Chapter 4.1 Completing Well Activity Details

4.1 Well Activity Tab

Applicants applying for a well permit must complete the well activity tab in the Application Management System. The well tab is made up of three components: well area overview, well details (further broken down to include sour well, flaring and exemptions) and well land details.

This section includes an overview of well permitting, guidance regarding well planning and design, details related to well-specific application requirements and detailed instructions for completing the data fields of the wells tab of the Application Management System.

Please Note:

This manual is written as a whole and provided to industry in sections to allow permit holders to access activity chapters. It is prudent of the permit holder to review the manual in its entirety and be aware of the content in other sections of the manual.

4.1.1 Wells Defined

Wells are an oil and gas activity as defined in OGAA, and are specifically defined in the Petroleum and Natural Gas Act as:

A hole in the ground:

a) Made or being made by drilling, boring or any other method to obtain petroleum or natural gas.

b) Made or being made by drilling, boring or any other method to explore for, develop or use a storage reservoir for the storage or disposal of

petroleum, natural gas, water produced in relation to the production of petroleum or natural gas, waste or any other prescribed substance.

c) Used, drilled or being drilled to inject natural gas, water produced in relation to the production of petroleum or natural gas or other substances into an underground formation in connection with the production of petroleum or natural gas.

d) Used to dispose of petroleum, natural gas, water produced in relation to the production of petroleum or natural gas, waste or any other prescribed substance into a storage reservoir, or

e) Used, drilled or being drilled to obtain geological or geophysical information respecting petroleum or natural gas.

And includes a water source well.

Approved oil and gas applications receive a permit under Section 25 of OGAA to carry out construction and operations pertinent to the activity. The permit expires where construction activities have not started within two (2) years of permit issuance. Unless expired, the permit remains active until cancelled, suspended or declared spent, according to the provisions of OGAA.

Well Names

Well names are generated by, and populated into, AMS automatically when spatial data is uploaded. Well names are based on information gathered at the application stage and formatted as follows:

- Company abbreviation – working interest partner(s) abbreviation – well profile – oil or gas field name – legal location or NTS/DLS legal location.

Each well must have a unique legal location. To distinguish wells within a quarter unit in the PNG grid system or within a legal subdivision in the DLS system, users must identify differing wells with an exception code. Exception codes must be entered into AMS manually to differentiate between multiple wells at a single legal location. Well names are issued by the Commission at the time of permit issuance.

4.1.2 Creating a New Well Activity Application

New Well Applications

A new well permit is required for any new well to be constructed and operated, including re-entering existing wells which have been previously issued a certificate of reclamation.

An application may include a single or multi-well application and may be submitted with other oil and gas activities. The system generates data input requirements for additional wells based on the well-points specified within the spatial data upload. Where multi-well pads are planned, the Commission encourages applicants to submit the all the wells together in one application.

If the subsequent well includes new land, the new land can be included in the subsequent well application.

Well Permit Amendments

A well permit amendment is required for changes to approved well permits as outlined in the following scenarios. Approval of a permit amendment is required before the associated changes are carried out. Amendment scenarios include:

- Surface footprint (surface disturbance) is changed.
- Objective formation(s) or the formation at total depth has changed.
- Expected hydrogen sulphide (H_2S) release rate is changed, resulting in a change of the emergency planning zone.
- Change blowout prevention to a lower class.
- Change to increase permitted flaring volumes.
- Change in well type (for example from Production to Disposal)
- Change in BHL with attendant changes in well profile such that the well name adds or deletes “HZ”.
- Adding (drilling) a new bottom hole location to a well that has previously been drilled and rig released. This can be lengthening, window cutting, or O/H sidetracking from an existing wellbore.

Permit amendments are not required:

- For minor changes if the proposed final total depth (FTD) resulting from geological prognosis change, simple changes to hole size or casing size, addition of a core or a drillstem test (DST) or minor changes in well centre coordinates.
- When changing well head location if there is no change to wellsite location. When moving the well head (within the permitted wellsite), report the new coordinates on the Summary Report of Drilling Operations (SRDO).

