

# Directive 056

**Release date: October 18, 2018**

**Effective date: October 18, 2018**

**Replaces previous edition issued May 1, 2014**

## Energy Development Applications and Schedules

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## Abbreviations

ABSA	Alberta Boilers Safety Association
ADR	alternative dispute resolution
AEP	Alberta Environment and Parks
AER	Alberta Energy Regulator
AOA	area operating agreement
AOF	absolute open flow
AUC	Alberta Utilities Commission
BA	business associate
CAPP	Canadian Association of Petroleum Producers
CBM	coalbed methane
CSA	Canadian Standards Association
DSU	drilling spacing unit
<i>EPEA</i>	<i>Environmental Protection and Enhancement Act</i>
EPZ	emergency planning zone
ERP	emergency response plan
HVP	high vapour pressure
MOP	maximum operating pressure
NIA	noise impact assessment
<i>OGCR</i>	<i>Oil and Gas Conservation Rules</i>



## 1 Introduction

### 1.1 Purpose of This Directive

This directive contains the requirements for licence applications to construct or operate facilities, pipelines, or wells as part of petroleum industry energy development.

This directive is incorporated by reference into the *Oil and Gas Conservation Rules* ([OGCR](#)). If a unique situation arises for an energy development proposal not covered in this directive, contact the AER for further direction.

When an applicant files a licence application, it makes a commitment that it understands and will follow the appropriate participant involvement, audit, and technical requirements for energy developments as described throughout *Directive 056*.

While *Directive 056* encompasses the legal requirements of all licensees under the [OGCR](#), the [Pipeline Rules](#), and other regulations stipulated by the AER, approvals, or licences from other government agencies may be required outside the *Directive 056* licensing process.

### 1.2 AER Requirements

Requirements and recommended practices are numbered sequentially within each section. “Must” indicates a requirement, and “recommends” and “expects” indicate a recommended practice.

- Requirements are those rules that industry has an obligation to meet.
- Expectations represent recommended best practices or guidelines.

### 1.3 What's New in This Edition

The 2018 edition of *Directive 056* has transformed the directive into a purely technical directive and has removed the procedural instructions on how to file an application. In addition, the participant involvement requirements and audit requirements were consolidated into the appropriate sections under those headings.

This directive is formatted with electronic links to assist users in moving quickly from one section to another, as well as linking to applicable regulations, websites, and publications recommended in the directive.

### 1.4 How to Use This Directive

- Section 2, “Energy Development Licence Applications,” describes requirements and expectations that apply to all licence application types.

- Section 3, “Participant Involvement,” describes two tiers of personal consultation and notification—required and expected. In addition, this section lists the information an applicant must include as part of its public information package and describes the AER’s suggested process for dealing with outstanding public or industry concerns and objections.
- Section 4, “Application Audit Process,” gives an overview of the audit process and the audit requirements that apply to all applicants.
- Section 5, “Facility Licence Applications,” describes the application procedures specific to applying for a facility licence.
- Section 6, “Pipeline Licence Applications,” describes application procedures specific to applying for a pipeline or pipeline installation licence.
- Section 7, “Well Licence Applications,” describes application procedures specific to applying for a well licence.
- Section 8, “Additional Application Requirements (Special Circumstances),” describes additional application requirements specific to certain areas or circumstances.
- Appendix 1 contains definitions used in the directive.

## 1.5 Continuous Improvement

The AER gathers information on the efficiency and effectiveness of *Directive 056* and the licence application process through application auditing and data retention activities, as well as by soliciting feedback from stakeholders.

As part of this commitment to continuous improvement, the AER anticipates the evolution of the requirements described in *Directive 056* in order to meet and exceed the needs of all stakeholders.

## 1.6 *Directive 056* Help

Links to frequently asked questions (FAQs), on-line schedules, and other information about ongoing *Directive 056* initiatives are available on the AER website.

If you have a question not covered in this directive or an FAQ, contact us at 403-297-8311.

## 2 Energy Development Licence Applications

### 2.1 Overview

All applicants have the responsibility to understand and comply with legislative and regulatory requirements. The AER continues to work with applicants new to the licensing process or experiencing difficulties.

### 2.2 Before Filing a Licence Application

There are many factors to consider before filing an energy development licence application. Have all mineral rights been secured? Are there outstanding concerns or objections to the licence application? Are licences or approvals required from other agencies?

- 1) Before filing an energy development licence application with the AER, the applicant must
  - a) obtain an AER BA code from [Petrinex](#) and licensee eligibility from the AER (see [Directive 067: Eligibility Requirements for Acquiring and Holding Energy Licences and Approvals](#); all applicants and consultants must have a BA code);
  - b) retain documentation to support the applicant's participant involvement program, including documentation of contact with or approval from other parties (see section 3 and tables 1–5); and
  - c) retain copies of all design work and other supporting documentation for the application.

#### 2.2.1 Business Associate Codes

BA codes, referred to as AER identification or operator codes in section 21(1) of the *Oil and Gas Conservation Act (OGCA)*, are obtained from [Petrinex](#). The AER cannot consider a licence application unless the applicant and all consultants have a valid BA code and the applicant has obtained licensee eligibility from the AER (see [Directive 067](#)).

#### 2.2.2 Prelicensing Approvals and Waivers

An applicant may seek a prelicensing ruling from the AER for the following components of a well licence application:

- H<sub>2</sub>S release rate assessment (section 7.8.15)
- critical well drilling plan waivers [Directive 036: Drilling Blowout Prevention Requirements and Procedures](#) and [IRP Volume 1: Critical Sour Drilling](#))
- surface casing waiver (section 7.8.10; [Directive 008](#))

Other types of waivers for facility, pipeline, and well requirements (e.g., equipment spacing, measurement) are captured through the licence application process.

- 2) When filing an application that has a precicensing approval or waiver for surface casing, the applicant must identify so in its application.

If the applicant cannot meet a technical requirement, chooses to apply for a regulatory relaxation, cannot meet all participant involvements, outstanding concerns or objections exist, or the applicant proposes to implement new technology, the applicant must disclose the situation in its application. If there are outstanding concerns or objections to an exempt activity, the activity is no longer exempt from licensing, and an application disclosing the situation must be submitted.

### 2.3 Applicant Responsibilities

An applicant is responsible for all aspects of application development, including planning the energy development, planning and conducting participant involvement, retaining supporting documents, and submitting the application. Once a licence application is approved by the AER, the company becomes a licensee and bears responsibility for the construction, installation, and safe operation of the facility, pipeline, or well. The licensee is also responsible for decommissioning, dismantling, abandonment, and reclamation.

- 3) An applicant must obtain the appropriate AER licences before starting any site preparation, construction, or operation.

Part 6, sections 11 and 12, of the *Oil and Gas Conservation Act* ([OGCA](#)) and Part 4, section 6, of the *Pipeline Act* prohibit any preparatory or incidental operations on private or public lands before the applicant receives a well, facility, or pipeline licence or approval. This includes work such as access road construction; pipe stringing, bending, and welding; and facility equipment installation. Applicants must limit prelease activities to surveying and obtaining soil samples through shovel digs or auger samples no more than 5 to 8 centimetres (cm) in diameter.

- 4) An applicant or licensee is responsible for outcomes of actions conducted on its behalf by contracted personnel.

### 2.4 Submission Procedures

- 5) Facility, pipeline, and well audit submissions must be submitted electronically to the AER.

### 2.5 Incomplete Licence Applications

The AER cannot process an incomplete licence application. If an application has minor deficiencies, the AER may notify the applicant and request that corrections be submitted.

In the case of significant deficiencies, the AER will notify the applicant that the application is being closed and why. The applicant may reapply by submitting a new, complete, and accurate energy development licence application.

- 6) Before reapplying, the applicant must assess the need to update its participant involvement program if a delay in filing or potential changes to the scope of the energy development require participant updates.

If the applicant designates a consultant to prepare and file an application on its behalf, the AER may communicate with the consultant during the processing of the application.

## 2.6 Checking the Status of a Licence Application

An applicant may review the status of its licence application through the AER website.

## 2.7 AER Licence Application Process

A licence issued under *Directive 056* is a licence to construct and operate a surface facility, pipeline, or well.

Numerous electronic checks are performed to determine the application's acceptability and the path for processing. This may include a preliminary technical screening that helps to identify issues that require further assessment.

Some applications may be set down for a hearing. For information on the AER's hearing process, see [Manual 003: Participant Guide to the Hearing Process](#).

## 2.8 Application Disposition

The disposition of an application may occur through the application licensing process, as a result of an AER hearing, or because of the applicant's decision not to proceed with the energy development. Application disposition includes

- issuance of a licence by the AER,
- denial of a licence by the AER,
- closure of an application by the AER, and
- withdrawal of an application by the applicant.





### 3 Participant Involvement

#### 3.1 Overview

“Participant involvement” is an umbrella term encompassing all aspects of public, industry, and regulator interactions and communications. While the three main participant groups in energy development are industry, the public, and the AER, it is recognized that other groups also have a stake in energy development.

While the outcomes of most participant involvement programs are successful, *Directive 056* provides the energy industry with requirements and expectations to assist industry in its participant involvement efforts. Applicants must consider requirements and expectations both in advance of submitting an application for energy development and throughout the life of that development.

Most land in Alberta carries two titles and two sets of rights. The surface title gives the landowner control of the land’s surface and the right to work it. The mineral title gives the company or the person who owns the minerals under the land the right to explore for oil and gas.

Industry is required to develop an effective participant involvement program that includes parties who may be directly and adversely affected by the nature and extent of a proposed application. The development and implementation of this program must occur before filing an application and include distributing the applicant’s information package and the required AER publications; responding to questions and concerns; discussing options, alternatives, and mitigating measures; and seeking confirmation of nonobjection through cooperative efforts. Industry is also expected to be sensitive to the timing constraints on the public (e.g., trapping, planting, harvesting, and calving seasons and statutory holidays).

The public is strongly encouraged to participate in ongoing issue identification, problem solving, and planning with respect to local energy developments. Early involvement in informal discussions with industry may lead to greater influence on project planning and mitigation of impacts. The public is also expected to be sensitive to the timing constraints on the applicant.

Participant involvement does not end with the issuance of a licence; it must continue throughout the life of a project. The development and creation of synergy groups at an early stage of the participant involvement program, especially in highly developed areas, will assist in fostering a collective and amenable approach to energy developments in the area.

All requirements and expectations detailed in this section apply to personal consultation and notification with all potentially directly and adversely affected persons, including First Nations and Métis. These requirements and expectations apply to the licensing of all new energy developments and all modifications to existing energy developments.

The Alberta Government issued [\*The Government of Alberta's First Nations Consultation Policy on Land Management and Resource Development\*](#) on May 16, 2005. Then in November 2007, to address how consultation with First Nations should occur in relation to certain land management and resource development activities, the government issued [\*Alberta's First Nations Consultation Guidelines on Land Management and Resource Development\*](#). The consultation required by the guidelines is a process that is separate from the AER consultation requirements, and completion of the consultation guidelines should not be considered as a substitute for, or as completion of, the AER's consultation requirements.

### 3.2 Planning a Participant Involvement Program

Tables 1–5 set out the category type and the consultation and notification radii for planning a participant involvement program. The radii are the minimum. It is industry's responsibility to assess the area beyond a specified radius to determine if the radius should be expanded. The radius may need to be expanded to include public interest groups or others who have expressed an interest in development in the area.

Local authorities and AEP play an important part in the plan for orderly land use and should be involved at an early stage in planning an energy development and participant involvement program. Additionally, local authorities, AER staff, and the applicant's previous knowledge of the area may help identify needs in the community. Local AER staff are also available to assist in the proactive engagement of stakeholders and resolution of public issues. Project-specific participant involvement requirements are given in sections 3.6 through 3.10.

#### 3.2.1 Who to Include

- 1) The applicant must develop and complete its participant involvement program before filing an energy development application.
- 2) The applicant must ensure that its participant involvement program includes those parties within the radii given in tables 1–5.
- 3) The applicant must include all parties with a direct interest in land, such as landowners, residents, occupants, other affected industry players, local authorities, municipalities, and other parties who have a right to conduct an activity on the land, such as Crown disposition holders.
- 4) The applicant must also include those people that it is aware of who have concerns regardless of whether they are inside or outside the radius of personal consultation and notification indicated in tables 1–5.
- 5) The applicant must allow participants a minimum of 14 calendar days to receive, consider, and respond to notification of the proposed development. The applicant may file an

application before the 14-calendar-day period has ended if certain conditions have been met. Refer to section 3.3.2.

- 6) The applicant is expected to communicate with local residents and other operators and to develop an effective participant involvement program engaging parties at an early stage of planning. The applicant is also encouraged to contact synergy groups.
- 7) The applicant is expected to consult with or to notify other parties that express an interest in the proposed development, whether located inside or outside the radius outlined in tables 1–5, and allow them the opportunity to obtain information specific to the proposed energy development and to understand its possible impacts.
- 8) The applicant is expected to document commitments made and have a process in place to monitor and follow up on commitments.
- 9) The applicant is expected to consider the timing constraints on the public (e.g., planting, harvesting, and calving seasons and statutory holidays).
- 10) The applicant is expected to minimize the cumulative impacts of energy development and to show that they have applied good planning practices with respect to the public and the environment.
- 11) If the proposed development is part of a larger project, the applicant is expected to discuss the entire project and explain how it complements other energy development in the area.
- 12) During the planning of its participant involvement program, the applicant will have assessed its need to reach the broader public and may determine that an information session or public open house meeting is required. When holding broader public meetings or open houses, the applicant must disclose the same project-specific information as it would to those involved in personal consultation and notification. However, information sessions or public open houses may not be a substitute for meeting consultation requirements. Contact the AER for advice on how to best proceed.

In situations where it is intended to test a proposed well by flaring or incinerating gas, the applicants should consider expanding the resident notification to the distances specified in [Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting](#) for well test flaring:

- 1.5 kilometres (km) for oil wells,
- 1.5 km for gas wells containing less than 10.0 moles per kilomole (mol/kmol) of hydrogen sulphide (H<sub>2</sub>S), and
- 3.0 km for gas wells where the gas contains greater than or equal to 10.0 mol/kmol H<sub>2</sub>S.

### 3.2.2 What Information to Disclose

- 13) Information packages must be developed and distributed to all parties included in the participant involvement program. Information packages are not required for consultation or notification with AEP unless requested.
- 14) The applicant must provide information packages to those persons within the radii given in tables 1–5 and be prepared to discuss the project, if requested, with any person to whom an information package was sent.
- 15) If an area development plan has been developed, it must be distributed to those persons within the radii given in tables 1–5, and the information must be made available upon request from other interested parties.
- 16) The applicant’s project-specific information package must provide the specific details of the proposed energy development.
- 17) The applicant must use appropriate language and terminology in the written materials so that the participants can clearly understand the details of the proposed development and the impacts it may have upon them.
- 18) The following details must be included in the applicant’s project-specific information package:
  - a) applicant name and contact numbers for further information;
  - b) emergency contact number of the applicant or operator;
  - c) location of proposed energy development;
  - d) a description (category type) of the proposed energy development (e.g., well with no H<sub>2</sub>S, CBM well, oil satellite with less than one tonne per day sulphur inlet);
  - e) need for the proposed development and explanation of how it fits with existing and future plans;
  - f) type of substances that will be processed, transported, or drilled for;
  - g) discussion of the presence of H<sub>2</sub>S and associated setbacks as detailed in tables 6, 8, and 12;
  - h) discussion of the potential restrictions regarding developing lands adjacent to the proposed development, such as setbacks ([OGCR 2.110](#) and *Subdivision and Development Regulation*; e.g., future surface improvements within 100 m of the wellhead may be subject to county/municipal development restrictions);
  - i) description of proposed on-site equipment;

- j) a description that meets the information requirements in [Directive 060](#) for any continuous flaring, incinerating, or venting;
  - k) potential sources of emissions and odours during normal operating conditions (including trucking operations) and measures to control or eliminate them;
  - l) proposed project schedule for construction and start-up;
  - m) anticipated noise level and description of proposed mitigative measures, if required;
  - n) traffic impacts, including types of vehicular traffic to be expected, duration, frequency, and dust control measures;
  - o) the EPZ (see [Directive 071: Emergency Preparedness and Response Requirements for the Upstream Petroleum Industry](#));
  - p) derrick height (only when notifying private unregistered and unlighted airstrips);
  - q) the list of available AER public information documents and their availability from the applicant:
    - i) the brochure [Understanding Oil and Gas Development in Alberta](#); and
    - ii) all current AER [EnerFAQs](#) publications, as set out on the AER website [www.aer.ca](http://www.aer.ca).
- 19) If any of the above project details are not applicable to the proposed energy development, the applicant's project-specific information letter must explain why the detail is not applicable.
- 20) The applicant is expected to include any other information that would assist the participant in understanding the proposed development (e.g., soil information, water well testing, maps).

### 3.2.3 Personal Information

Applicants are reminded of their obligations under the *Personal Information Protection Act* ([PIPA](#)). That includes disclosing the need and purpose for collecting any personal information, the circumstances under which this information will be disclosed, and details regarding the security, retention, and ultimately the destruction of this information. The name of the person to be contacted regarding personal information collection and the company's privacy policy should also be provided, and all of these details should be consistent with the applicant's established privacy policy.

### 3.3 Implementing the Participant Involvement Program

- 21) The development and implementation of the participant involvement program must occur before filing an application with the AER. This includes
  - distributing project-specific information packages and the AER public information documents;
  - responding to questions and concerns;
  - discussing options, alternatives, and mitigating measures; and
  - seeking confirmation of nonobjection through cooperative efforts.
- 22) The applicant must always close the participant involvement loop, even if the application is withdrawn. This means that all parties included in the participant involvement program must continue to be included in all correspondence and information updates during the development, implementation, and outcome of the proposed project.
  - a) If the scope of the project changes, such as a change to the surface location, the applicant must notify all parties included in the initial consultation program of the proposed change. If the project change results in the inclusion of new participants, the applicant must meet all participant involvement requirements in regard to the new participants as well.
  - b) The applicant must notify all parties (public and industry) if it has decided not to proceed with the proposed project after having initiated a participant involvement program.
  - c) The applicant must notify all participants (public, industry, and regulatory) when a change in circumstances does not allow previous commitments to be met.
- 23) If the applicant is unable to fulfil all *Directive 056* participant involvement requirements, it must indicate so in its application and demonstrate the efforts made to engage the participants.

#### 3.3.1 Personal Consultation and Confirmation of Nonobjection

- 24) Personal consultation is intended to inform parties of the nature and extent of the proposed application. Questions raised during the discussion of the proposed energy development should alert the applicant to potential concerns and objections. Through discussions, the applicant may be able to confirm nonobjection. If not, the applicant must identify this in its application. The applicant must fulfil the personal consultation and confirmation of nonobjection requirements for the radii in tables 1–5. It is the applicant’s responsibility to determine if the recommended radii need to be expanded for the proposed development.
- 25) The applicant must conduct face-to-face visits or telephone conversations with all identified parties.

- 26) A company representative with full knowledge of the overall plans and direction of future development options must be available to answer questions either in person or by telephone.
- 27) The applicant must use appropriate language and terminology both in conversations and written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.
- 28) The applicant must provide information packages to those persons within the radii given in tables 1–5 and be prepared to discuss the project as necessary.
- 29) The applicant must provide the following information when personal consultation is required:
  - a) the applicant’s project-specific information package,
  - b) the letter from the Chairman of the AER,
  - c) the AER brochure [\*Understanding Oil and Gas Development in Alberta\*](#),
  - d) the AER publication [\*EnerFAQs: Proposed Oil and Gas Development; A Landowner’s Guide\*](#),
  - e) the AER publication [\*EnerFAQs: Expressing Your Concerns – How to File a Statement of Concern About an Energy Resource Project\*](#), and
  - f) any other information that would assist a participant in understanding the proposed development (e.g., soil information, water well testing, maps).
- 30) The applicant must offer the participants copies of other AER [\*EnerFAQs\*](#) publications that relate to the proposed energy development and document its distribution for audit purposes.
- 31) The required information packages may be distributed during the personal consultation meeting or forwarded later as follow-up. Packages may be forwarded by courier, mail, fax, email, or other means as agreed upon by the parties.
- 32) If the participant does not want a copy of the required information packages, the applicant must document the refusal for audit purposes.
- 33) When confirmation of nonobjection is required, the applicant must ensure that there are no unresolved concerns or objections by obtaining written or verbal confirmation from the participant that they have no objection to the AER issuing a licence for the proposed energy development.
- 34) The applicant must keep a log of the dates that personal consultation and confirmation of nonobjection occurred, when materials were distributed and received, and by whom.

- 35) The applicant is accountable for the outcomes of personal consultation completed on its behalf by contracted personnel. Therefore, the applicant must ensure that individuals conducting personal consultation on its behalf
- a) possess a sound understanding of regulatory requirements and expectations for participant involvement and
  - b) use appropriate language and terminology in the written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.

### 3.3.2 Notification

Notification differs from personal consultation in that the initial communication may take place through written correspondence rather than through face-to-face or telephone conversations.

Ensuring that participants have received information packages will reduce the possibility of late (post-approval) concerns or objections and requests for regulatory appeal under the *Responsible Energy Development Act*, section 38. Applicants may choose to use registered mail or courier to ensure that the participants receive the information packages or to document attempts made to involve the participants.

- 36) The applicant must fulfil the notification requirements for the radii in tables 1–5. It is the applicant’s responsibility to determine if the recommended radius of notification needs to be expanded for the proposed development.

Notifying Crown disposition holders within the proposed facility site, well site, access road, or pipeline right-of-way is also required. The applicant may exclude Crown disposition holders such as oil and gas industry participants if they are not impacted by setback requirements.

- 37) If the notified party indicates it would prefer personal consultation, a company representative with full knowledge of the overall plans and direction of future development options must be available to answer questions either in person or by telephone.
- 38) The applicant must use appropriate language and terminology in conversations and written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.
- 39) The applicant must provide a copy of its project-specific information package and the letter from the Chairman of the AER and offer the participants copies of
- a) the AER brochure [\*Understanding Oil and Gas Development in Alberta\*](#),



- b) the AER publication [EnerFAQs: Proposed Oil and Gas Development; A Landowner's Guide](#),
  - c) the AER publication [EnerFAQs: Expressing Your Concerns – How to File a Statement of Concern About an Energy Resource Project](#), and
  - d) all current AER [EnerFAQs](#) publications as set out on the AER website.
- 40) The applicant must allow a minimum of 14 calendar days for the participants to receive, consider, and respond to the notification and be prepared to discuss the project as necessary before submitting an application. This also applies to any project updates that may have been forwarded since the original package was distributed.
- a) If the applicant has fulfilled the personal consultation and confirmation of nonobjection requirements in lieu of the notification requirements, the applicant may file the energy development application once it has completed personal consultation and acquired confirmation of nonobjection.
  - b) If the applicant is aware that an information package was not received by a required party, the applicant must demonstrate its efforts to contact the party.
- 41) The applicant is accountable for the outcome of notification completed on its behalf by contracted personnel. Therefore, the applicant must ensure that individuals conducting notification on its behalf
- a) possess a sound understanding of regulatory requirements and expectations for participant involvement and
  - b) use appropriate language and terminology in the written materials so that the participants can clearly understand the details of the proposed development and the impact it may have upon them.

### 3.3.3 Extended Absences

In some instances, landowners and residents may be away for extended periods, such as on vacation, or they may reside out of the province.

- 42) When the applicant must personally consult with participants and is unable to do so, the applicant is expected to use courier or registered mail to send letters and information packages.

### 3.3.4 Addressing Concerns/Objections and Alternative Dispute Resolution

*Directive 056* recommends that all applicants address and attempt to resolve concerns and objections before filing the application with the AER.

- 43) At any time during the planning, construction, and operation of a project, the applicant must attempt to address unresolved concerns and objections raised by potentially affected or interested parties, reconcile differences where possible, and obtain confirmation of nonobjection.
- 44) The applicant must attempt to address all questions, concerns, and objections regarding the proposed development before filing and during the review of the energy development application, regardless of whether the party involved is inside or outside the radii given in tables 1–5.

To address unresolved concerns and objections, the applicant may choose to

- meet with objectors and attempt to resolve issues through informal “kitchen table” discussions,
- engage the AER’s ADR program,
- pursue resolution through a more formalized third-party mediation process, or
- request an AER disposition, such as a public hearing; the applicant may request an AER hearing in parallel with the ADR process.

If concerns and objections cannot be resolved and the applicant intends to proceed with the project, the applicant must disclose so in its application.

- 45) The applicant must include a written summary of any unresolved concerns and objections, including a discussion of how the applicant intends to mitigate the concerns and objections raised.
- 46) The applicant and the objector are expected to consider using the AER’s ADR program to mitigate unresolved concerns and objections.

#### 3.3.4.1 Compensation

Matters of compensation are not within the AER’s jurisdiction. If a surface rights agreement is unobtainable from the landowner solely due to compensation issues, the applicant may request that the AER issue the licence to allow the applicant to apply to the Surface Rights Board (SRB) for a right-of-entry order.

- 47) The applicant may proceed with its licence application if the landowner confirms in writing that compensation is the only issue and there are no concerns/objections to the AER issuing a licence, so that the parties may proceed to the SRB.

- 48) If landowner confirmation as described above cannot be obtained or if there are unresolved compensation issues identified by participants other than the surface landowner, the applicant must disclose that in its application.

### 3.4 Documenting the Participant Involvement Program

It is in the applicant's best interest to understand the audit requirements for participant involvement. The applicant should develop an audit documentation package early and build it throughout the process.

- 49) The applicant must retain communication logs, records of confirmation of nonobjection letters, and registered mail and courier tracking for audit purposes.
- 50) The applicant must retain personal consultation and notification documents for audit purposes.
- 51) The applicant must retain documentation of resolution of concerns and objections that occurred before filing an application.

### 3.5 Expiry of the Personal Consultation and Notification Program

All facility, pipeline, and well licences issued under this directive typically expire one year from date of issue if not acted on (i.e., if clearing or construction has not begun). If a licence expires, any associated personal consultation and notification also expires.

- 52) If a licence expires and the licensee intends to proceed with the project, the licensee must consult again on the proposed project or be able to demonstrate that personal consultation and notification updates have been conducted.
- 53) A personal consultation and notification program is only valid for one energy development. Therefore, the applicant must initiate a new or updated personal consultation and notification program for additional applications and licence amendment applications.

In some instances the complexity of a project may have required that the personal consultation and notification be initiated well in advance of the licence application being filed.

- 54) The participant involvement program must be current when the application is filed, regardless of when the program was initiated.
- 55) If the personal consultation and notification program is initiated well in advance of the application submission date, the applicant is required to continue personal consultation and notification throughout the application process by providing participants with status updates on the proposed development. Project status updates must be provided if one year has elapsed since the initial consultation.

If the AER determines that the initial communication was incomplete or that the consultation is no longer current, the applicant may be directed to fulfil participant involvement requirements.

- 56) In cases where concerns or objections have been expressed, the applicant is expected to close the participant involvement loop by explaining the outcome of the application to those parties included in the participant involvement program. This should include what will be done next and an explanation of how the applicant will meet any commitments made during the participant involvement process, with an emphasis on ongoing information sharing.
- 57) The applicant must attempt to address concerns and objections and answer questions raised by members of the public, industry, government representatives, First Nations, Métis, and other interested parties throughout the life of a project.

### 3.6 Additional Participant Involvement Requirements for Facilities

#### 3.6.1 Licence Expiry

- 58) Applicants must conduct full participant involvement work in order to apply to extend the expiry date of a facility licence or a temporary facility licence.
- 59) Before initiating new construction when a licence is nearing expiry, the applicant must conduct a new search for residents and landowners and determine if any new issues may have arisen since the licence was granted.

#### 3.6.2 Licence Extensions

- 60) To get an extended expiry date for an applied-for licence, the applicant must update its participant involvement program before it acts on the licence.
- 61) To get an extended expiry date for an existing licence, the licensee must update its participant involvement program before it acts on the licence.

#### 3.6.3 Consultation and Notification Requirements by Facility

The consultation and notification requirements for each facility are listed in table 1. The category type of facility is dependent on the H<sub>2</sub>S and sulphur content of the inlet gas stream.

- 62) The applicant must identify the correct type for the proposed facility project and perform all associated consultations and notifications.

**Table 1. Consultation and notification requirements by facility type**

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification		
B	Facilities <0.01 mol/kmol H <sub>2</sub> S in inlet stream	001	single-well facility	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 0.3 km</li> </ul>	<ul style="list-style-type: none"> <li>Local authority</li> <li>Crown disposition holders</li> </ul>		
	Facilities <0.01 mol/kmol H <sub>2</sub> S in inlet stream	010	Gas processing plant	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 0.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authority</li> <li>Landowners, occupants, and urban authorities within 1.5 km</li> </ul>		
		011	Gas fractionation plant				
		020	Gas battery—multiwell				
		030	Oil battery—multiwell				
		031	Bitumen battery—multiwell				
		040	Compressor station				
		070	Oil satellite—multiwell			<ul style="list-style-type: none"> <li>Landowner and occupants</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> </ul>
		071	Bitumen satellite—multiwell				
	080	Custom treating facility	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 0.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authority</li> <li>Landowners, occupants, and urban authorities within 1.5 km</li> </ul>			
	090	Injection/disposal facility—water	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 0.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authority</li> <li>Landowners, occupants, and urban authorities within 1.5 km</li> </ul>			
091	Injection/disposal facility—enhanced oil recovery	<ul style="list-style-type: none"> <li>When H<sub>2</sub>S ≥0.1 mol/kmol:                             <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul> </li> </ul>					
200	Straddle plant	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 0.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authority</li> <li>Landowners, occupants, and urban authorities within 1.5 km</li> </ul>				
C	Facilities <1 t/d sulphur inlet	300	Gas processing plant	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 1.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities</li> <li>Landowners, occupants, and urban authorities within 2.0 km</li> </ul>		
		301	Gas fractionation plant				
		302	Straddle plant				
		310	Gas battery—single well				
		311	Gas battery—multiwell				
		320	Oil battery—single well				
		321	Oil battery—multiwell				
		330	Bitumen battery—single well			<ul style="list-style-type: none"> <li>When H<sub>2</sub>S ≥0.1 mol/kmol:                             <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul> </li> </ul>	
		331	Bitumen battery—multiwell				
		340	Compressor station				

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
		350	Oil satellite—single or multiwell	<ul style="list-style-type: none"> <li>Landowner and occupants</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> </ul> <p>When H<sub>2</sub>S ≥0.1 mol/kmol:</p> <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>
		351	Bitumen satellite—single or multiwell		
D	Facilities >1 t/d sulphur inlet	400	Gas processing plant	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 1.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authority</li> <li>Landowners, occupants, and urban authorities within 3.0 km</li> </ul> <p>When H<sub>2</sub>S ≥0.1 mol/kmol:</p> <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>
		401	Gas fractionation plant		
		410	Gas battery—single well		
		411	Gas battery—multiwell		
		420	Oil battery— single well		
		421	Oil battery—multiwell		
		430	Bitumen battery—single well		
		431	Bitumen battery—multiwell		
		440	Compressor station		
		450	Oil satellite—single or multiwell		
451	Bitumen satellite—single or multiwell				
E	Sulphur recovery facilities	600	Gas processing plant	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 1.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authority</li> <li>Landowners, occupants, and urban authorities within 5.0 km</li> </ul> <p>When H<sub>2</sub>S ≥0.1 mol/kmol:</p> <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>

### 3.6.4 Exempted Activities and Facilities

- 63) Although no application is required under this directive for certain exempted activities and facilities (see sections 5.4.1 and 5.4.3), the company must provide a project-specific information package to landowners, occupants, and residents who may be directly and adversely affected by the activity.

## Oil Sands Processing Plants

Stakeholder notification that has been completed as part of a [Directive 023](#) application for a new in situ oil sands project or an amendment to an existing project satisfies the participant involvement requirements for any related *Directive 056* application for facilities within the AER-approved in situ oil sands project area.

### 3.7 Other Participant Involvement Requirements for Facilities

- 64) The applicant must ensure that participant involvement requirements are met for the radii set out in table 1.
- 65) The applicant must meet the information requirements as part of personal consultation and notification for all facility licence applications.
- 66) For category C, D, and E facilities, the applicant must identify and notify all mineral reserve owners and licensees of existing similar facilities within the recommended radius (see table 2).

