

Chapter 17

Energy and Resources—Managing Future Cleanup of Oil and Gas Wells

1.0 MAIN POINTS

By law, the oil and gas industry remains responsible for the cleanup of oil and gas wells in Saskatchewan including inactive and legacy wells. The Ministry of Energy and Resources uses four programs to regulate the future cleanup of wells.

By February 2018, the Ministry had improved its processes to regulate the future cleanup of oil and gas wells by implementing four of six remaining recommendations made in our 2012 audit of this area. But more work remains.

Key improvements included:

- Dedicating more resources and skills to manage its oil and gas well cleanup programs, and cleaning up orphan wells sooner.
- Assessing the reasonableness of cleanup work cost estimates it uses to determine the financial risks of licensees (oil and gas companies) not being able to pay for cleanup of wells for which they are responsible. The Ministry uses this risk assessment to determine which licensees should provide security deposits and the amount of the deposit.
- Extending its auditing of licensees' reclaimed well sites to include audits of reclamation reports that did not identify anomalies and/or discrepancies.
- Giving legislators and the public better information about its regulation and management of the risks related to future cleanup of oil and gas wells and facilities.

Key areas where further work is needed include the following:

- Considering how best to address long-term financial risk to industry from the associated environmental risks related to the increasing number of inactive wells and facilities. The total number of inactive wells increased by almost 90% between 2005 and 2017.

As of February 2018, the Ministry had not completed its analysis to determine if its programs adequately protect industry from financial risks related to cleanup of inactive wells. This includes the risk of licensees with financial difficulties passing costs of cleanup onto the rest of the industry.

- Continuing to assess the environmental risks posed by 9,000 legacy well sites to confirm the Ministry's preliminary risk assessment of low. As of February 2018, because assessment work was not yet complete, the environmental risks of legacy well sites are unknown.



2.0 INTRODUCTION

The Ministry of Energy and Resources is responsible for regulating the oil and gas industry under *The Oil and Gas Conservation Act*. The responsibilities of the Ministry include regulating the future cleanup of oil and gas wells. The Ministry estimates that industry's overall future environmental cleanup costs of existing oil and gas well and facilities located in Saskatchewan could exceed \$4 billion.¹

This chapter describes our second follow-up of the Ministry's actions on the recommendations we first made in 2012.² **Section 5.0** is a glossary of technical terms used in this chapter.

Our *2012 Report – Volume 2*, Chapter 31 concluded that, for the period of October 1, 2011 to September 30, 2012, the Ministry did not have effective processes to manage the financial and environmental risks related to the future cleanup of oil and gas wells and related facilities. We made seven recommendations. By February 28, 2015, the Ministry had implemented one recommendation and made progress on six recommendations.

To conduct this follow-up audit, we followed the standards for assurance engagements published in the *CPA Canada Handbook – Assurance* (including CSAE 3001). To evaluate the Ministry's progress towards meeting our outstanding recommendations, we used the relevant criteria from the original audit. The Ministry agreed with the criteria in the original audit.

We interviewed Ministry staff responsible for managing its well cleanup programs. We also reviewed various documents including relevant information tracked in the Ministry's related IT systems, status update reports, job descriptions, and organizational charts.

3.0 STATUS OF RECOMMENDATIONS

This section sets out each recommendation including the date on which the Standing Committee on Public Accounts agreed to the recommendation, the status of the recommendation at February 28, 2018, and the Ministry's actions up to that date.

3.1 Additional Resources and Skills Allocated to Well Cleanup Programs

We recommended that the Ministry of Energy and Resources (formerly the Ministry of the Economy) assess and allocate the resources and skills necessary to effectively carry out the Licensee Liability Rating Program (LLR), the Orphan Abandonment Program (OA) (including the timely cleanup of orphaned wells and facilities), and the Acknowledgement for Reclamation Program (AOR). (2012 Report – Volume 2; Public Accounts Committee agreement December 9, 2013)

Status – Implemented

¹ Information taken from the Ministry of Energy and Resources' records.

² On February 2, 2018, Government discontinued the Ministry of the Economy and created three separate ministries: the Ministry of Energy and Resources, the Ministry of Trade and Export Development, and the Ministry of Immigration and Career Training (Orders in Council #49/2018 to 53/2018 each dated February 2, 2018).

In 2015-16, the Ministry reorganized its Petroleum and Natural Gas Division to focus its activities on regulating the oil and gas industry. The Ministry created the Liability Management Branch (a new branch in the Division). The new branch focuses on operating the Ministry's well cleanup programs (see **Section 4.0** for a brief description of these programs—Licensee Liability Rating, Orphan Abandonment, Acknowledgement of Reclamation, and Care and Custody).