Please Note:

Neither the working interest partner nor the oil and gas field name can be modified through an amendment application. To change the working interest partner a permit holder is required to submit a Well Name Change Notification Form to assetmanagement@bcogc.ca. To change the oil and gas field name, send a request to OGCservicedesk@bcogc.ca.

Well Identification

The well must be identified by type, sequence and drilling direction.

1. Well type:
   - Gas is a well drilled for the primary purpose of extracting natural gas.
   - Oil is a well drilled for the primary purpose of extracting oil.
   - Water source is a well drilled to obtain water for the purposes of injecting water into an underground formation in connection with the production of petroleum or natural gas.
   - Injection is a well drilled or operated for the primary purpose of injection into a subsurface formation to increase oil recovery or the storage of natural gas. It can be either water or gas injection.
   - Disposal is a well drilled or operated for the primary purpose of disposal of fluids that are a by-product of production.
   - Observation is a well drilled to observe production parameters.
2. Exception code:
   - The first well being applied for within a quarter unit in the PNG grid system or within a legal subdivision in the DLS system, will use the defined NTS or DLS legal location.

- Since each well must have a unique legal location, additional wells within a quarter unit in the PNG grid system or within the legal subdivision in the DLS system, must distinguish each well with an exception code. Exception codes do not have to be in sequence based on the order in which the permit holder plans to drill them. Depending on the number of wellsites in a quarter unit and the order in which wells were applied for, exception codes may not be sequential on a single wellsite.

3. Well drilling direction

- Directionally drilled wells are greater than a five degree inclination for a minimum of 150 metres of measured depth.
- Horizontally drilled wells have a greater than an 80 degree inclination for a minimum of 100 metres of measured depth.

Both injection and disposal wells require a permit to construct and complete a well. In conjunction, an additional order or permission is required under s. 75 of OGAA before a permit holder can use a particular sub-surface formation for the purpose of disposal or injection. This can be obtained via an amendment to the original permit or independently, depending on the specifics of the case. Contact the Commission's Reservoir Engineering department for more information regarding orders allowing for injection or disposal.

Well Classification

Wells are classified as development, exploratory wildcat, exploratory outpost, discovery, special data or observation well as defined in Section 2 of the Drilling and Production Regulation. To determine the classification of a well, refer to the High Resolution Map of Schedule 2 Unconventional Zones and Shape Files available on the Commission's website.

The Commission may reclassify a permitted well, post approval, if a well, or a portion of a well (in the opinion of the Commission) resulted in a discovery of prior unknown factors.

The Commission may reclassify re-entries if a well is re-entered and a new pool is not identified. Well information obtained during the re-entry is released in accordance with the classification assigned to the re-entry event.

The classification assigned to the well is reflected on the well permit letter. It is the permit holder's responsibility to review the classification assigned and follow-up with the Commission if there are any questions.

4.1.3 Well Planning and Design

This section provides typical planning and design requirements, guidelines and considerations when planning and designing a well for an oil and gas activity application. The standards and guidelines presented here form a substantial basis for assembling an application. The Commission reviews the well application relative to the engineering and technical information provided in AMS; therefore, applicants should review this section for an indication of any application requirements or attachments required in relation to the components.

Regulatory Requirements

Well activities must meet the design and operational requirements outlined in the Oil and Gas Activities Act (OGAA), Drilling and Production Regulation (DPR), the Environmental Protection and Management Regulation (EPMR).

If an exemption is requested from regulatory requirements, an exemption request may be submitted prior to an application, with an application, or after a permit has been issued. It must include:

- Specific regulatory provision requiring an exemption.
- Rationale for exemption (explanation of why an exemption is required).
- Proposed plan showing mitigation strategies to reduce impacts.

If exemptions are approved prior to the application, this approval must be attached to the application.

Specific well exemption considerations include:

- Inline testing is required for all new wells within 1.25 kilometres of a residence and 3.0 kilometres or less of a suitable pipeline. If an exemption is desired for a specific well, a justification for the exemption

must be included with the permit application. Exemption considerations are outlined in Commission Directive 2010-03.

Guidance Requirements

In addition to the requirements articulated in the Oil and Gas Activity Application Manual, well activities should meet guidance recommendations in the following Commission documents:

- Oil and Gas Activity Operations Manual.
- Inline Testing Directive.
- Supplementary Information for Water Source Wells.

