

Guide for Unit Agreements

Establishing and maintaining a unit-type agreement, including Commercial Gas Storage Unit Agreements

Standard Unit Agreement

An agreement among all the working interest owners and royalty owners in an oil and/or gas pool for the co-operative operation and development of the pool.

More Information:

For more information on policies, technical requirements, and unit terminologies, please refer to "[Crown Involvement in Units](#)" and "[Description of Unit Terminologies](#)" in this Guide.

Unit Agreement Proposal

A proposal can be submitted at any time but must not proceed to the final execution stage without Alberta Energy and Mineral's (the department) authorization.

Proposals must be submitted in person, mailed or by courier.

- Edmonton office:
Alberta Energy and Minerals
11th Floor, North Petroleum Plaza
9945 – 108 St. NW
Edmonton, AB T5K 2G6

OR

- Calgary office:
Alberta Energy and Minerals
3rd Floor, AMEC Place
801 – 6th Ave SW
Calgary, AB T2P 3W2

Required Technical Data

- proposed and detailed calculation of tract factors
- technical information that explains:
 - the pool being unitized such as net pay and structure mapping, cross sections, engineering and geophysical data
 - the extent of the pool
 - presence of a gas cap
 - Alberta Energy Regulator (AER) water flood application and project area approval

Points to consider when submitting a standard unit agreement proposal:

- PNG Agreement must be continued indefinitely under *section 15 of the [PNG Tenure Regulation](#)*.
- Primary term leases and intermediate term licences can be included in a proposed unit agreement. These PNG Agreements should be monitored while the unit negotiations are proceeding to ensure any expiries during that period are dealt with. PNG Agreements are not automatically continued when they are within a proposed unit agreement.

- An initial term licence cannot be included in a standard unit agreement or a commercial gas storage unit agreement; however, it can be included in a Production Allocation Unit Agreement (PAUA).
- A standard unit agreement cannot be executed retroactively. The unit agreement becomes effective on the first of the month following execution by all required working interest owners and royalty owners, including the Crown.

Unit Tract Calculation

The basis for determining tract factors, particularly in a unit agreement containing both Crown and freehold lands, must be equitable and technically justifiable. In some cases, remaining reserves may be acceptable. However, the use of several parameters such as original hydrocarbon pore volume, remaining reserves and productivity is encouraged if they produce a better result. A formula that heavily penalizes undrilled lands or relies mainly on surface area is normally not acceptable to the department as the basis for tract participation.

The overall Unit Participation Percentage for a Working Interest Owner (WIO) is taken from Exhibit A. All of the tracts that the WIO has an interest in are added together. This calculates the overall Unit Participation Percentage for the WIO.

The Crown interest is calculated as:
(WIO participation % in all Crown Tracts ÷ WIO participation % in all Tracts) x 100

Exhibit A (Unit Tract)

The department requires an effective date on the Exhibit A and all subsequent revisions and must be consistent with the WIO Summary effective date.

When changes are made to ownership (WIO or royalty owner), the Exhibit A must be revised and a

new effective date is required. The effective date MUST be on the first day of the month.

Note: The effective date affects royalty calculation. If the unit agreement is effective during the month, it is treated for royalty purposes that it is effective for the full month, as calculations are done on a monthly basis.

The unit operator must revise an Exhibit A whenever there is a change in WIO, sale of interest, partial transfer of interest, change in royalty interest, corporate status changes such as name change, amalgamation of companies, struck or dissolved.

The unit operator can change the numbering convention as long as the numbering system is consistent and in sequential numbering after the change.

For example, from a revision number to a date Revision no. 01, was changed later to a date 2018-01. The next revision number would then be 2018-02, then 2018-03, etc.

The revisions submitted to the department must be in chronological order. The current revision received should be of a later date than the previous one on file.

E-submissions of Exhibit A Revisions

Electronic submission has been mandatory since March 7, 2016, for changes of unit operatorship, unit tract revision and correction of Exhibit A.

