

ALBERTA

A glossary of titles, documents, agencies, acronyms, and web addresses is provided at the end of this document.

I. Administration

1. Agency regulating oil and gas exploration/production: Alberta Energy Regulator, [AER](#)
2. For regulatory updates, please refer to [AER](#)

Docketing procedure: A proceeding means a matter brought before the [AER](#) by application, by request for a regulatory appeal, by the [AER](#) on its own initiative, or at the request of the Lieutenant Governor in Council (government). A proceeding may include a hearing into the matter before a panel of hearing commissioners.

- a. Emergency orders: The AER has extensive powers to respond to emergency situations, including closing areas to travel, issuing stop orders, and taking control of operations. Orders may be expressed orally or in writing, depending on circumstances as set out in the applicable legislation.
 - b. Notice: Public notice is required for all applications filed with the AER, and the notice must include the subject matter of the application and the timelines for filing a statement of concern. Notice must also be given if a hearing is to be held. A notice of hearing provides information about the application, the location and schedule of the hearing, directions for finding information about the application and how to request participation, and instructions on making submissions for consideration at the hearing.
3. Agency regulating air emissions: [AEP](#)
 4. Agency regulating water quality: [AEP](#)

II. License

1. Licences required: “Licences” for oil and gas activity come in many forms, such as licences, approvals, certificates, leases, etc.
2. Conditions of licences: <https://aer.ca/regulating-development/project-application/application-processes>

III. Bond/Surety

<https://aer.ca/regulating-development/project-closure/liability-management-programs-and-processes>

1. Purpose of surety (financial security): Ensure that operators carry financial burden of decommissioning and reclaiming their energy infrastructure.
2. Decommissioning and Reclamation: Financial Security may be required to cover decommissioning and reclamation costs if a company cannot meet its obligations.
3. Compliance bond required: No. Security ensures compliance with end-of-life obligations.
4. Types of surety (financial security) accepted: Cash, Irrevocable letter of credit, certified cheques, bank drafts.
5. Conditions of bond: N/A. The AER currently does not accept surety bonds as a form of security.
 - Amount per well or facility: N/A
 - Amount of blanket bond: N/A.

IV. Land Leasing Information

Obtaining Mineral Rights:

Alberta Department of Energy contact: *Donna Crawford*, manager of P&NG Agreement Sales at (780) 427-8933 or Donna.Crawford@gov.ab.ca

Alberta owns 81 per cent of the province's mineral rights. The remaining 19 per cent are "Freehold" mineral rights owned by the federal government on behalf of First Nations or in national parks, and by individuals and companies. Owners of Freehold mineral rights, except the federal government, pay a tax to the Crown based on the production of oil or gas from their holdings. The tax ensures that the owners contribute to Alberta's infrastructure and regulatory costs.

<http://www.energy.alberta.ca/Tenure/867.asp>

1. Leasing method: public posting with closed bid system
2. Notice method: Determined by policy and set out in information letters. If it is notice for sale parcels, it is via a public offering notice, published eight weeks before the sale
3. Minimum bidding \$ (per acre): \$2.50 per hectare for a lease, \$1.25 per hectare for a licence

4. Qualification of the bidder: eligible corporation or individual
5. Provincial statutes:
 - [Mines and Minerals Act](#) (M-17 RSA 2000)
 - *Mines and Minerals Administration Regulation* (AR 262/1997)
 - *Petroleum and Natural Gas Tenure Regulation* (AR 263/1997)
 - *Crown Mineral Registration Regulation* (AR 264/1997)
6. Maximum acres:
 - 9 600 acres in the Plains Region
 - 20 480 acres in the Northern Region
 - 23 040 acres in the Foothills Region
7. Royalty rates:
 - Gas royalty = 5–36%
 - Oil royalty = 0–40%

The regulations relating to the above are the *Petroleum Royalty Regulation*, 2009 and the *Natural Gas Royalty Regulation*, 2009.
8. Agency in control of leasing: Alberta Energy, Tenure

V. Setbacks

1. What rules/regulations/policies does your jurisdiction have in regard to well setbacks from private residences and/or other habitable structures for use by humans or animals?
 - *Directive 056: Energy Development Applications and Schedules* <https://www.aer.ca/regulating-development/rules-and-directives/directives/directive-056>
 - *Directive 026: Setback Requirements for Oil Effluent Pipelines* <https://www.aer.ca/regulating-development/rules-and-directives/directives/directive-026>
 - *Directive 079: Surface Development in Proximity to Abandoned Wells* <https://www.aer.ca/regulating-development/rules-and-directives/directives/directive-079> sets out requirements for locating and testing abandoned wells where there may be conflict with proposed surface structures and where surface structures already exist close to an abandoned well. It includes abandoned well setback requirements, the responsibility of the licensee of abandoned wells, and the abandoned well locating and testing protocol.
2. Are there other sources of information on this matter that you could identify?
 - EnerFAQs explains [AER](#) setbacks: <https://www.aer.ca/providing-information/news-and-resources/enerfaqs-and-fact-sheets/enerfaqs-setbacks>