The applicant must provide all mineral reserve owners and licensees with a written overview of the proposed facility—including location, type, and design capacities—and the anticipated timing for application submission. The onus is then on these parties to raise any concerns or objections to the proposal with the applicant and the AER.

- 67) For facilities not listed in table 2, the AER does not prescribe a radius for industry notification. Applicants are expected to determine what is a reasonable geographic area for industry notification.
- 68) The AER does not prescribe the area the applicant must investigate. However, the applicant is expected to consider investigation parameters similar to those in table 2 and discuss the proposal with licensees of similar facilities.
- 69) When the applicant notifies other licensees, it must continue to include these licensees in updates during the licensing process (i.e., close the participant involvement loop; see section 3.3).

**Table 2. Facility industry notification requirements**

<b>Proposed facility</b>	<b>Mineral reserve owners</b>	<b>Facility licensees</b>
New gas processing plant (categories C and D)	5.0 km	15.0 km
Gas processing plant (category E)	5.0 km	15.0 km
Oil and bitumen production facilities (category D)	N/A	2.0 km

### 3.7.1 Setback Requirements

- 70) The applicant must address the issue of the setback restrictions in table 6 during its participant involvement process.

### 3.7.2 Noise Requirements

- 71) Applicants must discuss noise matters with area residents during the design, construction, and operating phases of the facility.

## 3.8 Additional Participant Involvement Requirements for Pipelines

### 3.8.1 Licence Expiry

- 72) Before initiating new construction when a licence is nearing expiry, the applicant must conduct a new search for residents and landowners and determine if any new issues have arisen since the licence was granted.

### 3.8.2 Licence Extensions

- 73) To get an extended licence expiry date, an applicant must update its participant involvement program before acting on the licence.

### 3.8.3 Consultation and Notification Requirements by Pipeline Type

The consultation and notification requirements for pipelines are listed in table 3. The category type of a pipeline is dependent on the pipe diameter and H<sub>2</sub>S content of the transported product.

- 74) The applicant must identify the correct type for the proposed pipeline and perform all associated consultations and notifications.

The participant involvement requirements for pipeline activities that require a licence amendment are listed in table 4.

Stakeholder notification that has been completed as part of a [Directive 023](#) application for a new in situ oil sands project or an amendment to an existing project satisfies the participant involvement requirements for any related *Directive 056* application for the associated pipelines within the AER-approved in situ oil sands project area.

### 3.8.4 Exemptions

- 75) Although no application is required under *Directive 056* for pipelines and activities in section 6.5, the company must provide a project-specific information package to any landowners, occupants, and residents that may be directly and adversely affected by the activity.



**Table 3. Consultation and notification requirements by pipeline type**

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
B	Pipelines, gas (non-sour service <sup>1</sup> )	100	Natural gas ≤323.9 mm OD	<ul style="list-style-type: none"> <li>Landowners and occupants of the right-of-way</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities along the right-of-way</li> <li>Urban authorities within 1.5 km</li> <li>For category type B101, B111, and B121, landowners and occupants within 0.2 km</li> </ul>
		101	Natural gas >323.9 mm OD		
	Pipelines, oil effluent <sup>2</sup> non-sour service <sup>1</sup>	110	Oil effluent ≤323.9 mm OD		
		111	Oil effluent >323.9 mm OD		
	Pipelines, other	120	Other ≤323.9 mm OD		
		121	Other >323.9 mm OD		
	Pipeline downstream facilities	130	Pipeline tank farm	<ul style="list-style-type: none"> <li>Landowner and occupants</li> <li>Residents within 0.5 km</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities</li> <li>Landowners, occupants, and urban authorities within 1.5 km</li> </ul>
		131	Pipeline oil loading or unloading terminal		
		132	Compressor station		
		133	Pump station		
C	Pipelines, gas (sour service but ≤10 mol/kmol H <sub>2</sub> S <sup>1</sup> )	380	Sour service natural gas ≤323.9 mm OD	<ul style="list-style-type: none"> <li>Landowners and occupants of the right-of-way</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities along the right-of-way</li> <li>Urban authorities within 1.5 km</li> <li>For category type C381 and C383, landowners and occupants within 0.2 km</li> </ul>
		381	Sour service natural gas >323.9 mm OD		
	Pipelines, oil effluent <sup>2</sup> sour service <sup>1</sup> )	382	Sour service oil effluent ≤323.9 mm OD		
		383	Sour service oil effluent >323.9 mm OD		
	Pipeline upstream facilities	384	Pipeline line heater		
					When H <sub>2</sub> S ≥ 0.1 mol/kmol: <ul style="list-style-type: none"> <li>Residents in the EPZ.</li> </ul>
					When H <sub>2</sub> S ≥ 0.1 mol/kmol: <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>
					When H <sub>2</sub> S ≥ 0.1 mol/kmol: <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>
					When H <sub>2</sub> S ≥ 0.1 mol/kmol: <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
D	Pipelines, gas >10 mol/kmol H <sub>2</sub> S	452	Level 1 natural gas ≤323.9 mm OD	<ul style="list-style-type: none"> <li>Landowners and occupants of the right-of-way</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities along the right-of-way</li> <li>Landowners, occupants, and residents within 0.5 km</li> <li>Urban authorities within 1.5 km</li> </ul> <p>When H<sub>2</sub>S ≥0.1 mol/kmol:</p> <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>
		453	Level 1 natural gas >323.9 mm OD		
	Pipelines, gas >10 mol/kmol H <sub>2</sub> S	454	Level 2 natural gas ≤323.9 mm OD	<ul style="list-style-type: none"> <li>Landowners and occupants of the right-of-way and within 0.1 km setback</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities along the right-of-way</li> <li>Landowners, occupants, and residents within 0.5 km</li> <li>Urban authorities within 2.0 km</li> </ul> <p>When H<sub>2</sub>S ≥ 0.1 mol/kmol:</p> <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>
		455	Level 2 natural gas >323.9 mm OD		
		461	Level 3 natural gas ≤323.9 mm OD	<ul style="list-style-type: none"> <li>Landowners and occupants of the right-of-way and within 0.1 km setback</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities along the right-of-way</li> <li>Landowners, occupants, and residents within 1.5 km</li> <li>Urban authorities within 3.0 km</li> </ul> <p>When H<sub>2</sub>S ≥ 0.1 mol/kmol:</p> <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>
		462	Level 3 natural gas >323.9 mm OD		
		463	Level 4 natural gas ≤323.9 mm OD	<ul style="list-style-type: none"> <li>Landowners and occupants of the right-of-way and within 0.1 km setback</li> </ul>	<ul style="list-style-type: none"> <li>Same as Level 3 unless otherwise specified by ERCB</li> </ul>
		464	Level 4 natural gas >323.9 mm OD		
	High-vapour-pressure pipelines	530	HVP pipelines	<ul style="list-style-type: none"> <li>Landowners and occupants of the right-of-way</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> <li>Local authorities along the right-of-way</li> <li>Landowners, occupants, and residents within 0.2 km</li> <li>Urban authorities within 1.5 km</li> </ul>
	Pipeline upstream facilities	531	Pipeline line heater	<ul style="list-style-type: none"> <li>Landowners and occupants</li> </ul>	<ul style="list-style-type: none"> <li>Crown disposition holders</li> </ul> <p>When H<sub>2</sub>S ≥0.1 mol/kmol:</p> <ul style="list-style-type: none"> <li>Residents in the EPZ</li> </ul>

<sup>1</sup> See clause 16 of [CSA Z662](#) for the definition of sour service.

<sup>2</sup> A release volume must be calculated for all oil effluent pipelines containing greater than 10 mol/kmol H<sub>2</sub>S. Applications for these pipelines must meet the personal consultation, confirmation of nonobjection, and notification requirements for category D pipelines based on the level of the proposed pipeline as defined in table 8.

### 3.9 Other Participant Involvement Requirements for Pipelines

- 76) The applicant must ensure that the participant involvement requirements are met for participants in the radii given in tables 3 and 4.
- 77) The applicant must meet the information requirements as part of personal consultation and notification for all pipeline licence applications.
- 78) The AER does not prescribe the geographic area the applicant must investigate for industry notification. However, the applicant is expected to discuss the proposal with licensees of similar pipelines.

The applicant is expected to provide interested oil and gas reserve owners and licensees with a written overview of the proposed pipeline. The onus is then on these parties to raise any concerns or objections to the proposal with the applicant and the AER. The AER expects this contact to precede public consultation and notification.

- 79) Applications for oil effluent pipelines containing greater than 10 mol/kmol H<sub>2</sub>S must meet the participant involvement requirements for category D pipelines based on the level designation of the pipeline proposed (as defined by table 8) regardless of the applied-for category/type of pipeline.
- 80) In cases of pipeline abandonment and discontinuation where no *Directive 056* licence is required to conduct the operation but the AER must be notified of its occurrence, applicants must advise the AER if any concerns/objections to the abandonment procedure are received.

#### 3.9.1 Participant Involvement Requirements for Pipeline Licence Amendments

The participant involvement requirements for pipeline activities that require a licence amendment are listed in table 4.

##### 3.9.1.1 Pipeline Discontinuation

Industry and public notification is not mandatory for discontinuations.

##### 3.9.1.2 Pipeline Abandonment

- 81) When abandoning a pipeline, the licensee must conduct notification with parties along the entire pipeline right-of-way and those affected by setbacks prior to any abandonment procedures.

##### 3.9.1.3 Partial Pipeline Removals

- 82) When applying for a partial pipeline removal and prior to undertaking any activity, the licensee must conduct notification with parties along the pipeline right-of-way and associated setbacks.

#### 3.9.1.4 Pipeline Resumption

- 83) The licensee must conduct personal consultation and notification if the resumption of a discontinued pipeline in conjunction with other activities results in a change to a category D pipeline.
- 84) When resuming operation of an abandoned pipeline, the licensee must demonstrate compliance with personal consultation, confirmation of nonobjection, and notification requirements for all parties along the entire pipeline right-of-way and those affected by setbacks.

#### 3.9.1.5 Pipeline Removal

- 85) When applying to remove a pipeline and prior to undertaking any activity, the licensee must conduct notification with parties along the pipeline right-of-way and associated setbacks.

#### 3.9.1.6 Surface Pipelines

- 86) A *Directive 056* pipeline application is not required for category B, C, and D surface pipelines in continuous service for less than 21 days for well testing purposes; however, the company must obtain landowner nonobjection.

#### 3.9.1.7 Maximum Operating Pressure Increase

- 87) If the applicant determines that any change in pipeline operation will change either the personal consultation and confirmation of nonobjection and/or the notification requirements, the applicant must initiate consultation and/or notification.

#### 3.9.1.8 Substance Change

- 88) When changing the substance, the applicant/licensee must consider the impact on setbacks and personal consultation and notification and take appropriate mitigative actions to ensure continued compliance.

#### 3.9.1.9 Liner Type

Notification is not mandatory for liner installations or removals.

#### 3.9.1.10 Pipeline Installation

- 89) When applying for a pipeline installation, the applicant must fulfil personal consultation, confirmation of nonobjection, and notification requirements for parties in accordance with table 3.
- 90) Applicants must discuss noise matters with area residents during the design, construction, and operating phases of the pipeline installation.

**Table 4. Participant involvement requirements for pipeline and pipeline installation licence amendments**

Activity	Participant Involvement
Complete removal (including all crossings)	<p>Notification must occur before filing an application and the removal operation and must include</p> <ul style="list-style-type: none"> <li>• landowners and occupants of the entire pipeline right-of-way and within the associated setbacks and</li> <li>• residents within the distances specified in table 3 for category D pipelines.</li> </ul>
Not constructed	<p>Notification must be provided to</p> <ul style="list-style-type: none"> <li>• landowners and occupants of the entire pipeline right-of-way and within the associated setbacks and</li> <li>• residents within the distances specified in table 3 for category D pipelines.</li> </ul>
Abandonment or partial removal	<p>Notification must occur before the abandonment or partial removal operation and must include</p> <ul style="list-style-type: none"> <li>• landowners and occupants of the entire pipeline right-of-way and within the associated setbacks and</li> <li>• residents within the distances specified in table 3 for category D pipelines.</li> </ul>
Discontinuation	<p>Notification is not mandatory for discontinuations.</p>
H <sub>2</sub> S change, MOP change, substance change, flow reversal, line split	<p>Notification is not mandatory for these activities.</p> <p>If any of these activities result in the pipeline changing to category D or the setbacks increase, personal consultation with nonobjection and notification must occur before filing an application and commencing operations.</p> <p>This must include</p> <ul style="list-style-type: none"> <li>• landowners and occupants of the entire pipeline right-of-way and within the associated setbacks and</li> <li>• residents within the distances specified in table 3 for category D pipelines.</li> </ul> <p>If any of these activities result in a setback decrease or the setback no longer exists, notification must occur with landowners and occupants of the entire pipeline right-of-way and within the associated setbacks.</p> <p>When the EPZ is affected by the proposed amendment, notification to residents in the EPZ must occur before filing the application.</p>
Resumption of discontinued pipeline	<p>Notification is not mandatory for resumption of a discontinued pipeline.</p> <p>If other activities are conducted in conjunction with the resumption that result in the pipeline changing to category D or the setbacks increase, personal consultation with nonobjection and notification is required before filing the application and commencing operation.</p> <p>This must include</p> <ul style="list-style-type: none"> <li>• landowners and occupants of the entire pipeline right-of-way and within the associated setbacks and</li> <li>• residents within the distances specified in table 3 for category D pipelines.</li> </ul> <p>When the EPZ is affected by the proposed amendment, notification to residents in the EPZ must occur before filing the application.</p>

Activity	Participant Involvement
Resumption of abandoned pipeline or pipeline installations	Personal consultation with confirmation of nonobjection and notification must occur before filing the application and resumption of operation and must include <ul style="list-style-type: none"> <li>• landowners and occupants of the entire pipeline right-of-way and within the associated setbacks and</li> <li>• residents within the distances specified in table 3 for category D pipelines.</li> </ul> When the EPZ is affected by the proposed amendment, notification to residents in the EPZ must occur before filing the application.
Liner installation or removal	Notification is not mandatory for liner installations or removals.

### 3.10 Additional Participant Involvement Requirements for Wells

#### 3.10.1 Licence Expiry

- 91) Prior to initiating new construction when a licence is nearing expiry, the applicant must conduct a new resident/landowner search and determine if any new issues may have arisen since the licence was granted.

#### 3.10.2 Licence Extensions

- 92) To get an extended expiry date for an applied-for licence, the applicant must update its survey and participant involvement program before it acts on the licence.
- 93) To get an extended expiry date for an existing licence, the licensee must update its survey and participant involvement program before it acts on the licence.

#### 3.10.3 Consultation and Notification Requirements by Well Type

The consultation and notification requirements for wells by type are listed in table 5. The category type of a well is determined by the H<sub>2</sub>S content, H<sub>2</sub>S release rate, and proximity to the public.

- 94) The applicant must identify the correct category type for the proposed well project and perform all associated consultations and notifications.
- 95) For wells containing H<sub>2</sub>S, the applicant must base the category type on the maximum wellhead, cumulative drilling, producing, or completion H<sub>2</sub>S release rate. Applicants must review available production data and consider future production operations that may result in a reservoir originally not containing H<sub>2</sub>S gas evolving to gas containing H<sub>2</sub>S.

Stakeholder notification that has been completed as part of a [Directive 023](#) application for a new in situ oil sands project or an amendment to an existing project satisfies the participant involvement requirements for any related *Directive 056* application for the associated wells within the AER-approved in situ oil sands project area.

**Table 5. Consultation and notification requirements by well type**

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
B	Wells 0.00 mol/kmol H <sub>2</sub> S	140	Single well	<ul style="list-style-type: none"> <li>• Landowners and occupants with regard to well-site location</li> <li>• Landowners and occupants with regard to well-site access</li> <li>• Residents within 0.2 km</li> <li>• Residents within 0.3 km, if single oil wells with 0.0 mol/kmol H<sub>2</sub>S and continuous flaring</li> </ul>	<ul style="list-style-type: none"> <li>• Crown disposition holders</li> <li>• Local authorities</li> <li>• Freehold coal rights owner or coal rights lessee</li> <li>• Landowners within 0.1 km</li> <li>• Urban authorities within 1.5 km</li> <li>• Unlighted airports within 1.6 km</li> <li>• Lighted airports within 5 km</li> </ul>
		141	Commercial or source water well		
		150	Multiwell pad		
C	Wells >0.00 mol/kmol H <sub>2</sub> S <0.01 m <sup>3</sup> /s H <sub>2</sub> S release rate	280	Single well	<ul style="list-style-type: none"> <li>• Landowners and occupants with regard to well-site location</li> <li>• Landowners and occupants with regard to well-site access</li> </ul>	<ul style="list-style-type: none"> <li>• Crown disposition holders</li> <li>• Local authorities</li> <li>• Freehold coal rights owner or coal rights lessee</li> <li>• Urban authorities within 1.5 km</li> <li>• Unlighted airports within 1.6 km</li> <li>• Lighted airports within 5 km</li> </ul>
		290	Multiwell pad		
	Wells ≥0.01 m <sup>3</sup> /s but <0.3 m <sup>3</sup> /s H <sub>2</sub> S release rate	360	Single well	<ul style="list-style-type: none"> <li>• Landowners within 0.1 km with regard to setbacks</li> <li>• Residents within 0.2 km or the EPZ radius, whichever is greater</li> </ul>	
		370	Multiwell pad		
D	Wells ≥0.3 m <sup>3</sup> /s but <2.0 m <sup>3</sup> /s H <sub>2</sub> S release rate	570	Single well	<ul style="list-style-type: none"> <li>• Landowners and occupants with regard to well-site location</li> <li>• Landowners and occupants with regard to well-site access</li> <li>• Landowners within 0.5 km with regard to setbacks</li> <li>• Residents within 0.2 km or the EPZ radius, whichever is greater</li> </ul>	<ul style="list-style-type: none"> <li>• Crown disposition holders</li> <li>• Local authorities</li> <li>• Freehold coal rights owner or coal rights lessee</li> <li>• Urban authorities within 1.5 km</li> <li>• Unlighted airports within 1.6 km</li> <li>• Lighted airports within 5 km</li> </ul>
E	Wells ≥2.0 m <sup>3</sup> /s H <sub>2</sub> S release rate	610	Single well	<ul style="list-style-type: none"> <li>• Landowners and occupants with regard to well-site location</li> <li>• Landowners and occupants with regard to well-site access</li> <li>• Landowners within 1.5 km with regard to setbacks</li> <li>• Residents, local authorities, and urban authorities within the EPZ</li> </ul>	<ul style="list-style-type: none"> <li>• Crown disposition holders</li> <li>• Freehold coal rights owner or coal rights lessee</li> <li>• Unlighted airports within 1.6 km</li> <li>• Lighted airports within 5 km</li> </ul>

Category	Name	Type	Description	Personal consultation and confirmation of nonobjection	Notification
E	Wells $\geq 0.01$ but $< 0.1$ m <sup>3</sup> /s release rate and within 0.5 km of urban centre	620	Proximity critical well	<ul style="list-style-type: none"> <li>• Landowners and occupants with regard to well-site location</li> <li>• Landowners and occupants with regard to well-site access</li> <li>• Landowners within 0.1 km with regard to setbacks</li> <li>• Residents and local authorities within 0.2 km or the EPZ radius, whichever is greater</li> <li>• Urban authorities within 1.5 km</li> </ul>	<ul style="list-style-type: none"> <li>• Crown disposition holders</li> <li>• Freehold coal rights owner or coal rights lessee</li> <li>• Unlighted airports within 1.6 km</li> <li>• Lighted airports within 5 km</li> </ul>
	Wells $\geq 0.1$ but $< 0.3$ m <sup>3</sup> /s release rate and within 1.5 km of urban centre	621	Proximity critical well	<ul style="list-style-type: none"> <li>• Landowners and occupants with regard to well-site location</li> <li>• Landowners and occupants with regard to well-site access</li> <li>• Landowners within 0.1 km with regard to setbacks</li> <li>• Residents and local authorities within 0.2 km or the EPZ radius, whichever is greater</li> <li>• Urban authorities within 1.5 km</li> </ul>	<ul style="list-style-type: none"> <li>• Crown disposition holders</li> <li>• Freehold coal rights owner or coal rights lessee</li> <li>• Unlighted airports within 1.6 km</li> <li>• Lighted airports within 5 km</li> </ul>
	Wells $\geq 0.3$ but $< 2.0$ m <sup>3</sup> /s release rate and well is within 5.0 km of urban centre	622	Proximity critical well	<ul style="list-style-type: none"> <li>• Landowners and occupants with regard to well-site location</li> <li>• Landowners and occupants with regard to well-site access</li> <li>• Landowners within 0.5 km with regard to setbacks</li> <li>• Residents and local authorities within 0.2 km or the EPZ radius, whichever is greater</li> <li>• Urban authorities within 5.0 km</li> </ul>	<ul style="list-style-type: none"> <li>• Crown disposition holders</li> <li>• Freehold coal rights owner or coal rights lessee</li> <li>• Unlighted airports within 1.6 km</li> <li>• Lighted airports within 5 km</li> </ul>



#### 3.10.4 Licence Amendments

- 96) The applicant must be able to demonstrate there are no outstanding concerns or objections to file an application to amend a well licence or disclose that there are outstanding concerns or objections in its application.

#### 3.11 Other Participant Involvement Requirements for Wells

- 97) The applicant must ensure that the participant involvement requirements are met for the radii given in table 5.
- a) In cases where the completion or producing H<sub>2</sub>S release rate is greater than the drilling release rate, the applicant must fulfil the personal consultation and notification requirements applicable to the highest rate.
  - b) The level designation of a well (table 12) must be based on the suspended/producing H<sub>2</sub>S release rate. The applicant may choose to fulfil the participant involvement requirements with regard to setbacks using the setback radius for the suspended/producing release rate.
- 98) The applicant must meet the information requirements as part of personal consultation and notification for all well licence applications.

##### 3.10.4.1 Airports

- 99) If the applicant proposes to drill a well within
- a) 5 km of a lighted (registered or unregistered) airstrip or aerodrome or
  - b) 1.6 km of an unlighted (registered) airstrip or aerodrome,
- before filing the well licence application, the applicant must advise Transport Canada, using the appropriate Transport Canada drilling rig clearance form.
- 100) If the applicant proposes to drill a well within a 1.6 km radius of a private, unregistered, and unlighted airstrip or aerodrome, the applicant must notify the owner or operator before submitting the well licence application to the AER.

##### 3.10.4.2 Coal Mines

- 101) If the applicant intends to drill through a bed or seam of coal, the applicant must notify in writing all Freehold coal rights owners and the lessees of Freehold or Crown coal rights (unless the applicant is also the holder of the coal rights). This notification must precede the filing of a well application with the AER.

The applicant is not required to notify the Crown regarding coal rights, whether or not the coal rights have been leased.

#### 3.10.4.3 H<sub>2</sub>S Release Rate Assessments

- 102) The applicant must conduct an H<sub>2</sub>S release rate assessment for each category C, D, or E well to ensure public safety when developing projects containing H<sub>2</sub>S gas. The H<sub>2</sub>S release rate assessment determines the minimum EPZ for the proposed project and dictates the minimum radius for the applicant's personal consultation and notification program.
- 103) If the producing or completion H<sub>2</sub>S release rate is greater than the drilling release rate, the applicant must fulfil the personal consultation and notification requirements applicable to the higher rate.

## 4 Application Audit Process

### 4.1 Overview

The AER provides the energy industry with requirements and expectations to assist the applicant or licensee both before submitting an application for energy development and throughout the life of a project. Applicants must meet the requirements outlined in *Directive 056*. Compliance with these requirements will be judged based on the representations that an applicant makes throughout the application process. The purpose of the audit process is to ensure industry's compliance and to identify areas for improvement.

The AER conducts audits both before a licence is issued (e.g., if there are outstanding concerns or objections or to determine if an environmental, safety, or compliance risk exists), or after the licence is issued (to determine whether and how the applicant met regulatory requirements).

Application audits are used to

- identify regulatory noncompliances,
- provide industry with feedback regarding compliant applications and areas for future improvement,
- measure the effectiveness of the application process and provide benchmarks for future improvements, and
- aid regulatory reform and the determination of requirements.

When conducting an audit, the AER relies upon the representations made and documents submitted by the applicant or licensee. The AER does not verify legal or beneficial title. The issuance of a licence or conducting of an AER audit is not to be relied upon by the licensee or third parties as a legal determination or confirmation of entitlement. Audits are conducted for AER internal purposes only.

### 4.2 Audit Selection

All applications are potential audit candidates. An application may be randomly selected by computer or judgementally selected by the AER based on factors such as category type, public risk, location, and recent applicant compliance history.

### 4.3 Audit Types

#### 4.3.1 Full or Partial Audit Review

The AER may select an application for a postlicensing audit review and may undertake a full or partial audit of the supporting material.

- 1) When subject to a full audit, the licensee must submit all supporting documentation associated with the application. The licensee must provide additional information to support the audit upon request.
- 2) When subject to a partial audit, the licensee must submit any materials requested by the AER to demonstrate compliance with the portion of the application under review.

#### 4.3.2 Immediate Audit

The AER normally allows 14 calendar days for a licensee to submit the requested audit documentation. However, in certain instances the AER may require an immediate audit (e.g., if participant involvement, mineral rights, or wellbore rights are in question).

- 3) If an immediate audit is conducted, the applicant or licensee must submit the requested audit material within the time set by the AER. This is usually within the same day, but the AER may require the information within hours.

#### 4.3.3 Prelicensing Audit Reviews

- 4) The applicant must submit audit materials when requested.
- 5) If an application may proceed to a hearing, the AER may require that the applicant submit the entire audit package for review.

#### 4.3.4 Link to AER Field Surveillance Inspections

Based on the findings of an application audit review, the AER may conduct a field inspection to confirm that the materials, operations, and commitments match those indicated in the application.

### 4.4 Audit Documentation

- 6) An applicant must retain copies of all applications and supporting data in the event of an audit. Refer to sections 4.7–4.9 for a list of required audit documentation for facilities, pipelines, and wells.
- 7) The applicant must retain on file all records and audit documentation relating to an application for one year from the date of issue of the corresponding licence.

The AER recommends that all records and audit documentation be kept on file for the life of the project, since exceptional circumstances may require that a review be conducted later in the life of the project.

- 8) The documentation must demonstrate that the supporting materials were developed and compiled during the project planning stage before filing the licence application.

- 9) The applicant must submit the required documentation to the AER within 14 calendar days of a request or as directed by the AER.
- 10) The AER must be able to determine from the audit documents that the applicant fulfilled all requirements to ensure regulatory compliance before filing the application.

#### 4.5 Acquisitions

In cases of corporate property acquisitions or mergers, it is in the company's best interest to obtain all relevant application documentation when it acquires ownership of a facility, pipeline, or well.

- 11) A new owner is expected to assess all newly acquired properties to ensure that the property is operating with the correct *Directive 056* licence.

#### 4.6 Compliance Records

Audit results are managed by the AER. A company wishing information on its compliance record pertaining to *Directive 056* applications must contact the AER.

#### 4.7 Additional Audit Documentation Requirements for Facilities

The following sets out audit documentation requirements for facilities, additional documentation may be required. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

##### 4.7.1 Participant Involvement Requirements

###### 4.7.1.1 Participant Involvement Map Requirements

- 12) The licensee must submit maps that illustrate
  - a) the location of the facility,
  - b) the location of all parties included in the participant involvement program (e.g., residents, similar facilities),
  - c) the area of investigation used in the personal consultation and notification program,
  - d) the location of the nearest surface development,
  - e) the EPZ and location of residents within the calculated EPZ (if applicable), and
  - f) the area of investigation used in the industry notification program (if applicable).

###### 4.7.1.2 Industry Notification Requirements

- 13) The licensee must submit a record of contact with other industry parties that includes
  - a) name, address, and telephone number of all parties contacted;

- b) copies of all related correspondence received;
- c) disclosure meeting minutes, including
  - i) date of meeting,
  - ii) meeting notice or invitation,
  - iii) invitation list, and
  - iv) names, addresses, and telephone numbers of all meeting participants; and
- d) project information presented at meetings or otherwise distributed.

#### 4.7.1.3 Personal Consultation and Notification Requirements

- 14) The applicant must submit a record of the personal consultation and notification program that was conducted.
- 15) The summary must include
  - a) name of each party (e.g., landowner, occupant, resident) included in the personal consultation and notification program,
  - b) legal land description for each party,
  - c) a description of each party's interest in the land (e.g., Crown disposition holder, landowner, resident, facility licensee),
  - d) date and type of contact conducted with each party (e.g., telephone conversation, registered mail, personal meeting),
  - e) date the required AER materials were distributed,
  - f) date the applicant's project-specific information package was distributed,
  - g) date the supplementary [EnerFAQs](#) were provided, and
  - h) date confirmation of nonobjection was obtained.

#### 4.7.1.4 Confirmation of Nonobjection

- 16) The AER does not require that confirmation of nonobjection be in writing. Confirmation of nonobjection may consist of one of the following documents, depending on the nature of the proposed development:
  - a) Freehold lease agreement (Freehold also includes federal lands and provincial Special Areas Board lands)

The licensee must submit a copy of the agreement that confirms the parties involved, the date of agreement, and the location of land involved.

- b) Crown disposition (i.e., signed mineral surface lease, miscellaneous lease, or pipeline installation lease; executed AOA or temporary field authorization)

In the case of an AOA, the licensee must submit copies of the following AOA documents:

- the title page (including the details of the expiry date, company name, and area of operation)
- the sign-off page (including when the agreement was executed)
- geographical map and locations list

For all other Crown dispositions, the licensee must submit a copy of the signed agreement that confirms the parties involved, the date of the agreement, and the location of the land involved.

- c) Signed document that identifies the details of the proposal (e.g., signatory page from the applicant's information package)
- 17) If confirmation of nonobjection is verbal, the licensee must document the name of the party providing verbal nonobjection and the date on which it was obtained.

#### 4.7.1.5 Information Packages

- 18) The licensee must submit a copy of the project-specific information package that was distributed to the parties included in the participant involvement process.

It is not necessary to include a copy of the AER's documents in the audit submission. However, details of its distribution must be included.

#### 4.7.1.6 Resolved Concerns and Objections

- 19) If concerns and objections were received and resolved during the course of the participant involvement program, the licensee must submit
- a) a record and explanation of any concerns and objections received and
  - b) documentation confirming the resolution of any concerns and objections.

#### 4.7.1.7 Sour Gas Planning and Proliferation

- 20) For cases where there are residents located within the EPZ of the facility, the applicant must submit
- a) the assessment of existing infrastructure required by section 8.3.2 and
  - b) the updated expanded project-specific information package as described in section 8.3.2.

#### 4.7.2 Emergency Response Planning

- 21) The licensee must keep a copy of the corporate-level ERP or, where required, the specific ERP on file. It is not required for inclusion in the audit submission.

The licensee must include in the audit submission a statement confirming that it has an approved corporate plan or that a site-specific plan will be approved before starting operations.

#### 4.7.3 Application Category

- 22) For category B facilities, the licensee must submit a gas analysis representative of the inlet stream. See table 1 for facility categories.

#### 4.7.4 Design Criteria

- 23) For all facilities, the licensee must submit a written description of the proposed process scheme and a process-flow diagram.
- 24) For custom treating facilities, the licensee must submit an inlet analysis to determine the percentage of oil, water, and solids.
- 25) For facilities with sources of NO<sub>x</sub> and CO<sub>2</sub> emissions, the licensee must submit
- a) a breakdown and total of NO<sub>x</sub> and CO<sub>2</sub> emissions for all sources in tonnes per day and kilograms per hour, respectively,
  - b) manufacturer specifications to confirm NO<sub>x</sub> and CO<sub>2</sub> emissions, and
  - c) diagrams to demonstrate that exhaust stack height requirements are met if the total NO<sub>x</sub> emissions are less than 16 kg/h.
- 26) For facilities with continuous flaring, venting, or incineration, the licensee must submit
- a) a list of all sources and
  - b) the results of the ground-level radiant heat intensity calculation.

#### 4.7.5 Technical Information

##### 4.7.5.1 Equipment Spacing Requirements

- 27) The licensee must submit a site-specific plot plan showing
- a) equipment placement,
  - b) the distances between equipment, and
  - c) the distance from equipment to surface improvements, vegetation, water bodies, and roads (within 100 m of the lease boundary).



- 28) The licensee must state whether emergency shutdown valves are automated or manual control.
- 29) For heavy oil facilities, the licensee must submit a representative oil analysis.