Based on its assessment of resources and skills to carry out its cleanup programs and in conjunction with the reorganization, the Ministry did the following. It updated the job descriptions of individuals responsible for these programs to reflect the responsibilities and required level of skills and experience. Based on these descriptions, it reclassified the positions to align with increased and clarified responsibilities. It added three full-time positions to the Branch to administer these programs.

The Ministry updated job descriptions for the program manager positions. We found the descriptions assigned clear responsibilities for administering these cleanup programs. In addition, we found the Ministry appointed managers for each well cleanup program as planned.

Also, we found the Ministry had improved, since our 2012 audit, the timeliness of its orphan well cleanup program activities (See **Figure 1**). It more systematically determines wells as orphaned, and has done a better job at abandoning and cleaning them up (reclamation) within a reasonable timeframe. Abandoning involves pumping cement into the well hole to prevent any subsurface formation containing gas or fluids from leaking below ground or escaping above ground.

At March 31, 2017, about 200 orphaned wells were in various stages of reclamation. The number of sites requiring reclamation is higher than the number requiring abandonment because the reclamation of a site typically takes between two to three years to complete, compared to abandonment which is much quicker to complete (e.g., days). The Ministry tracks the number of sites requiring reclamation monthly.

Figure 1—Orphan Well Abandonment Activity from 2011-12 to 2016-17

Fiscal Year	Number of Wells		
	Orphaned During the Year	Abandoned During the Year	Remaining to be Abandoned
2016-17	0	76	55
2015-16	121	79	131
2014-15	169	80	89
2013-14	43	45	0
2012-13	6	7	2
2011-12	10	7	3

Source: Ministry of Energy and Resources records

Note: There were also ten orphaned facilities at March 31, 2017; the Ministry had abandoned four and completed reclamation on one facility.

Having sufficient and dedicated resources and clear responsibilities for its cleanup programs will assist the Ministry in the following. It will help it reduce the risk of damage to the environment resulting from wells and facilities where the Ministry cannot locate the



responsible licensees (oil and gas companies), or it has determined the responsible licensees do not have sufficient financial means to pay for the cleanup costs.

3.2 Current Cleanup Cost Estimates and Trends Used

We recommended that the Ministry of Energy and Resources (formerly the Ministry of the Economy) use current estimates and trend analysis to monitor, assess, and report on the risks and associated costs of the future cleanup of wells and facilities. (2012 Report – Volume 2; Public Accounts

Committee agreement December 9, 2013)

Status – Implemented

The Ministry used current estimates to monitor, assess, and report on the current estimated costs of future cleanup of wells and facilities.

Use of Current Cost Estimates

To keep its estimates of costs current, the Ministry periodically compared its estimates of well cleanup costs to actual well cleanup costs it incurred in its Orphan Abandonment Program. Cleanup costs are costs for abandonment and reclamation. For example, in 2017, it estimated reclamation costs of \$22,200 per well in certain areas of the province.³

The Ministry included its estimated abandonment and reclamation costs in its *Saskatchewan Licensee Liability Rating Guidelines*. It uses these costs in its licensee liability rating calculation for each licensee.⁴ It requires licensees with lower ratings to pay the Ministry a security deposit, in the form of an irrevocable line of credit or cash. Lower ratings are where a licensee's well assets are less than the estimated cleanup costs for its wells and facilities.

We found the Ministry completed its 2017 comparison of costs as expected. We also found its 2017 estimates were reasonable—estimates were similar to costs incurred by licensees. In addition, we found the Ministry's IT system contained these cost estimates as expected (e.g., to use when calculating the licensee liability rating).

Use of Current Trend Analysis

The Ministry prepared a status report for its Oil and Gas Orphan Fund each month. The Ministry used the report to update senior management and the Saskatchewan Oil and Gas Orphan Fund Advisory Committee.⁵

The report set out key trends and the Ministry's analysis of costs and key program activities. It included:

- Key monthly financial statistics for the current year and prior year (i.e., total assets, liabilities, security deposits held, provincial licensee liability rating)

³ Ministry of Energy and Resources (formerly Ministry of the Economy), *Saskatchewan Licensee Liability Rating Guideline*.

⁴ The licensee rating is determined using a formula set under *The Oil and Gas Conservation Regulations* and related ministry directive. [http://publications.gov.sk.ca/documents/310/104148-DRAFT%20LLR%20Directive%20\(October%201%202017\).pdf](http://publications.gov.sk.ca/documents/310/104148-DRAFT%20LLR%20Directive%20(October%201%202017).pdf) (08 December 2017).

