



Canadian Natural

CANADIAN NATURAL RESOURCES LIMITED

CLEARHILLS

SUPPLEMENTAL EMERGENCY RESPONSE PLAN to Corporate (Core) Emergency Response Plan

DISCLAIMER:

In accordance with federal guidelines, portions of this Emergency Response Plan have been redacted as per the following:

- Canada Energy Regulator Order AO-001-MO-006-2016 s. 1.a.i.:
personal Information
- Canada Energy Regulator Order AO-001-MO-006-2016, s. 1.a.ii.:
facility / pipeline technical data, disclosure of which would risk security

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April 1, 2022

Canadian Natural Resources Limited 1-888-878-3700
24 Hour Emergency Number



EMERGENCY RESPONSE PLAN

Clearhills

Revision 15-0 | March 31, 2022

24-Hour Emergency 1-888-878-3700

AMENDMENT PROTOCOL

Annual updates are indicated by a consecutive 'revision' number dash zero (e.g. 7-0) while major revisions requiring a distribution will trigger a consecutive number change (e.g. 7-1).

Notification of errors and / or suggestions for improvement will be reviewed, addressed according to significance and considered for the next update by the EM Team. These notifications should include a) the ERP name, b) section(s) and page number(s) affected and c) the rationale for change and directed to:

CANADIAN NATURAL RESOURCES LIMITED

Email: [REDACTED]

Canadian Natural is committed to the continuous improvement of its documentation. For full details on Canadian Natural's Management of Change protocols, refer to Section 7 of the Corporate (Core) Emergency Response Plan.

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AMENDMENT RECORD

Date (YYYY/MM/D) ERP Planner	Rev	Revision Details	Annual Update (Y / N)	Date inserted in ERP (YYYY/MM/D)	Inserted / Replaced by (Name & Signature)
2022/03/31 [REDACTED]	15-0	<ul style="list-style-type: none"> Reviewed and updated gathering system, public and contact information where applicable Assets in Floral were excluded in the ERP due to area operation reorganization. ERP Name changed to "Clearhills". 	Y		
2021/03/31 [REDACTED]	14-0	<ul style="list-style-type: none"> Reviewed and updated gathering system, public and contact information where applicable 	Y		
2020/03/31 [REDACTED]	13-0	<ul style="list-style-type: none"> Reviewed and updated gathering system, public and contact information where applicable 	Y		
2019/03/29 [REDACTED]	12-0	<ul style="list-style-type: none"> Reviewed and updated gathering system, public and contact information where applicable 	Y		
2018/03/29 [REDACTED]	11-0	<ul style="list-style-type: none"> Reviewed and updated gathering system, public and contact information where applicable 	Y		
2017/03/30 [REDACTED]	10-0	<ul style="list-style-type: none"> Reviewed and updated gathering system, public and contact information where applicable 	Y		

The Clearhills ERP is Supplemental to Canadian Natural's Corporate (Core) Emergency Response Plan and covers the following:

AREA NAME	LOCATION	DESCRIPTION	REGULATOR ERP ID
Clearhills		Sour Production	
Clearhills		Propane (E2)	
Clearhills		Natural Gas Condensates (E2)	
Clearhills		CER Regulated Pipeline	
Clearhills		CER Regulated Pipeline	
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ALL HAZARDS IDENTIFICATION TABLE

Completed By:

POTENTIAL HAZARD	HAZARD IMPACTS:				RANK HAZARD IMPACT <i>(Low / Med / High)</i>	MITIGATION MEASURES AVAILABLE / NEEDED	
	PUBLIC	ENVIRONMENT		COMPANY ASSETS		CONTROLS / EQUIPMENT / RESOURCES	
		LAND USE AREAS	WILDLIFE / LIVESTOCK			<i>(Fundamental Reference Materials: SMS Section 22 / Safety Data Sheets (SDS) / ERP Manual / Emergency Response Guide / Guide to Safety & Compliance / First Responder's Guide / Site-Specific Drilling Plans / Asset Integrity Pipeline Maintenance Manual and Management Systems)</i>	
<input checked="" type="checkbox"/> Hydrogen Sulphide (H ₂ S) Release	Yes	Yes	Yes	Yes	Low (assets located in remote area, no known public / waterbodies / livestock within or close to EPZs)	<input checked="" type="checkbox"/> Personal Gas Monitor <input checked="" type="checkbox"/> Portable Gas Detector <input checked="" type="checkbox"/> SCBA <input type="checkbox"/> SABA <input checked="" type="checkbox"/> ESD Procedures <input checked="" type="checkbox"/> Emergency Planning Zone(s) <input checked="" type="checkbox"/> Ignition Resources – Equipment <input checked="" type="checkbox"/> Ignition Resources – Service Provider <input checked="" type="checkbox"/> Roadblock Kit(s) <input checked="" type="checkbox"/> Communication Plans – Public / Media <input type="checkbox"/> SCADA ESD <input type="checkbox"/> Other:	
<input type="checkbox"/> High Vapour Pressure (HVP) Pipeline Release <i>(pipelines that convey hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure of greater than 110 kPa absolute at 38°C)</i>						<input type="checkbox"/> SCADA ESD <input type="checkbox"/> Evacuation Procedures <input type="checkbox"/> Roadblock Kit(s) <input type="checkbox"/> Communication Plans – Public / Media <input type="checkbox"/> Emergency Response Plan <input type="checkbox"/> ESD Procedures <input type="checkbox"/> Emergency Planning Zone(s) <input type="checkbox"/> Ignition Resources – Equipment <input type="checkbox"/> Ignition Resources – Service Provider <input type="checkbox"/> Fire Extinguishers <input type="checkbox"/> Firefighting Equipment – e.g. shovels, axes, picks, water packs, wheeled extinguishers <input type="checkbox"/> Other:	



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	PUBLIC	ENVIRONMENT		COMPANY ASSETS		CONTROLS / EQUIPMENT / RESOURCES	
		LAND USE AREAS	WILDLIFE / LIVESTOCK			ACTIVE MITIGATIONS	
<p>Large Chemical Storage Hazards (CEPA – E2)</p> <p><input checked="" type="checkbox"/> <i>(large active storage vessels for NGLs, LPGs, LNGs, condensate, crude oil, hydrochloric acid, pentanes, etc.)</i></p>	Yes	Yes	Yes	Yes	Low	<p><input type="checkbox"/> Firefighting Equipment – e.g. shovels, axes, picks, water packs, wheeled extinguishers</p> <p><input checked="" type="checkbox"/> Fire Extinguishers</p> <p><input checked="" type="checkbox"/> Industrial Firefighters</p> <p><input checked="" type="checkbox"/> Roadblock Kit(s)</p> <p><input checked="" type="checkbox"/> Communication Plans – Public / Media</p> <p><input checked="" type="checkbox"/> Ignition Resources – Equipment</p> <p><input checked="" type="checkbox"/> Ignition Resources – Service Provider</p> <p><input checked="" type="checkbox"/> Evacuation Zone</p> <p><input checked="" type="checkbox"/> Evacuation Procedures</p> <p><input checked="" type="checkbox"/> ESD (Automatic Valves) Procedures</p> <p><input type="checkbox"/> SCADA ESD</p> <p style="text-align: center; background-color: #f2f2f2;">PASSIVE MITIGATIONS</p> <p><input type="checkbox"/> Secondary Containment – earth berms, dikes</p> <p><input checked="" type="checkbox"/> Separator / Surface Water Collection System</p> <p><input checked="" type="checkbox"/> Vessel Protection Systems – PSVs, high level alarm</p>	
<p>Petroleum Release / Spill</p> <p><input checked="" type="checkbox"/> <i>(on land or in water, includes all types of petroleum spills, gas releases, flammable vapours releases)</i></p>	Yes	Yes	Yes	Yes	Low	<p><input type="checkbox"/> SCADA ESD</p> <p><input checked="" type="checkbox"/> CiNQ – Environment Conventional – Thermal Intranet Site: <i>spill reporting procedures / docs</i></p> <p><input checked="" type="checkbox"/> TDG / LPG Emergency Responsibilities <i>(Guideline 10, Corporate ERP)</i></p> <p><input checked="" type="checkbox"/> WCSS / Other Spill Cooperative Manual</p> <p><input checked="" type="checkbox"/> WCSS / Other Water Control Point Location(s)</p> <p><input type="checkbox"/> Boom(s)</p> <p><input checked="" type="checkbox"/> Absorbent Material</p> <p><input checked="" type="checkbox"/> Roadblock Kit(s)</p> <p><input checked="" type="checkbox"/> Proper PPE</p> <p><input checked="" type="checkbox"/> Communication Plans – Public / Media</p> <p><input type="checkbox"/> Other:</p>	



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	PUBLIC	ENVIRONMENT		COMPANY ASSETS		CONTROLS / EQUIPMENT / RESOURCES	
		LAND USE AREAS	WILDLIFE / LIVESTOCK				
<input checked="" type="checkbox"/> Asset Fire	Yes	Yes	Yes	Yes	Low	<input type="checkbox"/> Firefighting Equipment – e.g. shovels, axes, picks, water packs, wheeled extinguishers <input checked="" type="checkbox"/> Fire Extinguishers <input type="checkbox"/> Fire Detection System (facilities) <input checked="" type="checkbox"/> Roadblock Kit(s) <input checked="" type="checkbox"/> Communication Plans – Public / Media <input checked="" type="checkbox"/> Evacuation Procedures <input checked="" type="checkbox"/> ESD Procedures <input type="checkbox"/> Other:	
<input checked="" type="checkbox"/> Wildfire <i>(can include grassfires, forest fires)</i>	n/a <small>(municipal / provincial jurisdiction)</small>	n/a <small>(municipal / provincial jurisdiction)</small>	n/a <small>(municipal / provincial jurisdiction)</small>	Yes	Med <small>(SMS Procedure 22.06)</small>	<input checked="" type="checkbox"/> ESD Procedures <input checked="" type="checkbox"/> Firefighting Equipment – e.g. shovels, axes, picks, water packs <input checked="" type="checkbox"/> Fire Extinguishers <input checked="" type="checkbox"/> Site Specific Wildfire Plans <input checked="" type="checkbox"/> Evacuation Procedures <input checked="" type="checkbox"/> Transportation Available <input checked="" type="checkbox"/> Provincial Wildfire Reporting Contact Numbers	
<input checked="" type="checkbox"/> On-Site Chemicals / Fuels <i>(at ERP's main facilities)</i>	n/a <small>(hazards contained within lease boundaries)</small>	n/a <small>(hazards contained within lease boundaries)</small>	n/a <small>(hazards contained within lease boundaries)</small>	Yes	Low	<input checked="" type="checkbox"/> Spill Reporting Procedures <input checked="" type="checkbox"/> SDS – accessible via online database, EOC, District offices <input checked="" type="checkbox"/> Fire Extinguishers <input checked="" type="checkbox"/> Absorbent Materials <input checked="" type="checkbox"/> Proper Storage <input checked="" type="checkbox"/> Proper PPE <input checked="" type="checkbox"/> SMS COP: Storage, Handling, Use / Disposal of Harmful Substances	
<input checked="" type="checkbox"/> Company Facility Isolation <i>(if access roads closed)</i>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	Yes	Low	<input checked="" type="checkbox"/> Shelter / Evacuation Procedures <input type="checkbox"/> Other Transportation Available – e.g. snowmobile, ATV, helicopter, boat, etc. <input checked="" type="checkbox"/> Area Work Alone Procedures <input checked="" type="checkbox"/> Communication Plans <input type="checkbox"/> Other:	