VI. Spacing

1. Spacing requirements: Part 4, "Drilling Spacing Units and Target Areas," *Oil and Gas Conservation Rules*
http://www.gp.alberta.ca/1266.cfm?page=1971_151.cfm&leg_type=Regs&isbncln=9780779785049&display=html
 - (a) Density: Unless the regulator otherwise prescribes, the surface area of a drilling spacing unit for an oil well is one quarter section and for a gas well is one section.
 - (b) Lineal: interval distances dictated by target area. AER *Bulletin 2014-27* <https://www.aer.ca/regulating-development/rules-and-directives/bulletins/aer-bulletin-2014-27> provides a "Reminder on the Rules and Procedures for Wells in Buffer Zones of Holdings and Units with Special Spacing and Special Well Spacing Applications."
2. Exceptions:
 - (a) Basis: The need for additional wells to improve recovery
 - (b) Approval: issued by spacing unit order

VII. Pooling

1. Authority to establish voluntary: not applicable
2. Authority to establish compulsory: section 80 of the [*Oil and Gas Conservation Act*](#)

VIII. Unitization

1. Compulsory unitization of all or part of a pool or common sources of supply: No authority to order compulsory unitization.
2. Minimum percentage of voluntary agreement before approval of compulsory unitization:
 - (a) Working interest: not applicable.
 - (b) Royalty interest: not applicable.

IX. Drilling Permit

(Permits referred to as licences in Alberta)

1. Permit required for:

- (a) Drilling a producing or service well: Under the [Oil and Gas Conservation Act](#) a “well” means “an orifice in the ground completed or being drilled:
- (i) for the production of oil or gas,
 - (ii) for injection to an underground formation
 - (iii) as an evaluation well or test hole, or
 - (iv) to or at a depth of more than 150 metres, for any purpose, but does not include one to discover or evaluate a solid inorganic mineral and that does not or will not penetrate a stratum capable of containing a pool or oil sands deposit.”

Section 11 of the [Oil and Gas Conservation Act](#) and *Directive 056: Energy Development Applications and Schedules*, October 2003 version; Part 2, “Licensing of Wells,” in the *Oil and Gas Conservation Rules* set out licence requirements for a well.

- (b) Seismic drilling: not applicable
- (c) Recompletion: section 3.010 of the [Oil and Gas Conservation Rules](#). Note: licence required for re-entry of abandoned wells (i.e., re-entry/resumption and deepening as per *Directive 056: Energy Development Applications and Schedules*, section 7.9).
- (d) Plugging and abandoning: not applicable when following [AER Directive 020: Well Abandonment](#) in accordance with sections 3.010(7) and 3.068(2) of the [Oil and Gas Conservation Rules](#), which require the licensee to conduct abandonment, casing removal, zonal abandonments, and plug backs in accordance with [AER Directive 020: Well Abandonment](#).

2. Permit fee:

- (a) Drilling: not applicable
- (b) Seismic drilling: not applicable
- (c) Recompletion: not applicable
- (d) Plugging and abandoning: not applicable

3. Require filing report of work performed:

- (a) [Directive 059: Well Drilling and Completion Data Filing](#)

Requirements.

- (b) Drill cuttings are required to be submitted as per the [Oil and Gas Conservation Rules](#), section 11.010. Drill cutting requirements are to be identified at the time of licensing as per *Directive 056: Energy Development Applications and Schedules*, section 7.8.8, Table 9 and 11. Drill cuttings are to be submitted to the Core Research Centre.
 - (c) Well core: section 11.030 of the [Oil and Gas Conservation Rules](#) sets out requirements for submission of well core. Required well core is to be submitted to the Core Research Centre.
 - (d) Reservoir Evaluation/Productivity Studies submissions are a requirement of the [Oil and Gas Conservation Rules](#), section 11.040. These studies are conducted on well core and drill cuttings stored at the Core Research Centre. Further collection of additional studies is supported in the [Material Sampling Procedure](#).
 - (e) Geological / Other Studies submissions are a requirement of the Material Sampling Procedure. These submissions include artifacts created from the well core or drill cuttings, which are stored and available at the Core Research Centre.
4. Sundry notices used: The following are some of the many notices the AER requires:
- (a) Notification is made to the AER using the Digital Data Submission (DDS) system before drilling activity (spud), and before both zonal and wellbore abandonments.
 - (b) For public lands dispositions, authorizations, and approvals, notification of entry is normally a requirement for lease construction (this could be months before drilling). There are also requirements for disclosure reporting of noncompliance.
 - (c) Related to incidents where potentially compliance with requirements is not achieved, the regulated party must notify the AER. These sorts of requirements are throughout the AER's regulatory requirements. For example, under *Directive 083: Hydraulic Fracturing – Subsurface Integrity*, for hydraulic fracturing, well licensees must immediately notify the appropriate AER field centre of a communication event (including pressure pulses) with an offset well, a nonsaline aquifer, or a water well. For example, under section 110 of Alberta's *Environmental Protection and Enhancement Act (EPEA)*, "a person who releases or causes or permits the release of a substance into the