⁵ The Orphan Fund Advisory Committee provides the Ministry with advice on orphan well abandonment and reclamation. It includes representatives from the Government and industry in Saskatchewan.

- For the current and past eight years, by fiscal year, the number of wells deemed orphaned and abandoned; the amount spent on cleanup, and the amount of levies collected
- Statistics on the number of licensees' wells for that month the Ministry was taking enforcement action on

We found the monthly status report included sufficient information to enable management to identify and understand the key trends and risks related to the future cleanup of wells and facilities.

In addition, the Ministry identified and kept senior management aware of new and emerging risks affecting its oil and gas cleanup programs. For example, the Ministry actively monitored a 2016 court case in Alberta (i.e., Redwater).⁶ This court case ruled that Alberta licensees going through the bankruptcy process in Alberta could use resources obtained from the sale of valuable assets (e.g., oil wells still producing oil) to pay other liabilities before using those resources to clean up oil wells no longer producing oil.

The Ministry documented its analysis of the risks and implications for Saskatchewan of the 2016 court case and the related 2017 appeal. It did its analysis within one month of the appeal—promptly. It discussed risks and options to manage them with the Saskatchewan Oil and Gas Orphan Fund Advisory Committee.

In August 2016, in response to the risks, the Ministry changed its process to review and approve licensee applications to transfer oil and gas wells. The new process considered factors in addition to the licensee liability rating formula when determining whether licensees must provide a security deposit and how much.⁷ While the Ministry was using the new process, it had not been finalized as of February 2018, as the Ministry was in consultation with industry and the Advisory Committee of the Oil and Gas Orphan Fund on whether it represented a viable approach for managing these risks over the long-term.

For each of the well transfer applications after August 2016 we tested, the Ministry followed its new process as expected.

Having and using current estimates of cleanup costs and trend analysis is key to proper management of the risks and associated costs of the future cleanup of wells and facilities. Having current estimates of cleanup costs is essential to properly assessing the risk of licensees potentially not having sufficient financial resources to clean up wells for which they are responsible.

3.3 Audits of Reclamation Reports Extended

We recommended that the Ministry of Energy and Resources (formerly the Ministry of the Economy) assess the need for extending its independent audit practices to sample licensees' well sites whose reclamation reports contained no anomalies and/or discrepancies. (2012

Report – Volume 2; Public Accounts Committee agreement December 9, 2013)

Status – Implemented

⁶ www.osler.com/en/resources/regulations/2017/redwater-revisited-should-the-buck-stop-here (20 July 2017) and www.osler.com/en/resources/regulations/2016/implications-of-the-redwater-decision-where-does (27 September 2017).

⁷ Prior to August 2016, the Ministry only required licensees to provide a security deposit based on the results of the licensee liability rating formula in *The Oil and Gas Conservation Regulations, 2012*, s. 117(1).



The Ministry has extended its practice of auditing licensees' reclaimed well sites to include audits where its review of reclamation reports did not identify anomalies and/or discrepancies.

The Ministry reviews all well-site reclamation reports using a standard checklist to guide and document its review. For each of the past four years, the Ministry audited licensees' well sites where:

- Its desk review of the licensee's well-site reclamation reports identified anomalies or discrepancies.
- Its desk review did not identify anomalies or discrepancies. The Ministry judgementally decided how many and which of these sites to audit. Instead, a statistical approach (e.g., a sampling program, and systematic method to select items to test) would help ensure it audits a sufficient number of items, and gives all items an equal opportunity of selection. This in turn helps test results reflect the area subject to audit.

The Ministry's audit includes engaging environmental specialists to verify that licensees met the requirements after licensees cleaned up oil and gas wells.

Over the past four years, it has audited 72 sites (comprised of 29 sites with identified anomalies and 43 sites without). For both types of reports, its audits found issues (e.g., soil that contained contamination greater than accepted limit):

- In 17% of them where its desk reviews had identified anomalies or discrepancies
- In 9% of them where its desk reviews did not identify anomalies or discrepancies

Although its audits found fewer issues where its desk review did not identify anomalies or discrepancies, the Ministry determined doing these audits was beneficial.

The Ministry is using these audits to determine whether licensees properly restore their sites to the original or similar condition. In addition, audits of sites where licensees report they have completed reclamation provide a way for the Ministry to enforce the provincial requirements related to reclaiming oil and gas wells and facilities.