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	PUBLIC	ENVIRONMENT		COMPANY ASSETS		CONTROLS / EQUIPMENT / RESOURCES	
		LAND USE	WILDLIFE / LIVESTOCK				
<input checked="" type="checkbox"/> Communications Failure	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	YES	Low	<input checked="" type="checkbox"/> Landlines <input checked="" type="checkbox"/> Cell phones <input checked="" type="checkbox"/> 2-Way Radios <input checked="" type="checkbox"/> 2-Way Radios – Service Provider <input checked="" type="checkbox"/> Internal Communication / Notification System <input type="checkbox"/> Other:	
<input checked="" type="checkbox"/> Power Outages	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	YES	Low	<input type="checkbox"/> Back-up generator(s) <input checked="" type="checkbox"/> Communication systems <input type="checkbox"/> Other:	
<input checked="" type="checkbox"/> Severe Weather / Natural Disasters <small>(includes severe storms, blizzards, tornadoes, earthquakes, floods, landslides)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	YES	Low	<input checked="" type="checkbox"/> Communication Advisory <input checked="" type="checkbox"/> ESD Procedures <input checked="" type="checkbox"/> Area Working Alone Procedures <input checked="" type="checkbox"/> Shelter / Evacuation Procedures <input type="checkbox"/> Pumps <input type="checkbox"/> Other:	
<input checked="" type="checkbox"/> Pandemic <small>(reduced workforce)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	YES	Low	<input checked="" type="checkbox"/> Back-Up Resources for Continued Operations <input checked="" type="checkbox"/> Internal Communication / Notification System <input checked="" type="checkbox"/> Canadian Natural Pandemic Protocols – <i>Human Resources</i>	
<input checked="" type="checkbox"/> Security Threats <small>(theft / vandalism / violence / terrorism)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	n/a <small>(not EPZ related)</small>	YES	Low	<input checked="" type="checkbox"/> Internal Communication / Notification System <input checked="" type="checkbox"/> Roadblock Kits <input checked="" type="checkbox"/> Communication Plans – Public / Media <input checked="" type="checkbox"/> Evacuation Procedures <input checked="" type="checkbox"/> Information Systems: <i>Disaster Recovery Principles</i>	
<input type="checkbox"/> Other						<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

1 SITE-SPECIFIC DISTRIBUTION LIST

1.1 INTERNAL COPIES

COPY	RECIPIENT	POSITION	LOCATION	CONFIDENTIAL INFORMATION INCLUDED (✓)
1	[REDACTED]	Foreman	Fort St. John Office	✓
2	[REDACTED]	Assistant Foreman	Fort St. John Office	✓
3	[REDACTED]	Area Superintendent	Fort St. John Office	✓
Electronic (CiNQ) / ERP Maps	[REDACTED]	Manager, Fort St. John Field Operations	Fort St. John Office	
Electronic (CiNQ)	[REDACTED]	Safety & Compliance Coordinator	Fort St. John Office	
4	[REDACTED]	Area Landman	Fort St. John Office	✓
5	Clearhills Compressor Station	Compressor Station	[REDACTED]	
6	Clearhills Gas Plant	Office	[REDACTED]	
7	Clearhills Gas Plant	Camp	[REDACTED]	
8	District Office Incident Command Post	Refer to Superintendent's copy		
9	Emergency Response Mobile Cart		Calgary Office	✓
10	Calgary Emergency Operations Centre (EOC)		Calgary Office BHE 26002	✓
*	ERP Map(s) for Roadblock Kits	Floral Gas Plant	[REDACTED]	
*	ERP Map(s) for Roadblock Kits	Clearhills Gas Plant	[REDACTED]	
*	ERP Map(s) for Roadblock Kits	Sweeney Oil Battery	[REDACTED]	



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1.2 EXTERNAL COPIES

COPY #	RECIPIENT	ORGANIZATION	LOCATION
Email	Secretary of the Board cc Emergency Management & Security Program Support	Canada Energy Regulator	[REDACTED]
11	CER – Hard Copy		517 – 10 th Avenue SW Calgary, AB T2R 0A8
CD	CER		
12	Emergency Response and Safety Inspector	British Columbia Oil and Gas Commission	6534 Airport Road Fort St. John BC V1J 4M6
eSubmission	British Columbia Oil and Gas Commission	British Columbia Oil and Gas Commission	[REDACTED]
DDS	Alberta Energy Regulator	Alberta Energy Regulator	[REDACTED]
SWIM	E2 Plan registration only <i>(full copy not required)</i>	Environment and Climate Change Canada	Public Inquiries Centre 12 th Floor, Fontaine Building 200 Sacré-Coeur Boulevard Gatineau QC, K1A 0H3
Email	Deputy Director of Emergency Management	Clear Hills County	Box 240 Worsley AB T0H 3W0 [REDACTED]
Email	General Manager of Community Services	Peace River Regional District	[REDACTED]
Email	North Zone Manager, Environmental Public Health	AHS – North Zone	[REDACTED]

CD	<i>Electronic copy on CD</i>
eSubmission	<i>Electronic copy submitted via British Columbia Oil and Gas Commission's online submission portal</i>
DDS	<i>Electronic copy uploaded via Alberta Energy Regulator online submission system</i>
Email	<i>Electronic copy provided by email</i>
SWIM	<i>Single Window Information Management system under Environment and Climate Change Canada (ECCC)</i>

EXTERNAL ERP DISTRIBUTION DISCLAIMER:

Site-Specific ERPs are forwarded electronically while the Corporate ERP can be found on our website here: <https://www.cnrl.com/corporate-responsibility/health-and-safety/emergency-management>

The following stakeholders who are impacted by an Emergency Planning Zone have been offered an information package as part of the consultation process if applicable:

- Local Indigenous Nations
- Residents / Businesses
- Public Facilities
- Local Airport Operators
- Registered Trappers / Guide Outfitters
- Grazing Lease Holders
- Grazing Reserves
- Forestry Management Areas
- Rights Holders

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2 GENERAL INFORMATION

2.1 INTRODUCTION AND SUMMARY

2.1.1 FACILITY - GENERAL INFORMATION LOCATION

FACILITY LOCATION	Clearhills Gas Plant [REDACTED]	
PHONE NUMBERS	NUMBER	DESCRIPTION
	[REDACTED]	Clearhills Plant [REDACTED]
	[REDACTED]	24-Hour On-Call Phone

DISTRICT OFFICE LOCATION	Fort St. John Office	
PHONE NUMBERS	NUMBER	DESCRIPTION
	250-785-3085	Office
	250-785-3055	Fax
	250-263-2019	24-Hour On-Call Phone

2.1.2 INCIDENT COMMAND POST (ICP) / EMERGENCY OPERATIONS CENTRE (EOC)

OFFICE LOCATION	Fort St. John District Office	
STREET ADDRESS	6744 Airport Road Fort St. John BC V1J 4H9	
MAILING ADDRESS	Bag 6450 Fort St. John BC V1J 4H9	
PHONE NUMBERS	250-785-3085	Office
	250-785-3055	Fax
	250-263-2019	On-Call Phone

2.1.3 SAFE LOCATIONS

NAME	LOCATION
On-Site Safe Location (Muster Area):	Upwind side of incident
Off-Site Safe Location (Staging Area):	To be determined at time of incident

2.1.4 GENERAL LAND USE AND POPULATION DENSITY

Local Municipality	Municipal District of Clear Hills Peace River Regional District	
Area Land Use	Hunting, trapping, ranching and oil and gas operations	
POPULATION DENSITY (WITHIN EPZ)		
NUMBER	TYPE	DESCRIPTION
3	Residences	Section 4
3	Businesses / Organizations	Section 4
0	Public Facilities / Recreational Areas	
4	Trappers / Guide Outfitters	See Section 4
0	Grazing Leases / Reserves	See Section 4
0	Forest Management Areas	See Section 4
0	First Nations	
Various	Lakes / Rivers	Little Clear River and several unnamed tributaries
0	Public Highways	
0	Other (Railway, logging, etc.)	

2.1.5 EMERGENCY & ROADBLOCK EQUIPMENT

2.1.5.1 Emergency Equipment

TYPE	QUANTITY	LOCATION / NOTES
Burn Kit	2	Clearhills plant [REDACTED]
Eye Wash Station – 1 litre bottle	Variable	Osborn office
Eye Wash Station – 15 min flow	Variable	19 - Clearhills plant [REDACTED] 2 - Clearhills compressor station [REDACTED]
First Aid Kit	Variable	Trucks Clearhills plant [REDACTED] Osborn office
First Aid Room	-	
First Aid Station	1	Clearhills plant [REDACTED]
Fire Blanket	-	
Firefighting Hand Tools (<i>e.g. shovels, axes, picks, hand pump water packs, etc</i>) - minimum requirements in place for different provinces (see Corp ERP, Section 2.2.4)	-	
Handheld Fire Extinguisher	Variable	Throughout Clearhills plant [REDACTED] Clearhills compressor station [REDACTED] operator's truck
Ignition Equipment	-	
Personal Gas Monitor	5	operator's truck plus 2 spares
Portable Gas Detector	-	
Portable Spill Response Kit	2	Clearhills gas plant shop
Self-Contained Breathing Apparatus (SCBA)	17	Clearhills [REDACTED] plant Clearhills [REDACTED] compressor operator's truck
Spill Response Trailer	-	Stored at: None located on site Nearest CNRL Trailer(s): - Progress [REDACTED] GP
Supplied Air Breathing Apparatus (SABA)	-	
Wheeled Fire Extinguisher (150 - 300 lb)	-	

2.1.5.2 Roadblock (EPZ Isolation) Equipment

Roadblock locations will be determined at the time of an incident. Refer to Corporate (Core) Emergency Response Plan – Public Protection Measures for isolation procedures.