environment that may cause, is causing or has caused an adverse effect shall, as soon as that person knows or ought to know of the release” must report it to the director.

X. Vertical Deviation

1. Regulation requirement:

- (a) When is directional survey necessary: Under *Directive 036: Drilling Blowout Prevention Requirements and Procedures* section 17.4, a directional survey must be conducted at a maximum interval of 60 meters if the inclination is greater than 3 degrees.
- (b) Filing of survey required: Yes, under section 6.030 of the [Oil and Gas Conservation Rules](#), “the licensee shall, immediately upon the making of a directional survey, send to the AER the report of the survey”.
- (c) Format of filing: Under *Directive 059: Well Drilling and Completion Data Filing Requirements* section 5.2, all directional surveys submitted to the AER must be final, and the AER will not accept intermediate, interim, and proposal directional surveys or deviation surveys in place of a directional survey report. Electronic copies must be in PDF format and submitted by e-mail to Directional.Surveys@aer.ca or WellDataServices@aer.ca as outlined in section 2.6 of *Directive 059: Well Drilling and Completion Data Filing Requirements*.

Other: Sections 4 and 5 of *Directive 080: Well Logging* outline logging requirements for deviated and horizontal wells.

XI. Casing and Tubing

1. Minimum amount required:

- (a) Surface casing: Under the *Oil and Gas Conservation Rules, Directive 008: Surface Casing Depth Minimum Requirements* outlines surface casing depth requirements and *Directive 010: Minimum Casing Design Requirements* sets out casing design requirements. Section 3 of *Directive 080: Well Logging* outlines requirements for logging of surface casing interval.
- (b) Production casing: Under the *Oil and Gas Conservation Rules, Directive 010: Minimum Casing Design Requirements* sets out casing design requirements.

2. Minimum amount of cement required:

- (a) Surface casing: Under the *Oil and Gas Conservation Rules, Directive 009: Casing Cementing Minimum Requirements* sets out surface casing cementing requirements.
 - (b) Production casing: Under the *Oil and Gas Conservation Rules, Directive 009: Casing Cementing Minimum Requirements* sets out production casing cementing requirements.
 - (c) Setting time: Under the *Oil and Gas Conservation Rules, Directive 009: Casing Cementing Minimum Requirements* sets out setting time related to cementing.
3. Tubing requirements:
- (a) Oil wells: Section 6.101 of the *Oil and Gas Conservation Rules* sets out tubing requirements
 - (b) Gas wells: Section 6.101 and section 7.050 (refers to packers/tubing) of the *Oil and Gas Conservation Rules* sets out tubing requirements

XII. Hydraulic Fracturing

1. Permitting:
- (a) Before drilling: Hydraulic fracturing is considered part of the drilling license application, therefore there is no specific permitting
 - (b) Before fracing: No permits are required for hydraulic fracturing. [Directive 083: Hydraulic Fracturing – Subsurface Integrity](#) sets out requirements related to well integrity, interwellbore communication, and the protection of nonsaline aquifers.
 - (c) How long before: not applicable
2. Reporting requirements:
- (a) Where reported:
 - Hydraulic fracturing notice form emailed to appropriate AER field centre and submitted through the [AER](#) DDS system using the field surveillance notification option ([Directive 083: Hydraulic Fracturing – Subsurface Integrity](#)).
 - Communication event (including pressure pulses) with an offset well, a nonsaline aquifer, or a water well is reported to the appropriate [AER](#) field centre for the location of development and emailed to the hydraulic fracturing administrator at

