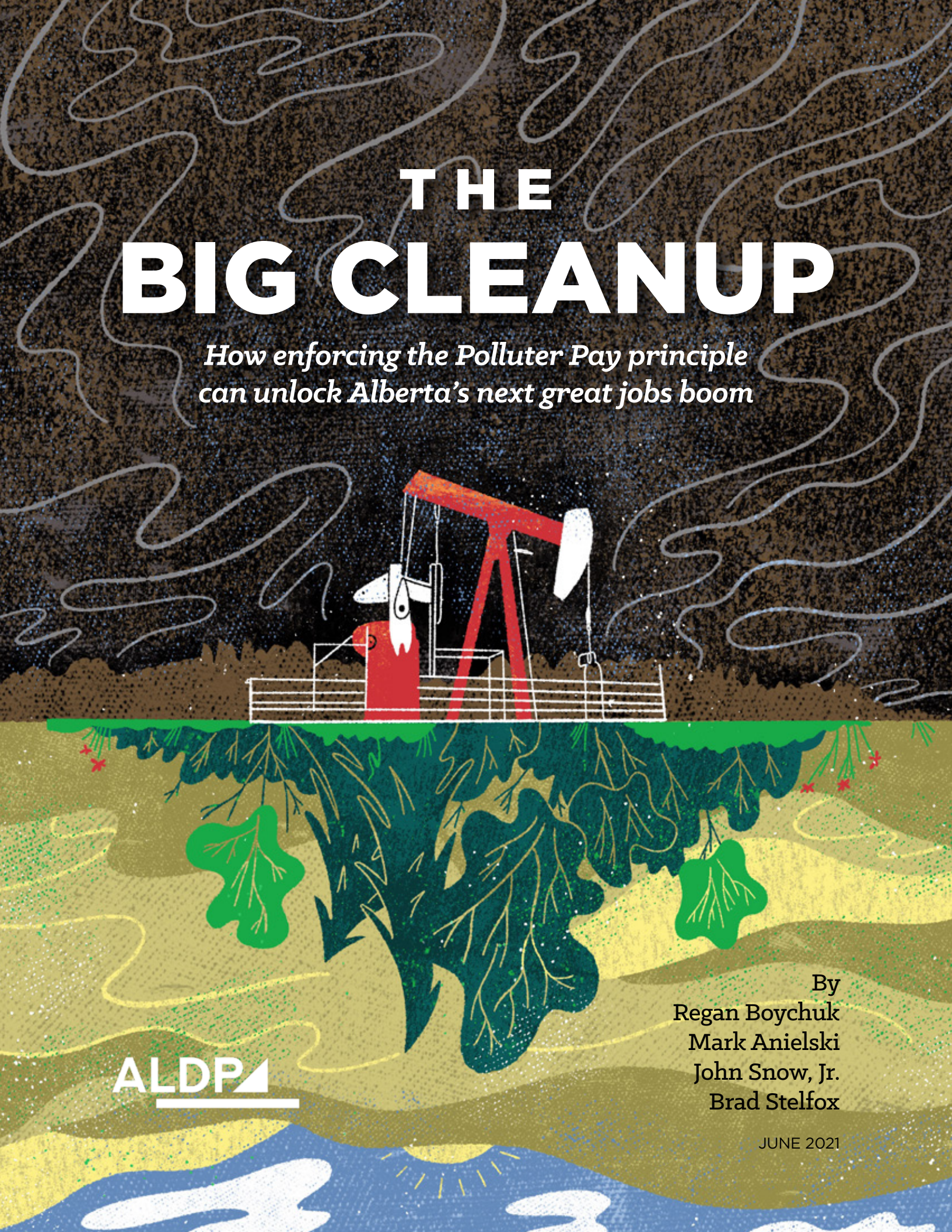
THE BIG CLEANUP

How enforcing the Polluter Pay principle can unlock Alberta's next great jobs boom



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Jodi McNeill was a founding member of the Alberta Liabilities Disclosure Project and her presence is sorely missed. This report is dedicated to her memory.

The Alberta Liabilities Disclosure Project (ALDP) is an independent and non-partisan organization pushing for accurate and transparent government-level data pertaining to Alberta's oil and gas liabilities, and solutions to Alberta's growing liabilities crisis.

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EXECUTIVE SUMMARY

Throughout 2020, the Canadian public spent $4.3 million dollars a day on the cleanup of Alberta's oil and gas wells, totaling $1.56 billion dollars.

This massive handout of public funds is just a drop in the bucket of the bill coming due. Using the Alberta Energy Regulator's (AER) own methodology, our research reveals that **the average projected cost of cleaning up Alberta's over 300,000 unreclaimed oil and gas wells is $55 billion dollars.**

Every dollar of public money that is spent on the cleanup of private industry's oil and gas wells undermines the Polluter Pay principle: a foundational tenet of Canadian environmental law. It means that polluting industries must pay for the social and environmental costs of their economic activities, including returning land to its pre-drilling state. Let's be clear: the companies that have profited from Alberta's 300,000 unreclaimed wells received their licenses to drill on the basis of cleaning them up.

But is the oil and gas industry saving for this massive bill? While parts of the industry remain massively profitable in Alberta, alarm bells are ringing in the traditional drilling sector. From unpaid municipal taxes and landowner compensation, to growing requests for grants, loans, and delayed repayments, these public handouts reveal a growing risk that some companies can't fulfill their cleanup obligations.

Using the AER's own data, our report reveals that 4 out of 5 unreclaimed oil and gas wells in Alberta are already past their economic limit, the "best before date" where they still have enough future revenue coming out of the ground to fund their own cleanup. We explore the story of one of them—drilled more than 30 years ago on our co-author's family's land—to demonstrate how companies are able to profit for decades without setting aside anything for cleanup.

