



Gas Operations Emergency Response Plan

October 2020/2021

The information in this Emergency Response Plan is a guide for **site-specific response** to emergency situations that affect:

- Distribution pressure assets
- High pressure pipelines
- Compressor stations
- All other types of stations.

Within British Columbia that may be located in population density of any kinds, land use of any sorts, as well as being in proximity to a variety of public and private facilities.

This document is not intended to replace current reporting procedures for occurrences of a non-emergency nature.

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Printed Name

Director, Transmission
Title


Signature

October 8, 2020
Date

Plan Distribution

Specific content in this section is available to persons associated with emergency response.

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Table of Contents

1	Immediate Actions.....	1
1.1	Immediate Actions.....	1
1.2	FortisBC Emergency Contacts.....	1
1.3	Incident Commander Checklist.....	2
1.4	Emergency Operations Representative	4
1.5	Operations Manager, Pipelines	4
1.6	Operations Manager, Compression.....	4
1.7	Gas Control	5
1.8	Additional Subject Matter Leads (SML)	5
1.9	Incident Classification	6
1.9.1	Distribution Pressure Assets.....	6
1.9.2	Pipeline (IP & TP) and Compression Stations	7
2	Regulatory Reporting.....	8
2.1	Regulatory Reporting Requirements	8
2.2	Regulatory Authorities.....	8
3	Emergency Response for Specific Incidents	9
3.1	Pipeline Incident	9
3.2	Emergency Blow-down.....	10
3.3	Compressor Station Evacuation.....	10
3.4	Compressor Station Emergency Isolation.....	10
3.4.1	If FortisBC Operations on Site.....	10
3.4.2	Remote Station	11
3.5	Wildfire	11
3.5.1	Concerns Associated with Forest Fire and Gas Operations.....	11
3.5.2	Degrees of Alertness.....	11
3.6	Flood	14
3.7	Security Threat.....	16
3.8	Chemical Spill or Release	16
3.9	Third-Party Emergencies Impacting FortisBC Assets	16
3.10	Serious Injury or Fatality.....	16
4	Public Protection Measures	17
4.1	Hazard Area	17
4.1.1	Determining Hazard Area	17
4.1.2	Cordoning Off Hazard Area.....	18
5.1.2.1	Air Quality Monitoring.....	18
4.1.3	Restricting Access – Land, Air and Water	19
4.2	Evacuation	19

5	Emergency Response Equipment	20
5.1	Personal Kit.....	20
5.2	Transmission Pipeline Emergency Equipment.....	20
6	Station Protection Systems	22
6.1	Compressor Station Emergency Protection Systems	22
6.2	Other Station Emergency Protection Systems	22
7	Compressor Station Emergency Planning Zone Maps	23
8	Appendices	45
	Appendix A: Contact Information	45
	Appendix B: Methane Technical Data	48
	Appendix C: SCENTINEL® S-20 Gas Odorant Technical Data	49
	Appendix D: Forms	50
	Check In/Check Out (ICS 211)	50
	Position Log (ICS 214).....	51
	Incident Action Plan/Incident Objectives (ICS 202)	53
	Appendix E: OGC Incident Classification Matrix	54
	Appendix F: OGC Notification Exemption Letter	57

1 Immediate Actions

1.1 Immediate Actions

Operations personnel will evaluate all emergencies and investigate alarms (where applicable). Many incidents may not be emergencies upon investigation. Upon completion of the incident evaluation, operations personnel will determine the level of emergency and then implement the appropriate immediate actions.

✓	IMMEDIATE ACTIONS CHECKLIST
	Ensure personal safety: <ul style="list-style-type: none"> ➤ Stop work in the area ➤ Assess the scene and evaluate the hazards ➤ Don any additional PPE ➤ Remove any sources of ignition
	Evacuate all non-essential personnel from the area.
	Establish an initial isolation area to protect others (see Section 4 Public Protection Measures)
	Assist injured persons within the capabilities of your training and if safe to do so.
	Call 9-1-1 to request assistance from emergency services.
	Relocate to a safe area upwind of the incident site.
	Establish communications with Dispatch or Emergency Operations Representative (EOR).
	Contact Gas Control and verify alarm, if applicable.
	Initiate appropriate control measures needed to manage the situation.
	Evaluate requirement and if necessary, seek authorization to request Gas Control to ESD the facility or valve. Alternatively, manually ESD if necessary and permission given and safe to do so.
	Determine initial Level of Emergency using the Incident Classification tables (Section 1.9). <ul style="list-style-type: none"> ➤ If Level 1, request appropriate Operations Manager to initiate internal notification. ➤ If Level 2 or 3, request Dispatch or EOR to activate Emergency Operations Centre.
	Assume role of Incident Commander: <ul style="list-style-type: none"> ➤ Liaise with emergency services and other responders as they arrive ➤ Establish unified command and work together to ensure the scene is safe. ➤ Inform/update Dispatch/EOR of site details and progress until EOC is activated (if required). ➤ See Incident Commander Checklist (Section 1.3)
	Refer to appropriate subsection in Section 3 (Emergency Response for Specific Incidents) to determine any specific actions to be taken to address the current situation.

1.2 FortisBC Emergency Contacts

Specific content in this section is available to persons associated with emergency response.

