**<https://apps.cer-rec.gc.ca/ers/home/index>**



### 10.5.2 CER Pipeline Telephone Directory

#### Pine Cliff 24 Hour Emergency Number

1-877-486-0470

#### Pine Cliff Main Number

1-403-269-2289

Medicine Hat Office			
Telephone Number		[REDACTED]	
Address		[REDACTED] [REDACTED]	
Name	Position	Office	Cell
[REDACTED]	[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]		[REDACTED]

#### Alberta Government Agencies

Resource	Contact	Office	Cell/24 Hour
Alberta Energy Regulator	Energy and Environmental Emergency 24-Hour Response Line	--	1-800-222-6514
	Inquiry Line	--	1-855-297-8311
	24/7 Media Centre	--	1-855-474-6356
	South Field Operations - Medicine Hat	1-403-527-3385	1-800-222-6514
County of Forty Mile No. 8	Stewart Payne Director of Emergency Management	1-403-867-3530	1-403-647-7674
Cypress County	Kim Dalton, Director of Emergency Management	1-403-526-2888	1-403-526-2888
RCMP - Bow Island Detachment	NCO In Charge	1-403-545-2784	911
RCMP - Redcliff Detachment	NCO In Charge	1-403-548-2288	911
Alberta Health Services	Province-wide	<a href="mailto:epd@ahs.ca">epd@ahs.ca</a>	1-844-755-1788
Alberta Health Services, South Zone 1	Pamela Hodgkinson Director, Environmental Public Health, South Zone	1-403-627-1230	1-844-755-1788
Alberta Emergency Management Agency	Province-wide	1-780-422-9000	1-866-618-2362
	Meghan Thomas, Team Lead, Alberta Emergency Alert	1-780-644-4447	1-780-996-2062

<b>Resource</b>	<b>Contact</b>	<b>Office</b>	<b>Cell/24 Hour</b>
Alberta Emergency Management Agency, South Central Region	Randy Tiller, Emergency Management Field Officer	--	Cell: 1-403-815-9665 24 Hour: 1-866-618-2362
	Rob Morton, Emergency Management Field Officer	--	Cell: 1-403-826-5615 24 Hour: 1-866-618-2362
Alberta Environment and Parks - Energy & Environment Response Line	Energy & Environment Response Line	--	1-800-222-6514
	South Saskatchewan Region (Calgary)	1-403-297-7602	1-800-222-6514
Alberta Agriculture and Forestry	Ag-Info Centre	--	310-FARM (3276)
Report a Wildfire	Province-wide	--	310-FIRE (3473) #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	Volker Stevin Highways Ltd.	1-888-877-6237	1-888-877-6237
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
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)	Province-wide	--	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
CP Railway - 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	--	1-819-997-7887
NAV Canada - Notice to Airmen	Canada-wide	--	1-866-992-7433



**Saskatchewan Government Agencies**

Resource	Contact	Office	Cell/24 Hour
Saskatchewan Ministry of Energy and Resources - PNG Division	Emergency Support Line	1-844-764-3637	1-844-764-3637
Ministry of Energy and Resources Area 3: Swift Current Field Office	Scott Lenz, Area Manager	1-306-741-1766	1-306-778-8252
Ministry of Environment - Enforcement & Investigations Report a Spill	Province-wide	1-800-667-7525	1-800-667-7525
Saskatchewan Emergency Management and Fire Safety	Provincial Offices, Emergency Management Support	1-306-787-3774	1-306-787-9563
RM of Maple Creek No. 111	Christine Hoffman, EMO Coordinator	1-306-662-2300	911
RCMP - Maple Creek Detachment	NCO in Charge	1-306-662-5550	911
Saskatchewan Health Authority	Angela Muzyka Director of Quality Care and Patient Safety	1-306-778-5100	911
Ministry of Environment - Firewatch (Report a Wildfire)	Province-wide	1-800-667-9660	1-800-667-9660
Ministry of Environment - Enforcement & Investigations Park Watch	Province-wide	1-800-667-1788	1-800-667-1788
Saskatchewan Occupational Health and Safety	Province-wide	1-800-567-7233	1-800-567-7233
Ministry of Highways and Infrastructure	Southern Region	1-306-787-4969	1-888-335-7623
Sask 1st Call	Province-wide	1-866-828-4888	1-866-828-4888
Poison Control Centre	Province-wide	--	1-866-454-1212 (Saskatchewan only)
Technical Safety Authority of Saskatchewan	Province-wide	1-866-530-8599	--
Weather Information Environment Canada	Province-wide	--	1-306-782-1511
SaskPower	Province-wide	1-888-757-6937	310-2220 (Saskatchewan) 1-888-355-5589 (out of Saskatchewan)
SaskWater	Province-wide	1-888-230-1111	1-800-667-5799
SaskTel	Province-wide	1-800-727-5835	1-800-727-5835
Government of Canada - DFO (Department of Fisheries and Ocean)	Canada-wide	--	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
CP Railway - 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	--	1-819-997-7887
NAV Canada - Notice to Airmen	Canada-wide	--	1-866-992-7433



**Montana Government Agencies**

Resource	Contact	Office	Cell/24 Hour
Montana Department of Natural Resources and Conservation	Helena Forestry – Missoula Helena Water Resources	406-444-2074 406-542-4300 406-444-6999	--
Montana Board of Oil and Gas Conservation	Helena Administrative Office Billings Technical Office	406-444-6731 406-656-0040	--
Montana Highway Patrol	--	406-444-3780	1-855-647-3777
Montana Department of Environmental Quality (DEQ)	Main Office (Helena) Billings Office	406-444-2544 406-247-4445	--
Spill Response Center DEQ – Leaks DEQ – Duty Officer DEQ – Enforcement	-- Leaks – business hours -- Duty Officer	1-800-457-0568 406-444-0379	406-324-4777 406-324-4777 406-324-4777 406-431-0014
Montana Disaster and Emergency Services (DES)	Duty Officer	406-324-4777	406-324-4777
Environmental Protection Agency Region 8 – Denver Colorado	Environmental Emergencies	1-800-227-8917	--
National Spill Response Center	Report Chemical or Oil Spills	1-800-424-8802	--
State Department of Health (DPHHS)	Helena	406-444-5622	406-444-0273
Montana Department of Transportation (MDT) Districts: Great Falls Glendive	Helena  Havre Area Office Wolf Point Area Office	406-444-6200  406-262-5500 406-653-6700	--
One Call Center – UULC	--	1-800-424-5555	--
Poison Control Center	--	1-800-222-1222	--
Bureau of Land Management – Eastern Montana / Dakotas District	<b>Scott Haight</b> District Manager <b>Eric Lepisto</b> Field Office – Miles City, MT	406-233-2800 406-233-2800	--
Federal Railroad Administration Vancouver, Washington	Region 8 – Vancouver, Washington Governs Montana	360-696-7536	1-800-724-5998
Highway Maintenance	Maintenance Division Highway Maintenance Road Conditions	406-444-6158 406-444-6200 1-800-226-7623	--

**Alberta Emergency Services**

Contact	Location	Telephone
<b>Ambulance - Municipal</b>		
Alberta Health Services - EMS	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
<b>Ambulance - Oilfield</b>		
Trojan Safety Services Ltd. - AB	Alberta-wide	1-780-567-3440
Superior Fire Control	Alberta-wide	1-877-882-0035
HellfireX Oilfield & Industrial Special Service Solutions	Alberta-wide	1-877-846-4499
<b>Air Ambulance</b>		
Alberta Central Air (ACA) - Medivac Flight Services	Alberta-wide	1-800-661-3822
<b>STARS</b>	Alberta-wide	1-888-888-4567 or 1-403-299-0932
<b>Hospitals</b>		
Milk River Health Centre	Milk River	1-403-647-5511
Bow Island Health Centre	Bow Island	1-403-545-3200
Medicine Hat Regional Hospital	Medicine Hat	1-403-529-8000
<b>Fire Fighters - Municipal</b>		
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
Alberta Municipal Fire Department	Alberta-wide	911
<b>Fire Fighters - Oilfield</b>		
Trojan Safety Services Ltd. - AB	Alberta-wide	1-780-567-3440
Superior Fire Control	Alberta-wide	1-877-882-0035
Safety Boss	Alberta-wide	1-800-882-4967



**Alberta / Saskatchewan Emergency Services**

Contact	Location	Telephone
<b>Ambulance - Municipal</b>		
Sask911	Sask-wide	911
Alberta Health Services - EMS	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
<b>Ambulance - Oilfield</b>		
Safety Boss	Sask-wide	1-800-882-4967
Firemaster Oilfield Services - SK	Sask-wide	1-877-342-3473
HSE Integrated	Sask-wide	1-888-346-8260
<b>Air Ambulance</b>		
Alberta Central Air (ACA) - Medivac Flight Services	Alberta-wide	1-800-661-3822
<b>STARS</b>	Sask-wide	Regina Base: 1-306-564-7900
	Alberta-wide	Saskatoon Base: 1-306-659-1510
		1-888-888-4567 1-403-299-0932
<b>Hospitals</b>		
Southwest Integrated Healthcare Facility	Maple Creek	1-306-662-2611
Medicine Hat Regional Hospital	Medicine Hat	1-403-529-8000
Bow Island Health Centre	Bow Island	1-403-545-3200
<b>Fire Fighters - Municipal</b>		
Sask911	Sask-wide	911
Alberta Municipal Fire Department	Alberta-wide	911
Alberta Health Services - Emergency Dispatch (SAT Phones)	Alberta-wide	1-780-624-3911
<b>Fire Fighters - Oilfield</b>		
Firemaster Oilfield Services - SK	Sask-wide	1-877-342-3473
Safety Boss	Sask-wide	1-800-882-4967
Superior Fire Control	Sask-wide	1-877-882-0035



**Alberta Industry Support Services**

Contact	Location	Telephone
<b>Air Quality Monitoring Equipment</b>		
Safety Boss	Alberta-wide	1-800-882-4967
Bravo Target Safety - AB	Alberta-wide	1-866-513-3779
Firemaster Oilfield Services - AB	Alberta-wide	1-877-342-3473
<b>Backhoes</b>		
Tornado Projects	Medicine Hat	1-403-580-9165
Davison Excavating Ltd.	Medicine Hat	1-403-527-8972
Industrial Backhoes Ltd.	Medicine Hat	1-403-529-6665
<b>Communication Equipment (Radio/Telephones)</b>		
Cypress Communications	Medicine Hat	1-403-528-2244
Cactus Communications	Medicine Hat	1-403-528-3000
Rigstar Communications	Alberta-wide	1-866-535-2418
<b>Construction Company</b>		
Maverick Oilfield Services Ltd.	Medicine Hat	1-403-548-2425
Tornado Projects	Medicine Hat	1-403-580-9165
Weir Construction Ltd.	Medicine Hat	1-403-527-1829
<b>Cranes / Picker Services</b>		
Maverick Oilfield Services Ltd.	Medicine Hat	1-403-548-2425
Stampede Crane & Rigging Inc.	Medicine Hat	1-403-548-8117
Niwa Crane Ltd.	Medicine Hat	1-403-580-8888
<b>Grief Counsellor</b>		
A Better Life Consulting & Counselling	Medicine Hat	1-866-527-3936
AHS Mental Health Services	Alberta-wide	1-877-303-2642
Lethbridge Family Services	Lethbridge	1-403-327-5724
<b>Helicopters</b>		
Rangeland Helicopters	Medicine Hat	1-403-528-3406
Delta Helicopters Ltd.	Alberta-wide	1-800-665-3564
Mustang Helicopters Inc.	Alberta-wide	1-403-885-5220
<b>Hotels / Potential Reception Centres</b>		
Days Inn	Medicine Hat	1-403-580-3297
Quality Inn & Suites	Medicine Hat	1-403-527-3700
Comfort Inn & Suites	Medicine Hat	1-403-504-1700
<b>Radio Stations</b>		
CBC Radio	Alberta-wide	1-866-306-4636
CKUA FM	Alberta-wide	1-800-494-2582
93.3 and 95.5 FM - Jim Pattison Group	Lethbridge	1-403-329-0955



Contact	Location	Telephone
<b>Safety Equipment / Personnel</b>		
Firemaster Oilfield Services - AB	Alberta-wide	1-877-342-3473
Bravo Target Safety - AB	Alberta-wide	1-866-513-3779
Safety Boss	Alberta-wide	1-800-882-4967
<b>Spill Response / Environmental Services</b>		
WCSS	Alberta-wide	1-866-541-8888
Echo Environmental Inc.	Medicine Hat	1-403-504-4078
SWAT Consulting Inc.	Alberta-wide	1-866-610-7928
<b>Supply Stores</b>		
Applied Industrial Technologies LP	Medicine Hat	1-403-527-8166
Baron Oilfield Supply	Alberta-wide	1-888-532-5661
Swift Oilfield Supply Inc.	Alberta-wide	1-888-423-6979
<b>Tank Rentals</b>		
Wrangler Rentals Ltd.	Alberta-wide	1-855-980-1331
Apex Oilfield Services (2000) Inc.	Alberta-wide	1-877-347-1628
Hitch'em Oilfield Hauling	Alberta-wide	1-780-832-0281
<b>Tank Trucks</b>		
Cascade Energy Services L.P.	Medicine Hat	1-403-504-1155
TWH Oilfield Services Ltd.	Alberta-wide	1-888-443-4717
Silvertip Oilfield Services Inc.	Alberta-wide	1-780-836-3792
<b>Vac and Steam Trucks</b>		
Cascade Energy Services L.P.	Medicine Hat	1-403-504-1155
MOVAC Mobile Vacuum Services Ltd.	Alberta-wide	1-888-727-7922
TWH Oilfield Services Ltd.	Alberta-wide	1-888-443-4717
<b>Well Control Equipment</b>		
Bravo Target Safety - AB	Alberta-wide	1-866-513-3779
Firemaster Oilfield Services - AB	Alberta-wide	1-877-342-3473
Safety Boss	Alberta-wide	1-800-882-4967
<b>Wellsite Accommodations</b>		
Apex Oilfield Services (2000) Inc.	Alberta-wide	1-877-347-1628
Prospector Energy Services Inc.	Alberta-wide	1-780-567-2365
Big Sky Camp Catering Ltd.	Alberta-wide	1-800-662-7139

**Note:** The above listed corporate entities are subject to change without notice. Information regarding support services is accurate at time of printing.