#### 4.7.5.2 Gas Conservation

- 30) For facilities with combined continuous flaring, venting, and incineration greater than 900 m<sup>3</sup>/d, the licensee must submit the [Directive 060](#) economic evaluation and decision tree analysis. If it is not feasible to complete the conservation evaluation until the well test is completed, the licensee must submit an explanation of related reasons and a description of plans to complete the evaluations after initial production.
- 31) For gas processing plants with continuous flaring or incineration, the licensee must submit documentation indicating that the requirements of [Directive 060](#), section 5.1, have been met.

#### 4.7.5.3 Noise Guidelines

- 32) For all facilities with noise-generating equipment, the licensee must submit a copy of the noise impact assessment prepared in accordance with [Directive 038](#).

#### 4.7.5.4 Storage Requirements

- 33) For facilities where products and materials will be stored on site, the licensee must submit a list of materials that will be stored and a description of the storage method ([Directive 055](#)), including details of
  - a) design and construction,
  - b) leak detection,
  - c) secondary containment,
  - d) weather protection, and
  - e) primary containment type and size.

#### 4.7.5.5 Production Measurement Requirements

- 34) For all facilities, the licensee must submit a list and provide the location of each type of meter proposed for each measurement point.
- 35) For facilities with continuous flaring, venting, and incineration, the licensee must submit documentation to confirm how measurement and estimation procedures meet the requirements of [Directive 060](#).

#### 4.7.5.6 NO<sub>x</sub> Emissions

- 36) For facilities where the NO<sub>x</sub> emissions are less than 16 kg/h, the licensee must submit documentation or a diagram demonstrating that the stack height for each source is at least 1.2 times the peak building height. If dispersion modelling was conducted, the licensee must submit the following:
- documentation that confirms dispersion modelling was conducted in accordance with the [\*Air Quality Model Guideline\*](#);
  - the source parameters, locations, elevations, and NO<sub>x</sub> emission rates for all sources;
  - predicted maximum ground-level NO<sub>2</sub> concentrations;
  - the name of the dispersion model used;
  - a description of meteorological data used; and
  - a terrain map of the study area.

#### 4.7.5.7 Alberta Environment and Parks Approval and Registration

- 37) For facilities with total NO<sub>x</sub> emissions more than 16 kg/h and all category C, D, and E gas plants that remove H<sub>2</sub>S using regenerative sweetening processes, the licensee must submit the approval or registration number provided by AEP, if available. If the facility or amendment to the licence has not been registered or approved by AEP, the licensee must submit the following to demonstrate that it will meet the Alberta ambient air quality objectives ([AAAOs](#)) before approval:
- documentation that confirms dispersion modelling was conducted in accordance with the [\*Air Quality Model Guideline\*](#);
  - the source parameters, locations, elevations, and NO<sub>x</sub> emission rates for all sources;
  - predicted maximum ground-level NO<sub>2</sub> concentrations;
  - the name of the dispersion model used;
  - a description of meteorological data used; and
  - a terrain map of the study area.

#### 4.7.5.8 *Historical Resources Act Clearance*

- 38) Where applicable, the licensee must submit documentation showing that it received clearance from Alberta Culture and Tourism before submitting the facility licence application.

#### 4.7.5.9 AER Environmental Requirements

39) The licensee must submit all documentation outlined in [IL 93-09](#), if applicable.

#### 4.7.6 Gas Plants

The following are additional facility audit documentation requirements for gas plants, additional documentation may be required. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

##### 4.7.6.1 Total Recovered Products

- 40) For gas processing, straddle, fractionation, and sulphur recovery plants, the licensee must submit
- a) a plant material balance for design conditions that matches the streams and equipment shown on the process-flow diagrams and includes
    - i) maximum H<sub>2</sub>S content for both the inlet rate and the acid gas rate,
    - ii) design rates for the inlet and recovered products,
    - iii) maximum acid gas rate, and
    - iv) continuous sulphur emission rate and
  - b) an explanation of any differences between the applied-for rates and those contained in the plant material balance.

##### 4.7.6.2 Technical Information – Sour Gas Proliferation

- 41) For new category C and D and all category E gas plants, the licensee must submit documentation regarding the alternatives to construction, including
- a) evaluation of the technical and economic feasibility of using or modifying existing infrastructure,
  - b) an assessment of the social and economic effects of the alternatives, and
  - c) design parameters and available capacity of existing category C, D, and E gas plants that were considered.

#### 4.7.7 H<sub>2</sub>S Information

The following are additional facility audit documentation requirements for H<sub>2</sub>S information, additional documentation may be required. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

4.7.7.1 Gas Treating and Processing Information

- 42) For facilities where an H<sub>2</sub>S scavenger unit is proposed, the licensee must submit
- a) a description of the H<sub>2</sub>S scavenger system proposed and
  - b) the nature of the spent scavenger and its disposition.
- 43) For all facilities where the inlet H<sub>2</sub>S content is more than 0.01 mol/kmol, the licensee must submit a wellhead or inlet gas analysis representative of the facility's inlet streams.
- 44) For facilities with continuous sulphur emissions, the licensee must submit a breakdown of all sources that contribute to the total value (e.g., flare, produced water tanks).
- 45) For facilities where the sulphur inlet is greater than 1 t/d, the licensee must submit an explanation of how the facility meets the current sulphur recovery guidelines.

4.7.7.2 Setback Requirements

- 46) The licensee must submit
- a) the input parameters used to calculate the potential H<sub>2</sub>S release volume of the highest level of pipeline associated with the facility (inlet or outlet streams),
  - b) a pipeline map showing emergency shutdown and check valve locations, and
  - c) the pipeline licence and line number for the highest level of pipeline associated with the facility.

4.7.7.3 Vapour Recovery

- 47) For facilities where the inlet H<sub>2</sub>S is greater than 10 mol/kmol, the licensee must submit a description of the method proposed to control odours from storage tanks and other sources of vented gas, including the type of system.
- 48) For facilities where a product containing greater than 0.01 mol/kmol of H<sub>2</sub>S will be transported, the licensee must submit documentation that confirms that a method to control off-lease odours during the transport of fluids containing H<sub>2</sub>S gas is in place.

4.7.7.4 SO<sub>2</sub> Emissions and Stack Design

- 49) For facilities with continuous flaring/incineration where the inlet H<sub>2</sub>S is less than 10 mol/kmol, the licensee must submit the heating value of the gas stream for the flare or incinerator.
- 50) For facilities where the inlet H<sub>2</sub>S is greater than 10 mol/kmol, the licensee must submit
- a) a schematic diagram or description of the flare or incinerator that must show a continuous pilot or automatic igniter, flame arrestor, and stack height;

- b) for incinerators, the residence time and exit temperature; and
- c) documentation that demonstrates that the AAAQOs will be met for SO<sub>2</sub> emissions from continuous sources and from nonroutine events.

The documentation must clearly show that dispersion modelling was conducted in accordance with the Alberta [Air Quality Model Guideline](#) and [Directive 060](#) and should include the following:

- i) the source parameters, locations, elevations, and SO<sub>2</sub> emission rates for all sources;
- ii) predicted maximum ground-level SO<sub>2</sub> concentrations;
- iii) the name of the dispersion model used;
- iv) a description of meteorological data used; and
- v) a terrain map of the study area.

#### 4.7.8 Compressors or Pumps

The following are additional facility audit documentation requirements for compressors/pumps, additional documentation may be required. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

- 51) For facilities with compressors or pumps, the licensee must submit manufacturer specifications that confirm emission ratings, unit size, and driver type.

### 4.8 Additional Audit Documentation Requirements for Pipelines

The following sets out audit documentation requirements for pipelines, additional documentation may be required. For licence amendment applications, the applicant may submit only the audit documentation that was affected by the amendment activity.

#### 4.8.1 Participant Involvement Requirements

##### 4.8.1.1 Participant Involvement Map Requirements

- 52) The licensee must submit maps that illustrate
  - a) the location of the pipeline or installation,
  - b) the location of all parties included in the participant involvement process (e.g., residents, existing infrastructure),
  - c) the area of investigation used in the personal consultation and notification program,

- d) the EPZ, and
- e) the area of investigation used in the industry notification program.

#### 4.8.1.2 Industry Notification Requirements

- 53) If industry notification occurs, the licensee must submit a record of contact with other industry parties that includes
- a) name, address, and telephone number of all parties contacted;
  - b) copies of all related correspondence received;
  - c) disclosure meeting minutes that include
    - i) date of meeting,
    - ii) meeting notice or invitation,
    - iii) invitation list,
    - iv) names, addresses, and telephone numbers of all meeting participants; and
  - d) project information presented at meetings or otherwise distributed.

#### 4.8.1.3 Personal Consultation and Notification Requirements

- 54) The applicant must submit a record of the personal consultation and notification program that was conducted. The summary must include
- a) name of each party (e.g., landowner, occupant, and resident) included in the personal consultation and notification program,
  - b) legal land description for each party,
  - c) a description of each party's interest in the land (e.g., trapper, landowner, and resident),
  - d) date and type of contact conducted with each party (e.g., telephone conversation, registered mail, personal meeting),
  - e) date the required AER materials were distributed,
  - f) date the project-specific information package was distributed,
  - g) date the required [EnerFAQs](#) package was provided, and
  - h) date the confirmation of nonobjection was obtained.

## 4.8.1.4 Confirmation of Nonobjection

55) The AER does not require a confirmation of nonobjection to be in writing. Confirmation of nonobjection may consist of one of the following documents, depending on the nature of the proposed development:

- a) Freehold lease agreement (Freehold also includes federal lands and provincial Special Areas Board lands)

The licensee must submit a copy of the agreement, which must confirm the parties involved, date of agreement, and location of land involved.

- b) Crown disposition (i.e., a signed pipeline lease agreement, individual ownership plat, miscellaneous lease, or pipeline installation lease; an executed AOA or temporary field authorization)

In the case of an AOA, the licensee must submit copies of the following AOA documents:

- the title page (including the details of the expiry date, company name, and area of operation),
- the sign-off page (including when the agreement was executed), and
- geographic map and locations list.

For all other Crown dispositions, the licensee must submit a signed copy of the agreement that confirms the parties involved, the date of the agreement, and the location of the land involved.

- c) Signed document that identifies the details of the proposal (e.g., signatory page from the applicant's information package)

56) If confirmation of nonobjection is verbal, the licensee must document the name of the party providing verbal nonobjection and the date on which verbal nonobjection was obtained.

## 4.8.1.5 Information Packages

57) The licensee must submit a copy of the project-specific information package that was distributed to the parties included in the participant involvement process.

4.8.1.6 Resolved Concerns and Objections

- 58) If concerns and objections were received and resolved during the course of the participant involvement process, the licensee must submit
- a) a record and explanation of any concerns and objections received and
  - b) documentation confirming the resolution of any concerns and objections.

4.8.1.7 Sour Gas Planning and Proliferation

- 59) If there are residents located within the EPZ of the pipeline, the applicant must submit
- a) the assessment of existing infrastructure required by section 8.3.2 and
  - b) the updated expanded project-specific information package, as described in section 8.3.2.

4.8.2 Emergency Response Planning

- 60) The licensee must keep a copy of the corporate-level or site-specific ERP on file for review upon request.

The licensee must include in the audit submission a statement confirming that it has an approved corporate plan or that a site-specific plan will be approved before starting operations.

4.8.3 Transportation and Utility Corridor

- 61) If the pipeline is located within a transportation or utility corridor, the licensee must submit documentation confirming that the pipeline or installation has received ministerial consent from Alberta Infrastructure.

4.8.4 Environmental Information

- 62) The licensee must submit all documentation outlined in [IL 93-09](#), if applicable.

4.8.5 Pipeline Technical Information

4.8.5.1 H<sub>2</sub>S Content Requirements

- 63) For all pipelines, the licensee must submit a representative gas analysis.

4.8.5.2 *Canadian Standards Association Z662*

- 64) For all pipelines, the licensee must submit
- a) a description of the methodology or process used to ensure that [CSA standards](#) are met;
  - b) a list of the licensed substance and MOP of the pipelines into which the proposed pipeline is tied;



- c) a description of pressure control and overpressure protection;
- d) mill certificates or other documentation to confirm that the pipe is suitable for the product being transported;
- e) specifications for the valves, flanges, and fittings;
- f) documentation of a quality assurance program to ensure that material is suitable for sour service;
- g) a description or map showing valve locations and spacing;
- h) Material testing reports if MOP is greater than 14 000 kPa and substance is crude oil; and
- i) Material testing reports if non-CSA manufactured pipe is sour service.

#### 4.8.5.3 Corrosion

- 65) If the licensee has indicated that appropriate corrosion mitigation in accordance with the requirements of [CSA Z662](#) and the [Pipeline Rules](#) is in place, the applicant must be able to provide the evaluation performed to assess the corrosivity of the pipeline and the need for corrosion mitigation.
- 66) If a corrosion mitigation plan has been deemed necessary, the licensee must provide
  - a) a detailed summary of the corrosion mitigation plan that outlines the scheduled actions that will be conducted,
  - b) a detailed summary of the monitoring plan that outlines the scheduled actions that will be conducted, and
  - c) a description of the scheduled actions that will be conducted to review the monitoring results and assess mitigation plan performance.

#### 4.8.5.4 Leak Detection

- 67) For liquid hydrocarbon pipelines that require leak detection, the licensee must submit a detailed description of procedures for leak detection, including frequency of right-of-way inspections, material balance parameters, and confirmation that employees have had or will receive training (see [CSA Z662](#), annex E).

#### 4.8.5.5 Steam Pipelines

- 68) The licensee must submit documentation verifying that the pipeline design was registered with ABSA.

4.8.5.6 Production Stream Blending

- 69) If blending production streams, the licensee must submit a detailed description of two independent techniques to ensure that the licensed H<sub>2</sub>S content in the receiving pipeline is not exceeded including
- a) a detailed description of the design for flow ratio control with or without automatic shutdown and
  - b) a detailed description of H<sub>2</sub>S monitoring (or flow ratio control) with automatic shutdown.

4.8.5.7 H<sub>2</sub>S Release Volume and Level Designations

- 70) For natural gas and oil effluent pipelines greater than 10 mol/kmol H<sub>2</sub>S, the licensee must submit
- a) the input parameters used to calculate the potential H<sub>2</sub>S release volume,
  - b) representative tie-in schematics of emergency shutdown valves, and
  - c) a system map showing emergency shutdown and check valve locations.

4.8.5.8 Level Designation Increase

- 71) For natural gas and oil effluent pipelines greater than 10 mol/kmol H<sub>2</sub>S, the licensee must submit
- a) the input parameters used to calculate the potential release volume of all affected segments,
  - b) representative tie-in schematic of emergency shutdown valves,
  - c) a system map showing emergency shutdown and check valve locations,
  - d) a map showing
    - i) the levels for the pipeline system and the segments that are being revised and
    - ii) all residences and other developments within the notification distances, and
  - e) documentation verifying that personal consultation, nonobjection, and notification requirements have been met for all affected pipeline segments and that a revised ERP, if required, has been submitted.

4.8.5.9 Sour Natural Gas Injection

- 72) If injecting into a producing reservoir, the licensee must give an explanation as to the impact the scheme operation will have on the pipeline material and operating parameters.

## 4.8.5.10 Substance Change

- 73) The licensee must submit documentation that
- a) confirms that the pipe, valves, flanges, and fittings are suitable for the new substance;
  - b) confirms that the depth of cover is sufficient (HVP pipelines only); and
  - c) demonstrates the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change (i.e., does it meet current code and regulation requirements).

4.8.5.11 MOP Change/H<sub>2</sub>S Change

- 74) The licensee must submit
- a) documentation verifying that the pipe, valves, flanges, and fittings are suitable for the new MOP;
  - b) a detailed evaluation of the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change (e.g., does it meet current code and regulation requirements); and
  - c) pressure test charts.

## 4.8.5.12 Liner Installation

- 75) The licensee must submit liner specifications and pressure test charts if available.

## 4.8.5.13 Pipeline Removal

- 76) For pipeline removal, the licensee must submit an explanation of the circumstances and assert that the entire pipeline (including water, rail, and road crossings) is being removed.

## 4.8.5.14 Pipeline Resumption

- 77) For resuming operation of a pipeline, the licensee must
- a) submit pressure test charts,
  - b) submit documentation to verify the depth of cover (HVP only),
  - c) provide a record of cathodic protection (cathodic protection survey),
  - d) provide a record of the medium left in pipelines,
  - e) provide the pipeline external coating integrity results,

- f) ensure that sour service requirements are met (e.g., mill certificates), and
- g) submit a detailed evaluation of the integrity and suitability of the pipeline for the proposed change and the proposed procedure for implementing the change (i.e., does it meet current code and regulation requirements).

#### 4.8.5.15 Pipeline Discontinuation

- 78) For pipeline discontinuation, the licensee must submit
- a) a description of the method used to discontinue the pipelines,
  - b) a record of the medium left in the pipelines, and
  - c) documentation to confirm that cathodic protection will be maintained.

#### 4.8.5.16 Pipeline Abandonment

- 79) For pipeline abandonment, the licensee must submit
- a) a description of the method used to abandon the pipelines and
  - b) a record of the medium left in the pipelines.

#### 4.8.6 Pipeline Installation Technical Information

- 80) For all pipeline installations, the licensee must submit
- a) a wellhead or inlet gas analysis representative of the inlet stream,
  - b) a process-flow diagram that meets the requirements of section 6.6.26.1,
  - c) a site-specific plot plan showing the placement of and distances between equipment, and
  - d) a list of each type of meter proposed for each measurement point and their locations.
- 81) For compressor and pump stations, the licensee must also submit
- a) manufacturer specifications for the proposed unit that confirms emission ratings, unit size, and driver type;
  - b) a noise impact assessment prepared in accordance with [Directive 038](#);
  - c) a breakdown and total of all sources of NO<sub>x</sub> emissions in kilograms per hour; and
  - d) if total NO<sub>x</sub> emissions will be less than 16 kg/h, documentation to demonstrate that exhaust stack height requirements are met in accordance with [EPEA](#).

- 82) For tank farms and oil loading and unloading terminals where products and materials will be stored on site, the licensee must also submit a list of materials that will be stored and a description of the storage methods, including details of
- a) design and construction,
  - b) leak detection,
  - c) secondary containment,
  - d) weather protection, and
  - e) primary containment device and size.
- 83) For line heaters, the licensee must also submit documentation verifying that the line heater is designed to [Safety Codes Act](#) requirements.

#### 4.9 Additional Audit Documentation Requirements for Wells

The following sets out audit documentation requirements for wells, additional documentation may be required. For licence amendment applications, the licensee may submit only that audit documentation applicable to the amendment activity.

##### 4.9.1 Participant Involvement Requirements

###### 4.9.1.1 Mapping Requirements

- 84) The licensee must submit maps that illustrate
- a) the location of the well,
  - b) the location of all parties included in the participant involvement process (e.g., residents, hamlets, subdivision, public facilities),
  - c) the area of investigation used in the personal consultation and notification program, and
  - d) the EPZ (if applicable).

###### 4.9.1.2 Personal Consultation and Notification Requirements

- 85) The licensee must submit a record of the personal consultation and notification program that was conducted.
- 86) The summary must include
- a) name of each party (e.g., landowner, occupant, resident) included in the personal consultation and notification program,
  - b) legal land description for each party,

- c) a description of each party's interest in the land (e.g., Crown disposition holder, landowner, resident, facility operator),
- d) date and type of contact conducted with each party (e.g., telephone conversation, registered mail, personal meeting),
- e) date AER documents were distributed if required,
- f) date the project-specific information package was distributed,
- g) date the required [EnerFAQs](#) package was provided, and
- h) date confirmation of nonobjection was obtained if required.

#### 4.9.1.3 Confirmation of Nonobjection

- 87) The AER does not require that confirmation of nonobjection be in writing; however, documentation must be submitted when available.

Confirmation of nonobjection may consist of one of the following documents, depending on the nature of the proposed development:

- a) Freehold lease agreement (Freehold also includes federal lands and provincial Special Areas Board lands)
  - i) The licensee must submit a copy of the agreement, which confirms the parties involved, the date of agreement, and the location of land involved.
- b) Crown disposition (i.e., signed mineral surface lease or miscellaneous lease; executed AOA or temporary field authorization)
  - i) In the case of an AOA, the licensee must submit copies of the following AOA documents:
    - the title page (including the details of the expiry date, company name and area of operation),
    - the sign-off page (including when the agreement was executed), and
    - geographical map and locations list.
  - ii) For all other Crown dispositions, the licensee must submit a copy of the agreement, which confirms the parties involved, the execution of the agreement (signature), the date of the agreement, and the location of the land involved.
- c) Signed document that identifies the details of the proposal (e.g., signatory page from the applicant's information package)

- 88) If confirmation of nonobjection is verbal, the licensee must document (log) the name of the party providing verbal nonobjection and the date on which verbal nonobjection was obtained.

4.9.1.4 Information Packages

- 89) The licensee must submit a copy of the project-specific information package that was distributed to the parties included in the participant involvement program.

It is not necessary to include a copy of the AER's documents in the audit submission; however, details of its distribution must be included.

4.9.1.5 Resolved Concerns and Objections

- 90) If concerns/objections were received and resolved during the course of the participant involvement program, the licensee must submit
- a) a record and explanation of any concerns/objections received, and
  - b) documentation confirming the resolution of any concerns/objections.

4.9.1.6 Sour Gas Planning and Proliferation

- 91) If there are residents located within the EPZ of the well, the applicant must submit
- a) the assessment of existing infrastructure required by section 8.3.2, and
  - b) the updated expanded project-specific information package, as described in section 8.3.2.

4.9.2 Emergency Response Planning

- 92) The licensee must keep a copy of the corporate-level ERP or, where required, the specific ERP on file. It is not required for inclusion in the audit submission.
- a) The licensee must include in the audit submission a statement confirming that the applicant has an approved corporate plan and/or that a site-specific plan will be approved prior to commencing operations.

4.9.3 Well Purpose

- 93) For category B wells, the licensee must submit a representative gas analysis for each prospective horizon in the proposed well.

#### 4.9.4 Rights to the Existing Wellbore

- 94) The licensee must provide
- a) documentation that it has obtained the rights to the existing abandoned wellbore from the previous licensee prior to submitting the well licence application, or
  - b) if the minerals have expired and the abandoned wellbore has reverted to the Crown, documentation that it has obtained the rights from the Crown prior to the submitting the well licence application.

#### 4.9.5 Minimum Casing Testing Requirements

- 95) The licensee must provide
- a) confirmation that sufficient casing was set and cemented in the well for control purposes, and
  - b) confirmation that the casing has been pressure tested in accordance with the appropriate section of the minimum casing testing requirements (see section 7.8.4), and
  - c) confirmation and/or documentation that all applicable requirements in section 7.8.4 have been met for the specific type of well and drilling operation, or
  - d) documentation that a waiver was granted for the required inspection log.

#### 4.9.6 Well Detail

- 96) The licensee must submit a survey plan. For CBM wells completed above the base of groundwater protection, the survey plan or an additional map must meet the requirements of [Directive 035](#).

#### 4.9.7 Surface Casing Requirements

- 97) The licensee must submit
- a) a [Directive 008](#) Surface Casing Depth Calculation form, pressure survey, and pressure gradient documentation, including supporting information for the reduction type selected,
  - b) documentation confirming that the applicable criteria will be met for deep surface casing or surface casing exemptions, including any supporting information, and
  - c) documentation showing the base of groundwater and a description of the method proposed to protect the groundwater.
- 98) If a surface casing waiver has been granted, the licensee must submit a copy of the approval issued by the AER that shows the presubmission application was reviewed and found to be acceptable.



#### 4.9.8 Well Classification

- 99) If a drill cuttings waiver has been granted, the licensee must submit a copy of the approval issued by the AER that shows the presubmission application was reviewed and found to be acceptable.

#### 4.9.9 Rights for All Intended Purposes

- 100) The licensee must submit
- a) the mineral rights lease number for Crown minerals,
  - b) documentation that authorization has been obtained from the mineral rights lessee or owner for water injection or water source wells,
  - c) documentation that authorization has been obtained for leased Crown minerals, and
  - d) documentation that authorization has been obtained for Freehold minerals.

#### 4.9.10 Rights for the Complete Drill Spacing Unit

- 101) The licensee must submit
- a) the mineral rights lease number for Crown minerals, and
  - b) documentation evidencing the rights for Freehold minerals.

#### 4.9.11 Water Body Setback Requirements

- 102) If the well centre is within 100 m of a water body, the licensee must submit documentation explaining the steps that were or will be taken to ensure that the water body is protected and that all AER requirements are met.

If there is potentially a water body on or near the proposed well's lease, the well application may be subject to further investigation. Subsequently, the applicant may need to demonstrate the efforts it has taken to determine the presence of any water body and to delineate the extent of any identified.

- 103) If a water body will be disturbed by the well activity, the applicant must submit to the AER the approval received under the [Water Act](#)

#### 4.9.12 Other Setback Requirements

- 104) If the proposed well is located within 100 m from a surface improvement, the licensee must submit documentation confirming that consent from the surface improvement owner was received prior to the submission of the well licence application.
- 105) If the proposed well is within 3 km of a working subsurface mine or within 400 m of an abandoned subsurface mine, the licensee must submit documentation confirming that the requirements of sections 6.140 to 6.190 of the [OGCR](#) will be met.

#### 4.9.13 Environmental Requirements

- 106) The licensee must submit documentation outlining the steps that will be taken to ensure the protection of the environment and that all AER requirements are met. The licensee must submit all documentation outlined in [IL 93-09](#), if applicable.

#### 4.9.14 *Historical Resources Act*

- 107) If applicable, the licensee must submit documentation showing that it received a clearance from Alberta Culture and Tourism before submitting a well licence application.

#### 4.9.15 CBM Wells

- 108) The following are additional well audit documentation requirements for wells completed above the base of groundwater protection. Submit documentation demonstrating that all the requirements as listed under “AER Environmental Requirements” above have been completed before applying. If water well testing was completed before applying, provide information confirming that those tests were completed in accordance with [Directive 035](#) requirements and that results were submitted accordingly.

#### 4.9.16 H<sub>2</sub>S Release Rate

- 109) The licensee must submit a map showing the size and location of the search area used to obtain a minimum of five representative maximum H<sub>2</sub>S concentrations and maximum AOF gas rates.
- 110) The licensee must submit an H<sub>2</sub>S release rate documentation package (see section 7.8.15) that includes
- a) a geological well prognosis, with a comprehensive geological discussion for all formations and zones;
  - b) geological mapping for all formations that it identifies as its primary and secondary zones that may contain H<sub>2</sub>S gas;
  - c) an engineering discussion for each potentially productive zone that may contain H<sub>2</sub>S gas; and
  - d) tabulated data that provide the results of H<sub>2</sub>S concentration and AOF rate reviews.
- 111) If a presubmission H<sub>2</sub>S release rate assessment was submitted, the licensee must submit a copy of the letter issued by the AER that indicates that the presubmission application was reviewed and that sets out the release rate values considered acceptable to the AER.

#### 4.9.17 Intermediate Casing

- 112) The licensee must submit the depth to which the intermediate casing will be set.
- 113) If an intermediate casing waiver has been granted, the licensee must submit a copy of the approval issued by the AER that shows that the precicensing application was reviewed and found to be acceptable.

#### 4.9.18 Drilling Critical Wells

- 114) The applicant must submit a complete and detailed drilling plan based on the requirements in [\*Directive 036\*](#) and [\*IRP Volume 1: Critical Sour Drilling\*](#). The drilling plan must include a detailed table of contents.
- 115) The applicant must submit a copy of any applicable waiver approvals obtained from the AER before filing an application.



## 5 Facility Licence Applications

### 5.1 Overview

An applicant must apply for a licence to construct or operate a facility unless exempted under section 5.5.

An application must also be made to amend a licence in certain circumstances. It is important that licensees and operators be aware of the operational and equipment scenarios requiring a facility licence and when a modification to an existing facility warrants a licence amendment application.

If the applicant cannot meet a technical requirement, chooses to apply for a regulatory relaxation, cannot meet all participant involvements, outstanding concerns or objections exist, or the applicant proposes to implement new technology, the applicant must disclose the situation in its application. If there are outstanding concerns or objections to an exempt activity, the activity is no longer exempt from licensing, and an application disclosing the situation must be submitted.

Facilities associated with an in situ crude bitumen scheme approval require licensing under *Directive 056*. However, this facility application should not be submitted until the AER has approved the scheme (see [Directive 023: Guidelines Respecting an Application for a Commercial Crude Bitumen Recovery and Upgrading Project](#)).

- 1) The applicant must file an application for a multiwell battery or satellite when the surface equipment on site meets the requirements for licensing and when
  - a) a single well has segregated production from more than one zone (i.e., not commingled in the wellbore) producing to the battery or satellite;
  - b) a new inlet is added to an existing single-well battery or satellite that includes, at a minimum, measurement for the production from a second well; or
  - c) multiple single-well batteries or satellites are operating within one surface lease.

If the applicant has both oil and gas production from separate wells or segregated zones within the same well at the same surface location, the surface facility should be licensed for the most significant operation at the site.

- 2) If the processing of solution gas or nonassociated gas is implemented at an existing licensed oil battery, the gas processing equipment must be licensed as a separate facility.

### 5.2 Licence Expiry

New facility licences expire one year from the date of issue if the licence has not been acted on (i.e., construction has not started). The AER will cancel the expired licence from the active records. It is the licensee's responsibility to ensure that the facility licence is still valid and has not expired

before starting any activity associated with the licence. Companies are expected to provide a courtesy notification to the AER using the designated information submission system advising that construction has started on the licensed facility.

- 3) If an applicant intends to proceed with a project for which a licence has expired, it must cancel that previous licence and also fulfil all applicable regulatory requirements, including all participant involvement requirements in section 3, before filing a new application.
- 4) If an applicant does not intend to proceed with the licence, it must notify the AER and request that the licence be cancelled.

Due to the complexity of some developments, it is possible that the applicant may not be able to act on a permanent facility licence or complete operations at a temporary facility before the expiry date. Applicants can file a licence amendment application to extend the expiry date of a facility licence or a temporary facility licence.

- 5) Before starting new construction when a licence is nearing expiry, the applicant must meet the participant involvement requirements in section 3.
- 6) To apply to extend the expiry date of a facility licence or a temporary facility licence, the applicant must meet the participant involvement requirements in section 3.

A facility licence that has been acted on cannot be cancelled. Licensees that do not intend to act on a facility licence may request that the licence be cancelled by contacting the AER.

#### 5.2.1 Licence Extensions

The AER typically issues a licence for a term of one year. An applicant may make a request to extend the expiry date of an applied-for licence at the time of application. Requests for extensions will be considered on a case-by-case basis.

The AER may extend the expiry date of a licence that has already been issued upon request of the licensee.

- 7) To get an extended expiry date for an applied-for licence, the applicant must meet the participant involvement requirements in section 3 before it acts on the licence.
- 8) To get an extended expiry date for an existing licence, the licensee must meet the participant involvement requirements in section 3 before it acts on the licence.

### 5.3 Category Type and Consultation and Notification Requirements

The category type and the consultation and notification requirements for facilities are listed in table 1. The category type of facility is dependent on the H<sub>2</sub>S and sulphur content of the inlet gas stream.

## 5.4 Exemptions

- 9) Although no application is required under *Directive 056* for the following exempted activities and facilities (sections 5.4.1 and 5.4.3), the company must meet the participant involvement requirements in section 3.
- 10) To proceed with a proposal where a concern or objection has been received and remains unresolved, the company must submit an application.
- 11) Even though applications under this directive may not be required for activities and facilities listed in sections 5.4.1 and 5.4.3, a company must meet all applicable regulatory requirements.

If the company is unable to meet all the regulatory requirements, it must obtain a waiver from the requirement from the AER.

### 5.4.1 Single-Well Facility Sites

An application is not required under *Directive 056* if the facility is a single-well site (oil, bitumen, or gas) where the H<sub>2</sub>S content is *less than* 0.01 mol/kmol and

- total on-site wattage for compressors is less than 75 kilowatts (kW),
- there is no gas processing, and
- there is no injection or disposal component.

An application is not required under *Directive 056* if the facility is a single-well *gas* site where the H<sub>2</sub>S content is *greater than* 0.01 mol/kmol and

- there are no liquid hydrocarbon or produced water storage tanks,
- there is no gas compression,
- there is no gas processing, and
- there is no injection or disposal component.