ROADBLOCK KIT CONTENTS	QUANTITY	LOCATION
3 triangular flare / reflector kits 1 traffic vest (mesh with reflective striping) 1 Stop / Slow paddle 3 traffic cones 1 30-minute flare with spike 1 flare gun with flares 1 6-volt flashlight with spare battery 1 12-volt spotlight 1 roll of Caution tape 1 windsock and stand - clipboard, pencils, paper - ERP map(s)	3	1 at Floral [REDACTED] Gas Plant 1 at Clearhills [REDACTED] Gas Plant 1 at Sweeney [REDACTED] Oil Battery

2.1.6 EXTERNAL EMERGENCY RESPONSE PLANS / MUTUAL AID

Canadian Natural maintains emergency response support / mutual aid understandings with local authorities impacted by this ERP and information from these understandings are included in the sections below. These understandings are maintained by annual consultations; consultation forms are filed separately with the Emergency Management group and are not included in this plan. Consultation forms are used to:

- Collect contact information for emergency notification and updating purposes
- Inform government / agency / emergency responder of Canadian Natural practices and procedure to be followed
- Make available relevant information consistent with that which is specified in our Emergency Response Plan (ERP) to the government / agency / emergency responder
- Clarify roles, responsibilities and capabilities of both parties, including support and / or additional aid from agency
- Inform the government / agency / emergency responder of the potential hazards of Canadian Natural facilities
- Inform government / agency / emergency responder of Canadian Natural's risk controls and mitigation activities
- Collect the authorization signature of the relevant agency representative

2.1.6.1 External Emergency Response Plans - Local Municipalities

Clear Hills County

Consulted March 15, 2021 via email with [REDACTED]

Roles and Responsibilities

Clear Hills County:

- Initiates and manages the local disaster services response in accordance with County Policy.
- May dispatch representative(s) to the Government's Off-Site Emergency Operations Centre.
- Ensures all local emergency and public information services are available in accordance with County Policy (Public Information Releases will be coordinated with the company's Public Information Officer).
- If required, activates Municipal Emergency Operations Centre (MEOC) and coordinates activities at this centre. The MEOC is available to the company for use as a Regional Emergency Operations Centre (REOC) subject to limitations as may be imposed by Clear Hills County due to current operations requirements at the time.
- Upon request, may assist with set up and administration of Reception Centre. May assist with arrangement of temporary accommodations for residents who have been evacuated in accordance with County Policy.
- May assist with set up and maintenance of roadblocks in accordance with County Policy.
- May assist with fire protection in accordance with County Policy in areas where accessible.
- If necessary, may declare a local state of emergency to provide local authorities with special powers.
- Supports the company in dealing with the emergency in accordance with County Policy.

Resources

There is one County Fire Department, located at Worsley and three Fire Departments on contract from Hines Creek, Fairview and Berwyn for the Hines Creek and east areas, each with approximately 20 volunteer firefighters.

Note: The Fire Departments are not equipped for Industrial Fire Protection and would be responsible for anything off-site or outside of the Emergency Planning Zone. Some Fire Department resources may be useful for on-site actions such as water tank trucks, potable tanks, etc. and may be made available if requested. Certain areas of Clear Hills County have limited access or are extremely remote from any Fire Department.

Alberta Energy Regulator – Peace Wildfire Management Area is responsible for wildland fire protection in these areas. The County has no Special Constables. All policing duties are covered by the RCMP, Fairview Detachment. The Public works Department employs about six personnel, which expands to 20 employees during the summer.

Emergency Medical Services are under Alberta Health Services; dial 9-1-1.

Peace River District (PRRD)

Consulted October 20, 2021 via email [REDACTED], General Manager of Community Services

The Peace River Regional District will be notified at any time an emergency occurs that involves the evacuation of residents.

It is essential that Canadian Natural's Incident Commander or designate maintain communication with PRRD's Protective Services Manager to ensure that responses are coordinated.

The PRRD has a formal Emergency Management Plan that outlines the measures and sources of assistance that can be obtained to support emergency response efforts within their jurisdiction. Upon request from the Oil and Gas Commission (OGC), the Regional District may address emergency response capabilities, expectations and preparedness. If required, the Regional District may activate their emergency plan in order to:

- Dispatch representative(s) to the EMBC's Emergency Operation Centre (EOC), if established
- Provide support to ensure notifications of endangered area residents
- Provide support to coordinate and deliver emergency social services to evacuated residents
- If necessary, declare a State of Local Emergency and issue an evacuation Alert, Order and Rescind
- Assist in a public information service; joint OGC, Industry, local government
- Provide building re-entry procedures

Emergency Services / Equipment:

The PRRD provides enhanced 9-1-1 Emergency Services to all municipalities and electoral areas of the Regional District. The 9-1-1 Emergency Services also includes fire / rescue radio dispatch for eleven fire departments throughout the region; fire dispatch centers are located at the Dawson Creek and Fort St John Fire Departments.

Local RCMP Detachments – the Fairview (AB) and Fort St. John (BC) RCMP detachment:

- May assist with initial area isolation, evacuation and / or assistance with closure of roads
- Provides security, traffic and crowd control
- May assist in search and rescue activities
- Maintains law and order

2.1.6 EXTERNAL EMERGENCY RESPONSE PLANS / MUTUAL AID (CONTINUED)

2.1.6.2 External Emergency Response Plans: Local Health Services

Alberta Health Services – North Zone

Consulted October 6, 2021 via email with [REDACTED], AHS-Environmental Public Health Inspector

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 EPH 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. 9-1-1 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 resources permit.
- 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.
- In consultation with the Zone Medical Officer of Health (MOH) provide guidance to stakeholders on substances that may affect public health, including Alberta Health and Wellness acute exposure health effects for hydrogen sulphide and sulphur dioxide.
- 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.

2.1.6 EXTERNAL EMERGENCY RESPONSE PLANS / MUTUAL AID (CONTINUED)

2.1.6.2 External Emergency Response Plans: Local Health Services (continued)

Health Emergency Management British Columbia (HEM BC) / Northern Health (NH)

Consulted August 16, 2021 via email with [REDACTED], Director, HEMBC

Health Emergency Management BC, North (HEMBC)

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

Roles and responsibilities:

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

Northern Health (NH)

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

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

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

Roles & responsibilities - PREPAREDNESS (PRE-EVENT):

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

Roles & responsibilities - RESPONSE:

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

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



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2.1.6.3 Mutual Aid

Canadian Natural does not currently participate in any formal mutual aid agreements for this ERP; however, reciprocal emergency response assistance on a service level to other industrial operators may be possible in the event of an emergency, depending on equipment / personnel resources and availability.

Operated Third Party Assets

In an emergency involving another licensee whose assets are operated by Canadian Natural, Canadian Natural would provide First Responder actions, with an immediate notification to these well or pipeline licensees to activate their ERP:

OPERATOR	ERP NAME	EMERGENCY NUMBER
Enercapita Energy Ltd.	[REDACTED]	1-866-556-7838
Spartan Delta Corp.	[REDACTED]	403-266-8670

Non-Operated Third Party Tie In Assets

Where third party assets are tied into this plan's facility(ies) but not operated by Canadian Natural, the licensee will have their own ERP and would be responsible for emergency response actions involving their assets.

OPERATOR	ERP NAME	EMERGENCY NUMBER
NA		

2.1.7 DRIVING DIRECTIONS AND MAP

2.1.7.1 Driving Route

CER PIPELINES: Driving directions to staging area location will be determined by field operations at time of incident.

From the Town of Worsley to Clearhills plant

- [REDACTED]

From Fort St. John to Osborn

- [REDACTED]
- [REDACTED]
- [REDACTED]

2.1.7.2 Proximity To Nearest Urban Centre

Worsley is located approximately [REDACTED]

Fort St John is located approximately [REDACTED]

2.1.7.3 Latitude and Longitude Coordinates

FACILITY	LATITUDE (N)	LONGITUDE (W)
Clearhills [REDACTED] gas plant	[REDACTED]	[REDACTED]
Osborne [REDACTED] compressor	[REDACTED]	[REDACTED]