- HF_Notification@aer.ca ([Directive 083 : Hydraulic Fracturing – Subsurface Integrity](#)).
- Section 4 of *Directive 059: Well Drilling and Completion Data Filing Requirements* outlines the requirements for electronic submission of fracture intervals, fracture fluid composition, and water source data. This is reported to the AER via the DDS system.
- (b) When reported:
- Hydraulic fracturing notice must be provided to the [AER](#) at least five days before the pressure test of surface equipment for hydraulic fracturing operations (section 8 of *Directive 083: Hydraulic Fracturing – Subsurface Integrity*).
 - Well licensees must immediately notify the appropriate [AER](#) field centre of a communication event (including pressure pulses) with an offset well, a nonsaline aquifer, or a water well (under *Directive 083: Hydraulic Fracturing – Subsurface Integrity*).
 - *Well Drilling and Completion Data Filing* must be completed *Directive 059: Well Drilling and Completion Data Filing Requirements* sections 2.3 through 2.5 specify the following time limits for filing: electronic data must be filed via the DDS system within 30 day of the end of operations (i.e., conclusion of a drilling, completion, or well abandonment operation) and the PDF copies of the files must be submitted to through the designated information submission system (OneStop) within seven days of the electronic submission.
3. Source-water requirements: A licence under the *Water Act* is required before any diversion of nonsaline groundwater or surface water. Access to any water sources on public land also requires a disposition operational approval or a temporary field approval as applicable.
4. Mechanical integrity: [Directive 083: Hydraulic Fracturing – Subsurface Integrity](#) has requirements related to well integrity, interwellbore communication, and the protection of nonsaline aquifers.
- (a) Cementing log required: [Directive 020: Well Abandonment](#) sets out cement evaluation logging requirements or plug logging requirements.
 - (b) Pressure testing: *Directive 065: Resources Applications for Oil and Gas Reservoirs*:
<https://www.aer.ca/documents/directives/Directive065.pdf>.
 - (c) Pressure monitoring: *Directive 065: Resources Applications for Oil and Gas Reservoirs*:
<https://www.aer.ca/documents/directives/Directive065.pdf>.

- (d) Blowout preventer required: *Directive 036: Drilling Blowout Prevention Requirements and Procedures*
<https://www.aer.ca/regulating-development/rules-and-directives/directives/directive-036>

5. Disposal of flowback fluids:

- (a) Retaining pits: [*Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry*](#) encourages reuse and recycling of fracture flowback. An engineered containment pond is an example of an appropriate storage device.
- (b) Tanks: [*Directive 055: Storage Requirements for the Upstream Petroleum Industry*](#), section 2.2.
- (c) Approved discharge to surface water: Not allowed. Fracture flowback must be disposed of in accordance with oilfield waste requirements.
- (d) Underground injection: Under [*Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry*](#) for management of fracture flowback, deep-well disposal is an acceptable method of disposal, tracking requirements as per *Directive 047: Waste Reporting Requirements for Oilfield Waste Management Facilities*. *Directive 051: Injection and Disposal Wells – Well Classifications, Completions, Logging, and Testing Requirements*.

6. Chemical disclosure requirement:

- (a) Mandatory: Yes. [*Directive 059: Well Drilling and Completion Data Filing Requirements*](#), section 4.3.1, stipulates the fracture fluid composition reporting requirements.
- (b) Where disclosed: Industry disclosure is to the AER via the DDS system. (FracFocus.ca enables public viewing of provincial hydraulic fracturing fluid information.)
- (c) When disclosed (pre-fracing, post-fracing, both): Post-fracturing.
- (d) Time limit to disclose: *Directive 059: Well Drilling and Completion Data Filing Requirements*, sections 2.3 through 2.5, specify the time limits for filing information with the AER. Disclosure of records to the AER is required within 30 days after completion of the fracture operation on the well. Electronic data must be filed via the DDS system within 30 days of the end of operations, and the PDF copies of the files must be submitted through the designated

information submission system (OneStop) within seven days of the electronic submission.

- (e) Information required to be disclosed: Carrier fluid (type, volume), proppant (type, trade name, supplier, size, weight), additives (trade name, supplier, purpose, volume/weight), additive ingredients (chemical abstract services number / Hazardous Materials Information Review Commission number / trade secret claim), ingredient name / chemical family name, maximum concentration in additive and in hydraulic fracturing fluid. Additional information on sources of water used as carrier fluid.
- (f) Trade secret protection: No. However, only minimal information on the product needs to be submitted in accordance with *Directive 059: Well Drilling and Completion Data Filing Requirements*. However, under *Directive 059: Well Drilling and Completion Data Filing Requirements*, section 4.3.1, the AER “may, at its discretion and at any time, require licensees to provide additional information about component ingredients used in hydraulic fracturing operations regardless of whether such information is considered or has been identified as a trade secret.”
- (g) Required disclosure to health/emergency personnel: Yes

XIII. Underground Injection

- 1. Agencies that control the underground injection of fluids: the AER for injection associated with oil and gas development. [Directive 51: Injection and Disposal Wells – Well Classifications, Completions, Logging and Testing Requirements](#) (March 1994) outlines completion, logging, testing, monitoring, and application requirements for injection and disposal wells. It specifies procedures and practices designed to protect the subsurface environment, including all usable groundwater and hydrocarbon-bearing zones and *Directive 065: Resources Applications for Conventional Oil and Gas Reservoirs*.

