

Guidebook for Helium Exploration and Operations



Overview/Guidance

What is Helium?

Helium is a gas formed by the decay of radioactive elements in the Earth's crust; it migrates towards the Earth's surface where it either gets trapped in a geological formation or is released into the atmosphere. Helium is a non-toxic, non-flammable, and has a number of unique properties including: the lowest boiling and liquefaction points of any elements (-269 degrees Celsius); low density (light); and a high ability to conduct heat. Helium has been identified as a strategic element on the [2021 Canadian Critical Minerals List](#). Saskatchewan has both historical and current helium production.

This Guidebook is intended to provide a high-level overview of the requirements of the ministry of Energy and Resources, Ministry of Agriculture and Ministry of Environment to conduct Helium exploration and operations in the province. This Guidebook does detail all the requirements but directs project proponents to the materials they should be familiar with before engaging in helium exploration and operation activities. Interested parties should contact the Ministry of Energy and Resources should questions arise.

ER Service Desk

Energy and Resources

Phone: [855-219-9373](tel:855-219-9373) or er.servicedesk@gov.sk.ca

The following sections provide information on the requirements to produce helium in Saskatchewan:

1. Governing Legislation	4
2. Use of the Integrated Resource Information System (IRIS)	4
3. Permits and Leases	5
GeoPlanner	6
4. Licensing Requirements.....	6
Gas (Helium) Facility	7
Helium Well - Licensing and Drilling Requirements	7
5. Well Operations	8
6. Production Reporting	10
7. Royalties	11
8. Transferable Royalty Credit Programs.....	12
9. Liability Management and Site Closure Requirements	12
Eligibility Requirements to Hold or Acquire Licences.....	12
Security Deposit Requirements	12
Environment Site Assessment Requirements	13
Acknowledgment of Reclamation	13
10. The Oil and Gas Cost Recovery Levy (Administration Levy)	14
11. Further Information.....	14

1. Governing Legislation

The following Acts, Regulations and Directives govern helium exploration, development, production, and end-of-life activities in the Province of Saskatchewan.

Minerals Rights and Tenure

- [*The Crown Minerals Act*](#)
- [*The Oil and Gas Tenure Registry Regulations*](#).

Exploration

- [*The Seismic Exploration Regulations, 1999*](#)

Production and Operations

- [*The Oil and Gas Conservation Act*](#)
- [*The Oil and Gas Conservation Regulations, 2012*](#)
- [*The Pipeline Act, 1998*](#)
- [*Pipeline administration and licensing Regulations*](#)

Directives also outline rules for the operation of well, facilities and pipelines from initial drilling to end of life operations. A complete list of directives can be found at:

<https://publications.saskatchewan.ca/#/categories/5568>

2. Use of the Integrated Resource Information System (IRIS)

The Integrated Resource Information System (IRIS) is an online business system that supports the development and regulation of Saskatchewan's energy and resources industry. Through IRIS, the oil and gas industry complete regularly performed business activities and regulatory tasks with the province online.

Information on the use of IRIS can be found here: [IRIS](#)

3. Permits and Leases

Helium and associated gases tenure is acquired under [The Oil and Gas Tenure Registry Regulations \(OGTRR\)](#) through an application process. Associated gases are defined in the OGTRR as naturally occurring non-hydrocarbon gas or gases but does not include helium and natural gases.

Relevant Regulations and Government of Saskatchewan website pages for Helium and associated gases includes the following:

- The Oil and Gas Tenure Registry Regulations
 - <https://publications.saskatchewan.ca/#/products/83195>
 - Tenure regulations for helium and associated gases; petroleum and natural gas; oil sands; oil shale; and spaces.
 - Helium and associated gases rights are disposed through an application process, not through a public offering.
- Non-Advertised Dispositions
 - <https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/crown-land-sales-dispositions-and-tenure/crown-dispositions>
 - This webpage provides links to the “Non-Advertised Dispositions” page that describes the types of dispositions that can be acquired outside the public offering process, including helium and associated gases and lease of spaces agreements, and a link to the “Non-Advertised Dispositions Application” page that provides guidance in regard to applying for a non-advertised Crown disposition.