### 5.4.2 Other Facilities

#### 5.4.2.1 Installation of On-site Power Generating Equipment

On-site power generation is managed and approved by the AUC. Although the facility licence should include emissions and noise impact from all sources on site, power generation equipment is not licensed through *Directive 056*. For more information, contact the AUC.

#### 5.4.2.2 Oil Sands Processing Plants

Oil sands scheme approvals for in situ operations continue to be issued under [Directive 023](#) and [Directive 078: Regulatory Application Process for Modifications to Commercial In Situ Oil Sands Projects](#). Licences for surface facilities associated with oil sands mine approvals are not issued under *Directive 056*.

Surface facilities associated with approved in situ schemes require a *Directive 056* facility licence.

#### 5.4.2.3 Oilfield Waste Management Facilities

Oilfield waste management facilities are not licensed under *Directive 056*. See the AER website for information on approvals to construct and operate new facilities, modify existing facilities, and notifications of minor modifications to existing facilities.

If a facility currently licensed under *Directive 056* becomes a waste management facility, a [Directive 058](#) approval is required and the previously issued *Directive 056* licence will be cancelled. Operators are reminded that the receipt of oilfield waste from outside of a facility's production system for consolidation and transfer or for on-site storage or management is not permitted unless the facility is approved as an oilfield waste management facility.

#### 5.4.3 Exempt Activities

Applications are not required for the following activities under *Directive 056* provided that the activity does not change the category type of the facility:

- temporary compressors in continuous use for less than 21 consecutive days as an alternative to flaring for such operations as the conservation of initial well test gas or plant turnaround, provided that landowner nonobjection has been obtained and regulatory requirements are met (see [Directive 060](#));
- replacing measurement and separation equipment;
- installation of downhole (subsurface) equipment;
- adding well production to an existing licensed multiwell facility;
- replacing a compressor or injection or disposal pump with the same type and size or a smaller one, such that total emissions do not increase;
- adding separators, dehydrators, pressurized bullets, process pumps, or group or test vessels to an existing licensed facility;
- adding a line heater to an existing licensed facility;
- adding a vapour recovery unit to an existing licensed category C, D, or E facility;



- adding one compressor less than 75 kW to an existing licensed facility, provided that the landowner has been notified and has no concerns and that the facility will meet nitrogen oxides (NO<sub>x</sub>) and noise requirements at the nearest residence (does not apply to acid gas injection compressors, regardless of size; compressors less than 75 kW that were installed previously as an exempt activity should be indicated the next time an amendment application for the facility is required);
- adding storage tanks to an existing licensed facility (all [Directive 055](#) requirements must be met, including secondary containment).

## 5.5 Licence Amendments

Only facilities that have an existing AER facility licence number can be amended.

- 12) When filing a licence amendment application, the applicant must retain the original facility type (e.g., gas battery, oil battery) unless
  - a) additional equipment proposed for installation will cause the gas facility to become a gas processing plant (e.g., the addition of a refrigeration skid will change an existing compressor station to a gas processing plant) or
  - b) equipment proposed for removal will cause the facility type to change (e.g., the removal of the refrigeration process will change an existing gas processing plant to a gas battery).
- 13) Applicants must file licence amendment applications when the proposed activity will result in an increase to emissions, risk, or public impact.

New facility licence applications for categories C, D, and E gas processing plants and licence amendment applications for category E gas processing plants require that all supporting audit documentation be submitted with the application. Licence amendment applications for categories C and D gas processing plants may be submitted without supporting audit documentation if there are no participant involvement or technical issues.

## 5.6 Technical Requirements

### 5.6.1 Emergency Response Planning

The EPZ for a category C, D, or E facility is based on the largest EPZ of any pipeline entering or leaving the facility. Applicants are cautioned that it is a violation of privacy legislation to disclose in the public portion of a facility, pipeline, or well licence application any personal information that was obtained for emergency response planning purposes. Such information must be provided to the AER in confidence (see [Directive 071](#)).

### 5.6.2 Licensee Liability Rating

The Licensee Liability Rating (LLR) program assesses a licensee's ability to address its abandonment and reclamation liabilities based on a comparison of its deemed asset to its deemed liability. The licensee's deemed asset is considered to be its cash flow derived from wells for which it is the licensee. Its deemed liability is considered to be the cost to abandon and reclaim wells and facilities for which it is the licensee.

The liability assigned to active facilities is less than that of an inactive facility. A facility is considered active if it has reported production or injection within a specified period (see [Directive 006: Licensee Liability Rating \(LLR\) Program and Licence Transfer Process](#)).

Because some facilities do not report production to the AER, a facility's active/inactive status cannot be determined. To allow an active nonreporting facility to benefit from the reduced liability associated with an active status, the licensee can link its facility to the first downstream production reporting facility to which it delivers product and use that facility's active/inactive status. Licensees of compressor stations that produce directly to a sales gas pipeline should contact the AER for information on how this affects their ratings.

- 14) The applicant of a nonreporting facility (e.g., compressor station, satellite) must record the facility licence number of the reporting facility when filing a facility licence application or, for category B and C compressors, indicate that the production goes direct to sales. If a linking number is not recorded for a nonreporting facility, the facility status will be considered inactive for liability management purposes. For a gas system, the reporting facility must be a gas facility, and for an oil facility, the reporting facility must be an oil facility.
- 15) The applicant of new or amended sulphur recovery plants, straddle plants, or bitumen central processing facilities with a bitumen inlet rate greater than 5000 m<sup>3</sup>/d must have the liability assessment completed in accordance with the Large Facility Liability Management Program (see [Directive 024](#)) before submitting an application under *Directive 056*.

### 5.6.3 Proliferation

As the proponent of a new oil or gas facility or pipeline, the applicant has already determined that the proposed project will meet its business needs. The AER, as the approving authority, is required to evaluate the need for the proposed project. The AER's sour gas proliferation requirements are set out in [ID 2001-03: Sulphur Recovery Guidelines for the Province of Alberta](#) and are summarized below.

- 16) Before filing an application for a new category C, D, or E gas processing plant, the applicant must
- a) evaluate all existing sour gas plants and pipelines that offer viable alternatives within a 15 km radius of the proposed new sour gas plant, regardless of ownership or interest:
    - i) the applicant must evaluate the feasibility of upgrading an existing facility and of forging commercial partnerships with existing licensees;
    - ii) the applicant must obtain an accurate assessment of the capabilities of existing sour gas plants, including design parameters (e.g., operating pressures and limitations on H<sub>2</sub>S content) and capacity available; and
    - iii) the applicant must demonstrate that feasibility of modifying the facilities was evaluated with the licensee if existing plants are not designed to handle the applicant's gas or if there are capacity limitations;
      - high processing fees, in and of themselves, may not be considered sufficient grounds for rejecting the option to use an existing facility;
  - b) assess the area's future production potential to ensure that the proposed facility is designed to meet the regional long-term processing needs;
  - c) contact other sour gas reserve owners within 5 km of a proposed new sour gas plant with a view to inviting these well licensees to participate in the new facility in some manner.
- 17) The applicant must include information on its assessment as part of the application audit package submitted to the AER.
- 18) The applicant of a new category C, D, or E gas processing plant must formally contact licensees of existing facilities for required information and be able to document related responses.
- The AER expects the parties to share information in a timely manner. If the applicant is unable to obtain the information necessary to conduct an assessment, it should contact the AER.
- 19) To preclude the unnecessary development of new category C and D facilities, the applicant is expected to investigate the feasibility of using existing facilities and pipelines before submitting an application to the AER.
- 5.6.4 Facility Design Criteria
- 20) The inlet and recovered product rates must represent the total design rates associated with all on-site equipment at the surface location based on a daily maximum.

- 21) For facility licence amendments, the inlet and recovered product rates for the facility must represent the total on-site design rate, not only the design rates of the additional equipment.

For facilities with a sulphur inlet greater than 1 tonne per day (t/d), the raw gas inlet rate and sulphur inlet rate represent the maximum operating limits for the facility. These rates are monitored by the AER.

Heavy oil/oil sands batteries and satellites are also subject to the regulatory requirements detailed in [ID 91-03: Heavy Oil/Oil Sands Operations](#) and [IRP Volume 3: In Situ Heavy Oil Operations](#).

- 22) The applicant must ensure that an oil analysis is available to demonstrate that the gravity of the inlet stream matches the category applied for and that the facility will meet the requirements of these documents for heavy oil facilities.

#### 5.6.5 Sulphur Recovery

Both the AER and AEP have regulatory responsibilities for sulphur recovery. The applicant must be aware of the regulatory requirements of both agencies.

[ID 2001-03: Sulphur Recovery Guidelines for the Province of Alberta](#) sets out the basis for AER's requirements around sulphur recovery and emissions reduction from

- category D and E gas processing plants and
- other types of upstream petroleum industry operations licensed under *Directive 056* where continuous flaring or incineration of gas containing H<sub>2</sub>S occurs (e.g., production batteries, dehydration facilities, and compressor stations where the bulk gas stream is not sweetened).

- 23) The applicant must meet the requirements of [ID 2001-03](#).

If the applicant believes a variance to the minimum recovery levels of [ID 2001-03](#) is warranted, the applicant may disclose the request for variance in its application.

- 24) When designing new category D and E gas processing plants, the applicant must

- a) comply with the calendar quarter-year sulphur recovery of [ID 2001-03](#), and
- b) determine the sulphur recovery based on mass (tonnes sulphur equivalent) using the following formula:

$$\text{sulphur recovery} = \frac{\text{sulphur production}}{(\text{sulphur production} + \text{sulphur emissions})}$$

where *sulphur production* is the tonnes of sulphur product and tonnes sulphur equivalent contained in injected sour gas or acid gas streams and *sulphur emissions* is the tonnes sulphur equivalent contained in flared sour and acid gas streams and in the sulphur recovery unit tail gas or incinerator stack emissions.

- 25) For other upstream petroleum industry facilities where sulphur recovery requirements apply, the applicant must
  - a) comply with the calendar quarter-year sulphur recovery of [ID 2001-03](#), and
  - b) determine the sulphur recovery requirements based on the sulphur content of flared or incinerated gas streams (not on the sulphur inlet of the facility), in addition to the sulphur recovery unit tail gas incinerator stack emissions.
- 26) If an applicant is filing a licence amendment application to modify a grandfathered gas plant, the applicant must meet the special provisions set out in [ID 2001-03](#).
- 27) For facilities where subsurface injection is the method of acid gas disposal, a separate AER approval is required for the injection scheme, in accordance with the requirements of [Directive 065: Resources Applications for Conventional Oil and Gas Reservoirs](#). Additional information may be obtained from the AER.

#### 5.6.6 Process-Flow Diagrams

- 28) The applicant must attach a process-flow diagram (PFD) for each facility application.
  - a) The PFD must identify all existing and proposed equipment at the facility.
    - i) For licence amendments, the applicant must identify the new equipment proposed for installation on a full-site PFD; a partial PFD is not acceptable.
      - New equipment must be identified in the legend and annotated on the diagram.
      - Equipment designated for removal by the application must also be clearly identified.
  - b) The applicant must clearly identify the following on the PFD:
    - i) process equipment
    - ii) measurement points
    - iii) storage vessels and tanks (including pop tanks)
    - iv) sources of all inlet, receipts, and deliveries, including all fuel lines, flare lines, and vent points
    - v) safety equipment (i.e., location of emergency shutdown device block valves and depressure points).

Diagrams are acceptable providing that they accurately represent the actual operations of the facility and contain the correct location and applicant name. Piping and instrumentation diagrams (PIDs) should be submitted if available at the time of application.

### 5.6.7 Total Continuous Emissions

- 29) The applicant must include the volume of gas from all sources on site that is disposed of by burning in a flare or incinerator. This does not include fuel gas used for header purge, pilot fuel, make-up gas to achieve effective combustion, sulphur recovery unit tail gas, or volumes attributed to emergency conditions or maintenance operations.

Applicants proposing to flare or incinerate gas must comply with the requirements of [\*Directive 060\*](#).

- 30) The applicant must include the volume of gas vented from all sources on site, including any volumes of CO<sub>2</sub> associated with a sweetening process.

Applicants proposing to vent gas must comply with [\*Directive 060\*](#) and section 8.080 of the [\*OGCR\*](#).

- 31) The applicant must evaluate the conservation of continuous flared, incinerated, and vented volumes in accordance with [\*Directive 060\*](#).

If NO<sub>x</sub> emissions are present, it is the applicant's responsibility to ensure that the facility meets the Alberta ambient air quality objectives ([\*AAAQOs\*](#)) for NO<sub>2</sub>. It is possible that facilities exempt from registration with AEP could exceed the [\*AAAQOs\*](#). It is in the company's best interest to conduct modelling to ensure that its facility will meet the [\*AAAQOs\*](#). In order to demonstrate that the facility meets the [\*AAAQOs\*](#), the AER may require that the applicant provide NO<sub>x</sub> modelling.

- 32) In designing its compression needs, the applicant must design the facility to meet the requirements set out by AEP's [\*Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants\*](#).
- 33) The applicant must register all compressor stations, pumping stations, and category B gas processing facilities with AEP before commencing operation if the total NO<sub>x</sub> emissions are greater than 16 kilograms per hour (kg/h).
- 34) New and additional natural gas-driven reciprocating engines greater than 600 kW at full load must not emit more than 6 grams of NO<sub>x</sub> per kilowatt-hour (g/kWh).
- 35) The applicant must meet the following requirements when NO<sub>x</sub> emissions are present at facilities that require registration or approval with AEP:
- a) Dispersion modelling must be conducted in accordance with AEP's [\*Air Quality Model Guideline\*](#)
  - b) Based on dispersion modelling, predicted NO<sub>2</sub> concentrations must meet the [\*AAAQOs\*](#), using guidance from the [\*Air Quality Model Guideline\*](#).

- c) Standby equipment used only for emergency purposes may be excluded from dispersion modelling.
- d) The engine exhaust stack height must be set in accordance with the direction given in AEP's [Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants](#).
- e) NO<sub>x</sub> emissions from steam generating units, heaters, and boilers may be excluded from dispersion modelling if their combined contribution is less than 3 per cent of the total NO<sub>x</sub> emissions.

#### 5.6.8 Compressor and Pump Additions

Temporary compressors in use for less than 21 consecutive days to test new gas well production as an alternative to flaring do not require a licence under *Directive 056*, provided that

- there is no other compressor on site,
  - the licensee or operator has met the participant involvement requirements in section 3, and
  - the compressor will meet all regulatory requirements, including noise and NO<sub>x</sub> requirements.
- 36) If there are any unresolved concerns or objections received, the applicant must disclose this in its application.
- 37) The use of temporary compressors is limited to a one-time-per-site occurrence. For further information on temporary compressors, see [Directive 060](#). Licensees and operators must notify the AER prior to operation.
- 38) Licensees are not required to submit a licence amendment application for the purpose of adding one compressor or pump less than 75 kW to an existing licensed facility. In these instances, the licensee must
- a) provide the landowner with a written description of the project,
  - b) ensure that the participant involvement requirements in section 3 are met, and
  - c) ensure that the facility will meet the NO<sub>x</sub> and noise requirements.

This exemption does not apply to acid gas injection compressors, regardless of size, and does not apply to the use of temporary compression greater than 75 kW for any period of time for the purpose of determining permanent compression requirements.

Compressors less than 75 kW that were installed previously as an exempt activity should be indicated the next time an amendment application for the facility is required.

All compressors at a site are to be licensed as part of the facility unless the equipment is used to provide instrument air.

Applications are required for all compressor installations at new facilities regardless of the kW rating if the H<sub>2</sub>S content of the inlet gas is greater than 0.01 mol/kmol (not including temporary compressors used for new gas well testing less than 21 consecutive days).

Applications are not required for the installation of process pumps that are not related to the injection or disposal of water or for enhanced oil recovery (EOR) purposes (e.g., glycol or chemical injection pumps, oil or water transfer pumps, recycle pumps, injection booster pumps).

- 39) The applicant must apply for the installation of the pumps associated with the injection or disposal component of a facility, regardless of pump size.
  - a) The applicant must amend the existing facility licence, retaining the original category type, to add an injection or disposal component to an existing licensed facility.
  - b) Third-party injection or disposal facilities must be licensed as waste disposal facilities under [Directive 058](#).

For licensing of compressors or pump stations on transmission pipelines (sales products), see section 6.

Facility licences issued under *Directive 056* do not include the installation of generators whose purpose is to generate power as part of a solution gas conservation process. In such cases, *Directive 056* remains the licensing point for the battery portion of the operations, while the generators require licensing with the AUC.

#### 5.6.9 Setback Requirements

There are specific setback distances between category C, D, and E facilities and permanent dwellings, unrestricted country developments, urban centres, or public facilities.

- 40) The applicant must meet the applicable setback requirements in table 6 based on the calculated H<sub>2</sub>S release volume for pipelines associated with the proposed facility.
- 41) The applicant must consider the level designation of inlet and outlet pipelines and use the highest level designation to determine the facility setback requirement.
- 42) Release volumes from on-site equipment must not be totalled to determine the setback requirements of the facility.
- 43) The applicant must meet the participant involvement requirements in section 3.



**Table 6. Setback requirements for category C, D, or E facilities with pipelines containing H<sub>2</sub>S**

Level	H <sub>2</sub> S release volume (m <sup>3</sup> )	Minimum distance
1	<300	Lease boundary
2	≥300 to <2000	0.1 km to individual permanent dwellings and unrestricted country developments  0.5 km to urban centres or public facilities
3	≥2000 to <6000	0.1 km to individual permanent dwellings up to 8 dwellings per quarter section  0.5 km to unrestricted country developments.  1.5 km to urban centres or public facilities
4	≥6000	As specified by the AER, but not less than those given in level 3

#### 5.6.10 Plot Plans and Spacing Requirements

- 44) A plot plan must be submitted with each facility application that clearly indicates the on-lease location of all the equipment (with the exception of valves) and reflects all surface improvements, water bodies, and vegetation for a minimum of 100 m past the edge of the lease, to demonstrate that all off-lease spacing requirements have been met (e.g., distance to a residence, water bodies, forestation, or road allowance).

The following is an abbreviated list of the spacing requirements. A complete list is in section 8 of the [OGCR](#) and [ID 91-03: Heavy Oil/Oil Sands Operations and Clarification](#).

- 45) Unless the AER permits otherwise, the applicant must meet the AER's spacing requirements. If the applicant cannot meet the AER's spacing requirements, the applicant must disclose this in its application.
- Tanks containing fluids other than fresh water must be located so that the distance from the outer perimeter of the dike to any surface improvement (other than a public roadway) is not less than 60 m ([OGCR](#) 8.030[4]).
  - Facility equipment must maintain a minimum distance of 100 m from a water body ([OGCR](#) 8.060).
  - Flare pits and flare line ends must not be located closer than 100 m to a surface improvement, except a surveyed roadway ([OGCR](#) 8.080[3]). Flares and incinerators must be located at least 40 m from a surveyed roadway or road allowance with open public access ([Directive 060](#), section 7.8).
  - A flare pit or the open end of a flare line must not be located or remain within 50 m of a well or oil storage tank ([OGCR](#) 8.080[5]).
  - A flare pit or open end of a flare line must not be located or remain within 25 m of any oil or gas processing equipment ([OGCR](#) 8.080[5]).
  - Oil storage tanks must be at least 50 m from a well ([OGCR](#) 8.090[3]).

- g) Flame-type equipment must not be placed or operated within 25 m of a well, oil storage tank, or other source of ignitable vapour ([OGCR 8.090\[4\]](#)).
- h) Flame-type equipment must not be placed or operated within 25 m of any process vessels unless, where such is applicable, the flame-type equipment is fitted with an adequate flame arrester ([OGCR 8.090\[5\]](#)).
- i) The exhaust pipe from an internal combustion engine, located less than 25 m from a well, process vessel, oil storage tank, or other source of ignitable vapour must be located at least 6 m from the vertical centre of the well and directed away from the well ([OGCR 8.090\[9\]](#)).
- j) The flare, incinerator, and enclosed burner spacing must comply with the requirements defined in the current [Forest and Prairie Protection Regulation](#).
- k) Compressors (electrically or engine driven) that are permanent and housed in a building must be located 25 m or more from wells.  
  
Compressors are considered permanent when placed on pilings or a defined foundation and connected to the facility with rigid piping.
- l) Nonpermanent compressors (on wheels or skid mounted) must be spaced such that the air intakes and exhaust must be no closer than 6 m to a well.  
  
Compressors are considered nonpermanent when they can be quickly disconnected and moved from where they are placed and there is no associated foundation constructed.
- m) Nonpermanent electrically driven compressors must comply with the current edition of [Code for Electrical Installations at Oil and Gas Facilities](#), Safety Codes Council (Alberta).

Location of tanks and flare systems relative to public roadways are not specified in the [OGCR](#). When planning facilities within 100 m of a municipal road, applicants should discuss the placement of tanks with the local authority. Additionally, for facilities planned within 300 m of a major (numbered) highway or within 800 m of an intersection of two major highways, applicants should contact Alberta Transportation for permit requirements.

#### 5.6.11 Vapour Recovery and Odour Control

Trucks are viewed as part of the facility operation when loading, unloading, and transporting fluid containing H<sub>2</sub>S gas.

- 46) For facilities where the maximum H<sub>2</sub>S content of the inlet gas is greater than 0.01 mol/kmol, the applicant must ensure that there are no off-lease odours from trucking operations and the

transfer of fluids containing H<sub>2</sub>S gas by implementing a method to control off-lease odours, such as the use of a pressurized or sealed vessel.

- 47) For facilities where the maximum H<sub>2</sub>S content of the inlet or vented gas is greater than 10 mol/kmol, the applicant must include a suitable method to recover and handle vapours from stock tanks or burn the vapours. When designing the facility, the applicant must ensure that stock tank vapours are not discharged to the atmosphere without proper combustion of the sulphur compounds.
- 48) If a vapour recovery unit is required because the composition of the inlet stream has changed and the gas stream now contains more than 10 mol/kmol of H<sub>2</sub>S, the licensee must submit an application to change the category type of the facility to category C, D, or E.

Applicants are not required to file a licence amendment application for the purpose of installing a vapour recovery unit at an existing category C, D, or E facility, provided that the participant involvement requirements in section 3 have been met, there are no landowner concerns, and the facility meets the NO<sub>x</sub> requirements and the noise requirements at the nearest residence.

- 49) When the maximum inlet H<sub>2</sub>S content of the gas is greater than 10 mol/kmol and a vapour recovery unit will not be installed, the applicant must provide an explanation of its proposed method of vapour control in its application.

#### 5.6.12 Noise Requirements

All facilities under the AER's jurisdiction must meet the requirements of [Directive 038: Noise Control](#).

An NIA ensures that the applicant considers possible noise impacts before a facility is constructed or operated. The NIA predicts the expected design sound level from the facility at the nearest or most affected residence.

- 50) An NIA must be completed before submitting a facility application for any new permanent facility or for modifications to existing permanent facilities if there is a reasonable expectation of a continuous or intermittent noise source. (For the purpose of an NIA, a permanent facility is a facility in operation for more than two months.)
- 51) If the NIA indicates that the permissible sound level will be exceeded, the applicant must consider further mitigative measures. Where mitigative measures are not practical the applicant must explain why in its application.
- 52) The AER expects the applicant to use a reasonable technical basis for the values presented in the NIA, such as computer modelling, field measurements of similar equipment, accepted acoustical engineering examples from literature, and calculations.

- 53) If the applicant is using manufacturer's specifications, the sound level ratings must represent free or far-field conditions. Sound level ratings at 1 m are not acceptable for inverse square law calculations.

#### 5.6.13 Production Measurement Guidelines

The AER provides measurement and reporting requirements and guidelines to assist those applying to construct, operate, or modify any upstream oil or gas production, transportation, injection, disposal, or processing facility.

- 54) The licensee must accurately measure and report volumes of produced oil, gas, and water in order to
- provide reservoir management information,
  - ensure that the appropriate Alberta Crown royalties are paid,
  - allow for the accurate assessment of each equity owner's share of production, and
  - allow for the detection of escaped substances to the environment.
- 55) Applicants of surface facilities associated with in situ oil sands schemes must ensure that the Measurement, Accounting, and Reporting Plan has been approved by the AER before submitting a *Directive 056* application.

#### 5.6.14 Alberta Environment and Parks

All applicants should be aware that additional licences or approvals might be required from AEP.

If a facility requires both an AER and an AEP licence or approval, and there are unresolved concerns or objections that were received during the participant involvement program, the applicant is encouraged to advertise both applications together through a joint notice. The applicant must meet the participant involvement requirements in section 3.

- 56) Flare stacks must be designed to meet the Alberta Ambient Air Quality Objectives (AAAQOs) and be in accordance with methods outlined in [Directive 060](#) and AEP's [Air Quality Model Guideline](#).
- 57) Based on dispersion modelling, the ground-level concentration of SO<sub>2</sub> must meet the AAAQOs, based on guidance from the [Air Quality Model Guideline](#) and [Directive 060](#).
- 58) The applicant must ensure that emissions from all combustion sources on site are reviewed in accordance with methods outlined in the [Air Quality Model Guideline](#).

- 59) When dispersion modelling is required by the [Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants](#), predicted ground-level concentrations of NO<sub>2</sub> must meet the AAAQOs, based on guidance from the [Air Quality Model Guideline](#).

#### 5.6.15 Alberta Culture and Tourism

- 60) For proposed new facility licences or licence amendments that require a lease expansion on Freehold lands, the applicant must consult Alberta Culture and Tourism to determine whether the proposed facility site will require Alberta [Historical Resources Act](#) clearance before filing a licence application.

If the proposed new or expanded lease is located on land identified in the list, the applicant must

- a) obtain [Historical Resources Act](#) clearance before submitting a licence application, or
- b) if Alberta Culture and Tourism will not grant clearance, disclose that in its application.

#### 5.6.16 AER Environmental Requirements

In 1993, the AER issued [IL 93-09: Oil and Gas Developments Eastern Slopes \(Southern Portion\)](#), setting guidelines and expectations for oil and gas development in this region.

- 61) If the proposed facility is located within the Eastern Slopes (Southern Portion), the applicant must meet the general expectations described in [IL 93-09](#) by
- a) preparing development plans beyond the initial exploration stage, taking into consideration current stages, such as
    - i) pool delineation (initial),
    - ii) pool delineation (subsequent), and
    - iii) pool development, and
  - b) developing environmental assessments, as outlined in [IL 93-09](#).

#### 5.6.17 Working Interest Participants

- 62) The applicant must be a working interest participant to apply for or hold a facility licence.

#### 5.6.18 Additional Application Requirements

- 63) Applicants must meet the requirements in section 8.3 when planning sour gas activity where residents are located within the EPZ.



## 6 Pipeline Licence Applications

### 6.1 Overview

An applicant must apply to

- construct and operate a new pipeline that requires a new pipeline licence;
- construct and operate a new pipeline that is to be added to an existing pipeline licence;
- construct and operate a permanent pipeline, regardless of length, which is not contained wholly within the boundary of a surface facility lease or an adjoining surface facility lease;
- construct and operate a permanent or temporary surface pipeline, except for pipelines for the purpose of well testing that will be in continuous use for less than 21 consecutive days for the purpose of well testing (consent is obtained from the AER; see [Directive 077: Pipelines – Requirements and Reference Tools](#));
- change the operating parameters of an existing pipeline; or
- construct a pipeline installation that includes a
  - compressor station or pump station in continuous use for more than 21 days that is associated with pipelines carrying processed (sales) product located downstream of a facility,
  - tank farm,
  - pipeline oil loading and unloading facility, or
  - pipeline line heater (categories C and D).

An applicant must also notify the AER of a pipeline abandonment and pipeline discontinuation.

[Directive 026: Setback Requirements for Oil Effluent Pipelines](#) introduces setback requirements for oil effluent pipelines containing greater than 10 mol/kmol of H<sub>2</sub>S. The requirements set out in [Directive 026](#) must be met when filing a [Directive 056](#) pipeline licence application for new construction of any pipeline containing greater than 10 mol/kmol H<sub>2</sub>S.

Gas utility pipelines and any associated pipeline installations are not under the jurisdiction of the AER. Applicants seeking to acquire or amend a licence for a gas utility pipeline or associated pipeline installation should contact the AUC.

If the applicant cannot meet a technical requirement, chooses to apply for a regulatory relaxation, cannot meet all participant involvements, outstanding concerns or objections exist, or the applicant proposes to implement new technology, the applicant must disclose the situation in its application.

If there are outstanding concerns or objections to an exempt activity, the activity is no longer exempt from licensing, and an application disclosing the situation must be submitted.

## 6.2 Licences

### 6.2.1 Licence Expiry

New pipeline construction licences typically expire one year from the date of issue if right-of-way clearing, construction, or operation has not begun on that pipeline. If an amendment is made to a pipeline licence with a “permitted” status, the expiry date remains unchanged.

- 1) The applicant must submit a licence amendment at least 30 days before the licence expiry date informing the AER that a pipeline will not be constructed.
- 2) If an applicant intends to proceed with a project for which a licence has expired, it must reapply. This means fulfilling all applicable regulatory requirements, including participant involvement requirements in section 3, before filing the new application.

Due to the complexity of some developments, it is possible that the applicant may not be able to act on a licence before the expiry date. If licence expiry is imminent, the applicant should contact the AER for further direction.

- 3) Before starting new construction when a licence is nearing licence expiry, the applicant must meet the participant involvement requirements in section 3.
- 4) If a pipeline licence has expired and construction has not started, the applicant must contact the AER for further direction.
- 5) If an applicant does not intend to proceed with the licence, it must notify the AER.

### 6.2.2 Licence Extensions

The AER typically issues a licence for a term of one year. An applicant may make a request to extend the expiry date of an applied-for licence at the time of application. Requests for extensions will be considered on a case-by-case basis.

- 6) To get an extended licence expiry date, the applicant must meet the participant involvement requirements in section 3 before it acts on the licence.

## 6.3 Category Type and Consultation and Notification Requirements

The category type and the consultation and notification requirements for pipelines are listed in table 3. The category type of a pipeline is dependent on the pipe diameter and H<sub>2</sub>S content of the transported product.



The participant involvement requirements for pipeline activities that require a licence amendment are listed in table 4.

- 7) If a concern or objection is received during the participant involvement process and remains unresolved, the applicant must disclose that in its application.

## 6.4 Exemptions

- 8) Although no application is required under *Directive 056* for the following pipelines and activities, the company must meet the participant involvement requirements in section 3.

To proceed with a proposal where a concern or objection has been received and remains unresolved, the company must submit an application.

Although applications are not required under *Directive 056*, the company must meet all applicable regulatory requirements. If the company is unable to meet all the regulatory requirements, it must obtain a variance from the requirement from the AER.

### 6.4.1 Pipeline Installations

The licensing of the following pipeline installations does not occur under *Directive 056*:

- loading racks,
- meter stations,
- regulator stations,
- a temporary pipeline installation that will be in continuous use for less than 21 consecutive days for the purpose of well testing (consent for temporary pipeline installations is obtained from the AER), and
- line heaters associated with category B pipelines.

### 6.4.2 Pipeline Activities

The licensing of the following pipelines and activities is not required under *Directive 056*:

- a utility cooperative pipeline operated at an MOP of 700 kPa or less (Alberta Agriculture and Forestry);
- a pipeline replacement if each individual section is less than 100 m long and
  - the replaced pipe is removed,
  - the work is carried out within the existing right-of-way, and
  - the replacement sections are identical, of the same material, or evaluated as being equivalent or of a higher grade for the licensed purpose and operating conditions;

- the pipeline or tie-in is wholly within a single surface lease boundary or is wholly within adjacent or abutting facility surface leases (see [Pipeline Rules](#)); and
- category B, C, and D surface pipelines that will be in continuous use for less than 21 consecutive days for the purpose of well testing (consent for surface pipeline is obtained from the AER; see [Directive 077](#)).

## 6.5 Licence Amendments

- 9) Applicants must follow the requirements set out in [Directive 026](#) when making an application to amend an oil effluent pipeline with greater than 10 mol/kmol H<sub>2</sub>S content.
- 10) The licensee must submit a pipeline licence amendment application for
  - a) MOP changes,
  - b) H<sub>2</sub>S changes,
  - c) change of substance,
  - d) liner installation or removal,
  - e) resumption,
  - f) discontinuation,
  - g) abandonment or partial removals,
  - h) removal,
  - i) line split,
  - j) flow reversal, and
  - k) a pipeline that is not constructed.