1.3 Incident Commander Checklist

Name: _____ Date: _____ Time in: _____ Time out: _____

Primary Responsibilities

- Coordinates and manages response actions at the Incident Site
- Ensures immediate public safety measures are taking place at the incident site
- Determines tactical response, based on incident objectives
- Reports to and received information from Operation Manager or Operations Section Chief, if assigned

✓	INCIDENT COMMANDER – INITIAL RESPONSE / SHIFT START CHECKLIST
	If first on site, follow Immediate Actions Checklist (Section 1.1).
	Report to Incident Site and sign in. Don green vest (if available) and obtain a copy of the appropriate Emergency Response Plan.
	Refer to appropriate subsection in Section 3 (Emergency Response for Specific Incidents) to determine if there are any specific actions to be taken to address the current situation.
	Ensure appropriate PPE is being worn.
	If other responders on site, receive briefing of current situation from person currently in charge.
	Assume control of the incident site.
	Assess and confirm the emergency situation. Determine impact to employees, customers, the public, the environment and FortisBC assets.
	Communicate initial needs to Dispatch or EOR until the EOC is established.
	Determine Level of Emergency using the Incident Classification tables (Section 1.9).
	If an Incident Command Post has been established by emergency services (fire/police), establish Unified Command.
	If ICP has NOT been established, establish an ICP at a safe location either on site or off site.
	Ensure that initial response efforts are underway (worker and public protection, isolation of hazard area). <ul style="list-style-type: none"> ➤ Confirm Hazard Area (Section 4.1) - Have combustible gas indicator (CGI) readings taken to determine actual radius ➤ Evacuate non-essential personnel from Hazard Area ➤ If appropriate, recommend evacuation to be carried out by the fire department.
	Determine notification requirements to external agencies, stakeholders, neighbours, etc. and ensure they are initiated in a timely manner. Refer to Section 2 (Regulatory Reporting) and Appendix A: Contact Information.
	Establish contact with Operations Section Chief if EOC is activated.
	Establish tactical response to reach incident objectives based on the following priorities: <ul style="list-style-type: none"> ➤ People ➤ Environment ➤ Assets ➤ Restoration
✓	INCIDENT COMMANDER – ONGOING CHECKLIST
	As they arrive, brief other responders on the situation and ensure that regular updates are provided.
	Maintain a list of responders within the Emergency Response Zone.
	Communicate all actions taken to Dispatch/EOR (or Operations Section Chief, if assigned), and ensure that a log of all emergency response activities and decisions is maintained.

✓	INCIDENT COMMANDER – INITIAL RESPONSE / SHIFT START CHECKLIST
	Prepare ICP Incident Action Plan/Incident Objectives (ICS 202) in consultation with other responding agencies. Modify as required and update at the beginning of each operational period. Consider Response Process: S O L V E (Corporate ERP Section 1.5)
	If required, delegate functions to FortisBC personnel present, such as Scribe or Logistics.
	Prepare Site Safe Work Plan and submit to Operations Section Chief for review.
	Manage response activities at the site. Report any current or potential issues to Operations Manager or Operations Section Chief, if assigned.
	Continually assess Hazard Area and adjust as necessary.
	Monitor resources and request any additional resources as required.
	Ensure external agencies, stakeholders, neighbours, etc. are updated as required.
	Advise Operations Section Chief, if assigned, of any changes at the incident site, including a downgrade or upgrade in Level of Emergency based on Incident Classification tables (Section 1.9).
✓	INCIDENT COMMANDER – SHIFT CHANGE CHECKLIST
	Communicate shift change to the appropriate personnel.
	Fully debrief your relief on the incident status and actions being taken.
	Give all completed forms and notes to your relief.
✓	INCIDENT COMMANDER - DEACTIVATION CHECKLIST
	In conjunction with appropriate agencies, downgrade Level of Emergency or call a STAND DOWN.
	Ensure all contacts made during the incident are aware of the status change.
	Work with emergency services to ensure all evacuated areas are deemed safe for re-entry Give “All Clear” to all site personnel when appropriate.
	Collect all incident-related documentation and submit to Manager, Emergency & Business Continuity Programs.
	Hold a debrief with all emergency management team members.
	Sign out.
	Complete and submit reporting through the Utility Risk Management (URM) application.
	Assist with preparation of After Action Report.

1.4 Emergency Operations Representative

Name: _____ Date: _____ Time in: _____ Time out: _____

Primary Responsibilities

Once manager of involved asset has determined that the Emergency Operations Centre will be activated:

- Sets up Emergency Operations Centre
- Ensures notification of appropriate personnel at the onset of an emergency
- Transitions to role of Scribe once the below actions have been completed

✓	EOR – INITIAL RESPONSE ACTIONS
	Act as the primary point of contact to assist field resources until the Emergency Operations Centre (EOC) is fully activated.
	Send General Emergency Message to appropriate internal personnel, based on incident type.
	Notify additional personnel of the situation, as requested by the manager of the involved asset.
	Prepare EOC for arrival of emergency management team members (sign in sheet, conference line, computer start-up, etc.).
	Start emergency incident diary using the SAP system. Record the notification time and dispatch times for all personnel responding to the emergency, as well as key events and decisions made.
	Assist with external stakeholder notifications, if required.

1.5 Operations Manager, Pipelines

Name: _____ Date: _____ Time in: _____ Time out: _____

Primary Responsibilities

- Acts as authority for initial emergency response actions for transmission pipeline-related incidents
- If necessary, activates Emergency Operations Centre

✓	OPERATIONS MANAGER, PIPELINES
	Verify the level of the emergency.
	Validate the requirement and authorize requests for valve closures from Gas Control or personnel on site.
	Activate the EOC if required. Transition to appropriate role in EOC emergency management team.

1.6 Operations Manager, Compression

Name: _____ Date: _____ Time in: _____ Time out: _____

Primary Responsibilities

- Acts as authority for initial emergency response actions for compressor-related incidents
- If necessary, activates Emergency Operations Centre

✓	OPERATIONS MANAGER, COMPRESSION
	Verify the level of the emergency.
	Determine the potential for impacts to gas supply and the transmission system.
	Activate the EOC if required. Transition to appropriate role in EOC emergency management team.