**Alberta / Saskatchewan Industry Support Services**

Contact	Location	Telephone
<b>Air Quality Monitoring Equipment</b>		
Safety Boss	Sask-wide	1-800-882-4967
Firemaster Oilfield Services - SK	Sask-wide	1-877-342-3473
HSE Integrated	Sask-wide	1-888-346-8260
<b>Backhoes</b>		
Industrial Backhoes Ltd.	Medicine Hat	1-403-529-6665
Davison Excavating Ltd.	Medicine Hat	1-403-527-8972
Tornado Projects	Medicine Hat	1-403-580-9165
<b>Communication Equipment (Radio/Telephones)</b>		
Cactus Communications	Medicine Hat	1-403-528-3000
Cypress Communications	Medicine Hat	1-403-528-2244
Rigstar Communications	Sask-wide	1-866-535-2418
<b>Construction Company</b>		
Weir Construction Ltd.	Medicine Hat	1-403-527-1829
Maverick Oilfield Services Ltd.	Medicine Hat	1-403-548-2425
Tornado Projects	Medicine Hat	1-403-580-9165
<b>Cranes / Picker Services</b>		
Niwa Crane Ltd.	Medicine Hat	1-403-580-8888
Maverick Oilfield Services Ltd.	Medicine Hat	1-403-548-2425
Stampede Crane & Rigging Inc.	Medicine Hat	1-403-548-8117
<b>Grief Counsellor</b>		
A Better Life Consulting & Counselling	Medicine Hat	1-866-527-3936
AHS Mental Health Services	Alberta-wide	1-877-303-2642
<b>Helicopters</b>		
Rangeland Helicopters	Medicine Hat	1-403-528-3406
Canadian Helicopters Limited	Sask-wide	1-780-429-6900
Delta Helicopters Ltd.	Sask-wide	1-800-665-3564
<b>Hotels / Potential Reception Centres</b>		
Comfort Inn & Suites	Medicine Hat	1-403-504-1700
Quality Inn & Suites	Medicine Hat	1-403-527-3700
Days Inn	Medicine Hat	1-403-580-3297
<b>Radio Stations</b>		
1490 AM - Golden West Broadcasting	Shaunavon	1-306-773-4605
CBC Radio	Sask-wide	1-306-347-9651
	Alberta-wide	1-866-306-4636
<b>Safety Equipment / Personnel</b>		
Combo Safety Services	Tilley	1-403-362-1838
Safety Boss	Sask-wide	1-800-882-4967
Superior Fire Control	Sask-wide	1-877-882-0035



Contact	Location	Telephone
<b>Spill Response / Environmental Services</b>		
Echo Environmental Inc.	Medicine Hat	1-403-504-4078
SWAT Consulting Inc.	Sask-wide	1-866-610-7928
Matrix Solutions Inc.	Sask-wide	1-877-774-5525
<b>Supply Stores</b>		
Applied Industrial Technologies LP	Medicine Hat	1-403-527-8166
Apex Distribution Inc.	Shaunavon	1-306-297-3722
TS&M Supply Ltd.	Shaunavon	1-306-297-2300
<b>Tank Rentals</b>		
PVT Group	Alberta-wide	1-780-830-0045
Apex Oilfield Services (2000) Inc.	Sask-wide	1-877-347-1628
Clean Harbors Inc.	Sask-wide	1-800-645-8265
<b>Tank Trucks</b>		
Cascade Energy Services L.P.	Medicine Hat	1-403-504-1155
Goulet Trucking (Torq Energy Logistics Ltd.)	Shaunavon	1-306-297-2861
R. French Transport	Sask-wide	1-306-455-3774
<b>Vac and Steam Trucks</b>		
Cascade Energy Services L.P.	Medicine Hat	1-403-504-1155
Bearstone Environmental Solutions Inc.	Medicine Hat	1-403-548-8132
Badger Daylighting	Sask-wide	1-306-570-7046
<b>Well Control Equipment</b>		
Superior Fire Control	Sask-wide	1-877-882-0035
Safety Boss	Sask-wide	1-800-882-4967
Firemaster Oilfield Services - SK	Sask-wide	1-877-342-3473
<b>Wellsite Accommodations</b>		
Black Diamond Camps and Lodging	Sask-wide	1-888-569-4880
ATCO Structures & Logistics Ltd.	Sask-wide	1-800-575-2826
Apex Oilfield Services (2000) Inc.	Sask-wide	1-877-347-1628

**Note:** The above listed corporate entities are subject to change without notice. Information regarding support services is accurate at time of printing.



### 10.5.3 Area Summary

#### **Pendor Area Summary**

Pine Cliff's Pendor field is a gas producing property located in Southern Alberta, approximately 94 km from Medicine Hat. It is located in Townships 01-03 and Ranges 08-10 W4M, in the County of Forty Mile.

Pine Cliff owns and operates a sweet sales gas pipeline from the Pendor Compressor Station in 01-17-003-08 W4M to the NorthWestern Energy pipeline tie-in in 03-04-001-10 W4M. The Pendor / Aden CER pipeline crosses the border between Alberta, Canada and Montana, USA and is therefore be regulated by the Canada Energy Regulator (CER).

**ANY EMERGENCY INVOLVING THE PIPELINE WILL REQUIRE A CALL TO THE TRANSPORTATION SAFETY BOARD (TSB) AND/OR DEPARTMENT OF TRANSPORTATION (DoT), ALONG WITH the AER IF THE EMERGENCY IS IN ALBERTA AND/OR MONTANA DNRC IF EMERGENCY IS IN MONTANA.**

Pipeline Information – Pendor	
Licensed Maximum Operating Pressure	5210 kPa
Licensed H <sub>2</sub> S Concentrations	0% H <sub>2</sub> S
Emergency Planning Zones	N/A
Maximum H <sub>2</sub> S Release Volumes	N/A

#### **Manny Islands / Hatton**

Pine Cliff's Manny Islands and Hatton fields are gas producing properties located in Southeastern Alberta, along the border of Alberta and Saskatchewan is therefore be regulated by the Canada Energy Regulator (CER). Pine Cliff owns and operates a natural gas pipelines from the 06-13-013-01 W4 to 10-14-013-30 W3.

**ANY EMERGENCY INVOLVING THE PIPELINE WILL REQUIRE A CALL TO THE TRANSPORTATION SAFETY BOARD (TSB) AND/OR DEPARTMENT OF TRANSPORTATION (DoT), ALONG WITH the AER IF THE EMERGENCY IS IN ALBERTA AND/OR SASKATCHEWAN MINISTRY OF ENERGY AND RESOURCES IF THE EMERGENCY IS IN SASKATCHEWAN.**

Pipeline Information – Many Islands / Hatton	
Licensed Maximum Operating Pressure	5465 kPa
Licensed H <sub>2</sub> S Concentrations	0% H <sub>2</sub> S
Emergency Planning Zones	N/A
Maximum H <sub>2</sub> S Release Volumes	N/A

H <sub>2</sub> S:	0%
Stored Liquids:	Condensate, produced water
Chemical use on-site:	Methanol, glycol, engine oil, engine coolant
Air emissions:	SO <sub>2</sub>

### Hazard Summary

CER Pipeline Field Area – Hazard Summary					
Hazardous Product	General Description	Health Effects	Downwind Evacuation	Fire	HPZ Public Safety (immediate precautionary measures)
Methane	<ul style="list-style-type: none"> <li>Often referred to as "sweet gas".</li> <li>Flammable.</li> <li>Lighter than air.</li> <li>At room temperature and standard pressure, methane is a colorless, odorless gas.</li> <li>It is the simplest alkane and the main component of natural gas.</li> </ul>	<ul style="list-style-type: none"> <li>Vapors may cause dizziness or asphyxiation without warning.</li> <li>Some may be irritating if inhaled at high concentrations.</li> <li>Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.</li> <li>Fire may produce irritating and/or toxic gases.</li> </ul>	<b>Large Spill</b> 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)
Methane, compressed					
Natural gas, compressed					



### ***Shutdown of Production Pipes and Pipelines Procedure***

The following is a general shutdown procedure, when the pipeline is put back into service this procedure will be reviewed to ensure it is applicable.

Pipelines may require periodic, temporary or emergency shutdowns throughout their lifetimes. Shutdowns may occur for several reasons, scheduled maintenance, required modifications or emergency repairs.

Prior to shutdown, the pipeline shall be purged of sour gas. The following procedure shall be followed.

1. All sour tie-ins shall be closed and locked out.
2. The pipeline will be pigged with sweet gas to purge sour gas and liquids from the pipeline.
3. Once the pigging is complete and the pipeline is purged of sour gas the pipeline may be shutdown.
4. All tie-in block valves must be locked out.
5. The valves must be manually closed.
  - Review of Lock-out/Tag-out procedures
  - Review of a site-specific isolation procedure
  - Review of LEL, Oxygen and H<sub>2</sub>S acceptable levels
  - Review of emergency response and egress plans and muster points
  - Document shutdown in company log and identify any anomalies
6. After the initial purge, the pipeline shall be flared to atmospheric pressure at the selected flare location.

The pipeline will be considered shutdown when the pipeline has been blown down to atmospheric pressure at the selected flare stack. Each shutdown shall be recorded in the company operations log.

Pipelines that have not seen normal production flow for a period longer than 1 month are considered long term shutdown. If a shutdown is longer than 12 months, it must be moved to a discontinued state.

### ***Geography and Area Use***

The geography surrounding the southern AB/SK operational areas is comprised of heavily forested land, cultivated farmland and rolling pasture land. The oil and gas industry is prevalent in areas.

### ***Highways / Area Roads / Railways***

Twp. Rd. 132 and range road 11 are closest to the Alberta assets. 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***

Many Island lake is north of the pipelines and Boxelder Creek is to the west.

In the event of an emergency near a waterbody, Pine Cliff will determine if they need to call WCSS to aid in response activities.

### **Guides and Outfitters**

<b>Name</b>	<b>Address</b>	<b>Telephone</b>
<b>WMU 102 Pakowi</b>		
925879 Alberta Ltd. Jonathan J. McMahon	Edmonton, AB	1-780-818-6201
Wild West Outfitters Jesse R.L. Van Maarion	Medicine Hat, AB	1-403-594-2781
Open Range Outfitting Inc. Rylan King	Foremost, AB	1-403-666-2500
<b>WMU 104 Aden</b>		
925879 Alberta Ltd. Jonathan J. McMahon	Edmonton, AB	1-780-818-6201
Wild West Outfitters Jesse R.L. Van Maarion	Medicine Hat, AB	1-403-594-2781
APEX Outfitters Inc. Dusten Bianchi	Coutts, AB	1-403-344-2363
Tactical Adventures and Outfitting Inc. David Dangerfield	Coutts, AB	1-403-448-1177
<b>WMU 106 Verdigris</b>		
T.L.C. Adventures John Sibert	Tulelake, CA	1-661-916-1027
Ridge Country Outfitters Darren Mazutinec	Stirling, AB	1-403-635-7077
Chinook Waterfowl Ltd. Colton Jarvis	Raymond, AB	1-587-926-4370
Wild West Outfitters Jesse R.L. Van Maarion	Medicine Hat, AB	1-403-594-2781
Ranchland Outfitters Inc. Robert E. Reynolds	Elk Point, AB	1-780-210-0411
APEX Outfitters Inc. Dusten Bianchi	Coutts, AB	1-403-344 2363
Open Range Outfitting Inc. Rylan King	Foremost, AB	1-403-666-2500
Tactical Adventures and Outfitting Inc. David Dangerfield	Coutts, AB	1-403-448-1177

### **Area Trappers**

There are no trappers near Pine Cliff operations in the CER Regulated Pipelines.

**Oil & Gas Operators**

<b>Name</b>	<b>Location</b>	<b>Telephone</b>
Canadian Natural Resources Ltd.	Calgary, AB 24 Hour Number	1-403-517-6700 1-888-878-3700
Canadian-Montana Pipeline Company, Ltd (a wholly owned subsidiary company of Northwestern Energy)	Butte Gas Control, 24 Hour Number	1-406-497-4339
Cenovus Energy Inc.	Calgary, AB 24 Hour Number	1-403-766-2000 1-877-458-8080
Enerplus Corporation	Calgary, AB 24 Hour Number	1-403-298-2200 1-877-576-5636
Orphan Well Association	Calgary, AB 24 Hour Number	1-403-297-6416 1-844-440-0144
Ovintiv Canada ULC	Calgary, AB 24 Hour Number	1-403-645-2000 1-403-645-3333
Persist Oil and Gas Inc.	Calgary, AB 24 Hour Number	1-587-686-6907 1-587-686-6907
SanLing Energy Ltd.	Calgary, AB 24 Hour Number	1-403-303-8500 1-403-303-8500
Spartan Delta Corp.	Calgary, AB 24 Hour Number	1-403-265-8011 1-403-266-8670
Torxen Energy Ltd.	Calgary, AB 24 Hour Number	1-403-452-8665 1-833-386-7936
TransGas Ltd.	Regina, SK 24 Hour Number	1-306-777-9900 1-306-777-9800

**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.



#### **10.5.4 Risk Assessment**

##### **Purpose**

Risk assessment is a method for analyzing the probability and impact of failure on personnel, the public, the facility, the environment, and/or Pine Cliff's reputation. Utilizing the Hazard, Risk and Vulnerability Assessment Matrix during the response to an emergency will help to ensure the incident is managed within Pine Cliff risk tolerances.

The nature of the hazard(s) will influence the responses that are implemented by the Site Operations Section Chief and the Incident Commander. Pine Cliff risk management during response to any incident is based on the following:

- Activities that present an extreme risk to workers, responders, and public must be limited to only situations where there is a potential to save endangered lives. Life Safety is the number one priority in every incident; this includes the safety of responders.
- Where there is no possibility to save lives, personnel should not attempt extreme risk operations.
- Activities to protect the environment or property are recognized as inherent risks to the safety of response personnel and actions should be taken to reduce or avoid these risks.

The Incident Commander is responsible for the overall coordination and direction of all activities and has the primary responsibility to evaluate the risk to on-site personnel with respect to the purpose and potential results of their actions in each situation. In situations where the risk to personnel is excessive, activities should be limited to defensive and protective operations.

The Site Operations Section Chief has the primary responsibility to evaluate the risk to on-site personnel with respect to the purpose and potential results of their actions in each situation. In situations where the risk to personnel is excessive, activities should be limited to defensive and protective operations.

##### **Determining Risk**

There are four steps in assessing the risk of an activity or process (see Hazard, Risk and Vulnerability Assessment Matrix):

1. Identify the risk or concern: Describe the risk or concern.
2. Assess the impact: The potential consequence of an incident is defined in terms of impact to people, the environment, operational assets, and the company's reputation.
3. Assess the Probability: The probability of occurrence is estimated in a range from Remote to Frequent.
4. Plot risk level and take action: Risk is categorized in terms of:
  - Critical - the activities must stop until risk controls have been implemented to reduce the risk to a lower level.
  - High - extensive risk controls must be immediately implemented.
  - Moderate - risk controls are required.
  - Low - some risk controls are justified.

### *Hazard Identification*

Under Canadian Standards Association (CSA) Z1600-08, organizations are required to identify and monitor hazards that can have an impact on their operations or areas of responsibility. In particular, organizations are mandated to consider the impact of natural, technological hazards and human-caused.

Hazards and risks for Pine Cliff were identified and vulnerabilities were assessed by Pine Cliff Emergency Response Planning section personnel using the Hazard, Risk and Vulnerability Assessment Matrix. As per the Risk Assessment process, staff evaluated information to facilitate the assignment of both probability and impact scores to the three categories of hazards. The combined scores were then plotted on the Risk Matrix so that the Risk Potential/Level could be determined, and appropriate ERP procedures developed where necessary.