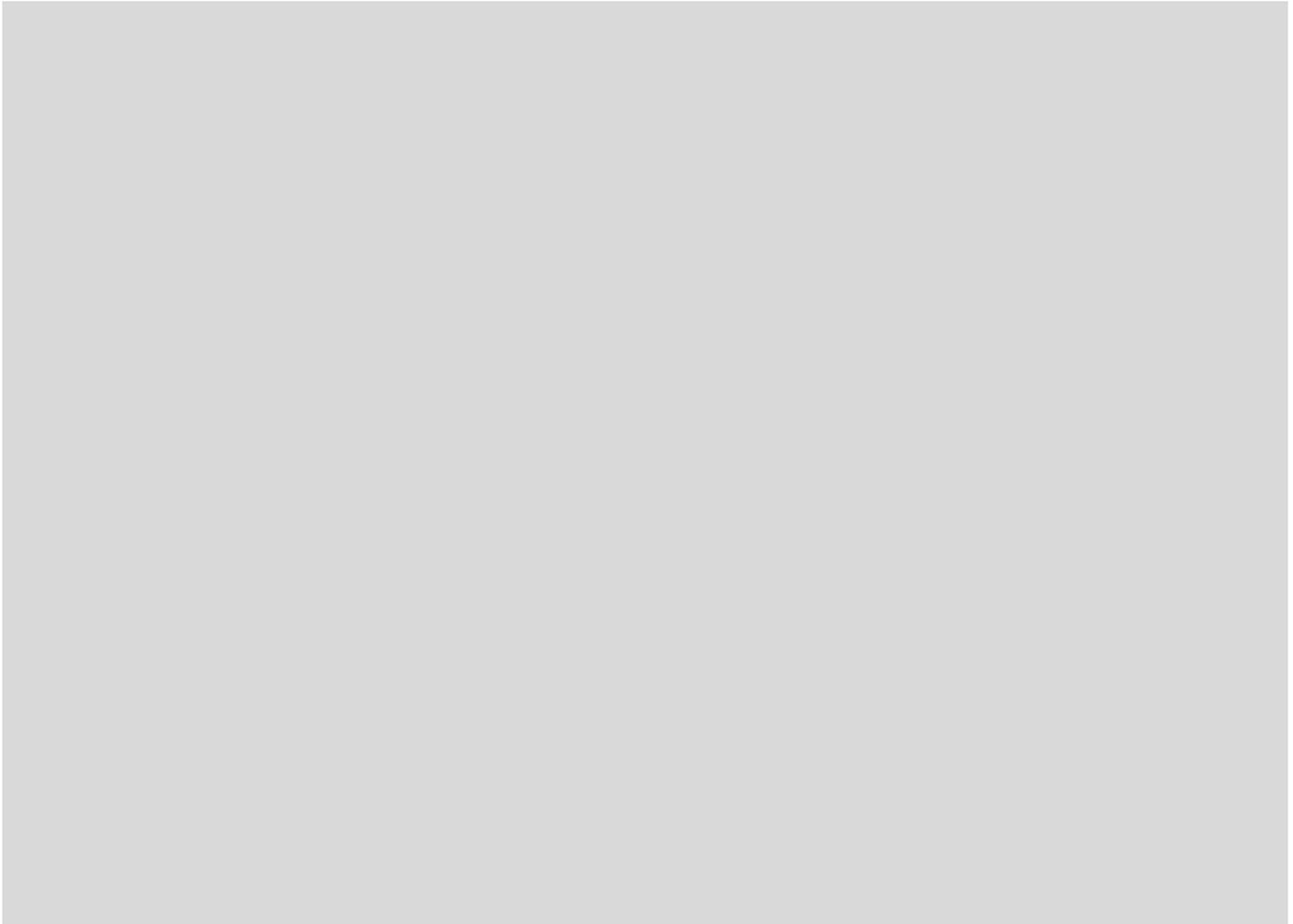


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2.2 EMERGENCY DETECTION, NOTIFICATION AND CONFIRMATION SYSTEMS

PRESENT AT CLEARHILLS	TYPE	DESCRIPTION
Y	24-Hour Emergency Telephone Number	A 24-hour emergency number is posted at all facilities and pipeline crossings. Any operator, landowner or citizen can call to notify Canadian Natural of an emergency situation. On-call Canadian Natural personnel will take appropriate actions to manage the emergency.
Y	SCADA System	Supervisory Control and Data Acquisition (SCADA) – Electronic monitoring equipment on wells throughout the gathering system will transmit signals to a central control panel. SCADA systems trigger alarm and call-out systems and may have ESD capabilities.
Y	Alarm and Call-out Process	System monitoring equipment throughout facilities will trigger an alarm to an answering service that will use a call-out system to notify applicable operators.
Y	Aerial Surveillance	Pipelines may be surveyed on a regular basis to detect leaks.
Y	Landowner Complaint System	Landowners with concerns, or who have identified potential problems, can call the facility directly or the 24-hour emergency number.
Y	Operator Inspections	Operators do regular inspections of pipelines, wells and facilities and will report any abnormality they detect.
Y	24-Hour Manned Stations	Some Canadian Natural facilities are monitored 24 hours a day.
Y	H ₂ S Monitors – Continuous	Continuous H ₂ S monitoring equipment is strategically located at all sour facilities. Monitors are calibrated at regular intervals and are designed to activate a call-out procedure to operational personnel if H ₂ S levels are detected at the facility. If H ₂ S levels reach a predetermined level, the system is designed to activate the Emergency Shutdown (ESD) and shut down the facility.
Y	Gas Monitors – Handheld	Canadian Natural personnel are equipped with personal H ₂ S / LEL monitors for early detection.
Y	Gas Detection Equipment	Continuous Combustible Gas Detectors are located throughout the facility. The detectors alarm at 20% lower explosion limit (LEL). At 40% LEL, the detectors engage a facility shut down.
Y	Fire Detection Equipment	An ultraviolet fire detection system, “Fire Eyes,” may be installed throughout facilities.
Y	Leak Detection System	Continuous monitoring systems are installed on several pipeline systems, including but not limited to water injection, oil emulsion and ESD risers. These systems can be based on different methodologies such as pipeline or differential pressure, pressure rate of change (ROC), flow rate imbalance, ROW monitoring, etc.

2.3 COMMUNICATIONS

The primary means of communications between the Emergency Response Team personnel and the various Operations Centers / Command Posts will be by cellular telephone. Portable radios will be utilized if practical. Applicable radio frequencies are listed below.

2.3.1 COMMUNICATION EQUIPMENT

EQUIPMENT	COMMENT
Cell Phone	Each operator has a cellular phone. Cell coverage in the area is reliable; however some dead spots may occur in lower lying area. In these cases, signals can be re-established by moving to higher ground.
Two-Way Radios	Two-way radios are installed in all operator trucks with base radios on Clearhills channel as noted below
Land Line	There is a land line at the facility – see Section 2.1.1

2.3.2 RADIO FREQUENCIES

NAME	RECEIVE NUMBER	TRANSMIT NUMBER
Clearhills		

2.4 SPILL RESPONSE

Canadian Natural has implemented company spill response trailers to supplement WCSS equipment caches and / or developed additional water control points for spill mitigation. Company and / or WCSS equipment and spill contingency plans will guide initial emergency response actions while long term spill containment and recovery activities will be performed by established spill response consultants / providers contracted and directed by Canadian Natural. A list of these providers can be found in Contract Services in Section 3.

NOTE: WCSS does not provide human resources for spill response however other neighboring industrial operators or other WCSS members may be of assistance.

For spill response, consult with Environmental Coordinator and applicable WCSS Spill Contingency manual. Also refer to CiNQ:

Corporate > Environmental Conventional-Thermal > Job Instructions > [*Spill Response Equipment and Contact List*](#)

For full spill response procedures, guidelines and methods see applicable WCSS Spill Contingency manual (recommended) or Procedure 5: Hazardous Product Release / Spill Control (SMS 22.05) on CiNQ or in purple tabbed Hazard Response Procedures section in the Corporate ERP.

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3 CONTACTS AND TELEPHONE LISTS

3.1 COMPANY EMERGENCY CONTACTS

POSITION	NAME	CELL	OFFICE
Area Foreman			
Assistant Foreman			
Operations Superintendent			
Area Safety & Compliance Coordinator			
Environmental Field Coordinator - AB			
Environmental Field Coordinator - BC			
Surface Landman			
Manager, Corporate Safety & Emergency Mgmt			
Emergency Management Lead			
Fort St. John Field Operations Manager			
VP West Field Operations			
Calgary Command Centre - Bankers Hall East (BHE)	Room 26002	n/a	

3.2 MANDATORY NOTIFICATIONS (SEE EMERGENCY NOTIFICATION DETAILS CHART)

NAME	LOCATION	TELEPHONE
BRITISH COLUMBIA		
FOR CER PIPELINE INCIDENTS, CALL: Transportation Safety Board (TSB) *TSB will contact CER <i>See Forms & Guidelines section, Corporate ERP: Guideline 8: CER Event Reporting Guidelines</i> NOTE: CER = Canada Energy Regulator OERS = CER's Online Event Reporting System	For "Immediately Reportable Events" within three (3) hours of discovery: a) call TSB 24-Hour Reporting Hotline and b) report via OERS For all other events, within 24 hours of discovery: a) report via OERS <i>If OERS is unavailable, report by calling TSB 24-Hour Reporting Hotline</i>	24-Hour 1-819-997-7887
		https://apps.cer-rec.gc.ca/ers
Emergency Management BC (EMBC) <i>EMBC will contact BC Oil & Gas Commission (OGC)</i> Use this number to also verbally report an Environmental Emergency (E2) ----- <ul style="list-style-type: none"> • <i>Written notice (Schedule 8) made via SWIM * ASAP by Environmental Coordinator</i> • <i>Environment Canada notified by EMBC</i> 	Province-Wide	For all emergencies 24-Hour Incident Reporting 1-800-663-3456 * For E2 Emergency Reporting only: <i>Single Window Information Management (SWIM)</i> https://ec.ss.ec.gc.ca
Peace River Regional District	Dawson Creek BC	Toll-free 1-800-670-7773
Health Emergency Management BC (HEMBC)	Northern BC	24-Hour Emergency On-Call [REDACTED]
		Non-emergency inquiries only (HEMBC Director) [REDACTED]
RCMP	Fort St. John BC	24-Hour 9-1-1



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NAME	LOCATION	TELEPHONE	
ALBERTA			
FOR CER PIPELINE INCIDENTS, CALL: Transportation Safety Board (TSB) *TSB will contact CER <i>See Forms & Guidelines section, Corporate ERP: Guideline 8: CER Event Reporting Guidelines</i> NOTE: CER = Canada Energy Regulator OERS = CER's Online Event Reporting System	For "Immediately Reportable Events" within three (3) hours of discovery: a) call TSB 24-Hour Reporting Hotline and b) report via OERS For all other events, within 24 hours of discovery: a) report via OERS <i>If OERS is unavailable, report by calling TSB 24-Hour Reporting Hotline</i>	24-Hour	1-819-997-7887
		https://apps.cer-rec.gc.ca/ers	
Energy & Environmental Response Line <i>Alberta Environment / Alberta Energy Regulator (AER)</i> Use this number to also verbally report an Environmental Emergency (E2) ----- <ul style="list-style-type: none"> • Written notice (Schedule 8) made via SWIM * ASAP by Environmental Coordinator • Environment Canada notified by EMBC 	Province-Wide	For all emergencies 24-Hour Incident Reporting	1-800-222-6514
		* For E2 Emergency Reporting only: <i>Single Window Information Management (SWIM)</i> https://ec.ss.ec.gc.ca	
Clear Hills County	Worsley AB	24-Hour	780-835-8097
Alberta Health Services <i>* Ask for Environmental Public Health On Call</i>	Province-Wide	24-Hour	
		Email	
RCMP: Fairview Detachment	Province Wide		9-1-1

3.3 ROAD CLOSURE CONTACTS

Dispatch Roadblocks immediately and notify the following (no Closure Orders required for emergencies):

	ROAD TYPE	AGENCY	TELEPHONE	
BC	Provincial Highway / Roads <i>(highways with 1, 2, 3 digits or local names)</i>	1. RCMP / Local Police – advise of situation / request presence	24-Hour	9-1-1
		2. Traffic Management Centre BC – advise of situation / pending roadblocks	24-Hour	1 866 707-7862
		3. Highway Maintenance Contractor – advise of situation / roadblock locations	Argo Road Maint	1-800-663-7623
	Dawson Road Maint		1-800-842-4122	
	Petroleum Development Roads (PDRS) Forestry Roads	1. RCMP / local police – advise of situation / roadblock locations; request presence 2. Notify of closures as needed: - for PDRs, notify OGC directly - for forestry roads, notify Ministry of Forests, LNRORD Resource District office SEE PROVINCIAL GOVERNMENT CONTACTS TABLE BELOW	24-Hour	9-1-1



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	ROAD TYPE	AGENCY	TELEPHONE	
AB	- for major highways (1, 2 or 3 digit highways)	RCMP – advise of situation / roadblock locations; request presence	24-Hour Emergency	9-1-1
	- for other licensee PDRs and / or forestry roads	AER / Alberta Environment & Parks	24-Hour	1-800-222-6514

3.4 WATER INTAKE CLOSURE CONTACTS

** NOT APPLICABLE **

3.5 PROVINCIAL GOVERNMENT CONTACTS

NAME	LOCATION	TELEPHONE	
BRITISH COLUMBIA			
Emergency Management BC (EMBC) <i>EMBC will contact BC Oil and Gas Commission (OGC)</i> <i>For E2 emergencies, call and written report* required</i>		For all emergencies 24-Hour Incident Reporting	1-800-663-3456
		* For E2 Emergency Reporting only: <i>Single Window Information Management (SWIM)</i> https://ec.ss.ec.gc.ca	
Forests, Lands, Natural Resource Operations & Rural Development (LNRORD), Ministry of <i>Natural Resource Districts</i>	Fort Nelson NRD	Fort Nelson Office	250 774-5511
	Peace NRD	Dawson Creek Office	250-784-1200
Health Emergency Management BC (HEMBC) Non-emergency inquiries only (<i>HEMBC Director</i>)	Northern BC	24-Hour Emergency On Call	
Highway Maintenance Service Area 21 – South Peace <i>Argo Road Maintenance (South Peace) Inc.</i>	Dawson Creek / Pouce Coupe BC	Emergency	1-800-663-7623
		Road & Weather Conditions: www.drivebc.ca	
Highway Maintenance Service Area 22 – North Peace <i>Dawson Road Maintenance Ltd.</i>	Fort St. John BC	Emergency	1-800-842-4122
		Road & Weather Conditions: www.drivebc.ca	
Report a Wildfire	Province-Wide	24-Hour	1-800-663-5555
		Cell (Telus)	*5555
Report All Poachers and Polluters (RAPP)	Province-Wide	24-Hour	1-877-952-7277
		Cell (Telus)	*7277
WorkSafeBC <i>(Area Safety & Compliance Coordinator only)</i>	Province-Wide	Worksite Emergency 24-Hour	1-888-621-7233



