Chapter 4.2 Completing Pipeline Activity Details

4.2 Pipeline Activity Tab

Applicants applying for a pipeline permit must complete the pipeline activity tab in the Application Management System. The pipeline tab is made up of three components: pipeline overview; pipeline details including segment details, segment linkages; installation details and exemptions; and land details.

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

Please Note:

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

4.2.1 Pipelines Defined

Pipelines are an energy resource activity as defined in ERAA as:

Piping through which any of the following is conveyed:

a) an energy resource,

a) Carbon dioxide,

b) Water used for, or produced in the course of, an energy resource activity,

c) Solids,

d) Substances prescribed in Section 133(2)(v) of the Petroleum and Natural Gas Act,

e) Other prescribed substances.

And includes installations and facilities associated with the piping, but does not include:

f) Piping used to transmit natural gas at less than 700 kilopascals (kPa) to consumers by a gas utility as defined in the Gas Utility Act.

g) A well head, or

h) Anything else that is prescribed.

Additionally, the following substances are prescribed in the ERAA General Regulation for the purposes of paragraph (e) above:

- Water and steam used for geothermal activities

And the following is prescribed for the purposes of paragraph (h) above

Pipelines used in a gas distribution main, as defined in regulations under the Safety Standards Act.

Energy Resource is defined in ERAA as:

a) petroleum,

b) natural gas,

c) hydrogen,

d) methanol, or

e) ammonia

In the field, pipelines encompass all piping from pig sending barrel to pig receiving barrel including all segments, risers, and appurtenances in between. For pipelines without pig barrels, the pipeline includes the last valve on the riser (or below ground valve), pump stations, line heaters, regulator stations, etc. prior to the facility tie-in. This transition may occur inside or outside the lease boundary.

Approved pipeline applications receive a permit under Section 25 of ERAA to construct and operate a pipeline. Pipeline permits expire where construction activities have not started within two (2) years of permit issuance. Unless expired,

the pipeline permit remains active until cancelled, suspended or declared spent, according to the provisions of ERAA.

Temporary Above-ground Freshwater Lines

Temporary above-ground lines designed to transport fresh water are not within the definition of a pipeline; therefore a pipeline permit is not required. Temporary above-ground water lines are authorized by the Regulator as associated activity and require an applicable authorization. Associated activities are detailed in Section 4.6 of this manual.

Canadian Energy Regulator (CER) Pipelines

In accordance with Sections 8 and 9 of ERAA, the Regulator has limited authorities with respect to federally regulated pipelines. These authorities do not include the power to issue an approval for these pipelines; however, applications for the pipeline right-of-way, road right-of-way; as well as ancillaries including facilities are submitted through AMS. Refer to Chapter 7 of this manual for more information regarding CER applications.

Preliminary Plans and Fixing the Site of a Proposed Pipeline Route

Under Section 23 of ERAA:

- Submitting a pipeline preliminary plan when preparing an application for a pipeline permit is optional. However, it is mandatory when entering land to conduct preliminary surveys or examinations, to fix the site of a proposed pipeline route.

Submission of a pipeline preliminary plan must include:

- Detail the proposed route, including a map of the proposed pipeline route at an appropriate scale:
    1. Base data.
    2. Tenure holders.
    3. Land parcels (legal land title).
    4. Portions of private land under agreement.
    5. Portions of private land without an agreement.
    6. Portion of land on which activities are completed.

- Outline proposed portions on private land where the applicant has not been granted access and submit the prescribed security to the Regulator to compensate the land owner or the Crown for any damage or disturbance possibly caused by fixing the site.
- Complete the required notifications.

Applicants should follow best management practices in addition to the regulatory requirements when following the preliminary plan process including:

- Immediately advise land owner when a situation requires the land owner's attention.
- Immediately notify land owner of changes made in respect of the obligations in Section 23 of the Requirements for Consultation and Notification Regulation.
- Consult land owner on preferred method of land access and only use motorized vehicles with the permission of the land owner.
- Ensure surveyors minimize the number of survey stakes used.
- Ensure surveyors only cut trees or branches in areas where growth is too dense for site lines.
- Ensure any trees or branches cut down are disposed of in a manner acceptable to the land owner.
- Ensure assessments are coordinated (for example, soil assessment with archaeology assessment) to avoid secondary intrusions.
- Provide the land owner with any soil assessment reports.

Additional Consultation and Notification Requirements: Notification Before Fixing the Site of a Pipeline

Notification requirements specific to fixing the site of a pipeline are indicated in Section 15 (3) of ERAA and Section 15 of the Requirements for Consultation and Notification Regulation. This notification precedes the consultation and notification associated with the pipeline permit application.

A person is required to notify the land owner of the intent to enter onto the land owner's property. The notice must include:

- Applicant name and contact name (person entering the land).