See table 7 for a summary of licence amendment requirements for pipeline and pipeline installations activities

Additional technical evaluation should be considered when the following pipeline activities are proposed: a pipeline resumption, MOP increase, substance change, liner installation, or composite pipeline installation.

**Table 7. Licence amendment requirements for pipeline and pipeline installations activities**

<b>Activity</b>	<b>Application</b>
Complete removal (including all crossings)	Licence must be obtained before starting the removal operation.
Not constructed	Application is filed 30 days prior to expiry of pipeline licence.
Abandonment or partial removal	Application is filed within 90 days of completing the abandonment operation to advise the AER of the abandonment.  Licence must be obtained before starting removal operations.
Discontinuation	Application is filed within 90 days of completing the discontinuation operation to advise the AER of the discontinuation.
H <sub>2</sub> S change, MOP change, substance change, flow reversal, line split	Licence must be obtained before starting operations.
Resumption of discontinued pipeline	Licence must be obtained before starting resumption operations.
Resumption of abandoned pipeline or pipeline installations	Licence must be obtained before starting operations.
Liner installation or removal	Licence must be obtained before starting liner installation or removal.

## 6.6 Technical Requirements

### 6.6.1 Emergency Response Planning

The EPZ for pipelines containing H<sub>2</sub>S in the gas phase and operating at pipeline licence conditions is based on the release volume from the pipeline. An EPZ is also calculated for a HVP pipeline.

Applicants are cautioned that it is a violation of privacy legislation to disclose in the public portion of a facility, pipeline, or well licence application, any personal information that was obtained for emergency response planning purposes. Such information must be provided in confidence to the AER in connection with the emergency response planning requirements set out in [Directive 071](#).

### 6.6.2 Setback Requirements

There are specific setback distances between pipelines containing gas >10 mol/kmol H<sub>2</sub>S and permanent dwellings, unrestricted country developments, urban centres, or public facilities.

- 11) The applicant must meet the applicable setback requirements in table 8 based on the calculated H<sub>2</sub>S release volume for the proposed pipeline.

**Table 8. Setback requirements for gas/oil effluent pipelines containing >10 mol/kmol H<sub>2</sub>S**

Level	H <sub>2</sub> S release volume (m <sup>3</sup> )	Minimum distance
1	<300	Pipeline right-of-way
2	≥300 to <2000	0.1 km to individual permanent dwellings and unrestricted country developments
		0.5 km to urban centres or public facilities
3	≥2000 to <6000	0.1 km to individual permanent dwellings up to 8 dwellings per quarter section
		0.5 km to unrestricted country developments
		1.5 km to urban centres or public facilities
4	≥6000	As specified by the AER, but not less than level 3

### 6.6.3 Pipeline Leak Detection

- 12) The licensee must meet [CSA Z662](#) leak detection requirements for liquid hydrocarbon pipelines, gas, and oilfield water pipelines. For liquid hydrocarbon pipelines the licensee must also meet the leak detection requirements in annex E of [CSA Z662](#).

### 6.6.4 Steam Distribution Pipelines

Steam distribution pipelines used in the recovery of hydrocarbons from a reservoir or oil sands deposit are regulated under the [Pipeline Act](#) and include pipelines intended to carry steam, steam and produced fluids, or recovered steam. These pipelines require design registration by ABSA under the [Pipeline Rules](#) but are exempt from both the [Safety Codes Act](#) and [Pressure Equipment Safety Regulation](#). There may be situations in other types of pipelines in which produced fluids (emulsion) meet the definition of “expansible fluid” and require steam pipeline design and design registration with ABSA. Refer to [Directive 077](#) for additional information.

- 13) Before submitting a licence application, the design of steam distribution pipelines must satisfy the requirements of [CSA Z662](#) and be registered with ABSA.

### 6.6.5 Pipeline Discontinuation

Pipeline discontinuation is defined as the temporary deactivation of a pipeline or part of a pipeline.

- 14) An application is not required for pipeline discontinuation; however, the applicant must notify the AER within 90 days of completing the pipeline discontinuation.

- 15) When discontinuing a pipeline, the licensee must ensure that
- a) proper discontinuation procedures are in place (see [Pipeline Rules](#)),
  - b) cathodic protection will be maintained in working condition and monitored in accordance with the [Pipeline Rules](#), and
  - c) setback distances are retained (table 8).

#### 6.6.6 Pipeline Abandonment

Pipeline abandonment is defined as the permanent deactivation of a pipeline in a manner prescribed by the [Pipeline Rules](#); this includes any measures required to ensure that the pipeline is left in a permanently safe and secure condition. This also includes the removal of related surface equipment no longer in use, including pig traps, risers, block valves, and line heaters, unless they are located within the boundaries of a facility that will continue to have other licensed equipment operating after the pipeline abandonment.

- 16) When abandoning a pipeline, the licensee must
- a) meet the participant involvement requirements in section 3 before starting any abandonment procedures,
  - b) ensure that proper abandonment procedures are in place (see [Pipeline Rules](#)), and
  - c) notify the AER within 90 days of the pipeline abandonment.

#### 6.6.7 Partial Pipeline Removals

The physical removal of a pipeline where crossings are not being removed is considered a partial removal.

- 17) When applying for a partial pipeline removal and before undertaking any activity, the licensee must
- a) meet the participant involvement requirements in section 3,
  - b) amend the pipeline licence (line split into multiple segments showing lines to be removed and crossings remaining in place), and
  - c) notify the AER within 90 days of completing the abandonment of the crossings.

#### 6.6.8 Pipeline Resumption

Pipeline resumption is defined as resuming operations on a discontinued pipeline or on a pipeline that has not been in active flowing service within the last 12 months to its original licensed parameters. Abandoned pipelines are not normally candidates for resumption of operation. In rare

and exceptional circumstances, a licence may be granted to resume operation of an abandoned pipeline if the applicant has supported the request with a comprehensive engineering assessment.

- 18) When resuming operation of a discontinued pipeline, the licensee must ensure that
  - a) cathodic protection was maintained in accordance with [CSA Z662](#),
  - b) there is suitable external and internal coating integrity, and
  - c) sour service requirements are met if applicable.
- 19) The licensee must meet the participant involvement requirements in section 3 if the resumption of the discontinued pipeline in conjunction with other activities results in a change to a category D pipeline.
- 20) When resuming operation of an abandoned pipeline, the licensee must file an application and demonstrate the following:
  - a) compliance with the participant involvement requirements in section 3,
  - b) the integrity of the pipeline and the external and internal coating,
  - c) that sour service requirements of the most recent version of [CSA Z662](#) are met if applicable, and
  - d) that a comprehensive engineering assessment supports the resumption.

#### 6.6.9 Pipeline Removal

Pipeline removal is defined as the removal of the entire pipeline, including crossings of roads, railways, and watercourses.

- 21) When applying to remove a pipeline and before undertaking any activity, the licensee must
  - a) meet the participant involvement requirements in section 3,
  - b) amend the pipeline licence, and
  - c) obtain approval before starting removal operations.

#### 6.6.10 Pipeline Replacement

Pipeline replacement is defined as the replacement of an existing pipeline or a pipeline segment. An application is not required for a pipeline replacement if each individual section is less than 100 m long and

- the replaced pipe is removed,
- the work is carried out within the existing right-of-way, and

- the replacement sections are identical, of the same material, or evaluated as being equivalent or of a higher grade for the licensed purpose and operating conditions.

#### 6.6.11 Surface Pipelines

Category B, C, and D surface pipelines that are in continuous use for less than 21 days for well testing purposes do not require a *Directive 056* pipeline licence application.

- 22) The applicant must submit a *Directive 056* pipeline application for
  - a) Category B, C, and D surface pipelines that are in use for less than 21 days for purposes other than well testing and
  - b) all surface pipelines in continuous use for more than 21 consecutive days.
- 23) A *Directive 056* pipeline application is not required for Category B, C, and D surface pipelines in continuous service for less than 21 days for well testing purposes; however, the company must
  - a) meet the participant involvement requirements in section 3, and
  - b) receive AER ([Directive 077](#)) consent to install and operate a surface pipeline for less than 21 days.
- 24) The applicant must meet all requirements of [CSA Z662](#) and the [Pipeline Rules](#).  
For category B surface pipelines, J55 API tubing and threaded joints may be used in some situations; contact the AER for more information.
- 25) For all category C and D surface pipelines for purposes other than well testing, the applicant must provide the following information.
  - a) supporting documentation to address surface pipeline requirements given in the [Pipeline Rules](#);
  - b) a detailed explanation of the pipeline design that includes consideration of the downstream pipeline effects and compatibility with connecting pipelines;
  - c) a description of the measures taken to protect the surface pipeline from third-party damage;
  - d) information of the corrosion control, monitoring program, and mitigation measures for the proposed surface pipeline, including an assessment of any impacts that adding and later removing the flow may have on the flow regimen of the connecting pipelines; and
  - e) an explanation detailing the need for the surface pipeline.

- 26) For all category C surface pipelines associated with a thermal in situ oil sands operation, the applicant is not required to provide the documentation described in the previous requirement if the proposed pipeline will
- a) be a permanent surface pipeline,
  - b) be part of a thermal in situ operation (for example, SAGD or cyclic steam injection) to produce crude bitumen in a designated oil sands area,
  - c) be made of steel,
  - d) be licensed as oil effluent, and
  - e) have an H<sub>2</sub>S partial pressure greater than 0.3 kPa but less than or equal to 70.0 kPa.

If all these criteria will be met, the applicant must provide confirmation in writing in place of the documentation.

If any of the criteria will not be met and the pipeline is category C, submit the support documentation outlined in the preceding requirement with the application.

#### 6.6.12 Calgary and Edmonton Transportation and Utility Corridors

- 27) Ministerial consent from Alberta Infrastructure must be obtained prior to any government authority ordering or authorizing any operation or activity that causes a surface disturbance in the transportation/utility corridors.
- 28) The applicant must obtain consent from Alberta Infrastructure prior to submitting an application to the AER.

#### 6.6.13 Line Splits

A line split occurs when one line segment is split into multiple line segments that are each assigned an individual line number.

- 29) The licensee must file a licence amendment application and receive approval before beginning fieldwork to split a line.

#### 6.6.14 Pipeline Spatial Data

The AER uses pipeline spatial data to show the location of licensed pipelines under its jurisdiction.

- 30) Applicants must submit spatial data that
- a) is formatted in a manner acceptable to the AER,



- b) meets the content requirements of either the [Public Lands Act](#) for pipeline rights-of-way located on public land or [Land Titles Act](#) for pipeline rights-of-way located on private land,
- c) shows the right-of-way and the location of the pipeline within the right-of-way being applied for, and
- d) indicates the licensee of any rights-of-way and licence numbers of the pipelines within those rights-of-ways that are adjacent to, or being crossed by, the proposed pipeline.

#### 6.6.15 Maximum Operating Pressure Increase

- 31) The applicant or licensee must determine if any of the following is affected by an increase in MOP and take the appropriate mitigative action to ensure continued compliance:
  - a) pressure-testing requirements
  - b) overpressure protection on upstream and downstream pipelines
  - c) pipeline class designation
  - d) pipeline level classification
  - e) setbacks
  - f) partial pressure of H<sub>2</sub>S (categories C and D only)
  - g) material and standard suitability
- 32) The applicant must meet the participant involvement requirements in section 3 for any change in pipeline operation.

#### 6.6.16 Maximum Operating Pressure Decrease

- 33) The applicant or licensee must determine if any of the following is affected by a decrease in MOP and take the appropriate mitigative action to ensure continued compliance:
  - a) pipeline integrity under the new MOP
  - b) pressure compatibility with upstream and downstream pipelines
  - c) pipeline level reclassification

#### 6.6.17 Substance Change

A pipeline licence is substance specific. If a licensee intends to transport a substance other than the substance for which the pipeline is currently licensed, a licence amendment application is required.

- 34) When changing the substance, the applicant or licensee must consider the following and take appropriate mitigative actions to ensure continued compliance:

- a) pressure-testing requirements
- b) pipeline level reclassification
- c) participant involvement requirements in section 3
- d) depth of pipeline cover
- e) pipeline warning sign requirements (the licensee must update pipeline warning signs to reflect the new substance before operations begin)
- f) potential class redesignation
- g) ERP changes ([Directive 071](#))
- h) corrosion monitoring and mitigation (if the substance is corrosive, effective internal corrosion mitigation and monitoring programs must be implemented according to the [Pipeline Rules](#) and [CSA Z662](#))

#### 6.6.18 Connecting Pipelines with Different Substances

For pipelines licensed for sour natural gas, the AER will only approve an application if the connecting pipeline is also licensed for sour natural gas. For pipelines licensed for HVP products, the AER will only approve an application if the connecting pipeline is also licensed for HVP products.

The AER will not approve an application for a pipeline with H<sub>2</sub>S that is to tie into an existing pipeline with a lower H<sub>2</sub>S content than that of the proposed pipeline unless a blending scheme is proposed.

#### 6.6.19 Liner Type

A liner is defined as a tubular product that is inserted into buried pipeline to form

- a corrosion-resistant barrier, or
- a separate free-standing pressure-containing pipe.

The applicant may choose to install a liner in a pipeline to improve or maintain the integrity of the pipeline.

- 35) The applicant must identify the correct type of liner for the substance transported in the pipeline.
- 36) Unless the AER permits otherwise, the applicant must use one of the following liner types:
  - a) free-standing fibreglass (considered pressure containing)
  - b) certain free-standing reinforced composite liners (considered pressure containing);

- c) free-standing polyethylene liners (considered pressure containing)
  - d) expanded polyethylene liners (considered to be internal corrosion barriers and not pressure containing)
- 37) Expanded polyethylene liners and the supporting pressure-containing pipe must be designed and pressure tested according to current CSA standards. Consideration should be given to temperature design and hydrocarbon absorption. For sour service, the supporting pressure-containing pipe must meet sour service requirements.
- 38) For all other liner types or new technologies, identify the type or technology in the application.

#### 6.6.20 Sour Service Pipelines

There are specific requirements in [CSA Z662](#) for the design, materials, construction, operation, and maintenance of sour service pipelines. Sour service is defined in clause 16 of [CSA Z662](#).

- 39) The applicant must calculate the H<sub>2</sub>S partial pressure or effective partial pressure to determine the need to meet [CSA Z662](#) sour service requirements.

#### 6.6.21 Canadian Standards Association

If the [Pipeline Act](#) and [Pipeline Rules](#) differ from CSA requirements, the act and rules govern. CSA states that the materials intended for sour service must comply with the requirements of the sour service clause of the applicable [CSA Z245](#) standard; if no applicable CSA standard exists, the current material requirements of [NACE MR0175/ISO 15156](#) apply. Steel pipe, fittings, flanges, and valves must meet the applicable requirements of a standard or specification given in [CSA Z662](#), with the acceptable materials and limitations indicated.

- 40) For sour service pipelines, the applicant must meet the following CSA material standards:
- CSA Z245.1, “Steel Pipe”
  - CSA Z245.11, “Steel Fittings”
  - CSA Z245.12, “ Steel Flanges”
  - CSA Z245.15, “Steel Valves”
- 41) For pipeline installations
- a) piping upstream and downstream of a line heater must meet [CSA Z662](#) standards,
  - b) piping within the line heater must be designed to American Society of Mechanical Engineers [ASME B31.3: Process Piping](#) standards,

- c) compressor and pump stations must meet [CSA Z662](#) standards, and
- d) as indicated in the preface of [CSA Z662](#), [ASME B31.3](#) is only permissible for internal piping for compressor and pump stations.

[Directive 077](#) further discusses the jurisdictional relationships for pipeline, pressure equipment, and pressure piping.

#### 6.6.22 Pipelines Transporting Carbon Dioxide (CO<sub>2</sub>)

CO<sub>2</sub> has unique properties that necessitate specific design considerations for pipelines transporting the substance. Because some design considerations are not covered in [CSA Z662](#), the AER reviews all applications to construct or amend pipelines that transport CO<sub>2</sub> to ensure that the design is based on sound engineering practices.

- 42) The applicant must provide the following information with its application:
  - a) specific operating pressure ranges and pressure drops to avoid unnecessary phase changes,
  - b) corrosion mitigation and monitoring issues due to water content and other impurities,
  - c) specific material considerations to minimize the risk of fracture propagation,
  - d) ERP and dispersion modelling considerations, and
  - e) safety precautions that will be taken during pipeline operation and repair.

#### 6.6.23 Stainless Steel Pipelines

[CSA Z662](#) does not address the use of stainless steel pipe; if an applicant is intending on using stainless steel pipe, it must discuss this with the AER.

#### 6.6.24 Injecting Natural Gas Containing H<sub>2</sub>S into a Producing Reservoir

When a producing reservoir has an approved enhanced recovery scheme that allows the injection of natural gas containing H<sub>2</sub>S, the pipeline licensee must review the impact of the scheme operation on the pipeline materials and operating parameters.

- 43) The applicant must evaluate the potential for
  - a) gas cap breakthrough,
  - b) reclassification of existing pipeline systems due to an increase in H<sub>2</sub>S content,
  - c) reclassification of producing wells as critical wells, and
  - d) licence amendment applications to meet CSA sour service material requirements for the pipelines affected.

### 6.6.25 Stress Level

Stress level is defined as the stress in the wall of a pipe that is produced by the pressure of the fluids in the pipeline. This section describes the stress level calculation for steel, aluminum, and polyethylene pipeline materials. There is no stress level calculation for fibreglass or composite pipeline materials.

Stress level is calculated as a percentage using the following formulas:

- for steel or aluminum pipe material,

$$\frac{(MOP \text{ kPa}) \times (\text{outside diameter mm})}{(20 \times \text{pipe specified minimum yield strength MPa}) \times (\text{wall thickness mm})}$$

- for polyethylene pipe material,

$$\frac{(MOP \text{ kPa}) \times (\text{outside diameter mm} - \text{wall thickness mm})}{(20 \times \text{pipe long-term hydrostatic strength MPa}) \times (\text{wall thickness mm})}$$

44) The applicant must meet all applicable [CSA Z662](#) design requirements.

a) For steel pipe:

- For any temporary or permanent surface pipeline containing greater than 10 mol/kmol H<sub>2</sub>S gas, the stress level must not exceed 50 per cent.
- For buried pipelines containing greater than 10 mol/kmol H<sub>2</sub>S gas, the stress level must not exceed 60 per cent.
- For all other steel pipelines, the stress level must not exceed 72 per cent unless otherwise approved by the AER.

b) For aluminum pipe, the stress level must not exceed 72 per cent unless otherwise approved by the AER.

c) For type 3408, 3608, or 3708 polyethylene pipe with a design temperature less than 23°C:

- For wet gas gathering, oil effluent, and low vapour pressure service, the stress level must not exceed 25 per cent.
- For gas distribution, the stress level must not exceed 40 per cent.
- For dry gas gathering and water service, the stress level must not exceed 50 per cent.

These limitations do not apply to type PE80, PE100, 3710, or 4710 polyethylene pipe.

45) For all other pipeline materials and new technologies, identify the pipeline material and new technology in the application.

#### 6.6.26 Pipeline Installation

A pipeline installation is defined as any equipment, apparatus, mechanism, machinery, or instrument incidental to the operation of a pipeline. This includes a compressor station, pump station, tank farm, and pipeline loading and unloading facility associated with pipelines carrying processed (sales) product. These installations would be located downstream of a gas processing facility or battery. Category C and D line heaters are considered pipeline installations, although all other upstream facilities are licensed under section 5 of *Directive 056*.

- 46) When applying for a pipeline installation, the applicant must meet the participant involvement requirements in section 3.
- 47) Where applicable, the applicant must meet
  - a) noise requirements defined in [Directive 038](#),
  - b) AER storage requirements (see [Directive 055](#)), and
  - c) AER spacing requirements as described in the [OGCR](#).

##### 6.6.26.1 Process-Flow Diagrams

- 48) The applicant must attach a process-flow diagram (PFD) for all pipeline installation applications.
  - a) The PFD must identify all existing and proposed equipment at the pipeline installation. Proposed equipment must be identified in the legend and annotated on the diagram.  
  
Diagrams must accurately represent the actual operations of the installation and contain the correct location and applicant name.
  - b) The applicant must clearly identify the following on the PFD:
    - i) process equipment
    - ii) measurement points
    - iii) storage tanks
    - iv) sources of all inlets, receipts, and deliveries, including all fuel lines, flare lines, and vent points
    - v) safety equipment

6.6.26.2 NO<sub>x</sub> Emissions

If NO<sub>x</sub> emissions are present, it is the applicant's responsibility to ensure that the facility meets the AAAQOs for NO<sub>2</sub>. It is possible that facilities exempt from registration with AEP could exceed the AAAQOs. It is in the company's best interest to conduct modelling to ensure that its facility will meet the AAAQOs. In order to demonstrate that the facility meets the AAAQOs, the AER may require that the applicant provide NO<sub>x</sub> modelling.

- 49) The applicant must design the pipeline installation to meet the requirements set out in AEP's [\*Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants\*](#).
- 50) The applicant must register all compressor and pumping stations with AEP before commencing operations if the total NO<sub>x</sub> emissions are greater than 16 kg/h.
- 51) New and additional natural gas-driven reciprocating engines greater than 600 kW at full load must not emit more than 6 grams of NO<sub>x</sub> per kilowatt-hour (g/kWh).
- 52) The applicant must meet the following requirements when NO<sub>x</sub> emissions are present at facilities that require registration or approval with AEP:
  - a) Dispersion modelling must be conducted in accordance with AEP's [\*Air Quality Model Guideline\*](#).
  - b) Based on dispersion modelling, predicted NO<sub>2</sub> concentrations must meet the AAAQOs using guidance from the [\*Air Quality Model Guideline\*](#).
  - c) Standby equipment used only for emergency purposes can be excluded from dispersion modelling.
  - d) The engine exhaust stack height must be set in accordance with the direction given in AEP's [\*Code of Practice for Compressor and Pumping Stations and Sweet Gas Processing Plants\*](#).
  - e) NO<sub>x</sub> emissions from steam generating units, heaters, and boilers can be excluded from dispersion modelling if their combined contribution is less than 3 per cent of the total NO<sub>x</sub> emissions.

## 6.6.26.3 Plot Plans

- 53) A plot plan must be submitted with each pipeline installation application that clearly indicates the on-lease location of all the equipment (with the exception of valves) indicated on the process-flow diagram. It must also show at least 100 m past the edge of the lease to demonstrate that all off-lease spacing requirements have been met (e.g., distance to a residence, water bodies, forestation, or road allowance).
- 54) The applicant must meet the spacing requirements of the [\*OGCR\*](#), as applicable.

#### 6.6.26.4 Noise

All pipeline installations under the AER's jurisdiction must meet the requirements of [Directive 038](#).

An NIA will ensure that the applicant has considered possible noise impacts before a pipeline installation is constructed or operated. The NIA predicts the expected design sound level from the pipeline installation at the nearest or most impacted residence.

- 55) Applicants must discuss noise matters with area residents (see section 3).
- 56) An NIA must be completed before submitting a pipeline installation application for any new permanent pipeline installation or for modifications to existing permanent pipeline installations if there is a reasonable expectation of a continuous or intermittent noise source.

For the purpose of an NIA, a permanent pipeline installation is a pipeline installation in operation for more than 2 months.

- 57) If the NIA indicates the permissible sound level will be exceeded, the applicant must consider further mitigative measures.

Where mitigative measures are not practical, the applicant must explain why in its application.

- 58) The AER expects the applicant to use a reasonable technical basis for the values presented in the NIA, such as computer modelling, field measurements of similar equipment, accepted acoustical engineering examples from literature, and calculations.
- 59) If the applicant is using manufacturer's specifications, the sound level ratings must represent free or far-field conditions. Sound level ratings at 1 m are not acceptable for inverse square law calculations.

#### 6.6.27 Blending of Products

Product blending is defined as the combination of similar products with different H<sub>2</sub>S contents for the purpose of maintaining a lower H<sub>2</sub>S content in the blended stream. Blending a liquid stream with a gas stream is not permitted.

- 60) The applicant must ensure that the H<sub>2</sub>S content in the final blended stream does not exceed the licensed H<sub>2</sub>S content of the receiving pipeline.
- 61) The applicant must include a detailed description of the design for
- a) flow ratio control with or without automatic shutdown and
  - b) H<sub>2</sub>S monitoring (or flow ratio control) with automatic shutdown in accordance with the [Pipeline Rules](#), section 14.



### 6.6.28 Proliferation

As the proponent of a new oil or gas facility or pipeline, the applicant has already determined that the proposed project will meet its business needs. The AER, as the approving authority, is required to evaluate the need for the proposed project in the broader public interest. The AER considers this interest in terms of economic, orderly, and efficient development of Alberta's oil and gas resources.

The AER continues to receive strong input from the public, who are aware of the growth of resource development. The AER accepts the public's view that pipeline proliferation should be avoided whenever possible and practical.

Pipeline development is to be carried out in a manner that minimizes the overall impacts on the environment and public. Proliferation of pipelines occurs when new development results in greater surface disturbances and impact on the public than would be the case if existing infrastructure were used.

### 6.6.29 AER Environmental Requirements

In 1993, the AER issued [IL 93-09: Oil and Gas Developments Eastern Slopes \(Southern Portion\)](#), setting guidelines and expectations for oil and gas development in this region.

- 62) If the proposed pipeline is to be located within the Eastern Slopes (Southern Portion), the applicant must meet the general expectations described in [IL 93-09](#) by
- a) preparing development plans beyond the initial exploration stage, taking into consideration current stages such as
    - i) pool delineation (initial),
    - ii) pool delineation (subsequent), and
    - iii) pool development, and
  - b) developing environmental assessments, as outlined in [IL 93-09](#).

### 6.6.30 Conservation and Reclamation Requirements

[EPEA](#) requires that pipelines located in the white area of the province with an index of 2690 or greater (class 1) must have an [EPEA](#) conservation and reclamation approval. Pipelines with an index value lower than 2690 (class 2) do not require the approval.

The index is determined by multiplying the outside diameter of the pipe (in mm) times the length of the pipe (in km).

For class 2 pipelines, notification to AEP is not required; however, AEP conservation and reclamation requirements under the [EPEA](#) must be met. When siting an upstream oil and gas site on

private land, refer to AEP's [R&R/03-2](#): *Siting an Upstream Oil and Gas Site in an Environmentally Sensitive Area on Private Land*.

For class 1 pipelines, the applicant may file an application once the 30-day AEP notification period has expired. The AER will not accept a pipeline application if the notification period has not expired unless there are outstanding concerns and the application is submitted appropriately.

#### 6.6.31 Additional Application Requirements

- 63) The AER does not require applicants to acquire crossing agreements prior to submitting an application. However, they must be in place prior to construction.
- 64) Applicants must meet the requirements in section 8.3 when planning sour gas activity where residents are located within the EPZ.

## 7 Well Licence Applications

### 7.1 Overview

An applicant must apply for a well licence for

- a new oil, gas, or crude bitumen well,
- a water well greater than 150 m,
- a new disposal or injection well,
- re-entering a well,
- resuming drilling operations after original rig release,
- an evaluation well or test hole,
- a CBM well,
- drilling a well through a potential hydrocarbon zone for any other purpose,
- amending a previously issued well licence before spud or rig release,
- deepening an existing well while the rig is on hole, or
- changing an oil sands evaluation well to a conventional producing well (within 30 days of drilling).

A licence is also required for wells that will be drilled deeper than 150 m to supply water for domestic or stock watering purposes. Please contact the AER for details and instructions.

If the applicant cannot meet a technical requirement, chooses to apply for a regulatory relaxation, cannot meet all participant involvements, outstanding concerns or objections exist, or the applicant proposes to implement new technology, the applicant must disclose the situation in its application. If there are outstanding concerns or objections to an exempt activity, the activity is no longer exempt from licensing, and an application disclosing the situation must be submitted.

### 7.2 Licence Expiry

Well licences expire one year from the date of issue if construction or operation has not yet started. After one year, the AER will cancel the expired licence from the active records.

- 1) If the applicant intends to proceed with a project for which a licence has expired, all applicable regulatory requirements, including participant involvement requirements (section 3), must be fulfilled prior to filing a new application.

Due to the complexity of some developments, it is possible that the applicant may not be able to act on a licence before the expiry date. If licence expiry is imminent, the applicant should contact the AER.

- 2) Prior to initiating new construction when a licence is nearing expiry, the applicant must meet the participant involvement requirements in section 3.
- 3) The applicant must advise the AER 30 days before licence expiry if it has commenced lease construction but has not spudded the well. This will ensure that the licence is not automatically cancelled.
- 4) If an applicant does not intend to proceed with the licence, it must notify the AER.

#### 7.2.1 Licence Extensions

The AER typically issues a licence for a term of one year. An applicant may request an extension to the expiry date of an applied-for licence at the time of application. Requests for extensions will be considered on a case-by-case basis.

- 5) To get an extended expiry date for an applied-for licence, the applicant must meet the participant involvement requirements in section 3 before it acts on the licence.
- 6) To get an extended expiry date for an existing licence, the licensee must meet the participant involvement requirements in section 3 before it acts on the licence.

### 7.3 Category Type and Consultation and Notification Requirements

The category type and the consultation and notification requirements for wells are listed in table 5. The category type of a well is determined by the H<sub>2</sub>S content, H<sub>2</sub>S release rate, and proximity to the public.

### 7.4 Cavern Scheme Wells

Before submitting a well licence application for a well drilled for the purpose of producing or injecting into a solution mining cavern or injecting into a hydrocarbon storage or disposal cavern, the applicant must meet the participant involvement requirements in section 3.

### 7.5 Exemptions

Well licence applications are not required for

- wells drilled to a depth of less than 150 m that are not intended to encounter or produce hydrocarbons,

- wells drilled to discover or evaluate a solid inorganic mineral (e.g., limestone quality test well), and
- oil sands evaluation wells drilled within an approved mine site in accordance with section 4(5) of the [Oil Sands Conservation Rules](#).

#### 7.5.1 Abandoned Well Remediation

Approvals for abandoned well remediation do not require a *Directive 056* application. Companies responsible for the re-entry, repair, and reabandonment of a well must submit a nonroutine abandonment request to the AER, indicating the reason for the re-entry, a plan for resolution of the issue, and a statement about whether the company is the current licensee of the well, holds the mineral rights, and has a current surface lease agreement. If the request is approved, the AER will issue a letter of approval. If the company is not the current licensee, a *Directive 056* application may be required.

Before submitting an application, authorization for re-entry, repair, and reabandonment must be obtained from the Alberta Energy, if applicable.

#### 7.6 Licence Amendments

- 7) The applicant must be the licensee to file a well licence amendment.
- 8) The applicant must meet the participant involvement requirements in section 3 to file a well licence amendment.
- 9) The licensee must amend the well licence if any of the following information changes prior to spudding the well: surface ownership (Freehold and Crown), mineral ownership (Freehold and Crown), surface location, ground elevation, well purpose, surface coordinates, total depth, well type, terminating formation, regulation section, the EPZ, or number of occupied dwellings, public facilities, or places of business inside the EPZ.
- 10) The licensee must amend the well licence while the rig is on hole deepening an existing well with no change in the well category or type if
  - a) the change in total depth is greater than 150 m or
  - b) the terminating formation changes.

If (a) or (b) does not apply, the change in the total depth is captured through the submission of the licensee's drilling records.
- 11) The licensee must amend the well licence to correct inadvertent data entry errors or transposition of numbers.

- 12) The licensee must amend the well licence to change the bottomhole location prior to spudding the well.

Bottomhole location changes after spud date are captured through the submission of the licensee's directional survey.

#### 7.7 Re-entry, Resumption, and Deepening

- 13) The licensee must apply to re-enter an abandoned well. The licensee assumes responsibility for the well and any associated liabilities regardless of whether operations are subsequently conducted at the well.
- 14) The licensee must apply to resume drilling when resuming drilling of a well after rig release. A resumption application is not required if the licensee is resuming drilling within six months of spud to the same terminating formation and the type of drilling operation (e.g., vertical, horizontal) remains the same as originally licensed.
- 15) The licensee must apply to deepen a well when deepening an existing well while the rig is on hole if that will result in an increase in the well category (e.g., from B to C or C to D).