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NAME	LOCATION	TELEPHONE	
ALBERTA			
Alberta EDGE – Center for TDG <i>(Environmental and Dangerous Goods Emergencies)</i>	Province-Wide	24-Hour	1-800-272-9600
Alberta Emergency Management Agency (AEMA) <i>Provincial Operations Centre (POC)</i>	Province-Wide	24-Hour	1-866-618-2362
Alberta Energy Regulator (AER) <i>* notify when blocking petroleum development and / or forestry roads</i>	Energy & Environmental Emergency or Complaint	24- Hour	1-800-222-6514
Alberta Environment and Parks <i>* notify when blocking roads through or adjacent to Crown Land</i>			
Alberta Environment & Parks <i>Parks Fish and Wildlife Land Water</i>	Report a Poacher	24-Hour	1-800-642-3800
		Telus Mobile	#3800
	Report a Wildfire	24-Hour	310- 3473 (FIRE)
Alberta Health Services <i>* Ask for Environmental Public Health On Call</i>	Province-Wide	24-Hour	
		Email	
Alberta Transportation <i>Provincial Highway Road Closures Support</i> 1. call 9-1-1 / RCMP 2. call nearest Region / District Office <i>Highway maintenance contractors are responsible for maintenance activities including highway patrolling and emergency duties</i> Road & Weather Conditions: 511.alberta.ca	Grande Prairie District Office	Grande Prairie	780 538-5310
Occupational Health & Safety <i>(Area Safety & Compliance Coordinator only)</i>	Province-Wide	24-Hour	1-866-415-8690
Workers' Compensation Board	Province-Wide	24-Hour	1-866-922-9221

3.6 EMERGENCY SERVICE NUMBERS

SERVICE	LOCATION	TELEPHONE NUMBER	
BRITISH COLUMBIA			
RCMP	Fort St. John BC	24-Hour	9-1-1
		Office	250-787-8100
Hospital	Fort St. John BC	24-Hour	250-262-5200
British Columbia Ambulance Service	Province-Wide	Emergency	9-1-1
		Toll Free	1-800-461-9911
		Cell/ SAT Phone/ Outside BC	250-374-5937
Fire Department	Fort St. John BC	24-Hour	9-1-1



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		Office	250-785-0800
ALBERTA		ALL EMERGENCY SERVICES CALL 9-1-1	
RCMP	Grande Prairie AB	Office	780-830-5700
Hospital	Grande Prairie AB	24-Hour	780-538-7100
Ambulance	Grande Prairie AB	Office	780-513-5290
Fire Department	Grande Prairie AB	Office	780-538-0393

3.7 TDG / LPG EMERGENCY NUMBERS

NAME	CONTACT	TELEPHONE NUMBER
FOR TDG EMERGENCIES Operations to contact ERAC only if carrier driver is unable to contact supervisor		
1) Carrier is responsible for contacting ERAC 2) ERAC will contact company on call contacts (Safety Leads) for ERAP activation 3) ERAC will notify and report to Transport Canada		
For Emergencies involving CNRL Propane & Butane Emergency Response Assistance Canada (ERAC) Canadian Natural ERAP Number: [REDACTED]	24-Hour	1-800-265-0212
For TDG emergencies other than CNRL Product - contact ERAC	24-Hour	1-800-265-0212
For Information Only: CANUTEC	Toll free	1 888 226-8832
	Call Collect	613 996-6666
	Cell	*666

3.8 MUNICIPAL GOVERNMENT CONTACTS

NAME	LOCATION	TELEPHONE NUMBER
Clear Hills County	Worsley AB	24-Hour 780-835-8097
Peace River Regional District	Dswson Creek BC	24-Hour 1-800-663-3456

3.9 FEDERAL GOVERNMENT CONTACTS

NAME	LOCATION	CONTACT INFORMATION
FOR CER PIPELINE INCIDENTS, CALL: Transportation Safety Board (TSB) *TSB will contact CER <i>See Forms & Guidelines section, Corp ERP: Guideline 8: CER Event Reporting Guidelines</i> NOTE: CER = Canada Energy Regulator OERS = CER's Online Event Reporting System	For "Immediately Reportable Events" within three (3) hours of discovery: a) call TSB 24-Hour Reporting Hotline and b) report via OERS	24-Hour 1-819-997-7887 https://apps.cer-rec.gc.ca/ers
	For all other events, within 24 hours of discovery: a) report via OERS <i>If OERS is unavailable, report by calling TSB 24-Hour Reporting Hotline</i>	https://apps.cer-rec.gc.ca/ers
Environment Canada	* will be notified by respective provincial govt agency – see Section 3.2	
Fisheries & Ocean Canada <i>Report damage to fish habitat – contact Fish and Fish Habitat Protection Program by province</i>	Alberta, Manitoba, Saskatchewan, Northwest Territories	1 855 852-8320
	British Columbia	1 866 845-6776
Health Canada	BC – FNIH First Nations Health Authority	Main 1-866-913-0033



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Department of Indigenous Services Canada, Environmental Public Health Services First Nations & Inuit Health Branch <i>For emergencies impacting First Nations and Indigenous communities (see Section 4)</i>	BC – EMBC (fanout)	24-Hour	1-800-663-3456
	AB - Environmental Health Officer (EHO)	24-Hour	
Indigenous Services Canada (ISC) Aboriginal Affairs & Northern Development Canada	Toronto Office	Toll Free	1-800-567-9604
NAV Canada – Flight Info Centre (FIC) To issue a NOTAM, have ready (if possible): - GPS coordinates, height, time frame	Nation wide	Toll Free Call Centre	1-866-992-7433

3.10 CONTRACT SERVICES

COMPANY	LOCATION	TELEPHONE NUMBER	
3.10.1 AIR QUALITY MONITORING (MOBILE)			
Emergency Management BC/ British Columbia Oil and Gas Commission <i>(contact if no contract services are available)</i>	Province-Wide, BC	24-Hour	1-800-663-3456
Alberta Energy Regulator <i>(contact if no contract services are available)</i>	Province-Wide	24-Hour	1-800-222-6514
Brogan Safety - SO ₂ monitors	Dawson Creek, Fort St. John, Grande Prairie, Whitecourt	Grande Prairie	780-539-9004
Firemaster Oilfield Services Inc.	BC, AB, SK	24-Hour	1-877-342-3473
HSE Integrated Ltd.	BC, AB, SK	24-Hour	1-888-346-8260
Trojan Safety Services	BC, AB, SK	24-Hour	250-785-9557
3.10.2 AIRCRAFT (FIXED WING) CHARTERS		CONTACT CORPORATE TRAVEL	
3.10.3 COMMUNICATIONS RENTAL EQUIPMENT			
Expert Mobile	Grand Prairie	24-Hour	780-539-3962
Vector Communications	Grand Prairie	24-Hour	780-532-2555
3.10.4 DRONE / UAV OPERATORS <i>(alphabetical by location)</i>			
Digital B Photography	Fort St John Grande Prairie	250-719-7469 https://www.digitalb.ca	
Red Hawk UAV Inc	Grande Prairie	780-933-4807 http://www.redhawkuav.ca	
Top-Line Surveys Ltd	Grande Prairie	780-882-7444 http://www.toplinesurveys.com/contact.html	



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COMPANY	LOCATION	TELEPHONE NUMBER	
3.10.5 FRESH WATER SUPPLIERS			
Aquatera	Grand Prairie	Distribution and Collection	780-882-7800
DINO's Potable Water	Grand Prairie	24 Hour	780-539-4302 780-766-3477
3.10.6 HELICOPTERS			
Bailey Helicopters	Fort Nelson Fort St. John (Head Office)		1-877-822-2245
Canadian Helicopters	Edmonton, Fort McMurray, Fort Nelson, Fort St. John, Grande Prairie, Norman Wells	24 Hours Emergency – Western Canada	1-780-429-6900
Yellowhead Helicopters	Fort St. John, BC Prince George (Ops Centre)		1-888-566-4401
3.10.7 SAFETY SERVICES			
Brogan Safety - SO ₂ monitors	Dawson Creek, Fort St. John, Grande Prairie, Whitecourt	Grande Prairie	780-539-9004
		Whitecourt	780-396-1005
Firemaster Oilfield Services Inc.	BC, AB, SK	24-Hour	1-877-342-3473
HSE Integrated Ltd.	BC, AB, SK	24-Hour	1-888-346-8260
Safety Boss Services	BC, AB	24-Hour	1-800-882-4967
Trojan Safety Services	BC, AB, SK	24-Hour	250-785-9557
United Safety Ltd.	BC, AB	24-Hour	1-800-432-1809
3.10.8 SPILL RESPONSE EQUIPMENT			
Clean Harbors	North America	24-Hour	1-800-645-8265
EnviroHazmat Emergency Response	BC, AB	24-Hour	1-866-249-7583
Gen7 Environmental Solutions	AB, SK	24-Hour	780-542-3676
GFL Environmental	North America	24-Hour	1-866-417-2797
North Shore Environmental Consultants	BC, AB, SK (small scale)	24-Hour	1-855-700-6732
QM Environmental	BC, AB, SK	24-Hour	1-877-378-7745
Rapid Response Industrial Group	Canada-wide	24-Hour	1-844-774-4911
Roy Northern Land and Environment	BC, AB	Fairview	780-835-2682
		FSJ	250-261-6644



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COMPANY	LOCATION	TELEPHONE NUMBER	
		Terrace	250-635-6973
SWAT Consulting	Canada-wide	24-Hour	1-866-610-7928
Western Canadian Spill Services (WCSS)	See WCSS section		
3.10.9 WELL BLOWOUT CONTROL			
Firemaster Oilfield Services Inc.	BC, AB, SK	24-Hour	1-877-342-3473
HSE Integrated Ltd.	BC, AB, SK	24-Hour	1-888-346-8260
Safety Boss Inc.	BC, AB	24-Hour	1-800-882-4967
3.10.10 WESTERN CANADIAN SPILL SERVICES (WCSS) COOP "8" & COOP "9" 24-HOUR EMERGENCY CONTACT 1-866-541-8888			
<i>Refer to Section 2 Emergency Equipment subsection for Canadian Natural spill response trailers</i>			
COOP "8"			
Co-op Custodian James Barnhill, Husky Energy	Equipment Location: Husky Oil Operations Yard / Rainbow Lake SE 10-10-109-08 W6M	Office	(780) 956-8052
		Cell	(780) 956-1814
		Email	james.barnhill@huskyenergy.com
Co-op Custodian Bruce Muzichuk, Muzzy's Contracting	Equipment Location: 1072 Aspen Drive Zama City, AB	Office	n/a
		Cell	780-926-9797
		24 Hour	n/a
Co-op Custodian Don Jaeger, CNRL Randy Matychuk, CNRL	Equipment Location: CNRL Chinchaga Gas Plant 1-24-96-05 W6M	Control Rm	780-836-3364 ext. 25
		Don Jaeger	780-836-6223
		Randy Matychuk	780-625-8642
COOP "9"			
Regional Equipment Custodian Shawn Doré, Clean Harbors Production Services	Equipment Location: Clean Harbors Surface Rentals 6715 - 85th Avenue Fort St. John, BC V1J 4J3	Office	(250) 785-4577
		Cell	(250) 261-9404
		24-Hour	n/a
Co-op Equipment Custodian Troyer Ventures Ltd	Equipment Location: 4850 - 46 Avenue Fort Nelson, BC V0C 1R0	Office	n/a
		Cell	n/a
		24-Hour	250-774-5332

NOTE: For spill response, consult with Environmental Coordinator. Also refer to CiNQ:

Corporate > Environmental Conventional-Thermal > Job Instructions > [*Spill Response Equipment and Contact List*](#)

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4 PUBLIC NOTIFICATIONS

4.1 NOTIFICATION PROCEDURES

4.1.1 TELEPHONE CALLERS

If an emergency occurs that involves only a few residents within the EPZ, the Public Safety Supervisor will designate Telephone Callers to relay messages of notification, shelter-in-place or evacuation. Refer to the Public Safety Supervisor and Telephone Caller roles in the Corporate ERP for procedures and scripts. (Forms 15, 16, 17, and 18)

Once all calls are made, the Public Safety Supervisor will review the contacted public within the EPZ and dispatch Rovers for those who requested assistance or were not reached by the telephone callers.