## Hazard, Risk and Vulnerability Analysis

### Step 1 – Assess the Impact

Level	People	Environment	Assets	Reputation
<b>4 Critical</b>	<ul style="list-style-type: none"> <li>Fatality</li> <li>Long-term health impact</li> <li>Permanent disability</li> <li>Life altering injury or illness</li> <li>Evacuation of a facility and community</li> <li>Action from / activist involving weapons</li> </ul>	<ul style="list-style-type: none"> <li>Severe long-term environmental damage</li> <li>Wide-spread impacts to sensitive environments, wildlife and/or major bodies of water</li> <li>Significant off lease/site groundwater impacts</li> </ul>	<ul style="list-style-type: none"> <li>One-month facility/equipment outage</li> <li>Production, equipment, property, motor vehicle loss and or damage greater than \$10 million</li> <li>Terrorist attack/attempt</li> </ul>	<ul style="list-style-type: none"> <li>Action resulting in regulatory and/or legal prosecution or suspension of operations</li> <li>Prolonged national/international media attention</li> <li>Sustained widespread stakeholder public protest</li> </ul>
<b>3 High</b>	<ul style="list-style-type: none"> <li>Short term health impact</li> <li>Lost time injury or illness</li> <li>Evacuation of facility and immediate area</li> <li>Violent action from landowner/ activist</li> </ul>	<ul style="list-style-type: none"> <li>Severe short-term environmental damage</li> <li>Localized on lease groundwater impacts</li> <li>Significant off lease/site surface impacts</li> </ul>	<ul style="list-style-type: none"> <li>One-week facility/equipment outage</li> <li>Production, equipment, property, motor vehicle loss and or damage greater than \$1 million</li> <li>Substantial loss from theft/ vandalism</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory and/or legal action resulting in fines or punitive action</li> <li>Prolonged national/regional media attention</li> <li>Prolonged local/regional stakeholder public protest</li> </ul>
<b>2 Moderate</b>	<ul style="list-style-type: none"> <li>Medical aid injury or illness</li> <li>Restricted work/modified duties</li> <li>Evacuation of job site</li> <li>Specific threat from landowner/ activist</li> </ul>	<ul style="list-style-type: none"> <li>Moderate environmental damage</li> <li>No groundwater impacts</li> <li>Localized off lease/site surface impacts</li> <li>Immediate cleanup</li> </ul>	<ul style="list-style-type: none"> <li>Short term (less than one week) facility/equipment outage</li> <li>Production, equipment, property, motor vehicle loss and or damage greater than \$100,000</li> <li>Major property crime</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory and/or legal action resulting in administrative response</li> <li>Brief local/regional media attention</li> <li>Brief local public protest</li> </ul>
<b>1 Low</b>	<ul style="list-style-type: none"> <li>First aid injury or illness</li> <li>Implied threat from landowner/ activist</li> </ul>	<ul style="list-style-type: none"> <li>Minor environmental damage</li> <li>Localized on lease/site surface impacts</li> </ul>	<ul style="list-style-type: none"> <li>Negligible production loss</li> <li>Protection, equipment, property, motor vehicle loss and/or damage less than \$100,000</li> <li>Minor property crime</li> </ul>	<ul style="list-style-type: none"> <li>No regulatory action anticipated</li> <li>Brief or no media attention</li> <li>Brief or no public attention</li> </ul>

### Step 2 – Determine the Probability

Level	Description	Likelihood
<b>4 Frequent</b>	Event is expected to occur in most circumstances.	One or more occurrences per year.
<b>3 Likely</b>	Event will probably occur at home time based on current practices.	One occurrence every 1-5 years.
<b>2 Unlikely</b>	Event should occur at some time based on current practices	One occurrence ever 5-20 years
<b>1 Remote</b>	Event could occur at some time based on current practices	One in the life of the facility

### Step 3 – Determine the Risk Level

	4 Critical				
	3 High				
Impact	2 Moderate				
	1 Low				
		1 – Remote	2 – Unlikely	3 – Likely	4 – Frequent

#### Probability

Impact x Probability = Risk Level

### Step 4 – Risk Level

**Critical – STOP activities. Work cannot proceed until risk is reduced to a lower level.**

**High – Extensive risk controls/mitigation measures must be implemented and possible corporate approval is required to allow work to proceed. Efforts to reduce risk to a MEDIUM or LOW level should be undertaken.**

**Moderate- Risk controls/mitigation measures must be implemented to allow work to proceed. Efforts to reduce risk to a LOW level should be undertaken.**

**Low – Some risk controls/mitigation measures may be justified. Represents an acceptable level of risk.**

### Step 5 – Take Action

Ensure all Risks are understood, controlled, and communicated prior to starting work.



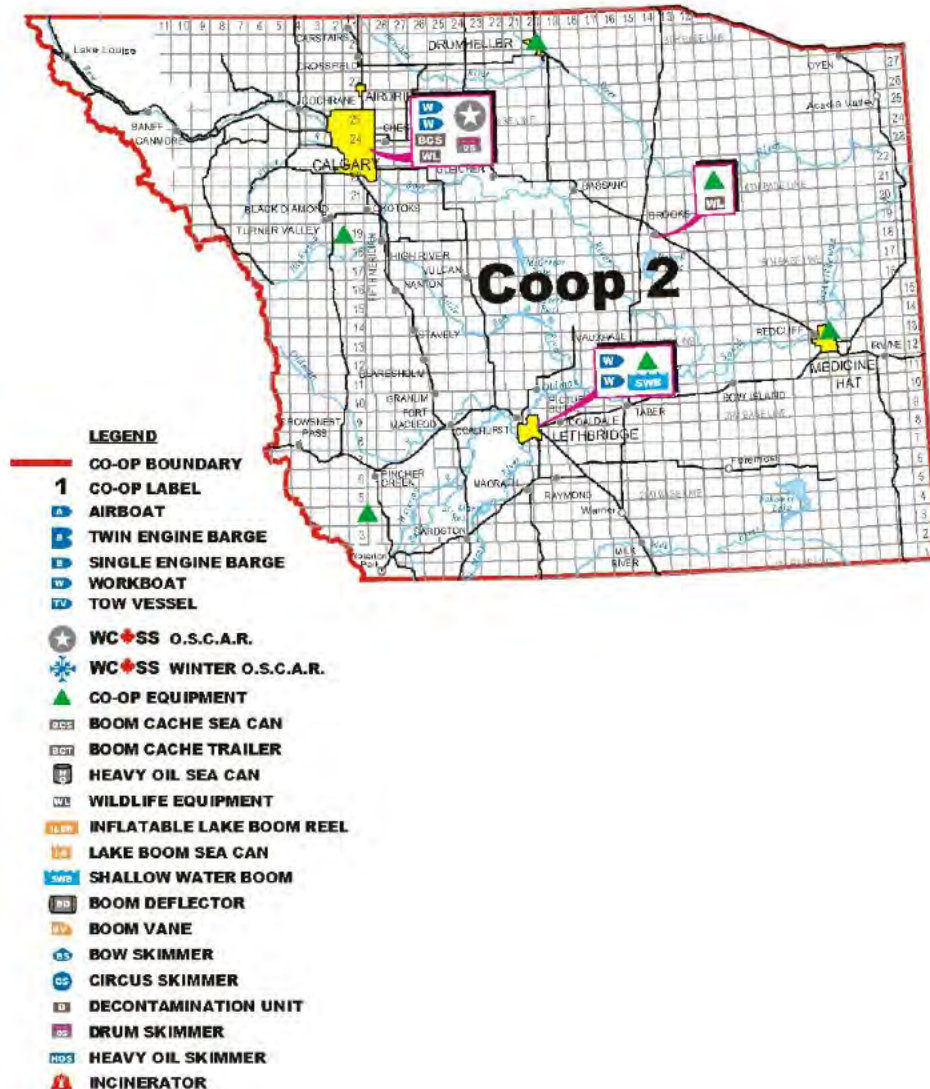
### 10.5.5 Spill Support Services

#### WCSS – Coop 2

Area	Chairman	Contact Information
<b>WCSS Emergency 24 Hour Number</b>		1-866-541-8888
<b>Coop 2 Chairman</b>	Mike Peacock Crescent Point Energy	Ph: 1-403-767-6971 Cell: 1-403-510-8353 mpeacock@crescentpointenergy.com
<b>Coop 2 Alternate Chairman</b>	Rebecca Wade Inter Pipeline Ltd	Ph: 1-403-218-9568 Cell: 1-587-888-5375 rebecca.wade@interpipeline.com
<b>Coop 2 Alternate Chairman</b>	Duane Bolin Ember Resources Ltd	Ph: 1-403-361-2225 Cell: 1-403-823-0532 dbolin@emberresources.com
<b>Coop 2 Alternate Chairman</b>	Walter Nasse Inter Pipeline Ltd	Cell: 1-403-501-4342 walter.nasse@interpipeline.com

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
5535 – 56 Ave SE Calgary, AB T2C 3X6	Proactive Environmental	Kale Haupt Cell: 1-780-514-9858 24hr: 1-403-203-3336 Toll Free: 1-877-471-3336	40' Boom Cache Sea Can Boom Deflector (2) 52' OSCAR Trailer Work Boats (2) Drum Skimmer w/ Power Pak 16' Wildlife Trailer	winch tractor/trailer ½ ton truck semi-tractor ½ ton truck w/ 2" ball hitch ½ ton truck ½ ton truck w/ 2" ball hitch
311 – 33 Street N. Lethbridge, AB	Midwest Pumps Ltd.	Adrian Schuurman Cell: 1-403-795-9985 24hr: 1-403-329-0427 Ext. 205 Fax: 1-403-327-4660	20' ISRU Sea Can 400' Shallow Water Boom Work Boats (2) Turner Valley Gates (5)	winch tractor/trailer ½ ton truck ½ ton truck w/ 2" ball hitch ½ ton truck
Bay #2, 600 Industrial Road Brooks, AB	Absolute Safety	Rob Drader 24hr: 1-403-362-7100 Cell: 1-403-362-1945	24' ISRU Trailer 14' Wildlife Trailer	1-ton truck w/ 2-5/16" ball hitch ½ ton truck w/ 2" ball hitch
240 Grove Pl. Drumheller, AB T0J 0Y0	Performance Steam Ltd	Lee Borsheim 24hr: 1-403-820-0582	24' ISRU Trailer	1-ton w/ 2-5/16" ball hitch
Medicine Hat 15-7-13-5 W4M	Enerplus Corp	Cam Miller 24hr: 1-403-580-7133 Alt: 1-403-581-8467	24' ISRU Trailer	1-ton truck w/ 2-5/16" ball hitch
Turner Valley 10-12-19-2 W5M	Crescent Point Energy Corp	Todd Torrens Cell: 1-403-625-0805 Reed Suitor Ph: 1-403-601-4041	24' ISRU Trailer	1-ton truck w/ 2-5/16" ball hitch

Equipment Storage Location	Custodian	Contact Information	Equipment	Transport Requirements
Waterton Gas Plant SE ¼ 24-4-1 W5M	Pieridae Energy	Maureen Pasion Cell: 1-403-369-0122 Control Room: Non-Emergency Ph: 1-403-627-2602 24hr: 1-403-627-4200* (*Emergency Only*)	24' ISRU Trailer	1-ton truck w/ 2-5/16" ball hitch





*Saskatchewan Spill Support Services*

Area	Custodian	Location	Area Contact	Cell/24 Hour
Area 3 Environment Response Unit	Plains Midstream Canada Ph: 1-403-298-2102 24 Hour: 1-866-875-2554	5535 – 56 Avenue SE Calgary, AB T2C 3X6	Theresa Busse - Area 3 Administrator 1-306-750-1723 <a href="mailto:area3eru@sasktel.net">area3eru@sask tel.net</a>	1-844-561-8444

*Waterway Control Points*

There are no waterway control points.



### 10.5.6 CER Regulated Assets

LICENSEE	NEB ORDER	LICENSE	LINE	SUBSTANCE CATEGORY (ds6)	STATUS CODE (ds6)	FROM	FROM FACILITY	TO	TO FACILITY	MOP (kPa)	LIMITED MOP (kPa)	EXPECTED MOP (kPa)	OD (mm)	WT (mm)	LICENSED CO2 CONTENT (%)	MAX EXPECTED CO2 CONTENT (%)	LICENSED H2S CONTENT (%)	MAX EXPECTED H2S CONTENT (%)	LENGTH (KM)	EPZ (KM)	IZ (KM)	PAZ (KM)	LAND USE SETBACK AND OLD EPZ H2S RELEASE RATE (#) OR VOLUME AT LICENSED CONDITIONS	SET BACK LEVEL	H2S Volume Released for new EPZ Calculation m³
NEB ASSETS																									
Pendor / Aden																									
PINE CLIFF ENERGY LTD.	AO-005-GC-3	080101	003	NG	O	16-08-003-08W4	CS	03-04-001-10W4	PL	5210	na	na	406.4	6.40	na	0.00	0.00	0.00	29.54	na	na	na	na	na	na
Many Islands / Halton																									
PINE CLIFF ENERGY LTD.	AO-001-GC-8	080026	001	NG	O	06-13-013-01W4	PL	10-14-013-30W3	PL	5465	3100	430	406.4	6.35	na	0.00	0.00	0.00	1.32	na	na	na	na	na	na
PINE CLIFF ENERGY LTD.	AO-001-GC-8	080026	002	NG	O	06-13-013-01W4	PL	10-14-013-30W3	PL	5465	493	110	609.6	7.10	na	0.00	0.00	0.00	1.32	na	na	na	na	na	na

### 10.5.7 Supporting Information Table

The table below indicates the location of CER supporting documentation in this emergency response plan.

Supporting Information	ERP Section
CER Distribution	Forward: Distribution List
CER Roles and Responsibilities	Jurisdictional Requirements: Canadian Federal Government – Section 9
CER Definitions of Incident Reporting	Jurisdictional Requirements: Canadian Federal Government – Section 9
CER Detailed Incident Report	Jurisdictional Requirements: Canadian Federal Government – Section 9
Notification Requirements for Key Government Agencies and Local Resources	Applicable Jurisdiction – Section 9
TSB Roles and Responsibilities	Jurisdictional Requirements: Canadian Federal Government – Section 9

### 10.5.8 Maps

Area maps on following page:







## 11.0 FORMS

<b>11.0 FORMS</b>	<b>1</b>
11.1 Jurisdictional Forms	2
11.1.1 Alberta Forms	2
First Call Communication Form	2
Release Report	5
ABSA Accident Reporting Form	8
Electrical Incident Report Form	12
Report an Alberta Wildfire	13
11.1.2 Saskatchewan Forms	14
Spill Report Form	14
Report an Incident	18
11.1.3 CER Forms	19
CER Detailed Incident Report	19
11.2 ICS Forms	23
ICS 201 - Incident Briefing	23
ICS 202 - Incident Objectives	27
ICS 203 - Organization Assignment List	28
ICS 204 - Assignment List	29
ICS 206 - Medical Plan	30
ICS 207 - Incident Organization Chart	31
ICS 208 - Safety Message / Plan	33
ICS 209 - Incident Status Summary	34
ICS 211 - Check-In List	38
ICS 214 - Activity Log	39
ICS 215 - Operational Planning Worksheet	41
ICS 215a - Incident Action Safety Plan Analysis	42
ICS 221 - Demobilization Checkout	43
11.3 ERP Forms	45
Telephone Checklist for Threatening Calls	45
Issues Board	46
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Stakeholder Contact Record	49
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Roadblock Checkpoint Record	51
Environmental Monitoring Record	52
Reception Centre Registration Form (to be filled out by evacuees)	53
Evacuee Expense Claim Form	54
Spill/Release Written Report Form	55
Drilling and Completions Emergency Evacuation Pre-Planning Sheet	57
STARS Remote Site Landing Zone Reference Card	58



## 11.1 Jurisdictional Forms

### 11.1.1 Alberta Forms

#### First Call Communication Form

This form is to be used when taking information for spills/releases. It will assist in consistent gathering of data and should be attached to the FIS record.



