

Pipeline Conservation and Reclamation Approvals Under the *Environmental Protection and Enhancement Act*

Requirements and Guidance for Applications and Postconstruction Reclamation Assessment Reports

[\[Month Year\]](#)

Alberta Energy Regulator

SED XXX: Pipeline Conservation and Reclamation Approvals Under the *Environmental Protection and Enhancement Act*; Requirements and Guidance for Applications and Postconstruction Reclamation Assessment Reports

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Abbreviations

ACO	Aboriginal Consultation Office
<i>ALSA</i>	<i>Alberta Land Stewardship Act</i>
BA code	business associate code
CanSIS	Canadian Soil Information Service
EMF	environmental management frameworks
<i>EPEA</i>	<i>Environmental Protection and Enhancement Act</i>
EPP	environmental protection plan
FNC	First Nations consultation
PCRA	postconstruction reclamation assessment
SED	specified enactment direction
SMART	specific, measurable, achievable, relevant, and time bound

1 Introduction

1.1 Purpose

This specified enactment direction (SED) addresses conservation and reclamation matters under section 137(2)(c) of the [Environmental Protection and Enhancement Act \(EPEA\)](#) and has two main purposes:

- To set out the information requirements and expectations for a pipeline application for an approval under *EPEA*, as required under Schedule 1 Division 3(c) of the [Activities Designation Regulation](#). Section 3 of the [Approvals and Registrations Procedure Regulation](#) outlines the application information requirements, and this SED provides additional detail in support of technically complete and consistent applications.
- To set out requirements and expectations for postconstruction reclamation assessment (PCRA) reports under an *EPEA* approval, in the interest of returning the land to a productive and environmentally stable state as soon as possible after construction.

This document supersedes and replaces the following Government of Alberta documents:

- [Guide for Pipelines Pursuant to the Environmental Protection and Enhancement Act and Regulations](#)
- [Information Requirements for Regulated Pipelines](#)

1.2 AER Requirements

Following AER requirements is mandatory for the responsible duty holder as specified in legislation (including applicant, licensee, operator, company, approval holder, or permit holder). The term “must” indicates a requirement. Each AER requirement that is unique to this document is numbered.

The terms “should,” “recommends,” and “expects” indicate a recommended practice, which is an approach likely to result in technically complete and consistent applications but may not be wholly suitable for all pipeline projects. Recommended practices are interspersed throughout the document.

Information on compliance and enforcement can be found in section 3.6.

1.3 How to Use this Document

The requirements in sections 2 and 3 apply to new and amendment applications for proposed construction or proposed reclamation activities of applicable pipelines. The requirements in section 4 apply to pipelines with *EPEA* approvals that were issued after this SED was published and that require the submission of PCRA reports.

A glossary of terms appears in an appendix. Defined terms are **bolded** at first use.

1.4 Legislative Overview

1.4.1 *Alberta Land Stewardship Act*

The [Alberta Land Stewardship Act \(ALSA\)](#) provides the overarching framework for land-use planning in Alberta and defines various levels of plans: regional, subregional, and issue specific. Those plans are further supported by environmental management frameworks (EMFs) and other systems. Alberta's [Land-Use Framework](#) document and [land-use webpage](#) discuss these in further detail.

The AER may deny an application to conduct an activity occurring within the boundaries of a regional plan or subregional plan, including EMFs, if it is not satisfied that the proposed activity complies with that plan. The AER does not have authority to allow a variance to a regional or subregional plan or EMF requirement approved under *ALSA*. Applicants are responsible for ensuring the proposed activity is in accordance with the plans and must provide a summary in the application.

1.4.2 *Environmental Protection and Enhancement Act*

Section 1(ww) of *EPEA* defines a pipeline as a pipe for the transmission of any substance and installations in connection with that pipe with some exceptions described below. An approval is required for the construction or reclamation of a pipeline under the *Activities Designation Regulation*.

Part 2, Division 2, of *EPEA* has provisions to require specific information in *EPEA* approval applications, as outlined in the [Approvals and Registrations Procedure Regulation](#).

The AER is responsible for reviewing pipeline applications and regulatory submissions related to oil, oil sands, natural gas, coal resources, geothermal, and brine-hosted mineral resources development, as applicable, that fall under *EPEA*. The AER is not responsible for pipelines that are under the jurisdiction of Alberta Environment and Protected Areas, such as sewer and water pipelines.

1.4.2.1 *Activities Designation Regulation*

Under Schedule 1, Division 3(c) of the [Activities Designation Regulation](#), pipelines with an **index** number (calculated by multiplying the outside diameter of the pipe in millimetres by the length of the line in kilometres) of 2690 or greater require an *EPEA* approval prior to construction. These pipelines are commonly known as **class I pipelines**.

However, the definition of “pipeline” in section 3(i) of the *Activities Designation Regulation* excludes several pipelines, including those with an index number of less than 2690. These are commonly known as **class II pipelines**, which do not require an *EPEA* approval; however, such pipelines are still subject to the general provisions of *EPEA* (e.g., substance release, the pipeline must be reclaimed, a reclamation certificate is required, etc.).

To help clarify, below are some common scenarios. If you are unsure whether a project would be classified as class I or II, please contact EPEA.WA.Applications@aer.ca.

A single pipeline with an index ≥ 2690 , as per section 3(i) of the *Activities Designation Regulation*, would require an *EPEA* approval (figure 1), whereas a single pipeline with an index < 2690 would not (figure 2).

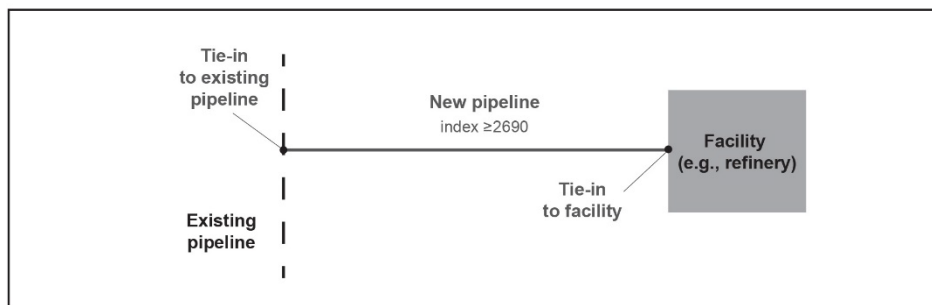


Figure 1. Single pipeline with an index ≥ 2690

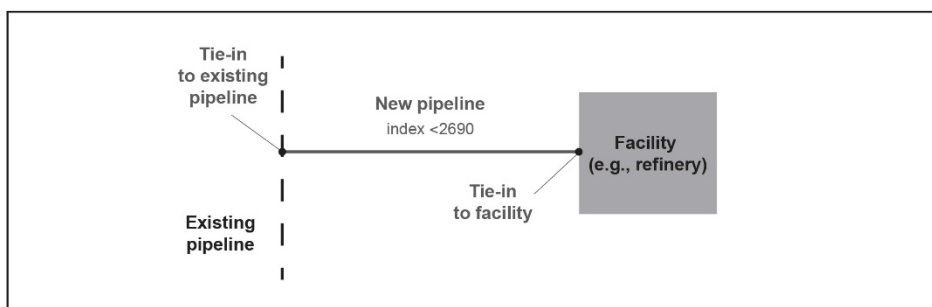


Figure 2. Single pipeline with an index < 2690

Multiple pipelines, as per section 2(3)(i) of the *Activities Designation Regulation*, are considered one project if they tie into the same existing pipeline and are under the same *Directive 056* pipeline licence application or will be built within the same construction season. If, however, the pipeline segments are built over a period of time as separate projects (i.e., during different construction seasons and under a number of different applications to the AER), each segment requires an *EPEA* approval only when the index of the individual segment is ≥ 2690 . The 2690 index is not applied retroactively to any of these segments when built independently. Add together the indices of the individual pipelines within one project, including any combination of segments A through F, and if the sum of the indices is ≥ 2690 , then an *EPEA* approval is required (figure 3).