4.1.2 AUTOMATED PUBLIC NOTIFICATION SYSTEM (NOT APPLICABLE)

****NOT APPLICABLE FOR THIS AREA****

4.2 RECEPTION CENTRE(S)

Reception Centres have been pre-arranged as noted below. The Reception Centre chosen to send residents to will be dependent on the site of the emergency and which route is the safest for evacuating residents out of the Emergency Planning Zone.

RECEPTION CENTRE	LOCATION	TELEPHONE NUMBER	
Dunvegan Inn & Suites	9812 – 113 Street Fairview AB T0H 1L0	Main	780-835-5100
Northern Grand Hotel & Conference Centre	9830 – 100 Avenue Fort St. John BC V1J 1Y5	Main	250-787-0521
Worsley Gateway Inn	355 Secondary Hwy 726 Worsley AB T0H 3W0	Main	780-685-2080

4.3 RESIDENT INFORMATION

Confidential resident information will only be included in the main responders' Emergency Response Plans at the end of this Section, if applicable.

4.4 BUSINESS / PUBLIC FACILITY INFORMATION

Confidential business and public facility information will only be included in the main responders' Emergency Response Plans at the end of this Section, if applicable.

4.5 SPECIAL CONSIDERATIONS FOR EMERGENCY RESPONSE

4.5.1 LOCATING TRANSIENTS AND RECREATIONAL USERS

In an emergency situation, aerial surveillance should be considered for sweeping the area to look for individuals such as non-resident landowners, snowmobilers, hunters, backpackers, skiers or any other recreational transient activity. Helicopters and fixed wing contractors are listed in Contract Services Section under the Site Specific Emergency Contacts Tab in the manual.

NOTE: Helicopters only fly during daylight hours; an emergency situation that happens at night will require the services of the fixed wing company.

4.5.2 RECREATION AREA

There are various recreation sites inside the Emergency Planning Zones that should be checked to ensure that there are no members of the public on-site:

RECREATION TYPE	ERP MAP QUADRANT	LOCATION
Unnamed lake	Not available	

4.6 SCHOOLS DIVISION(S) / SCHOOL(S)

In the event of an emergency, the school division(s) listed below must be contacted. General school division policy defines that in an emergency situation, each division is responsible for children attending their schools until their parents / guardians are located. Private schools must be contacted directly. School children living within the EPZ attend the following schools:

SCHOOL DIVISION	TELEPHONE NUMBER	SCHOOL NAME
There are no school divisions affected by this ERP	Main Office	
	Cell Number	

4.7 INDUSTRIAL OPERATOR(S)

If an industrial operator is the first person to identify a problem or emergency involving Canadian Natural Facilities, their response will be to notify Canadian Natural immediately. If Canadian Natural personnel are the first people to identify a problem or an emergency, they will immediately notify all industrial operators within the determined EPZ. Whether or not assistance will be given by neighbouring industrial operators will depend on the resources of the company at the time. The following companies operate in the Emergency Planning Zone.

INDUSTRIAL OPERATOR NAME	OPERATIONS DESCRIPTION	TELEPHONE NUMBER	
TC Energy (formerly TransCanada)	If TC Energy is an operator in the area, EMAIL PIP to [REDACTED]		
	Pipelines	24-Hour Emergency	1-888-982-7222
Advantage Oil & Gas Ltd.	Wells/Pipelines	24-Hour Emergency	1-866-266-5623
AltaGas	Gas plant in the area	24-Hour Emergency	1-866-826-3830
Arc Resources Ltd.	Pipelines in the area	24-Hour Emergency	403-292-0434
Blue Range Resources Ltd.	Wells/Pipelines	Main	403-231-6361
Blue Sky Resources Ltd.	Pipelines in the area	24-Hour Emergency	1-844-514-2462
Bonavista Energy Corp	Wells/Pipelines	24-Hour Emergency	1-866-971-8317
BP Canada Energy Group	Wells/Pipelines	Main	403-233-1313
Conocophillips Canada Resources Corp.	Pipelines in the area	Main	403-233-4000
Enercapita Energy Ltd.	Pipelines in the area	Main	403-294-9199



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INDUSTRIAL OPERATOR NAME	OPERATIONS DESCRIPTION	TELEPHONE NUMBER	
Husky Oil Operations Limited (Cenovus)	Wells/Pipelines	24-Hour Emergency	1-877-458-8080
North River Midstream Inc.	Pipelines in the area	24-Hour Emergency	1-844-667-8477
Nova Gas Transmission Ltd. (Refer to TC Energy)	Pipelines in the area	24-Hour Emergency	1-888-982-7222
ORLEN Upstream Canada Ltd.	Pipelines in the area	24-Hour Emergency	1-866-835-6132
Pembina Pipeline Corporation	Pipelines in the area	24-Hour Emergency	1-800-360-4706
Ridgeback Resources Inc.	Pipelines in the area	24-Hour Emergency	1-866-413-7800
Spartan Delta Corp.	Wells/Pipelines	24-Hour Emergency	403-266-8670
Terra Energy Corp	Pipelines in the area	Main	403-699-7777
Tourmaline Oil Corp.	Wells/Pipelines	24-Hour Emergency	1-877-504-4252

4.8 TRAPPERS / GUIDE OUTFITTERS

The following information has been updated from the most current provincial government database. Where applicable, "N/A" indicates the information was 'not available' in this database (confidentiality laws) nor was available via data searches or public consultations. Rovers will be dispatched to search the area for transient activity when required.

REGISTERED AREA	NAME	ADDRESS	TELEPHONE NUMBER
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]

4.9 GRAZING LEASE(S) / RESERVE(S) AND OTHER LAND USE DISPOSITIONS

The following information has been updated from the most current provincial government database. Where applicable, "N/A" indicates the information was 'not available' in this database (confidentiality laws) nor was available via data searches or public consultations. Rovers will be dispatched to search the area for transient activity when required.

Land Use Disposition Types

FDL	Farm Development Lease	GRP	Grazing Permit	GRL	Grazing Lease
FGL	Forestry Grazing License	GRR	Provincial Grazing Reserve		

REGISTERED AREA	NAME	ADDRESS	TELEPHONE NUMBER
N/A			

4.10 FOREST MANAGEMENT AREA(S)

REGISTERED AREA	NAME	ADDRESS	TELEPHONE NUMBER
N/A			

4.11 FIRST NATIONS / INDIGENOUS NATIONS

NAME	CONTACT	TELEPHONE NUMBER	DESCRIPTION
There are no known First Nations dwellings / communities located within or immediately adjacent to the EPZ.			

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5 GATHERING SYSTEM INFORMATION

5.1 FACILITY INFORMATION

5.1.1 FACILITY SUMMARY

FACILITY NAME	Clearhills
FACILITY TYPE	Gas plant
FACILITY LICENSE	
FACILITY CODE	
LEGAL DESCRIPTION	
FACILITY DESCRIPTION	

5.1.1 EMERGENCY CONTROL SYSTEMS

TYPE	NTS LOCATION	LAT (Decimal Degrees)	LONG (Decimal Degrees)	EASTING (UTM NAD 83)	NORTHING (UTM NAD 83)	UTM ZONE	NOTES
BRITISH COLUMBIA							
ESD							

TYPE	LOCATION	NOTES
ALBERTA		
ESD		
CV		
CV		
ESD		

5.2 FACILITY, PIPELINE AND WELL INFORMATION

5.2.1 FACILITY RELEASE RATES AND EMERGENCY PLANNING ZONES

LOCATION	FACILITY TYPE	FACILITY LICENSE	FACILITY CODE	SUB	STAT	H ₂ S REL VOL (m ³)	EPZ (m)	E2* EPZ (m)
ALBERTA								
	Battery						980	
	Compressor station						980	
	Compressor station						390	
	Battery						260	
	Gas processing plant						2500	1600
	Gas gathering system						2500	
	Gas gathering system						2500	
BRITISH COLUMBIA								
	Compressor station	-					980	

* "E2" = chemical storage container as defined by CEPA regulations



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5.2.2 PIPELINE LIST LEGEND

LEGEND		SUBSTANCE / SUB		STATUS / STAT		FROM FACILITY (FAC) / TO FACILITY (FAC)	
LICENSE	License Number	OE	Oil Effluent	O	Operational	PL	Pipeline
LINE	Line Number	FG	Fuel Gas	P	To Be Constructed	WE	Well
OD	Outer Diameter (mm)	NG	Natural Gas	D	Discontinued	GP	Gas Processing Plant
WT	Wall Thickness (mm)	SW	Salt Water	S	Suspended	IP	Injection / Disposal Facility
MOP	Max Operating Pressure (kPa)	LV	Low Vapour Pressure Products			RI	River
LENGTH	Length of Segment (km)	CO	Crude Oil			LA	Lake
H₂S	Licensed Hydrogen Sulphide (mol / kmol)	FW	Fresh Water			S	Satellite
REL VOL	Total H ₂ S Volume Between ESDs (m ³)	SG	Sour Gas			CK	Creek
IIZ	Initial Isolation Zone (km) – <i>applicable only for Alberta</i>	H₂S CONVERSION: 1% = 10 mol / kmol = 10,000 ppm				BE	Blind End
SET EPZ	Emergency Planning Zone (m)					B	Battery
ESD	Emergency Shut Down Valve					CS	Compressor Station
CV	Check Valve					MS	Meter Station

NOTE: Abandoned assets are not included



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5.2.3 PIPELINE RELEASE VOLUMES AND EMERGENCY PLANNING ZONES

NOTES: • Pipelines are sorted by From Location

Provincial LICENSE --- CER Order Number	Line	Licensee	Sub	Stat	From Location	From (Fac)	To Location	To (Fac)	OD (mm)	WT (mm)	ID (mm)	MOP (kPa)	H ₂ S (mol / kmol)	Length (km)	H ₂ S Rel Vol (m ³)	IIZ (m)	Set EPZ (m)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	190	630
AB: [REDACTED] BC: [REDACTED] **CER: [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	150	980
AB: [REDACTED] BC: [REDACTED] **CER: [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	-	470

*** CER REGULATED PIPELINE:**

For any emergency involving CER regulated pipelines, contact Transportation Safety Board (TSB) first – they will contact the CER. Contact the applicable provincial authorities with a courtesy call. Refer to TSB / CER contact information / reporting requirements in Section 3.9 Federal Government Contacts.