Helium permits and leases can be obtained through the [Integrated Resource Information System \(IRIS\)](#) and are considered as Non-Advertised Dispositions. The difference between a helium permit and a lease is found below:

Helium permits: Designed to encourage exploration, these permits grant the rights to explore for helium and associated gases, but not to remove, produce or recover them until a lease is granted. To place a well on permit lands for production test purposes the holder may apply to the minister. Application may be made through the ER Service Desk at er.servicedesk@gov.sk.ca.

For more information regarding helium permits, please visit section 6 of [The Oil and Gas Tenure Registry Regulations](#).

Helium leases: Provide the right to explore for and produce helium and associated gases.

For more information regarding helium leases, please visit section 9 of [The Oil and Gas Tenure Registry Regulations](#)

GeoPlanner

Proposed Helium projects should consider using the GeoPlanner to review siting options.

The [GeoPlanner](#) tool is a web-enabled geo-spatial planning and decision tool that identifies base, site sensitive features from multiple ministries and agencies data, to assist with pre-planning and development of oil and gas and other commodities . It provides users the ability to view and map their proposed project and generate a report that lists potential areas of concern to be addressed or that may require additional approval(s) or other land uses requiring provincial government approvals.

For more information on to GeoPlanner, please visit this link:
[GeoPlanner - Saskatchewan Ministry of Energy and Resources](#)

4. Licensing Requirements

To apply for a well licence, log into [IRIS](#) and complete the well licence application process. Well licence applications are approved by the Ministry of Energy and Resources; however, they may be subject to review by the Ministry of Environment and the Ministry of Agriculture. All applications and supporting documentation required for all three ministries are submitted through the Integrated Resource Information System (IRIS).

For information of licensing of associated flow lines and pipelines please refer to the:
<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/pipeline-licensing>

To obtain the license for pipeline associated with production of Helium please refer to *Directive PNG034: Saskatchewan Pipelines Code* at:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/pipeline-licensing>

Flowline and pipeline reviews by the Ministry of Environment and Ministry of Agriculture are required independent of the IRIS application.

The following documents and information from the Ministry of Environment may also be

required with your licence application:

- Checklist for Private Lands
- Oil and Gas Proposal
- Conservation Data Center Search
- Pre-Disturbance Site Assessment
- Wet Land mitigation
- Native Vegetation mitigation
- Species of Concern mitigation

Additional information on the Saskatchewan Ministry of Environment assessment process can be found here:

<https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/environmental-assessment/does-my-project-need-an-environmental-assessment>

Gas (Helium) Facility

A gas facility may need to meet requirements of:

- *Directive PNG001: Facility Licence Requirements;*
- *Directive PNG036: Venting and Flaring Requirements;*
- *Directive S-20: Saskatchewan Upstream Flaring and Incineration Requirements;* *Directive S-01: Saskatchewan Upstream Petroleum Industry Storage;*
- and any facility related sections in *The Oil and Gas Conservation Act* and *The Oil and Gas Conservation Regulations, 2012*, not covered by the above Directives.

Contact the ER Service Desk early in the life of the project to receive guidance with respect to Gas (Helium) facility requirements.

The Technical Safety Authority of Saskatchewan – Boiler and Pressure Vessel Safety (TSASK) has jurisdiction over inter-connecting piping, pressure equipment and some construction activities. For more information on TSASK, please visit the website: www.tsask.ca

A facility may also need to be reviewed through the Environmental Assessment review process prior to approval. Contact the Environmental Assessment & Stewardship branch at 306-787-6132 for guidance.