3.4 Further Work to Confirm Risks of Legacy Well Sites Needed

We recommended that the Ministry of Energy and Resources (formerly the Ministry of the Economy) complete its assessment of the financial and environmental risks arising from legacy well sites, assess its liability, and develop a plan for cleaning up contaminated legacy well sites. (2012

Report – Volume 2; Public Accounts Committee agreement December 9, 2013)

Status – Partially Implemented

The Ministry has not yet completed its assessment of potential risks arising from legacy well sites. See **Figure 2** for a brief description of legacy well sites.

Figure 2—Legacy Wells Sites

Saskatchewan has about 20,000 legacy well sites, of which, about 9,000 were producing wells. At February 2018, the licensees of almost 1,300 of the 9,000 wells have ceased operating in Saskatchewan. Wells that produced may present a higher environmental risk.

Legacy well sites are sites that received a release prior to 2007 from surface owners (e.g., farmers) or certificates issued pursuant to section 56(2) of *The Surface Rights Acquisition and Compensation Act*. The Ministry, in accordance with its legislation at the time, accepted the signed release or the certificate as evidence that the sites were restored to appropriate environmental standards or to the satisfaction of the landowner. The legislation did not require surface owners or licensees to provide the Ministry with independent reports by environmental specialists before the Ministry granted the releases.

Since February 2015 (our last follow-up), the Ministry inspected, in 2015, 36 legacy well sites. None of the 36 sites inspected contained residual contamination or significant issues. For one site inspected, the Ministry identified some tanks requiring removal. Based on these inspections, the Ministry's preliminary assessment is that the environmental risk of these sites is low. Also, because it did not find contamination in these 36 sites, the Ministry had determined no liability or cleanup plan was required for them. For the Ministry's 2015 site investigation reports we tested, the Ministry completed site investigations as expected.

However, the Ministry did not document its basis for the number of sites it inspected in 2015 or how it selected which sites to inspect. It did not use a formal approach to select the number and types of sites it inspected.⁸

Use of an informal approach to select sites to inspect increases the risk that the results of inspections may not be reflective of all legacy well sites or a subset thereof. In our view, environmental and associated financial risks to industry of legacy well sites are unknown because of the informal approach the Ministry used to select the legacy sites for inspection.

Under the Ministry's liability management programs (such as those described in **Section 4.0**), active licensees are responsible for environmental cleanup costs. For sites where licensees are no longer active in the province, its Orphan Abandonment Program is responsible for cleanup. As **Section 4.0** indicates, the Ministry collects levies and security deposits from industry to pay for cleanup costs incurred in the Orphan Abandonment Program.

The Ministry needs to know the risks the wells pose to make certain its liability management programs sufficiently consider those risks, and that it has effectively transferred those risks to the oil and gas industry (e.g., collected sufficient levies from industry).

In February 2018, senior management indicated the Ministry was considering how best to further assess legacy well sites. It was considering taking a targeted approach that would focus on wells that may pose a higher risk (e.g., wells that produced where the licensee no longer operates in the province). Saskatchewan has almost 1,300 legacy wells that produced where the licensee no longer operates in the province. At February 2018, it had not made final decisions and did not have a written plan to guide this work.

⁸ When using a sampling approach to determine the financial and environmental risks of legacy well sites, it must be done using appropriate sampling methods. This includes using sampling methods that help ensure the size of the sample is large enough to get results that reflect the entire population as accurately as needed. In addition, it includes selecting sites for inclusion in the sample in a way that gives all items an equal chance of selection. A population may be segmented based on various factors prior to selecting a sample.



3.5 Complete its Analysis that Programs Manage the Risk of Inactive Wells

We recommended that the Ministry of Energy and Resources (formerly the Ministry of the Economy) manage the financial and associated environmental risks related to the timely cleanup of inactive wells and facilities. (2012 Report – Volume 2; Public Accounts Committee agreement December 9, 2013)