Digging deeper, we reveal that an astonishing 49% of oil and gas companies licensed by the regulator are classified as insolvent through the Licensee Liability Rating system.

The oil and gas industry has dined on profits from Alberta's oil and gas wells for years, and are now dashing out the door as the cleanup bill comes due—leaving the public with the tab. This must stop: polluting companies must fund the cleanup of their infrastructure in full. **It's the law.**

The report details thirteen key recommendations to enforce the Polluter Pay principle around the cleanup of Alberta's oil and gas wells, including:

- collecting cleanup costs before a well reaches its economic limit;
- creating a non-profit Reclamation Trust to wind down insolvent companies and use remaining revenues to fund cleanup;
- ensuring the industry pays the full cost of its annual levy to the Orphan Well Association, who must also repay public loans;
- … and introducing an industry-wide levy to cover cleanup costs not captured by other means.

On the other side of these efforts is the promise of a true "Reclamation Boom" in Alberta. Our calculations show that industry-funded cleanup of the province's 300,000 unreclaimed oil and gas wells could spark **an annual economic boom of:**

- 10,112 full-time jobs;
- $727,632,421 in employment income;
- $1.96 billion in contribution to Alberta's Gross Domestic Product (GDP);

… every year, for the next 25 years. Add in the economic and social benefits of 410,000+ hectares of newly-remediated land opened up for farming, hunting, recreation and redevelopment—and you start to sense the scale of benefits awaiting an Alberta that can muster the political courage to enforce the law, and make the polluter pay.

The massive cleanup ahead is also a chance to advance reconciliation with Indigenous peoples, with opportunities at every stage for community leadership, economic development for Indigenous businesses and strengthening restoration efforts with traditional knowledge.

A better future is possible. This report is a call to action for governments and regulators to take control of our relationship with the oil and gas industry, and for Albertans to take action as well. It's time to challenge our leaders to enforce the Polluter Pay principle, and unlock a reclamation job boom in the province that can kickstart our next economy.

INTRODUCTION

Hardly a month goes by in Alberta without a new report about the impacts of aging oil and gas wells and the increasingly dysfunctional industry that runs them.

- A billion-dollar public bailout to spur the cleanup of idle oil and gas wells in Alberta—that ends up reducing the pace and scale of the work in the province.[1]
- Families falling desperately ill from a well leaking toxic gas on their property—and there's no operator to fix it.[2]
- Oil and gas companies refusing to pay over $245 million in municipal taxes by 2020, triggering tax increases and cuts to services for rural Albertans—and a shrug from the provincial government.[3]
- A regulator rubber stamps wells as 'reclaimed' with almost no due diligence—field checking only 3% of the wells it certifies.[4]
- Almost 70,000 wells that changed hands in western Canada between 2015-2018 were sold to companies of dubious solvency.[5]
- Alberta's government picked up the $20 million bill in unpaid surface compensation to landowners last year on behalf of delinquent and insolvent oil and gas companies.[6]
- A small town can no longer grow because so much of its land is contaminated by oil and gas development—with no path to cleanup.[7]

As Albertan researchers, scientists and industry veterans who have spent years deeply immersed in the growing crisis of oil and gas well cleanup, we are heartened by the increasing media and public attention to the issue in our province. After decades of inaction and inattention, pressure is growing to finally face the unavoidable burden of retiring oil and gas wells.

But there's a big problem—**the funds for the cleanup are increasingly coming from the public purse, rather than oil and gas companies** who are legally responsible for the retirement of their infrastructure under the "Polluter Pay" principle of Canadian law.

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1 Riley, Sharon. (2021, May 7). $100 million in federal funding for clean up of Alberta oil and gas wells went to sites licensed to CNRL. *The Narwhal.*

2 Page, Allannah. (2019, April 8). 'Forgotten and ignored': An Alberta couple fights a leaky oil well. *National Observer.*

3 Rural Municipalities of Alberta. (2021, February 18). Rural Municipalities continue to struggle as unpaid tax amounts owed by oil and gas companies increase. [News release].

4 Riley, Sharon. (2020, January 23). Report 'buried' by Alberta government reveals 'mounting evidence' that oil and gas wells aren't reclaimed in the long run. *The Narwhal.*

5 Lewis, J., Jones, J., D'Aliesio, R., & Wang, C. (2018, November 23). Hustle in the oil patch: Inside a looming financial and environmental crisis. *Globe and Mail.*

6 Riley, Sharon. (2021, March 9). Alberta covered $20 million in unpaid land rent for oil and gas operators in 2020. *The Narwhal.*

7 Haber, Paul. (2020, November 7). Alberta town on verge of collapse due to aging oil wells. *CTV News.*

In 2020, Canadians contributed a staggering $1.56 billion to the cleanup of Alberta's oil and gas wells through a mix of direct grants, unnecessary loans, unpaid taxes, and other subsidies (detailed in Part 2).

That's $4.3 million in subsidies a day, every day in 2020 for the cleanup of private companies' oil and gas wells. And believe it or not, that's only a fraction of the bill that's coming due.

Here's the hard truth: it's going to cost $40-70 billion dollars to clean up the more than 300,000 unreclaimed oil and gas wells in Alberta, an amount our research shows is 2-3.5 times higher than estimates the regulator has shared publicly.[8]

And even worse? These estimates are for wells only—not the facilities that support them, or the 433,000+ kilometres of pipelines that connect them. With those thrown in, the numbers stretch past $100 billion in cleanup costs. Add in reclamation of oilsands mines and tailings ponds, and the Alberta Energy Regulator's own cleanup estimate is at least $260 billion dollars.[9]

This is a ticking time bomb. For years, we've been ringing the alarm bell about these numbers, and the weak regulatory and legal enforcement of Polluter Pay in Alberta that could leave all of us on the hook with the bill.