You can submit a revision request by logging into the department's [Electronic Transfer System \(ETS\)](#), which gives you access to the "Unit Agreement Exhibit A" node.

Through ETS, you can submit a correction to Exhibit A by accessing Unit Agreement Exhibit A node and Unit Tract Revision node.

Once your request is received by the department, the ETS request status will change to “Processing”. An email notification will be sent to the Unit operator informing them that the request is “completed” when it has been processed.

When your request is rejected, the department will receive a similar email notification. We will review the issue. Once it is resolved, we will contact the initiator of the request.

You can acquire a copy of the revised Exhibit A through ETS. In order for you to be able to request an Exhibit A report form type, a submitter and viewer roles set-up in ETS is required.

As a unit operator, it is your responsibility to provide a copy of the completed revised Exhibit A to AER as stated in the models (PAUA clause 2.2 and Unit Agreement clause 206).

When a unit operator and one of the WIOs are in the process of amalgamation, a revision can only be submitted under the new resulting company name once the department’s records are updated with the amalgamation information.

The unit operator is responsible for preparing and distributing a revised Exhibit A and ensuring all parties to the Unit agreement receive the same revised Exhibit A including the AER.

Contact Information:

Exhibit A’s can be revised and updates will be processed if the change occurs in an open production year. Changes will not be processed in statute barred years. For more information contact Royalty Operations, at 780-422-8727 or email VCR@gov.ab.ca

For any ETS Request rejected, you may email the helpdesk at EnergyUnitsHelpdesk@gov.ab.ca and you will be advised of the next step(s).

Counterpart Execution Pages

As per the [Mines and Minerals Administration Regulation](#), section 23.3(3) and 23.5(1), unit operator can submit signed and dated execution pages electronically.

All signed and dated execution pages must be combined into a single PDF and submitted under one email to EnergyUnitsHelpdesk@gov.ab.ca. In the email Subject line, include the Crown assigned unit name and number.

The department will reply to the email and acknowledge receipt.

Production Allocation Unit Agreement (PAUA)

A PAUA is a unit-type agreement used for a single well that crosses multiple drilling spacing units of mixed ownership (Crown and Freehold). The PAUA ensures that the royalty payments from one well are distributed to both royalty owners in a fair and equitable manner.

Initial term licences can be included in PAUA. However, at expiry of the initial term licence, the company must meet the criteria for validating into an intermediate term pursuant to *section 9(1) of the PNG Tenure Regulation*. If the criteria is not met, the licence will be cancelled and the PAUA will be reviewed for unit termination pursuant to clause 10.4 of the PAUA document.

Exhibit A

The Exhibit A template was modified to add a new column, “Share of Royalty Interest Owner (%)” Each freehold royalty interest owner can indicate its ownership % in respect of the overall Tract Participation determined for freehold. For freehold owners, there might be one or more owners listed with their respective ownership % indicated.

The department does not validate or use these numbers. The Crown column will always indicate 100%.

For more information, please refer to the [Deviated Well](#) or [Horizontal Well](#) PAUA model guides.

Execution of PAUA

Unlike a standard unit agreement, a PAUA can be executed retroactively. A PAUA must become effective at 0800 on the first day of the first calendar month which is the earliest of:

- the month in which production of production allocation substances from the well commences, or
- the month following the date of execution and delivery of the agreement by the owners of one hundred percent (100%) of the Working Interest and one hundred percent (100%) of the Royalty Interest within the production allocation area.

PAUA's can be executed retroactively; therefore, in order to determine the proposed unitized substance and zone, the well must be placed on production for 3 months before the department's review can commence. In addition, ensure you have the rights to drill and produce.

The proposal and data can be submitted to EnergyUnitsHelpdesk@gov.ab.ca, in person, mailed, or couriered. The hard copy of all data or a memory stick must be submitted prior to Crown execution. Each PAUA requires a copy of the data or a memory stick.