Status – Partially Implemented

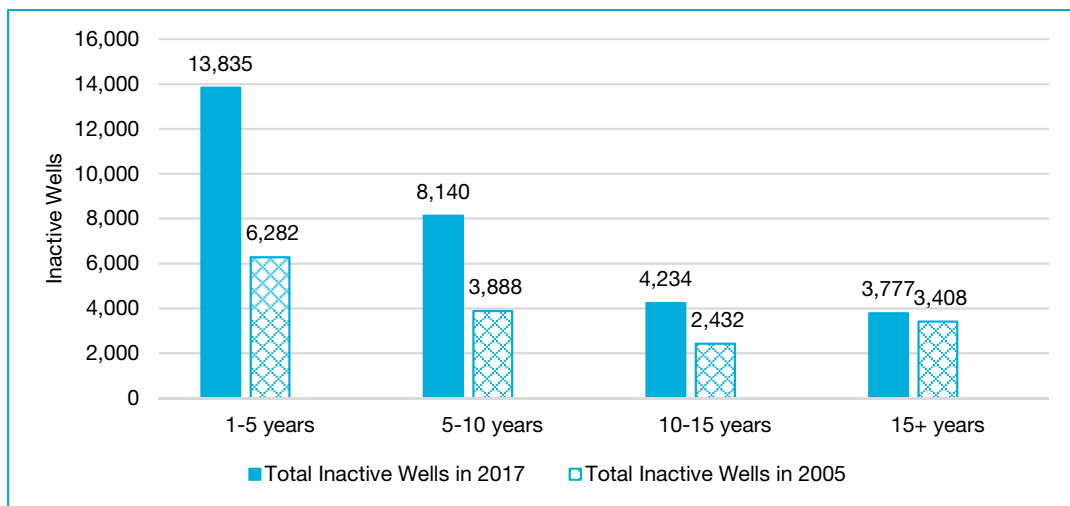
As of February 2018, the Ministry was in the midst of assessing the implications on its liability management programs of increases in the number of inactive wells in Saskatchewan as well as recent changes in the oil and gas industry. It was determining whether its liability management programs are doing enough to mitigate the risk of licensees (including those with inactive wells) not paying for cleanup of the wells they own, thereby passing the costs of cleanup onto the rest of the industry and potentially to taxpayers.

Since our 2015 follow-up, the oil and gas industry has faced two key challenges that have resulted in the number of inactive wells increasing, and potentially may impact who pays for their cleanup.

First, the level of activity in Saskatchewan’s oil and gas sector declined significantly in 2015 resulting from significant declines in the global prices of oil and gas. While the sector has partially recovered, the number of inactive wells in Saskatchewan has increased.

As shown in **Figure 3**, the total number of inactive wells in Saskatchewan has increased by almost 90% between 2005 and 2017 to about 30,000.

Figure 3—Number of Inactive Wells by How Long They Have Been Inactive



Source: Ministry of Energy and Resources records.

Second, as noted in **Section 3.2**, the Alberta Redwater court decisions could have significant implications on who pays for the cleanup of abandoned wells. This decision allows receivers in Alberta to renounce uneconomic wells of insolvent companies, resulting in an increased number of orphaned wells and facilities. It pushes the liability for

cleanup on the rest of the industry through orphan abandonment programs.⁹ The Government of Saskatchewan disagrees with this decision and have intervened in the court proceedings. At February 2018, this matter was before the Supreme Court of Canada.

In response, the Ministry has been monitoring the financial viability of the industry, and the implications on inactive wells. In late 2017, the Ministry analyzed inactive wells and facilities in Saskatchewan. Its analysis shows that licensees having a high percentage of inactive wells are more likely to fail (e.g., declare bankruptcy). It found, on average, 60% of those licensees' wells were inactive at least two years prior to failure. Its analysis indicates the risk of more licensees failing increases the risk of the number of orphaned wells increasing. The Ministry is aware that as more licensees fail, the Oil and Gas Orphan Fund levy required from the remaining licensees may need to proportionally increase.

Further to this, its analysis identified that as the percentage of inactive wells a licensee holds increases, the ability of the Ministry to collect security deposits under its Licensee Liability Rating Program decreases. There is an increased risk that these licensees may not sufficiently maintain the sites or have the financial means to clean them up.

As of February 2018, given the uncertainty about the outcome of the Alberta Redwater case, the Ministry was not able to complete its analysis.

Also, based on our research (as set out in **Figure 4**), wells inactive for extended periods may pose risks to the environment albeit less than those posed by active wells. Active wells present the highest and most immediate environmental risk. As shown in **Figure 3**, at May 2017, about 16,000 wells were inactive for more than five years, compared to almost 10,000 in 2005—an increase of 60%.

The Ministry regards inactive wells, regardless of age, as having low environmental risks. It further notes its various programs that check the integrity of wells (e.g., inspection of wells) would identify environmental risks if they did exist. It also noted that it has received few complaints from landowners about inactive wells.

Figure 4—Potential Environmental Risks of Inactive Wells

The well pipe and casing usually prevent the co-mingling of sub-surface liquids (fresh water, salt water and hydrocarbons), or leaks at the surface. However, failures can occur due to corrosion or breakage due to ground shifting. The longer pipes and casings are in the ground, the greater the chance a failure could occur.

