

PEMBINA
institute

HAVE QUESTIONS?
GET ANSWERS.

LANDOWNERS' GUIDE TO OIL AND GAS DEVELOPMENT PRIMER



This PRIMER document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide:

www.pembina.org/pub/landowners



Do you have questions about oil and gas activity on or near your land?

If a land agent tells you an oil and gas company plans to do seismic exploration or drill a well on your land, what do you need to know before you start negotiations?



Landowners' Guide to Oil and Gas Development.

The Landowners Guide to Oil and Gas Development answers these and hundreds of other questions about your rights regarding oil and gas development on or near your property.

This guide focuses on the rights of landowners and others who lease or occupy the land but do not own the mineral rights.

Things have changed with oil and gas development.

Alberta has new legislation, regulations and procedures. The industry has new technology, advanced hydraulic fracturing that is bringing more intensive operations to new locations.

The guide, now in its third edition, is an impartial and comprehensive resource that empowers landowners in conversations, interactions and negotiations with oil and gas producers and understanding the regulations put forth by the Alberta Energy Regulator (AER).

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Do's + Don'ts

- Do build relationships with your neighbours, company representatives and officials
- Do get involved as early as you can to increase chances of working out mutually beneficial solutions
- Do ask questions
- Do use the guide to understand the full picture from negotiation to reclamation
- Do read how you can encourage a company to adopt best practices and reduce possible impacts
- Do seek further help from one of the many resources listed in the guide
- Don't use the guide as legal advice

Inside the guide:

- Section 1: General background information and advice
- Section 2: What you need to know before a project is approved
- Section 3: Questions, compensation and complaints regarding exploration
- Section 4: Information about oil and gas wells
- Section 5: Information about pipelines
- Section 6: Information about oil batteries, gas compressors and other facilities
- Section 7: If there is an emergency
- Section 8: Potential environmental impacts
- Section 9: Requirements for abandoning wells and reclaiming land
- Section 10: Compensation for surface rights access and right-of-entry orders
- Section 11: Public hearings and regulatory board processes
- Appendix A – E: Contact information for officials, lawyers, organizations, summaries of legislation, checklists and a glossary.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development.
Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

In the following pages, you'll find a brief overview of some of the information landowners need about oil and gas development on or near their land. There are hundreds of different questions — and answers — with complex regulations and information to digest. The following questions are just a sample.

Are you buying property that already has oil and gas development?



Ask to see the surface agreement or right-of-entry order and read it carefully. Check to see whether the agreement is written to the name of current landowner or the title of the land. That's an important distinction when it comes to receiving surface payments. Did the previous landowner include additional conditions in the surface lease? If so, what are they?



Check to see whether there is a registered private surface agreement with the AER. Once a lease agreement is signed by a landowner and a company, it becomes a binding legal agreement for the current owner and all future owners of the land. The company registers the lease agreement with the Land Titles Office and the landowner can register the written contract with the AER as a private surface agreement (PSA) on the Private Surface Agreements Registry.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

What are a company's commitments under the surface lease?



Review the surface agreement or right-of-entry order to determine what commitments the company has made. Ask how each of the commitments has been fulfilled and whether there have been any issues. If commitments have not been fulfilled, ask what has been done to address this and whether an owner has filed a section 64 request with the AER under a private surface agreement to review the terms of the lease and order the company to comply.



Class I pipeline A pipeline's class, for regulatory purposes, is defined by an index that is based on a product of its size and length. A Class I pipeline has an index of 2690 or greater, and must be approved by the AER.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>



Class II pipeline A pipeline's class, for regulatory purposes, is defined by an index that is based on a product of its size and length. Class II pipelines have an index less than 2690, and are generally small and/or short pipelines; they are not approved by the AER but they follow the same environmental protection guidelines as Class I pipelines. Class II pipelines also include any pipeline regulated by the National Energy Board.

What are the setbacks to a well or pipeline and how does that impact building a house, subdividing or other future development?

A setback is the minimum distance for seismic shot lines and test hole drilling from buildings, water wells, irrigation works, pipelines and wells. Wells and pipelines have setbacks that may limit where you can build a new structure. If you have plans to build a new structure, subdivide your land for your children or other developments, **it's critical to understand** how a well or pipeline may affect these plans.



The setback requirements for wells and pipelines vary in part on the nature of the activity and what the activity is adjacent to. For example, greater distances are required for sour gas wells than for oil wells and sweet gas wells.