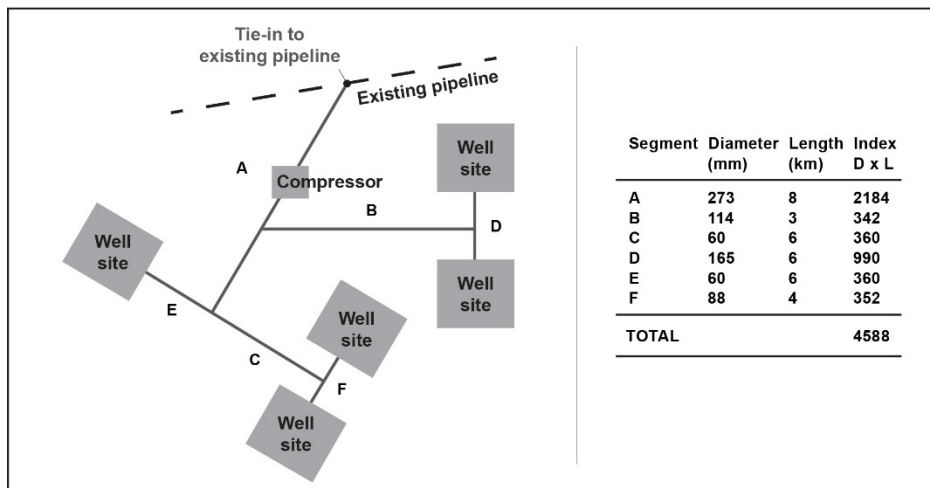


Figure 3. Multiple pipelines

A battery or compressor site is part of a pipeline as defined in *EPEA* (figure 4). If all pipeline segments are built as part of one project (i.e., under the same application to the AER), and the cumulative total of the segment indices is ≥ 2690 , the entire project requires an *EPEA* approval (class I). If, however, the pipeline segments are built over a period of time as separate projects (i.e., during different construction seasons and under a number of different applications to the AER), each segment requires an *EPEA* approval only when the index of the individual segment is ≥ 2690 . The 2690 index is not applied retroactively to any of these segments when built independently.

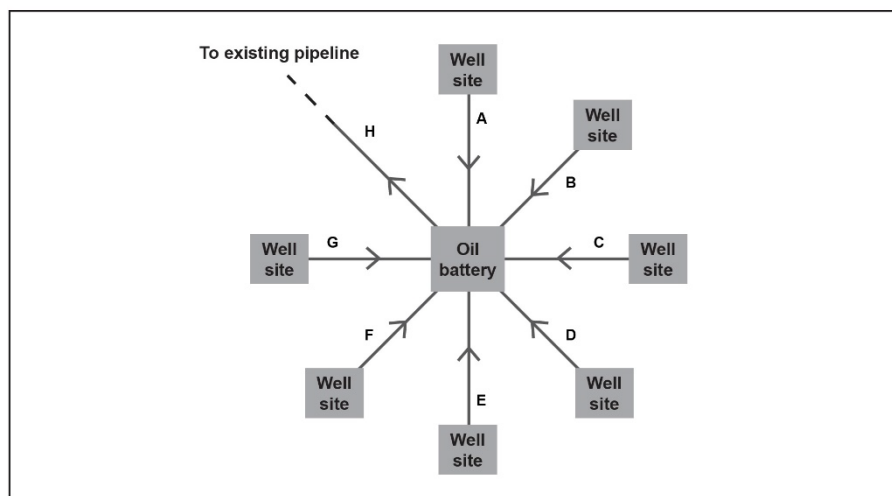


Figure 4. Multiple pipelines into an oil battery

A processing plant is not part of a pipeline as defined in *EPEA* (figure 5). Each segment in itself must have an index ≥ 2690 to require an *EPEA* approval, and the *EPEA* approval would only apply to that segment and not the entire project.

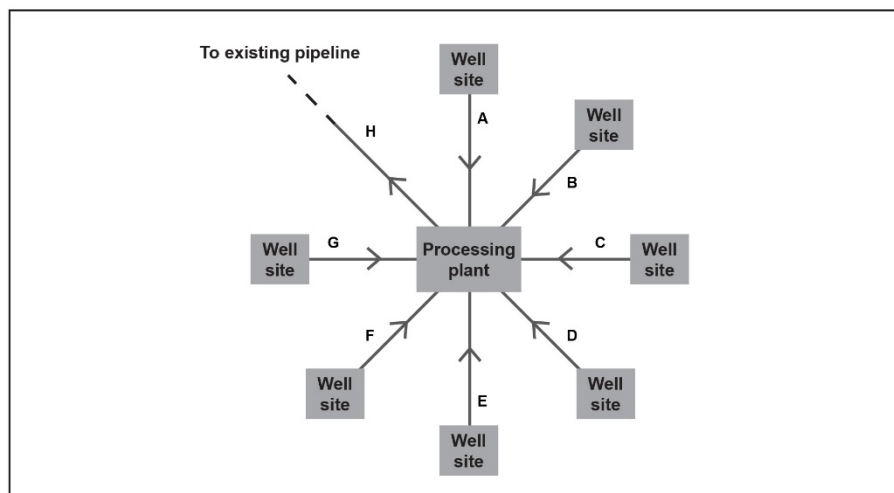


Figure 5. Multiple pipelines into a processing plant

1.4.2.2 Approvals and Registrations Procedure Regulation

Section 3(1) of the *Approvals and Registrations Procedure Regulation* stipulates the information that must accompany an application. Table 1 is a concordance of the *Approvals and Registrations Procedure Regulation* and this SED.

Table 1. Concordance of Approvals and Registrations Procedure Regulation and requirements in this document

Approvals and Registrations Procedure Regulation	Section of this SED
(a) the name and address of the applicant	3.1
(b) the location, capacity and size of the activity to which the application relates	3.1
(c) the nature of the activity, the change to the activity or the amendment, addition or deletion, as the case may be	3.1
(d) where the applicant requires an approval from the Alberta Energy Regulator or the Natural Resources Conservation Board in relation to the activity, the date of the written decision in respect of the application	3.1
(e) an indication of whether an environmental impact assessment report has been required	3.1
(f) copies of existing approvals or registrations that were issued to the applicant in respect of the activity under <i>EPEA</i> or a predecessor of <i>EPEA</i>	3.1
(g) the proposed or actual dates for construction commencement, construction completion and commencement of operation	3.1