Inactive wells may leak methane (a greenhouse gas) and may increase risk of contamination of surface and ground water.

If inactive well and facility sites contain contamination, these sites can threaten wildlife habitat and interfere with agricultural activity.^A Flooding of or soil erosion from contaminated well sites that are not reclaimed may lead to the release of chemicals into the environment (e.g., surface and ground water).^B

The purpose of abandoning (i.e., plugging the well pipe with cement or mud) is to protect the sub-surface environment in the event of pipe failure.^C

^A Research for the Future, *Plugging the Gaps in Inactive Well Policy*, (May 2016), www.rff.org/research/publications/plugging-gaps-inactive-well-policy (28 December 2017).

^B University of Waterloo, *Climate Change and the Preparedness of Canadian Provinces and Yukon to Limit Potential Flood Damage* (October 2016), www.intactcentreclimateadaptation.ca/wpcontent/uploads/docs/Climate%20Change%20and%20the%20Preparedness%20of%20Canadian%20Provinces%20and%20Yukon%20%28Oct%2031%202016%29.pdf (21 December 2017).

^C Society of Petroleum Engineers (George E. King, Randy L. Valencia), *Environmental Risk and Well Integrity of Plugged and Abandoned Wells*, (2014).

⁹ Ministry of Economy, *2016-17 Annual Report*, p. 7.



At February 2018, Saskatchewan had about 30,000 inactive wells that had not been abandoned.

The Ministry is aware that licensees are reluctant to permanently close and clean up inactive wells because, at times, such wells may become productive again. For example, technological changes that reduce drilling or extraction costs, changes in owners, or increases in oil prices may result in an inactive well becoming profitable or producing.

In addition, cleaning up inactive wells (i.e., abandonment and reclamation) is more expensive for a licensee than keeping a well in a prolonged inactive state. As a result, it is in licensees' interest to keep their wells inactive instead of incurring the cleanup costs.¹⁰

However, we found that research predicts that the number of inactive wells that licensees put back into production is low, even if oil prices significantly increased and new technologies are developed.¹¹

While the Ministry takes some steps to encourage licensees to clean up inactive wells (e.g., providing financial incentives such as the Acknowledgement of Reclamation Program), it has not set criteria for requiring abandonment of inactive wells. We noted that some jurisdictions have opted to use this approach.¹² See **Figure 5** for examples.

Figure 5—Examples of Regulatory Requirements of Other Jurisdictions related to Inactive Wells

Example Requirement	Example Jurisdiction
Licensees to abandon wells that have been inactive for a period of time (e.g., 12 months) or that meet certain criteria.	North Dakota requires wells that have not produced any oil or gas in 12 consecutive months to be abandoned. ^A
Licensees to suspend inactive wells	Alberta requires licensees to suspend inactive wells that have been inactive for 12 consecutive months. Suspending inactive wells helps to reduce potential environmental risks by temporarily plugging inactive wells to prevent leakage. Alberta released its well suspension requirements in December 2016. ^B
Licensees to ask the regulator to inspect the well or facility before the regulator accepts the licensee making the well or facility inactive. This assumes that a well or facility that is in good condition before becoming inactive is less likely to harm the environment.	Pennsylvania requires such inspections. ^C
Licensees to provide evidence that the well or facility still has future economic viability before the regulator accepts the licensee making the well or facility inactive.	Texas requires an independent specialist to provide a report on the future viability of the well proposed to become inactive. ^C

^A <http://business.financialpost.com/commodities/energy/north-dakotas-last-orphan-how-canada-needs-a-lesson-on-cleaning-up-an-oil-boom-gone-bust> (26 September 2017).

^B Alberta Energy Regulator *Directive 013 Suspension Requirements for Wells*, www.aer.ca/documents/directives/Directive013.pdf (3 November 2017).

^C Research for the Future, *Plugging the Gaps in Inactive Well Policy*, (May 2016), www.rff.org/research/publications/plugging-gaps-inactive-well-policy (28 December 2017).

¹⁰ Research for the Future, *Plugging the Gaps in Inactive Well Policy*, (May 2016), www.rff.org/research/publications/plugging-gaps-inactive-well-policy (28 December 2017).

¹¹ University of Calgary School of Public Policy, *80,000 Inactive Oil Wells: A Blessing or a Curse?*, (2017), www.policyschool.ca/publications/80000-inactive-oil-wells-blessing-curse-2/ (28 December 2017).