#### 7.8 Technical Requirements

##### 7.8.1 Survey Plans

- 16) The applicant must attach a survey plan that
  - a) meets all requirements stated in section 2.020 of the [OGCR](#);
  - b) provides sufficient detail to accurately identify surface topography, surface improvements, and access roads;
  - c) is formatted in a manner acceptable to the AER;
  - d) is current and valid, meaning
    - i) less than 12 months old from the date of certification or,
    - ii) if more than 12 months from the date of certification, certified as correct by an Alberta Land Surveyor;
  - e) shows the location of the well tied by bearings and distance to a monument or, in the case of a well in unsurveyed territory, the location determined in accordance with the [Alberta Land Surveyors Association Manual of Standard Practice](#);

- f) shows the relation of the well to the boundaries of the quarter section shown by the coordinates from the two boundaries of the quarter section that are also the boundaries of the section (assuming a 20 m wide road allowance) and by calculated distances to the interior boundaries of the quarter section;
  - g) shows the relation of the well location to the surface topography within 200 m of the well, including
    - i) elevation of the corners of the surface lease,
    - ii) elevation of any significant water bodies, and
    - iii) sufficient information to establish the general character of the topography and any predominant drainage patterns;
  - h) in the case of long access roads (i.e., outside the 200 m radius) or where the well is close to survey section lines, shows sufficient information to establish the general character of the topography, predominant drainage patterns, and surface improvements;
  - i) shows the relation of the well location to
    - i) surface improvements,
    - ii) wells,
    - iii) coal mines, whether working or abandoned, and
    - iv) water wells within 200 m of the well; and
  - j) indicates the depth of the water if the proposed well is in a water-covered area.
  - k) For new CBM wells completed above the base of groundwater protection, applicants must meet the requirements found in [Directive 035](#) regarding survey plans and maps.
- 17) The survey plan should also reflect the distance to the nearest
- a) dwelling (whether occupied part time or full time; e.g., house, seasonal cottage, trapper's cabin),
  - b) publicly used development (e.g., church, community centre, campground, curling rink),
  - c) place of business, or
  - d) other surface development where members of the public may gather.
- 18) The AER will accept survey plans based on remotely sensed, three-dimensional survey data like LiDAR if
- a) the survey plan clearly identifies that the data the survey is based on was acquired from remotely sensed data,

- b) the survey plan meets all components of requirement 16 above, and
- c) a final survey plan will be completed by a certified Alberta land surveyor once the proposed surface lease is surveyed for construction within 60 days of the start of construction.

#### 7.8.2 Emergency Response Planning

The EPZ for wells containing H<sub>2</sub>S is based on the release rate for the well.

Applicants are cautioned that it is a violation of privacy legislation to disclose in the public portion of a facility, pipeline, or well licence application any personal information that was obtained for emergency response planning purposes. Such information must be provided in confidence to the AER, in connection with emergency response planning requirements set out in [Directive 071](#).

#### 7.8.3 Critical Sour Well

A critical sour well is one that meets any of the following criteria:

- $RR \geq 2.0 \text{ m}^3/\text{s}$
  - $RR \geq 0.3 \text{ m}^3/\text{s}$  but  $< 2.0 \text{ m}^3/\text{s}$  and the well is located within 5.0 km of an urban centre
  - $RR \geq 0.1 \text{ m}^3/\text{s}$  but  $< 0.3 \text{ m}^3/\text{s}$  and the well is located within 1.5 km of an urban centre
  - $RR \geq 0.01 \text{ m}^3/\text{s}$  but  $< 0.1 \text{ m}^3/\text{s}$  and the well is located within 500 m of an urban centre
- 19) If the proposed well is critical or deemed to be category E, the applicant must meet the drilling requirements detailed in [Directive 036: Drilling Blowout Prevention Requirements and Procedures](#), and [IRP Volume 1: Critical Sour Drilling](#).

#### 7.8.4 Minimum Casing Testing Requirements – Re-entry and Resumption of Drilling

The following requirements apply when re-entering an existing wellbore, whether abandoned or not, to deepen, whipstock, recomplete (abandoned well only), or recomplete horizontally.

For the tests set out below, the required pressures are applied at surface and are based on a wellbore fluid density of 1000 kg/m<sup>3</sup>. The test pressure is adjusted according to the fluid density in the wellbore at the time of the test. For a satisfactory pressure test, a stabilized pressure is maintained over a 10-minute interval.



- 20) For all categories of wells with only surface casing set:
- a) Before starting re-entry or resumption of drilling operations, the licensee must
    - i) ensure that there is sufficient casing set and cemented in the well for well control purposes (see [Directive 008](#)) and
    - ii) pressure test the existing casing to the lesser of 7000 kPa or 50 times the casing setting depth (m).
- 21) For category B, C, or D wells that will be drilled overbalanced or recompleted:
- a) Before starting re-entry or resumption of drilling operations, the licensee must
    - i) ensure that there is sufficient casing set and cemented in the well for well control purposes (see [Directive 008](#)), and
    - ii) pressure test the existing casing to 67 per cent of the bottomhole pressure at the casing setting depth or the depth at which the window will be cut.
  - b) If the existing casing is to be used for production purposes, before placing the well on production, the licensee must
    - i) run a casing inspection log or combination of logs, fully interpreted on a joint-by-joint basis, which
      - determines the percentage penetration of anomalies,
      - distinguishes between internal and external corrosion, and
      - has the ability to detect holes, pits, perforations, metal loss, and metal thickness;
    - ii) use the results of the casing inspection log in the following equation to verify that the minimum internal yield ( $P_y$ ) of the existing casing meets the minimum required casing burst pressure set out in [Directive 010](#):
 
$$P_y = \frac{2Y_p t}{D}$$

where  $P_y$  is the minimum internal yield (kPa),  $Y_p$  is the specified minimum yield strength (kPa),  $t$  is the reduced wall thickness (mm; minimum remaining well thickness—not an average), and  $D$  is the nominal outside diameter (mm); and
    - iii) pressure test the casing to a pressure of 85 per cent of the minimum required casing burst pressure set out in [Directive 010](#).

- 22) For category B, C, or D wells that are drilled underbalanced and for any category E well:
- a) before starting re-entry or resumption of drilling operations, the licensee must
    - i) ensure that there is sufficient casing set and cemented in the well for well control purposes;
    - ii) run a casing inspection log or combination of logs, fully interpreted on a joint-by-joint basis, which
      - determines the percentage penetration of anomalies,
      - distinguishes between internal and external corrosion, and
      - has the ability to detect holes, pits, perforations, metal loss, and metal thickness;
    - iii) use the results of the casing inspection log in using the equation in requirement 21(b)(ii) to verify that the minimum internal yield ( $P_y$ ) of the existing casing meets the minimum required casing burst pressure set out in [Directive 010](#); and
    - iv) pressure test the existing casing to 67 per cent of the highest anticipated formation pressure that will be encountered.
  - b) If the existing casing is to be used for production purposes, prior to placing the well on production, the licensee must
    - i) run another casing inspection log (this casing inspection log may be a log that has regard for internal wall loss and may be compared to the data from the log conducted prior to drilling [see 21(b)(ii) above]),
    - ii) ensure that the formula set out in 21(b)(ii) is now satisfied based on the least wall thickness remaining,
    - iii) ensure that the minimum internal yield ( $P_y$ ) of the existing casing meets the minimum required casing burst pressure set out in [Directive 010](#), and
    - iv) pressure test the casing to a pressure of 85 per cent of the minimum required casing burst pressure set out in [Directive 010](#).
- 23) To request a waiver from the required casing inspection logs for a re-entry or resumption of well, the licensee must identify the waiver in its application. Note that there are certain situations in which the AER will not consider granting waivers.

#### 7.8.5 Terminating Formation

For the purpose of well licensing, the terminating formation is defined as the deepest formation in which the well will terminate and which the applicant has the right to produce for all intended purposes of the well.

The applicant may drill to a maximum overhole depth of 15 m below the base of the terminating formation. This overhole depth is permitted to accommodate logging tools and casing.

- 24) The applicant must not identify any formations within the 15 m overhole as the terminating formation on a well licence application unless the applicant holds the mineral rights.
- 25) The applicant must have the permission of the mineral rights holder, whether Crown or Freehold owner or lessee, to exceed the 15 m maximum overhole depth.

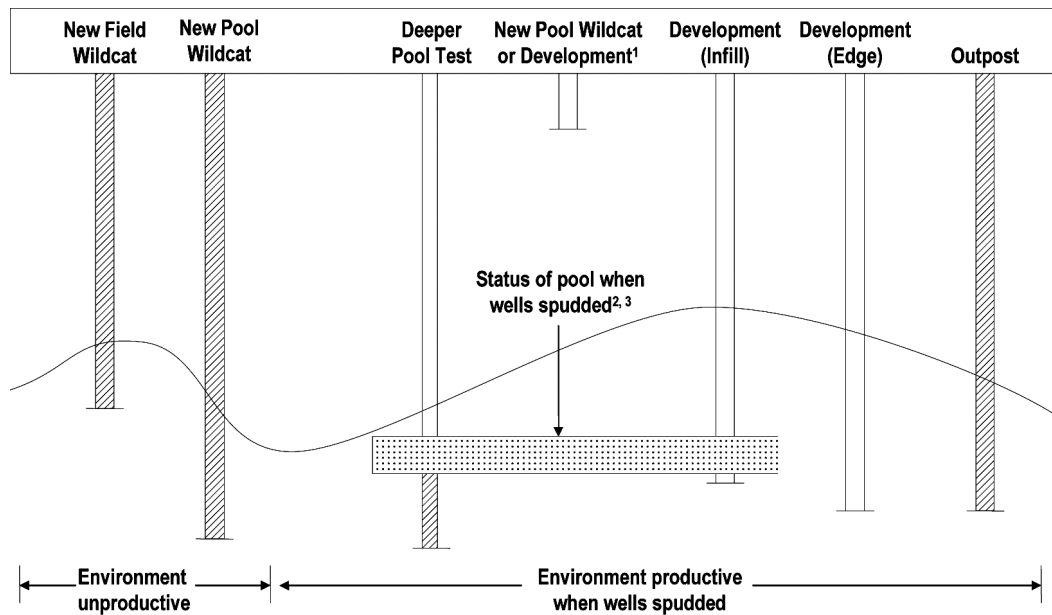
### 7.8.6 Lahee Classifications

A Lahee classification is a “pre-spud” assignment given to each well based on the geological complexities and the known existence of hydrocarbon accumulations (pools) in the area where the well is to be drilled. The classification takes into account the general degree of risk of geological failure. Refer to table 9 for individual classification descriptions and to schematic figure 1.

**Table 9. Lahee classification**

Lahee classification	Description
New Field Wildcat (NFW)	An NFW well is located at a considerable distance beyond the limits of known pools and is outside the boundaries of existing fields. The well is drilled in an area where hydrocarbons have not yet been discovered. The geological risk of this type of well is very high: in the absence of the discovery of a new pool, the well would be deemed unsuccessful.
New Pool Wildcat (NPW)	The objective of an NPW well is the discovery of new pools in all zones that the well encounters. The well is located in an already discovered field. The geological risk of this type of well is very high: in the absence of the discovery of a new pool, the well would be deemed unsuccessful. In circumstances where the well is in relatively close proximity to the limits of known pools, the NPW classification must be based on technical data suggesting that a new pool will be encountered. A well drilled within or in close proximity to the limits of known pools but terminating shallower than the known pools is normally classified as NPW, except in the case where pre-existing wells in close proximity to the well have logs and/or tests that strongly suggest the existence of shallower pools to be penetrated by the well.
Deeper Pool Test (DPT)	A DPT well is located within or in close proximity to known pools and is drilled with the objective of exploring for new, undiscovered pools below the deepest of the known pools. Only the interval below the deepest of the known pools is exploratory and carries a high geological risk. The remaining metreage in a DPT is development, with low geological risk. In circumstances where the exploratory portion of the well is in relatively close proximity to the limits of known pools, the DPT classification must be based on technical data suggesting that a new pool will be encountered.
Outpost (OUT)	An OUT well is drilled with the intention of extending a known pool by a considerable distance. A well in proximity to a known pool but whose outcome is uncertain because of geological complexities might also be classified as OUT. There would be some geological risk associated with drilling an OUT well.
Development (DEV)	The objective of a DEV well is to further exploit or extend known pools. The well may be inside of the established limits of the pool or in close proximity to the edge of the pools. The DEV classification should be used even if the well is drilled slightly deeper than the target pool, especially where the deeper strata to be penetrated have no hydrocarbon-bearing potential. The geological risk of this type of well is low.  Wells licensed with a well type of production and substance of bitumen are DEV.

Lahee classification	Description
Re-entry (REN)	A REN classification is assigned to a well that re-enters an existing wellbore for the purpose of recompleting the well as a producer or service well with no new strata being drilled. If new strata are to be drilled (e.g., by deepening, whipstock, or sidetracks), the well is assigned the appropriate Lahee classification.
Development Service Well (DSW)	A DSW well is drilled to introduce fluids into a formation or observe the performance of a reservoir. Water injection, steam injection, and observation wells are examples of DSW wells.
Evaluation Oil Sands (OV)	An OV well is drilled in an oil sands area to evaluate the oil sands and is not intended to produce hydrocarbons. Such wells will be licensed under section 2.030 of the <a href="#">OGCR</a> .
Test Hole (TH)	A TH well is drilled for geological and geophysical stratigraphic evaluation purposes and is not intended to produce or expected to encounter hydrocarbons. Such wells will be licensed under section 2.030 of the <a href="#">OGCR</a> .
Experimental (EX)	An EX well is part of an AER-approved experimental scheme. Such wells will be licensed under section 2.030 of the <a href="#">OGCR</a> .
Other (OTH)	A well drilled for water production, brine production, gas storage, water disposal, or any other purpose not covered by other Lahee classifications is classified as OTH. It may be licensed under section 2.020 or 2.040 of the <a href="#">OGCR</a> .



<sup>1</sup> Shallower wells may be drilled on the basis of uphole hydrocarbon evidence at adjacent wells and, therefore, the development category may be appropriate.

<sup>2</sup> The horizontal shaded bar represents the cross-section of a pool as previously delineated before the shown wells were spudded. (Other pools may exist on the section, but they have not yet been discovered.)

<sup>3</sup> The left edge of this pool is known to terminate where indicated. The exact position of the right edge has not been defined.

**Figure 1. How to classify a well**

#### 7.8.6.1 Technical Considerations

The following describes the technical considerations for Lahee classifications:

- The Lahee classification takes into account all zones to be penetrated by the well.
- The Lahee classification takes into account any pre-existing exploited offset pools, as well as pre-existing wells with logs or tests that strongly suggest the presence of pools, although the pools may not have yet been exploited. In both cases, the AER would consider the pools as previously discovered.
- Step-out distances will vary depending upon the size and trend of pools previously encountered in the region.
- The AER's official designation of pool orders (formerly known as G-orders) have no bearing on the Lahee classification. This is because they may not have been issued for nearby pools and because their boundaries may not have been updated to reflect current knowledge regarding areal extent and continuity of pools.

#### 7.8.6.2 Process and Review Information

The following describes the process and review considerations for Lahee classifications:

- Lahee classifications are to be selected by the applicant in accordance with the definitions provided in table 9.
- The Lahee classification is not reviewed by the AER before issuing the well licence.
- It is strongly recommended that the licensee review its well licence to ensure accuracy of the Lahee classification selection. In the event that the licensee detects an incorrect selection, a letter may be sent to the AER requesting a revision. The AER will issue a letter acknowledging the revision. As is the case with new licences issued, the revision request will not be reviewed for correct selection.
- Because the Lahee classification is a risk assessment based upon pre-spud information, it would not be appropriate for a licensee to request a Lahee classification revision after the well has been drilled and results have been obtained.
- The AER may review a well's Lahee classification at any time.
- If the AER requires additional data in support of the licensee's Lahee classification selection, a letter will be sent to the licensee indicating that
  - the licensee has 30 days to file a submission package in support of its Lahee classification selection, and

- in the absence of a submission within 30 days, the AER will revise the classification to the AER planned revision stated in the letter.
- Submission packages in support of a licensee’s Lahee classification should include a covering letter stating the views of the licensee and any pre-spud technical information (maps, seismic, etc.) in support of retaining the original Lahee classification selection.
- The AER will review submissions and issue a written decision. In some cases, meetings to exchange information may be necessary.

The AER records the Lahee classification assignment for all wells drilled in Alberta.

### 7.8.7 Assigning Initial Confidentiality to New Wells

The initial confidential status on new wells is based on the provisions described in section 12.150 of the [OGCR](#) and section 15 of the [Oil Sands Conservation Rules](#). Table 10 is a guide for determining the appropriate initial confidential status of new wells. Figure 2 provides well scenarios to assist in assigning confidentiality to OUT, DPT, DEV, DSW, and REN wells.

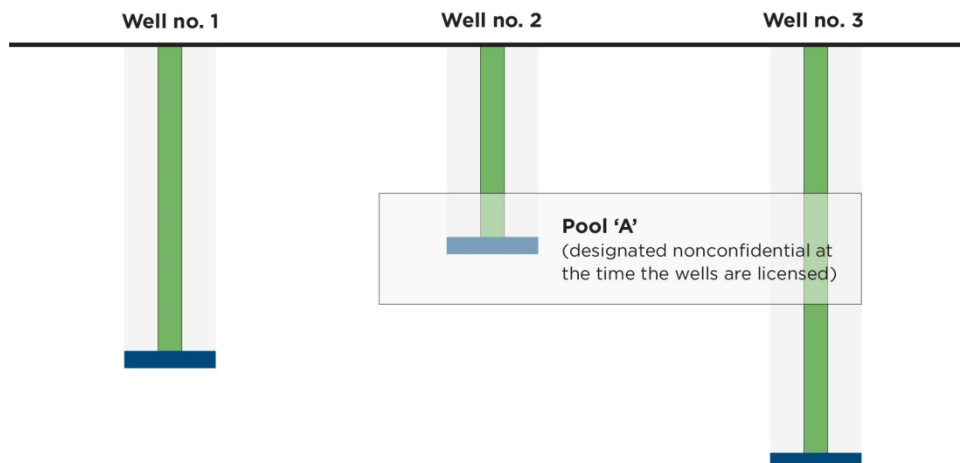
#### 7.8.7.1 Confidentiality Considerations

The following are considerations when assigning confidentiality:

- A confidentiality assignment takes into account all zones to be penetrated by the well.
- The AER’s official designation of pool orders (formerly known as G-orders) has a direct impact on confidentiality assignments. The most recent official pool order boundaries are on the AER website.

**Table 10. New well initial confidential status based on Lahee classification**

Lahee classification	New well confidential status
NFW,NPW,TH,OV,EX	(C) – CONFIDENTIAL
OUT, DPT, DEV, DSW, REN	(C) – CONFIDENTIAL if all zones penetrated by the well are outside the limits of AER-designated pools (formerly known as G-orders) or inside the boundaries of an existing AER-designated confidential pool. Well No. 1 in figure 2 demonstrates this scenario.  (NC) – NONCONFIDENTIAL if the well terminates in or just below an AER-designated nonconfidential pool. Well No. 2 in figure 2 demonstrates this scenario. If the well type and substance are production of crude bitumen in an oil sands area, the well is also nonconfidential.  (CB) – CONFIDENTIAL BELOW if one or more uphole zones penetrated by the well is inside an AER-designated nonconfidential pool. The “confidential below” formation name is the name of the deepest designated pool the well penetrates. Well No. 3 in figure 2 demonstrates this scenario.
OTH	(NC) – NONCONFIDENTIAL



**Figure 2. Well scenarios to assist in assigning confidentiality and drill cutting sample requirements**

#### 7.8.7.2 Process and Review Information

The following describes the process and review considerations for assigning confidentiality:

- Initial confidentiality statuses are to be selected by the applicant.
- Initial confidentiality selections are not reviewed by the AER before issuing a well licence.
- The AER strongly recommends that the licensee review its well licence to the initial confidentiality status is accurate. If there is an error, the licensee may send a letter to the AER requesting a revision. Included in the AER's mandate is dissemination of information regarding the oil and gas resources of Alberta; a request to revise an initial selection may be subject to review by the AER.
- The AER will review the initial confidentiality status shortly after a well licence is issued.
- In cases where the selection does not appear consistent with the regulations, the AER may issue a letter requesting information to support the confidentiality assignment. The letter will indicate that
  - the licensee has 30 days to file a submission package in support of the licensee's initial confidentiality selection, and
  - in the absence of a submission within 30 days, the AER will revise the initial confidentiality to the AER planned revision stated in the letter.
- Submission packages should include a covering letter stating the views of the licensee and any information in support of retaining the initial confidentiality selection.
- The AER will review submissions and issue a written decision. In some cases, meetings to exchange information may be necessary.

#### 7.8.7.3 Ongoing Confidentiality Maintenance

Ongoing confidentiality maintenance may result in further revisions. After a well has been drilled, a licensee may request a revision to its confidentiality assignment based upon information gained as a result of drilling. If the revision meets the criteria in the regulations, the AER will revise the confidentiality. The AER will provide a written response to the request.

For each well carrying a confidential status, the AER will initially assign an expected confidentiality release date of one year from its finished drilling date. However, the AER may scrutinize a well's confidentiality at any time, and if it meets the conditions for release in accordance with section 12.150 of the [OGCR](#) or section 15 of the [Oil Sands Conservation Regulations](#), its confidential status will be revised by the AER. Notification will not be provided to the licensee.

#### 7.8.8 Drill Cutting Sample Requirements

Drill cutting sample requirements are determined using figure 3 and table 11, which describes the appropriate drill cuttings samples required based upon a well's Lahee classification described in table 9. In addition, figure 2 provides well scenarios to assist in assigning drill cutting sample requirements.

- 26) The applicant must submit drill cuttings in 5 m intervals and in accordance with section 11.010 of the [OGCR](#).

The AER may periodically identify areas where geological complexities dictate that additional samples should be taken. In those cases, the AER will notify the licensee of the revised requirements before drilling commences.

#### 7.8.9 Groundwater Protection

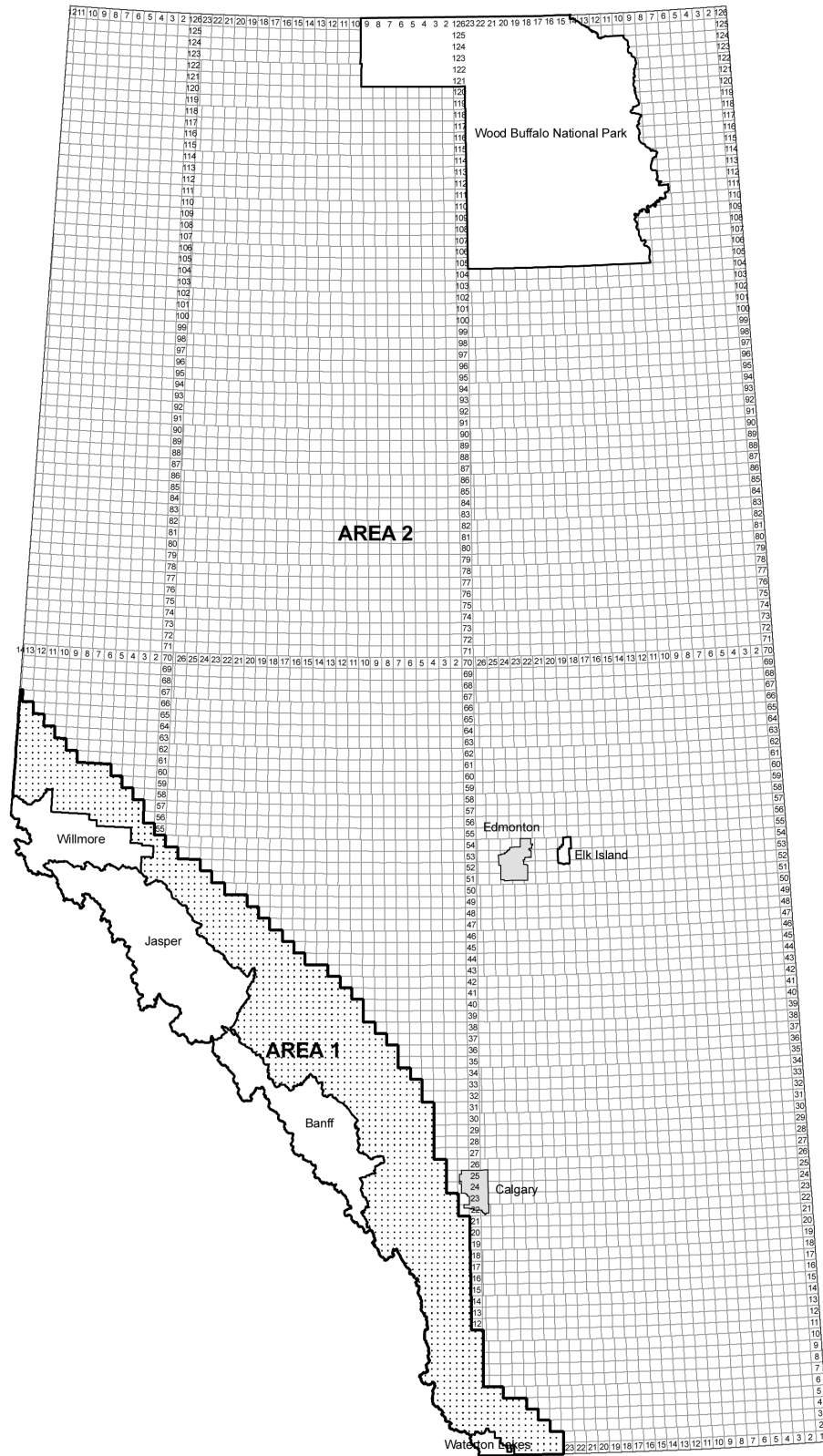
- 27) Applicants must ensure that nonsaline groundwater is protected during drilling operations by
  - a) meeting the requirements of section 6.080 of the [OGCR](#) and [Directive 020: Well Abandonment](#) so that nonsaline aquifers (groundwater containing less than 4000 milligrams per litre [mg/l] total dissolved solids) will be covered by cementing surface casing, cementing the next casing string, or appropriate placement of open-hole abandonment plugs and
  - b) referring to the [Base of Groundwater Protection Query Tool](#) to determine if a reference well or depth below ground level is available to determine the base of groundwater protection.



### 7.8.10 Surface Casing and Exemptions

[Directive 008](#) sets out the requirements for determining surface casing depth for wells to be drilled and gives specifics on where surface casing is not required.

- 28) To obtain a surface casing exemption in accordance with [Directive 008](#), the applicant must request the exemption in an application and include the following information, where applicable:
- a) Geological data
    - i) Identify all zones from surface to total depth.
    - ii) Identify gas potential in the hydrocarbon-bearing zones and provide an isopach map showing the extent of the productive zones.
    - iii) Identify any nonthermal enhanced recovery schemes within 1 km of the proposed well.
    - iv) Identify any thermal schemes within 1 km of the proposed well.
    - v) Identify the location of any water well within a 200 m radius of the proposed well.
  - b) Operations data
    - i) Review offset wells within a 3 km area from surface to the terminating formation and provide the following for each well:
      - well location (unique well identifier)
      - zones and depths of severe lost circulation
      - zones and depths of artesian water flows
      - zones and depths of kicks and blowouts
      - estimated unstimulated AOF rate
      - H<sub>2</sub>S content from surface to set casing depth
      - formation pressures
      - maximum pressure gradient of any formation to the terminating depth
  - c) For horizontal wells, indicate if intermediate casing will be set before drilling the horizontal section.
  - d) Provide the field kick rate.



**Figure 3. Drill cutting sample requirements by area in Alberta**

**Table 11. Drill cutting sample requirements**

Lahee classification	Well scenario	Drill cutting sample requirement
<b>Area 1 (see figure 3)</b>		
NFW, NPW, EX		Base of surface casing—to—total depth
REN, TH, OTH		No drill cutting samples required
DPT, OUT	Well falls outside all AER-designated pools (formerly known as G-orders) from surface to total depth (see Well No. 1 in figure 2).	Base of surface casing—to—total depth
	Well falls inside an AER-designated pool at total depth (see Well No. 2 in figure 2) or well penetrates an AER-designated pool and is drilling to a deeper horizon (see Well No. 3 in figure 2).	30 m above shallowest potential hydrocarbon-bearing horizon—to—total depth
DEV, DSW	Well meets one of the following exceptions: <ul style="list-style-type: none"> <li>• The well type is production and well substance is crude bitumen.</li> <li>• The well type of drilling operation is horizontal.</li> <li>• The well projected total depth is less than 600 m.</li> </ul>	No drill cutting samples required
	Well does not meet one of the exceptions described above.	Sample requirements as DPT and OUT wells above
<b>Area 2 (see figure 3)</b>		
NFW		Base of surface casing—to—total depth
NPW, EX		30 m above shallowest potential hydrocarbon-bearing horizon—to—total depth
OV, REN, TH, OTH		No drill cutting samples required
DPT, OUT	Well falls outside all AER-designated pools from surface to total depth (see Well No.1 in figure 2).	30 m above shallowest potential hydrocarbon-bearing horizon—to—total depth
	Well falls inside an AER-designated pool at total depth (see Well No. 2 in figure 2).	No drill cutting samples required
	Well penetrates an AER-designated pool and is drilling to a deeper horizon (see Well No. 3 in figure 2).	30 m above the first potential hydrocarbon-bearing horizon to be encountered after the well drills through the deepest AER-designated pool—to—total depth
DEV, DSW	Well meets one of the following exceptions: <ul style="list-style-type: none"> <li>• The well type is production and well substance is crude bitumen.</li> <li>• The well type of drilling operation is horizontal.</li> <li>• The well projected total depth is less than 600 m.</li> </ul>	No drill cutting samples required
	Well does not meet one of the exceptions described.	Same requirements as DPT and OUT wells above

- 29) In addition to the above, the applicant must provide a map that illustrates the area 3 km around the proposed well and shows
- a) surface and bottomhole locations of the proposed well,
  - b) existing wells within 3 km of the proposed well that are drilled to the proposed terminating zone,
  - c) wells with hole problems,,
  - d) AOF gas rates for existing wells,
  - e) proximity to thermal wells,
  - f) proximity to water bodies, and
  - g) if the proposed well is in an “established area” as defined in [Directive 008](#).

#### 7.8.11 Right to Produce or Operate

- 30) Before submitting a well licence application, the applicant must
- a) be a working interest participant;
  - b) be entitled to the right to produce the oil, gas, or crude bitumen from the well or have the right to drill or operate the well for the authorized purpose;
  - c) acquire the right to produce from the intended formation for the complete DSU. Part 4 of the [OGCR](#) gives requirements for normal DSUs and for special DSUs. Applicants need to be aware that fractional sections require a special DSU if the size of the fractional section differs by more than 5 per cent from a normal DSU. The applicant must ensure that it acquires the rights for the entire DSU for the intended purpose of the well prior to submitting the application.
  - d) if applicable, obtain permission from Alberta Energy to produce minerals under water bodies on Freehold mineral lands, as the Crown holds the mineral rights beneath water bodies; and
  - e) because normal DSUs do not include the road allowance, contact Alberta Energy if the bottomhole location of the well is in a road allowance.

##### 7.8.11.1 Mineral Lease Continuation

Alberta Energy does not consider an application for a mineral lease continuation sufficient to demonstrate that an applicant has the rights for all of the intended purposes of the well.

- 31) Before submitting a well licence application with the AER, the applicant must receive a signed approval granting a mineral lease continuation from Alberta Energy.

### 7.8.11.2 Wellbore Rights for Abandoned Wells

Wellbore rights are separate and distinct from mineral rights and require separate approval before a well licence application can be filed.

- 32) Before filing a well licence application, the applicant must acquire the rights to the abandoned wellbore:
- a) For Freehold mineral rights, the applicant must obtain the abandoned wellbore rights from the licensee of record. If the applicant is unable to acquire an agreement from the licensee of record, the applicant must identify that in its application.
  - b) For Crown mineral rights, if the mineral rights have not expired, the applicant must obtain the abandoned wellbore rights from the licensee of record; if the mineral rights have expired, the abandoned wellbore rights revert to the Crown. In this case, the applicant must obtain well re-entry approval from the Crown using the Request for Well Re-Entry Approval form available on the Alberta Energy website.

### 7.8.12 Setback Requirements

There are specific setback distances between wells containing H<sub>2</sub>S gas and permanent dwellings, unrestricted country developments, urban centres, or public facilities.

- 33) The applicant must meet the applicable setback requirements in table 12 based on the calculated H<sub>2</sub>S release rate for the proposed well.
- 34) The level designation must be based on the suspended or producing H<sub>2</sub>S release rate.