5.2.4 WELL RELEASE RATES AND EMERGENCY PLANNING ZONES

NOTES: • No well information required.



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SECTION 6: MAPS & PUBLIC INFORMATION PACKAGE

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6 MAPS & PUBLIC INFORMATION PACKAGE

6.1 SITE SPECIFIC ERP MAP

An area map showing the gathering system and facilities, surface development (roads, petroleum facilities, petroleum operators and industrial camps, trappers and guide outfitter cabins, as well as known public facilities / areas where the public may gather on a regular basis) within the Emergency Planning Zone (EPZ) and the surrounding area is included within this section.

If applicable, calculated EPZs for production assets are identified on the map as “yellow” shaded areas.

A pre-determined Environmental Emergency (E2) worst case scenario EPZs are identified on the map as the “pink” shaded areas if applicable.

6.2 PUBLIC INFORMATION PACKAGE

A Public Information Package will only be included if assets located in British Columbia have been incorporated into this Site Specific ERP. The following stakeholders who are impacted by an Emergency Planning Zone have been offered an information package as part of the consultation process if applicable:

- Local Indigenous Nation(s)
- Residents / Businesses
- Public Facilities
- Local Airport Operators
- Registered Trappers / Guide Outfitters
- Grazing Lease Holders
- Grazing Reserves
- Forestry Management Areas
- Rights Holders

Map(s) Redacted – CER Order AO-001-MO-006-2016, s. 1.a.ii.
- Facility / Pipeline technical information, disclosure of which would risk security



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SECTION 7: CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) 1999 – ENVIRONMENTAL EMERGENCY (E2) PLAN PRINCIPLES

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7 CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) 1999 – ENVIRONMENTAL EMERGENCY (E2) PLAN PRINCIPLES

7.1 INTRODUCTION

This area specific plan and information contained herein, when used in conjunction with Canadian Natural's Corporate Emergency Response Plan (ERP) establishes an appropriate level of preparedness and response capability for CEPA regulated substances. It meets the requirements of the Environment and Climate Change Canada (ECCC) Environmental Emergency Regulations (E2 Regulations) which came into effect August 24, 2019.

7.2 SCOPE

The E2 Emergency Response Plan provides emergency response guidance for:

- Stationary tank incidents involving Canadian Natural's owned product and locations as required under the Canadian Environmental Protection Act (CEPA)
- Transportation emergencies as required under the Transportation of Dangerous Goods (TDG) Act

7.3 SUBSTANCE DATA & EMERGENCY PLANNING ZONE (EPZ)

Based on the E2 Regulations, the regulated substance(s) located at this facility include:

Substance	Location	Latitude	Longitude	UN#	CAS Registry #	Maximum expected quantity at any time during calendar year	Capacity of single largest container where substance is stored	Hazard Category	Worst Case Scenario EPZ * (m)
Natural Gas Condensate									1600
NGL / LPG / LNG (Propane)									1600

* For Emergency Response Procedures based on incident type, see Section 8.1.5 of this ERP

* NGL / LPG / LNG = Natural Gas Liquids / Liquefied Petroleum Gas / Liquefied Natural Gas

7.4 TRAINING & EXERCISES

See Canadian Natural's Corporate Emergency Response Plan (ERP), Section 7.0 Plan Principles and Manual Maintenance. Exercises are held based on E2 Regulations. Annual tabletop exercises are held annually while major full scale exercises are held every 5 years.

SECTION 8: On Site E2 Regulated Substance(s) Overview & Response Procedures

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8 ON SITE E2 REGULATED SUBSTANCE(S) OVERVIEW & RESPONSE PROCEDURES

8.1 NATURAL GAS CONDENSATE / PETROLEUM CRUDE OIL / PENTANE

8.1.1 CHARACTERISTICS – FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames**
- Vapours may form explosive mixtures with air
- Vapours may travel to source of ignition and flash back
- Most vapours are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapour explosion hazard indoors, outdoors or in sewers
- Runoff to sewer may create fire or explosion hazard
- Containers may explode when heated
- Many liquids will float on water
- Substance may be transported hot

8.1.2 HEALTH IMPACTS

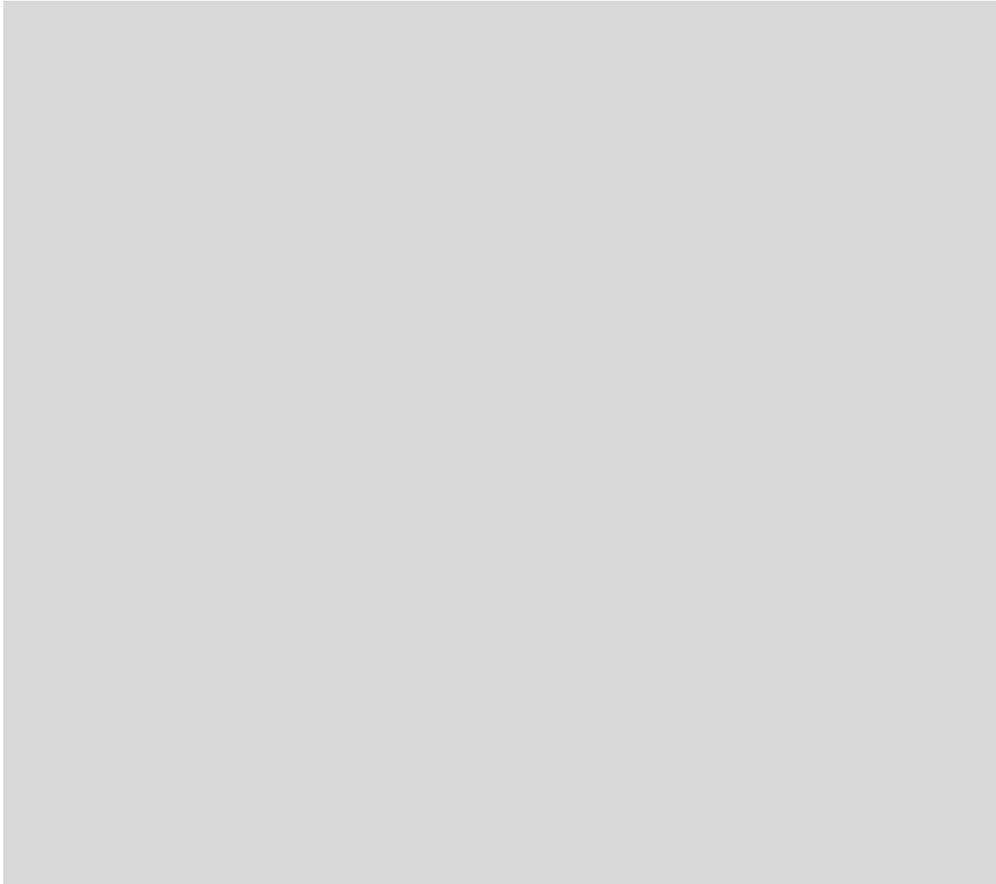
CAUTION: Petroleum crude oil (UN1267) may contain **TOXIC** hydrogen sulphide gas

- Inhalation or contact with material may irritate or burn skin and eyes
- Fire may produce irritating, corrosive and / or toxic gases
- Vapours may cause dizziness or suffocation
- Runoff from fire control or dilution water or spill may cause pollution
- May be harmful to aquatic life

NOTE: Access Canadian Natural's sdsBinders () for the most current Safety Data Sheet (SDS)

8.1.3 FACILITY OVERVIEW

8.1.3.1 Facility Plot Plan –



8.1.3.2 Description of Industrial Processes Involving Regulated Substance

Natural gas condensate (“condensate”) / petroleum crude oil is stored at the above location and in quantities as outlined in Section 7.

The natural gas condensate is produced by gathering system and sent to tanks from condensate stabilizer and is trucked out of site.

8.1.3.3 Containment System

The containment system is comprised of three tanks. The tanks are interconnected with manual valve. Secondary containment is on site for the tanks.

8.1.4 SUMMARY OF IDENTIFIED ENVIRONMENTAL EMERGENCIES

8.1.4.1 Worst Case Scenario

The worst-case scenario of a BLEVE explosion with subsequent off-site blast and heat radiation effects will be used for Canadian Natural facilities storing CEPA regulated substances.

The worst-case scenario is based on an adopted EPZ of 1,600 m. This is the hazard zone applied to Canadian Natural facilities where organic compounds such as ethane, propane, butane, pentane and octane are stored at maximum quantities below 650 tonnes.

To determine this standard, the ALOHA software (ver 5.4.7) and several scenarios using different tank capacities was used to model the release rates or distances to overpressure endpoints for these flammable and / or explosive substances. The scenarios assumed a) BLEVE explosions that consumed the maximum quantity of substances stored in the largest container system and b) subsequent fire (thermal radiation). The resulting models demonstrate a maximum of 650 tonnes with an EPZ of 1,600 m. This EPZ is equivalent to thermal radiation of 5.0 kW/m that will cause second degree burns within 60 seconds.

8.1.4.2 Alternate Worst Case Scenario

Reasonable alternative worst-case scenarios were identified through a risk analysis of scenarios provided by field operations. Canadian Natural assumes the full tank amount leaks from the tank and is ignited in a pool fire. Modeling was conducted for ethane, propane, butane, pentane, and octane and given a 650 tonne tank, the adopted alternative EPZ is 800m.