- Applicant contact information (or land agent representing the applicant) including contact name and phone number and email address.
- Preliminary plans under Section 23 (1) of ERAA.
- Description of the specific portion of the land to be surveyed or examined, and the activities to be undertaken for the purpose of fixing the site of the pipeline.
- Timelines and order in which proposed activities are carried out. For multi-well pads, include the entire schedule of activities over various years, where applicable.
- Statements advising the land owner of notification and consultation obligations if the company intends to submit an application for a pipeline permit on the land.

Applicants intending to enter on land in accordance with Section 23 (2) of ERAA must, provide notice to the land owner at least two (2) working days before entering the land.

4.2.2 Creating a New Pipeline Activity Application

New Pipeline Applications

A new pipeline permit is required for any new pipeline construction or operation, including pipelines constructed in existing right-of-way or over new Crown or private land. New pipeline segments can be added to an existing pipeline permit via an amendment application.

Pipelines can be applied for individually or with other energy resource activities as part of a multi-activity project application. The system generates data input requirements for additional activities specified within the spatial data upload.

Pipeline Permit Amendments

Approval of a permit amendment application is required before the associated changes are carried out. Applications for amendments to pipeline permits may be required if the permit holder plans to change the surface disturbance associated with the pipeline permit or certain operating parameters of the pipeline. With respect to operating parameters, changes requiring an amendment to a pipeline permit include:

- Increase in maximum operating pressure.
- A new pipeline segment to an existing pipeline permit.
- Modify pipeline, including installation of a liner within an existing pipe.
- Adding the following installations, these should be added under the pipeline installation section in the application and require spatial data:
    1. Flare stack
    2. Generator
    3. Line heater
    4. Pump
    5. Regulator
    6. Riser
    7. Tank
    8. Valve (pressure control and / or isolation. Isolation valves and Emergency shut down valves should be entered as two separate installations.)
- A permit amendment is required, prior to a change of service, when planned or actual fluid composition of a pipeline is outside of the permitted parameters or does not meet the criteria of a notification. Common examples of change of service fluid that require an amendment include increase of H_2S and changes to some fluid types.
- The following changes do **not** require an amendment, and can be submitted as a notification providing the pipeline permit includes the notification permission and:
    a) prior notice of the change is provided, in the form and manner the BC Energy Regulator requires;
    b) the change is not made before the 7th day after the notice identified in (a) is submitted or the day the permit holder receives notification from the BC Energy Regulator, whichever occurs first;
    c) the change does not affect direct connections to pipelines and facilities;
    d) there are no changes to approved pressure protection, H2S protection or isolation;
    e) there is no substantive impact to any aspect of the project that was included in the consultation;
    f) the design and operation of the pipeline continues to meet all regulatory requirements and the requirement of CSA Z662

- changes to outside diameter
- adjusting the wall thickness
- changes to the pipe grade as identified in the product change table (see, Oil and Gas Activity Operations Manual)
- allowable pipeline product changes
- reducing H2S
- reducing the maximum operating pressure
- changing the flow direction;
- pipeline segment split
- minor modification for installations

More information on the notification process, including how to submit a notification, can be found in the Oil and Gas Activity Operations Manual.

- If the service fluid is seen to go out of specifications, the permit holders should ensure the fluid composition is within the parameters of any connected facility or pipeline until the permit amendment, for the change of service, is approved.
- Amendments to adjoined facilities or facilities linkage changes may be required. See section 4.3 of this manual and the Oil and Gas Activity Operations Manual for more information.

Pipeline Integrity Works Applications

Where in-stream works, temporary workspace or other authorizations are required to facilitate regular maintenance and integrity work for pipelines, permit holders are required to do the following:

1. Contact the appropriate Authorizations Director at the Regulator and notify them of the timing of submission and the risk ranking (based on risk rating criteria below) of the integrity works application.
2. Ensure that the application summary clearly identifies the application as integrity work.
3. The application summary must include the level of urgency of proposed integrity works, ranked from 1 to 3 for risk to public safety and environment.

Risk Rating Levels:

- Level 1 - Investigative digs and planned maintenance: Where smart tool analysis or visual inspection has indicated an anomaly of some form and further investigation is required, or planned maintenance works (digs, pipeline replacements, depth of cover maintenance, etc.), that are part of planned infrastructure maintenance where no immediate threat to the environment or public safety is present.

- Level 2 - Known Risk: Where there is exposed pipeline or potential for pipeline integrity to be compromised.
- Level 3 – Emergency Works: Where pipeline integrity is compromised and the threat to the public or the environment is existing or imminent.