If oil and gas activities cannot adhere to the guidance recommendation then justification for a variance must be included in the permit application. Include specifics of the guidelines not followed, an explanation of why they cannot be followed, proposed plan and mitigation strategies.

Advisory Guidance

The Regional Health Authority must be contacted prior to construction of the camp sump and disposal of sump fluids before reclamation. Locations of the various Health authorities are:

- 1001-110th Avenue, Dawson Creek, B.C., (250) 719-6500.
- 5217 Airport Drive Bag 1000, Fort Nelson, B.C., (250) 263-6000.
- 10115-110th Avenue, Fort St. John, B.C., (250) 263-6000.

Other than Normal Well Spacing

Normal spacing requirements for oil and gas wells are defined within Sections 5 through 7 of DPR.

Other than normal spacing areas occur along the entire provincial boundary and along the boundary of the Peace River Block, (Township-Range survey system), where it adjoins the Petroleum and Natural Gas Grid system. Other than normal

spacing areas can also occur where active tenure was surrendered up to the boundary of a newly established park or protected area. They may also be established to manage resource production more equitably.

Horizontal wells with the productive interval open in two or more normal spacing areas, and not within an approved reservoir project (good engineering practice, pressure maintenance or unitized operation), must have an approved enlarged "other than normal" spacing area prior to production.

To space wells outside of the requirements, review the Other Than Normal Spacing Application Guideline and Information Letter EMD 00-09 Other Than Normal Spacing and Target Areas for Petroleum and Natural Gas Wells.

Wells with Surface Casing Set Depth Less Than 600m

Wells with a surface casing set depth less than 600 metres require a justification indicating how the base of useful ground water was determined and how the ground water will be protected. Justifications for the planned surface casing set depth can be submitted to the Commission via the Application Management System. For more information, refer to INDB 2016-09 Technical Guidance for Determining "Base of Usable Groundwater" on the Commission's website.

An intermediate casing program can be used as a justification for a shallow set surface casing if the intermediate hole will be drilled with non-toxic drilling fluid and the intermediate casing is to be set deeper than 600 metres and cemented in full length.

4.1.4 Well Specific Activity Requirements

This section outlines requirements for well applications. Requirements are dependent on the characteristics of each well and are outlined in full details below including a description, details of additional information and requirements. In most cases, the details are input into the well application tab within AMS, but may require the upload of an attachment to support the details

Attachments must meet specific size and file formatting restrictions in order to be uploaded correctly as defined in Section 5.8 of this manual.

Technical and engineering well details are required for each well and include surface hole details, bottom hole details, well classification, well type and well characteristics.

For well re-entry of an active or abandoned well the Engineering Data Sheet for Re-entry must be completed and submitted with application as an “Other Attachment”.

Water Source Wells Requirements

A water source well is defined in Petroleum and Natural Gas Act as:

- A hole in the ground drilled to obtain water for the purposes of injecting water into an underground formation in connection with the production of petroleum or natural gas.

A water source well permit is required before drilling or operating a water source well. Petroleum and natural gas titles are required for water source wells if petroleum or natural gas is produced. A water well drilled for the purpose of supplying water for drilling, camps, hydrostatic testing of pipelines, etc., does not classify as a "water source well” therefore does not require a well permit, but is regulated under the Water Sustainability Act.

All water source wells require well permits, however, companies wishing to explore for groundwater sources through test well drilling to depths of up to 300m on Crown land, may do so under an Investigative Use through an Associated Oil and Gas Activity application. Following test well drilling under an Investigative Use , a water source well permit under OGAA and authorization under the Water Sustainability Act are required before any test well can be used as a water source.

Groundwater test wells drilled to depths greater than 300m on Crown land, or to any depth on private land cannot be authorized under an Investigative Use

Permit, and require direct application for a well permit. Investigative Use applications are discussed in more detail in Section 4.6 of this manual.

Applicants are encouraged to consult the Supplementary Information for Water Source Wells document available on the Commission's website for additional information regarding drilling of test groundwater wells under an Investigative Use and description of operational requirements for water source wells.