General Incident Information			
AER contact:		Field centre:	
Licensee:	Caller:	Phone:	
E-mail address for release report:			
Licence #:	Pipeline line #:	Approval #:	
Incident location: ____ / ____ / ____ / ____ W ____ M			
Emergency level:			
Serious event? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, what kind of serious event? <input type="checkbox"/> Blowout <input type="checkbox"/> Explosion <input type="checkbox"/> Fire <input type="checkbox"/> Other control loss <input type="checkbox"/> Fracking <input type="checkbox"/> Casing failure			
Land type (jurisdiction): <input type="checkbox"/> Freehold <input type="checkbox"/> First Nations <input type="checkbox"/> Métis <input type="checkbox"/> CFB <input type="checkbox"/> Crown – Disposition #:			
Agencies notified:		Date:	
FIRST duty office (DO) contacted: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, date & time DO was contacted:			
DO contact name:			

Release Details			
Volumes			
Substance*	Released (m <sup>3</sup> /10 <sup>3</sup> m <sup>3</sup> )	Recovered (m <sup>3</sup> /10 <sup>3</sup> m <sup>3</sup> )	Disposal/storage location
* For emulsion, break down oil & water if possible.			
Description of how the release volume was determined and verified (including calculations; e.g., spill length × width × depth):			
Area affected (length × width):                      m <sup>2</sup>			
How was the area affected determined? (Aerial survey, perimeter walk, range finder, samples taken, etc.):			
Who delineated the spill area (environmental technologist, operator, etc.) and what process was used?			

<input type="checkbox"/> Reminded licensee to update the AER immediately if release volumes or area changes from what was originally reported.
<input type="checkbox"/> Asked for the immediate submission of photos of the entire spill site to the AER and communicated that photos of the cleanup will need to be submitted with the release report.
Cause of release (suspected or actual):

Impact		
Release off lease? <input type="checkbox"/> Yes <input type="checkbox"/> No (pipeline right-of-way is off lease)		
If yes, was the landowner notified? <input type="checkbox"/> Yes <input type="checkbox"/> No Name of landowner/agency:		
Release within disposition boundary? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Outside disposition – was leaseholder notified? <input type="checkbox"/> Yes <input type="checkbox"/> No Name of leaseholder:		
<input type="checkbox"/> If outside disposition, reminded licensee that they will need a TFA.		
Actual incident H <sub>2</sub> S concentration (if applicable): % / ppm / mol/kmol		
Nearest town:	Distance and direction to town:	
Environment affected: <input type="checkbox"/> Air <input type="checkbox"/> Land <input type="checkbox"/> Water		
Distance of release to the nearest water body, watercourse, or waterway:		
How was this distance determined?		
Wildlife/waterfowl/livestock affected: <input type="checkbox"/> None <input type="checkbox"/> Habitat affected <input type="checkbox"/> Animals injured/killed		
Notes/description:		
Confirm how the release has been or will be contained:		
Confirm how the release has been or will be cleaned up:		
Evacuees (#):	People injured (#):	Fatalities (#):
Were members of the public affect? <input type="checkbox"/> Yes <input type="checkbox"/> No		
If yes, indicate if they were		
<input type="checkbox"/> notified <input type="checkbox"/> instructed to shelter in place <input type="checkbox"/> advised to evacuate		

Notes/description:			
Media interest?	<input type="checkbox"/> None	<input type="checkbox"/> Local	<input type="checkbox"/> Regional <input type="checkbox"/> National
Damage to public property?	<input type="checkbox"/> Minor/no damage	<input type="checkbox"/> Substantial (home covered in oil)	<input type="checkbox"/> Extensive (home destroyed)

Pipeline Specific			
Hit?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Line #:	Test failure? <input type="checkbox"/> Yes <input type="checkbox"/> No
Normal operating pressure: kPa		Maximum operating pressure: kPa	
Is the pipeline shut in, depressured, and isolated? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, date & time:			
What is the total volume of liquid in the pipeline?			
Are there isolation valves? <input type="checkbox"/> Yes <input type="checkbox"/> No		If yes, have they been activated? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Are there any other pipelines that tie into the failed line? <input type="checkbox"/> Yes <input type="checkbox"/> No		If yes, have they been shut in/isolated? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Reminded the company to contact the AER before excavating the pipeline.			
<input type="checkbox"/> Reminded, advised, or directed the company that the pipeline is not to be returned to service without the AER's permission.			
Right-of-way (ROW)			
<input type="checkbox"/> Licensee has confirmed when the pipeline ROW and well were last checked. Date:			
How was the ROW surveillance conducted (from the air, by quad, on foot, using infrared, etc.)?			
<input type="checkbox"/> Requested that daily production volumes for the well/pipeline be submitted within 24 hours.			
Investigation information			
What operations are currently taking place (containment, sampling, line locating, retaining contractors/consultants, pipeline excavation, repair, site access, EM survey, etc.)?			



## 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.:		CIC reference no.:			
Date AER notified:	Time: <input type="checkbox"/> p.m. <input type="checkbox"/> a.m.	AER contact:			
Type of report:	Projected date for final report:				
Incident date:	Time: <input type="checkbox"/> p.m. <input type="checkbox"/> 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 <sup>3</sup>	m <sup>3</sup>			W
	m <sup>3</sup>	m <sup>3</sup>			W
	m <sup>3</sup>	m <sup>3</sup>			W
Gas	e <sup>3</sup> m <sup>3</sup>				
Release rate:	Duration of release:				
* If the released substance is "Emulsion" the crude oil, produced water, and gas must all be reported separately above.					
* 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 <sup>3</sup>			W
Contaminated freshwater and/or snow removed	m <sup>3</sup>			W
Washwater and/or freshwater used	m <sup>3</sup>			W
Vegetation/crop bagged and/or removed	m <sup>3</sup>			W
* Refer to ST107 for the list of AER-approved oilfield waste management (WM) facilities.				
Contaminated soils storage: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> On site <input type="checkbox"/> Off site – If off site, enter location: W				
On-site waste treatment: <input type="checkbox"/> Yes <input type="checkbox"/> No Waste Treatment Type:				

Release Containment Details			
<input type="checkbox"/> Within well/facility lease boundary – Contained to working surface of lease boundary: <input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Outside well/facility lease boundary			
Release contained by berm: <input type="checkbox"/> Yes <input type="checkbox"/> No	Release contained by liner: <input type="checkbox"/> Yes <input type="checkbox"/> No	Liner type (Directive 055):	
Release onto land/soil: <input type="checkbox"/> Yes <input type="checkbox"/> No	Surface soil type:	Subsurface soil type:	

Release Site Details			
Land jurisdiction type:	Environment affected:	Area affected:	m <sup>2</sup>
<input type="checkbox"/> Within public lands disposition boundary	<input type="checkbox"/> 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 <sub>2</sub> S concentration:	Unit of measurement: <input type="checkbox"/> % <input type="checkbox"/> ppm <input type="checkbox"/> mol/kmol	
Wildlife/livestock affected:	Equipment loss:	
Emergency Response Plan (ERP) activated: <input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> Public affected	<input type="checkbox"/> Public evacuation	Number evacuated:
<input type="checkbox"/> Landowner notified*	<input type="checkbox"/> Leaseholder notified*	
<input type="checkbox"/> 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.		
Pipeline incident type:	Pipeline leak cause:	
Licence number:	Line number:	Installation number (if applicable):
Start location:      W	End location:      W	ABSA registration number (if applicable):
Associated facility location:      W	Associated facility licence number:	
<input type="checkbox"/> Test failure <input type="checkbox"/> Retest segment <input type="checkbox"/> Pipeline repair pretested <input type="checkbox"/> Cathodic protection		
Type of external coating:	<input type="checkbox"/> Corrosion mitigation/monitoring program:	
Normal operating pressure:      kPa	Maximum operating pressure	kPa
Date line shut in:	Pipeline returned to service: <input type="checkbox"/> No <input type="checkbox"/> Yes	Date:

Clean-up/Remediation Details	
All releases must be remediated or managed in a matter satisfactory to the AER.	
Clean-up status:	Final cleanup/remediation completion date:
<input type="checkbox"/> In-situ remediation implemented	
Remediation guidelines used (choose all applicable):	
<input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input type="checkbox"/> SST <input type="checkbox"/> SCARG <input type="checkbox"/> CCME <input type="checkbox"/> Exposure control	
Method of subsurface delineation:	Confirmatory samples taken: <input type="checkbox"/> Number of samples:
Remediation certificate applied for: <input type="checkbox"/> Yes <input type="checkbox"/> 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 cleanup/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

LOCAL FILE NUMBER \_\_\_\_\_  
DATE \_\_\_\_\_

**ELECTRICAL  
EQUIPMENT  
INVOLVED**

OTHER  
EQUIPMENT  
INVOLVED

Reported ByFirm NameLocationPhone No.

**SUBMIT COPIES TO:**

Technical Administrator for the Electrical Discipline  
16<sup>th</sup> Floor, 10155 – 102 Street, Edmonton, Alberta T5J 4L4  
**Email:** [safety.services@gov.ab.ca](mailto: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)	
<b>CALLER</b>	Company:		
	Address:		
	In area because:	<input type="checkbox"/> Local Resident:	<input type="checkbox"/> Recreation <input type="checkbox"/> Working
	<input type="checkbox"/> Other (Describe): _____		
<b>LOCATION OF FIRE</b>	LSD:      Section:      Township:      Range:      W__M		
	Other Description (GPS):		
<b>ON SITE INFORMATION</b>	Fire is burning in the:		Rate of spread is:
	<input type="checkbox"/> Ground:		<input type="checkbox"/> Not Moving:
	<input type="checkbox"/> Bush (probe-timber type?):		<input type="checkbox"/> Moderate (less than normal walk):
	<input type="checkbox"/> Agricultural Land (stubble, windrows, etc):		<input type="checkbox"/> Fast (more than normal walk):
	<input type="checkbox"/> Other:		
	Any people at the fire?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Don't Know
	Is property threatened?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Don't Know
	Is road access available?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Don't Know
	Is water readily available?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Don't Know
	Other observations: (Lightning, recreation, vehicles, children in area)		
<b>SMOKE INFORMATION</b>	Unable to see fire, only smoke is visible		
	Colour:		Column:
	<input type="checkbox"/> Light Grey:	<input type="checkbox"/> Intermittent:	
	<input type="checkbox"/> Medium Grey:	<input type="checkbox"/> Scattered:	
	<input type="checkbox"/> Dark Grey:	<input type="checkbox"/> Light:	
	<input type="checkbox"/> Black:	<input type="checkbox"/> Heavy:	
FPD Contacts:			
_____ Fire Centre		(____) ____-____(DUTY ROOM)	
FPD Industry Liaison: _____			
Contact Number: (____) ____-____			
<b>SIGNATURE:</b>		<b>NAME:</b>	



## Spill Report Form

Discharge ID/Spill Report Number

Ministry of Environment

Government  
of  
Saskatchewan30 Day Written Spill Report  
Form

December 2015 | CSB | CSB21001

## A. Reporting Requirements

## How do I report a discharge?

- Call the Ministry of Environment at 1-844-764-3637 (note: this number IS NOT intended for general inquiries. It is an emergency line for reporting spills only).
- Submit this report within 30 days of the date the discharge occurred.

This report ensures timely reporting of discharges that may cause or have caused adverse effects and collects appropriate details about the discharge.

**What do I report?** This report requires the person reporting to have detailed information about the discharge and discovery, including the following:

- Site location
- Responsible party
- Substances involved in the occurrence
- Surrounding land use
- Agencies involved in the discharge

**What happens next?** Once the report is submitted, the ministry reviews it to determine its acceptability, in some cases in consultation with individuals involved in the discharge/discovery and may include other agencies and impacted landowners. If the report is not acceptable, the ministry identifies deficiencies and requests that it be improved. There are numerous ways to obtain closure and the user should consult the impacted sites guidance document.

**How do I submit the report?** You can submit this application to the Ministry of Environment using our online services or by mailing a hard copy.

- **Web:** the preferred method is to sign in to our Online Services and submit it through your company's business portal. In the portal you can apply for and receive permission, fill out forms and submit documents online, review documents, and track your interactions with the ministry. Please visit the website: <http://www.environment.gov.sk.ca/online-services>.
- **Mail:** you can complete the report, save and print it, and mail the hard copy to:  
Environmental Protection Branch  
Hazmat and Impacted Sites Unit  
102 - 112 Research Drive  
Saskatoon, SK S7N 3R3

**What if I have questions?** For assistance completing this application or for more information, please contact our Client Service Office:

Email: [centre.inquiry@gov.sk.ca](mailto:centre.inquiry@gov.sk.ca)

Tel (toll free in North America): 1-800-567-4224

Tel (Regina): 306-787-2584

**NOTE:** This form meets Environment Canada's reporting requirements when submitted as soon as feasible in accordance with Federal legislation regulations. It may be submitted to Environment Canada

- by email (preferred):  
[ec.dalesaskatchewanrpn-ecdsaskatchewanpnr.ec@canada](mailto:ec.dalesaskatchewanrpn-ecdsaskatchewanpnr.ec@canada).
- or by mail:  
Environment Canada  
Room 300 - 2365 Albert Street  
Regina, SK S4P 4K1

## B. Person Reporting

Company Name

Last Name

First Name

Middle Name

Address

Address

City

Province

Postal Code

Country

Mailing  
Address
☐ Same as above    ☐ Different from above:

Address

Address

City

Province

Postal Code

Country

## Contact Details

Phone (main)

Phone (work)

Phone (mobile)

Email

Preferred Method of Contact ☐ Phone ☐ Email ☐ Mail

**C. Responsible Party**

Legal Name			
Business Name			
Address			
Address			
City	Province	Postal Code	
Country			

**D. Fixed/Storage Facility Information (if applicable)**

Facility Code		Operation Identification	
---------------	--	--------------------------	--

**E. Discharged Material Details**

Shipping Name		Material Code (UNPN/NA #)	
Chemical Abstract Service Registry (CAS) #			
Material Comments			
(include phase: solid, liquid gas)			
Concentration of Liquid Released (mg/kg)			
Type of Package or Containment		Classification	
Total Mass/Volume Prior to Discharge		Mass or Volume of Discharge	
	Units		Units

**F. Pressure Vessel Details (if applicable)**

Pressure Vessel	<input type="checkbox"/> Yes <input type="checkbox"/> No	Certification Safety Marks	
Description of Failure			

**G. Discharge Details****Date of Occurrence (DD/MM/YEAR)**Description of Events *Please attach any additional information as a separate document.*

Discharge Rate		Discharge Rate Units	
Duration of Discharge		Temperature	
Wind Speed (kph)		Wind Direction	Precipitation Type
Cloud Cover		Relative Humidity (%)	



Emergency Response Measures, and Subsequent Assessment and Corrective Actions

How impacted materials were disposed of

Closures resulting from spill (infrastructure disruptions ie. road closures etc.)

Actions taken to prevent similar incidents in the future

Long-term corrective actions (attach corrective action plan if more space required)

Other details

## H. Discharge Location

Enter the Latitude/Longitude for center of the site in degrees, minutes, seconds.