At the same time, we've tried to highlight the upside of the cleanup challenge—that starting

[8] Alberta Liabilities Disclosure Project. (2019, July). Description of ALDP's Methodology for Completing the Alberta Energy Regulator's Internal Study of Oil and Gas Well Reclamation Costs.

[9] De Souza, M., Jarvis, C., McIntosh, E., & Bruser, D. (2018, November 1). Cleaning up Alberta's oilpatch could cost $260 billion, internal documents warn. *Global News.*

Report 'buried' by Alberta government reveals 'mounting evidence' that oil and gas wells aren't reclaimed in the long run - *The Narwhal*

Hustle in the oil patch: Inside a looming financial and environmental crisis - *Globe and Mail*

'Forgotten and ignored': An Alberta couple fights a leaky oil well - *National Observer*

Alberta ranchers, farmers furious over oil and gas companies' failure to clean up their geriatric wells - *Financial Post*

Alberta town on verge of collapse due to aging oil wells - *CTV News*

to deal with this multi-billion dollar liability will generate tens of thousands of high-quality jobs in plugging, remediation, and reclamation work for many of the same oil and gas workers now facing layoffs and unemployment in an increasingly volatile industry.

What alarms us today is how quickly the narrative around job creation possibilities in well cleanup have been co-opted by oil and gas companies to subvert Polluter Pay. They've successfully drawn over $1.5 billion dollars of public funding into an increasingly dysfunctional and unaccountable industry for this work, all while delaying or watering down reforms that would actually address the root of the problem.

At issue? First, that companies and regulators deliberately underestimate well cleanup costs to minimize liabilities on their balance sheets.

Second, only a fraction of the multi-billion dollar cleanup bill has been set aside by industry, with the public already being asked to pick up the unfunded liability that makes up the difference.

Third, the rules that do exist to back Polluter Pay are either too weak or not properly enforced in Alberta—that needs to end.

We want to be absolutely clear: polluting companies must fund the cleanup of their infrastructure in full. It's the law. They cannot be allowed to dine on the profits from our resources and dash from the cleanup at the end. And if oil and gas companies are unwilling or unable to set those funds aside, this report has some concrete solutions to propose, detailed in Part 3.

Our proposals offer the promise of a true "reclamation boom" in Alberta: a quarter century of cleanup jobs, funded by the companies who have extracted hundreds of billions of dollars in profits from the province over decades. We can liberate over 410,000 hectares of land for other uses, bringing jobs and new revenue to municipalities, rural areas and First Nation communities.

Done right, the cleanup can also be a **step on the path towards reconciliation with Indigenous peoples.** Ensuring Indigenous sustainability means starting the work from the proper terms of reference: Treaty rights under Treaties 6, 7, and 8; the Truth and Reconciliation Commission's Calls to Action; and the United Nations Declaration on the Rights of Indigenous Peoples.[10]

A better future is possible. This report is our call for Albertans to take control of our relationship with the oil and gas industry, enforce the Polluter Pay principle, and unlock a reclamation boom in the province that can kickstart our next economy.

> *"My people must never lose their respect for the wisdom of the elders, wisdom which will balance all human activity. My people say: If you destroy nature and the environment, you are destroying yourself. But if you protect the environment and safeguard the water, ultimately you are protecting yourself. Wisdom harnessed with technology can go a long way in creating a better social order, a world in which all creation can survive and enjoy life to the fullest."*[11]
>
> **The late Reverend, Dr & Chief John Snow Sr.**
> Author, *These Mountains Are Our Sacred Places*,
> Stoney Tribe

[10] Government of Canada. (2013). Treaty Texts.
Crown-Indigenous Relations & Northern Affairs Canada; Truth and Reconciliation Commission of Canada. (2012). Calls to Action;
United Nations General Assembly. (2007, October 2). United Nations Declaration on the Rights of Indigenous Peoples.
A/RES/61/295.

[11] Snow, Chief John. (2005). *These Mountains Are Our Sacred Places: The story of the Stoney people* (p. 212). Markham: Fifth House.

PART ONE

A HUGE MESS: HOW BAD IS IT AND WHO'S TO PAY?

MEET POLLUTER PAY

You make a mess, you clean it up: it's not just a household rule to manage Lego that litters the living room, or the aftermath of a party. It's a foundational principle of Canadian environmental law.

Enshrined in the Canadian *Environmental Protection Act* of 1999,[12] Polluter Pay is now what the Supreme Court calls "a well-recognized tenet in Canadian environmental law,"[13] detailed in provincial and territorial environmental legislation across the land.[14]

Polluter Pay means just that: **polluters must pay for the social and environmental costs of their economic activities.**[15] For the operators of oil and gas wells in Alberta and across Canada, this means taking on the cost of returning the land to its pre-drilling state.

The fact that the Polluter Pay principle is entrenched across provincial and Canadian laws reinforces a critical point: companies don't just have a moral obligation to clean up after making huge profits from public resources. **Cleaning up is the law.**

[12] Government of Canada. (2004, December 10). Guide to Understanding the Canadian Environmental Protection Act, chapter 3.

[13] *Orphan Well Association v. Grant Thornton Ltd.,* (2019 SCC 5), p5, para 29.

[14] Environmental Law Centre of Alberta. (2019, December). The Polluter Pay Principle in Alberta Law: An Introduction and Survey, p4.

[15] Ibid., p. 21.

WHAT'S INVOLVED IN CLEANING UP AN OIL AND GAS WELL?[16]

Here's a quick look at what happens after a well stops producing oil or gas in Alberta.