XIV. Completion

- 1. Completion report required: Yes
 - (a) Time limit: 30 days
 - (b) Where submitted: AER—Submission is done electronically through the AER’s DDS system.
- 2. Well logs required to be filed:
 - (a) Time limit: Within one month of the rig release of the well, the

licensee must submit to the [AER](#) a copy of all well logs acquired at the well. Any additional well logs taken after rig release must be submitted within one month of the run date (*Directive 080: Well Logging*).

- (b) Where submitted: Under *Directive 080: Well Logging*, well logs are submitted to Information Management Branch. Inquiries can be made at [WellLogInquiries@aer.ca](mailto:WellLogInquiries@ aer.ca) or by calling 403-297-8952, option #5
 - (c) Confidential time period: Yes, in some cases section 12.150 of the *Oil and Gas Conservation Rules* provides confidentiality for one year.
 - (d) Available for public use: Yes in electronic format (TIFF/PDF, LAS), but subject to confidentiality provisions.
 - (e) Log catalog available: Product name is "Well Logs." It is available through the product and service catalogue at <http://www1.aer.ca/ProductCatalogue/230.html>
3. Multiple completion regulation: Section 3.060 of the *Oil and Gas Conservation Rules* and Part 15, "Certain Applications," of the *OGCR*.
- (a) Approval obtained: section 3.050 of the *Oil and Gas Conservation Rules*.
4. Commingling in wellbore: Yes
- (a) Approval obtained: commingling order (MU order)

XV. Oil Production

1. Definition of an oil well: "oil well" under section 1.020(2)(12)(i) of the [Oil and Gas Conservation Rules](#) means a well that produces primarily liquid hydrocarbons from a pool or portion of a pool in which the hydrocarbon system is liquid or exhibits a bubble point on reduction of pressure, and (ii) any well designated as an oil well by the Regulator.
2. Potential tests required: No testing required.
 - (a) Time interval: not applicable
 - (b) Witness required: not applicable
3. Maximum gas-oil ratio: Part 10, "Production Rates and Accounting," of the *Oil and Gas Conservation Rules*; Part 15, "Certain Applications," of the *OGCR*; and *Directive 65: Resources Applications for Conventional Oil and Gas Reservoirs*.

- (a) Provision for limiting gas-oil ratio: gas-oil ratio (GOR) penalties applied to oil wells not on good production practices (GPP). Pools with GPP status can be produced unrestricted by rate limitations or GOR penalties. In the development of such resources, operators are expected to produce the wells in accordance with good engineering practices to optimize oil recovery. Enhanced oil recovery scheme areas are automatically granted GPP. Once granted, the AER may rescind GPP approval if new information or technology shows that production under GPP may affect conservation or the rights of other mineral rights owners in the pool. See more at <http://www.aer.ca/applications-and-notice/application-process/good-production-practice>.
- (b) Exception to limiting gas-oil ratio: GPP or GOR penalty relief.
4. Bottomhole pressure test reports required: Under *Directive 040: Pressure and Deliverability Testing Oil and Gas Wells*, the following bottomhole pressure test reports are required and are to be submitted to the [AER](#) using the appropriate PAS (Pressure ASCII Standard) file format, e.g., GRD, TRG, and DST.
- Bottomhole Build-Up
 - Bottomhole Fall-Off
 - Drillstem Test
 - Flow and Build-Up
 - Static Gradient
 - Wireline Formation Test
- (a) Periodical bottomhole pressure surveys: *Directive 040: Pressure and Deliverability Testing Oil and Gas Wells*
- Initial pressure survey – This requirement is by well. All pressure and deliverability tests must be submitted within 90 days of completing field work.
 - Annual pressure survey – This requirement is by field and pool. Within the annual requirements, periodic submissions may be required by annual, biennial, triennial, or quadrennial testing requirements depending on field and pool circumstances.
5. Commingling oil in common facilities: *Directive 065: Resources Applications for Oil and Gas Reservoirs*, *Directive 007: Volumetric and Infrastructure Requirements*, and *Manual 011: How to Submit Volumetric Data to the AER*.
6. Measurement involving meters: Part 14, “Measurement,” of the *Oil and Gas Conservation Rules*, which references *Directive 017: Measurement*

*Requirements for Oil and Gas Operations and Directive 076: Operator Declaration Regarding Measurement and Reporting Requirements. Directive 076: Operator Declaration Regarding Measurement and Reporting Requirements sets out requirements for operators to declare the degree to which they have infrastructure in place to ensure compliance with [AER](#) measurement and reporting requirements. Instructions on how volumes are to be measured and reported are included in *Directive 017: Measurement Requirements for Upstream Oil and Gas Operations* and *Directive 007: Volumetric and Infrastructure Requirements.*”*