¹² We note various jurisdictions have differing regulatory regimes for inactive wells based on their geology, geography, well design, production, and land and mineral ownership. For example, British Columbia, Alberta, Texas, and Louisiana have regimes similar to Saskatchewan. Pennsylvania and North Dakota have significantly different programs.

In light of the significant increase in the number of inactive wells, the recent decline in the oil and gas industry, and the uncertainty of the outcome of the Redwater Supreme Court case, completing its analysis of the liability management programs is key to confirming if the Ministry's programs adequately protect industry from related financial risks. This includes the risk of licensees with financial difficulties passing costs of cleanup onto the rest of the industry.

3.6 Key Information about Oil and Gas Well Cleanup Programs Reported

We recommended that the Ministry of Energy and Resources (formerly the Ministry of the Economy) report on its effectiveness to the Legislative Assembly and the public in managing the financial and associated environmental risks related to the future cleanup of oil and gas wells and related facilities. (2012 Report – Volume 2; Public Accounts Committee agreement December 9, 2013)

Status – Implemented

The Ministry's Oil and Gas Orphan Fund annual reports publicly reported sufficient information relating to its management of the risks related to future cleanup of oil and gas wells and facilities. Information in the current-year report combined with that of the prior-year report provided sufficient information on the financial and associated environmental risks related to the future cleanup.

The Ministry's *Saskatchewan Oil and Gas Orphan Fund Annual Report for 2016-17* reported key information about three of its cleanup programs (see **Section 4.0** for brief summary of each program). It reported work completed in 2016-17 and planned for in 2017-18. Similarly, the Fund's 2015-16 Annual Report reported work completed in 2015-16 and planned for 2016-17. Combined, this information allows readers to compare planned and actual work completed, see **Figure 6**. Having comparative information in the same report would be easier for readers.

Figure 6—Comparison of Oil and Gas Orphan Fund Planned to Actual Activities

Oil and Gas Orphan Fund Activity	2015-16 Actual	2016-17 Planned	2016-17 Actual
Number of Well Abandonments in Fiscal Year	79	74	76
Number of Site Assessments (i.e., steps required to reclaim well sites) in Fiscal Year	142	75-100	221

Source: *Saskatchewan Oil and Gas Orphan Fund Annual Report for 2016-17* and *Saskatchewan Oil and Gas Orphan Fund Annual Report for 2015-16*.

Examples of other key information published for 2016-17 include:

- Nine-year trends and analysis on the industry-wide estimated unfunded liability.¹³ Unfunded liability is an important measure to help assess how well the Ministry is managing the financial risks related to future cleanup of oil and gas wells.

¹³ Unfunded liability equals, for licensees with a Licensee Liability Rating Program rating less than one, the total estimated cost to clean up wells, less licensee total estimated well asset value, less the amount of security deposits held by the Oil and Gas Orphan Fund.



At March 2017, the unfunded liability has decreased to about \$10 million from \$40 million in 2009.¹⁴

- Nine-year trends and analysis on the industry-wide Licensee Liability Rating. This shows the estimated total cost to industry to clean up oil and gas wells was increasing quicker than estimated total industry well asset value. However, at March 2017 the estimated total industry well asset value was over three times greater than the estimated total cost of industry cleanup costs.
- Total forecasted cost of cleanup activities to the Fund of \$56 million (2015-16: \$51 million).
- Nine-year trend and analysis of the number of licensees required to provide security deposits into the Fund (number of licensees having a licensee liability rating of less than one).

The trend shows that the Ministry held security deposits from about 200 licensees—relatively stable since the inception of the program. There are about 350 licensees in the province.

In addition, the Ministry's *Annual Report for 2016-17* included information on strategic risks considered during 2016-17 (e.g., the Redwater court case referred to in **Section 3.2**) as well as actions taken to address related risks. For example, it reports that in light of risks related to the Redwater court decision, the Ministry:

- Reviewed its licensee transfer policy to determine whether it levies and collects sufficient funds from licensees to cover its costs of future cleanup of orphaned wells
- Started a review of the licensee liability rating formula to determine whether the formula accurately reflects current industry liabilities

Effectively managing the cleanup programs is key to reduce financial and associated environmental risks related to the future cleanup of oil and gas wells and related facilities. Providing legislators and the public with robust information about how well the Ministry manages its cleanup programs and related risks helps them understand the challenges the Ministry faces. In addition, it helps them hold the Ministry to account.