1. When a well ceases to produce, it's declared **inactive.** Within 12 months of becoming inactive,[17] a well must resume production or its status changes to **suspended.**

2. Operators of **suspended** wells are supposed to follow a checklist of functional and safety standards, annually inspect the site and report their findings to the regulator. There is no requirement to plug the well, except for the few dangerous wells classified as "critical sour". Otherwise, wells can sit idle indefinitely. Alberta's oldest idle well has sat unplugged since World War One.[18]

3. **Plugging** (or **abandoning**) a well involves permanently sealing it and removing it from production. At the surface, any pumpjack or other production equipment is removed and the site tidied. There is no set timeline for when a company must complete plugging after suspension.

4. The second-to-last stage is **remediation**—the cleanup of any onsite spills or contaminations from the hundreds of chemicals in the drilling process.[19] While remediation is often supposed to occur at the time of the spill, it doesn't always happen. Contamination must be **remediated** before reclamation can begin.

5. **Reclamation** is the work of returning the wellsite to the functional equivalent of its pre-dilling state. In Alberta, 80% of certificates are automatically issued online, and field inspectors only visit about 3% of sites to verify reclamation.[20]

GLOSSARY OF WELL TYPES

Active: A well producing oil and/or gas.

Depleted: A well nearing the end of its production. Also called a "marginal" or "stripper" well.[21]

Inactive: A well no longer producing oil or gas, but also not yet plugged.

Plugged: A well that has been plugged with cement, its wellhead removed, and casing cut below surface and capped. This type of well is also called "abandoned".

Reclaimed: The well site has been returned to an equivalent land capability and a reclamation certificate issued.

Orphaned: The well has no current viable owner and has been officially designated as an orphan by regulators. The well is transferred to the Orphan Well Association.

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16 Way, N., & Simpson-Marran, M. (2019). Landowners' Primer: What you need to know about unreclaimed oil and gas wells. Pembina Institute.

17 Six months if a well is deemed "critical sour" by the regulator.

18 D'Aliesio, R., Lewis, J., & Wang, C. (2018, November 23). In Western Canada, surge of inactive wells a brewing 'disaster'. *Globe and Mail.*

19 Hryciuk, Dennis. (1991, October 30). Oil industry defends use of pits for toxic well waste. *Edmonton Journal,* D9. Marshall, Andy. (1992, February 22). Toxic waste resurfaces to haunt oil industry. Calgary Herald, A8.

20 Riley, Sharon. (2018, December 6). Many of Alberta's 'reclaimed' wells aren't actually reclaimed: government presentation. *The Narwhal.* Graney, Emma. (2021, January 14). Energy firms misled Alberta regulators on cleanup of well sites. *Globe and Mail.*

21 The AER calls active wells "marginal" if they produce less than 10 barrels of oil equivalent (boe) per day. In the U.S., "stripper" wells are generally considered those producing less than 15 boe/d.

450,000 oil and gas wells have been drilled in Alberta—one for every ten people in the province.

HIDING THE TRUE COST OF CLEANING UP ALBERTA'S OIL AND GAS WELLS

Around 1906, near the First Nation community of Fort McKay, a German aristocrat named Count Alfred von Hammerstein drilled, and walked away from, what is today Alberta's oldest orphan well.[22]

In the 115 years since, **450,000 oil and gas wells have been drilled in Alberta—one for every ten people in the province.**

Over 300,000 of them need to be cleaned up now, or in the near future. Geographically, they are everywhere—from rural areas to First Nation communities to cities. Each is an economic liability, and the potential for creating a health hazard increases as wells age.

Here's the ugly truth: our research shows **it's going to cost between $40-70 billion dollars to clean up** the over 300,000 unreclaimed oil and gas wells in Alberta—a number that's 2 to 3.5 times higher than estimates the Alberta Energy Regulator has previously shared publicly. In 2019, our research totalling those numbers made national headlines when we released it.[23]

The reason the findings were so explosive? After a private Alberta Energy Regulator (AER) presentation on oil and gas liabilities by the Vice-President of Closure and Liability Robert Wadsworth hit the media in 2018,[24] we used a freedom of information request to access the AER's incredibly detailed cleanup estimates for every well type in Alberta.[25] And then we finished the work they had started—applying those costs to each of the 300,000+ unreclaimed oil and gas wells in the province to reach our $40-70 billion total (for more detail on this work, see Appendix A).

Bear in mind these estimates are for oil and gas wells only—not the facilities that support them, or the 433,000+ kilometres of pipelines that connect them. With those included, the numbers for conventional oil and gas approach $100 billion in cleanup costs—before we even start on the oil sands.

So this is the massive cleanup bill that's already coming due across Alberta. Under the Polluter Pays principle, it's the oil and gas industry that should be funding the retirement of this infrastructure. But have they been saving?

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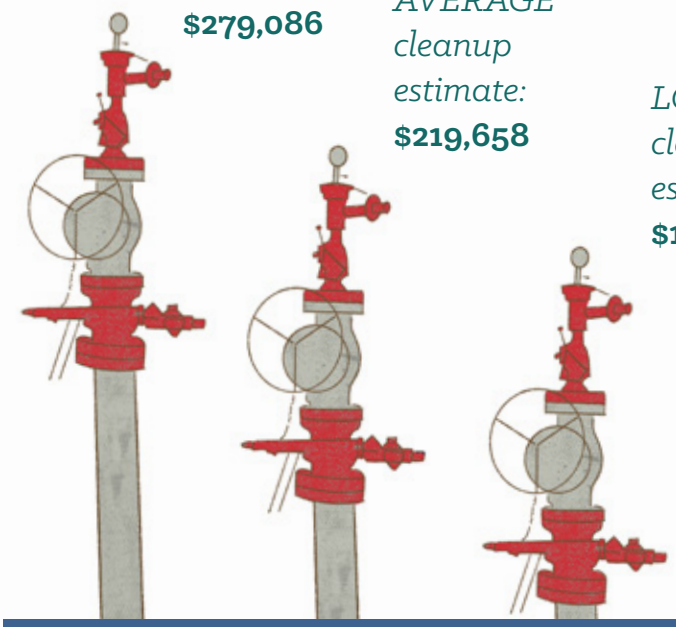
22 Morgan, Geoffrey. (2019, December 18). Alberta ranchers, farmers furious over oil and gas companies' failure to clean up their geriatric wells. *Financial Post.*