Note: When a well is placed on production and requires a PAUA, the proposed Unit Operator may send an email to EnergyUnitsHelpdesk@gov.ab.ca and request an interim Crown/Freehold split. This request **must** be received the month the well is placed on production and contain the proposed PAUA and data. Late or incomplete requests will not be considered.

Approvals are subject to a review of any outstanding debts with the department. If approved, a minimum of 50% Crown allocation will be applied and the interim allocation will be effective for up to one year. The interim allocation will be replaced with the final tract allocations as executed in the PAUA. If the agreement is not fully executed within one year from the production date, the department will revert the allocation to the single well production entity's bottom hole location.

If the PAUA has a producing well and one or more parties refuse to execute, the following are consequences:

- Failure to execute a PAUA may result in the Crown taking action through the AER to remedy this high risk non-compliance under [Directive 65](#) of the Oil and Gas Conservation Rules. These specify that no well shall be produced unless there is common ownership throughout the drilling spacing unit.

OR

- The department will recommend plugging back the wellbore to ensure production is isolated to one drilling spacing unit eliminating the requirement for a PAUA.

Commercial Gas Storage

An agreement that establishes a reservoir as one in which natural gas may be stored after it was produced from its native reservoir.

Proposal

To convert a partially depleted reservoir into a commercial gas storage field and if some or all of the reservoir is on Crown land, a company must form a Commercial Gas Storage Unit Agreement by submitting a Commercial Gas Storage Unit Agreement proposal. ([Information Letter 1998-23](#) has additional information).

- The model for this agreement is on [Alberta Online Learning](#) under Models for Unit Agreements.
- The agreements that are subject to a Commercial Gas Storage Unit Agreement are administered in accordance with the [PNG Tenure Regulation](#).
- WIOs holding Crown petroleum and natural gas agreements containing the unitized zone would be a party to a Commercial Gas Storage Unit Agreement. Mineral owners, including the Crown would also be parties to the Agreement.

Required Technical Data

- proposed and detailed calculation of tract factors
- technical information that explains:
 - the pool being unitized such as net pay and structure mapping, cross sections, engineering and geophysical data
 - the extent of the pool
 - presence of a gas cap
 - AER water flood application and project area approval
- The data must include calculations about remaining recoverable gas so that the department can generate an amortization schedule.

The treatment of native gas is outlined in the model [Commercial Gas Storage Unit Agreement](#).

The Commercial Gas Storage Unit Agreement provides for the payment of royalties on remaining recoverable marketable gas in the reservoir over a base amortization period. When the volume of gas has been determined, 80% of this amount, described by the heat content, will be amortized over a negotiated period. This amount will be indicated in the Commercial Gas Storage Unit Agreement, which provides the methodology for the payment of royalties.

The Crown does not have any regulated buffer zone protection or specific rules around migration of gas. It is important for the operator to identify the limits of the gas reservoir prior to using it for storage. However, only lands the Crown considers as part of the commercial gas storage operation will be included in the Commercial Gas Storage Unit Agreement.

A letter from the unit operator must be received prior to execution advising the field, pool number and injection facility number, which is required in order to set up the injection scheme ID.

Information pertaining to existing facilities such as cushion gas, areal extent, licences, capacity, operators, etc. is handled by the AER.

Although the department supports the storage of gas in Alberta, there is no published policy on the promotion of gas storage in Alberta. Please refer to [Information Letter 1998-23](#) for further information.

Salt Cavern for Commercial Storage

The following must be obtained to develop a salt cavern for commercial storage:

- A lease from the Crown for the right to create a cavern in the salt formation and store specified materials.
- Approval/licence from the AER for the injection well. Additionally, the AER may also approve a disposal well to dispose of the brine solution.

To apply for the subsurface rights lease, use the Subsurface Reservoir Leasing form on the [Alberta Online Learning](#) under Mineral Direct Purchase tab/Forms. The applicant must specify the location, storage zone, and the substance that will be stored.

The application fee for the lease is \$625.00 and the annual rental is \$12.50 per hectare. The lease is issued pursuant to the [Metallic and Industrial Minerals Tenure Regulation](#).