**Table 12. Setback requirements for wells containing H<sub>2</sub>S**

Level	H <sub>2</sub> S release rate (m <sup>3</sup> /s)	Minimum distance
1	≥0.01 to <0.3	0.1 km, as stated in section 2.110 of the <a href="#">OGCR</a>
2	≥0.3 to <2.0	0.1 km to individual permanent dwellings and unrestricted country developments 0.5 km to urban centres or public facilities
3	≥2.0 to <6.0	0.1 km to individual permanent dwellings up to 8 dwellings per quarter section 0.5 km to unrestricted country developments 1.5 km to urban centres or public facilities
4	≥6.0	As specified by the AER, but not less than level 3

#### 7.8.12.1 Water Bodies

A water body may be natural or manmade and contain or convey water continuously, intermittently, or seasonally.

For the purposes of *Directive 056*, a natural water body is defined as any location where water flows or is present, whether the flow or the presence of water is continuous, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake,

creek, lagoon, swamp, marsh, slough, muskeg, and other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills.

- 35) For the purposes of *Directive 056*, a manmade water body may include, but is not limited to, a canal, drainage ditch, reservoir, dugout, and other manmade surface feature. The well centre must be sited a minimum of 100 m from a water body.
- 36) Unless the AER permits otherwise, if the well centre is located on Freehold or Crown land but does not meet the 100 m setback requirement, the applicant must
- a) have a Crown disposition if the well centre is located on Crown land;
  - b) maintain natural drainage if there is intermittent drainage or a spring or artesian flow across the well site or access road on Freehold and Crown land; and
  - c) have acceptable measures in place to protect the water body during drilling and future production operations and mitigate the consequences of a spill on Freehold and Crown land.

Acceptable measures must include one or more of the following as required:

- site and berms constructed using impermeable materials
- synthetic liner
- vacuum truck
- absorption material
- enclosed systems with tankage
- textile mat

The AER expects the measures to comply with all relevant requirements of provincial and federal legislation and regulation (including the [Environmental Protection and Enhancement Act](#), [Water Act](#), [Public Lands Act](#), [Fisheries Act](#), and the [Navigation Protection Act](#) and the regulations thereunder).

An applicant may request a waiver if the applicant cannot meet the requirements above or wishes to propose alternative mitigative measures. The applicant must outline measures to protect the water body from contamination during drilling and future production operations and to mitigate the consequences of a spill.

- 37) If a water body will be disturbed by the well activity, the applicant must submit to the AER the approval received under the [Water Act](#) from AEP.

#### 7.8.12.2 Surface Improvements

For the purposes of *Directive 056*, a surface improvement is defined as a

- railway, pipeline, canal, or other right-of-way,
- road allowance and surveyed roadway,
- dwelling,
- industrial plant,
- aircraft runway or taxiway,
- building used for military purposes,
- permanent farm building,
- school, or
- church.

A surveyed road or road allowance is a surface improvement; however, specific setback requirements are discussed under section 7.8.12.3.

- 38) The well centre must be sited a minimum of 100 m from a surface improvement.
- 39) Unless the AER permits otherwise, the applicant must
  - a) meet the 100 m setback requirement or
  - b) acquire the consent of the surface improvement owner if the well centre does not meet the 100 m setback for a railway, pipeline, gas co-op, or other right-of-way.
- 40) For all other surface improvements, if the surface improvement owner consents to relaxation of the 100 m setback requirement, the applicant must disclose that in its application.
- 41) An applicant may request a waiver from the AER if consent from the surface improvement owner cannot be acquired.

#### 7.8.12.3 Surveyed Road or Road Allowance

A surveyed road or road allowance, whether developed or undeveloped, is considered a surface improvement but is subject to a 40 m setback. A lease or access road located on Crown or Freehold land or a private access road is not considered a surface improvement and is not subject to a setback.

The AER will consider a lesser distance if the applicant demonstrates that special circumstances exist and that the owner or administrator of the surface lands does not object.

- 42) You may request a relaxation from the 40 m setback requirement in your application.

- 43) The applicant is expected to consider other setback restrictions set out by Alberta Transportation and local authorities.

#### 7.8.12.4 Airports

- 44) If the applicant proposes to drill a well within
- a) 5 km of a lighted (registered or unregistered) airstrip or aerodrome or
  - b) 1.6 km of an unlighted (registered) airstrip or aerodrome,
- then before filing the well licence application, the applicant must advise Transport Canada, using the appropriate Transport Canada drilling rig clearance form.
- 45) If the applicant proposes to drill a well within a 1.6 km radius of a private, unregistered, and unlighted airstrip or aerodrome, the applicant must fulfil the participant involvement requirements in section 3.

#### 7.8.12.5 Coal Mines

Sections 6.140 to 6.190 of the [OGCR](#) detail the requirements if a well is proposed within 3 km of a working subsurface mine or within 400 m of an abandoned subsurface mine. If these requirements are applicable and the applicant is unable to meet the requirements, the applicant must provide an explanation of the reason the requirements cannot be met in the application.

If the applicant intends to drill through a bed or seam of coal, see section 3 for notification requirements.

#### 7.8.13 AER Environmental Requirements

- 46) The applicant is expected to assess each well site and access road and to develop plans to conserve, reclaim, and mitigate the effects of its activities. These plans should include measures to contain any spills and prevent and control soil and water contamination, soil erosion, siltation of any drainage courses or water bodies, and slope instability.
- 47) Unless the AER permits otherwise, the applicant must meet the following requirements:
- a) For CBM wells completed above the base of groundwater protection, the applicant must meet the environment requirements listed in [Directive 035](#).
  - b) The applicant must have acceptable measures in place to protect the environment during drilling and future production operations and to mitigate the consequences of a spill.
    - i) Acceptable measures for on-site containment must include one or more of the following as required:
      - site and berms constructed using impermeable materials



- synthetic liner
  - vacuum truck
  - absorption material
  - enclosed systems with tankage
  - textile mat
- ii) The AER expects the measures to comply with all relevant requirements of provincial and federal legislation and regulation (including the [Environmental Protection and Enhancement Act](#), [Water Act](#), [Public Lands Act](#), [Fisheries Act](#), and the [Navigation Protection Act](#) and the regulations thereunder).
- iii) Before constructing or preparing a well lease site or a well-site access road, the licensee is expected to meet the requirements and guidelines in all current and applicable AEP informational letters.
- c) If there is intermittent drainage or a spring or artesian flow across the well site or access road, the applicant must maintain natural drainage.
- d) If the proposed well site is within a caribou range, the applicant must ensure the requirements for development within a caribou range are met. See the AER website and consult with AEP for further information.

In 1993, the AER issued [IL 93-09: Oil and Gas Developments Eastern Slopes \(Southern Portion\)](#), setting guidelines and expectations for oil and gas development in this region.

- 48) If the proposed well site is located within the Eastern Slopes (Southern Portion), the applicant must meet the general expectations described in [IL 93-09](#) by
- a) preparing development plans beyond the initial exploration stage, taking into consideration current stages such as
    - i) pool delineation (initial),
    - ii) pool delineation (subsequent), and
    - iii) pool development, and
  - b) developing environmental assessments.
- 49) The applicant must request a waiver if it cannot meet the requirements immediately above or if it proposes alternative mitigative measures to protect the environment.

An AER well licence does not relieve the applicant or licensee from meeting the legislative or regulatory requirements of the following:

- [\*Environmental Protection and Enhancement Act\*](#) and *Regulations*
- Other relevant acts, including provincial and federal legislation and regulation (including the [\*Water Act\*](#), [\*Public Lands Act\*](#), [\*Fisheries Act\*](#), and the [\*Navigation Protection Act\*](#) and the regulations thereunder).

#### 7.8.14 Alberta Culture and Tourism

- 50) For proposed projects on Freehold lands, the applicant must consult Alberta Culture and Tourism to determine whether a proposed well site will require Alberta [\*Historical Resources Act\*](#) clearance before filing a well licence application.
- a) If the proposed well site is to be located on land identified in the list, the applicant must
- i) obtain [\*Historical Resources Act\*](#) clearance before submitting a well licence application or,
  - ii) if Alberta Culture and Tourism has not granted clearance, disclose this in the application.

#### 7.8.15 H<sub>2</sub>S Release Rate Assessments

The AER requires the applicant to conduct an H<sub>2</sub>S release rate assessment for each category C, D, or E well to ensure public safety when developing projects containing H<sub>2</sub>S gas. The H<sub>2</sub>S release rate assessment determines the minimum EPZ for the proposed project and dictates the minimum radius used in the applicant's participant involvement program.

- 51) If the producing or completion H<sub>2</sub>S release rate is greater than the drilling release rate, the applicant must fulfil the participant involvement requirements applicable to the higher rate.

Pursuant to section 12.150(8.1) of the [\*OGCR\*](#), the AER will normally consider interpretative data submitted in support of release rate assessments as confidential, provided that the data are indicated as confidential at the time of filing.

Test data used for H<sub>2</sub>S release rate assessments are available in area summary format or individual well format from AER Information Services.

An applicant may file an H<sub>2</sub>S release rate assessment with the AER before submitting a well licence application.

- 52) Before filing a well licence application, the applicant must also do the following:
- a) The applicant must prepare an adequate H<sub>2</sub>S release rate assessment that meets the outlined requirements.
  - b) The applicant must evaluate all formations up to and including the 15 m overhole interval and incorporate this information into the H<sub>2</sub>S release rate assessment.
  - c) Upon request, the applicant must provide documentation to demonstrate that the H<sub>2</sub>S release rate assessment was conducted before filing the well licence application.
  - d) The applicant must include related H<sub>2</sub>S details for a well that may encounter H<sub>2</sub>S gas. This information forms the basis for the applicant's participant involvement program for the proposed well project.
- 53) Each H<sub>2</sub>S release rate assessment must consist of the following four components (described in more detail later in this section) but may include additional components as circumstances warrant:
- a) geological well prognosis with a comprehensive geological discussion,
  - b) geological mapping,
  - c) engineering discussion, and
  - d) tabulated data.
- 54) The applicant must support the H<sub>2</sub>S release rate assessment with the proper documentation, as detailed in this section. This information must be available before filing a presubmission or well licence application and upon request. Its immediate availability is crucial in an emergency situation.

The AER expects that the documentation package will be prepared under the supervision of a member of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) or other technical designation.

#### 7.8.15.1 Geological Discussion

- 55) The applicant must provide a geological well prognosis and a comprehensive geological discussion to address the hydrocarbon and H<sub>2</sub>S potential of all formations encountered by the well. There are two basic cases for reviewing H<sub>2</sub>S potential:
- a) shallow wells – wells planned to reach total depth before the top of the Mannville Group (or equivalent zone)
  - b) deep wells – wells planned to be drilled deeper than the top of the Mannville Group

### Shallow Wells

Reservoirs in shallow horizons may develop very low concentrations of H<sub>2</sub>S gas during their operational life. In these cases, the calculated H<sub>2</sub>S release rate may result in an emergency planning radius that is less than the total radius of the well-site lease; however, this needs to consider safety of personnel and the public.

- 56) The applicant must plan for the potential to encounter H<sub>2</sub>S gas if gas analysis data in the public domain demonstrate that a reservoir originally not containing H<sub>2</sub>S gas has evolved to gas containing H<sub>2</sub>S.

### Deep Wells

These wells have the potential to encounter H<sub>2</sub>S gas horizons throughout the Mannville Group and deeper. However, H<sub>2</sub>S gas zones may be encountered at shallower depths. Reservoirs in shallow zones may develop very low concentrations of H<sub>2</sub>S gas during their operational life; one example is the Cardium Formation.

If a well encounters H<sub>2</sub>S gas in the Mannville Group or deeper, the estimated H<sub>2</sub>S release rate derived from the deeper zones usually overwhelms the small contribution from shallower zones. In this case, the contribution from shallower zones need not be considered in the cumulative H<sub>2</sub>S assessment for the proposed well.

- 57) Should the assessment reveal that gas containing H<sub>2</sub>S will not be encountered in formations or at depths greater than the top of the Mannville Group, the applicant must revisit the well prognosis and provide an H<sub>2</sub>S release rate assessment for any shallow zones that have any concentrations of H<sub>2</sub>S gas.
- 58) Should either proprietary data or data in the public domain on H<sub>2</sub>S gas concentrations indicate that the H<sub>2</sub>S release rate for shallow zones significantly affects the cumulative H<sub>2</sub>S release rate for the proposed well, the applicant must include this information in the review.

### Geological Considerations

- 59) The geological discussion must indicate the basis for the interpretation of the potential to encounter gas containing H<sub>2</sub>S for each horizon (e.g., open-hole log interpretation, cross-sections, or pool isopachs derived from open-hole logs or seismic information, drillstem test recoveries, production, or any other appropriate information).

The geological review must support the applicant's choice of data used in the H<sub>2</sub>S release rate calculation. The CAPP document [\*H<sub>2</sub>S Release Rate Assessment and Audit Forms\*](#) is one possible reference for the types of calculation adjustments or corrections that may be required.

- 60) The applicant is expected to consider the following examples (or other situations where they apply) of geological interpretations that may affect the H<sub>2</sub>S release rate calculation for the proposed well:
- a) Wells near potentially productive reservoirs containing H<sub>2</sub>S gas that are located along erosional edges (e.g., the Elkton member) should be evaluated for the potential for a reduced reservoir thickness beyond the limits of seismic resolution and for the potential to encounter productive outliers.
  - b) Different geological environments may lead to different potential reservoir trends. These trends sometimes exhibit a bias in H<sub>2</sub>S concentration or AOF rates for wells completed in the different geological environments. This bias should be considered when reviewing data for geologically analogous pools.
    - i) Because of the potential differences in AOF rates and H<sub>2</sub>S concentrations, the applicant should identify and discard data obtained from a Nisku pinnacle reef reservoir in the West Pembina Basin if the target is the Nisku bank facies.
    - ii) H<sub>2</sub>S concentration and AOF rate data for wells in the Foothills area must be segregated by structural trend for evaluation, since the geological analogue may be a pool on the same structural trend as the proposed well.
    - iii) If multiple sands within a formation are potentially productive (e.g., Ellerslie #1 and #2 sandstone), the H<sub>2</sub>S release rate must be adjusted to reflect this scenario.
  - c) If offsetting well data or seismic interpretation indicate that a substantially thickened reservoir is potentially present, this information must be used to determine the H<sub>2</sub>S release rate.

#### 7.8.15.2 Geological Mapping

The AER recommends that the applicant begin its geological assessment using a three-township by three-range map plot to examine the well penetration data appropriate for each zone that it identifies as its primary and secondary zones that may contain H<sub>2</sub>S gas. The mapped data may assist in the determination of geological trends, the identification of applicable geologically analogous pools, and the estimation of the potential availability of H<sub>2</sub>S concentration and AOF rate data for the geologically analogous area.

The results of this initial review may indicate that the map area should be expanded to identify the geological trend (e.g., reef platform or thrust sheet) or needs to be reduced due to a high well data density capable of providing sufficient data for review (e.g., oil pools with reduced spacing).

- 61) The applicant must submit geological maps for all formations that it identifies as its primary and secondary zones that may contain H<sub>2</sub>S gas.

For other potential H<sub>2</sub>S zones the AER expects the applicant to implement the process outlined below in the “Tabulated Data” section. Mapping of these zones is not required.

- 62) The applicant must submit schematic dip-oriented cross-sections for all proposed wells located in the Foothills geological area based on existing well control or seismic information. The schematic cross-section must illustrate the relationship and the structural style of the prospective zones that may contain H<sub>2</sub>S gas.
- 63) For map presentations relying on net pay or porosity interpretations, the applicant must provide the basis for the interpretation (e.g., gross pay, shale cutoffs, log porosity cutoffs, water saturation cutoffs) where applicable.
- 64) All map and schematic cross-section presentations must be completed before filing a well licence application.

The applicant may choose the map type that best illustrates its geological interpretation. The following are examples of appropriate maps types:

- net pay isopach
- gross pay isopach
- structure contour
- show or bubble maps denoting test or production information
- porous thickness isopach
- isochron maps

- 65) Maps must show the following:
- a) township, range, meridian (sections where appropriate)
  - b) map scale
  - c) geologically analogous area or pool
  - d) date prepared and company name
  - e) existing well control and proposed well location

The applicant may choose the map annotations that best illustrate its geological interpretation. Map annotations should be applicable to the map type submitted. The following are some examples of annotations on a net pay isopach map:

- presence or absence of porosity (e.g., tight, shale)
- fluid content (e.g., water, gas, or oil) of the zone
- absence of the zone otherwise anticipated (e.g., eroded)
- estimate of net pay/pay:
  - where the zone is productive
  - at the proposed well location
  - by using contouring at the proposed location

The following are some examples of annotations on a structure contour map:

- presence or absence of porosity (e.g., tight, shale)
- fluid content (e.g., water, gas, or oil) of the zone
- absence of the zone otherwise anticipated (e.g., eroded)
- structural elevations and source (e.g., zone top or porosity top)
- structural contouring

#### 7.8.15.3 Engineering Discussion

- 66) The applicant must provide an engineering assessment for each potentially productive zone that may contain H<sub>2</sub>S gas that includes
- a) constraints that geological interpretation places on data gathering and review,
  - b) corrections to H<sub>2</sub>S concentration data, and
  - c) corrections to AOF rate data.
- 67) Data must be from an analogous geological area or pool. Use of data from an arbitrary search area without consideration of the geological similarity of the pools is appropriate only when
- a) a review of the geological interpretation reveals that analogous geological pools exist within the search area or
  - b) no demonstrated pattern or trend can be established and therefore the maximum H<sub>2</sub>S concentration data and AOF rate data should be used.

- 68) The applicant must summarize the logic used to determine the release rate for each formation. The summary could be as simple as a statement indicating that the pay, pressure, and deviation for the proposed well and analogue well are comparable and, therefore, the highest values have been used; or it could be an in-depth account of the logic used for any data discounting or adjustments made.

#### Engineering Considerations

The CAPP document [\*H<sub>2</sub>S Release Rate Assessment and Audit Forms\*](#) is one reference for many of the engineering formulas required to adjust the H<sub>2</sub>S release rate. This document may also be used as a reference for the types of calculation adjustments or corrections that may be required as a result of the geological interpretation of the potential zones that may contain H<sub>2</sub>S gas encountered by the proposed well.

#### Determining Release Rates

- 69) The applicant must determine three H<sub>2</sub>S release rates:
- a) drilling release rate
  - b) completion or servicing release rate
  - c) suspended or producing release rate
- 70) To determine the cumulative H<sub>2</sub>S release rate for the proposed well, the applicant must consider the development or exploratory nature of each zone that may contain H<sub>2</sub>S gas.
- The maximum H<sub>2</sub>S content and the maximum AOF rate are based on the information from the surrounding geological analogue pools or area completed in the same or similar zones.

The H<sub>2</sub>S release rate for each potential zone that may contain H<sub>2</sub>S gas is determined by multiplying the maximum H<sub>2</sub>S content and AOF rate as determined by the geological and engineering review of the available data. The paired data points need not be from the same well.

The drilling release rate for each intermediate hole and main hole is the sum of the release rates from each zone that will be open to the wellbore during the drilling operations.

To calculate the release rate for each zone that may be encountered, AOF rate data may be adjusted to reflect the different flow scenarios appropriate for each zone. If preferred, post-stimulation data, without adjustment for tubing or casing friction loss, may be used for all scenarios.

The applicant may calculate the maximum drilling release rate by totalling the unstimulated release rate for each formation. The discounting of flow data due to stimulation is not appropriate. Post-stimulation data may be adjusted to reflect a zero skin.



The completion or servicing release rate for the targeted formation relies on post-stimulation AOF data. These AOF data may be adjusted for the effects of friction loss using the configuration of the casing cemented in the hole.

The suspended or producing release rate also relies on post-stimulation AOF data and may include an adjustment calculation for flow to surface to account for tubing friction loss. The suspended or producing release rate is used to determine the level classification and the minimum distance or setback requirement for the proposed well (see table 12). Communication of this minimum setback distance is a key component of the applicant's participant involvement plan for the proposed well (see section 3).

- 71) A summary of the engineering review, identifying adjustments, corrections, and discounted data as appropriate, must be included with presubmission materials or in the H<sub>2</sub>S release rate assessment package and must be made available to the AER upon request.

#### Release Rate Scenarios

- 72) Each proposed well must be evaluated with its unique circumstances in mind. These calculations must be documented and included with an H<sub>2</sub>S release rate presubmission request and made available to the AER upon request.

The following list gives common release rate calculation corrections and comments on appropriate methodology and is not exhaustive:

- H<sub>2</sub>S samples – H<sub>2</sub>S samples must not be discounted simply because the sample point source is listed as “other.” A review of the gas analysis is required to determine if the sample point is reasonable for use. If the review indicates that the sample point is not representative (e.g., it is a second-stage separator sample source for a gas well release rate), it may be discounted and an annotated analysis describing the reason for discounting must be included.
- Potential for both gas and oil production – If a formation has potential for both gas and oil production, the applicant must calculate both release rates and use the higher value.
  - H<sub>2</sub>S release rates for oil should be calculated using the maximum gas rate from inflow performance relationship (IPR) tests and the maximum H<sub>2</sub>S concentration from solution gas samples.
  - For H<sub>2</sub>S release rates based on analogous oil wells, the oil rate from the IPR test and the gas-oil ratio (GOR) measured during that test should be used to calculate the maximum gas rate for analogous wells. Combining a maximum IPR rate with a maximum GOR that is not from the same test may result in an unreasonable release rate and is therefore not recommended.

- Extended AOF data – When both extended and stabilized AOF rates are reported, the extended AOF must be used for release rate purposes. A production rate for a well that is higher than the AOF for the same well is often an indication that the reported AOF might be the stabilized value. In this case, a review of the AOF test is required.
- Single-point AOF – If the “n” value used for a single-point AOF test is not 1.0, a calculated AOF assuming an “n” of 1.0 must be used, unless a review is undertaken to determine a more appropriate value. A summary of this review must be included with a presubmission and made available to the AER upon request.
- Potential producing zones – If the estimated potential pay for the primary and secondary zones that the applicant identifies are estimated to be higher than the pay for the analogue wells used for each zone, the AOF rates must be adjusted for each zone affected.
- Multiple sands – If multiple sands within a formation are potentially productive (e.g., Ellerslie #1 and #2 sandstone), the release rate must be adjusted to reflect this scenario. This can be done by multiplying the maximum release rate calculated for a single sand by the number of potential sands or by totalling the pay estimated for each of the sands and adjusting for the pay of the analogue well. If significant differences in performances can be documented between sands, a release rate based on individual sands is acceptable.
- AOF pressure – If the pressure reported for the AOF from an analogue well is lower than the pressure expected at the proposed location, an adjustment of the AOF to the expected pressure is required. Due to the potential impact an adjustment can have on the revised AOF, the viscosity of the gas at each pressure is required to be used in the formula. If a well has multiple AOF tests performed at declining reservoir pressure, only those performed at close to the initial pressure should be used unless some type of stimulation has been performed since the first tests.
- Pool development – In a pool development scenario, it is reasonable to use the existing wells in the pool as analogues. If the proposed well is the second well in the pool, the H<sub>2</sub>S concentration from the first well in the pool may be used; however, because of the variance of AOFs within pools, the flow potential should be estimated from all analogous pools in the area. If the pool is under any type of scheme (e.g., acid gas disposal or injection), the release rate must address the current pool characteristics. If the proposed well will penetrate a pressure depleted pool, the AOF may be adjusted to reflect the current expected reservoir pressure.

- Commingled pools – Commingled pools present additional complexity when reviewing the release rate. Analogous wells must not be discounted because the pool name indicates it is commingled. In many instances, test data are obtained before commingling. Although the pools may have approval for commingling, only a few wells in the pools may actually be commingled. A review of the test or completion data is necessary to determine the actual formation tested and the appropriate data for the formations in question.

#### 7.8.15.4 Tabulated Data

- 73) The applicant must provide the results of H<sub>2</sub>S concentration and AOF rate reviews in a tabular format. The CAPP document [H<sub>2</sub>S Release Rate Assessment and Audit Forms](#) provides examples. Regardless of the table format used, the basic data elements as described in the CAPP tables must be provided, along with an indication as to whether the AOF rate data are from a single or multipoint test.
- 74) The applicant must select a minimum of five H<sub>2</sub>S gas analyses and five AOF data points that are representative of each potential zone that may contain H<sub>2</sub>S gas. Data points are representative if they are from a geologically analogous area or pool and are not discounted for technical reasons. In situations where multiple data points exist for the same well, only one value is considered representative. If any of the five data points encounter an AER-defined pool, the applicant must assess all of the wells within the pool boundary.
- If higher values are discounted, the applicant must support the decision in the geological or engineering discussion.

#### 7.8.16 Working Interest Participants

- 75) The applicant must be a working interest participant to apply for or hold a well licence.

#### 7.8.17 Additional Application Requirements

- 76) If the applicant has obtained a zero-flaring agreement (see [Directive 060](#)), a copy must be submitted with the well licence application.
- 77) The AER does not require applicants to acquire road-use agreements before submitting its application; however, they must be in place before construction.
- 78) Applicants must meet the requirements in section 8.3 when planning sour gas activity where residents are located within the EPZ.

## 8 Additional Application Requirements (Special Circumstances)

### 8.1 Overview

This section sets out application-related requirements that address specific locations or circumstances. It is included to avoid creating multiple directives on specific matters that primarily relate to the applications process.

### 8.2 Battle Lake Area Application Requirements

#### 8.2.1 Background

Battle Lake is a unique environment in that it remains essentially a wilderness lake convenient to major population centres (one hour from Edmonton and Red Deer and two-and-a-half hours from Calgary). In 1974, the County of Wetaskiwin commissioned a study about Battle Lake and gave the lake a protected status, with overwhelming support from area residents. That status was later modified by the county's general plan and a watershed protection district was formed instead. The provincial government also recognized the merit of protecting the area by creating the Mount Butte and South Battle Lake Natural areas, which now protect about one-third of the shoreline and riparian zones, as well as some of the upland habitat.

Subsequent to [\*Decision 2005-129: Ketch Resources Ltd.; Review of Well Licence No. 0313083 and Application for Associated Battery and Pipeline, Pembina Field\*](#), the AER engaged Battle Lake area stakeholders in a pilot project to address upstream oil and gas development issues. After a detailed review, the area stakeholders recommended and the AER concurred that further disturbance by oil and gas development close to Battle Lake and surface water features in the contributing watershed (designated as the Tier 1 area) should be avoided where practical. In particular, lands within the Tier 1 area are closely linked to Battle Lake. Should spills or leaks occur, contaminants would quickly enter Battle Lake, giving limited opportunity to implement effective emergency measures. The Tier 1 areas include bald eagle nesting sites, fish spawning grounds, and unique vegetation communities (fern meadows), as well as natural upland wildlife habitat areas. Battle Lake community residents hold very strong views that further development within Tier 1 areas is not acceptable.

As a result, the AER has determined that licence applications for oil and gas facilities located in the designated Tier 1 area will be considered through the *Directive 056* application licensing process. The designated Tier 1 area as of May 1, 2007, includes Townships 45 and 46, Ranges 2 and 3, West of the 5th Meridian, and is illustrated in figure 4. Note that the current mapping of the area may not have identified and designated all water features, notably springs in the area. It is intended that water features in the watershed be protected. Therefore, potential development sites need to be

assessed to verify whether unmapped water features are present. If unmapped water features are identified, these areas are to be protected consistent with Tier 1 practices.

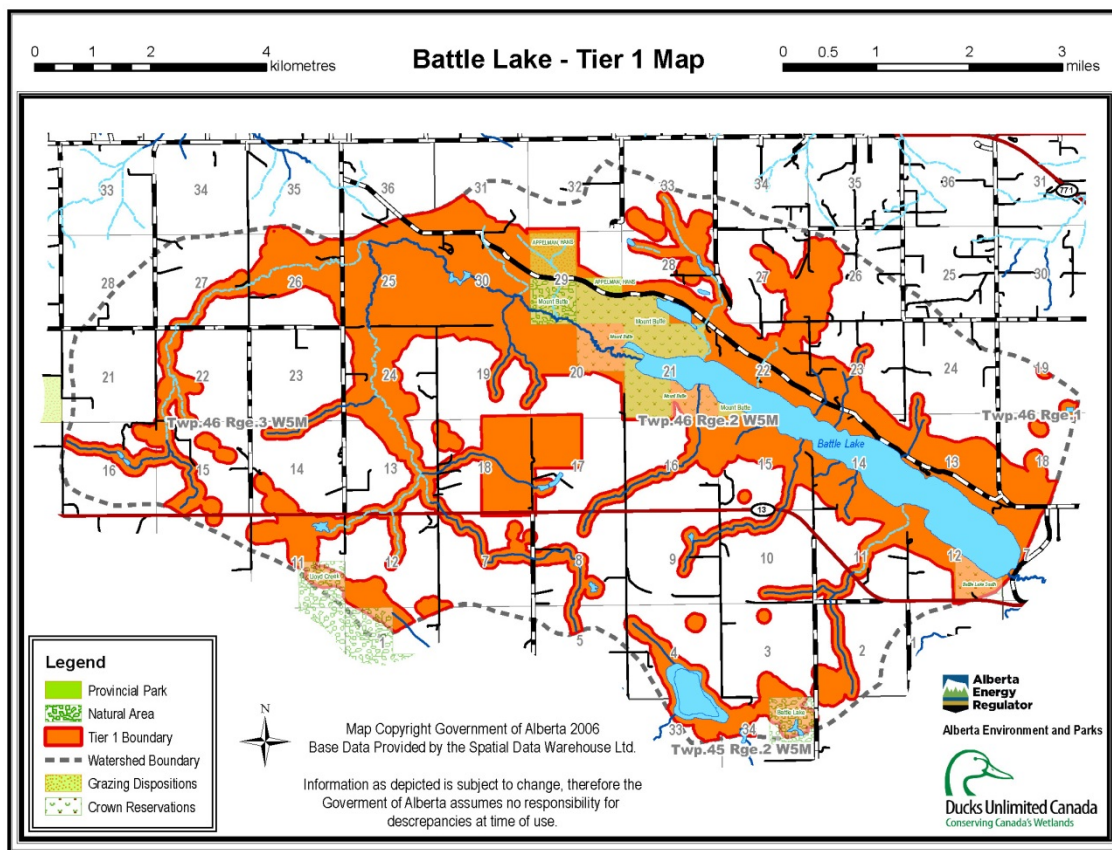


Figure 4. Battle Lake Tier 1

### 8.2.2 Battle Lake Tier 1 Area Definition

The Tier 1 area is defined as surface lands within

- 100 m of water features that feed into Battle Lake (water features for the purpose of this criterion include permanent and recurring streams, springs, and wetlands [fens, bogs, muskeg, marshes]; these include water bodies and wetlands as defined by the more stringent or comprehensive designations in the [Water Act](#) and the [Alberta Wetland Policy](#));
- 100 m of the 900 m (2950 foot) elevation contour along the shoreline of Battle Lake (top of the escarpments that parallel the lake); and
- the Mount Butte natural area, County natural areas, South Battle Lake Natural Area, and remaining undisturbed natural areas on public lands.

### 8.2.3 Application Requirements for the Tier 1 Area

- 1) Proponents must investigate alternative approaches for oil and gas development and, where feasible, are expected to select those that avoid further disturbance of Tier 1 areas.
- 2) If development within Tier 1 area is viewed as unavoidable, proponents must
  - a) assess opportunities to use existing facilities, road access, pipeline rights-of-way, and other pre-existing disturbances and to minimize incremental disturbances in Tier 1 areas;
  - b) ensure that well, production battery, compressor, and gas plant sites located in Tier 1 have appropriate mitigative measures to prevent fluid spills and contaminated runoff from entering wetlands, streams, or the lake during construction and operational phases (e.g., runoff containment berms and retention ponds, catch-pans or devices for equipment seal leaks); and
  - c) incorporate mitigative measures to maintain the integrity of pipelines and provide for early detection of and response to leaks for new hydrocarbon liquid and produced water pipelines traversing Tier 1 lands.
- 3) Proponents must conduct a preapplication on-site assessment to determine site, pipeline, and road locations that will
  - a) avoid sensitive habitats that may include bald eagle nesting sites, fern meadow sites, and other unique ecological features that may be identified;
  - b) identify and avoid steep slopes where construction could require significant surface disturbance or aggravate erosion problems; and
  - c) avoid disturbance of springs, streams, and wetlands.

A primary purpose of the site assessment is to verify whether unmapped water features are present. If unmapped water features are identified, these areas are to be protected.