Groundwater Usage

The use of groundwater is regulated under the Water Sustainability Act and requires a water authorization (licence or approval) from the BC Ministry of Forests, Lands and Natural Resource Operations & Rural Development (FLNRORD). Water licences are required to operate water source wells, unless they access "deep groundwater" as defined in the Water Sustainability Regulation. Consult the Commission's Water Licence Application Manual.

Operators must comply with the Ministry of Environment's Ground Water Protection Regulation and the Ministry of Health's Protection Drinking Water Protection Act when using groundwater for camp water supply.

Requirements for Fracturing Operations Less than 600m Below Ground

The Drilling and Production Regulation states fracturing operations must not be conducted at a depth less than 600 metres below ground level unless the operations are permitted by the well permit. Fracture model simulation is required as part of the application if fracturing at depths shallower than 600 metres and must include a risk assessment for all potential impacts to usable groundwater resulting from the fracturing operations (where the "base of usable groundwater" is defined as per IB 2016-09). As a minimum, the fracture model simulation report must include:

- Fracture program design including proposed pumping rates, volumes, pressures, and fluids.
- Estimation of the maximum height and length of fracture propagation.

- Determination of the "base of usable groundwater" as per Information Bulletin 2016-09.
- Identification of water supply wells within 200 m of the proposed surface hole location and within 200 lateral metres of the surface trajectory of a horizontal or directional well. Include notification documentation of the water well owners of the proposed activity.
- Development of a groundwater monitoring program for the identified water supply wells that includes pre-drilling and post-fracture sampling of water wells where agreed to by the water well owners.
- Verification of cement integrity through available public data of all wells under the Commission's jurisdiction within a 200 metre radius of the well to be fractured.
- Determination of bedrock depth.
- Assessment of the suitability and geological integrity of the candidate well for the proposed fracturing operations including casing and cement integrity.

Sour Well Formation Details

Applicants submitting a permit application for a well with an expected H_2S release rate greater than 0.01 m^3/s, must provide additional information, including H_2S release rate rationale spreadsheet and emergency planning zone (EPZ) map. Sour well formation details include:

- All expected sour zones and the corresponding maximum H_2S content.
- Estimated H_2S release rates for drilling and completions in accordance with the CAPP H_2S Release Rate Assessment Guidelines.
- Distance to nearest occupied dwelling. In remote areas, it is acceptable to indicate the distance to the nearest occupied dwelling with a greater than symbol. For example, distance to nearest occupied dwelling: greater than 4.2 kilometres. The Commission does not require applicants to search a large radius to identify the nearest occupied residence. It is sufficient to ground truth the area out to the edge of the Emergency Awareness Zone (EAZ).

If the well is classified as a special sour well, the applicant must also submit a drilling plan. Drilling plan details include (but not limited to):

- Drilling fluid type.
- Underbalanced drilling (pressure in the well bore is lower than the fluid pressure in the formation).
- Managed pressure drilling information (an additive drilling process used to precisely control the annular pressure profile throughout the well bore).
- Sump information. A remote sump must be shown on construction plans.
- Geological information, including the extent and quality of offset data, a summary of offset hole problems and adverse drilling occurrences, an assessment of the possibility of encountering similar problems and occurrences at the proposed well, and how the problems and occurrences is dealt with.
- Description of the equipment used to drill the well including:
    1. Blowout preventer system, including a discussion as to whether blind shear rams is used and if not, an assessment or evaluation of the possible use.
    2. Drill pipe.
    3. Mud-gas separators.
    4. Drilling fluid system and equipment (type, density, quantity, hole volume, surface volume, stockpile supplies and availability, H_2S scavenger, mixing and pumping equipment).
    5. Wellhead (casing bowl, intermediate spool, valves) and casing (surface, intermediate, production).
- Description of the procedures to be followed in drilling the well including:
    1. Inspection and testing procedures ensuring all equipment is fully operational prior to the well reaching the critical depth and procedures to ensure a state of readiness is maintained.
    2. Procedures to ensure wellsite personnel are familiar with the drilling and emergency response plan, trained in the use of the drilling and safety equipment, and are proficient in blowout preventer and well control procedures.
    3. Procedures to ensure wellbore and casing integrity (directional survey, formation leak-off tests, casing pressure test, caliper logs).