Helium Well - Licensing and Drilling Requirements

The regulatory requirements of gas wells are currently applied to helium wells. Helium wells must follow the drainage units and target areas set for gas wells and may also be subject to a production allowable. If any of the gas well requirements cause difficulties for any helium

development plans, please contact the ER Service Desk for assistance prior to submitting a helium well application. The following Directives outline the requirements set for gas wells:

- [Guideline PNG021: Determining Drainage Units and Target Areas](#)
- [Directive PNG007: Off-Target Well Requirements](#)
- [Directive PNG011: Allowable Rate of Production: Gas Wells](#)
- [Directive PNG009: Public Notice Requirements](#)

In addition:

- All licensing and drilling requirements must be followed for any proposed NHR wells.
- *The Oil and Gas Conservation Regulations, 2012 (OGCR), O-2 Reg 6 (Part XI), Directive PNG004: Surface Lease Construction Requirements, and Directive PNG005: Casing and Cementing Requirements* must be followed regarding surface location, well control drilling activity and well integrity.
- As per OGCR Section 28(2), approvals must be obtained for any drilling deviations from proposed licensing details that occur while drilling. Contact the local field office for approvals.
- All licensed infrastructure is subject to inspection. Any non-compliance activity will be communicated in IRIS and will require a corrected response to be provided.
- Any reclassification or recompletion activity or any repairs required due to well failure, will require an application and approval. Any abandonment activity will be considered non-routine and require an application and approval.
- Helium wells must conduct an AOF test with an approved method within 30 days after any completion or recompletion pursuant to OGCR Section 79. Additional information on AOF test requirements can be found in *Guideline: [Gas Well Absolute Open Flow Tests](#)*

For further information, on requirements for obtaining a Well Drilling Licence please visit: <https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/oil-and-gas-drilling-and-operations/licence-to-drill-a-well>

5. Well Operations

Helium wells that do not meet the spacing requirements set for gas wells require a spacing modification authorization which must be applied for and approved prior to making a licence application or recompleting into a zone with an existing Helium well in the drainage unit. For more information on submitting a well spacing modification application please visit:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/oil-and-gas-drilling-and-operations/well-spacing-modification>

After a well is drilled and it is determined that a different formation is to be completed for the initial completion of the well, the local Field Office must be contacted to discuss the deviation from the licenced completion. No additional applications are then required and instead the completion can be reported as “Not Completed as Planned” in IRIS. More information on reporting the initial completion can be found at:

<https://training.saskatchewan.ca/EnergyAndResources/information-submission/#/lessons/35ILcpkMzyflf6CWGcQ0TqvbAVRHE0mZ>

Any additional completions made after the initial completion must make an application for authorization to well reclassification and complete application. These applications will be for any plugbacks or multizone completions conducted after the initial completion as well. For further information, visit the Well Reclassification and Completion Application page:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/well-reclassification-and-recompletion>

How to apply for authorization to abandon a well, perform a downhole abandonment, or cut and cap a well, for wells drilled for upstream oil and gas, or potash, in Saskatchewan. For more information on Well Abandonment Application, please visit:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/well-abandonment>

How to apply for authorization to repair an oil and gas well. For more information on the Oil and Gas Well Repair Application page, please visit:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/application-to-repair-a-well>

6. Production Reporting

Reporting of volumetric data is required for a well or facility, and must identify the activity, product, and volume. Helium production is reported monthly through [Petrinex](#). [Directive PNG032 – Volumetric, Valuation and Infrastructure](#) can be used to determine what type of information is required to be reported through Petrinex.

- **Directive PNG017: Measurement Requirements for Oil and Gas Operations in Saskatchewan (PNG017)**

PNG017 contains information on regulatory requirements with respect to measurement points used for accounting and reporting purposes, including upstream and some downstream facilities. Measurement is the volume determination which is integral for accounting and reporting activities.