23 Bakx, Kyle. (2019, April 8). Old, unproductive oil and gas wells could cost up to $70 B to clean up says new report. *CBC News.*

24 De Souza, M., Jarvis, C., McIntosh, E., & Bruser, D. (2018, November 1). Cleaning up Alberta's oilpatch could cost $260 billion, internal documents warn. *Global News.*

25 Alberta Liabilities Disclosure Project. (2019, April 8). New coalition calls on party leaders for transparency on true costs of well cleanup [News release].

COSTS TO PLUG, RECLAIM AND REMEDIATE AN OIL OR GAS WELL IN ALBERTA[26]



OUR DATA SET OF ALBERTA'S OIL AND GAS WELLS

The scope and detail of our data set is a gold mine for researchers, journalists and policy makers. Landowners and communities who are building legal cases or making regulatory applications will find great value in the data and analysis of wells and the companies operating them. With 368 different well types and dozens of well-specific data points, we can answer a wide range of questions, such as:

- What's the cost of cleaning up all the wells in Two Hills, Alberta?
- How many abandoned wells are licensed to CNRL?
- How many were operated by the bankrupt Trident Exploration?
- Which wells were drilled in the 1970s?
- Which wells in our community are closest to watersheds?
- What is the health of the company operating on my land? How much cleanup are they responsible for overall?

See Appendix A for more detail on the data set.

[26] Based on our 2019 analysis of the AER's internal study on cleanup estimates. Full methodology and details can be found at https://www.aldpcoalition.com/research. Per-license estimate based on data from the AER's June 2021 LLR report: $219,435,452.13 in security held / 343,456 licenses evaluated = $638.90/license.

HOW MANY WELLS IN ALBERTA ARE PAST THEIR "BEST-BEFORE" DATE?

Every well in Alberta and around the world has a "best-before" date—the point when the value of the oil or gas left in the ground beneath the well is equal to the cost of cleaning up the well. In industry terms, this is known as the well's **economic limit.**

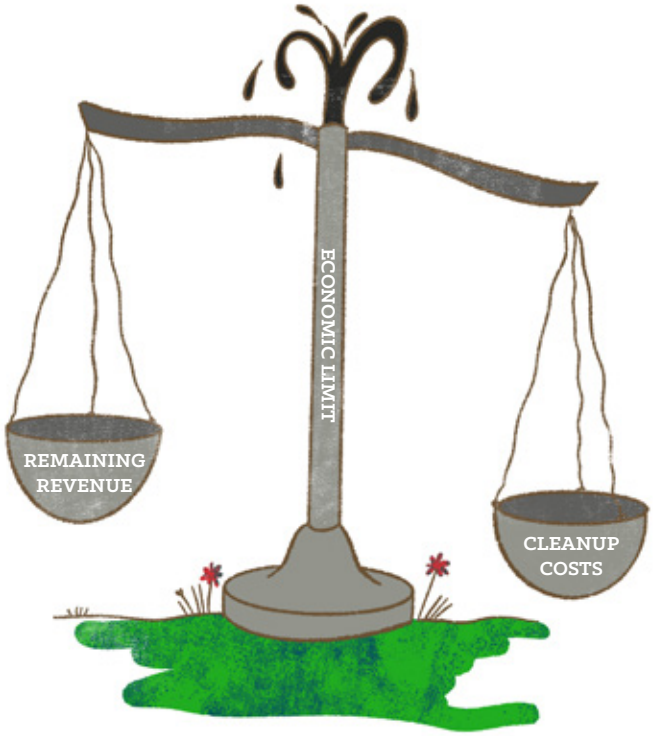
If the well's owner or operator has not set aside any bonds or deposits for the cleanup, the best-before date marks a second important milestone. **It's the day the well owner's cleanup costs begin to transfer to the public.** When oil and gas companies don't save for cleanup, all of us get left with the bill.[27]

We've uncovered another jaw-dropping statistic from the now-renowned AER presentation on liabilities: **about 80% of the wells that still need to be retired in Alberta are already past their "best-before" date.**[28]

That means about four out of five remaining wells are past the point of insolvency, in that they can no longer fully fund their own cleanup. This crucial detail is laid out on Slide 12 of the AER presentation, under the title *"Current State: Financial Capacity."*

Amongst a lot of detail about the overall health of the industry is a key fact: the majority (61%) of the wells categorized as "Active" by the AER are actually only marginal producers, pumping less than 10 barrels a day. **At that rate of production, they are highly unlikely to be able to fund their own cleanup costs.**