1.7 Gas Control

Name: _____ Date: _____ Time in: _____ Time out: _____

Primary Responsibilities

- Continuously monitors and operates the transmission system
- Acts as hub for information and data on the transmission system and compressor stations, utilizing field personnel at key sites and the SCADA (Supervisory Control and Data Acquisition) system

✓	GAS CONTROL – INITIAL RESPONSE / SHIFT START CHECKLIST
	Determine the scope of the incident.
	Notify EOR of incident if not already aware.
	Request EOR assistance with notifications and diarizing the response in SAP.
	Dispatch appropriate operations personnel, in conjunction with EOR. <ul style="list-style-type: none"> ➤ Operations Manager, Pipelines or designate ➤ Operations Manager, Pressure Control or designate ➤ Operations Manager, Compression or designate ➤ Gas Control & SCADA Manager or designate
	Make notifications to interconnecting pipeline companies, if required.
✓	GAS CONTROL – ONGOING CHECKLIST
	Evaluate gas supply requirements and options in consultation with Gas Supply personnel.
	Adjust gas supply as necessary.
✓	GAS CONTROL – SHIFT CHANGE CHECKLIST
	Communicate shift change to the appropriate personnel.
	Fully debrief your relief on the incident status and actions being taken.
	Give all completed forms and notes to your relief.
✓	GAS CONTROL - DEACTIVATION CHECKLIST
	Ensure all contacts made during the incident are aware of the status change.
	Attend debrief session if requested.
	Sign out of EOC.
	Assist with preparation of After Action Report if requested.

Note: Collaboration with Midstream and Industrial Markets business units may be required. Refer to the [Gas Control Midstream Services and Commercial and Industrial Marketing Emergency Plan](#) for more information.

1.8 Additional Subject Matter Leads (SML)

Duties of additional subject matter leads will be determined by the appropriate Section Chief, based on the incident and nature of expertise.

1.9 Incident Classification

The level of emergency defines the severity of the incident, the potential hazards to the public and the environment, and the appropriate response. A level is assigned when the emergency meets one or more conditions of the higher level. For example, if an incident meets several conditions under Level 1 (minor) and Level 2 (serious) in the table below, it is a Level 2 Emergency.

1.9.1 Distribution Pressure Assets

CONDITION	LEVEL 1 – MINOR	LEVEL 2 – SERIOUS	LEVEL 3 – CRITICAL
Threat or injury to workers or public	No immediate threat.	Some injury or threat.	Serious injury or fatality and/or ongoing threat.
Potential environmental effects	Minimal.	Moderate.	Significant and ongoing.
Media interest	Little or no interest.	Local or regional interest.	Regional or national interest.
Response Capability	Incident is handled by FortisBC.	Emergency services and government agencies are likely to be directly involved.	Immediate and significant government agency involvement.
Potential to escalate	Low.	Moderate, based on potential for fire, explosion, increased release of product, or other hazard.	High, based on potential fire, explosion, increased release, or other hazard.
Examples	<ul style="list-style-type: none"> Reported gas leaks Damaged service Minimal outages Carbon monoxide incident, no hospitalization 	<ul style="list-style-type: none"> Damaged main Carbon monoxide incident with hospitalization Gas accumulated in buildings Moderate commercial/industrial outages Gas main or service line is on fire 	<ul style="list-style-type: none"> Explosion Death from carbon monoxide Significant widespread outages Significant odorant release in an inhabited area

1.9.2 Pipeline (IP & TP) and Compression Stations

CONDITION	LEVEL 1 – MINOR	LEVEL 2 – SERIOUS	LEVEL 3 – CRITICAL
Threat or Injury to Workers or Public	No immediate threat.	Some injury or threat.	Serious injury or fatality and/or ongoing threat.
Containment within Company Property	No threat to company facility infrastructure. No effects outside company property.	Potential threat to company facility infrastructure. No immediate threat outside company property, but potential exists to extend beyond boundaries.	Ongoing or imminent threat to facility infrastructure. Effects extend beyond company boundaries.
Control of Product	Control completed or pending.	Control likely imminent	Uncontrolled release of product continues and control is not imminent.
Potential Environmental Effects	Minimal.	Moderate.	Significant and ongoing.
Media Interest	Little or no interest.	Local or regional interest.	Regional or national interest.
Response Capability	Incident is handled by FortisBC.	Emergency services and government agencies are likely to be directly involved.	Immediate and significant government agency involvement.
Potential to escalate	Low.	Moderate, based on potential for fire, explosion, increased release of product, or other hazard.	High, based on potential fire, explosion, increased release, or other hazard.
Examples	<ul style="list-style-type: none"> Vehicle accident involving facility with moderate to major damage to facility Damage to facility equipment and/or piping with gas release <LEL beyond 3m; control expected within 4 hours Gas release beyond site affecting public safety, area successfully evacuated Damage requiring facility to be shut-in Underground leak on pipeline and outside of facilities not entering structures or underground utilities 	<ul style="list-style-type: none"> Unable to control damage on site, requiring control off site Damage to facility equipment or piping with gas release >LEL beyond 3m Underground leak on pipeline entering structures or underground utilities; control expected within 4 hours Facility overpressure condition discovered and controlled Failure of facility to deliver downstream supply; customer impact if not corrected within 24 hours Gas release beyond site affecting public safety; area evacuated within 1 hour Failure of facility to deliver downstream supply; <10,000 customers without service Suspicious package near pipeline or on Right-of-Way resulting in police response 	<ul style="list-style-type: none"> Underground leak on pipeline, entering structures or underground utilities; control not expected for more than 2 hours Facility overpressure condition discovered and not controlled Failure of facility to deliver downstream supply; >10,000 customers without service Gas release beyond site affecting public safety, area will require more than 1 hour to evacuate or may be unable to be completely evacuated (e.g. care home, detention centre, hospital)

2 Regulatory Reporting

2.1 Regulatory Reporting Requirements

Regulatory reporting is the responsibility of the Operations Manager, On-Call Manager, or the Operations Supervisor, Support. This responsibility can be delegated by the aforementioned, as required.