Latitude:

Longitude:

Deg:  Min:  Sec:  Deg:  Min:  Sec:

Address

Address

City

Province

Postal Code

Country



**I. Distances and Direction to:****Nearest Community**

Name

Direction

Distance

**Nearest Well**

Name

Direction

Distance

**Nearest Surface Water Body**

Name

Direction

Distance

**Nearest Occupied Building**

Name

Direction

Distance

**Surrounding Land Use (within 500 m of discharge location)***Check all that apply*☐ Industrial☐ Commercial☐ Residential/Parkland☐ Agricultural**J. Transportation Occurrence Details (if applicable)**☐ Road ☐ Rail ☐ Air ☐ Marine Type of Vehicle/Mean of Containment**K. Emergency Response Assistance Plan (ERAP)**ERAP activated? ☐ Yes ☐ No ERAP Number**L. Effects on Public**Public evacuated? ☐ Yes ☐ NoPublic sheltered in place? ☐ Yes ☐ No

No Number of People Affected

Number of Deaths

Number of People Requiring Medical Aid

**M. Emergency Response Agencies**

Organization Type

Agency Name

Organization Type

Agency Name

Organization Type

Agency Name

Organization Type

Agency Name

Organization Type

Agency Name

Organization Type

Agency Name

**N. Conditions for Submission**

If reporting by regular mail, please make sure all related documents are included or attached as part of the submission.

I have read, and I fully understand that these conditions must be met before the Ministry of Environment can accept, assess and process my report, and

I have read, and I fully understand the requirements of this report, and wish to continue with my report, and

Date of Report

Signature of Reporter

I certify that the information I have provided in this report is true and accurate in every respect.

☐ By checking this box, I accept these conditions.

# Report An Incident

## To report an incident:

(involving a Boiler, Pressure Vessel, Elevator or Amusement Ride in Saskatchewan)

\*Please note that we do not provide emergency assistance!

**Toll Free: 1.866.530.8599**

**Direct phone: 306-798-7111**

## Please fill out this form:

Date of the Incident

Phone Number

Type of Equipment Involved

Nature of Incident

Address of Equipment Involved

Contact Name & Information

Contact Email

<http://www.tsask.ca/contact-us/report-an-incident>

### 11.1.3 CER Forms

#### CER Detailed Incident Report



Canada Energy  
Regulator  
Calgary, Alberta

1

### Appendix 1 DETAILED INCIDENT REPORT Type or print in black pen

#### Board Use Only

CER Incident No. \_\_\_\_\_ Date Received \_\_\_\_\_ CER Investigator \_\_\_\_\_  
Investigator's Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Secretary  
Canada Energy Regulator  
517 Tenth Avenue S.W.  
Calgary, Alberta T2R 0A8 • Fax: 403-292-5503

#### PART A - OPERATOR INFORMATION

Name of Company \_\_\_\_\_  
Address of Company \_\_\_\_\_  
Pipeline Name \_\_\_\_\_  
\_\_\_\_\_

#### PART B - TIME, WEATHER AND LOCATION OF INCIDENT

Date (month) \_\_\_\_\_ (day) \_\_\_\_\_ (year) \_\_\_\_\_  
Hour (24 hour system & time zone) \_\_\_\_\_  
Weather temperature: \_\_\_\_\_ °C precipitation: \_\_\_\_\_ wind speed & direction: \_\_\_\_\_  
CSA Class Location ☐ 1 ☐ 2 ☐ 3 ☐ 4  
Location (provide specific location using a chainage description (MLV, kmP), land survey description or prominent landmarks)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### PART C - ORIGIN OF SPILL/RELEASE


Facility Involved:  
☐ Line Pipe ☐ Tank Farm ☐ Pump Station ☐ Compressor Station ☐ Regulator/Meter Station ☐ Gas Plant  
☐ Other Related Facility (specify) \_\_\_\_\_  
Equipment Involved:  
☐ Pipe ☐ Valve ☐ Pressure relief device ☐ Fitting ☐ Compressor ☐ Pump ☐ Pressure vessel ☐ Tank  
☐ Instrumentation  
☐ Other (specify) \_\_\_\_\_

#### PART D - SPILLS AND RELEASES (Report LVP and HVP spills only if in excess of 1.5 m<sup>3</sup>)

☐ Gas ☐ LVP ☐ HVP ☐ Toxic Substance  
Name of product/substance \_\_\_\_\_  
Volume spilled/released \_\_\_\_\_ m<sup>3</sup> Volume recovered \_\_\_\_\_ m<sup>3</sup>  
Was there a fire? ☐ Yes ☐ No Was there an explosion? ☐ Yes ☐ No

\*Local reproduction of this form is permitted



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

**PART L - INJURY AND FATALITY DESCRIPTIONS**

Serious Injury - includes an injury that results in: fracture of a major bone, amputation of a body part, loss of sight - one or both eyes, internal hemorrhage, third degree burns, unconsciousness, or loss of a body part

☐ Number of Fatalities    ☐ Number of Serious Injuries

NAME	AFFILIATION	FATALITY OR INJURY DESCRIPTION AND CURRENT PATIENT CONDITION
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	
	<input type="checkbox"/> Company Employee <input type="checkbox"/> Contractor Public	

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

- ☐ Defective/inadequate safety devices, tools or equipment    ☐ Improper operation of safety devices, tools or equipment  
☐ Improper loading or placement    ☐ Hazardous environment (gases, dust, smoke, fumes or vapours)  
☐ Congested work area/disorderly workplace    ☐ Other (specify)

**PART N - NARRATIVE OF INCIDENT**

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

*Attach additional sheets of narrative as required.*

**PART O - WITNESS INFORMATION**

NAME \_\_\_\_\_

TELEPHONE NO. ( ) \_\_\_\_\_

( ) \_\_\_\_\_

( ) \_\_\_\_\_

( ) \_\_\_\_\_

( ) \_\_\_\_\_

**PART P - BASIC CAUSES OF INCIDENT**

(Identify all basic causes contributing to the incident. Basic Cause - means the real or root causes of why the unsafe acts and unsafe conditions as described in the immediate cause occurred. Several Basic Causes may be assigned for one incident.)

☐ Inadequate training☐ Inadequate work standards or procedures☐ Inadequate materials, tools or equipment☐ Inadequate design/maintenance☐ Non-compliance with work standards or procedures☐ Other (specify) \_\_\_\_\_

Additional comments on selected basic cause: \_\_\_\_\_

**PART Q - CORRECTIVE ACTIONS TAKEN TO PREVENT SIMILAR INCIDENTS (If no corrective action taken, state reasons why)****PART R - NAME OF PERSON CONDUCTING A COMPANY INCIDENT INVESTIGATION**

Name \_\_\_\_\_

Title \_\_\_\_\_

Telephone ( ) \_\_\_\_\_

Fax ( ) \_\_\_\_\_

**PART S - NAMES OF OTHER AGENCIES INVESTIGATING INCIDENT**

Agency \_\_\_\_\_

Telephone \_\_\_\_\_

Contact Name \_\_\_\_\_

Agency \_\_\_\_\_

Telephone \_\_\_\_\_

Contact Name \_\_\_\_\_

Agency \_\_\_\_\_

Telephone \_\_\_\_\_

Contact Name \_\_\_\_\_

Agency \_\_\_\_\_

Telephone \_\_\_\_\_

Contact Name \_\_\_\_\_

**PART T - NAME AND TITLE OF COMPANY REPRESENTATIVE FILING REPORT**

Name \_\_\_\_\_

Signature \_\_\_\_\_

Title \_\_\_\_\_

Telephone ( ) \_\_\_\_\_

Fax ( ) \_\_\_\_\_

Date (time)\_\_\_\_(month)\_\_\_\_(day)\_\_\_\_(year) \_\_\_\_



## 11.2 ICS Forms

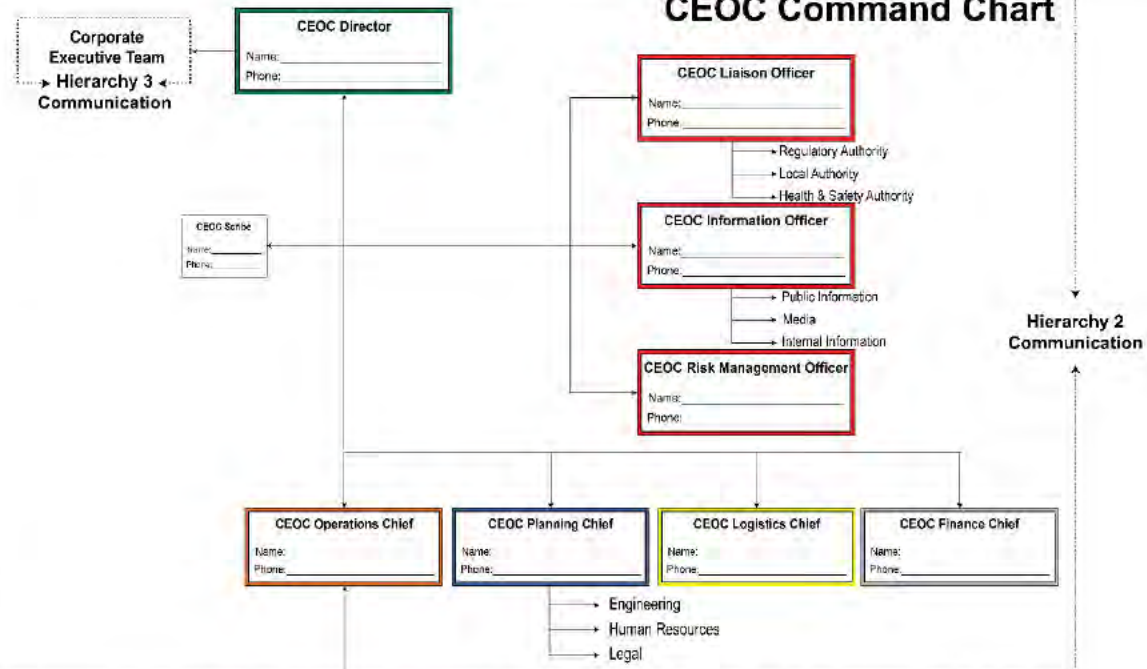
### ICS 201 - Incident Briefing

<b>DETAILS</b>	Incident:	
	Date:	
	Time (0-2400 hrs):	Time Zone:
	Prepared by (Name and Position):	Signature:
<b>MAP SKETCH</b>		
<b>SITUATION SUMMARY AND SAFETY BRIEFING</b>		

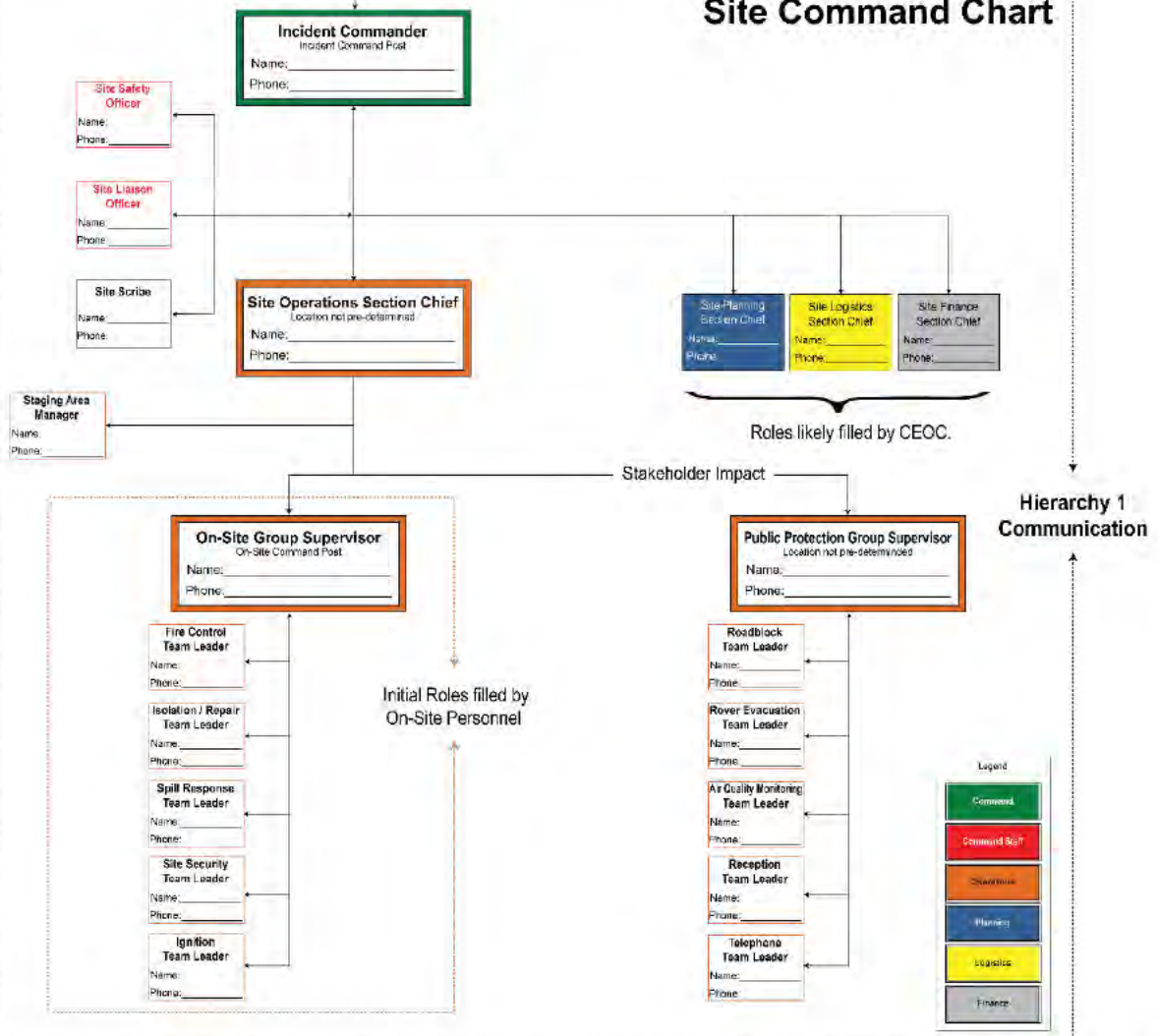
PAGE 1 OF 4

CURRENT AND PLANNED OBJECTIVES		
CURRENT AND PLANNED ACTIONS, STRATEGIES AND TACTICS	Time:	Actions:

## CEOC Command Chart



## Site Command Chart







## ICS 202 - Incident Objectives

<b>DETAILS</b>	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: _____	
<b>GENERAL CONTROL OBJECTIVES FOR THE INCIDENT</b>	(Include alternatives)		
<b>WEATHER FORECAST</b>			
<b>GENERAL SAFETY MESSAGE</b>			
<b>ATTACHMENTS</b>	<div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> ICS 203 - Organization List  <input type="checkbox"/> ICS 204 - Assignment List         </div> <div> <input type="checkbox"/> Medical Plan (ICS 206)  <input type="checkbox"/> ERP Map         </div> <div> <input type="checkbox"/> _____  <input type="checkbox"/> _____  <input type="checkbox"/> _____         </div> </div>		

## ICS 203 - Organization Assignment List

[illegible]



## ICS 204 - Assignment List

	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 INSTRUCTIONS								
COMMUNICATION	Function:	Frequencies:	System:	Chan:	Function:	Frequencies:	System:	Chan:
	Command				Logistics			
	Tactical (Field Operations)				Air to Ground			
PAGE 1 OF 1								