7. Production reports: Part 12, “Records and Reports,” of the *Oil and Gas Conservation Rules*, *Directive 007: Volumetric and Infrastructure Requirements*, *Directive 017: Measurement Requirements for Oil and Gas Operations*, and *Manual 011: How to Submit Volumetric Data to the AER*.
 - (a) By lease: not applicable
 - (b) By well: electronic submission to Petrinex
 - (c) Time limit: monthly

XVI. Gas Production

1. Definition of a gas well: under the [Oil and Gas Conservation Rules](#), section 1.020(2)(8)(i), “gas well” means a well that produces primarily gas from (a) a pool or portion of a pool in which the hydrocarbon system is gaseous or exhibits a dew point on reduction of pressure, or (b) coal by in situ gasification; and (ii) any well designated as a gas well by the Regulator.
2. Pressure base 101.325 KPa @ 15 degrees C.
3. Initial potential tests: Section 11.102 of the *Oil and Gas Conservation Rules* and in accordance with *Directive 040: Pressure and Deliverability Testing Oil and Gas Wells*.
 - (a) Time interval: Initial pressure and deliverability tests must be submitted within 90 days of completing field work while initial fluid analysis must be submitted within 45 days of test completion.
 - (b) Witness required: not applicable
4. Bottomhole pressure test reports required: Under *Directive 040: Pressure and Deliverability Testing Oil and Gas Wells*, the following bottomhole pressure test reports are required and are to be submitted to the [AER](#) using the appropriate PAS (Pressure ASCII Standard) file format, e.g., GRD, TRG, and DST.
 - Bottomhole Build-Up
 - Bottomhole Fall-Off
 - Drillstem Test

- Flow and Build-Up
- Static Gradient
- Wireline Formation Test

(a) Periodical bottomhole pressure surveys:

- I. Initial pressure survey – This requirement is by well. All pressure and deliverability tests must be submitted within 90 days of completing field work.
- II. Annual pressure survey – This requirement is by field and pool. Within the annual requirements, periodic submissions may be required by annual, biennial, triennial, or quadrennial testing requirements, depending on field and pool circumstances.

5. Commingling gas in common facilities: *Directive 065: Resources Applications for Oil and Gas Reservoirs*, *Directive 007: Volumetric and Infrastructure Requirements*, and *Manual 011: How to Submit Volumetric Data to the AER*. *Directive 017: Measurement Requirements for Oil and Gas Operations* has requirements related to surface commingling of gas before it is measured.

6. Measurement involving meters: Part 14, “Measurement,” of the *Oil and Gas Conservation Rules*, which references *Directive 017: Measurement Requirements for Oil and Gas Operations* and *Directive 076: Operator Declaration Regarding Measurement and Reporting Requirements*.

Directive 076: Operator Declaration Regarding Measurement and Reporting Requirements sets out requirements for operators to declare the degree to which they have infrastructure in place to ensure compliance with AER measurement and reporting requirements. Instructions on how volumes are to be measured and reported are included in *Directive 017: Measurement Requirements for Upstream Oil and Gas Operations* and *Directive 007: Volumetric and Infrastructure Requirements*.

7. Production reports: Part 12, “Records and Reports,” of the *Oil and Gas Conservation Rules*, *Directive 007: Volumetric and Infrastructure Requirements*, *Directive 017: Measurement Requirements for Oil and Gas Operations*, and *Manual 011: How to Submit Volumetric Data to the AER*.

(a) By lease: not applicable

(b) By well: electronic submission to Petrinex

(c) Time limit: monthly

Glossary of Titles, Documents, Agencies, Acronyms, and Web Addresses

The following lists keywords and titles and related acronyms used in this response to the IOGCC questionnaire and web addresses where available.

Note: The following does not include all regulatory instruments delivered by the AER.

Title, document, agency, etc.	Acronym (if applicable)	Web address
Provincial acts, regulations, and rules		http://www.qp.alberta.ca/Laws_Online.cfm
Alberta Responsible Energy Policy System	AREPS	http://www.areps.ca/
Government of Alberta	GoA	http://www.alberta.ca/
Alberta Energy Regulator	AER	http://www.aer.ca/
Alberta Environment and Parks	AEP	http://www.aep.alberta.ca/
Alberta Department of Energy	DoE	http://www.energy.alberta.ca/
Alberta Surface Rights Board	SRB	http://www.surfacerights.alberta.ca/
<i>Responsible Energy Development Act</i>	<i>REDA</i>	http://www.qp.alberta.ca/documents/Acts/r17p3.pdf
<p><u>REDA</u> energy enactments include</p> <ul style="list-style-type: none"> • Oil and Gas Conservation Act • Oil Sands Conservation Act • Coal Conservation Act • Gas Resources Preservation Act • Pipeline Act • Turner Valley Unit Operations Act • as well as all relevant rules and regulations 		https://www.aer.ca/regulating-development/rules-and-directives/acts-regulations-and-rules
<p><u>REDA</u> specified enactments include</p> <ul style="list-style-type: none"> • Water Act • Public Lands Act • Environmental Protection and Enhancement Act • Mines and Minerals Act • as well as all relevant regulations 		https://www.aer.ca/regulating-development/rules-and-directives/acts-regulations-and-rules
<i>Water Act</i>		http://www.qp.alberta.ca/documents/Acts/w03.pdf