INCIDENT TYPE	IMMEDIATE	WITHIN 24 HOURS OR ASAP
Any potential danger to public safety	Police, Technical Safety BC, OGC ² , CER ³	BCUC ⁴
Release of any hazardous product	Ministry of Environment, WorkSafe BC, Metro Vancouver ⁵	
Pipeline rupture – Major ¹	OGC or CER	
Pipeline rupture – Minor	OGC or CER	OGC or CER
Serious injury or fatality (worker)	Police, WSBC, OGC or CER	
Serious injury or fatality (customer)	Police, TSBC	BCUC
Fire or explosion	Police, TSBC, OGC or CER	BCUC
System outage (greater than 100 customers impacted)	TSBC	BCUC

1. Instantaneous release that immediately impairs the operation of a pipeline segment such that the pressure of the segment cannot be maintained
2. OGC notifications only if impacted pipeline pressure is greater than 100 psi (700 kPa) (transmission and Intermediate pressure pipelines)
3. CER requires notification only for incidents involving pipelines that cross provincial or international borders.
4. BCUC notifications will be completed by the FortisBC regulatory group
5. Only applicable for unauthorized air discharge from Tilbury T1A Plant and Eagle Mountain (Coquitlam V1) Compressor Station

2.2 Regulatory Authorities

AGENCY	PHONE	OTHER
TSBC	866-566-7233	
WorkSafe BC	888-621-7233	866-922-4357 (After hours)
Environment Canada Duty Officer (24/7)	604-666-6100	
Metro Vancouver	604-436-6777	
Emergency Management BC (EMBC)	800-663-3456	
BC Ministry of Environment	Call to report to all three agencies.	604-582-5200
BC Oil & Gas Commission (OGC)		
Canada Energy Regulator	819-997-7887	https://apps.cer-rec.gc.ca/ers

3 Emergency Response for Specific Incidents

3.1 Pipeline Incident

✓	PIPELINE INCIDENT ACTIONS
	Follow Immediate Actions Checklist (section 1.1).
	Do not extinguish burning gas from a pipeline break unless the fire poses a hazard.
	Direct the fire department to use water spray to protect surrounding property, as required.
	Monitor gas migration above and below ground using a CGI.
	Check on an ongoing basis for gas accumulation in nearby buildings and fixtures. If a building is discovered to contain concentrations of gas, and the decision is made to shut off power to the building, it must be done remotely.
	When responding to a pipeline leak, always consider the possibility of multiple leaks.
	Determine if the section can be isolated from the system without affecting supply to gate stations.
	Determine the required valve operation and sequencing.
	Evaluate requirements and <i>if authorized</i> , request Gas Controller to remotely close the valve or manually close valve if permission is given to isolate the transmission pipeline segment. Operate valves only after authorization from the Operations Manager, Pipelines.
	Consult and update the appropriate Operations Manager frequently.
	Assess the damage to determine if a shutdown is required: <ul style="list-style-type: none"> ➤ Immediate shutdown if an immediate public hazard exists or gas system pressures are decaying significantly. ➤ Planned shutdown if there is no immediate public hazard and system pressures are stable. ➤ No shutdown if temporary or permanent repairs can be made with the transmission pipeline in service, possibly at a reduced pressure.
	Notify Gas Control if the transmission system configuration may be changed as a result of the incident or may need to be changed as a remedial measure.
	If life and property are not threatened, document and review the shutdown procedure before initiating it.
	Issue instructions to responders to operate the necessary valves identified by valve number, size, and location.
	Reduce the line pressure through regulator stations or vent to atmosphere through blow-down stacks.
	Repeat until gas is controlled and accumulations are vented.
	Communicate to Gas Control or designate (EOR) all actions taken, and ensure that a log of all emergency response activities and decisions is maintained.

3.2 Emergency Blow-down

✓	EMERGENCY BLOW-DOWN ACTIONS
	Follow Immediate Actions Checklist (section 1.1).
	<i>Specific content in this section is available to persons associated with emergency response.</i>
	Prepare site and equipment for the blow-down.
	Confirm readiness to blow-down with Gas Control and the EOR.
	Initiate the blow-down.
	Communicate to Gas Control or designate (EOR) all actions taken, and ensure that a log of all emergency response activities and decisions is maintained.

3.3 Compressor Station Evacuation

Evacuation of the compressor station will be conducted under the following conditions:

- When an emergency situation exists on the compressor or gate station site that threatens the safety of staff on site
- At the direction of the FortisBC Incident Commander or emergency services (police/fire department) Incident Commander
- On hearing the compressor station evacuation alert, all personnel on the compressor station site are to report to the nearest designated muster point and receive instructions from the FortisBC Incident Commander

Access to the compressor station area will be controlled by emergency services in coordination with the FortisBC Incident Commander.

3.4 Compressor Station Emergency Isolation

Isolation of a compressor station does not necessarily constitute an emergency. It is the responsibility of the responding FortisBC operations personnel to evaluate the situation and to confirm the emergency level.

In the event of automatic or manual ESD compressor station isolation, the station will automatically vent and an alarm horn will be sounded.

Note: This event is also listed in the Gas Operations Emergency Field Guideline Handbook.

3.4.1 If FortisBC Operations on Site

✓	EMERGENCY ISOLATION – FORTIS ON SITE
	Follow Immediate Actions Checklist (section 1.1).
	Confirm the station is appropriately isolated.
	<i>Specific content in this section is available to persons associated with emergency response.</i>
	Continue assessment and monitoring of situation until additional assistance arrives at the site.
	Communicate to Gas Control or designate (the EOR) of all actions taken, ensuring a log of all emergency response activities and decisions is maintained.

3.4.2 Remote Station

✓	EMERGENCY ISOLATION – REMOTE STATION
	Gas Control will contact the Operations Manager, Compression (or designate), and the compression operator on call.
	The Operations Manager, Compression will review the information available from Gas Control and the SCADA system to assess the situation and declare the level of emergency.
	Confirm with Gas Control that the station is in the appropriate isolation condition.
	Dispatch FortisBC Operations to site to investigate.
	Upon arrival at the site, FortisBC Operations will assess and confirm that the station is safe to enter.
	Follow Immediate Actions Checklist (section 1.1).
	Confirm the station is appropriately isolated.
	Communicate to Gas Control or designate (the EOR) of all actions taken, ensuring a log of all emergency response activities and decisions is maintained.