- Description of the monitoring of drilling and drilling fluid parameters to be installed ensuring drilling occurrences (kicks, lost circulation) or warning signs (drilling rate, torque, pump pressure, gas-cut mud) are promptly detected.
- Information to confirm, prior to licensing sufficient well-site personnel are available and adequately trained and experienced for the drilling operation.

Special sour wells are classified by a combination of potential H_2S release rate and distance from an urban centre as outlined below. In addition, the Commission may classify a well as a special sour well based on the maximum potential H_2S release rate, population density, environment, sensitivity of the area and any expected complexities during the drilling phase.

Potential H_2S Release Rate (m^3/s)	Distance to Boundary of Urban Centre
$0.01 \leq H_2S < 0.10$	≤ 500 metres
$0.10 \leq H_2S < 0.30$	≤ 1,500 metres
$0.30 \leq H_2S < 2.00$	≤ 5,000 metres
$H_2S \geq 2.00$	N/A

Requirements where applicant is not PNG rights tenure holder

According to Section 24.4 of OGAA, if the applicant is not the registered petroleum and natural gas rights holder for the target formation, an agreement between the applicant and the registered holder of the subsurface rights must be in place.

Applicants must adhere to the conditions of the PNG tenure and ensure any proposed applications are compliant with the tenure conditions set out under Section 72 of the PNG Act, if there are any.

If the PNG tenure includes any special conditions, known as caveats, the applicant must provide an explanation of the caveats in AMS. These caveats disclose information related to potential access restrictions that an applicant may adhere to and that the Commission may need to consider as part of the decision making process. Caveats may have been identified as part of the pre-tenure engagement referral process with another Ministry, local government and or First Nation.

For more information, refer to the Ministry of Natural Gas Development website.

Emergency Response Planning

An Emergency Response Plan (ERP), or an update to an existing plan, must be submitted to the Commission prior to commissioning a well, in accordance with Section 7 of the Emergency Management Regulation. Emergency planning zones are determined using H_2S content of product in a well or pipeline. Review Schedule A of the Emergency Management Regulation for more information.

4.1.5 Well Activity Submission: Data Field Completion

Table 4-B below provides detailed instructions for each of the data fields requiring input (not auto populated) within the Application Management System.

Table 4-B: Application Instruction Table for the Wells Overview and Wells Detail Tabs

Label	Instructions
Is the activity within previously assessed construction corridor	Indicate if the proposed activity falls within a previously assessed review corridor or previously assessed construction corridor.
Activity Description	Provide a brief description of the project and any comments relevant to the well and/or application.
File XREF Number	Applicant's internal cross reference number.
Working Interest Partner (Optional):	Select the Working Interest Partner.
More Than One WIP	Check the box, if more than one Working Interest Partner.
PNG Tenure Rights ID	Enter the permit, drilling licence or lease number(s) for bottom and heel to toe locations.

Label	Instructions
Is there an agreement in place for those PNG tenures in which the proponent does not hold the PNG rights?	If the applicant is not the registered petroleum and natural gas rights holder, an agreement between the applicant and the registered holder of the subsurface rights is required.
Does the proposed application adhere to the conditions of the PNG tenure?	Indicate whether planned drilling and production is consistent with the conditions of the PNG tenure set out under Section 72 of the PNG Act, if there are any. If there are no conditions applied to the PNG tenure, indicate "Yes".
Does the PNG tenure include caveats?	This refers to any caveats that were placed on the PNG tenure. These caveats disclose information related to potential access restrictions that an application may adhere to and that the Commission may need to consider as part of the decision making process. Caveats may have been indentified as part of the pre-tenure engangement referral process with another Ministry, local government and/or First Nation.
COR Re-entry Details	
Is re-entry required on COR'd well?	Indicate yes, if this application is for the re-entry of a well that has been issued a certificate of restoration. Active, abandoned or suspended well permits must apply to re-enter via the amendment process.
WA Number	Enter the original WA number of the well being re-entered.
Existing Total Depth (mKB)	Indicate the existing total maximum depth reached in the well in metres.
Case Detail	
Grade	Enter API Grade in format: • Capital letters, dash, numbers (i.e. L-80; C-90). Enter Non-API Grade in format: • Capital letters and numbers, no dash (i.e. TN110SS, HCP110).
Re-Entry Summary	Provide the reason for re-entry and a description of the program summary.