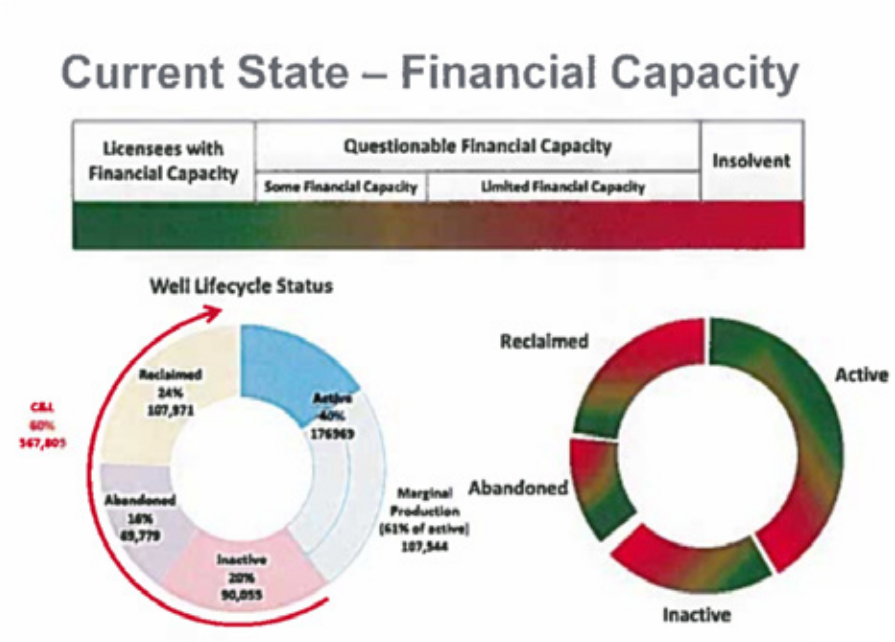
THE BALANCING ACT OF ECONOMIC LIMIT



[27] "In the end, the provinces and regions may be responsible for the costs of aging infrastructure where a company is insolvent." Marion, M. A., Massicotte, M.G., & Duhn, J.L. (2014, December). Canada's Aging Oil and Gas Infrastructure: Who will pay? The public and private cost recovery frameworks. *Alberta Law Review,* 52(2): p. 343.

[28] Wadsworth, Robert. (2018, February 28). *Liability Challenges.* [Public presentation by Alberta Energy Regulator vice president for closure and liability]. FoIPP #2018-G-0051: slide 12.

"CURRENT STATE — FINANCIAL CAPACITY," SLIDE 12 OF AER "LIABILITY CHALLENGES" PRESENTATION, 2018



From the speaker's notes: "...looking a little closer at the inventory (graphic on the left). Out of our active well populations 61% of them are marginal producers which means they are producing 10 or less barrels of oil or oil equivalent a day."

Adding those marginal wells to the tens of thousands of inactive and abandoned (plugged) wells on the chart led to the eye-popping total: **about 80% of unreclaimed wells in Alberta are already past their best-before date.**[29]

ALBERTA WELLS PAST THEIR ECONOMIC LIMIT

Well Type	All Wells	All Unreclaimed
Reclaimed	24.3%	0%
Abandoned (Plugged)	15.7%	20.7%
Inactive	20.2%	26.7%
Active (Marginal)	24.2%	31.9%
Active	15.6%	20.6%
Total	**100%**	**100%**
Total Past Economic Limit	**60.1%**	**79.4%**

Our calculation of the data from Slide 12 of the AER's "Liability Challenges" Presentation, 2018, adjusted for economic limit. Red = past economic limit.

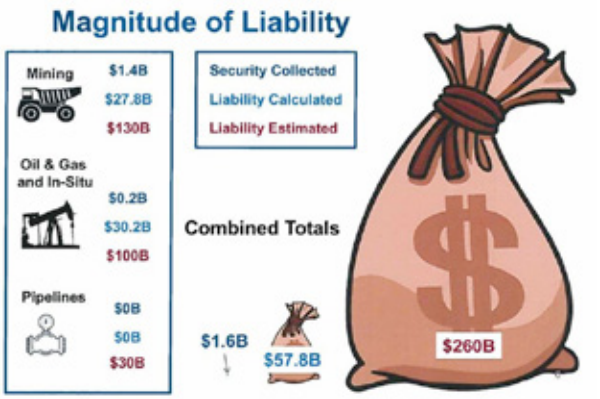
[29] To make this calculation, we removed the 24% of reclaimed wells from the AER's total well count, and calculated the percentage totals of the remaining wells. *Abandoned, Inactive and Marginal* made up 79.4% of the unreclaimed total.

HOW MUCH HAS BEEN SET ASIDE FOR CLEANUP?

The huge cost of well cleanup and the fact that 4 out of 5 unreclaimed wells in Alberta are past their best-before date would not be a problem if, following the Polluter Pay principle, the oil and gas industry has set aside the funds for the cleanup of their infrastructure. But have they?

The next slide in the AER presentation answered the question in a way that was simple enough for a kid to understand. There was a huge, huge bag of money representing "Liability Estimated"—the AER's internal calculations of what the oil and gas industry's entire cleanup bill would cost.

"MAGNITUDE OF LIABILITY" SLIDE FROM AER PRESENTATION[30]



Slide 13 of the AER's 2018 "Liability Challenges" Presentation, titled "Magnitude of Liability"

Next to that giant bag of money was a tiny, almost invisible little dot, labelled "Security Collected." That was the amount the regulator had collected from industry for cleanup.

And in case there was any confusion about the discrepancy, the presenter added a note: "*The bags are to scale.*"

Once this presentation made national headlines, the regulator walked the findings back, calling it a "worse case scenario"—even though its author, the AER's Vice-President of Closure and Liability Robert Wadsworth, had said in the talk that his estimates were "likely less than the actual cost."

When we did our own calculations using the AER's detailed methodology, our estimated cleanup costs were $55 billion for oil and gas wells alone, based on the average costs of wellsite reclamation. Our totals were actually more conservative than the estimates in the presentation—but crucially, still more than double the $18.5 billion estimate the regulator had shared publicly for the cleanup of oil and gas wells.

These multi-billion dollar cleanup costs are a debt—a future liability—owed by industry in exchange for their license to damage, extract, and profit from the land and water that sustains us.

In this way, everyone in Canada has involuntarily become the oilpatch's environmental creditors. The oil and gas industry has been massively underestimating their cleanup debts, and have saved almost nothing towards repaying them. **They've accumulated profits for decades—and now hope to walk out the door before the cleanup bill comes due.**

The dine-and-dash approach to cleanup is playing out right now across Alberta, through wells drilled in farmers' fields, First Nation communities, public lands, and even in the middle of cities.