3.5 Wildfire

3.5.1 Concerns Associated with Forest Fire and Gas Operations

- Potential damage to facilities (underground gas lines and aboveground), right of way markers.
- Forest fire fuelled by escaping natural gas.
- Lack of access to endangered facilities and isolation valves.
- Lack of access or restricted access to evacuated areas of service.

3.5.2 Degrees of Alertness

- | | |
|---------------|--|
| Green | ➤ The wildfire risk is low |
| Yellow | ➤ Gas infrastructure is located within 30km of a forest fire
➤ The wildfire risk remains extreme and requires awareness and monitoring of fire locations |
| Orange | ➤ Forest fire is within 10km of gas infrastructure |
| Red | ➤ Imminent risk of forest fire or other danger impacting FortisBC infrastructure
➤ The fire has the potential to: <ul style="list-style-type: none"> • Directly affect public or employee safety • Directly affect the gas system and/or pipeline • Directly affect radio towers (communications and/or SCADA) • Result in significant financial loss to FortisBC |

✓	PHASE 1 – PRE-FOREST FIRE ACTION
	Receive initial warning of a forest fire within 30km of FortisBC infrastructure (Alert level Yellow).
	EORs to set up nightly updating of forest fires as reported by the Province of BC – Wildfire Service website at https://www2.gov.bc.ca/gov/content/safety/wildfire-status .
	The Operations Manager, On-Call Manager or Supervisor, Emergency Support will verify that mapping information showing gas infrastructure in the threatened areas. This information will be issued to appropriate operations personnel and prepared for the EOC.
	Identify regulating stations, control valves, radio towers, NGT stations, FortisBC facilities (musters, offices), interruptible customers, industrial plants, critical customers, as appropriate on the mapping of information.
	Review assets in the risk area in coordination with System Capacity Planning, Gas Control and other relevant departments to determine the potential impact on FortisBC infrastructure and customers.
	Continuously monitor the situation for potential escalation.
✓	PHASE 2 – ALERT LEVEL ORANGE
	Notification of an evacuation alert and/or notification of a fire within 10km of FortisBC infrastructure (Alert level Orange).
	EORs to set up nightly updating of forest fires as reported by the Province of BC – Wildfire Service website at https://www2.gov.bc.ca/gov/content/safety/wildfire-status .
	Consider activating the EOC.
	Conduct planning activities in collaboration with Wildfire Management Branch, local government EOC, and the Provincial Regional Emergency Operations Centre (PREOC) when activated.
	Operations managers to consider regular inspection of applicable gas assets.
	Consider inspection of any facility (radio towers etc.) infrastructure as required.
	Review with personnel, safe working procedures when working around wildfire.
	Consider locating and servicing valves which may be needed to isolate potential forest fire areas. Confirm operability of valves.
	Prepare crimp locations including excavation and attachment of fittings for bypass.
	Prepare a separate shutoff list for elevated pressure delivery sets by EOR as required.
	Consider increasing transmission line patrols in the alert area.
	Consider preparing (fire proofing) stations and other infrastructures in the potential fire zone as appropriate.
	If the transmission is required to be shut off, consider alternate feeds in coordination with System Capacity Planning, Gas Control, Operations and other relevant departments.
	Coordinate appropriate materials and transportation.
	Consider issuing public safety information regarding actions to be taken before, during and after an evacuation.
	Continuously monitor the situation for potential escalation.

✓	PHASE 3 – ALERT LEVEL RED
	Receive order issued to evacuate an area and establish direct contact between FortisBC and the appropriate government Emergency Operations Centres.
	If an area is under the threat of fire activity, work as appropriate to ensure minimum personal risk.
	Consider activating the EOC.
	Upon notification of an evacuation, Operations to activate the appropriate isolation plan.
	Operations staff may be stationed at strategic locations to implement shutoff plans.
	Continue actions as if evacuation areas will continue to be served by gas until a directive from the appropriate public authority is received.
	Operations together with Gas Control will continue to monitor transmission pipeline pressure and flow.
✓	PHASE 4 – POST FOREST FIRE ACTIONS
	The threat of fire has been rescinded and approval for an area to be populated has been received (Alert level Yellow).
	Personnel will be instructed on possible hazards in the area before entering the forest fire zone.
	When the evacuation order has been receded, or authorities have approved access to the area, conduct inspections, survey, repairs, re-gasification and re-light activities.
	Probable turn-on sequence: <ul style="list-style-type: none"> ➤ Inspection of the premises by outside agency inspectors. ➤ Upon direction of local authorities, commence inspection of FortisBC infrastructure for fire damage to stations, mains, services and meters. ➤ Inspect each distribution installation to determine the extent of damage. ➤ If necessary, purge all distribution mains and service lines. ➤ Electrical service must be available before calls are accepted to restore gas to individual premises. ➤ If the house lines of a premise are not purged and appliances relit, then the meter valve will be left in the "off" position. ➤ Repair any damaged facilities. ➤ Begin the re-gasification procedure.
	Consider conducting a ground patrol of transmission pipelines and perform an inspection of the area previously threatened by forest fires.
	Keep Dispatch and the Customer Contact Centre informed of progress as the area is being restored.