- Facility measurement schematic must be created and maintained by the operator of record, Schematic must be used by operational and production accounting to ensure that reported volumes follow the regulatory requirements.
- Produced volumes must be measured by meter or estimated using acceptable methods. If meter is utilized, it must operate within prescribed limits of accuracy and uncertainties; and
- Where applicable, meter and its must be calibrated and proved with respect to frequencies outlined in the PNG017.
- Since Helium is not produced as a single gas stream, the volumes of all gas stream products (i.e., Helium, Carbon Dioxide, Nitrogen, Gas) must be reported in gas phase in thousand cubic meters (10^3 m^3), at standard conditions (i.e., atmospheric pressure of 101.325 kPa and temperature of 15 degrees C). The volume of water is to be reported in cubic meters (m^3), at standard conditions.

For more information on PNG017, please visit:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-licensing-operations-and-requirements/oil-and-gas-drilling-and-operations/measurement-requirements>

- **PNG032: Volumetric, Valuation and Infrastructure Reporting (PNG032)**

Saskatchewan's oil and gas industry is required to report volumetric, valuation, royalty/taxpayer, and some infrastructure data to the government.

For more information on PNG032, please visit:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-reporting-and-compliance/reporting-data-and-incidents/volumetric-valuation-and-infrastructure-reporting>

- ***PNG013: Well Data Submission Requirements (PNG013)***

Applicable sections are on a case-by-case basis. Applicability is heavily dependent on obligation determination based on well licensing and work completed.

For more information on *PNG013*, please visit:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-reporting-and-compliance/reporting-data-and-incidents/submitting-well-data>

- ***PNG076: Enhanced Production Audit Program (PNG076)***

Enhanced Production Audit Program (EPAP) applies to all Business Associates that operate facilities that are subject to the Ministry of Energy and Resources' measurement and reporting requirements but does not apply to mineable oil sands.

For more information on *PNG076*, please visit:

[Enhanced Production Audit Program \(EPAP\) | Oil and Gas Reporting and Compliance | Government of Saskatchewan](#)

7. Royalties

Helium produced from or allocated to Crown lands are subject to Crown royalty. The Crown royalty is determined on a well basis by using the helium and associated gas royalty structure (section 9 of [The Oil and Gas Tenure Registry Regulations](#)). In Saskatchewan, the helium Crown royalty rate is 4.25%. No freehold production tax is levied on helium and associated gases produced from or allocated to freehold lands in Saskatchewan.

[PR-IC08 Helium and Associated Gases Royalty Structure](#) provides more information on the helium and associated gas royalty structure, as well as the calculation for helium Crown royalties.

Currently, helium royalties are manually calculated and invoiced each month. For more information on how to submit your helium royalty information, including pricing and valuation, please email petroleumroyalties@gov.sk.ca.

8. Transferable Royalty Credit Programs

[Oil and Gas Processing Investment Incentive](#) (OGPII) provides eligible value-added helium projects with transferrable oil and gas royalty credits worth 15 per cent of eligible costs, up to a maximum of \$75 million in royalty credits per project.

[Saskatchewan Petroleum Innovation Incentive](#) (SPII) provides eligible helium innovation commercialization projects with transferable oil and gas royalty credits worth 25 per cent of eligible costs, up to a maximum of \$5 million in royalty credits per project. The program targets a broad range of innovations deployed across all segments of Saskatchewan's oil, gas, or helium industry.

For more information on the incentive programs, please email ogpii@gov.sk.ca or spii@gov.sk.ca.

9. Liability Management and Site Closure Requirements

Eligibility Requirements to Hold or Acquire Licences

Before applying to (1) [transfer](#), or (2) hold a [well](#) or [facility](#) licence, licensees must:

- Meet applicable eligibility requirements to hold a well/facility licence under Section 12 of [The Oil and Gas Conservation Regulations, 2012](#).
- Have an [IRIS](#) account and the appropriate permissions assigned by your IRIS Security Administrator.
- Be registered with [Information Services Corporation \(ISC\)](#) as a corporation to carry on business in Saskatchewan.
- Be in good standing in relation to debts owing to the Crown.

Security Deposit Requirements

As a condition of a person becoming a licensee under [The Oil and Gas Conservation Act \(OGCA\)](#), Section 15 provides authority to the Minister to require the submission of a security deposit to ensure obligations with respect to the suspension, abandonment, restoration, remediation or reclamation or wells, facilities and sites are satisfied.