4.0 SUMMARY OF MINISTRY PROGRAMS RELATED TO CLEANING UP OIL AND GAS WELLS AND FACILITIES

Per Ministry regulations, the oil and gas industry remains responsible for the cleanup of oil and gas wells in Saskatchewan. The Ministry uses four programs to regulate the future cleanup of wells. They are the Licensee Liability Rating Program, Orphan Abandonment Program, Acknowledgement of Reclamation Program, and Care and Custody Program.

¹⁴ March 31, 2009 was the first complete fiscal year of the Oil and Gas Orphan Fund.

Licensee Liability Rating Program

The Licensee Liability Program is to help prevent a rapid increase of orphaned well and facility liabilities in the future and to help ensure licensees pay for the future cleanup of their wells and facilities.

Under this Program, the Ministry estimates the productive value of each licensee's wells and facilities (well assets) measured in the value of oil and/or gas produced from their wells and facilities in Saskatchewan compared to their estimated cleanup costs (costs of abandonment and reclamation). It requires higher risk licensees (those with well assets valued at less than the estimated cleanup costs for their wells and facilities) to pay to the Ministry a security deposit, in the form of an irrevocable line of credit or cash.

The purpose of a security deposit is to manage financial risk. If an existing licensee becomes bankrupt or cannot be located in the future, the Ministry uses the licensee's security deposit to cover the costs of cleaning up the licensee's wells and facilities. It is also used to deter a licensee from transferring or selling uneconomic wells and facilities to companies or individuals who do not have the economic means to pay for the cleanup costs.

The amount of the security deposit is the difference between the Ministry's estimated cleanup costs and the value of the licensee's well assets. The Ministry assesses the security deposit each month and when ownership of wells and facilities are transferred. The Ministry holds the security deposits in trust in the Oil and Gas Orphan Fund.

Orphan Abandonment Program

The Orphan Abandonment Program is used to clean up wells and facilities when the Ministry cannot locate the responsible licensees, or it has determined the responsible licensees do not have sufficient financial means to pay for the cleanup costs. It refers to these wells and facilities as orphaned.

Under this Program, the Ministry co-ordinates and pays for the cleanup of wells and facilities using levies collected from all well and facility licensees. The Ministry deposits the levies into the Oil and Gas Orphan Fund. When the Ministry determines a licensee's wells and facilities are orphaned, any security deposits relating to that licensee are forfeited to the Fund.

Acknowledgement of Reclamation Program

The Acknowledgement of Reclamation Program is used to motivate licensees to clean up wells and facilities. Licensees who have cleaned up wells and facilities to the Ministry's satisfaction reduce their future costs of cleanup and provide lower security deposits, if any, to the Ministry under the Licensee Liability Rating Program.

Under the Acknowledgement of Reclamation Program, the Ministry issues a certificate to a licensee when it has cleaned up (or reclaimed) a well or facility in accordance with the Ministry's site remediation standards. The Ministry does not release licensees who receive certificates from any unforeseen long-term environmental liabilities arising from the licensee's wells and facilities.



Care and Custody Program

The intent of the care and custody program is to take over the maintenance of pre-orphaned sites. These are sites that, at the time the work was required, were not officially deemed as orphaned, but the responsible company refused or was unable to meet its obligations. The Ministry's work conducted under this program is typically emergent in nature. For example, the Ministry may complete emergency abandonment of wells, removal of fluid from tanks, disposal of chemicals, etc.¹⁵

5.0 GLOSSARY

Abandonment – abandonment refers to pumping cement into the well hole to prevent any subsurface formation containing gas or fluids from leaking below ground or escaping above ground.

Inactive Wells and Facilities – wells and facilities (equipment and structures) without any reported production, injection, or disposal activities for 12 consecutive months or longer. Inactive wells and facilities are owned by active licensees; licensees remain responsible for the associated cleanup costs. As such, inactive wells and facilities are not orphaned wells and facilities.

Legacy Wells – legacy well sites are sites that received a release prior to 2007 from surface owners (e.g., farmers) or certificates issued pursuant to section 56(2) of *The Surface Rights Acquisition and Compensation Act*.

Orphan Wells – a well or facility in which the owner (i.e., licensee) no longer exists due to insolvency or bankruptcy, or cannot be located.

Reclamation – reclamation of well sites involves abandoning wells, removing facilities (equipment and structures), remediating contaminated soils and/or groundwater, and returning the site to its original or equivalent condition.

¹⁵ *Oil and Gas Regulatory Cost Recovery Levy Annual Report for 2016-17*, s.6.3. www.publications.gov.sk.ca/details.cfm?p=87610 (8 November 2017).