[30] Wadsworth, Robert. (2018, February 28). *Liability Challenges.* [Public presentation by Alberta Energy Regulator vice president for closure and liability]. FoIPP #2018-G-0051: slide 13.

To find out how we let so many wells reach their end of life without saving for cleanup, we'll dig into the story of one of them, drilled 30 years ago on Regan Boychuk's grandfather's farm near Rycroft, Alberta.

The story of one well's "best-before" date

Meet oil well #0776062502000. It was drilled on Regan Boychuk's grandfather's farm near Rycroft, Alberta in the summer of 1986.

Regan was a young hockey nut who switched to goaltending after watching Patrick Roy's breakout rookie season in Montreal. That year, his grandfather began receiving $3,500 annual cheques from the well operators, as compensation for not being able to farm that corner of their canola field.

By the winter of 1992, when Regan was in middle school, the well was producing 950 barrels a day—worth about $32,300 per day in today's dollars.[31]

But the oil flow slowed significantly in just a few years. As Regan prepared to graduate high school, a pump jack was installed to extend extraction. Then an acid treatment was used to re-stimulate the oil well's production in the summer of 2000.

The well was assessed in 2003: were there any other depths worth perforating for production? Nothing attractive was found. The seventeen year-old well continued to decline in production. Regan was 24 and about to graduate from university.

In the spring of 2012—when Regan's first daughter was almost as old as he was when it was first drilled—the well hit its "best-before date", or economic limit. This was the date when the well's remaining oil revenues were equal to the costs of cleaning it up.

In the spring of 2016 the well fell idle and was sold to Rising Star Resources, a newly-formed junior company.[32] Rising Star was not required to pay any cleanup deposits on the well when it changed hands.

In March 2020, as Regan's second daughter finished grade four, the well was plugged permanently. Between 1986 and 2016, it had produced 1.6 million barrels of oil, worth over $61 million in 2021 dollars.[33] No profits were set aside for cleanup in that time, and there is no fixed timeline for reclamation.

In 2021, as Regan's youngest son awaits his second birthday, the farm hosts a plugged well in a canola field that still can't be farmed. And without proper cleanup, the farm's value is impaired, and any suspected contamination could complicate a potential sale.

Based on the year drilled, well depth, and surrounding soil type, the remaining cleanup could cost another quarter million dollars. But #0776062502000 never produced a barrel for Rising Star, who is now responsible for the remaining cleanup bill.

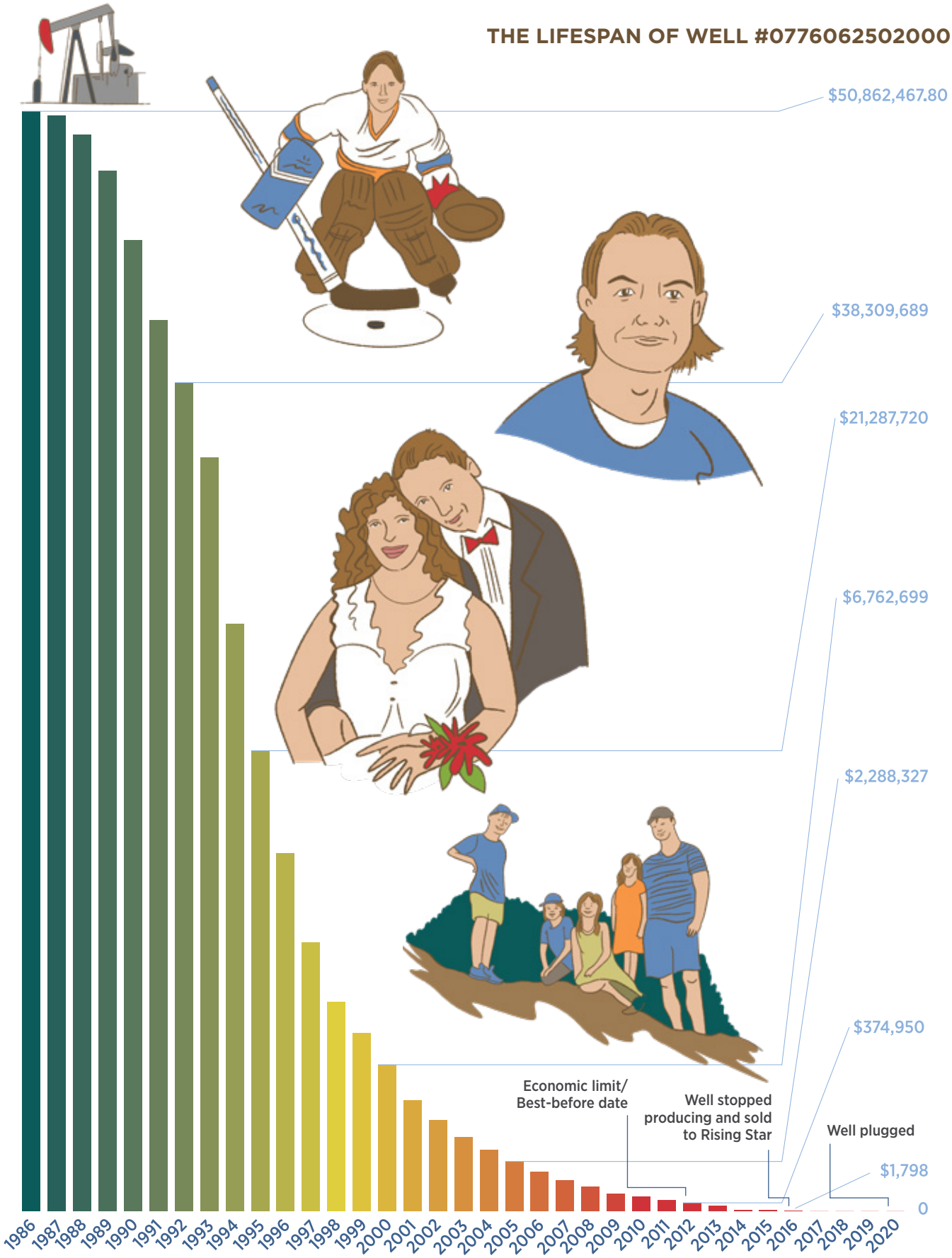
How is Rising Star going to pay $250,000 for the cleanup, when it hasn't set aside a penny for it?