Environment Site Assessment Requirements

Contaminant remediation and investigation are to be completed to the standards supplied in [Directive PNG033: Phase II Environmental Site Assessment](#). Incident reclamation is to be completed to match the land use prior to the incident and match adjacent background conditions.

Acknowledgment of Reclamation

The Acknowledgement of Reclamation (AOR) Program administered by the Government of Saskatchewan's Ministry of Energy and Resources oversees the reclamation of all well and facility sites licensed under [The Oil and Gas Conservation Act \(OGCA\)](#).

Licensees seeking to satisfy their reclamation obligations for their sites may submit one or more of the following applications:

- [Acknowledgement of Reclamation \(AOR\)](#): For sites reclaimed in accordance with [The Oil and Gas Conservation Regulations, 2012](#).
- [Grandfathered Reclamation Release](#): For sites that were reclaimed before the implementation of the AOR Program on June 19, 2007.
- [Exemption from Reclamation \(overlap activity\)](#): For sites where reclamation is prevented due to overlapping well or facility activities on the land area.
- [Reclamation Declaration Application](#): For sites that have been reclaimed and establishment of vegetation is still required, licensees may be eligible for a temporary reduction in reclamation liability.

All applications are submitted through the [Integrated Resource Information System \(IRIS\)](#).

An application to obtain an AOR authorization for a well or facility site must be submitted by the licensee. It typically takes 3 to 5 years to obtain all the documentation required for an AOR application.

For more information, see:

- [Directive PNG016: Acknowledgement of Reclamation Requirements](#)
- [Directive PNG018: Detailed Site Assessment Requirements](#)

10. The Oil and Gas Cost Recovery Levy (Administration Levy)

The Administration Levy is a single annual payment to Saskatchewan's General Revenue Fund. Well and pipeline licensees are assessed an annual levy to offset costs incurred by the Government of Saskatchewan for regulation of the oil and gas industry. For more information on the levy visit:

<https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/oil-and-gas-reporting-and-compliance/well-levy>

11. Confidentiality

In some instances, certain data collected in association with exploration and development activities of a helium well may be eligible for a one-year confidentiality period. Information on the conditions for granting of a one-year confidentiality period can be found at:

<https://training.saskatchewan.ca/EnergyAndResources/Files/Notices/2022/MRO%2039-22.pdf>

12. Further Information

Released in November 2021, the [Helium Action Plan: From Exploration to Exports](#) (HAP) is the Government of Saskatchewan's integrated approach to helium sector development, which aims to improve competitiveness and increase investment outcomes across the entire helium value chain. HAP features 10 new policy and program commitments in five key areas: Exploration, Production, Innovation, Process, and Export Infrastructure.

[Helium in Southern Saskatchewan 2021](#) is an expansion of the 2016 geological study by the Saskatchewan Geological Survey (SGS) and assesses helium potential across southern Saskatchewan. The 2021 study reviews 6,672 gas tests from 4,574 wells in an area that extends across southern Saskatchewan, from Township 1 to 25.

<https://training.saskatchewan.ca/EnergyAndResources/Files/Notices/2022/MRO%20104-22.pdf>

[Helium in Southwestern Saskatchewan - 2016](https://publications.saskatchewan.ca/api/v1/products/82133/formats/94157/download) is a geological study by the SGS of helium potential in southwest Saskatchewan, with analysis covering 1,873 gas analyses from 1,412 wells. <https://publications.saskatchewan.ca/api/v1/products/82133/formats/94157/download>

Ministers Order [MRO 104/22](https://training.saskatchewan.ca/EnergyAndResources/Files/Notices/2022/MRO%20104-22.pdf) grants the authority for ER to regulate reservoir spacing in association with helium wells.

<https://training.saskatchewan.ca/EnergyAndResources/Files/Notices/2022/MRO%20104-22.pdf>