Approvals and Registrations Procedure Regulation	Section of this SED
(h) a list of substances, the sources of the substances and the amount of each substance that will be released into the environment as a result of the activity, the change to the activity or the amendment, addition or deletion, as the case may be, the method by which the substances will be released and the steps taken to reduce the amount of the substances released	3.3
(i) —	Not applicable for new <i>EPEA</i> approvals for pipelines
(j) —	Not applicable for new <i>EPEA</i> approvals for pipelines
(k) the justification for the release of substances into the environment as a result of the activity, the change to the activity or the amendment, addition or deletion, as the case may be	3.3
(l) the measures that will be implemented to minimize the amount of waste produced, including a list of the wastes that will or may be produced, the quantities and the method of final disposition of them	3.3
(m) any impact, including surface disturbance, that may or will result from the activity, the change to the activity or the amendment, addition or deletion, as the case may be	3.2, 3.3
(n) confirmation that any emergency response plans that are required to be filed with the local authority of the municipality in which the activity is or is to be carried on or with Alberta Public Safety Services have been so filed	<i>See Directive 071: Emergency Preparedness and Response</i>
(o) confirmation that there are contingency plans in place to deal with any unforeseen sudden or gradual releases of substances to the environment	3.4
(p) the conservation and reclamation plan for the activity	3.4
(q) a description of the public consultation undertaken or proposed by the applicant	No additional information is provided in this SED.
(r) information required under any other regulation under the Act to be submitted as part of or in support of the application	3.1
(s) any other information required by the Director, including information that is addressed in a standard, code of practice or guideline in respect of the activity that is published or adopted by the Department	Additional information may be required after the application has been submitted. See the AER's webpage on the EPEA application review process for more information.

2 Preapplication Meeting

The AER recommends that applicants request preapplication discussions with AER staff. A preapplication meeting request should be sent to EPEA.WA.Applications@aer.ca, and the AER will identify the personnel to attend. With the meeting request, the applicant also should submit the project description information outlined in section 3.1 and its subsections (or as much of it as is reasonable at the time) and any specific questions for the AER.

During the preapplication meeting, applicants should be prepared to answer any questions from the AER on the information submitted and to present an estimated timeline on any Indigenous consultation required by the Aboriginal Consultation Office (ACO). If consultation is required, an adequacy decision report from the ACO is required before the AER can decide on an application (see section 3.5 for additional information).

Where applicants believe that a proposed pipeline may require further consideration under the environmental assessment process, the AER recommends that they request a preapplication meeting as early as possible in the project development process.

Examples of agenda items that might be discussed in a preapplication meeting include the following:

- level of soils information required to develop acceptable soil conservation procedures
- planned field surveys
- seek AER input on any challenges (e.g., known environmental sensitivities, alternative assessment, potential for delayed or incomplete field surveys, issues around land titles and occupancy rights, etc.)
- discuss what is considered a deficiency within an application
- other agency consultation or approval requirements (e.g., ACO, Environment and Protected Areas, Historic Resources Management Branch, Fisheries and Oceans Canada, Alberta Public Safety Services, etc.)

3 Pipeline *EPEA* Approval Applications

This section describes the information that is either required or expected for the AER to review and decide on new applications or amendment applications to construct or reclaim class I pipelines.

As per section 67 of *EPEA*, changes to approved activities also must be approved. New activities or disturbance not documented in the initial application must be described and included in an amendment application (e.g., pipeline alignment and timeline changes for construction and reporting).

- 1) If the activity is within the boundary of an approved **regional plan** as set out under *ALSA*, the applicant must assess the following in a manner that allows the AER to assess an application under the applicable regional plan:
 - a) whether that activity would also be within the boundaries of a designated conservation area, a provincial park, a provincial recreation area, or a public land area for recreation and tourism;
 - b) whether that activity is consistent with the land uses established in the applicable regional plan or with any of the outcomes, objectives, and strategies in that same regional plan;
 - c) if that activity is to be within the boundaries of a designated conservation area, a provincial park, a provincial recreation area, or a public land area for recreation and tourism, whether the mineral rights associated with the activity are subject to cancellation; and
 - d) how that activity is consistent and complies with any regional trigger or limit established under the management frameworks detailed under the applicable regional plan or any notices issued in response to an exceedance of a regional trigger or limit.
- 2) Applicants must also include any relevant information that allows the AER to assess an application under the applicable regional initiatives or plans, any government-approved regional initiatives, or plans that pertain to the area with requirements that relate to environment and resource management for the activity, such as integrated resource plans, water management plans, or municipal development plans.

3.1 Project Description

- 3) Applications must include a project description that covers the information in the following list. At the request of the AER, a more detailed project description providing context for the potential project effects under section 3.3 must also be provided.
 - a) project applicant name and business associate (BA) code
 - The project applicant name is the name that should appear on an approval.
 - A BA code represents an operator, company, consultant, etc. that accesses OneStop. BA codes consist of four alphanumeric characters.
 - b) project applicant contact information
 - The name and address of the contact person representing the lead company and working interest partners
 - c) project name (as it should appear on the approval)
 - d) whether the application is new or an amendment
 - e) submission date

- f) nature of the project
 - purpose of the project
 - capacity and size of the activity to which the application relates
 - products the pipeline will transport
- g) project location & schedule
 - LSD / UTM of route terminal locations
 - schedule for the construction and reclamation phases of the project
- h) detailed project description
 - pipeline index (show calculations)
 - width of right-of-way, width of ditch, depth of ditch, number of pipelines to be constructed in right-of way
 - installations associated with the pipeline (e.g., compressor stations, regulator stations, meter stations, pump stations, tank farms, pigging facilities, emergency shutdown system, geothermal booster and heat transfer stations, etc.)
 - ancillary facilities such as camps, access roads, and powerlines
- i) list of previous approvals under *EPEA*
 - whether an environmental impact assessment report has been required
 - for amendment applications, a list of previous approvals under *EPEA*, including date, approval number, and website link (if available)
- j) list of other approvals required for the proposed activity or codes of practice that will be followed
 - The applicant is responsible for obtaining all approvals, permits, or licences (or following codes of practice) that are required by the AER. Provide a list and estimated application/notification dates.

3.1.1 Maps

- 4) The **project site** must be plotted on base maps, at an appropriate scale, with the following layers:
 - a) legal land grid
 - b) **green areas** (forested; includes most of northern Alberta as well as mountain and foothills areas along the western boundary) and **white areas** (settled; includes populated central, southern, and Peace River areas; roughly 75% private land)
 - c) land-use boundaries (e.g., municipal boundaries, parks, recreation areas, etc.)

- d) land ownership (i.e., Crown, private)
 - e) Alberta Merged Wetland Inventory Class layer
 - f) mapped watercourses
 - g) wildlife sensitivity and critical habitat layers (available via the Landscape Analysis Tool) that provide information on the locations of sensitive wildlife populations.
- 5) The project site must be differentiated according to type of activity (e.g., right-of-way, **temporary workspace**, installations associated with the pipeline, ancillary facilities, borrow pits, etc.).
 - 6) A table detailing area per type of activity must be included on the base maps.
 - 7) A file in Keyhole Markup Language format (.kml/.kmz) that contains the geographic data of the project site, differentiated according to type of activity (e.g., right-of-way, temporary workspace, installations associated with the pipeline, ancillary facilities, borrow pits, etc.), must be submitted.

3.1.2 Route Justification

- 8) The applicant must describe and justify the selection of the proposed route, including a discussion of the following selection criteria and any others used:
 - a) safety (e.g., setbacks, exposure, etc.)
 - b) technical (e.g., geotechnical, engineering, etc.)
 - c) environmental (e.g., existing land use such as common corridors, interactions with the special circumstances in table 5, wetlands, water body setbacks, etc.)
 - d) social (e.g., landowner concerns, etc.)