ICS 206 - Medical Plan

<b>DETAILS</b>	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: _____			Date/Time _____		
Approved by (Incident Commander):				Signature: _____			Date/Time _____			
<b>INCIDENT MEDICAL AID STATION</b>	<b>Medical Aid Stations</b>		<b>Location</b>		<b>Contact (number or frequency)</b>			<b>Paramedics</b>		
								<b>Yes</b>	<b>No</b>	
								<input type="checkbox"/>	<input type="checkbox"/>	
								<input type="checkbox"/>	<input type="checkbox"/>	
								<input type="checkbox"/>	<input type="checkbox"/>	
								<input type="checkbox"/>	<input type="checkbox"/>	
<b>TRANSPORTATION</b>	<b>Ambulance Service</b>		<b>Location</b>		<b>Contact (number or frequency)</b>			<b>Level of Serv.</b>		
								<b>ALS</b>	<b>BLS</b>	
								<input type="checkbox"/>	<input type="checkbox"/>	
								<input type="checkbox"/>	<input type="checkbox"/>	
								<input type="checkbox"/>	<input type="checkbox"/>	
								<input type="checkbox"/>	<input type="checkbox"/>	
<b>HOSPITALS</b>	<b>Hospital Name</b>	<b>Address</b> <small>(lat/long if helipad)</small>	<b>Travel Time</b>		<b>Contact (number or frequency)</b>		<b>Helipad</b>		<b>Burn Centre</b>	
			<b>Air</b>	<b>Ground</b>			<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SPECIAL MEDICAL EMERGENCY PROCEDURES</b>										

## ICS 207 - Incident Organization Chart

<b>DETAILS</b>	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**

### CEOC Command Chart

```

graph TD
    CDE[CEOC Director] --- CET[Corporate Executive Team  
Hierarchy 3  
Communication]
    CDE --- CS[CEOC Scribe]
    CDE --- CLO[CEOC Liaison Officer]
    CDE --- CIO[CEOC Information Officer]
    CDE --- CRM[CEOC Risk Management Officer]
    CDE --- COC[CEOC Operations Chief]
    CDE --- CPC[CEOC Planning Chief]
    CDE --- CLC[CEOC Logistics Chief]
    CDE --- CFC[CEOC Finance Chief]
    
    CLO --- RA[Regulatory Authority]
    CLO --- LA[Local Authority]
    CLO --- HSA[Health & Safety Authority]
    
    CIO --- PI[Public Information]
    CIO --- M[Media]
    CIO --- II[Internal Information]
    
    CPC --- E[Engineering]
    CPC --- HR[Human Resources]
    CPC --- L[Legal]
    
    CLO -.-> H2C[Hierarchy 2  
Communication]
    CIO -.-> H2C
    CRM -.-> H2C
    CLC -.-> H2C
    CFC -.-> H2C
    
```

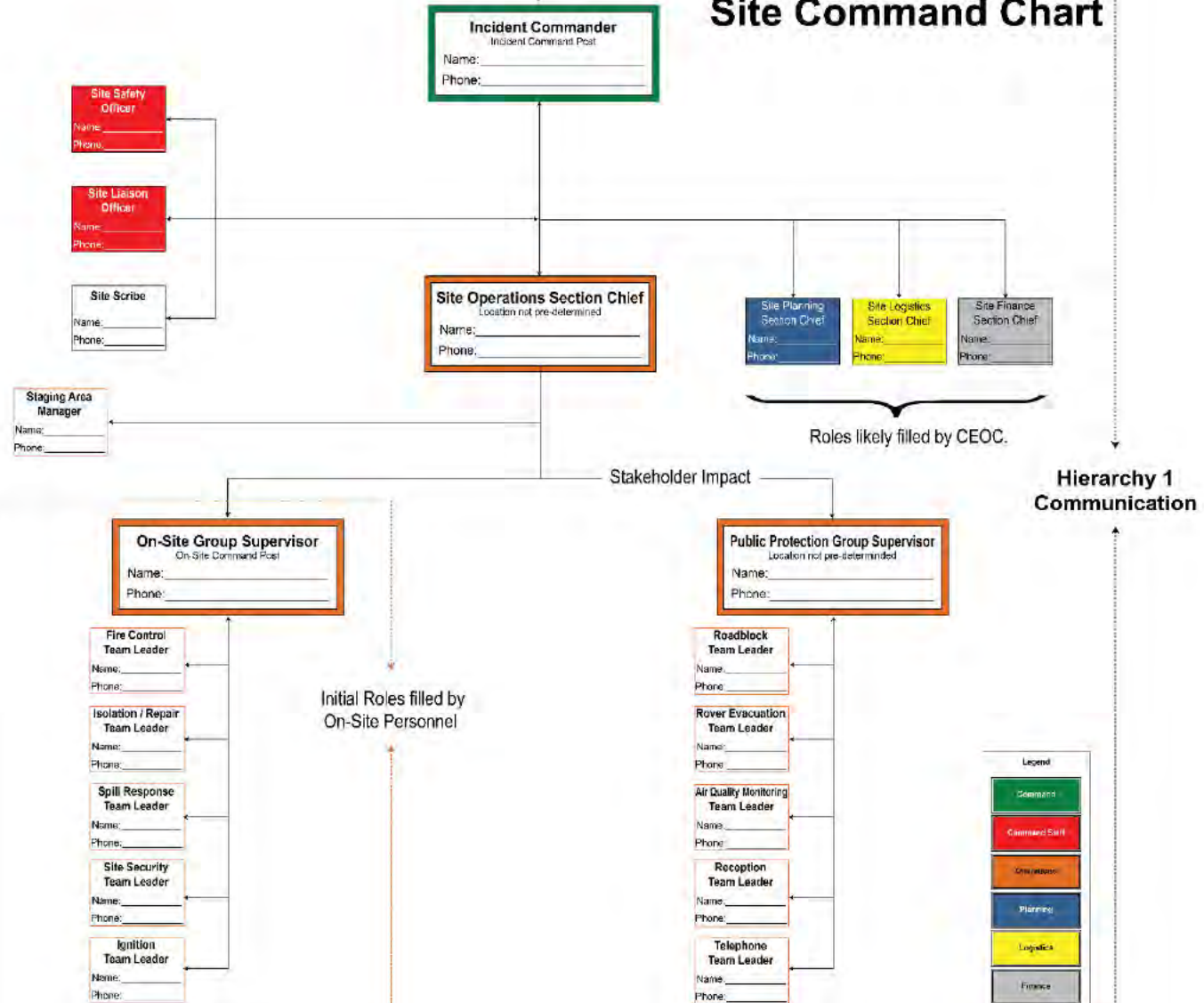
**Legend**

- Command
- Command Staff
- Operations
- Planning
- Logistics
- Finance

Page: \_\_\_\_\_



# Site Command Chart



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 <input type="checkbox"/> No <input type="checkbox"/>	
	Approved Site Safety Plan(s) located at: _____	

PAGE 1 OF 1

## ICS 209 - Incident Status Summary

<b>DETAILS</b>	<b>*Incident Name:</b>			<b>Incident No:</b>	
	<b>*Report Version</b> Check one box on left): <input type="checkbox"/> Initial Rpt# <input type="checkbox"/> Update (if used) <input type="checkbox"/> Final		<b>*Incident Commander(s) &amp; Agency or Organization</b>		<b>Incident Management Organization</b>  <b>*Incident Start Date/Time</b> Date:  Time:
	<b>Current Incident Size or Area Involved</b> (Use unit label – e.g. 'sq km', 'city block')	<b>% Contained</b>	<b>*Incident Definition</b>	<b>Incident Complexity Level</b>	<b>*For Time Period</b> From Date/Time:  To Date/Time:
		<b>Completed</b>			
<b>APPROVAL &amp; ROUTING INFORMATION</b>	<b>*Prepared by:</b>		<b>ICS Position:</b>		<b>Signature:</b>
	<b>Approved by:</b>		<b>ICS Position:</b>		<b>Signature:</b>
	<b>*Date/Time Submitted:</b>				
	<b>*Primary Location, Organization, or Agency Sent To:</b>				
<b>INCIDENT LOCATION INFORMATION</b>	<b>*Province/Territory</b>		<b>*County, Regional/Rural Municipality, Regional/Municipal District</b>		<b>*City</b>
	<b>Unit or Other</b>		<b>*Incident Jurisdiction</b>		<b>Incident Location Ownership</b> (if different than jurisdiction)
	<b>Longitude</b>	<b>Latitude</b>	<b>Datum</b>		<b>Legal Description</b> (twp, range, section)
	<b>*Short location or area description</b> (list all affected areas or a reference point)				<b>*UTM Coordinates</b>
	<b>Note any electronic geospatial data included or attached</b> (indicate data format, content, and collection time information and labels)				
<b>INCIDENT SUMMARY</b>	<b>*Significant events for the time period reported</b> (summarize significant progress made, evacuations, incident growth, etc.)				
	<b>Primary materials or hazards involved</b> (hazardous chemicals, fuel types, infectious agents, radiation, etc.)				
	<b>Damage Assessment Information</b> (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)	<b>Structural Summary</b>	<b># Threatened (72 hrs)</b>	<b># Damaged</b>	<b># Destroyed</b>
		<b>Single Residences</b>			
		<b>Non-residential Commercial Property</b>			
		<b>Other Minor Structures</b>			
<b>Other</b>					

\*required when applicable



<b>DETAILS</b>	*Incident Name:			Incident No:		
<b>ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION</b>	*Public Status Summary	# This Reporting Period	Total # To Date	*Responder Status Summary	# This Reporting Period	Total # To Date
	Indicate number of Stakeholders (public) below			Indicate number of responders below		
	Fatalities			Fatalities		
	With Injuries/Illness			With Injuries/Illness		
	Trapped/In Need of Rescue			Trapped/In Need of Rescue		
	Missing (note if estimated)			Missing (note if estimated)		
	Evacuated (note if estimated)			Evacuated (note if estimated)		
	Sheltering in Place (note if estimated)			Sheltering in Place (note if estimated)		
	In Reception Centres (note if estimated)			In Reception Centres (note if estimated)		
	Total # Stakeholders (Public) Affected			Total Responders Affected		
	Life, Safety, and Health Status/Threat Remarks			*Life, Safety, and Health Threat Mgmt	Check if active	
				No likely threat	<input type="checkbox"/>	
				Potential Future Threat	<input type="checkbox"/>	
				Mass notifications in progress	<input type="checkbox"/>	
				Mass notifications completed	<input type="checkbox"/>	
				No evacuation(s) imminent	<input type="checkbox"/>	
				Planning for evacuation	<input type="checkbox"/>	
				Planning for shelter-in-place	<input type="checkbox"/>	
				Evacuation(s) in progress	<input type="checkbox"/>	
				Shelter-in-Place in Progress	<input type="checkbox"/>	
Area restriction in effect				<input type="checkbox"/>		
				<input type="checkbox"/>		
				<input type="checkbox"/>		
				<input type="checkbox"/>		
Weather Concerns (synopsis of current and predicted weather, discuss related factors that may cause concern)						
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

<b>DETAILS</b>	<b>*Incident Name:</b>	<b>Incident No:</b>
<b>ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION (continued)</b>	<b>CURRENT INCIDENT THREAT SUMMARY AND RISK INFORMATION IN 12-, 24-, 48-, AND 72-HOUR TIMEFRAMES AND BEYOND</b> 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	
	<b>Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives.</b> 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	
	<b>Strategic discussion: explain in relation to overall strategy, constraints, and current available information to:</b> 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		
<b>Remarks</b> (or continuation of any blocks above – list block number in notation)		

[illegible]



ICS 211 - Check-In List

DETAILS	Incident Name:		Incident Number (if assigned):		Check-In Location											Start Date/Time				
					<input type="checkbox"/> OSCP <input type="checkbox"/> ICP <input type="checkbox"/> Staging Area <input type="checkbox"/> CEOC <input type="checkbox"/> Helibase <input type="checkbox"/> 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

<b>DETAILS</b>	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:
<b>PERSONNEL ASSIGNED</b>	<b>Name</b>	<b>ICS Position</b>	<b>Command Centre (OSCP, ICP, CEOC)</b>
<b>ACTIVITY LOG</b>	<b>Time</b>	<b>Major Events</b>	





## ICS 215 - Operational Planning Worksheet

<b>DETAILS</b>	<b>Incident:</b>																					
	<b>Date:</b>																					
	<b>Time (0-2400 hrs):</b>												<b>Time Zone:</b>									
	<b>Operational Period (Date/Time)</b>										<b>Date From:</b> _____				<b>Date To:</b> _____							
											<b>Time From:</b> _____				<b>Time To:</b> _____							
<b>Prepared by (Site Operations Section Chief):</b>												<b>Signature</b>										
<b>OPERATIONAL PLANNING</b>	<b>Branch</b>	<b>Division, Group, or Other</b>	<b>Work Assignment &amp; Special Instructions</b>	<b>Resources</b>															<b>Overhead Position(s)</b>	<b>Special Equipment &amp; Supplies</b>	<b>Reporting Location</b>	<b>Requested Arrival Time</b>
				Req.																		
				Have																		
				Need																		
				Req.																		
				Have																		
				Need																		
				Req.																		
				Have																		
				Need																		
<b>Total Resources Required</b>																						
<b>Total Resources – Have on Hand</b>																						
<b>Total Resources Need to Order</b>																						
																		<b>Page:</b>				

ICS 215a - Incident Action Safety Plan Analysis

<b>DETAILS</b>	Incident:		
	Date:		
	Time (0-2400 hrs):		Time Zone:
	Operational Period (Date/Time)		
	Date From: _____		Date To: _____
	Time From: _____		Time To: _____
<b>INCIDENT ACTION SAFETY PLAN</b>	Prepared by (Site Safety Officer):	Name: _____	Signature: _____
	Prepared by (Site Operations Section Chief):	Name: _____	Signature: _____
	<b>Incident Area</b>	<b>Hazards/Risks</b>	<b>Mitigations</b>

## ICS 221 - Demobilization Checkout

<b>DETAILS</b>	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 <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>UNIT/PERSONNEL</b>	Destination:		Notify	ICP <input type="checkbox"/>	Agency <input type="checkbox"/>	Region <input type="checkbox"/>	Area <input type="checkbox"/>	Dispatch <input type="checkbox"/>
			Name					
			Date					
	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							
	<b>LOGISTICS SECTION</b>			<b>COMMENTS</b>				
	<input type="checkbox"/> Site Logistics Section Chief							
	<input type="checkbox"/> CEOC Logistics Section Chief							
	<input type="checkbox"/> a. Additional Support							
	<input type="checkbox"/>							
	<input type="checkbox"/> b. Additional Services							
	<input type="checkbox"/>							
	<b>PLANNING SECTION</b>							
	<input type="checkbox"/> Planning Section Chief							
	<input type="checkbox"/> CEOC Planning Section Chief							
<input type="checkbox"/> Engineering								
<input type="checkbox"/> Human Resources								
<input type="checkbox"/> Legal								
<b>OPERATIONS SECTION</b>								
<input type="checkbox"/> Site Operations Section Chief								
<input type="checkbox"/> Staging Area Manager								
<input type="checkbox"/> Public Protection Group Supervisor								
<input type="checkbox"/> Roadblock Team Leader								
<input type="checkbox"/> Rover Evacuation Team Leader								
							Page 1 of 2	