Historical Submission: Pipeline

A historical pipeline submission is intended to collect missing data including dates for NCS, NPT, LTO and as built information. The historical pipeline submission is also used for notification of pipeline changes. Specific details for historical pipeline submissions can be found in the AMS User Manual. Any changes, which require an amendment application, cannot be applied through a historical submission.

The historical pipeline submission is selected from the create "application type" menu as "historical submission".

Historical pipeline applications pass fewer data validation checks upon submission. No fees are collected for an historical pipeline submission.

In order to complete a historical pipeline submission, AMS searches pipelines based on the applicant's information including:

- Approval determination number.
- Legacy BCER File number.
- Authorized activity number (Pipeline project number).

Once the permit holder enters the historical activity description, AMS pre-populates the information fields based on the current information, where information exists. Complete and/or edit the activity details within the AMS tabs. Spatial data may be uploaded where it does not exist providing it meets the spatial data standards and the spatial data provides the physical location of the facility. Spatial data for historical submissions is optional, except where a notification for segment splits or changes to installations occurs..

4.2.3 Pipeline Planning and Design

This section provides typical planning and design requirements, guidelines and considerations when planning and designing a pipeline for an energy resource activity application. The standards and guidelines presented here form a substantial basis for assembling an application. The Regulator reviews the pipeline 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 required components.

Regulatory Requirements

Pipelines must meet the design and operational requirements outlined in the Energy Resource Activities Act (ERAA), the Pipeline Regulation and the Environmental Protection and Management Regulation (EPMR).

Of particular note, as required under Section 3 of the Pipeline Regulation:

- Every permit holder designing, constructing, operating, maintaining or abandoning pipeline infrastructure in British Columbia must follow the most current version of CSA Z662, including Annex N.

CSA Z662 is the standard developed and maintained by the Canadian Standards Association covering the design, construction, operation and maintenance of energy resource industry pipeline systems conveying liquid hydrocarbons, oilfield water and/or steam, carbon dioxide, or gas. It is a legal requirement for operators to meet this standard for pipelines operating under ERAA in B.C.

If an exemption is requested from regulatory requirements, an exemption request must be prepared at the time of application and 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.

Guidance Requirements

In addition to this Energy Resource Activity Application Manual and the CSA Z662 standard, pipeline activities should meet guidance recommendations in the following Regulator documents:

- Oil and Gas Activity Operations Manual.
- Environmental Protection and Management Guideline.

If energy resource activities cannot adhere to the guidance recommendation then justification must be included in the permit application. Include specifics of the guidelines not followed, an explanation of why they cannot be followed, proposed alternative and mitigation strategies.

Pipeline Integrity Management Programs (IMP)

In accordance with Section 7(1) of the Pipeline Regulation:

- A pipeline integrity management program must be prepared in compliance with CSA Z662 including Annex N.

Applicants must be aware of the legal requirements to meet this standard for pipelines operating under ERAA in B.C. and answer IMP-related questions in the pipeline permit application.

Damage Prevention Plans (DPP)

In accordance with Section 7(1) of the Pipeline Regulation:

- All pipeline permit holders must develop and implement a damage prevention plan and submit the program for review upon the Regulator's request. For a successful damage prevention plan, permit holders should review the British Columbia Common Ground Alliance's Recommended Practice for Damage Prevention Programs.

Damage Prevention Programs are intended to reduce the frequency of preventable damage by addressing external/third-party threats to the integrity of pipeline infrastructure.

Surface and/or Subsurface Planning

Pipelines often require surface or subsurface corridors. Environmental considerations must go into planning a pipeline route including:

- Projects may require approval from the Environmental Assessment Office and timelines for approvals should factor into the application planning stages.
- Crossing plan drawings/diagrams should be prepared when crossing water, roads, rails and other utilities. Include a table of crossing type, typicals for all types of crossings and specific design drawings for any aerial crossings.

- Plot plans should be prepared showing the riser/pipeline starts and ends on a site and how it leaves the site going into the right-of-way. Risers associated with the pipeline require National Topographic Series (NTS) or Dominion Land Survey (DLS) co-ordinates for location confirmation. The locations must be filled out and indicated on the design schematics along with segment specification information. Include as part of the pipeline or amendment to the pipeline, even if it exceeds the width of the existing right-of-way.
- Geotechnical summary identifying geohazards along the pipeline route and mitigating strategies. This is a required document for all trenchless crossings.

4.2.4 Pipeline Specific Activity Requirements

This section outlines application requirements for pipeline applications. Requirements are dependent on the characteristics of the pipeline and are outlined in full details below including a description, details of additional information and requirements.