Once the above requirements have been obtained, submit a Commercial Gas Storage Unit Agreement proposal to the Crown. This proposal is reviewed on how much (amortized) native gas is in the cavern so that the Crown can receive its share.

The AER has technical requirements for converting a salt cavern from liquid storage to gas storage. Apply through the AER or email inquiries@aer.ca. The subsurface rights lease from the Crown will usually accommodate a substance change, if the applicant presented this within the initial application.

Note: Copies of existing Unit Agreements, PAUA's, and Commercial Gas Storage Agreements, can be obtained by e-mailing the AER's Order Fulfillment Team at informationrequest@aer.ca. As the AER has no tracking system for units, you must provide the AER with the unit name.

Useful Links:

[Online Learning Course – Unit Agreement Exhibit A](#)

This online learning course provides screen captures from ETS for this process.

[ETS Apply for Access](#)

In order to do an e-submission of Exhibit A revisions, you will need to have an ETS account.

For reference, please view the *ETS Account Setup and Preferences* module under [Accounts in ETS](#) in the Online Learning portal.

To access ETS, you will need to apply for an account setup so that you can do business electronically with the department. Please contact Crown Land Data at (780) 644-2300 or email crownlanddatasupport@gov.ab.ca

[Unit Agreement Models](#)

Contain downloadable PAUA and Commercial Gas Storage unit models.

Model of standard Unit Agreement is available through the [Petroleum Joint Venture Association](#) at (403) 244-4487 or email pjva@pjva.ca

Crown Involvement in Units

Alberta Energy and Minerals (the department) is the manager of Alberta's hydrocarbon resources. Its mandate, in part, is to encourage the exploration and development of the Petroleum and Natural Gas reserves of the province in a manner that is consistent with the economic, environmental and employment interests of Alberta.

When the department enters into a unit agreement on behalf of the Province of Alberta, it is committing Crown lands to the unit for an unspecified period of time and is agreeing to accept royalties on the basis of allocated, rather than actual, production. In a unit, which combines Crown and freehold interests, it is therefore, critical to verify that the Crown lands have been allocated tract participations, which reflect the Crown's share of the reserves. It is also important, in any unit, to ensure the agreement complies with land tenure legislation and policy.

There must be diversity of ownership, either at the lessee or at the lessor level, for a unit to be considered. If the Crown were the only lessor and all the lands were held by one company (or group of companies in the same proportional interests), a unit would be rejected by Alberta the department as being unnecessary.

Alberta Energy and Mineral's Policies On Unitization

The department enters into units on behalf of the Province of Alberta, under the authority of the [Mines and Minerals Act](#) section 102(1). The department must ensure a proposed unit is equitable and fair to all participants and that any lands not included in the unit are not adversely affected by the formation of the unit.

The department reviews a proposed unit agreement with the following principles in mind:

- The Crown must consider all lands within a unit to be productive. Non-productive lands dilute either parties' interest, and non-

productive Crown lands would remain leased and committed to the unit, contrary to the department's land tenure policies.

- Ideally, the unit should cover an entire pool. Oil pools and their associated gas caps should be jointly unitized. Where this is not possible, the department will try to ensure that no "windows" are created within the unit, and that the owners of any adjacent lands, which could be adversely affected, are offered participation in the unit upon reasonable terms. In order for the unitization to proceed without these lands, letters from these owners declining participation in the unit is normally required.
- The basis for determining tract factors, particularly in a unit containing both Crown and freehold lands, must be equitable and technically justifiable.

Equitable tract factors are typically based upon a combination of two or three factors such as hydrocarbon pore volume, remaining recoverable reserves and productivity. A formula that heavily penalizes undrilled lands is not acceptable to the department as a basis for tract participation.

Lands undrilled at the time of the formation of the unit may be drilled later, but will always retain a reduced tract factor.

Surface area is also an unacceptable factor for determining tract factors unless there is no valid technical basis.