If there is a proposed project that may impact your plans for your land, try to think ahead and **approach** your municipality to get the subdividing process started. The more details you can provide, the stronger your case when you negotiate with a company or submit a statement of concern when the company applies to the AER. It's not enough to say you're concerned because one day you may subdivide your land or build a home. It's better to explain how a project would limit where you have already assessed you'll build a house and show why other potential locations on your land are unsatisfactory.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

If there are abandoned wells or pipelines on the property, what is the status of the abandonment?

Well abandonment means shutting down dry wells or wells that aren't being used anymore. Down-hole abandonment includes putting cement plugs into the hole to prevent fluids from travelling through the geologic formations, cement to secure the sheath of the well (if needed) and closing the well at the surface, called surface abandonment.

Open-hole abandonment refers to the down-hole and surface abandonment of a dry hole (one that was not brought into production). Cased-hole abandonment is the same process in a completed, or cased well, after oil and gas has been extracted. Surface abandonment means removing all the wellhead equipment, but not reclaiming the site so it is possible that an abandoned well could sit for years without reclamation being completed.



A company is required to notify nearby landowners and occupants of plans for surface abandonment and make sure no oil or gas is flowing that could contaminate groundwater or rise to the surface. A company has to set cement plugs to cover all non-saline groundwater zones, to prevent substances from flowing into groundwater in porous zones. After plugging, the wellbore must be filled with non-saline water.



There is a permanent five metre setback on abandoned wells to prevent anyone building on or near one. Developers and property owners that apply for a subdivision or development permit must **identify the location** of abandoned wells. Some shallow and other wells are exempt.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

What are the reclamation plans for abandoned wells on the land?



Ask about the company's plans for reclamation of the well or pipeline. Before a company abandons a well, it's required to send a letter inviting comments on the reclamation process. Reclamation returns the land to an "equivalent land capability." That means the land has similar uses (but not necessarily identical) to land use before any development.



Get involved. Tell the company about any issues, point out where you think the ground may be contaminated and ensure that any drilling waste disposal areas are properly reclaimed. Tell the company if you want to keep the access road (but that's only allowed if the road was built to grade). If there was natural vegetation before, you can request reseeding or replanting with native plants, rather than with cultivated varieties.



The company is required to do a Phase 1 Environmental Site Assessment (ESA) before applying for a reclamation certificate from the AER. The ESA gathers information to determine the likelihood and probable locations for contamination and whether further assessment is needed. If the Phase 1 ESA finds there may be contamination or it can't find sufficient information, the operator must do a Phase 2 ESA which includes taking soil and groundwater samples and identifying any areas that don't meet AER's remediation guidelines.



Only about 15 per cent of the sites will be audited by the AER so it's important to **check** the condition of the landscape, soil and vegetation. Reclaimed sites are required to have at least 80 per cent replacement of topsoil, contouring, and seeding or replanting of the surface. Once the well is shut down and surface abandonment has been completed, AER will issue a reclamation certificate.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

What about impacts on agricultural activities and livestock?



You don't want animals eating contaminated vegetation or contacting contaminated soil or spilled oil, condensate or hydraulic fracturing fluids. Animals may also be affected by air emissions from oil and gas development.

In your surface lease agreement you can **negotiate** fencing and other measures to keep your animals away from the well site. If you're concerned about your animals and air pollution, you can request an assessment of the project's emissions and where they're released in relation to pasture lands.

You can also include a clause in the surface agreement that the costs of a necropsy will be covered in cases where you suspect nearby development may have played a role in an animal death. It would be helpful to have an ongoing relationship with a veterinarian to establish a herd health baseline so you can monitor changes in health and behavior to compare to the health of the herd prior to development.

If you believe oil or gas activity is affecting the health of your livestock call your veterinarian and the AER's 24-hour Emergency and Operational Complaint number 1-800-222-6514. **Be sure to keep a record** of events and take photographs to aid any investigation.



Stakeholder A person with an interest in an issue. In the case of oil and gas resource development, this may include nearby residents, recreational users of land, local business, environmental groups and various government agencies as well as the company, its staff and contractors.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>



Is there a lease road for an oil and gas operation? Is it permanently constructed or a temporary access road that will need to be reclaimed?



When it comes to roads, **think about** whether access to your property depends on a lease road, how much daily traffic there is from nearby industry and whether your property is in or crosses an emergency planning zone (EPZ) (the area around a well where people may be at highest risk in case of an uncontrolled release of H₂S).

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Have there been any drilling wastes applied to the land in the past five years?



Drilling waste may contain heavy metals, sodium, chloride, hydrocarbons, nitrogen or other substances that can pollute soils and surface waters. Companies have to **sample and test** the waste before they dispose of it. The criteria and disposal methods depend on the toxicity of the waste, so that some types of waste cannot be applied to land. Non-hydrocarbon-based drilling wastes can be applied to fields and vegetated lands through landspray, landspray while-drilling, and pump-off methods.