8.1.5 EMERGENCY RESPONSE PROCEDURES

** Transport Canada Emergency Response Guidebook*

PUBLIC SAFETY

- **Call 9-1-1.** Isolate spill or leak area immediately for at least 50 meters (150 feet) in all directions
- Keep unauthorized personnel away
- Stay upwind
- Keep out of low areas
- Ventilate closed spaces before entering **but only if properly trained and equipped**

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA)
- Structural firefighters' protective clothing provides thermal protection **but only limited chemical protection**

EVACUATION – Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet)

EVACUATION – Fire

- If tank, rail car or tank truck is involved in a fire, **ISOLATE** for 1600 meters in all directions; also consider initial evacuation for 1600 meters in all directions

FIRE RESPONSE

- **CAUTION: All these products have a very low flash point. Use of water spray when fighting fire may be insufficient.**

Small Fires

- Dry chemical, CO₂, water spray or regular foam

Large Fires

- Water spray, fog or regular foam
- Avoid aiming straight or solid streams directly onto the product
- If can be done safely, move undamaged containers away from the area around the fire

Fire Involving Tanks or Car / Trailer Loads

- Fight fire from a maximum distance or use unmanned hose holder or monitor nozzles
- Cool containers with flooding quantities of water until well after the fire is out
- For petroleum crude oil, do not spray water directly into a breached tank car. This can lead to a dangerous boil over

- Withdraw immediately in case of rising sound from venting safety devices or discolouration of tank
- ALWAYS stay away from tanks engulfed in flames
- For massive fire, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from the area and let fire burn

SPILL OR LEAK

- **ELIMINATE** all ignition sources (no smoking, flares, sparks or flames) from immediate area
- All equipment used when handling the product must be grounded
- Do not touch or walk through spilled material
- Stop leak if you can do it without risk
- Prevent entry into waterways, sewers, basements or confined areas
- A vapour suppressing foam may be used to reduce vapours
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers
- Use clean non-sparking tools to collect absorbed material

Large Spill

- Dike far ahead of liquid spill for later disposal
- Water spray may reduce vapour but may not prevent ignition in closed spaces

FIRST AID

- CALL 9-1-1 or emergency medical service
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves
- Move victim to fresh air if it can be done safely
- Give artificial respiration if victim is not breathing
- Administer oxygen if breathing is difficult
- Remove and isolate contaminated clothing and shoes
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes
- Wash skin with soap and water
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet

8.1.6 RECOVERY / RESTORATION

As soon as possible following an E2 emergency involving this substance, Canadian Natural will develop, in cooperation with local governments and other impacted stakeholders as required, a plan for the recovery and restoration of the site to a condition that is reasonably safe and acceptable and situation-specific.

Canadian Natural will be responsible for this project which will include but is not limited to:

- Post incident investigation and evaluation, including but not limited to:
 - emergency response Debrief Report
 - preservation of evidence
 - root cause analysis
 - other Company incident investigation protocols
- Stakeholder post incident notification and engagement - damage assessment and communication
- Support of stakeholder recovery protocols – including Critical Incident Stress Debriefings if required
- Site restoration – including disposal / waste management (resources to be determined as needed)

8.2 NGL / LPG / LNG – PROPANE

8.2.1 CHARACTERISTICS

➤ EXTREMELY FLAMMABLE

- Will be easily ignited by heat, sparks or flames
- Will form explosive mixtures with air
- Vapours from liquefied gas are initially heavier than air and spread along the ground
- Vapours may travel to source of ignition and flash back
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices
- Containers may explode when heated
- Ruptured cylinders may rocket

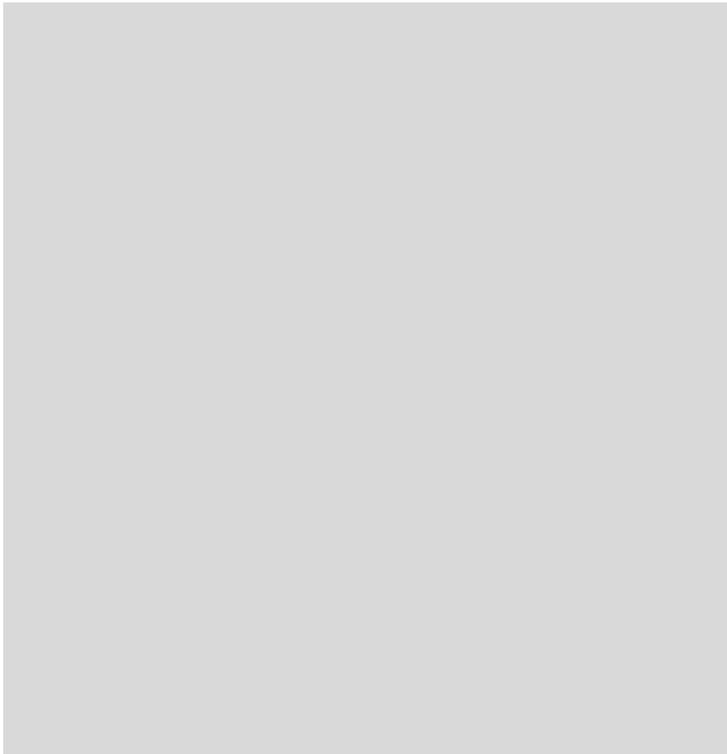
8.2.2 HEALTH IMPACTS

- Vapours may cause dizziness or asphyxiation without warning
- Some vapours may be irritating if inhaled at high concentrations
- Contact with gas or liquefied gas may cause burns, severe injury and / or frostbite
- Fire may produce irritating and / or toxic gases

NOTE: Access Canadian Natural's sdsBinders () for the most current Safety Data Sheet (SDS)

8.2.3 FACILITY OVERVIEW

8.2.3.1 Facility Plot Plan –



8.2.3.2 Description of Industrial Processes Involving Regulated Substance

Propane is stored at the above location and in quantities as outlined in Section 7. NGL - propane is produced by gathering system and either shipped via pipeline to Pembina or trucked to CNRL Knopcik.

8.2.3.3 Containment System

Two bullets are on site interconnected with manual valve, vessel protection systems are in place for these bullets.

8.2.4 SUMMARY OF IDENTIFIED ENVIRONMENTAL EMERGENCIES

8.2.4.1 Worst Case Scenario

The worst-case scenario of a BLEVE explosion with subsequent off-site blast and heat radiation effects will be used for Canadian Natural facilities storing CEPA regulated substances.

The worst-case scenario is based on an adopted EPZ of 1,600 m. This is the standard hazard zone applied to Canadian Natural facilities where organic compounds such as ethane, propane, butane, pentane and octane are stored at maximum quantities below 650 tonnes.

To determine this standard, the ALOHA software (ver 5.4.7) and several scenarios using different tank capacities was used to model the release rates or distances to overpressure endpoints for these flammable and / or explosive substances. The scenarios assumed a) BLEVE explosions that consumed the maximum quantity of substances stored in the largest container system and b) subsequent fire (thermal radiation). The resulting models demonstrate a maximum of 650 tonnes with an EPZ of 1,600 m. This EPZ is equivalent to thermal radiation of 5.0 kW/m that will cause second degree burns within 60 seconds.

DISCLAIMER: Given the considerable number of Canadian Natural facilities that may periodically store these products throughout the western provinces, this worst-case scenario will be assigned to those sites unless 1) there is more than 650 tonnes of product stored in one container / container system or 2) there is a need to reduce the EPZ (i.e. product stored on site is significantly less than 650 tonnes and the standard 1,600 m EPZ impacts a heavily populated area). In both these cases, the modelling will be recalculated using the site specific data and the resulting EPZ applied to the plan.

8.2.4.2 Alternate Worst Case Scenario

Reasonable alternative worst-case scenarios were identified through a risk analysis of scenarios provided by field operations. Canadian Natural assumes the full tank amount leaks from the tank and is ignited in a pool fire. Modeling were conducted for ethane, propane, butane, pentane, and octane and given the 650 tonnes tank the adopted alternative EPZ is 800m.

8.2.5 EMERGENCY RESPONSE PROCEDURES

** Transport Canada Emergency Response Guidebook*

PUBLIC SAFETY

- Isolate spill or leak area immediately for at least 100 meters (330 feet) in all directions
- Keep unauthorized personnel away
- Stay upwind, uphill and / or upstream
- Many gases are heavier than air and will spread along the ground and collect in low or confined areas (sewers, basements, tanks, etc.)

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA)
- Structural firefighters' protective clothing provides thermal protection but only limited chemical protection
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids

EVACUATION

- **Immediate precautionary measure** – isolate spill or leak area for at least 100 meters (330 feet) in all directions

EVACUATION – Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile)

EVACUATION – Fire

- 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
- In fires involving Liquefied Petroleum Gases (LPG) (UN1075), Butane (UN1011), Butylene (UN1012), Isobutylene (UN1055), Propylene (UN1077), Isobutane (UN1969), and Propane (UN1978), also refer to **THE FOLLOWING**:

Boiling Liquid Expanding Vapour Explosion (BLEVE)

- **If safe to do so**, attempt to extinguish any fires before they come in contact with any storage bullets
- Call applicable service provider (i.e. FireMaster, etc.) to obtain assistance with fire suppression
- Ensure all responders are made aware of the hazards
- Evacuate all personnel and isolate area to a 1600 m radius
- Evaluate tank from a safe distance away. Choose an upwind position to side of tank if possible
- Flowing water can be used to cool tanks in order to prevent or delay a BLEVE; however, this requires a significant amount of water and should not be attempted unless an unlimited water supply can be located and tank can be approached safely
- Leave area immediately if you hear a hissing sound from venting safety devices or see discoloration of the tank

FIRE RESPONSE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED**

Small Fires

- Dry chemical or CO₂

Large Fires

- Water spray or fog
- If it can be done safely, move undamaged containers away from the area around the fire
- **CAUTION:** For **LNG – Liquefied natural gas (UN 1972)** pool fires, **DO NOT USE** water. Use dry chemical or high-expansion foam.

Fire Involving Tanks

- Fight fire from a maximum distance or use unmanned master stream devices or monitor nozzles
- Cool containers with flooding quantities of water until well after the fire is out
- Do not direct water at the source of leak or safety devices; icing may occur
- Withdraw immediately in case of rising sound from venting safety devices or discolouration of tank
- **ALWAYS** stay away from tanks engulfed in fire
- For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from the area and let fire burn

SPILL OR LEAK

- **ELIMINATE** all ignition sources (no smoking, flares, sparks or flames) from immediate area
- All equipment used when handling the product must be grounded
- Do not touch or walk through spilled material
- Stop leak if you can do it without risk
- If possible, turn leaking containers so that the gas escapes rather than fluid

- Use water spray to reduce vapours or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material
- Do not direct water at spill or source of leak
- **CAUTION:** For **LNG – Liquefied natural gas (UN 1972)**, DO NOT apply water, regular or alcohol-resistant foam directly on spill. Use a high-expansion foam if available to reduce vapors.
- Prevent spreading of vapours through sewers, ventilation systems and confined areas
- Isolate area until gas has dispersed
- **CAUTION: When in contact with refrigerated / cryogenic liquids, many materials become brittle and are likely to break without warning**

FIRST AID

- CALL 9-1-1 or emergency medical service
- Ensure that medical personnel are aware of the materials involved and take precautions to protect themselves
- Move victim to fresh air if it can be done safely
- Give artificial respiration if victim is not breathing
- Administer oxygen if breathing is difficult
- Remove and isolate contaminated clothing and shoes
- Clothing frozen to the skin should be thawed before being removed
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water
- In cases of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin
- Keep victim calm and warm

8.2.6 RECOVERY / RESTORATION

As soon as possible following an E2 emergency involving this substance, Canadian Natural will develop, in cooperation with local governments and other impacted stakeholders as required, a plan for the recovery and restoration of the site to a condition that is reasonably safe and acceptable and situation-specific.

Canadian Natural will be responsible for this project which will include but is not limited to:

- Post incident investigation and evaluation, including but not limited to:
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- Stakeholder post incident notification and engagement - damage assessment and communication
- Support of stakeholder recovery protocols – including Critical Incident Stress Debriefings if required
- Site restoration – including disposal / waste management (resources to be determined as needed)