DETAILS		
Incident Name/Number:	Date/Time:	
Prepared by (Site Planning Section Chief or CEOC Planning Chief):	Signature	
Approved by (Incident Commander):	Signature	
UNIT/PERSONNEL Continued	<input type="checkbox"/> Air Monitoring Team Leader	
	<input type="checkbox"/> Reception Team Leader	
	<input type="checkbox"/> Telephone Team Leader	
	<input type="checkbox"/> On-Site Group Supervisor	
	<input type="checkbox"/> Fire Control Team Leader	
	<input type="checkbox"/> Isolation Repair Team Leader	
	<input type="checkbox"/> Spill Response Team Leader	
	<input type="checkbox"/> Site Security Team Leader	
	<input type="checkbox"/> Ignition Team Leader	
	<input type="checkbox"/> a. Additional Support	
	<input type="checkbox"/>	
	<input type="checkbox"/> b. Additional Services	
	<input type="checkbox"/>	
	<b>FINANCE / ADMIN SECTION</b>	
	<input type="checkbox"/> Site Finance Section Chief	
	<input type="checkbox"/> CEOC Finance Chief	
	<b>CORPORATE EMERGENCY OPERATIONS CENTRE (CEOC)</b>	
	<input type="checkbox"/> CEOC Director	
	<input type="checkbox"/> CEOC Operations Chief	
<input type="checkbox"/> CEOC Liaison Officer		
<input type="checkbox"/> CEOC Risk Management Officer		
REMARKS:          		

## 11.3 ERP Forms

### Telephone Checklist for Threatening Calls

<b>DETAILS</b>	Date:																									
	Time (0-2400 hrs):	Time Zone:																								
	Completed by:																									
<b>CALL DETAILS</b>	<b>When a threat is received:</b> <ul style="list-style-type: none"> <li>• Have someone listen in on the call and have call traced, if possible.</li> <li>• Listen.</li> <li>• Be calm and courteous.</li> <li>• Do not interrupt the caller.</li> <li>• Obtain as much information as you can.</li> </ul>																									
	<b>Questions to ask for bomb threats:</b> <ul style="list-style-type: none"> <li>• When is the bomb going to explode?</li> <li>• Where is it right now?</li> <li>• Why did you place the bomb?</li> <li>• What does it look like?</li> <li>• What will cause it to explode?</li> <li>• What is your name and address?</li> </ul>																									
	Exact wording of the threat:																									
	<b>BACKGROUND SOUNDS</b> <table border="0"> <tr> <td><input type="checkbox"/> Street Noises</td> <td><input type="checkbox"/> PA System</td> <td><input type="checkbox"/> Motor</td> <td><input type="checkbox"/> Animal noises</td> </tr> <tr> <td><input type="checkbox"/> Local</td> <td><input type="checkbox"/> Crockery</td> <td><input type="checkbox"/> Music</td> <td><input type="checkbox"/> Office machinery</td> </tr> <tr> <td><input type="checkbox"/> Clear</td> <td><input type="checkbox"/> Long distance</td> <td><input type="checkbox"/> Voices</td> <td><input type="checkbox"/> House noises</td> </tr> <tr> <td><input type="checkbox"/> Factory</td> <td><input type="checkbox"/> Static</td> <td><input type="checkbox"/> Booth</td> <td><input type="checkbox"/> Other</td> </tr> </table>		<input type="checkbox"/> Street Noises	<input type="checkbox"/> PA System	<input type="checkbox"/> Motor	<input type="checkbox"/> Animal noises	<input type="checkbox"/> Local	<input type="checkbox"/> Crockery	<input type="checkbox"/> Music	<input type="checkbox"/> Office machinery	<input type="checkbox"/> Clear	<input type="checkbox"/> Long distance	<input type="checkbox"/> Voices	<input type="checkbox"/> House noises	<input type="checkbox"/> Factory	<input type="checkbox"/> Static	<input type="checkbox"/> Booth	<input type="checkbox"/> Other								
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<input type="checkbox"/> Local	<input type="checkbox"/> Crockery	<input type="checkbox"/> Music	<input type="checkbox"/> Office machinery																							
<input type="checkbox"/> Clear	<input type="checkbox"/> Long distance	<input type="checkbox"/> Voices	<input type="checkbox"/> House noises																							
<input type="checkbox"/> Factory	<input type="checkbox"/> Static	<input type="checkbox"/> Booth	<input type="checkbox"/> Other																							
<b>THREATENING LANGUAGE</b> <table border="0"> <tr> <td><input type="checkbox"/> Well spoken (educated)</td> <td><input type="checkbox"/> Foul</td> <td><input type="checkbox"/> Irrational</td> </tr> <tr> <td><input type="checkbox"/> Message being read by threat maker</td> <td><input type="checkbox"/> Taped</td> <td><input type="checkbox"/> Incoherent</td> </tr> </table>		<input type="checkbox"/> Well spoken (educated)	<input type="checkbox"/> Foul	<input type="checkbox"/> Irrational	<input type="checkbox"/> Message being read by threat maker	<input type="checkbox"/> Taped	<input type="checkbox"/> Incoherent																			
<input type="checkbox"/> Well spoken (educated)	<input type="checkbox"/> Foul	<input type="checkbox"/> Irrational																								
<input type="checkbox"/> Message being read by threat maker	<input type="checkbox"/> Taped	<input type="checkbox"/> Incoherent																								
<b>CALLER DETAILS</b>	Distinguishing accent:																									
	Age:	Sex:																								
	Length of call:	Number called:																								
	<b>CALLER'S VOICE</b> <table border="0"> <tr> <td><input type="checkbox"/> Calm</td> <td><input type="checkbox"/> Angry</td> <td><input type="checkbox"/> Excited</td> <td><input type="checkbox"/> Slow</td> </tr> <tr> <td><input type="checkbox"/> Rapid</td> <td><input type="checkbox"/> Soft</td> <td><input type="checkbox"/> Loud</td> <td><input type="checkbox"/> Laughter</td> </tr> <tr> <td><input type="checkbox"/> Crying</td> <td><input type="checkbox"/> Normal</td> <td><input type="checkbox"/> Distinct</td> <td><input type="checkbox"/> Slurred</td> </tr> <tr> <td><input type="checkbox"/> Nasal</td> <td><input type="checkbox"/> Stutter</td> <td><input type="checkbox"/> Lisp</td> <td><input type="checkbox"/> Raspy</td> </tr> <tr> <td><input type="checkbox"/> Deep</td> <td><input type="checkbox"/> Ragged</td> <td><input type="checkbox"/> Clearing throat</td> <td><input type="checkbox"/> Deep breathing</td> </tr> <tr> <td><input type="checkbox"/> Cracking</td> <td><input type="checkbox"/> Disguised</td> <td><input type="checkbox"/> Accent</td> <td><input type="checkbox"/> Familiar</td> </tr> </table>		<input type="checkbox"/> Calm	<input type="checkbox"/> Angry	<input type="checkbox"/> Excited	<input type="checkbox"/> Slow	<input type="checkbox"/> Rapid	<input type="checkbox"/> Soft	<input type="checkbox"/> Loud	<input type="checkbox"/> Laughter	<input type="checkbox"/> Crying	<input type="checkbox"/> Normal	<input type="checkbox"/> Distinct	<input type="checkbox"/> Slurred	<input type="checkbox"/> Nasal	<input type="checkbox"/> Stutter	<input type="checkbox"/> Lisp	<input type="checkbox"/> Raspy	<input type="checkbox"/> Deep	<input type="checkbox"/> Ragged	<input type="checkbox"/> Clearing throat	<input type="checkbox"/> Deep breathing	<input type="checkbox"/> Cracking	<input type="checkbox"/> Disguised	<input type="checkbox"/> Accent	<input type="checkbox"/> Familiar
	<input type="checkbox"/> Calm	<input type="checkbox"/> Angry	<input type="checkbox"/> Excited	<input type="checkbox"/> Slow																						
<input type="checkbox"/> Rapid	<input type="checkbox"/> Soft	<input type="checkbox"/> Loud	<input type="checkbox"/> Laughter																							
<input type="checkbox"/> Crying	<input type="checkbox"/> Normal	<input type="checkbox"/> Distinct	<input type="checkbox"/> Slurred																							
<input type="checkbox"/> Nasal	<input type="checkbox"/> Stutter	<input type="checkbox"/> Lisp	<input type="checkbox"/> Raspy																							
<input type="checkbox"/> Deep	<input type="checkbox"/> Ragged	<input type="checkbox"/> Clearing throat	<input type="checkbox"/> Deep breathing																							
<input type="checkbox"/> Cracking	<input type="checkbox"/> Disguised	<input type="checkbox"/> Accent	<input type="checkbox"/> Familiar																							
If familiar, who did it sound like:																										
<b>NOTES</b>																										
		Page:																								

Report call immediately to your supervisor, corporate security, or administrative services.

## Issues Board

[illegible]



## 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 residence:					
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					

Page:

## Notification Record

<b>DETAILS</b>	Incident:			
	Date:			
	Time (0-2400 hrs):			Time Zone:
	Completed by:			
<b>INCIDENT COMMANDER</b>		<b>Who was notified?</b>	<b>Date/Time</b>	<b>Who did notification?</b>
	Supervisor:			
	Ambulance:			
	Police:			
	Fire Department:			
	Forestry Service:			
	Local Authority:			
	Prime Contractor:			
	Area Stakeholder:			
	Other:			
	<b>CEOC OPERATIONS CHIEF</b>		<b>Who was notified?</b>	<b>Date/Time</b>
Executive Team:				
President:				
Disaster Services:				
Regulatory Authority:				
Workplace Health and Safety Authority:				
Health Authority:				
Hospital/Health Care Facility:				
Environmental Agency:				
Other:				
Page:				

### 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		
						Page:	



## 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.  
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**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 \_\_\_\_\_.

## Roadblock Checkpoint Record

<b>DETAILS</b>	Incident:						
	Date:						
	Time (0-2400 hrs):					Time Zone:	
	Completed by:					Response Team Position:	
<b>ROADBLOCK CHECKPOINT RECORD</b>	<b>Vehicle Type</b>	<b>Licence Plate Number &amp; Province/State</b>	<b>Name of Driver (if available)</b>	<b>Number of People in Vehicle</b>	<b>Time Entering EPZ</b>	<b>Time Exiting EPZ</b>	<b>Comments (Record all vehicles turned away)</b>
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.



## Environmental Monitoring Record

<b>DETAILS</b>	Incident:									
	Date:									
	Time (0-2400 hrs):							Time Zone:		
	Completed by:							Response Team Position:		
<b>ENVIRONMENTAL MONITORING RECORD</b>	<b>Time</b>	<b>Location of Sample:</b>	<b>LEL (%)</b>	<b>O<sub>2</sub> (%)</b>	<b>H<sub>2</sub>S (ppm)</b>	<b>SO<sub>2</sub> (ppm)</b>	<b>Other</b>	<b>Temp. (C/F°)</b>	<b>Wind Conditions</b>	
									<b>From</b>	<b>Speed (km/h/mph)</b>
								Page:		



*Reception Centre Registration Form (to be filled out by evacuees)*

<b>DETAILS</b>	Incident:						
	Date:						
	Time (0-2400 hrs):					Time Zone:	
	Completed by:						
<b>EVACUEE INFORMATION</b>	Last Name			First Name		Middle Initial:	
	Sex:	Age:	Address:				
	City:		Province:		Phone Number:		
<b>EVACUATED FAMILY MEMBERS</b>	First Name	Middle Initial	Last Name	Relationship to above	Gender	Age	
<b>ALTERNATE CONTACT INFO.</b>							
<b>SPECIAL MEDICAL NEEDS</b>							
<b>ADDITIONAL INFO.</b>							
<b>CHECK IN/OUT</b>	Arrival Time:					Departure Time:	

## Evacuee Expense Claim Form

<b>DETAILS</b>	Incident:		
	Date:		
<b>EVACUEE INFORMATION</b>	Last Name	First Name	Middle Initial:
	Address:		Phone Number:
	City:	Province:	Postal Code:
	Location of Residence, Business, etc.		
<b>EXPENSES</b>	Accommodation:	\$	Details:
	Meals:	\$	Details:
	Other Reasonable Expenses:	\$	Details:
	Other:	\$	Details:
	Other:	\$	Details:
	Other:	\$	Details:
		<b>Total:</b>	
	Evacuee Signature:		
<b>ADMINISTRATION</b>	Company Contact:		Company Phone Number:
	Approved by:		

*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 <sup>3</sup> )/Quantity (bbl) Spilled/Released:				Volume/Quantity Recovered:			
	<input type="checkbox"/> Sweet gas	<input type="checkbox"/> LVP	<input type="checkbox"/> HVP	<input type="checkbox"/> Toxic substance	<input type="checkbox"/> Sour gas	<input type="checkbox"/> Produced water	<input type="checkbox"/> Oil	<input type="checkbox"/> Other
	Was there a fire? <input type="checkbox"/> Yes <input type="checkbox"/> No				Was there an explosion? <input type="checkbox"/> Yes <input type="checkbox"/> No			



		Yes	No	Details	
RELEASE INFORMATION	Is the health or safety of any individuals (residences, communities, etc.) in imminent danger?	<input type="checkbox"/>	<input type="checkbox"/>		
	Are any specially designated environmental areas (wetland, preserves, etc.) in imminent danger?	<input type="checkbox"/>	<input type="checkbox"/>		
	Was any waterway affected?	<input type="checkbox"/>	<input type="checkbox"/>	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.).	<input type="checkbox"/>	<input type="checkbox"/>		
	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 cleanup:			\$	
				\$	
				\$	
	List special cleanup equipment used:			\$	
				\$	
				\$	
	Describe remedial action taken and current status:				
	<div>Page:</div>				

## Drilling and Completions Emergency Evacuation Pre-Planning Sheet

<b>DETAILS</b>	Incident:		
	Date:		
	Time (0-2400 hrs):		Time Zone:
	Completed by:		
<b>LOCATION</b>	Site Location:		
	Site Supervisor:		
	Longitude/latitude:		
	Other Information (e.g.: Air Ambulance, etc.):		
	Helicopter landing location identified?		
<b>FIRST AID</b>	Nearest health care facility (define services available):		
	Is it available 24 hours?		Travel Time (hrs):
	Transportation vehicle:		
	Valid First Aid training certificates on site?		Appropriate First Aid supplies on site?
<b>TEST PLAN</b>	Phone emergency transportation (24 hour)?		
	Phone emergency services (24 hour)?		
	Phone others (24 hour)?		
<b>SUPPORT FACILITIES</b>	<b>Rigs in the area</b>	<b>Name</b>	<b>Phone</b>
	<b>Production facilities in area</b>	<b>Name</b>	<b>Phone</b>
	<b>Construction/other in area</b>	<b>Name</b>	<b>Phone</b>
			Page:

**POST UPON COMPLETION OF THIS FORM**



# STARS<sup>®</sup>

Site Number \_\_\_\_\_

Location \_\_\_\_\_

## Remote Site Landing Zone Reference Card

**In the event of a SITE EMERGENCY**  
**PHONE the STARS Emergency Link Centre<sup>®</sup>**

**TOLL FREE**  
**1-888-888-4567**

**OR**

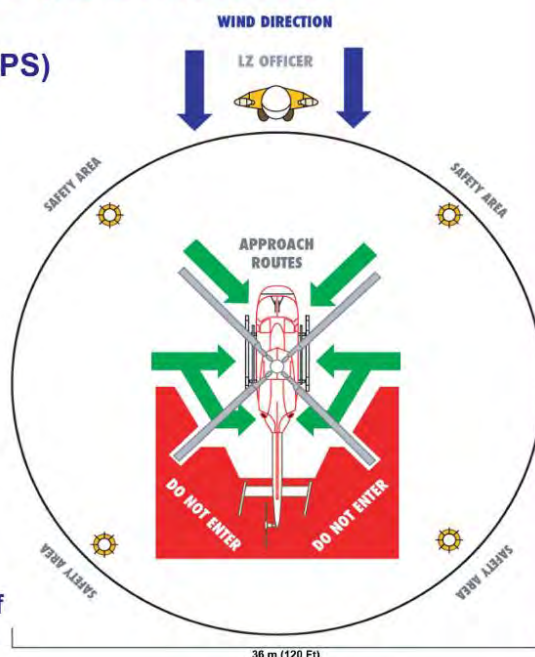
**DIRECT**  
**403-299-0932**

### 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<sub>2</sub>S

### 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**  
level or sloping  
type of surface  
dust, loose snow,  
rocks, bushes,  
stumps, etc.