Companies also have to collect samples of the soil at the disposal site before, and sometimes after disposal. Ask to see the laboratory results and review the disposal method criteria. A landowner has the right to withhold consent for any disposal that goes beyond the well site or pipeline right-of-way boundaries for different types of disposal methods. But the company doesn't have to secure consent if the drilling waste will be managed on the site where it was created.



Adversely affected There are two conditions you have to prove as 'probable' in a statement of concern in order to have your concerns about an energy resource activity considered by the AER when it reviews an application for development. The first is whether you're 'directly affected' and the second is whether you're 'adversely affected.' Generally, this is understood to be more than moderate adverse consequences. If in a regulatory appeal, you must prove adversely affected is a fact, not a probability.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Off-site waste disposal **requires** landowner approval over and above the approval for the well site itself, or of a nearby landowner who consents to the disposal process on their land. This approval should be in writing, negotiated separately but attached to the surface lease or right-of-entry agreement.



Before giving permission for any drilling waste to be spread on your land, ask about the type of waste and the compensation offered. If you agree, ask for copies of the lab work on the sampling and the pre-disposal soil conditions to ensure it meets the criteria and the baseline condition of the disposal site is documented.

If you're engaged in organic farming, waste has to be taken off-site to maintain your organic status. Neighbours of organic farmers should also be aware that organic beekeepers can lose their organic status if sump fluids are spread within range of their hives.

Flaring The burning of unwanted gases from a well or processing facility. It may be routine or occur due to an upset. The two common types of flaring are well test flaring and solution gas flaring. Well test flaring is carried out when a new well is drilled, to burn off gases while the chemical content of the gases is being tested. Solution gas flaring occurs at batteries or wells where oil from one or more wells is processed and stored. Flaring is sometimes necessary at temporary stacks, as part of pipeline maintenance operations. Gas processing plants also use flares, to burn off by-products for which there is no market and to burn off gas during emergency conditions.



This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Is there any flaring allowed and occurring near the property?



There are many types of flares and they can release a lot of air pollutants, including unburned hydrocarbons and other harmful substances. Signs of problems with flares include black smoke or plumes, frequent or long-lasting flares, or continuous flaring at projects that may not have been approved for such, or abnormally intense flames.



If you experience health issues that seem to be correlated with flaring activity, **take detailed notes**. Document issues, take photographs of flares and smoke, and keep records of the date, nature of the occurrence and length of time that the problem persists.



Be sure to include something in the photograph to provide scale and to identify the location where it was taken — such as the company sign. Ideally, use a camera that includes a date and time stamp on the image. This is especially important in cases where the flaring event may end before an inspector can come to the site to investigate.



If there are problems with flares, contact the company and call the AER's 24-hour Emergency and Operational Complaint number 1-800-222-6514 to register your complaint, ask them to investigate and take action.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Can you find out whether oil and gas activity is coming to or near your land?



The industry **has to inform** and consult all those “whose rights may be directly and adversely affected by the proposed application.” The company will likely interpret whom to inform and consult based on the minimum consultation and notification requirements that the AER has established.

The company is **obliged** to have a face to face meeting or phone call with landowners in the required consultation area. Consultation is meant to be a two-way process: informing people and also listening and responding to their concerns.

The company **must provide** an information package and relevant AER information as well as obtain a confirmation of nonobjection from certain people depending on the type of project (which doesn't have to be in writing). A surface rights agreement signed by landowners or occupants is a form of nonobjection.

The company has at the very least send people and/or local authorities a **written notice** about the proposed project and an information letter from the AER. The company must offer AER publications and brochures (including some of those supplied to the consulted landowners), and be available to answer questions.



Statement of concern A written submission to the AER that outlines specific concerns about an energy resource activity application. A statement of concern may be filed by anyone who believes they may be directly and adversely affected by an application.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>



Companies send materials to addresses on land titles, so **ensure** the address on your land titles are up to date. After this notification, the company must wait 14 days to allow people to raise concerns before applying to the AER.

Since **notification requirements** differ depending on the size and type of a project or facility, in some cases you may be consulted and informed as a nearby landowner, while in others you may have to find the information yourself. Building and maintaining relationships with company representatives, AER staff, and neighbours may help keep you informed about any upcoming activities.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Should I test the well water when buying a new property?



Yes. Get as much information as you can about the history of water quality and quantity so that you have a baseline. There are two issues with water wells—the effect from water wells drilled by a company can have on groundwater and the impacts that may be caused by oil and gas wells.