3.2 Predisturbance Assessment Information

- 9) The applicant must identify the essential physical, chemical, and biological characteristics of the environment (**biophysical elements**) that interact with the proposed activities (e.g., clearing, grading, topsoil stripping and storage, subsoil excavating and storage, trenching, stringing, lowering in, backfilling, pressure testing, commissioning, mechanical cleanup, final cleanup, reclamation, etc.). See section 3.3 for additional information.
- 10) Assess the biophysical elements identified in the above requirement in the **project disturbance area** as described below (i.e., where biophysical elements are predicted to be affected, which may account for recommended setback distances or inventory guidelines).

Predisturbance assessments provide detailed information of the project disturbance area, in particular the baseline conditions of the biophysical elements and the potential project effects.

- 11) Predisturbance assessments supported by field surveys are required to support effective mitigation planning (i.e., development of the project-specific environmental protection plan).

Field surveys should be conducted according to published standards, including those listed below as applicable. Further, the application should describe any advanced technologies (e.g., drones, artificial intelligence, etc.) used to produce predisturbance information.

- [*Sensitive Species Inventory Guidelines*](#)
- [*Alberta Native Plant Council Guidelines for Rare Vascular Plant Surveys in Alberta – 2012 Update*](#)
- [*Conservation Assessments in Native Grasslands*](#)
- [*Standard for Sampling of Small Streams in Alberta \(Public Version\)*](#)
- [*Aquatic Ecosystems Field Sampling Protocols*](#)

12) If field surveys are not conducted, or if available published standards were not followed, applicants must provide a justification and describe how the baseline conditions of the biophysical elements and the potential project effects were identified satisfactorily to support effective mitigation planning.

Any requirements for assessments and recommendations by qualified professionals or persons under the applicable *Water Act* codes of practice will satisfy the needs of predisturbance assessments for watercourses in this SED. See the Government of Alberta website for more information at Water > Water Legislation and Resources > [Water Codes of Practice](#). Similarly, any requirements for assessments or recommendations by qualified professionals or persons under the *Water Act* Wetland Policy implementation may satisfy the needs of predisturbance assessments for wetlands in this SED. See the Government of Alberta website for more information at Water Conservation and Wetlands > Wetlands > [Alberta Wetland Policy Implementation](#).

13) Predisturbance assessments for landscape, soil, and vegetation evaluations must be conducted or supervised by a professional member as defined in the Association of Professional Engineers and Geoscientists of Alberta's [*Professional Responsibilities in Completion and Assurance of Reclamation and Remediation Work in Alberta*](#).

14) The following predisturbance assessment information must be included in the application:

- a) definition of the project disturbance area for each biophysical element
- b) areas or features within the project disturbance areas requiring special consideration, including the following:
 - i) areas designated as having regional, provincial, or national importance (e.g., ecological reserves, wilderness areas, provincial parks, natural areas, heritage rangelands, special areas, **subregional plan** areas, Eastern slopes southern portion (see figure 1 in [*Informational Letter II 93-9: Oil and Gas Developments Eastern Slopes \(Southern Portion\)*](#)), Crown reservations, etc.)
 - ii) wetlands as delineated following the [*Alberta Wetland Identification and Delineation Directive*](#)

- iii) class of water bodies, as per section 7 of the [*Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body*](#) or that is designated by a class symbol on a map that is listed in Schedule 6
 - iv) the presence of federally and provincially listed vegetation, fish, and wildlife species at risk, or their habitat, such as the following:
 - published range maps
 - critical habitat
 - any historical presence as indicated in the Fish and Wildlife Management Information System and the Alberta Conservation Information Management System
 - v) components of wildlife habitat considered to be key features (e.g., mineral licks, nests [including cavities], dens of game and non-game wildlife, leks, breeding ponds, dams, hibernacula, etc.)
 - vi) components of fish habitat considered to be key features (e.g., spawning and nursery/rearing areas, connectivity, overwintering, etc.)
 - vii) timing windows/restrictions and setbacks for vegetation, fish, fish habitat key features, wildlife, and wildlife habitat key features, as identified in resources such as the following:
 - [*Restricted Activity Periods for Fish Species in the 10 Fish Management Zones of Alberta*](#)
 - [*General Nesting Periods of Migratory Birds*](#)
 - [*Recommended Land Use Guidelines: Key Wildlife and Biodiversity Zones*](#)
 - [*Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within Grassland and Parkland Natural Regions of Alberta*](#)
 - [*Master Schedule of Standards and Conditions*](#), which is applicable on public land and is a good reference for appropriate timing windows/restrictions and setbacks
 - c) soil evaluation reports and maps (see section 3.2.1)
 - d) clubroot assessment reports if the proposed route traverses a county with clubroot infestations
- 15) The applicant must retain full details of the predisturbance assessments for the duration of the approval and must make the full details available to the AER upon request.

3.2.1 Soil Evaluations

16) Soil evaluations must be conducted on a proposed project site to provide predisturbance information about landforms and soils to support soil conservation planning.

The predisturbance information is used to determine the following:

- **topsoil** availability, quality, and depth
- subsoil quality and depth
- storage requirements for surface material and **spoil**, as well as adequate separation between piles
- right-of-way width requirements
- procedures and equipment requirements to remove and replace materials
- **problem soils** and necessary stripping/handling, storage, replacement, or soils handling procedures
- postconstruction reclamation, and monitoring procedures
- reclamation and revegetation procedures

3.2.1.1 Location and Number of Inspection Sites

Preliminary soil **map units** and possible inspection sites can be delineated before fieldwork begins using desktop methods. The appropriate level of soil evaluation depends on the presence of potential problem soils and the variability of the soils on a proposed project site.

17) Level 1 soil evaluations, which include the details below, are required where potential problem soils are *not* present:

- a) Must have one inspection site per soil map unit. If a particular soil map unit is >1 km, must have at least one inspection site per 1 km.
- b) Visual field inspections must be conducted (see section 3.2.1.4).

18) Level 2 soil evaluations, which include the details below, are required where potential problem soils are present:

- a) Must have one inspection site per soil map unit. If a particular soil map unit is >1 km, must have as many sites as necessary to characterize the segment with at least 2–5 inspection sites per 1 km.
- b) Visual field inspections must be conducted (see section 3.2.1.4).
- c) Field samples must be collected for analysis to verify the extent and significance of problem soils (see section 3.2.1.5).

If sufficient existing soil data are available to meet the requirements of level 1 or level 2 surveys, whichever is pertinent to the project (i.e., from parallel right-of-way), additional field inspections may not be required.

Combinations of levels 1 and 2 may be necessary to describe the soils along a right-of-way. For example, existing information may indicate the presence of Solonetzic soils on one-third of a 30 km pipeline right-of-way. A level 2 evaluation may be required for the 10 km with Solonetzic soil, while a level 1 evaluation may be sufficient for the remaining 20 km.