**LANDING ZONE MARKINGS**  
4 turbo flares  
4 road flares / strobes  
4 reflective flares  
4 highway cones (days only)  
extra strobes/flares/cones  
on upwind side

**HAZARDS**  
signs  
vehicles  
trees  
equipment  
wires



## 12.0 APPENDIX

### 12.1 Properties of Hydrogen Sulphide (H<sub>2</sub>S)

H<sub>2</sub>S 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<sub>2</sub>S are generally measured in parts per million (ppm). 1 ppm means that there is one part of H<sub>2</sub>S gas in one million parts of air (1% H<sub>2</sub>S 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

<http://work.alberta.ca/documents/WHS-PUB-CH029.pdf>

### 12.2 Properties of Sulphur Dioxide (SO<sub>2</sub>)

SO<sub>2</sub> gas is a colourless, non-flammable, non-explosive gas, and has a pungent odour such as a burning match. SO<sub>2</sub> is a by-product from the combustion of hydrogen sulphide and would only be present if the source of H<sub>2</sub>S was ignited.

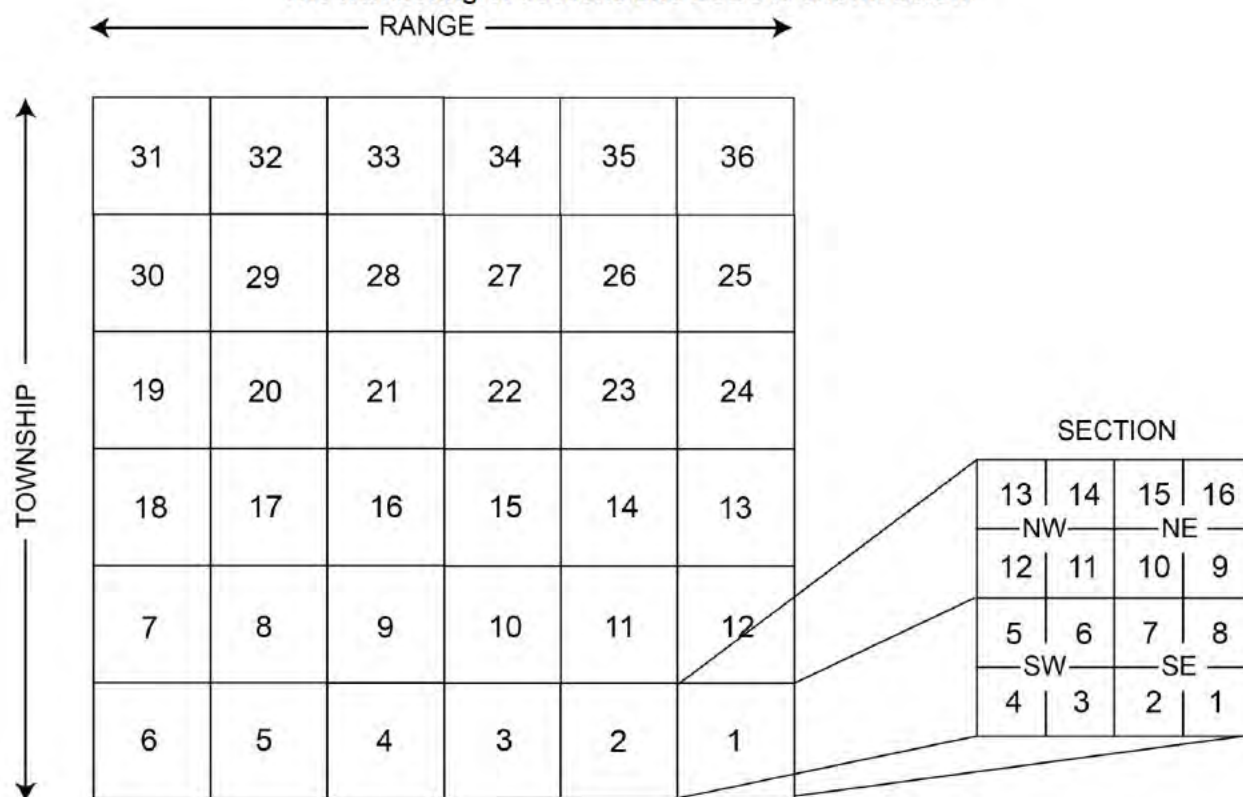
In its normal state SO<sub>2</sub> is heavier than air, however during the combustion process, the heat from the fire will carry the SO<sub>2</sub> and smoke upwards resulting in rapid dispersion and low concentration values.

Toxicity Information	
Concentration (ppm)	Effects
2	<ul style="list-style-type: none"> <li>8 hour exposure limit</li> </ul>
3 – 5	<ul style="list-style-type: none"> <li>Odour detection threshold</li> </ul>
5	<ul style="list-style-type: none"> <li>15 minute exposure limit</li> </ul>
6 – 50	<ul style="list-style-type: none"> <li>Exposure for 5 to 15 minutes irritates the eyes and may irritate the respiratory system (e.g. choking and coughing)</li> <li>possible nose bleed under extended exposure</li> </ul>
50 – 100	<ul style="list-style-type: none"> <li>Irritation increase may become unbearable and vision impossible</li> </ul>
Over 100	<ul style="list-style-type: none"> <li>Immediately dangerous to life</li> <li>Immediate feeling of suffocation</li> </ul>

### 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



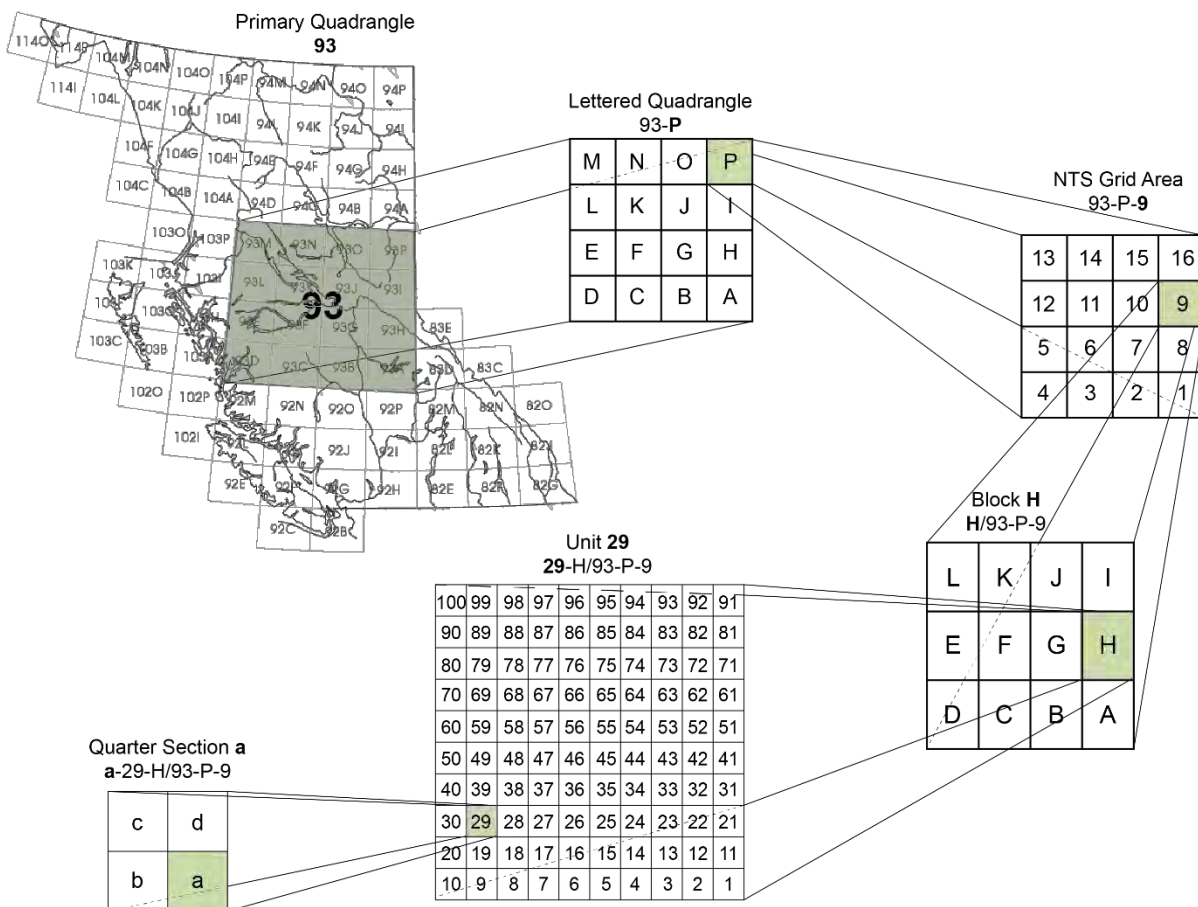
## 12.4 National Topographic System (NTS) Reference Tool

Based on the national topographic series map numbering system terms as follows:

<b>Primary Quadrangle:</b>	A 4° x 8° in geodetic latitude and longitude (e.g. Primary Quadrangle 93).
<b>Lettered Quadrangle:</b>	1/16 of a Primary Quadrangle 1° in latitude by 2° in longitude, lettered A to P (e.g. 93-P).
<b>N.T.S. Grid Area:</b>	1/16 of Lettered Quadrangle 15' in latitude by 30' in longitude, numbered 1 to 16 (e.g. 93-P-9).
<b>Block:</b>	An area 1/12 of an NTS map 5' in latitude by 7'30" in longitude, lettered A to L (e.g. H/93-P-9).
<b>Unit:</b>	A block is divided into 100 numbered parts, 10 to a side, each part called a unit and has a latitudinal extent of 30" and longitudinal extent of 45" (e.g. 29-H/93-P-9).
<b>Quarter Section:</b>	¼ of a Unit, lettered a to d (e.g. a-29-H/93-P-9).

The area contained by a unit decreases to the north from 86.016 HA at 48° latitude to 64.782 HA at 60° latitude.

Example: a-29-H/93-P-9





## 12.5 Description of Legal Survey (Saskatchewan)

- 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 quarter LSDs (A - D); and
- Each quarter can be further divided into four (1 - 4).

The numbering of sections and LSDs is shown below:

LSD

C	D	
B	3	4
	2	1

Township - 36 Sections

Section - 16 LSDs

Section

13	14	15	16	13	14	15	16	33	34	35	36																												
12	11	10	9	12	11	10	9																																
5	6	7	8	5	6	7	8																																
4	3	2	1	4	3	2	1																																
13	14	15	16	29	28	27	26	25																															
12	11	10	9																																				
5	6	7	8																																				
4	3	2	1																																				
19				20				21				22				23				24																			
18				17				16				15				14				13																			
7				8				9				10				11				12																			
6				5				4				3				2				<table> <tr> <td>13</td><td>14</td><td>15</td><td>16</td> </tr> <tr> <td>12</td><td>11</td><td>10</td><td>9</td> </tr> <tr> <td>5</td><td>6</td><td>7</td><td>8</td> </tr> <tr> <td>4</td><td>3</td><td>2</td><td>1</td> </tr> </table>				13	14	15	16	12	11	10	9	5	6	7	8	4	3	2	1
13	14	15	16																																				
12	11	10	9																																				
5	6	7	8																																				
4	3	2	1																																				

## 12.6 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

## 12.7 Conversion Table

H <sub>2</sub> S	10 moles	1%	10,000 ppm	14,000 mg/m <sup>3</sup>
<b>Pressure</b>	1 PSI	6.895 kPa	1 kPa	0.15 PSI
<b>Length</b>	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		
<b>Volume</b>	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
<b>Weight</b>	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
<b>Area</b>	1 acre	.404 hectare	1 hectare	2.471 acres
	1 section	640 acres	-	-
	¼ section	160 acres	-	-
	1 LSD	40 acres	-	-
<b>Temperature</b>	0° Celsius	32° Fahrenheit	0° Fahrenheit	-18° Celsius
<b>Other</b>	1 dek	10 <sup>3</sup> m <sup>3</sup>	-	-



## 12.8 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

## 12.9 Glossary

10 <sup>3</sup> m <sup>3</sup> (e <sup>3</sup> m <sup>3</sup> ):	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 <sub>2</sub> S or SO <sub>2</sub> .
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.
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.

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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 interchangeably. 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:	<p>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.</p> <p>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.</p> <p>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.</p>
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).

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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 <sup>3</sup> /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 38° C (34.8 psig at 100 °F). 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):	<p>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.</p> <p>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.</p>
Hydrogen Sulphide (H <sub>2</sub> S):	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 <sub>2</sub> S 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 <sub>2</sub> S) 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 <sup>3</sup> /s). The size of the EPZ is calculated based on the H <sub>2</sub> S release rate.



Hydrogen Sulphide (H <sub>2</sub> S) 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 <sup>3</sup> ). 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:	<p>Council of a city, town, village, or municipal district.</p> <p>An improvement district or special area.</p> <p>The Settlement Council or a settlement under the Métis Settlements Act.</p> <p>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.</p>
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 or vapour (per cent by volume in air) that burns or explodes if an ignition source is present at ambient temperatures.
m <sup>3</sup> :	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, C <sub>2</sub> H <sub>5</sub> SH.
Mmcf:	An abbreviation for one million cubic feet of gas.
mSv/h	<p>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.</p> <p>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.</p>

Mobile Air Monitoring Unit:	Personnel with sophisticated portable equipment capable of tracking substances such as H <sub>2</sub> S or SO <sub>2</sub> 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.
OH&S:	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: <ul style="list-style-type: none"> <li>• An injury that results in death.</li> <li>• A fracture or crush of a major bone.</li> <li>• Penetrating injury to eye, head, neck, chest, abdomen or groin.</li> <li>• Amputation other than a portion of a finger or toe.</li> <li>• Severe haemorrhaging - internal or external.</li> <li>• Third degree burn or any other degree burn with complications.</li> <li>• Unconsciousness.</li> <li>• An injury that results in paralysis (permanent loss of function or sense).</li> </ul>
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.

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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 <sub>2</sub> S), carbon dioxide (CO <sub>2</sub> ), and/or mercaptans over a specified level.
Sour Gas:	Natural gas, including solution gas, containing hydrogen sulphide (H <sub>2</sub> S).
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, Aboriginal 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.

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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 <sub>2</sub> ):	A colorless, water soluble, suffocating gas formed by burning sulphur in air; also used in the manufacture of sulphuric acid. SO <sub>2</sub> has a pungent smell similar to a burning match. SO <sub>2</sub> is extremely toxic at higher concentrations. The molecular weight of SO <sub>2</sub> 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.

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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.