3.6 Flood

✓	PHASE 1 – PRE-FLOOD ACTION FOR ELEVATED FLOOD RISK
	Phase 1 will begin upon receipt of the information indicating an elevated flood risk.
	Review flood mapping information of the area, e.g. through Geographic Information System (GIS), to assess for risk and potential impacts to FortisBC assets and customers.
	The Operations Manager, On-Call Manager or Supervisor, Emergency Support will verify that mapping information showing gas infrastructure in the threatened areas is up-to-date. This information will be issued to the appropriate operations personnel and prepared for the EOC.
	Identify regulation stations, control valves, facilities (musters, offices), interruptible customers, critical customers, industrial plants, etc. on the mapping information.
	Review distribution assets in the risk area in coordination with System Capacity Planning, Gas Control and other relevant departments to determine the potential impact on FortisBC infrastructure and customers. This could include the assessment of: <ul style="list-style-type: none"> ➤ Stations (in dyke protection area) ➤ Transmission pipelines (key negative buoyancy and cover)
	Consider locating and servicing valves which may be needed to isolate potential inundation areas. Confirm operability of valves.
	Review with personnel safe working procedures when working around flood waters.
	Arrange strategic placement of material, equipment and crew to protect and preserve from potential hazards.
	Conduct planning activities in collaboration with the local government EOC and the Provincial Regional Emergency Operations Centre (PREOC), if activated.
	Communicate public safety information regarding actions to be taken before, during and after a flood.
	Continuously monitor the situation for potential escalation.
✓	PHASE 2 – FLOOD ALERT
	Phase 2 will begin dependent on the river under flood alert and the corresponding risk assessment of FortisBC infrastructure.
	Inform internal stakeholders of the alert.
	Consider routine checks of assets within the flood zone and watch for rising water levels.
	Report impacts due to observed high water levels to Dispatch or EOR.
	Consider increasing line patrols of the transmission pipelines in the alert area.
	Continuously monitor the situation for potential escalation.

✓	PHASE 3 – EMERGENCY ACTION
	Phase 3 will begin dependent on the area under evacuation alert or order and the corresponding risk assessment of FortisBC infrastructure and customer impacts.
	Activate the Emergency Operations Centre.
	Create a diary in SAP and ensure that details are logged. The log must record the notification time and dispatch times for all personnel responding to the emergency, and must record key events and decisions made.
	Review the shut-off plan.
	Arrange to carry out appropriate precautionary activities to protect the system before flooding occurs. <ul style="list-style-type: none"> ➤ Consider protecting regulators by using plugs, plastic bags or extended vents and shut off underground house lines, house line valves etc. ➤ Regulator or meter assembly may be removed in high risk installations such as trailer parks ➤ The riser and house line may be plugged or capped
	If an area is inundated, work as appropriate to ensure minimum personal risk.
	If water floods, or threatens to flood, gas customers, the standard shut-off procedures will apply.
	Where customers within an evacuated area cannot be shut off at the meter cock, prepare to isolate that section of the gas system to prevent gas escape due to flood-related damages.
	Transmission pipelines are to remain in service as long as it is safe to operate.
	Continuously monitor the situation for potential escalation.
✓	PHASE 4 – POST FLOOD ACTIONS
	When water has receded and approval for an area to be repopulated has been granted, post flood activities can be undertaken.
	In planning the recovery of services, the area of responsibility between the gas trade, gas inspection, electrical inspection, sanitation inspection and FortisBC should be done in collaboration with the local government EOC.
	Personnel will be instructed on possible hazards in the area, before entering the flood zone.
	When the water has receded, conduct post flood inspections, survey, repairs, re-gasification and re-light activities.
	Probable recovery sequence: <ul style="list-style-type: none"> ➤ Inspection of the premises by outside agency inspectors ➤ Upon direction of local authorities, commence inspection of FortisBC infrastructure for fire damage to stations, mains, services and meters ➤ Consider inspecting each distribution installation to determine the extent of the damage ➤ Replace any regulators that have been submerged in water, as mud and dirt will impact the operation of these units ➤ Replace any meters that have water in the interior of the body, as mud and dirt will impact the operation of these units ➤ Consider the use of alcohol injection into meter sets, mains, and services which have been subjected to internal water ➤ Monitor dew points to ensure system is dry prior to the onset of freezing weather ➤ The meter cock should be left in the “off” position ➤ Electrical service must be available before calls are accepted to restore gas to individual premises ➤ Begin the re-gasification procedure ➤ The remainder of the restoration of flooded appliances may be the gas trade’s responsibility
	Keep Dispatch and Customer Contact Centre aware of progress as the area is being restored.

3.7 Security Threat

If any person is in immediate danger or could become in immediate danger as a result of a threat to FortisBC personnel or property, contact Police or RCMP immediately. When safe to do so, contact FortisBC Corporate Security.

If no immediate danger is present, contact Corporate Security.

3.8 Chemical Spill or Release

For guidance on cleanup and regulatory reporting requirements, refer to:

- Material Safety Data Sheets (MSDS) <http://ccinfoweb.ccohs.ca/msds/search.html>
- *Specific content in this section is available to persons associated with emergency response.*
- *Specific content in this section is available to persons associated with emergency response.*

For any leak or spill, ensure that a FortisBC Environment representative is contacted.

3.9 Third-Party Emergencies Impacting FortisBC Assets

If a gas emergency arises in the area of a third-party shelter-in-place or HAZMAT incident, it may be dangerous for FortisBC crews to respond. At no time should crews enter the affected area without coordinating with the emergency services Incident Commander (IC). Any decisions about how to respond to an emergency in the affected area will be made in conjunction with the IC. The following procedure should be used in such cases:

✓	THIRD-PARTY EMERGENCIES ACTION CHECKLIST
	Responding crews stage to a safe location outside of the affected area, maintaining communications with EORs.
	EORs contact External Agency Liaison or Supervisor, Emergency Support and request the location of the Incident Command Post (ICP).
	External Agency Liaison or Supervisor, Emergency Support contacts the incident EOC, and: <ul style="list-style-type: none"> ➤ Determines the location of the ICP ➤ Informs the EOC that a FortisBC representative will report to the ICP to coordinate response to a gas emergency ➤ Requests that the EOC pass this information to the emergency services IC.
	External Agency Liaison or Supervisor, Emergency Support passes the location of the ICP through the EORs to the responding crew.
	Upon arrival at the ICP, the senior FortisBC representative will become the FortisBC Incident Commander, and identify him or herself as such to the Emergency Services IC.
	FortisBC and emergency services IC will together determine an appropriate plan for responding to the situation.

3.10 Serious Injury or Fatality

In the event of a serious injury or fatality, it's extremely important that evidence not be disturbed other than to perform immediate actions to protect personnel or execute rescue operations.

4 Public Protection Measures

The safety of responders and the public is FortisBC's first priority in any emergency. Public protection measures will start immediately surrounding the incident site and then move to those downwind of the incident before expanding to the rest of the defined Hazard Area.