Surface Hole Details	
Primary or Subsequent Well	The Primary well is the applicant's first well applied for on the wellsite application area. Subsequent wells are additional wells on the same wellsite area after the primary well has been applied for.
Primary WA Number	Indicate the primary well authorization number. This is a mandatory field.
Proposed Surface Hole DLS Location: LSD	Enter Legal Subdivision (LSD) Value: 01 to 16.
Proposed Surface Hole DLS Location: Section	Enter Section Value: 01 to 36.
Proposed Surface Hole DLS Location: Township	Enter Township Value: 076 to 088.
Proposed Surface Hole DLS Location: Range	Enter Range Value: 13 to 26.
Proposed Surface Hole NTS Location: Quarter Unit	Enter Quadrant Unit Value: A to D.
Proposed Surface Hole NTS Location: Unit	Enter Map Unit Value: 001 to 100.
Proposed Surface Hole NTS Location: Block	Enter Map Block Value: A to L.
Proposed Surface Hole NTS Location: Map	Enter Mapsheet and Map Group Value in format XXX-X-XX. XXX = Mapsheet Value: 082, 083, 092, 093, 094, 095, 102, 103, 104, 114. X = Mapsheet Value: A to P. XX= Map Group Value: 01 to 16.
Ground Elevation (m)	Enter the ground elevation at well center.

Well Classification	Select the well classification as per the Drilling and Production Regulation.
Innovative Technology Project	The applicant must identify whether the project is within an area designated as a special project using innovative technology under OGAA Section 75 (1) or prescribed in s. 10 of the Oil and Gas Activities Act General Regulation.
Approval Number	Provide the approval number for the special project.
Well Type	Selected Well Type should reflect the expected operation of the well, i.e. if well will be utilized for "Temporary Observation" purpose during first 2 months following rig release, but will then be converted to "Gas Production", Well Type should indicate "Gas Production".
Water Characteristics	Select the water characteristics of the water source well.
Reviewable Project by the Environmental Assessment Office	Indicate yes, if review by the environmental assessment office is applicable.
Bottom Hole Details	
Will a New Bottom-hole Location be Drilled?	If a well has not been rig released, selecting "NO" will allow edits to the existing bottom-hole information but will not allow a new bottom-hole to be added. If a well has not been rig released, selecting "YES" will allow both edits to the existing bottom-hole information and a new bottom-hole to be added. If a well has been rig released, selecting "YES" will require a new bottom-hole to be added and the existing bottom-hole will be unavailable for edits. If a well has been rig released, selecting "NO" will allow only the Objective Formation and Objective Fluid to be edited and will not allow the addition of a new bottom-hole.
Well Profile	Select well profile: • Directional if the drill path has an inclination greater than 5 degrees for a min 150m measured depth. • Horizontal if the drill path has an inclination greater than 80 degrees for a min 100m measured depth. • Vertical if the drill path does not have an inclination greater than 5 degrees for a min 150m measure depth.
NTS/DLS Location	Enter the NTS or DLS location of the proposed bottom hole.

Expected Total Depth (m TVD)	Enter the true vertical depth of the well in meters. True Vertical Depth is the vertical depth from the ground surface to the bottom-hole location of the well.
Expected Total Depth (m MD)	Enter the total measured depth of the well in meters. Measured depth is the length of the well bore measured along its actual course through the earth.
Formation at Total Depth	Select the name of the formation at total depth.
BOP Class	Select the blow-out preventer class to be used. This is optional if the well type is a water source. • True Vertical Depths (TVD) up to 1,800 meters require minimum class A. • TVD between 1,800 and 3,000 meters require minimum class B. • TVD between 3,000 – 5,500 meters require minimum class C. • TVD over 5,500 meters require minimum class D. • Select " Diverter" only for drilling a well with low risk of encountering hydrocarbon bearing formation. • Select "Other " for a situation different from all listed above.
Objective Formation	Select the name of the objective formation.
Objective Fluid	Select the objective fluid (oil, gas or water) for the proposed well.
Objective Depth (m TVD)	Enter the true vertical depth at which the objective formation will be reached in metres. True Vertical Depth is the vertical depth from the ground surface to the depth where the formation will be reached.
Objective Depth (m MD)	Enter the measured depth at which the objective formation will be reached in meters. Measured depth is the length of the borehole, measured along its actual course through the earth.