The AER encourages applicants to

- participate in the Battle Lake Watershed Synergy Group,
- review their plans and explain their rationale for their proposed development in Tier 1 areas at a regular meeting of the synergy group, and
- consult with the Battle Lake Preservation Society and seek its advice on locations and mitigative measures for new development in Tier 1 areas.

- 4) In addition to the required documentation, all *Directive 056* applications for development in the Tier 1 area must be accompanied with justification that includes the following information:
- a) a cover letter that identifies that the proposed development is within the Battle Lake Tier 1 area;
  - b) an explanation of the alternatives involving development outside Tier 1 areas that have been investigated and an explanation of why these are not technically feasible; the alternatives are to be compared with the application case in terms of potential land disturbance and other watershed effects, impacts on the public, resource recovery, and feasibility;
  - c) a description of the proposed site that describes existing cover, habitat features, and presence of surface water features (springs, streams, and wetlands);
  - d) an explanation of how existing facilities and disturbances have been incorporated into the project;
  - e) an explanation of mitigation measures the proponent will undertake to prevent contamination of surface water bodies from leaks and spills; and
  - f) a description of any feedback on the proposed development as a result of discussions with the Battle Lake Watershed Synergy Group and the Battle Lake Preservation Society.

The AER expects that any new disturbance will be limited to the minimum area feasible and that cleanup, regrading, and establishment of natural cover similar to predisturbance conditions on unused portions of rights-of-way and lease sites will occur as soon as possible following construction.

#### 8.2.4 Non-Tier 1 Areas

The Battle Lake pilot project also addressed facility application considerations for other parts of the watershed, including the adoption of recommended practices for areas not designated as Tier 1. Proposed surface facility development within Battle Lake Tier 2 (undisturbed and forested lands) and Tier 3 (lands disturbed by agricultural, residential, or other industrial development) areas must meet all *Directive 056* requirements.

### 8.3 Sour Gas Planning and Proliferation Application Requirements

- 5) Effective June 30, 2008, all applicants must follow the [Recommended Practices for Sour Gas Development Planning and Proliferation Assessment](#) when proposing sour gas development (i.e., facilities, pipelines, and wells) in areas where residents are located within the EPZ.

### 8.3.1 Background

In December 2000, the Provincial Advisory Committee on Public Safety and Sour Gas produced a final report that contained 87 recommendations for addressing public safety and sour gas. In recommendations 7, 32, and 33, the committee noted that a greater effort was required to reduce the proliferation of sour facilities near people and that more information regarding future development plans should be provided to people near sour gas developments as part of the AER's application and licensing process. In response to these recommendations, an oversight committee consisting of public, industry, and regulatory participants monitored sour gas development applications over a two-year trial period to determine if the *Recommended Practices* would be effective in responding to recommendations 7, 32, and 33.

In 2007 the oversight committee provided [its report](#). The report noted that when the *Recommended Practices* were followed, the effect was consistent with the intent of recommendations 7, 32, and 33 and that the *Recommended Practices* were an effective approach to developing and maintaining good relations with the public.

However, because industry participation during the two-year trial was less than expected, the oversight committee subsequently recommended that a requirement to follow the *Recommended Practices* was necessary to meet recommendations 7, 32, and 33.

### 8.3.2 Application Requirements for Sour Gas Development

Applicants must meet the following additional application requirements when preparing applications for sour gas development near people.

- 6) Before submitting an application, the applicant must follow the *Recommended Practices* when planning sour gas development in areas where there will be residents located within the calculated EPZ. At a minimum, the applicant must
  - a) conduct an assessment of any existing facility or pipeline to determine if it can be used;
  - b) expand the project-specific information package requirements in section 3 to include
    - a detailed description of the full project, including future wells, pipelines, and facilities,
    - the results of the applicant's assessment for the use of existing infrastructure,
    - a map that illustrates the assessment area, including proposed wells, pipelines, and/or facilities, existing land use (e.g., roads, residences), and existing infrastructure investigated, and
    - the anticipated timing for the project from the licensing stage through to production operations; and



- c) meet all participant involvement requirements set out in section 3.
- 7) An applicant that is required to conduct an assessment of the existing infrastructure must
- a) review all existing sour gas facilities and sour gas pipelines within a 15 km radius of the proposed facility;
  - b) evaluate the feasibility of upgrading an existing facility and of forging commercial partnerships with existing licensees (for example, contact area operators for information required to conduct the assessment: operating pressure, available capacity, H<sub>2</sub>S limitations, future production potential for the area); and
  - c) document the evaluation for application and audit purposes.

### 8.3.3 Addressing Concerns and Objections

If a concern or objection has been received and remains unresolved, the applicant is subject to the following additional requirements specific to sour gas planning and development.

- 8) If there are residents located in the calculated EPZ and there are unresolved concerns or objections, the applicant must
- a) submit an application that includes documentation to demonstrate that the requirements of section 8.3.2 were met; and
  - b) consider preparing an area development plan, as set out in the *Recommended Practices*.

If an area development plan has been developed, see section 3 for further requirements.

In some circumstances the AER may request that an area development plan be prepared in accordance with the *Recommended Practices* for distribution before submitting or during the processing of the application.

- 9) An applicant proposing sour gas development where there are residents located in the EPZ and about which unresolved concerns or objections exist may be required to submit all applications associated with the proposed sour gas project (i.e., wells, facilities, and pipelines) at the AER's request.

### 8.3.4 Application Submission

- 10) If there are no unresolved concerns or objections, the applicant must confirm that none exist and that the application meets the requirements of the *Recommended Practices*. Applicants are not required to attach the documentation that demonstrates they met *Recommended Practices* but must retain the documentation for audit purposes.

- 11) In those cases where there are one or more surface developments within the EPZ but none of those surface developments is a residence, the *Recommended Practices* would not apply. Applicants must identify the type of surface developments and confirm that section 8.3 of does not apply.

#### 8.3.5 Audit

The audit review process will ensure that the sour gas development requirements summarized in section 8.3.2 were fulfilled before submitting the application.

### 8.4 Peace River Area Application Requirements

#### 8.4.1 Background

In January 2014, a panel of AER hearing commissioners conducted an inquiry on odours and emissions from heavy oil operations in the Peace River area of Alberta. On March 31, 2014, the panel released [\*Decision 2014 ABAER 005: Report of Recommendations on Odours and Emissions in the Peace River Area\*](#). The AER accepted all of the panel's recommendations within its jurisdiction. Among the commitments that the AER made in its response to the report were to require

- existing heavy oil and bitumen operations in the Peace River area to capture and flare, incinerate, or conserve all casing gas and tank-top gas and
- new heavy oil and bitumen operations in the Peace River area to capture and flare, incinerate, or conserve all casing gas and tank-top gas effective May 15, 2014.

Licensees of existing operations and applicants for new developments in the Peace River area will need to demonstrate that their projects meet these requirements when submitting facility licence applications under *Directive 056*.

#### 8.4.2 Peace River Area Definition

The Peace River area covers the Three Creeks, Reno, Seal Lake, and Walrus areas (see figure 5).

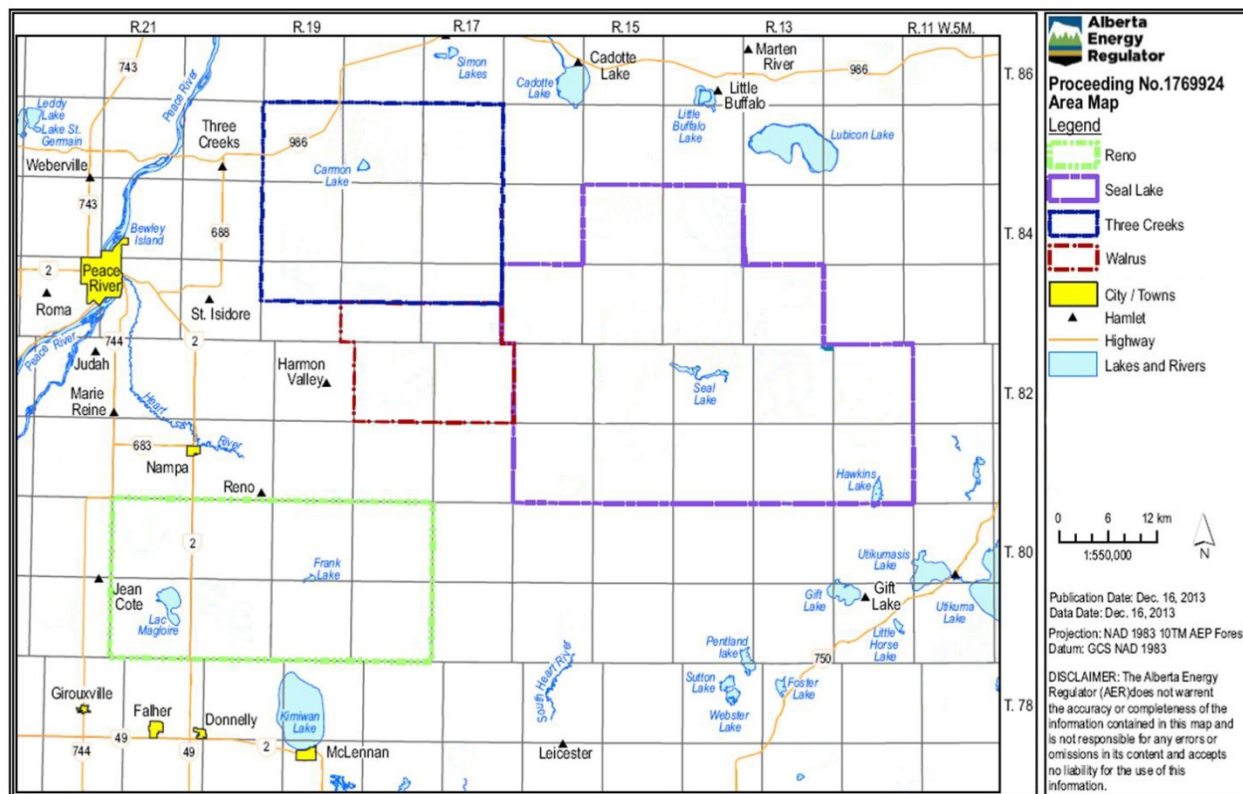


Figure 5. Peace River area

### 8.4.3 Application Requirements for the Peace River Area

- 12) Effective May 15, 2014, applicants for new heavy oil and bitumen operations in the Peace River area must submit documentation with their facility licence application that includes
  - a) a process-flow diagram that shows that all casing gas and tank-top gas will be captured and flared, incinerated, or conserved;
  - b) confirmation that there is no total continuous venting;
  - c) details on any compressor associated with the vapour recovery unit regardless of its size; and
  - d) any other information requested by the AER.
  
- 13) In order to be compliant with [Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting](#), licensees of existing heavy oil and bitumen facilities in the Peace River area that are currently venting casing gas or tank-top gas must amend the facility licence.

Heavy oil and bitumen operations in the Peace River area that are exempt from *Directive 056* licensing must still meet the Peace River–area requirements in [Directive 060](#) for the capture and flaring, incinerating, or conserving of all casing gas and tank-top gas.

## 8.5 Application Requirements for Activities Within the Boundary of a Regional Plan

The AER is legally obligated to act in compliance with any approved regional plans under the [\*Alberta Land Stewardship Act\*](#). To ensure this compliance, the AER requires any applicant seeking approval for an activity that would be located within the boundary of an approved regional plan to meet the requirements below.

- 14) For an activity to be located within the boundary of an approved regional plan, the applicant must assess
  - a) whether the activity would also be located within the boundaries of a designated conservation area, a provincial park, a provincial recreation area, or public land area for recreation and tourism and, if so, whether the mineral rights associated with the activity are subject to cancellation;
  - b) whether the 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 plan; and
  - c) how the 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 the exceedance of a regional trigger or limit.
- 15) The applicant must retain the information for requirement 14 at all times and provide it on request unless otherwise indicated below. The information must be sufficient to allow the AER to assess an application under the applicable regional plan.
- 16) The applicant must submit the information from requirement 14 if the proposed activity to be located within the boundary of an approved regional plan
  - a) is also 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) is inconsistent with the land uses established in the applicable regional plan or any of the outcomes, objectives, and strategies in that same plan;
  - c) may result in the exceedance of a trigger or limit or contravene a notice issued in response to an exceedance of a trigger or limit; or
  - d) is “incidental” to previously approved and existing activities.
- 17) If the applicant believes that its proposed activity is permitted under the applicable regional plan because it is incidental to previously approved and existing activities, the applicant must provide information to support its position.

The AER has no authority to waive compliance with or vary any restriction, limitation, or requirement regarding a land area or land use under a regional plan. Applicants that wish to seek this type of relief must apply directly to Alberta's Land Use Secretariat established under the [Alberta Land Stewardship Act](#). The stewardship minister may, on application and by order, vary the requirements of a regional plan.



## Appendix 1 Definitions

<b>abandoned well</b>	A well that has been drilled, abandoned, cut, and capped at surface.
<b>abandonment</b>	The permanent dismantlement of a well, pipeline, or facility in the manner prescribed by the regulations; includes any measures required to ensure that the well, pipeline, or facility is left in a permanently safe and secure condition.
<b>acid gas</b>	Gas that is separated in the treating of solution or nonassociated gas that contains hydrogen sulphide (H <sub>2</sub> S), totally reduced sulphur compounds, or carbon dioxide (CO <sub>2</sub> ).
<b>applicant/licensee</b>	The company responsible for the accuracy and completeness of the application and all supporting information. Upon licence approval, the applicant becomes the licensee and bears responsibility for the construction and safe operation of the facility, pipeline, or well. The licensee is also responsible for the decommissioning, abandonment, and reclamation of the facility, pipeline, or well.
<b>battery</b>	<i>See gas battery and oil/bitumen battery.</i>
<b>bitumen</b>	Bitumen may be defined by specific gravity or API units or by the well's location within the designated oil sands areas.
<b>blending</b>	The combination of similar products with different H <sub>2</sub> S contents for the purpose of maintaining a lower H <sub>2</sub> S content in the blended stream. Blending of liquids with gases is not permitted for pipelines.
<b>blowout</b>	A well where there is an unintended flow of wellbore fluids (oil, gas, water, or other substance) at surface that cannot be controlled by existing wellhead or blowout prevention equipment, or a well that is flowing from one formation to other formations (underground blowout) that cannot be controlled by increasing the fluid density. Control can only be regained by installing additional or replacing existing surface equipment to allow shut-in or to permit the circulation of control fluids, or by drilling a relief well.
<b>coalbed methane gas</b>	Natural gas that is found in coal.
<b>coalbed methane well</b>	Any well intended to produce or producing coalbed methane.
<b>compressor station/site</b>	Service equipment intended to maintain or increase the flowing pressure of the gas that it receives from a well, battery, or gathering system before delivery to market or other disposition.
<b>condensate</b>	A hydrocarbon liquid recovered either from a natural gas well or at some point in the field handling system consisting primarily of pentane and heavier hydrocarbons.

<b>construction (facilities)</b>	When any equipment associated with a licence for the facility is brought to the site or when a ground disturbance required for the facility equipment is initiated.
<b>consultant</b>	A person or corporation authorized by an applicant to prepare its application. The applicant is still responsible for the accuracy and completeness of the application if filed on its behalf by a consultant.
<b>confirmation of nonobjection</b>	A statement made by a person that confirms there is no objection to the AER granting a licence for the proposed energy development.
<b>critical sour well</b>	The AER designation of a well for drilling purposes with an H <sub>2</sub> S release rate greater than or equal to 2.0 m <sup>3</sup> /second or other wells with a lesser H <sub>2</sub> S release rate in close proximity to an urban centre.
<b>Crown disposition</b>	The administrative and operating conditions assigned for use of public lands in the form of a lease, licence, permit, or letter of authority; administered by AEP.
<b>Crown disposition holder</b>	A person or party that has been assigned use of public lands (e.g., lease, licence, or permit) issued under the provisions of the <a href="#">Public Lands Act</a> .
<b>custom treating plant</b>	A system or arrangement of tanks and other surface equipment receiving oil/water emulsion exclusively by truck for separation prior to delivery to market or other disposition.
<b>dehydrator</b>	Equipment designed to remove water from raw gas.
<b>design capacity</b>	The maximum capable throughput of volumes based on the engineering design of all on-site equipment associated with the facility.
<b>directionally drilled well</b>	A well drilled on an angle from a surface location to a subsurface location some lateral distance away from the surface location of the well.
<b>drilling spacing unit</b>	<p>The drilling spacing unit for a well is</p> <ul style="list-style-type: none"><li>• the surface area of the drilling spacing unit and the subsurface vertically beneath that area or,</li><li>• where the drilling spacing unit is prescribed with respect to a specified pool or geological formation, member, or zone, the pool, geological formation, member, or zone vertically beneath that area.</li></ul> <p>The normal drilling spacing unit for an oil well is one quarter-section. The normal drilling spacing unit for a gas well is one section. A drilling spacing unit does not include the area of a road allowance.</p>
<b>emergency planning zone (EPZ)</b>	A geographic area surrounding a well, pipeline, or facility containing hazardous product that requires specific emergency response planning by the licensee.



<b>emergency response plan (ERP)</b>	A comprehensive plan to protect the public, including criteria for assessing an emergency situation and procedures for mobilizing response personnel and agencies and establishing communications and coordination.
<b>emulsion</b>	A combination of two immiscible liquids or liquids that do not mix together under normal conditions.
<b>energy development</b>	Any construction or operation of wells, pipelines, or facilities to extract or deliver energy resources.
<b>expectations</b>	Recommended best practices or guidelines.
<b>environment</b>	All components of the earth, including air, land, and water; all layers of the atmosphere; all organic and inorganic matter and living organisms; and interacting natural systems.
<b>facility</b>	Any building, structure, installation, equipment, or appurtenance (excluding wells and pipelines) over which the AER has jurisdiction and that is connected to or associated with the recovery, development, production, handling, processing, treatment, or disposal of hydrocarbon-based resources or any associated substances or wastes.
<b>flame-type equipment</b>	Any electric or fired heating equipment using an open flame, electric arc, or element—includes a space heater, torch, heated process vessel, boiler, electric arc, open flame welder, and open element electric heater or appliance.
<b>gas battery</b>	A system or arrangement of tanks and other surface equipment (including interconnecting piping) that receives the effluent from one or more wells that might provide measurement and separation, compression, dehydration, dew point control, H <sub>2</sub> S scavenger where <0.1 t/d of sulphur is being treated, line heater or other gas handling functions before the delivery to market or other disposition. This does not include gas processing equipment that recovers more than 2 m <sup>3</sup> /d of liquids or processes more than 0.1 t/d of sulphur.
<b>gas fractionating plant</b>	An arrangement of equipment to reprocess a natural gas liquid (NGL) inlet for the extraction of liquids.
<b>gas processing</b>	The changing of the composition of raw natural gas either at processing facilities at the gas field or at straddle plants located on pipeline systems.
<b>gas processing plant</b>	A system or arrangement of equipment used for the extraction of hydrogen sulphide, helium, ethane, natural gas liquids, or other substances from raw gas; does not include a wellhead separator, treater, dehydrator, or production facility that recovers <2 m <sup>3</sup> /day of hydrocarbon liquids without using a liquid extraction process (e.g., refrigeration, desiccant). In addition, does not include an arrangement of equipment that removes small amounts of sulphur (<0.1 tonne/day) through the use of nonregenerative scavenging chemicals that generate no hydrogen sulphide or sulphur dioxide.

<b>gas well</b>	A well that produces primarily gas from a pool or portion of a pool wherein the hydrocarbon system is gaseous or exhibits a dew point reduction of pressure, or any well so designated by the AER.
<b>hand delivered</b>	Delivering documents directly to a participant at their place of residence or place of business.
<b>high-vapour-pressure (HVP) pipeline</b>	A pipeline system conveying hydrocarbons or hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure greater than 110 kPa absolute at 38°C, as determined using the Reid method (see ASTM D323). Some examples are liquid ethane, ethylene, propane, butanes, and pentanes plus.
<b>hydrogen sulphide (H<sub>2</sub>S)</b>	A naturally occurring gas found in a variety of geological formations and also formed by the natural decomposition of organic matter in the absence of oxygen. H <sub>2</sub> S is colourless, has a molecular weight that is heavier than air, and is extremely toxic. In small concentrations it has a rotten egg smell and causes eye and throat irritation.
<b>injection/disposal facility</b>	A system or arrangement of surface equipment associated with the injection or disposal of any substance through one or more wells for the purpose of water disposal or enhanced oil recovery.
<b>landowner</b>	<p>The person in whose name a certificate of title has been issued pursuant to the <a href="#">Land Titles Act</a> or, if no certificate of title has been issued, the Crown or other body administering the land.</p> <p>In the case of Métis land, the person registered in the Métis Settlements Land Registry as owner of the Métis title pursuant to the <a href="#">Métis Settlements Land Registry Regulation</a>.</p>
<b>large diameter/high pressure hydrocarbon pipeline</b>	A hydrocarbon pipeline with both an outside diameter equal to or greater than 323.9 mm and an MOP equal to or greater than 3475 kPa.
<b>level designation</b>	A designation that stipulates different separation or setback distances for wells, pipelines, and facilities for land-use and public-safety purposes.
<b>licensee</b>	The holder of a facility, pipeline, or well licence according to the records of the AER—includes a trustee or receiver-manager of property of a licensee (also see Applicant).
<b>line heater</b>	Equipment installed at either the well-site lease or along a pipeline right-of-way to prevent the formation of gas hydrates.
<b>liner</b>	A tubular product that is inserted into buried pipelines to form a corrosion-resistant barrier or separate free-standing pressure-containing pipe.

<b>local authority</b>	Council of a city, town, village, or municipal district, or in the case of an improvement district or special area, the Minister of Municipal Affairs, the council of a settlement under the <a href="#">Métis Settlements Act</a> , or the band council of a First Nations reserve.
<b>location exemption (LE) code</b>	A code that identifies cases when there is more than one wellbore or facility on the smallest land area described by the Dominion Land Survey system.
<b>lost circulation</b>	The loss of drilling fluids from the wellbore into permeable formations penetrated during drilling of the well.
<b>minimum information requirements</b>	The project-specific details that an applicant must provide to all parties in accordance with the participant involvement guidelines.
<b>multiwell facility</b>	A battery (oil, gas, or bitumen) or satellite handling the production from multiple zones being produced in segregation from one wellbore; inlets for more than one well are located and being produced at a battery or satellite at one surface location; multiple single-well batteries or satellites are operated within one surface lease.
<b>nonobjection</b>	The party has been personally consulted or notified of the project, has fully understood the details, has no outstanding concerns or objections, and does not oppose the AER issuing a licence for the proposed energy development.
<b>nonroutine</b>	An application is nonroutine if the applicant cannot meet requirements or chooses to apply for a regulatory relaxation; all participant involvement requirements have not been met; outstanding concerns or objections exist; the applicant proposes to implement new technology; the application is designated nonroutine (i.e., a new category C or D plant, any category E application).
<b>notification</b>	The distribution of project-specific information to participants.
<b>occupant</b>	A person other than the owner who is in actual possession of land; a person who is shown on a certificate of title or by contracts as having an interest in the land that confers a right to occupy the land; in the case of Métis land, a person having a right or interest in land recorded on the Métis title register pursuant to the <a href="#">Métis Settlements Land Registry Regulation</a> ; the holder of a permit for a coal mine.
<b>oil/bitumen battery</b>	A system or arrangement of tanks or other surface equipment or devices receiving the effluent of one or more wells for the purpose of separation and measurement prior to the delivery to market or other disposition.
<b>oil effluent</b>	Oil, gas, and water in any combination produced from one or more oil wells or recombined oil well fluids that may have been separated in passing through surface facilities.

<b>oil and gas energy development</b>	Any category type of facility, pipeline, and well requiring licensing under <i>Directive 056</i> .
<b>oil well</b>	A well that produces primarily liquid hydrocarbons from a pool or a portion of a pool wherein the hydrocarbon system is liquid or exhibits a bubble point on reduction of pressure, or any well so designated by the AER.
<b>oil loading/unloading facility (truck terminal)</b>	A system or arrangement of tanks and other surface equipment receiving crude oil by truck for the purpose of delivering crude oil into a pipeline.
<b>oil sands scheme approval number</b>	The number assigned an approval of a scheme or operation for the recovery of oil sands or crude bitumen under the <a href="#"><i>Oil Sands Conservation Act</i></a> .
<b>oil satellite</b>	An arrangement of surface equipment (not including oil storage tanks) located some distance between a number of wells and the main battery that will receive the effluent and separate and measure the production from each well, after which the fluids are recombined and piped to the main battery for further treatment; water handling equipment may be included.
<b>oilfield waste</b>	An unwanted substance or mixture of substances generated from the construction, operation, or reclamation of wells, facilities, and pipelines.
<b>oilfield waste management facility</b>	A facility whose operation is approved by the AER. Includes a waste processing facility, a waste storage facility, a waste transfer station, a surface facility associated with a disposal well, a biodegradation facility, an oilfield landfill, a thermal treatment facility, and any other facility for the processing, treatment, storage, disposal, or recycling of oilfield waste.
<b>operator</b>	A person or company that has control of or undertakes the day-to-day operations and activities of a facility, pipeline, or well, whether or not that person is also the licensee for the facility, pipeline, or well.
<b>partial pressure</b>	The pressure exerted by one component of a natural gas mixture when isolated in a container.
<b>participant</b>	An organization, community, group, or individual with a stake in the discovery, development, and delivery of Alberta's resources.
<b>participant involvement</b>	Participant involvement encompasses all aspects of public, industry, and regulator interactions and communications. It means that each organization, community, group, and individual with a stake in the discovery, development, and delivery of Alberta's resources may be a participant.
<b>perforation</b>	The holes placed through the casing and cement into the formation using a perforation gun or by cutting the casing and cement using sand-laden fluids to expose a formation.
<b>personal consultation</b>	Consultation through face-to-face visits or telephone conversations with identified parties and providing the required information packages.

<b>pipeline abandonment</b>	The permanent deactivation of a pipeline, whether it is left in place or removed.
<b>pipeline base map</b>	The plan produced by the AER on a township or smaller geographic area basis that shows pipelines currently licensed under the <a href="#">Pipeline Act</a> .
<b>pipeline discontinuation</b>	The temporary deactivation of a pipeline or part of a pipeline.
<b>pipeline installation</b>	Any equipment, apparatus, mechanism, machinery, or instrument incidental to the operation of the pipeline. This includes compressor stations, pump stations, line heaters (categories C and D), oil loading/unloading facilities, and tank farms associated with pipelines carrying process sales product.
<b>pipeline leak</b>	The escape of substance from a pipeline.
<b>pipeline right-of-way plan</b>	A scaled sketch plan of the pipeline right-of-way that includes Alberta township survey (ATS) detail and identifies land ownership, water body crossing, and other directly adjacent or affected rights-of-way.
<b>pipeline removal</b>	The removal of an entire pipeline, including crossings of roads, railways, and watercourses.
<b>primary containment device</b>	A device used to physically contain materials produced, generated, and used by the upstream petroleum industry, including single-walled tanks and containers.
<b>processing equipment</b>	Equipment used for the extraction of components such as water, H <sub>2</sub> S, and liquids from gas or oil.
<b>process vessel</b>	A heater, dehydrator, separator, treater, and any vessel used in the processing or treatment of produced gas or oil.
<b>project</b>	A network of facilities, pipelines, and wells that connects to a common facility.
<b>public facility</b>	A public building, such as a hospital, rural school, or major recreational facility, situated outside of an urban centre that can accommodate more than 50 individuals or that requires additional transportation to be provided during an evacuation.
<b>public notice</b>	In accordance with the <a href="#">Alberta Energy Regulator Rules of Practice</a> , the delivery, circulation, or advertising by the AER of a notice stating that the AER might take action in a proceeding specified in the notice. The cost of advertising public notices is borne by the applicant.
<b>publicly used development</b>	Places where the presence of 50 individuals or fewer can be anticipated (e.g., places of business, campgrounds, cottages, churches, and other locations created for use by the nonresident public).

<b>pump station</b>	A system of equipment located at intervals along a main pipeline to maintain flow to the receipt point.
<b>re-entry</b>	The re-entry of an abandoned wellbore by a company other than the original licence holder.
<b>refer status</b>	A corporate status indicator noting the licensee's inability or unwillingness to comply with requirements. This status will be considered by the AER when deciding to approve or deny any pending or future applications to the AER involving the licensee.
<b>release</b>	Any unintended discharge of product to the environment from a well, facility, or pipeline.
<b>requirement</b>	A rule that industry has an obligation to meet.
<b>residence</b>	A dwelling that is occupied full time or part time.
<b>resident</b>	A person occupying a residence on a temporary or permanent basis.
<b>resumption of drilling operations</b>	Re-entry of an existing wellbore by the licensee, whether abandoned or not, for the purpose of deepening, whipstocking, recompleting (abandoned well only), or horizontal recompletion.
<b>right-of-way</b>	The land upon which a legal right-of-way is granted over another person's property. This right can be acquired by means of an easement or by a right-of-entry order.
<b>routine application</b>	One where the applicant met all requirements (including participant involvement), there are no outstanding public or industry concerns, and regulatory waivers or relaxations are not requested.
<b>setback distance</b>	The minimum required distance between a well, pipeline, or other facility and land-use development such as a surface improvement, permanent dwelling, unrestricted country development, urban centre, or public facility.
<b>solution gas</b>	Gas that is dissolved in solution with produced oil or bitumen.
<b>stock tank vapours</b>	The small volume of dissolved gas present in storage tanks.
<b>straddle plant</b>	Surface equipment intended to reprocess marketable gas for the purpose of ethane extraction.
<b>sulphur emissions</b>	The release of sulphur-containing compounds, including SO <sub>2</sub> , H <sub>2</sub> S, and total reduced sulphur compounds.

<b>surface development</b>	Dwellings that are occupied full time or part time, publicly used development, public facilities such as campgrounds and places of business, and any other surface development where the public may gather on a regular basis. Includes residences immediately adjacent to the EPZ and those from which dwellers are required to egress through the EPZ.
<b>surface improvement</b>	A railway, pipeline, canal, or other right-of-way, road allowance, surveyed roadway, dwelling, industrial plant, aircraft runway or taxiway, buildings used for military purposes, permanent farm buildings, school, or church.
<b>suspension</b>	The temporary cessation of operations at a well, pipeline, or facility in the manner prescribed by the regulations or directed by the AER—includes any measures required to ensure that the well, pipeline, or facility is left in a safe and secure condition.
<b>tank</b>	A device designed to contain materials produced, generated, and used by the petroleum industry that is constructed of impervious materials.
<b>tank farm</b>	A system or arrangement of tanks or other surface equipment associated with the operation of a pipeline and that may include measurement equipment and line heaters but does not include separation equipment or storage vessels at a battery approved under the <a href="#"><i>Oil and Gas Conservation Act</i></a> .
<b>temporary facility or pipeline</b>	A facility or pipeline that will be in use for a period of 12 months or less.
<b>terminating formation</b>	For the purpose of well licensing, the deepest formation in which the well will terminate and which the applicant has the right to produce for all intended purposes of the well.
<b>unrestricted country development</b>	Any collection of permanent dwellings situated outside of an urban centre and having more than eight permanent dwellings per quarter section.
<b>unsatisfactory event</b>	A contravention of a regulation or requirement.
<b>urban authority</b>	The administrator of a city, town, new town, village, summer village, or hamlet with not fewer than 50 separate buildings, each of which must be an occupied dwelling or other incorporated centre.
<b>urban centre</b>	A city, town, village, summer village, or hamlet with no fewer than 50 separate buildings, each of which must be an occupied dwelling, or any similar development the AER may designate as an urban centre.

<b>water body</b>	<p>Natural or manmade; contains or conveys water continuously, intermittently, or seasonally.</p> <p>A natural water body is any location where water flows or is present, whether the flow or the presence of water is continuous, seasonal, intermittent, or occurs only during a flood. This includes the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, or other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills.</p> <p>Examples of a manmade water body include a canal, drainage ditch, reservoir, dugout, or other manmade surface feature.</p>
<b>well spacing</b>	<p>The normal drilling spacing unit for a gas well is one section (1 well per 256 hectares); for an oil well it is one quarter-section (4 wells per 256 hectares).</p>
<b>working interest participant</b>	<p>A person who owns a beneficial or legal undivided interest in a well or facility under agreements that pertain to the ownership of that well or facility.</p>