The distance that public protection measures will be taken is dependent on the hazards that are present, but must be outside of any area that may present a safety concern.

4.1 Hazard Area

4.1.1 Determining Hazard Area

The table below should be used as a guideline until actual hazardous conditions are determined. Emergency services will response based Transport Canada's Emergency Response Guidebook (ERG 2020) until advised by FortisBC personnel.

	DISTRIBUTION PRESSURE	INTERMEDIATE PRESSURE	TRANSMISSION PRESSURE	ERG 2020 GUIDEBOOK
INITIAL ISOLATION AREA	100 meters	100 meters	100 meters	100 meters
EVACUATION AREA	200 metres	200 metres	400 metres	800 metres
EXPLOSION RISK	200 metres	200 metres	800 metres	1600 metres

Several factors must be considered when determining the actual hazard area.

- Combustible gas indicator measurements (**document all readings**)
- Sources of odour, if applicable
- Meteorological conditions (wind direction, wind speed)
- Ignition sources
- Tracking and venting opportunities
- Potential exposure of the public (rural versus urban area)
- Possibility of migrating gas (surrounding buildings, sewers, underground ducts, enclosed areas)
- ETA of resources, as it influences time for incident under control
- Critical infrastructure at risk (ex. government buildings, transportation corridors (road, rail and water))

Helpful FortisBC resources include:

- Data from Gas Control, if monitored
- Emergency analysis conducted by the Dispatch or EOR on distribution pipelines and some intermediate pressure pipelines, including:
 - Asset type
 - Flow direction
 - Location of valves
 - Number of utility services downstream of the incident
- System Planning can provide assistance to establish the shut off plan¹; determination includes:
 - Capacity
 - Load requirements and projections
 - Strength of feed or capacity
 - Location of valves
- Mapping information with the use of the Geographic Information Systems (GIS) operated by the Dispatch, EOR, Engineering and GIS Technology personnel
- Asset data/records with the use of the FileNet system from the Engineering department

Re-evaluate regularly, or upon a change in the circumstances, to expand or contract the zone in consultation with emergency services and the EOC.

4.1.2 Cordoning Off Hazard Area

To ensure the safety of the public and any attending responders, it may be necessary to cordon off an area surrounding the involved asset. This should be done immediately upon arrival at any incident site, and can be done using cones, flags, sawhorses, or any other equipment available to indicate restricted access.

5.1.2.1 Air Quality Monitoring

FortisBC carries and delivers sweet natural gas. As such monitoring for H₂S or SO₂ concentrations is unnecessary. The monitoring of air quality will be carried out by FortisBC field operations personnel using combustible gas monitoring equipment. This monitoring equipment continuously measures for natural gas, percentage of oxygen and carbon monoxide. The units are set to alarm at 0.5% natural gas in air. If evacuations are required, FortisBC's field operations personnel will be assigned to patrol the outside perimeter of the evacuation zone to determine the concentration, if any, of natural gas. Based on the results of monitoring, the evacuation zone will be adjusted or modified. Plume modeling will be utilized as required.

¹ Pre-determined shutoff zones for events such as flood zones, tsunami inundation areas and earthquakes, have been established to enable rapid isolation. For events with advanced notice (forest fires), or when communities are on evacuation alert, detailed site specific shutoff plans will be generated.

4.1.3 Restricting Access – Land, Air and Water

To ensure the safety of the public, roadblocks may need to be established. FortisBC response personnel will work with emergency services (fire, police) to determine when this is required, and where access should be restricted.

If required, contact NAV CANADA to issue a Notice to Airmen (NOTAM) to advise pilots of restrictions in the airspace above the incident site or to close the airspace for a certain radius from the release (a no-fly zone). See Corporate ERP, Appendix B: *Procedures for Requesting Notice to Airmen (NOTAM)* for more information.

If the incident is near a navigable waterway, contact the Coast Guard to discuss the possibility of issuing a vessel traffic restriction (NOTSHIP).

4.2 Evacuation

In the event that the public is at risk as a result of a FortisBC incident and must be evacuated from the area, FortisBC response personnel will advise emergency services (fire, police) of the areas that should be evacuated. Note that special consideration must be given to those who have been identified as Critical Customers.

Permission to return to the evacuated area will be decided jointly by the FortisBC Incident Commander and the emergency services Incident Commander(s).

“All Clear” messaging will be coordinated and delivered by emergency services and distributed using the appropriate communication channels.

5 Emergency Response Equipment

5.1 Personal Kit

FortisBC operations personnel who could be dispatched as a first responder to a gas incident should have the following as standard personal equipment:

- Combustible gas indicator
- Fire-resistant coveralls
- Hard hat
- Safety Eyewear
- Safety Footwear
- High Visibility Apparel
- Gloves
- Hearing protection
- First aid kit – FortisBC (Gas) Level 1
- Cell phone
- Flashlight (with extra batteries)
- Notepad, pen, pencil
- *Specific content in this section is available to persons associated with emergency response.*
- *Specific content in this section is available to persons associated with emergency response.*
- *Specific content in this section is available to persons associated with emergency response.*
- *Specific content in this section is available to persons associated with emergency response.*

5.2 Transmission Pipeline Emergency Equipment

Specific content in this section is available to persons associated with emergency response.

Specific content in this section is available to persons associated with emergency response.

6 Station Protection Systems

6.1 Compressor Station Emergency Protection Systems

Specific content in this section is available to persons associated with emergency response.

6.2 Other Station Emergency Protection Systems

Specific content in this section is available to persons associated with emergency response.

7 Compressor Station Emergency Planning Zone Maps

Specific content in this section is available to persons associated with emergency response.

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8 Appendices

Appendix A: Contact Information

Specific content in this section is available to persons associated with emergency response.

Specific content in this section is available to persons associated with emergency response.

Specific content in this section is available to persons associated with emergency response.

Appendix B: Methane Technical Data

The Safety Data Sheet for Methane can be found at <http://ccinfoweb.ccohs.ca/msds/search.html>.