Fracturing Details	
Fracturing Under 600 m	A fracturing operation must not be conducted at a depth less than 600 metres below ground level unless the operations are permitted by the well permit, in accordance with Section 21 of the Drilling and Production Regulation.
Existing Water Well within 1km: (Optional)	If fracturing under 600 metres, upload rationale and enter the water well ID of any existing water wells within one kilometre of the proposed well.
Sour Well Formation H_2S Content Details	
Formation Name	Select the names of the expected H_2S formations.
Maximum H_2S Content (%)	Enter the maximum H_2S % concentration of the expected formation.
Area Details	
Distance to Nearest Occupied Dwelling (km)	Indicate the distance in kilometres to the nearest occupied dwelling. Distances must be accurately measured if the occupied dwelling is located within a 2 kilometre radius from the proposed activity. In remote areas, it is acceptable to estimate the distance to the nearest occupied dwelling. The Commission does not require applicants to search a large radius to identify the nearest occupied residence. It is sufficient to ground truth the area out to the edge of the Emergency Awareness Zone (EAZ).
Distance to Nearest Urban Centre (km)	Indicate the distance in kilometres to the nearest occupied urban centre. An urban centre is defined as a city, town, village, summer village, hamlet with no less than 50 separate buildings, each of which must be an occupied dwelling. Also, any First Nation reserve, other incorporated centres and any similar development the Commission may designate as an urban centre.
Distance to Nearest Populated Area (km)	Indicate the distance to the nearest populated area, ie: occupied dwelling, school, picnic ground, or other place of concourse.
H2S Release Rate Details	
H2S Rationale Document	H2S Release Assessment Data Search and Analysis documents.

Critical Features within EPZ Details	
Are there critical features within the EPZ?	Are there any occupied dwellings, public facilities, places of business, numbered or named highways, parks or recreational sites, roads egress or trap lines inside the calculated Emergency Planning Zone (EPZ)?
Critical Feature Type	Indicate the following: Numbered Highways - A major highway runs through the EPZ e.g. Alaska Highway, Highway 97, Heritage Highway, Highway 2, etc. Roads Egress - There are residents who live on dead end roads, beyond the EPZ, who must egress through the EPZ.
Number within completion case EPZ	Includes the number of critical features within the effective EPZ.
Special Sour Well Details	
Does This Well Meet Criteria for a Special Sour Well?	Indicate Yes or No. The classification of special sour wells is based on two primary criteria; H_2S release rate potential and proximity to populated centers.
Flaring	
Objective Formation	Select the formation for each objective formation where flaring may be required.
Maximum H_2S Concentration (%)	Indicate the expected maximum H_2S content for the objective formation.
Requested Volume	Indicate the amount of gas that the applicant would like to flare represented in 10^3m^3 (thousand cubic metres).
Requested Volume Rationale	Rationale is required when the 'sum' of all formations exceeds the following thresholds for the proposed well classification: • 400 10^3m^3 for development wells. • 600 10^3m^3 for exploratory wells.

Flaring Description (optional)	Provide a description and/or justification in the space provided or upload the description and/or justification document by indicating yes below.
Flaring Description Attached	Indicate yes, to upload description and/or justification document.
Exemption	
Variance Explanation	Provide an explanation as to why a variance to well operational guidelines is required.
Does this application adhere to the Inline Testing Directive?	Inline testing is required for all new wells within 1.25 kilometres of a residence and 3.0 kilometres or less of a suitable pipeline.
Variance Explanation	Provide an explanation as to why a variance is required.
Exemption from Drilling and Production Regulation	Indicate if exemption from the Drilling and Production Regulation is required.
Exemption for	Enter the section of the regulation in which an exemption is required.
Exemption Explanation	Provide a detailed explanation / rationale for the regulatory exemption request. Include statements indicating why the regulation cannot be followed, proposed alternate strategies and mitigation.