If the tract factors are determined to be inequitable in a unit that is 100 percent Crown land, the department will inform the operator but will not ask for any adjustment. The first principle, above, necessitates that no lands be allocated a tract factor of zero.

- The unit should be comprised of complete spacing units for the unitized substance. Drilling a well on an incomplete spacing unit, either inside or outside the unit boundary, will necessitate a pooling agreement between the unit and the owner of the non-unitized portion of the spacing unit.
- When a unit contains oil, and a gas cap is present, gas spacing is not required throughout the entire unit area; however, the drilling spacing unit for gas is required where gas cap is present and for any wells that will later be used to blow down the gas cap.
- All Crown agreements to be included in the unit must contain the appropriate rights and be in good standing. Leases should be monitored while the unit negotiations are proceeding to ensure any expiries during that period are dealt with.

The department will NOT automatically continue leases that are within a proposed unit.

Unless agreements are proven productive and the continuation is resolved, agreements that are subject to *section 17 or 18 of the PNG Tenure Regulations* will not be included in the unit.

Initial term licences cannot be included in a unit agreement; however, intermediate term licences can be included.

- If the unit is being formed to implement a waterflood, gas cycling scheme, gas storage scheme or any other enhanced recovery project that requires approval from the AER, the unit must contain all of the lands included in the approval.

AER approvals and units are both production entities for the purposes of Crown royalty, and if they conflict, the royalty calculations will have to be done manually. Not only is this time consuming, but it will also disrupt the negotiated equity of the tract participations, since the land outside the unit will be added in on an areal basis.

Required Technical Data

- Geological mapping of the pool, superimposed on the unit outline, together with the parameters on which it was based. This should include structural mapping and net pay and/or hydrocarbon pore volume mapping.
- Structural and/or stratigraphic cross-sections to support the mapping, showing gas/oil/water contacts, if possible.
- Detailed information on the method used to calculate the tract factors. Tables, formulae and calculations must be included, as well as any background material (e.g. core analyses, flow tests) used to determine value, and explanations for any assumptions made and used in the process.
- Complete set of well data for any confidential wells: logs, drillstem tests, completion report, absolute open flow/flow test/initial production (confidential data is NOT available to the department through the AER).
- Copies of any applications made to the AER, and approvals granted by them for enhanced recovery schemes, gas cycling schemes, gas storage schemes or any other operation to be conducted by the unit.

- Pressure surveys, material balance calculations, and any other reservoir information that supports the size and continuity of the reservoir, or the productivity of the unit lands.
- Seismic support (mapping and interpreted lines), if applicable. All relevant lines that support the mapping should be included, not just one or two examples. Seismic should be accompanied by synthetic seismic logs.
- Written confirmation from any owners of lands with mapped pay not included in the unit (e.g. windows, peripheral tracts) indicating they do not wish to commit their lands to the unit.
- The Exhibit "C" should be a clear copy of the well log, properly labelled, with the top and bottom of the unitized interval marked by horizontal lines on the logs.

Note: All data submitted to the department is retained in our files, with the exception of seismic lines, which can be returned upon request by the applicant. All data is kept strictly confidential and is not released or made available to anyone other than the party that submitted it.

Production Allocation Unit Agreements

The PAUA is a cross between a pooling agreement and a unit that has been developed for use where varied "Royalty and Working Interest Owners" wish to share the production from a single well.

The well may be an off-target gas well that will drain an entire pool underlying portions of two or more drilling spacing units. The AER will no longer grant an enlarged gas drilling spacing unit, but will approve a holding provided that the ownership is common at both the lessee and lessor levels.

It could also involve a horizontal oil well whose producing section crosses Crown and freehold lands.

Required Technical Data

- Wellsite survey to confirm the surface hole coordinates
- Directional surveys for each drilled leg to calculate open hole lengths on each tract
- Daily drilling reports to confirm casing points and kick off points for each leg
- Plan view of the drilled legs to determine which drilling spacing units have been penetrated and should be included in the PAUA
- Geologic strip logs and electric logs
- Completion reports

The department is not empowered to sign pooling agreements, and the PAUA is the only vehicle, short of a unit agreement, that will achieve common royalty ownership.