In addition to the pipeline project description, pipeline specific details are input into the pipeline application tab within the Application Management System and may require the upload of an attachment. Additional attachments may include (further described in this section):

- Engineering assessment.
- Piping and instrumentation diagram.
- Appurtenance design.
- Above ground pipeline protection and support drawings.
- Pressure control/overpressure protection.
- Proposed pressure test design.
- Leak detection design.
- Gas analysis for new sour pipelines.

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 pipeline details are required for all known design specifications for the pipeline, and the start and end points of the pipeline. The start and end points are not just from lease to lease, but the exact start and end point of the pipeline is required for all pipeline applications; this information is collected within the line data of the spatial data submission.

If Annex C of CSA Z662 has been used in the design of the pipeline, please attach documentation in the application detailing which segments followed the design along with how Annex C was incorporated into the design.

1. Engineering Assessment

An engineering assessment is required for the activities that fall under the CSA Z662 clauses listed in Appendix A of this manual. Engineering assessments must be performed and documented to the standards outlined in the CSA Z662. The standards are considered engineering documents. Section 20(9) of the Engineers and Geoscientists Act states the assessments must be sealed, signed and dated by a professional engineer licenced in the province of British Columbia.

2. Piping and Instrumentation Diagram (P&ID)

A full P&ID is required for all new pipeline applications and the amendments which affect the whole pipeline. P&ID of the point location can be submitted, if the change is only applied for that point location.

The minimum requirements for P&IDs are:

- All pipelines which are part of the permit are shown, including their connections (input and output).
- All segment breaks indicated and segments labelled (by project/segment).
- Facility and pipeline breaks, if applicable, clearly indicated.
- Spec breaks and class location changes indicated.
- Valves, fittings, flanges, etc. shown.
- Risers indicated with locations.
- Flow direction indications/arrows.
- Any equipment or pressure control directly on the pipeline, including setpoints. (Note pressure control can be on the facility drawings, in which case a separate pressure control attachment can be provided).

- Pipeline fluid or fluids, maximum permitted H_2S and maximum operating pressure.
- Pipeline outside diameter (OD) and wall thickness (WT).
- Drawing cross-references. Indicate on the drawing the line continued on so it is traceable.
- Drawing number, revision number and date.

Risers or installations directly supporting the pipeline are considered part of the pipeline and should be included in the piping and instrumentation diagram. Installation types included on a pipeline application include:

- Pump
- Storage vessel/tank
- Regulator
- Riser
- Pressure control/pressure protection valves/devices
- Isolation valves showing the physical location.
  (If applicable, the distance between valves and relation to major water crossings is to be determined)
- Farm taps
- Line heater
- Flaring
- Generator

Installations not included in the list should be shown on the P&ID and may be included as part of the facility application.

3. Appurtenance Design

An appurtenance is an item that belongs to the pipeline, such as a riser, pig sender, pig receiver or pump stations. The appurtenance design may be shown as a table or schematic that includes all specifications, codes and or standards and appurtenance locations.

4. **Above Ground Pipeline Protection and Support Drawings**

   If the pipeline is installed above ground, provide documentation showing the additional measures taken to protect it from external interference, UV degradation and other possible failure modes. This is not applicable for typical surface piping on a riser site. For aerial crossings, provide documentation for the pipeline support structure.

5. **Pressure Control/Overpressure Protection**

   Pressure control/overpressure protection must include the locations and set points of any devices protecting the line from possibly exceeding maximum operating pressure (MOP).

6. **Proposed Pressure Test Design**

   Pressure test plans should meet the requirements of CSA Z662. Hydraulic test plans must include the test medium, the minimum and maximum anticipated test pressure considering elevation differences, and the hold times. Pneumatic test, plans must include the procedures which are used at the site including all safety protocols. Pneumatic plans must also include a rationale for pneumatic testing.

7. **Leak Detection Design**

   A description and/or drawings of the leak detection methodology is required for liquid hydrocarbon and optional otherwise.

8. **Gas Analysis**

   Representative gas analysis and expected release volume, expressed at standard conditions of 15 degrees Celsius and 101.3 kPa, of hydrogen sulphide from the pipeline. This is required by Section 2 of the Pipeline Regulation.

4.2.5 Additional Considerations for Pipeline Activity

Emergency Response Planning

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

information.

Please Note:

Applicants submitting an update to an existing Emergency Response Plan should include a statement identifying the existing plan.

Approval from Other Jurisdictions for Pipelines

The Regulator may authorize a permit holder to construct a pipeline across, along, over or under any highway, road, public place, railway, underground communication or powerline, or another pipeline. Despite this permission, the permit holder may still require authorization for the use or occupation of land from the affected jurisdiction. Applicable legislation should be consulted.

BC One Call

Section 7 of the Pipeline Regulation states:

- A permit holder must not operate a pipeline approved by a permit unless the permit holder is a member of BC One Call. For more information on BC One Call, visit the BC One Call website.