3.2.1.2 Soil Mapping

When generating a pipeline soils map, it is important to consider that soil map units and possible inspection sites can be delineated before fieldwork begins using desktop methods. A single soil salvage procedure can optimize soil conservation over a variety of soil conditions within an 800 m pipeline right-of-way segment, and it is generally not necessary to delineate segments shorter than 800 m. Segments shorter than 800 m that may require delineation and separate salvage procedures include the following:

- sloughs or wet areas
- stream crossings
- road or highway crossings
- extreme variations in topography
- non-uniform areas of problem soils
- changes in land use
- changes in parent materials

3.2.1.3 Inspection Methods

19) Soil inspections must be completed using physical survey methods such as soil pit, hand auger, or mechanical coring device. Soil inspection locations must be completed to a minimum depth of 50 cm. Where confirmation of lower subsoil quality is required soil inspections must be completed to trench depth.

If possible, inspections should be done in dry and unfrozen soil conditions.

3.2.1.4 Visual Field Inspections

20) Landforms and soils must be described and classified according to the [*Canadian System of Soil Classification*](#), and soils must be classified to the subgroup level.

21) Characteristics used to describe landforms and soils must be provided and are noted in table 2 and table 3.

Table 2. Visual landform and vegetation characteristics

Characteristic	Relationship to pipeline
Parent material	<ul style="list-style-type: none"> Indicates potential for compaction, erosion, and water holding capacity for revegetation
Surface features	<ul style="list-style-type: none"> Indicates areas such as sloughs and marshes Indicates areas of adverse topography Indicates variability of topsoil depths that may require changes in surface stripping procedures (e.g., knob and kettle topography)
Topography	<ul style="list-style-type: none"> Indicates potential for erosion Determines grading requirements Determines special equipment requirements Determines special slope modification practices (e.g., drainage berms)
Surface and subsurface drainage	<ul style="list-style-type: none"> Indicates seep areas and slope discharge areas Aids assessment of slope stability and whether soil drainage conditions will permit easy movement of vehicles along the right-of-way
Land use	<ul style="list-style-type: none"> Affects soil conservation and reclamation procedures
Vegetation	<ul style="list-style-type: none"> Indicator of present land capability
Surface salts	<ul style="list-style-type: none"> Indicator of problem soils and drainage problems

Table 3. Visual soil characteristics

Characteristic	Relationship to pipelines
Depth of the major horizons (A, B, and C to trench depth) and horizon designation according to CSSC	<ul style="list-style-type: none"> Indicates depth of soil to be stripped and depth at which problem materials may occur Assists in determining procedures and equipment for soil handling Indicates storage space and location requirements Indicates right-of-way width requirements
Colour	<ul style="list-style-type: none"> Where colours are contrasting, differentiates between topsoil and subsoil horizons during surface stripping
Texture and structure	<ul style="list-style-type: none"> Determines compaction potential, ease of handling, and erodibility of major soil horizons Used to differentiate between topsoil and subsoil horizons where colours are not contrasting
Presence of salts and carbonates	<ul style="list-style-type: none"> Indicators of problem soils Indicates reclamation suitability of A and B horizons Indicates whether separate storage and extra right-of-way width should be considered Indicates revegetation species compatibility
Stones, Bedrock, and Coarse Fragment Content	<ul style="list-style-type: none"> May influence soil handling procedures and reclamation practices May dictate use of certain types of construction equipment

3.2.1.5 Analysis of Field Samples

22) Table 4 lists analyses that must be performed on soil samples.

Table 4. Soil analyses

Analysis	Relationship to pipelines
pH	<ul style="list-style-type: none"> Indicates potential revegetation problems Indicates fertility requirements in some cases Indicates if salinity analyses may be required
Salinity Analysis:	<ul style="list-style-type: none"> Confirms nature and severity of the problem Confirms appropriate amendments and rates Confirms appropriate methods and species for revegetation
<ul style="list-style-type: none"> Soluble cations (Na⁺, Ca⁺², Mg⁺², K⁺) Saturation percentage (sat %) Sodium Adsorption Ratio (SAR) Electrical Conductivity (EC) 	

23) The analyses listed in table 4 must be conducted in accordance with the book [Soil Sampling and Methods of Analysis](#).

24) Analysis of complete representative soil profiles must be conducted for each soil type.

25) Where the suitability of **upper subsoils** may be reduced following soil replacement, laboratory analysis to trench depth is necessary to confirm the suitability of the lower subsoil.

26) Analyses also are required to determine quality of any subsoil materials that could be incorporated into the surface salvage material. This should include areas where the A horizon is less than 10 cm in depth, or where the A horizon is to be overstripped or not stripped at all. Subsoil materials to be stripped with the A horizon must be of sufficient quality that the physical and chemical properties of the replaced surface material will not be adversely affected.

3.2.1.6 Report

27) A soil evaluation report must be submitted with the application and must include the following:

- a) an outline of methods used, including soil inspection density, sampling density, sampling techniques, and laboratory analyses carried out
- b) a representative description of each soil type encountered along the right-of-way, including the following:
 - i) a description of landforms indicated in table 2
 - ii) a soil profile description using the [Canadian System of Soil Classification](#) format, and the information indicated in table 3
 - iii) laboratory analysis results
 - iv) comments on depth of topsoil; degree of colour change; presence of salinity, sodicity, or other problems; and comments on any special stripping or construction procedures required

- c) a description of all profiles inspected and sampled must be included as an appendix to the soil evaluation report

3.2.1.7 Map

- 28) The boundaries of soil map units of uniform or repeating soil and land features, indicating similar soil conservation procedures, must be revised as required and delineated once soils have been inspected and characterized. Final delineations must be presented on an imagery mosaic on the environmental alignment sheets (see section 3.4.1). Soil information and soil conservation procedures must be clearly indicated. The air photo mosaic and environmental alignment sheets must include a legend to describe the soil map units delineated to serve as a link between the map and the text.
- 29) Areas requiring special procedures must be designated as separate soil map units.

3.3 Potential Project Effects

3.3.1 Description

- 30) A comprehensive and detailed table describing the potential project effects, from all steps of the pipeline construction process (e.g., clearing, grading, topsoil stripping and storage, subsoil excavating and storage, trenching, stringing, lowering in, backfilling, pressure testing, commissioning, mechanical cleanup, final cleanup, reclamation, etc.), identified through predisturbance assessments must be included in the application.
- 31) The potential project effects table must be organized according to the essential physical, chemical, and biological characteristics of the biophysical elements that interact with the construction or reclamation of the proposed activities, and therefore may require protection against degradation.
- 32) Any special circumstances listed in table 5 must be highlighted and described in the potential project effects table, if applicable to the proposed activities.

Table 5. Biophysical element special circumstances

Biophysical elements	Special circumstances
Atmosphere	<ul style="list-style-type: none"> • Outstanding stakeholder concerns regarding nuisance (e.g., dust, noise)
Terrain	<ul style="list-style-type: none"> • Steep slopes (e.g., any slope that poses a significant challenge or hazard to the safety, quality, or efficiency of the pipeline installation or operation and that requires special planning, design, or mitigation measures to address the site-specific conditions)
Soils	<ul style="list-style-type: none"> • Interactions with problem soils • Interactions with clubroot • High admixing potential (e.g., winter soil salvage, unstable trench)

Biophysical elements	Special circumstances
Vegetation & wetlands	<ul style="list-style-type: none"> • Interactions with native grassland • Interactions with rare plant species • Interactions with critical habitat • Interactions with provincially or federally listed species • Recommended timing restrictions and setbacks are not followed
Wildlife	<ul style="list-style-type: none"> • Interactions with critical habitat • Interactions with provincially or federally listed species • Interactions with key wildlife features • Timing restrictions and setbacks are not followed
Fish and fish habitat	<ul style="list-style-type: none"> • Interactions with critical habitat • Interactions with provincially or federally listed species • <i>Water Act</i> codes of practice are not followed

Table 6 is an example of a table of potential project effects to biophysical elements, provided for illustrative purposes.