The agreement provides for the sharing of costs, revenues and royalties on the basis of allocated production and, if possible, the tract participations are based on technical parameters rather than on surface area. Offset obligations are eliminated and leases are continued for as long as the well produces.

The agreement becomes effective at 0800 on the first day of the first calendar month which is the earliest of:

- the month in which production of production allocation substances from the well commences, or
- the month following the date of execution and delivery of the agreement by the owners of one hundred percent (100%) of the Working Interest and one hundred percent (100%) of the Royalty Interest within the production allocation area.

Typically, these agreements terminate when a second producing well is drilled within the PAUA. In this scenario, transitioning to a unit agreement may be necessary to maintain common royalty ownership.

The basis for determining tract participations must be equitable and technically justifiable. In the case of stimulated horizontal wells with production casing in place, the productive portion of the wellbore is considered to be from the last frac port to total depth ("TD") of the wellbore. With a non-stimulated lateral with an open-hole, the productive interval would be from below the intermediate casing point ("ICP") to TD of the wellbore. For non-stimulated multi-lateral wells, the common or primary leg portion of the wellbore is accounted for once in the calculations. The productive interval for the remaining legs is from the start of the sidetrack to TD of the wellbore. Other methodologies for calculating tracts, such as acreage or mapped hydrocarbon pore volume, can be used under special circumstances. When calculating tract factors, generally, the road allowance portion is removed from the productive interval of the wellbore for both Crown and Freehold tract.

Note: Initial term licenses [can be included in a PAUA](#).

The Review Process

The length of time required by the department to review a unit proposal can vary greatly, depending on the complexity and completeness of the data presented, and the current workload of the various groups whose input is required.

The following guidelines will help the department review your unit proposal as quickly as possible:

1. Once the "Working Interest Owners" have agreed on a unit outline, the department can advise whether the outline is acceptable. This will allow unit negotiations to proceed with a greater degree of confidence.

2. Once the "Working Interest Owners" have agreed on the tract participation calculation parameters, the department can advise whether they are acceptable.
3. Include all relevant data with your proposal. the department will analyze this unit just as carefully as would any prospective "Working Interest Owner", and will require just as much technical information.
4. Point out any unusual characteristics of the unit and provide an explanation for any decisions made.
5. Avoid sending the department "committee mapping" that is inconsistent with previously submitted data used for other applications (e.g. lease continuation) by individual companies.



Description of Unit Terminologies

Unit Agreement

An agreement amongst the working interest owners and royalty owners in an oil and/or gas pool for the co-operative operation of the pool from multiple wells.

Production Allocation Unit Agreement (PAUA)
Formed to allow WIO and royalty owners to share in the production from a single well drilled through two spacing units of Crown and Freehold interests.

Commercial Gas Storage Unit Agreement

An agreement that establishes a reservoir as one in which natural gas may be stored after it was produced from its native reservoir.

Royalty Interest

An ownership interest in mineral rights.

Royalty Owner

An individual or corporation who owns a royalty interest. A royalty owner (lessor) who leases out his rights to a working interest owner is usually entitled to share of the production obtained from the rights.

Note: The Crown participates in units only as a mineral rights (royalty) owner. the department only becomes involved in units that contain Crown rights.

Unit Operator

The party designated by the working interest owners in a unit agreement as the operator of the unit.

Unitized

Used to refer to a zone or a spacing unit that is subject to a unit agreement.

Working Interest

A right to produce and dispose of minerals, associated with the responsibility for the costs of production and disposal.

A working interest is usually acquired from the royalty owner of the mineral rights through a leasing arrangement.

Working Interest Owner (WIO)

An individual or corporation who owns a working interest.

Each WIO (lessee in a unit agreement) contributes to the unit costs in proportion to this tract participation factor and receives production or revenues in the same proportion, whether or not there is a well physically located on the agreement.