Colour	Colourless
Odour	Odourless
Auto ignition temp.	537°C
Flammability	Extremely flammable gas
Water Solubility	Slightly soluble in water
Reactivity	Contact with incompatible materials. Sources of ignition. Exposure to heat.

Prevention

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
- No smoking.

Response

- Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
- In case of leakage, eliminate all ignition sources.

Hazards

- Extremely flammable gas.
- Contains gas under pressure; may explode if heated.
- May displace oxygen and cause rapid suffocation.

Appendix C: SCENTINEL® S-20 Gas Odorant Technical Data

The Safety Data Sheet for SCENTINEL® S-20 Gas Odorant can be found at

<http://ccinfoweb.ccohs.ca/msds/search.html>.

Form	Liquid
Physical State	Liquid
Colour	Clear
Odour	Repulsive
Water Solubility	Slightly soluble

Prevention

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
- No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical, ventilating and lighting equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Avoid breathing dust, fume, gas, mist, vapours and spray.
- Wash skin thoroughly after handling.
- Contaminated work clothing must not be allowed out of the workplace.
- Wear protective gloves, eye protection and face protection.

Response

- If on skin (or hair): Remove, take off immediately all contaminated clothing. Rinse skin with water and shower.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If skin irritation or rash occurs, get medical advice/attention.
- If eye irritation persists, get medical advice/attention.
- Wash contaminated clothing before reuse.
- In case of fire, use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage

- Store in a well-ventilated place. Keep cool.

Disposal

- Dispose of contents/container to an approved waste disposal plant.

These forms are for reference only. Digital forms can be found on the FortisBC intranet.

Check In/Check Out (ICS 211)

[illegible]


Position Log (ICS 214)

[illegible]

Working Notes

3425 15/07

Incident Action Plan/Incident Objectives (ICS 202)

Incident Action Plan/Incident Objective (ICS 202)		 FORTIS BC™
Incident Name	Date/Time Prepared	
	Date: _____ Time: _____	
Operational Period		
From Date (Yr/Mth/Day): _____	To Date (Yr/Mth/Day): _____	
From Time (24 hrs., incl. time zone): _____	To Time (24 hrs., incl. time zone): _____	
General Control Objectives for the Incident (Include Alternatives)		
Weather Forecast		
General Safety Message		
Attachments (Check if attached)		
<input type="checkbox"/> Organization List (ICS 203)	<input type="checkbox"/> Incident Map	<input type="checkbox"/>
<input type="checkbox"/> Assignment List (ICS 204)	<input type="checkbox"/> Traffic Plan	<input type="checkbox"/>
<input type="checkbox"/> Communications Plan (ICS 205)	<input type="checkbox"/> Site Safe Work Plan (ICP)	<input type="checkbox"/>
<input type="checkbox"/> Medical Plan (ICS 206)	<input type="checkbox"/> Incident Action Safety Plan Analysis (ICS 215a)	<input type="checkbox"/>
Prepared By _____	Signature _____	
Approved By _____	Signature _____	
3426 19/12		

Appendix E: OGC Incident Classification Matrix

The OGC incident Classification Matrix can be found online at: <https://www.bcogc.ca/incident-classification-matrix>



INCIDENT CLASSIFICATION MATRIX

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

TABLE 1. CONSEQUENCE RANKING

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

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

TABLE 2. PROBABILITY RANKING

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

TABLE 3. INCIDENT RISK SCORE AND CLASSIFICATION

CONSEQUENCE + PROBABILITY = RISK SCORE (this must be completed)

RISK SCORE	ASSESSMENT RESULT
Minor (1-2)	Notification Only; permit holder must notify the Commission online within 24 hours using the Form A: Minor Incident Notification Form . In addition to Form A, spills must also be reported to EMBC.
Moderate (3-4)	Level-1 Emergency; immediate notification (call EMBC)
Major (5-6)	Level-2 Emergency; immediate notification (call EMBC)
Serious (7-8)	Level-3 Emergency; immediate notification (call EMBC)

SEE OVER

Updated: 08-Sept-2017
Effective: 08-Sept-2017

SPILL REPORTING CRITERIA

Where the permit holder holds or maintains rights, the permit holder must report to the BC Oil and Gas Commission, all spills of materials as identified below:

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


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

OTHER REPORTABLE INCIDENTS

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

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

Updated: 08-Sept-2017
Effective: 08-Sept-2017

<div><div>BC Oil & Gas Commission</div></div> <div>OGC Incident Classification Matrix</div>		Probability				
		4	3	2	1	0
Consequence		<div><div><input type="checkbox"/> Uncontrolled, with control unlikely in near term</div><div><input type="checkbox"/> Escalation highly unlikely; controlled or imminent control</div><div><input type="checkbox"/> Will not escalate; no hazard; no monitoring required</div></div>	<div><div><input type="checkbox"/> Escalation possible; under or imminent control</div><div><input type="checkbox"/> Escalation unlikely; controlled or likely imminent control</div></div>	<div><div><input type="checkbox"/> Escalation unlikely; controlled or likely imminent control</div><div><input type="checkbox"/> Escalation highly unlikely; controlled or imminent control</div></div>	<div><div><input type="checkbox"/> Escalation highly unlikely; controlled or imminent control</div><div><input type="checkbox"/> Will not escalate; no hazard; no monitoring required</div></div>	
	4	Level 3	Level 3	Level 2	Level 1	Level 1
	3	Level 3	Level 2	Level 2	Level 1	Level 1
	2	Level 2	Level 2	Level 1	Level 1	Minor Notification Form
	1	Level 2	Level 1	Level 1	Minor Notification Form	Minor Notification Form
0	Level 1	Level 1	Minor Notification Form	Minor Notification Form	No notification Required	

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

Updated 08-Sept-2017

Effective 08-Sept-2017

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

Updated: 06-Sept-2017
Effective: 06-Sept-2017

Appendix F: OGC Notification Exemption Letter

Specific content in this section is available to persons associated with emergency response.