Table 6. Example of potential project effects to biophysical elements

Biophysical element	Potential project effects	Description, including special circumstances (see table 5)
Atmosphere	<ul style="list-style-type: none"> • Change in air quality (e.g., dust) • Change in noise during construction and reclamation 	<ul style="list-style-type: none"> • Dust resulting from grading, excavation, construction traffic on access roads • Unresolved landowner concern with noise/nuisance to livestock
Terrain	<ul style="list-style-type: none"> • Changes in terrain during construction 	<ul style="list-style-type: none"> • Blasting of bedrock • Cuts in slopes • Slope instability (e.g., slumping, mud slides, contact with high groundwater table, etc.)
Soil	<ul style="list-style-type: none"> • Change to soil quantity (e.g., wind, water erosion, etc.) • Change to soil quality (e.g., admixing, compaction, clubroot interactions, contamination, etc.) 	<ul style="list-style-type: none"> • Wind erosion on windward side of slopes, soil stockpiles • Interactions with clubroot • Soil compaction • Admixing • Fuel spills
Vegetation and wetlands	<ul style="list-style-type: none"> • Change in vegetation communities (e.g., temporary loss of trees and shrubs, community composition of native grassland) • Change in vegetation species (e.g., loss of rare plants, increase in invasive species, etc.) • Changes to wetlands 	<ul style="list-style-type: none"> • Interacts with limber pine • Loss of native grassland species • Change in wetland function (e.g., loss of wetland area, change of wetland type, change in water movement, etc.)

Biophysical element	Potential project effects	Description, including special circumstances (see table 5)
Wildlife	<ul style="list-style-type: none"> • Changes to wildlife movement • Changes to wildlife habitat availability • Changes to wildlife abundance 	<ul style="list-style-type: none"> • Construction phase will occur within the timing restrictions for key wildlife/biodiversity zone • Construction phase will be within the recommended setback of the following key wildlife features: stick nests, a lek, and a breeding bird colony • Construction will occur within subregional plan area, caribou range
Fish and fish habitat	<ul style="list-style-type: none"> • Change to fish habitat quality • Change to fish health 	<ul style="list-style-type: none"> • Interaction with Athabasca rainbow trout critical habitat • Restricted activity period for Athabasca rainbow trout cannot be followed • Water quality (erosion and sedimentation, accidental releases, etc.) during construction • Physical alteration during in-stream construction • Riparian alteration during clearing and construction

3.3.2 Mitigation

33) The application must include mitigation measures for each of the potential project effects identified in the potential project effects table.

The mitigations listed below are required, if applicable.

Wildlife

34) Conduct wildlife sweeps prior to disturbance, in accordance with the [Wildlife Sweep Protocols: Sensitive Species Inventory Guidelines](#).

Timber Clearing and Salvage

35) Conduct timber clearing and salvage procedures in a manner that minimizes (1) surface soil loss and degradation; (2) the disturbance of adjacent, undisturbed forest cover; and (3) the loss of merchantable timber.

Soil Conservation

36) Wherever topsoil degradation/loss may occur from approved activities, topsoil must be stripped according to the appropriate soil handling procedures (e.g., two-lift, three-lift, overstrip, etc.) as identified or supervised by a professional member as defined in [Professional Responsibilities in Completion and Assurance of Reclamation and Remediation Work in Alberta](#).

37) Use appropriate soil handling procedures to prevent impacts to soil quality due to problem soils.

- 38) Suspend soil handling when conditions (e.g., wet, frozen, wind, etc.) exist that could result in the degradation or loss of topsoil or upper subsoil.
- 39) Salvage topsoil and stockpile separately from upper subsoil and spoil, as applicable (depending on the soil handling procedures used). Stockpile locations must be recorded accurately so that they can be located in the future.
- 40) Stockpile subsoil and spoil on areas where topsoil has been removed or on a material that will prevent mixing, loss, or degradation of the topsoil.
- 41) Using all necessary erosion control methods, protect stockpiled topsoil and upper subsoil from loss or degradation.

Waste Management

- 42) Do not release waste from the approved project site or activities except in accordance with applicable direction (e.g., [Directive 050: Drilling Waste Management](#)) or as authorized by an *EPEA* approval.
- 43) Do not bury any waste within or adjacent to the pipeline alignment.
- 44) Include a plan for waste management in the project-specific environmental protection plan that must be included in the application (see section 3.4).

Wetlands

- 45) Stockpile topsoil and wetland soils separately.

Reclamation

- 46) Contour the approved project site so that it is comparable with predisturbance conditions (e.g., slopes, run-off/drainage, watercourse crossings, etc.) and the adjacent, undisturbed landscape.
- 47) Any constructed pipeline water crossings having high erosion potential must be properly armoured and stabilized or otherwise protected from erosion.
- 48) Stabilize and revegetate all riparian and wetland areas on the approved project site.
- 49) Replace all salvaged soil materials from the approved project site. Within the pipeline alignment, place spoil in the trench. Where applicable, spread upper subsoil evenly over contoured spoil and spread topsoil evenly over contoured upper subsoil or spoil.
- 50) Alleviate compaction in all replaced upper subsoil or spoil before topsoil replacement.
- 51) Alleviate any compaction in replaced topsoil.
- 52) Maintain a weed control program as per the Alberta [Weed Control Act](#) until new vegetation on the pipeline alignment is re-established and is self-sustaining.

The AER expects the applicant to identify and use the most appropriate standards available. The application should include references to all standards used in the development of the application. Examples of standards that may be applicable are listed below:

- [Alberta Clubroot Management Plan](#)
- [Salt Contamination Assessment and Remediation Guidelines](#)
- [Decontamination Protocol for Work in or Near Water](#)
- [Master Schedule of Standards and Conditions](#)
- [Recovery Strategies for Disturbance in Native Grasslands](#)
- [Best Management Practices for Pipeline Construction in Native Prairie Environments](#)
- [Guidelines for Alternative Soil Handling Procedures During Pipeline Construction](#)

53) If standards that are applicable to the proposed activities are not followed, then a rationale must be provided.

54) SMART (i.e., specific, measurable, achievable, relevant, and time-bound) objectives for the mitigation must be provided.

SMART objectives provide clarity with respect to the expected outcome of the mitigation, hold the approval holder accountable for the expected outcome, and, through regular evaluation, drive adaptation/optimization of the mitigation.

3.3.3 Residual Project Effects

Applicants should assume that, at a minimum, if the special circumstances listed in table 5 are applicable, then there will be residual effects (i.e., those remaining after accounting for mitigation) associated with that circumstance.

55) A comprehensive and detailed table describing the residual project effects must be included in the application, including a rationale if residual effects associated with the special circumstances in table 5 are not assumed.