Many landowners **ask** the company to pay for testing their well when they negotiate a lease agreement, so they have a baseline to compare any changes in water quality due to oil and gas related operations. Make sure the laboratory is accredited by the Canadian Association of Environmental Analytical Laboratories and ask for a copy of the test results. If a company is unwilling to pay for a routine water quality test before it constructs an oil or gas well, you may want to ask the AER to facilitate your negotiations.



If you have a **complaint** about a water well that may be affected by the oil and gas industry or groundwater contamination, call the AER's Energy and Environmental 24-hr Response line at 1-800-222-6514.



Seismic survey A survey of the geological layers under the ground, conducted by sending out vibrations and measuring the way in which these are reflected back from the different layers. The vibrations may be created by dynamite charges in holes (usually 12 to 18 metres deep) or by mechanical vibrations at the surface (vibroseis). Data is recorded on receiving devices — either in two dimensions using one line of receiver “geo-phones” along a shot line, or more often now with a three-dimensional technique using simultaneous recording along multiple receiver lines. This enables geophysicists and geologists to identify the geological structure and formations where oil or gas may be found.

This document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>



Are you selling the property? Have you disclosed all potential sources of contamination or former remediation efforts?

Sellers and real estate agents are **required by law to disclose** any known contamination or “latent defects” when selling a property. A landowner can be sued for deceit or fraud if they’ve intentionally or recklessly misled a buyer and the buyer has been harmed as a result.



A company is responsible for 25 years for surface reclamation issues such as vegetation, soil texture and drainage, and has a lifetime liability for contamination. If landowners or occupants have problems with the reclaimed land they should contact the company first and then notify the AER. An AER inspector may inspect the site and may require the company to conduct further work. The AER has a 24-hour Emergency and Operational Complaint number: 1-800-222-6514.

This document gives you a brief overview of what you can find in the Landowners’ Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Still, it is buyer beware.

The courts have suggested that: “the burden of thoroughly investigating a site remains firmly on the purchaser’s shoulders.” Often land contracts may transfer land “as is” and exclude a warranty outside of the scope of the contract, such as the condition of the soil. Therefore if an engineering report recommends that **further investigation** is necessary, or there are other indications that investigation is needed, the liability may fall on you as a buyer if you don’t do your due diligence.



In some cases, the buyer’s **bank will ask** for an environmental assessment if a reclamation certificate has not been issued. The bank may also want an environmental audit before granting a mortgage. The current landowner would normally have to pay for this audit.

Some banks may ask for an **environmental assessment** of sumps or drilling waste disposal sites before allowing you to use your property as security for borrowing. These sites may or may not be identified on the Environmental Site Assessment Repository (ESAR), so you may have to dig into approvals of past projects. The Farmers’ Advocate’s Office may be able to give advice in these situations.



Abandonment (abandoned well or facility) The permanent deactivation of a well, pipeline or seismic hole. In an abandoned well (cased or uncased), porous and permeable hydrocarbon and/or water bearing formations are effectively isolated through the placement of cement caps. Well abandonment also includes removing the wellhead, cutting the casing off at a depth of one metre below ground surface and welding a steel plate across the opening. Abandonment should ensure there is no potential for damage to the oil and gas remaining in the ground or for the oil or gas to contaminate groundwater. See also orphan well and suspended well. In the case of a pipeline, abandonment means the permanent deactivation of a pipeline or part of a pipeline, whether or not it has been removed. For seismic holes, abandonment involves ensuring the hole is capped in such a way that there is no chance of damage to groundwater.

This document gives you a brief overview of what you can find in the Landowners’ Guide to Oil and Gas Development. Download the complete guide <http://www.pembina.org/reports/landowners-guide-2016.pdf>

Check List:

- Be Proactive
- Engage early
- Be diligent
- Know your plans
- Find the win-win

Find out more information in Chapter 1 of the Landowners' Guide to Oil and Gas Development.
<http://www.pembina.org/reports/landowners-guide-2016.pdf>



This PRIMER document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide:
www.pembina.org/pub/landowners

Get The Full Guide

This PRIMER document gives you a brief overview of what you can find in the Landowners' Guide to Oil and Gas Development. Download the complete guide:

www.pembina.org/pub/landowners



PEMBINA institute



This primer was prepared by the Pembina Institute with the support of the Alberta Real Estate Foundation



pembina.org



pembina.org/subscription
email updates



twitter.com/pembina



facebook.com/pembina.institute

Calgary

219 19 St. NW, Calgary, AB T2N 2H9

Edmonton

300, 9804 Jasper Ave., Edmonton, AB T5J 0C5

Toronto

600, 920 Yonge St., Toronto, ON M4W 2J2

Vancouver

610, 55 Water St., Vancouver, BC V6B 1A1