<i>Public Lands Act</i>	PLA	http://www.qp.alberta.ca/documents/Acts/P40.pdf
<i>Environmental Protection and Enhancement Act</i>	EPEA	http://www.qp.alberta.ca/documents/Acts/E12.pdf
<i>Mines and Minerals Act</i>	MMA	http://www.qp.alberta.ca/documents/acts/m17.pdf
<i>Business Corporations Act</i>		http://www.qp.alberta.ca/documents/Acts/B09.pdf
<i>Oil and Gas Conservation Act</i>	OGCA	http://www.qp.alberta.ca/documents/Acts/O06.pdf
<i>Oil Sands Conservation Act</i>		http://www.qp.alberta.ca/documents/Acts/O07.pdf
<i>Pipeline Act</i>		http://www.qp.alberta.ca/documents/Acts/p15.pdf
<i>Turner Valley Unit Operations Act</i>		http://www.qp.alberta.ca/documents/Acts/T09.pdf
<i>Alberta Energy Regulator Rules of Practice</i>		http://www.qp.alberta.ca/documents/Regs/2013_099.pdf
<i>Oil and Gas Conservation Rules</i>		http://www.qp.alberta.ca/documents/Regs/1971_151.pdf
<i>Activities Designation Regulation</i>		http://www.qp.alberta.ca/documents/regs/2003_276.pdf
<i>Environmental Assessment (Mandatory and Exempted Activities) Regulation</i>		http://www.qp.alberta.ca/documents/Regs/1993_111.pdf
<i>Mines and Minerals Administration Regulation</i>		http://www.qp.alberta.ca/documents/Regs/1997_262.pdf
<i>Petroleum and Natural Gas Tenure Regulation</i>		http://www.qp.alberta.ca/documents/Regs/1997_263.pdf
<i>Crown Mineral Registration Regulation</i>		http://www.qp.alberta.ca/documents/Regs/1997_264.pdf
<i>Public Land Administration Regulation</i>	PLAR	http://www.qp.alberta.ca/documents/Regs/2011_187.pdf
<i>PLAR Approvals and Authorizations Administrative Procedures</i>		http://aep.alberta.ca/forms-maps-services/forms/lands-forms/aep-forms/documents/ApprovalsAuthorizationsProcedures-Jan2014.pdf
<i>Water Act Code of Practice for Pipelines and Telecommunications Lines Crossing a Water Body</i>		http://www.qp.alberta.ca/documents/codes/PIPELINE.PDF
<i>Water Act Code of Practice for Watercourse Crossings</i>		http://www.qp.alberta.ca/documents/codes/CROSSING.PDF
<i>Water Act Code of Practice for Outfall Structures on Water Bodies</i>		http://www.qp.alberta.ca/documents/codes/OUTFALL.PDF

<i>Water Act Code of Practice for Temporary Diversion of Water for Hydrostatic Testing of Pipelines</i>		http://www.gp.alberta.ca/documents/codes/DIVERSE.PDF
<i>EPEA Code of Practice for the Release of Hydrostatic Test Water from Hydrostatic Testing of Petroleum Liquid and Gas Pipelines</i>		http://www.gp.alberta.ca/documents/codes/RELEASE.PDF
<i>Directive 007: Volumetric and Infrastructure Requirements</i>	D007	http://www.aer.ca/rules-and-regulations/directives/directive-007
<i>Directive 009 "Casing Cementing Minimum Requirements"</i>	D009	http://www.aer.ca/rules-and-regulations/directives/directive-009
<i>Directive 017: Measurement Requirements for Oil and Gas Operations</i>	D017	http://www.aer.ca/rules-and-regulations/directives/directive-017
<i>Directive 020: Well Abandonment</i>	D020	http://www.aer.ca/documents/directives/Directive020.pdf
<i>Directive 023: Guidelines Respecting an Application for a Commercial Crude Bitumen Recovery and Upgrading Project</i>	D023	http://www.aer.ca/rules-and-regulations/directives/directive-023
<i>Directive 026: Setback Requirements for Oil Effluent Pipelines</i>	D026	http://www.aer.ca/rules-and-regulations/directives/directive-026
<i>Directive 036: Requirements and Procedures</i>	D036	http://www.aer.ca/rules-and-regulations/directives/directive-036
<i>Directive 040: Pressure and Deliverability Testing Oil and Gas Wells</i>	D040	http://www.aer.ca/rules-and-regulations/directives/directive-040
<i>Directive 047: Waste Reporting Requirements for Oilfield Waste Management Facilities</i>	D047	http://www.aer.ca/rules-and-regulations/directives/directive-047
<i>Directive 051: Injection and Disposal Wells - Well Classifications Completion, Logging and Testing Requirements</i>	D051	http://www.aer.ca/rules-and-regulations/directives/directive-051
<i>Directive 055: Interim Requirements for Aboveground Synthetically-Lined Wall Storage Systems, Updates to Liner Requirements, and Optional Diking Requirements for Single-Walled Aboveground Storage Tanks</i>	D055	http://www.aer.ca/rules-and-regulations/directives/directive-055
<i>Directive 056: Energy Development Applications and Schedules</i>	D056	http://www.aer.ca/rules-and-regulations/directives/directive-056