3.4 Environmental Protection Plan

56) The application must include a project-specific environmental protection plan (EPP), which must consist of the following components:

- a) environmental alignment sheets (see section 3.4.1)
- b) a description of mitigation measures for each of the potential project effects identified in the potential project effects table and their SMART objectives

- c) a description of the process to verify that the SMART objectives of the mitigation are being met (see section 3.4.2)
- d) a description of the actions that will be taken if the SMART objectives of the mitigation are not being met or are not likely to be met (see section 3.4.3)
- e) a commitment to prepare a table or alignment sheets, during the construction phase of the project, that identifies potential inspection sites (e.g., locations where residual effects were assumed, locations where adaptive management or contingency measures were implemented, sites of concern, etc.) to be included in postconstruction reclamation assessments (see section 4)

The procedures specified in the applicant's EPP are enforced under an *EPEA* approval, if issued. The approval holder is responsible for ensuring that any contractors are fully conversant with the terms and conditions of the *EPEA* approval, including the EPP.

3.4.1 Environmental Alignment Sheets

- 57) Environmental alignment sheets must cover the entire project site
- 58) The base map of all environmental alignment sheets must be satellite imagery or aerial photographs.
- 59) At a minimum, the information in the bulleted list below must be plotted on each environmental alignment sheet, as well as the specific locations where mitigation to avoid or reduce the potential project effects will be applied:
 - a) soil map units
 - b) soil salvage depths and methods
 - c) watercourses, water bodies, and wetland mapping
 - d) key wildlife features, wildlife sensitivity layers, and critical habitat
 - e) rare plant locations
 - f) clubroot sampling results
 - g) land use

- 60) If data are used from multiple sources or years of data collection (e.g., historical and current soil surveys), clearly indicate data source on maps (e.g., colour coding).

3.4.2 Verification of the Effectiveness of Mitigation Measures

Approval holders are responsible for ensuring that mitigation measures are meeting their associated SMART objectives. Mitigation measures are experiencing failure if the associated SMART objectives are not met.

- 61) To verify the effectiveness of the mitigation measures implemented during construction or reclamation, mitigation measures must be monitored and evaluated against their associated SMART

objectives to verify that the objectives have been met and, ultimately, that the mitigations are effectively avoiding or reducing the potential project effects.

Further, the application should describe any advanced technologies (e.g., drones, artificial intelligence, etc.) used for monitoring and/or evaluating mitigations against their associated SMART objectives.

62) A description of the approach to verify the effectiveness of mitigation measures must be included in the application. The description must include the mitigations that are being monitored, methods for monitoring them, the monitoring schedule, and the approach for determining effectiveness/ineffectiveness.

3.4.3 Actions to Correct Ineffective Mitigation Measures

Approval holders are responsible for adapting mitigation measures, or implementing contingencies, before they fail.

63) The application must include an **adaptive management** process that will adapt mitigations *before* failure. This includes defining what actions will be triggered when.

64) Where neither mitigation nor adapted mitigation are meeting the SMART objectives associated with the mitigations, **contingency plans** must be executed. At a minimum, the following events must be covered under contingency plans included in the application:

- a) releases (e.g., fuel, fluids used to install trenchless sections of the pipelines, etc.) including the remediation of contaminated soils
- b) erosion and sedimentation resulting from wind, wet soils, flooding, etc.
- c) soil conservation (i.e., unstable trench, shallow bedrock)
- d) unexpected discoveries (i.e., previously unidentified environmental features such as vegetation, wildlife, etc.)

3.5 Submission and Review of an Application

65) Applicants must email their applications to EPEA.WA.Applications@acr.ca.

For information on the review, decision, and appeal processes, visit our website, acr.ca > Regulating Development > Project Application > Application Legislation > [Environmental Protection and Enhancement Act](#).

As per the [Joint Operating Procedures for First Nations Consultation on Energy Resource Activities and the Joint Operating Procedures for Métis Settlements Consultation on Energy Resource Activities](#), the First Nations consultation (FNC) application supplement is a document that must form part of any application submitted to the AER under the specified enactments, except applications for those activities listed in appendix C of [The Government of Alberta's Guidelines on Consultation with First Nations on](#)

[Land and Natural Resource Management](#) and [The Government of Alberta’s Guidelines on Consultation with Metis Settlements on Land and Natural Resource Management](#).

If at the time the application is made the applicant has either a decision by the ACO that no consultation is required or a report by the ACO that consultation has been adequate, the applicant should include the FNC application supplement with the emailed application.

The file name of the supplement document should contain “FNC Application Supplement” and the date (e.g., FNC-Application-Supplement-YYYY-MM-DD). If the preconsultation assessment or the ACO report is being submitted with the FNC application supplement, then it should be combined with the supplement to form one document.

3.6 Postapproval Processes

For postapproval processes, including enforcement, renewals, and reclamation certification, see the following resources:

Process	Resources
Inspections and audits	Regulating Development > Compliance > Inspections and Audits Under section 9(1) of the <i>Pipeline Rules</i> , licensees must notify the AER at least 24 hours, but not more than 14 days, before starting pipeline construction. The notification should include the <i>EPEA</i> approval number.
Compliance and enforcement	Regulating Development > Compliance > Compliance Assurance Program Regulating Development > Compliance > Compliance and Enforcement Tools The approval holder must immediately report to the director by telephone any contravention of the terms and conditions of <i>EPEA</i> approvals at 1-780-422-4505.
Renewals	<i>EPEA</i> approval renewals should not be required; however, where extenuating circumstances exist, contact the AER.
Reclamation and reclamation certification	Regulating Development > Project Closure > Reclamation Under section 137(1)(c) of <i>EPEA</i> , operators must apply for a reclamation certificate after a pipeline has been abandoned and decommissioned. SED 002 sets out the information requirements for reclamation certificate applications for upstream oil and gas operations, including associated facilities and pipelines under <i>EPEA</i> .

4 Postconstruction Reclamation Assessment Reports

Typical terms and conditions attached to *EPEA* approvals issued by the AER include the completion of postconstruction reclamation assessments (PCRAs) of the landscape, soils, and vegetation on the project site. The purpose of a PCRA is to verify the completion of reclamation according to the terms and conditions of the *EPEA* approval, assess the success of reclamation activities, identify deficiencies and corrective actions, address landowner concerns, and ensure that the site is on a trajectory to achieve **equivalent land capability**.

66) The **appropriate reclamation criteria** and **record of observation** data sheets must be used during PCRAs to assess the reclamation trajectory of the project site.

4.1 Submissions

67) A PCRA report must be submitted within two growing seasons and two overwintering periods following backfill of the pipeline trench (two-year PCRA report). If conditions are not suitable to replace topsoil following backfill (e.g., frozen, wet, etc.), then an extension request with rationale must be submitted for AER review and approval.

68) Another PCRA report must be submitted within five years from backfill of the pipeline trench (five-year PCRA report), if the two-year PCRA report does not meet the appropriate reclamation criteria, to address the deficiencies, issues, and concerns identified in the two-year PCRA report. Inspection locations that met the appropriate reclamation criteria in the two-year PCRA report do not need to be re-inspected, but the data must be included in the five-year PCRA report.

69) If the five-year PCRA report does not meet the appropriate reclamation criteria, justification must be provided for the criteria deviations or a request for an extension to complete the final PCRA must be made.

70) PCRAs must be submitted electronically to EPEA.Reports@aer.ca on or before the due date provided in the *EPEA* approval.

4.2 Content

4.2.1 Project Background

71) Identify the project (including the *EPEA* approval number), environmental setting, construction dates, backfill dates, and the dates when reclamation was completed.

72) List the inspection sites garnered from the construction phase of the project (see section 3.4).

73) Discuss how and when landowner consultation occurred and any concerns raised.

4.2.2 Methods/Scope

74) Provide the dates when the field assessment was conducted and any challenges encountered. The methodology for the various components of the landscape, vegetation, and soils assessed must be in

alignment with the appropriate reclamation criteria for the appropriate land use. If deviations are proposed, justification must be provided in the PCRA report.

75) Inspection density can vary from what is required in the appropriate reclamation criteria but must at least meet the density conducted during the baseline soil survey assessment, in addition to identified areas of concern. If deviations are proposed, justification must be provided in the PCRA report.

Further, the application should describe any advanced technologies (e.g., drones, artificial intelligence, etc.) used to complete the assessment.

4.2.3 Results/Observations

76) The following information must be provided in the discussion of results and observations:

- a) Populated Record of Observation data sheets:
 - i) Access Soil Assessment worksheet (L1-Soil (Access))
 - ii) Access Vegetation Assessment worksheet for the appropriate land uses (i.e., Cultiv (Access), TamePas (Access), NG-%Cover (Access), or For (Access))

Landscape observations can be captured in the comment boxes within the aforementioned worksheets.

- b) constraints encountered that may have impacted reclamation success (e.g., drought conditions, third-party impacts, etc.)
- c) an overview map showing the entire project area
- d) base maps with legal land grid, land ownership (i.e., Crown, private), land-use boundaries (e.g., municipal boundaries, parks, recreation areas, etc.), and imagery showing assessment locations, the numbered location of deficiencies, and areas of sensitivity or concern (e.g., problem soils, wetlands, third-party impacts)
- e) photos with descriptions
- f) a summary table of deficiencies (see table 7) that includes the following items:
 - i) deficiency number (to correlate with maps)
 - ii) tract
 - iii) LSD
 - iv) UTM coordinates
 - v) land use
 - vi) deficiency, including extent (extent must be clearly communicated in length/width/depth or % coverage within a defined area)
 - vii) corrective actions, including timing

- viii) follow-up status (e.g., resolved, ongoing)
- ix) observations/comments (including landowner comments)
- x) photo number

Table 7. Example summary table of deficiencies for initial PCRA and reclamation site assessment reports

Deficiency number	Tract	LSD	UTM coordinates	Land use	Reclamation criteria Pass/Fail	Deficiency	Corrective action and date	Status	Landowner comments / outstanding concerns	Comments	Photo number
1	KP 1+100 – 1+200	01- 02- 44-01 W4M	11 U 695845 E 5849199 N	Pasture	Fail	Ditch subsidence: ~10 m long by 1 m wide and 10 cm deep	Recontour: Sept 2024	Ongoing			1
2	KP 5+545 – 5+600	01- 02- 44-01 W4M	11 U 695845 E 5849199 N	Cultivated	Fail	Coarse fragments higher on right-of-way	Pick rocks: completed June 2023	Resolved	Landowner is satisfied		2
3	KP 6+100 – 6+200	01- 02- 44-01 W4M	11 U 695845 E 5849199 N	Cultivated	Pass	Ditch subsidence: ~5 m long and 1 m wide and 5 cm deep	Monitor for resolution through farming practices: Sept 2022	Resolved		Revisited site in 2023 and subsidence has resolved	3

Note: For illustrative purposes only

Appendix 1 Glossary

adaptive management	A planned process to adjust mitigation, as necessary, by learning from their outcomes under the site conditions. It involves (1) monitoring mitigation, (2) assessing the effectiveness of the mitigation, and (3) modifying the mitigation based on the observed outcomes, <i>before mitigations fail</i> .
appropriate reclamation criteria	The Government of Alberta has produced several documents containing reclamation criteria for different land types. Follow the criteria that match the land type in question: <ul style="list-style-type: none"> • <u>2010 Reclamation Criteria for Wellsites and Associated Facilities for Cultivated Lands</u> • <u>2010 Reclamation Criteria for Wellsites and Associated Facilities for Forested Lands</u> • <u>2010 Reclamation Criteria for Wellsites and Associated Facilities for Native Grasslands</u> • <u>Reclamation Criteria for Wellsites and Associated Facilities for Peatlands</u>
biophysical elements	The natural components of the environment, such as air, water, soil, vegetation, wildlife, and fish.
class I pipelines	These pipelines require an approval under <i>EPEA</i> prior to any surface disturbance. Class I pipelines have an index of 2690 (outside diameter in millimetres multiplied by length in kilometres) or greater, unless otherwise excluded in the regulations.
class II pipelines	These pipelines do not require an approval under <i>EPEA</i> . The <u>Activities Designation Regulation</u> , section 2(3)(i), lists the exemptions for pipelines not requiring an approval.
conservation	See section 1(l) in <i>EPEA</i> .
contingency plans	Processes to respond to unexpected events or emergencies. They outline specific actions and procedures to be followed in case of incidents to minimize environmental impacts.
electrical conductivity	As defined by <u>Digging into Canadian Soils</u> .

equivalent land capability	As defined in section 1(e) in the Conservation and Reclamation Regulation .
green area	As defined in the section 1(g) of the Conservation and Reclamation Regulation .
index (pipeline)	Calculated by multiplying the outside diameter of the pipe in millimetres by the length of the line in kilometres.
map unit	As defined by the Canadian Soil Information Service (CanSIS) .
problem soils	See Guidelines for Alternative Soil Handling Procedures During Pipeline Construction , section 3.9.
project disturbance area	Where biophysical elements are predicted to be potentially affected by the activities proposed in an application for approval under <i>EPEA</i> . Should account for recommended setback distances and species inventory guidelines. The project disturbance area considers both direct and indirect effects: direct effects are those within the project site and indirect effects are those outside the project site, in the zone of influence .
project site	Identified based on the proposed activities and encompasses the physical area where the project will be constructed and reclaimed.
reclamation	See section 1(ddd) in <i>EPEA</i> .
record of observation	Datasheets for recording soil and vegetation information, measurements, and observations, managed by the Government of Alberta (https://www.alberta.ca/system/files/custom_downloaded_images/ep-2010-combined-assessment-tool-roo.xlsx).
regional plans	See section 2(1)(v) of the Alberta Land Stewardship Act .
saturation percentage	See Salt Contamination Assessment & Remediation Guidelines .
sodium adsorption ratio (SAR)	See Salt Contamination Assessment & Remediation Guidelines .
soluble cations	The positively-charged soil constituents that are soluble in water.

spoil	Any material below the topsoil and upper subsoil layers removed during excavation of the trench.
subregional plans	See <i>ALSA</i> , section 10 (e.g., Moose Lake Access Management Plan , Livingstone-Porcupine Hills Land Footprint Management Plan).
temporary workspace	The land adjacent to the right-of-way used during the construction or maintenance phases of pipeline projects that allows additional space for working (e.g., travel, stringing, repairs, etc.) offset from the ditch or pipeline.
topsoil	The uppermost layer of soil that is normally referred to as the plough layer in agricultural soils, is typically darker in colour than the upper subsoil layer and consists of the A horizons as defined in The Canadian System of Soil Classification .
upper subsoil	In problem soils, the layer of soil directly below the topsoil layer that <ul style="list-style-type: none"> • contains roots or the root zone, • is typically lighter in colour than the topsoil layer, • consists of the B horizons as defined in The Canadian System of Soil Classification, and • extends no more than 50 centimetres below the topsoil layer.
white area	As defined in section 1(v) of the Conservation and Reclamation Regulation .