<i>Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry</i>	D058	http://www.aer.ca/rules-and-regulations/directives/directive-058
<i>Directive 059: Well Drilling and Completion Data Filing Requirements</i>	D059	http://www.aer.ca/rules-and-regulations/directives/directive-059
<i>Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting</i>	D060	http://www.aer.ca/rules-and-regulations/directives/directive-060
<i>Directive 065: Resources Applications for Oil and Gas Reservoirs</i>	D065	http://www.aer.ca/rules-and-regulations/directives/directive-065
<i>Directive 067: Applying for Approval to Hold AER Licenses</i>	D067	http://www.aer.ca/rules-and-regulations/directives/directive-067
<i>Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry</i>	D071	http://www.aer.ca/rules-and-regulations/directives/directive-071
<i>Directive 076: Operator Declaration Regarding Measurement and Reporting Requirements</i>	D076	http://www.aer.ca/rules-and-regulations/directives/directive-076
<i>Directive 078: Regulatory Application Process for Modifications to Commercial In Situ Oil Sands Projects</i>	D078	http://www.aer.ca/rules-and-regulations/directives/directive-078
<i>Directive 079: Surface Development in Proximity to Abandoned Wells</i>	D079	http://www.aer.ca/rules-and-regulations/directives/directive-079
<i>Directive 080: Well Logging</i>	D080	http://www.aer.ca/rules-and-regulations/directives/directive-080
<i>Directive 083: Hydraulic Fracturing – Subsurface Integrity</i>	D083	http://www.aer.ca/rules-and-regulations/directives/directive-083
<i>Manual 011: How to Submit Volumetric Data to the AER</i>		http://www.aer.ca/documents/manuals/Manual011.pdf
<i>Interim Directive (ID) 2000-03: Harmonization of Waste Management and Memorandum of Understanding Between the Alberta Energy and Utilities Board and Alberta Environment - See more at #sthash.DLuxKrX2.dpuf</i>	ID 2000-03	http://www.aer.ca/rules-and-regulations/interim-directives/id-2000-03
<i>ID 2002-01 Slope and Break Setback Guidelines (GoA)</i>		http://aep.alberta.ca/forms-maps-services/directives/documents/ID2002-01-SlopeBreakSetbackGuideline-Directive-Dec02.pdf

<i>ID 2000-04: An Update to the Requirements for the Appropriate Management of Oilfield Wastes</i>	<i>ID 2000-04</i>	http://www.aer.ca/rules-and-regulations/interim-directives/id-2000-04
<i>ID 99-04: Deposition of Oilfield Waste into Landfills</i>	<i>ID 99-04</i>	https://www.aer.ca/documents/ids/pdf/id99-04.pdf
Tenure (for mineral rights)		http://www.energy.alberta.ca/Tenure/867.asp
good production practice	GPP	http://www.aer.ca/applications-and-notices/application-process/good-production-practice
gas-oil ratio	GOR	
geophysical exploration	GEO	
mineral surface lease	MSL	
licence of occupation	LOC	
pipeline agreement	PLA	
pipeline installation lease	PIL	
vegetation control easement	RCE	
miscellaneous lease	MLL	
temporary field authorization	TFA	
oil sands exploration program	OSE	
coal exploration program	CEP	
Enhanced Approval Process	EAP	http://aep.alberta.ca/forms-maps-services/industry-online-services/public-lands-dispositions/default.aspx
<i>Wildlife Land Use Guidelines (AEP)</i>		http://aep.alberta.ca/fish-wildlife/wildlife-land-use-guidelines/