[31] Alberta's 1992 oil price of $20.36 per barrel translates to $34.06 today.

[32] Healing, Dan. (2016, July 17). Private equity firms zeroing in on Western Canada oilpatch bargains. *Canadian Press.*

[33] Production data from Enervus for the well's first five and final two years were extrapolated using straight line decline fit to match total lifetime production. Alberta oil prices from the Canadian Association of Petroleum Producers' Statistical Handbook, adjusted to 2021 dollars using Bank of Canada's online inflation calculator.

THE LIFESPAN OF WELL #0776062502000



PART TWO

THE DINE AND DASH: HOW DO POLLUTERS GET AWAY WITH IT?

"It's a shell game that we have no ability… to control."[34]

Al Kemmere, then-president of the Rural Municipalities of Alberta, 2019

"The commerce of the business is to take high-value producing wells, produce them as much as you can, and then, as soon as the economics become marginal, hand them off to someone else and include the liability within it."[35]

Keith Wilson, Edmonton-based surface rights lawyer

"It's a disaster waiting to happen. Everybody's sort of pushing it down the road hoping prices are going to come back [but] if they don't, then we as the citizens are going to have one humongous liability."[36]

David Speirs, founder of the Freehold Owners Association

"The current rules are so weak that companies can delay setting aside money to cover cleanup costs until they are out of business and can no longer afford to pay anything."[37]

National Observer

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[34] Lewis, J., Jones, J., D'Aliesio, R. & Wang, C. (2018, November 23). Hustle in the oil patch: Inside a looming financial and environmental crisis. *Globe and Mail.*

[35] Ibid.

[36] Ibid.

[37] De Souza, M., Jarvis, C., McIntosh, E. & Bruser, D. (2018, November 1). Alberta regulator privately estimates oilpatch's financial liabilities are hundreds of billions more than what it told the public. *National Observer.*

HOW POLLUTERS BECAME ABOVE THE LAW IN ALBERTA

Skyrocketing oil prices in the 1970s led to widespread oil and gas development in Alberta—and vast profits for industry. But there was also a gusher of oil and gas regulation. Under Premier Peter Lougheed, the Alberta government introduced the province's first environmental laws, quadrupled oil and gas royalty rates, and enacted Alberta's first reclamation standards.[38]

As the oil and gas industry became a bigger part of the Albertan and Canadian economies, its power grew. Oil and gas companies donated to political parties, funded university programs, and hired an army of lobbyists to advance their interests with regulators and various levels of government.[39]

Increasingly, Canada's banks and public pension plans were themselves invested heavily in the industry.[40] Governments, investors, pensioners, and the public all began to understand their economic fortunes as tied to oil and gas.

The industry used its influence to erode the regulations that had been enacted under Lougheed. They pushed to loosen rules and enforcement around cleanup. They lobbied to release former well owners of their responsibility for cleanup costs. And they persuaded regulators and lenders to ease how cleanup costs were accounted for.

This is how we find ourselves in a cleanup crisis today.

> **In Alberta, the Energy Regulator is 100% funded by the industry that it is mandated to both regulate and promote. It is, arguably, captured by design.**

[38] See Bott, R., Chandler, G., & McKenzie-Brown, P. (2016). *Footprints: The evolution of land conservation and reclamation in Alberta.* Cochrane: Kingsley.

[39] Taft, Kevin. (2017). *Oil's Deep State: How the Petroleum Industry Undermines Democracy and Stops Action on Global Warming—in Alberta, and in Ottawa.* Ottawa: Lorimer.

[40] Storrie, J., Kinney, D., & Boychuk, R. (2020, April). Alberta's Failed Oil and Gas Bailout: How AIMCO invested more than a billion dollars of pensioners and Albertans money into risky oil and gas companies with more than $3 billion in environmental liabilities and how the people running those companies got rich through huge salaries, share buybacks, dividends and conservative political connections. *Progress Report.*
DeRochie, P., & Scott, A. (2020, October 5). Canada Pension Plan fuels the climate crisis with our own retirement savings. *National Observer.*

A TIMELINE OF INDUSTRY INFLUENCE

1989-1991: When Alberta energy regulators first tried to limit the trade in depleted wells and put former owners on notice they would be held liable for cleanup, the oil and gas industry was able to have the reforms reversed barely a year later.

1997-2000: The Long Term Inactive Well program aimed to make the industry plug all wells that had been idle for more than a decade. But the five-year program was gutted and cancelled before it produced its second annual report.

2000-2002: When a new regulatory program was introduced in October 2000 that could have solved the unfunded oilfield cleanup problem, industry complaints led to a new round of consultations by Christmas.[43] The program was soon modified, suspended and replaced by one of industry's design[44]—the same program in place today.

1997-2016: The oil and gas industry also lobbied the government for lower royalty rates, and over time, it paid off. Royalty rates shrank to historic lows under successive Conservative governments. And when Albertans elected a New Democratic Party (NDP) government for the first time in a century on a promise to review the regime—the NDP lowered them even further.

2021: Today Canada captures roughly 32% of oil and gas profits through royalties, taxes and fees. When compared to Saudi Arabia (85%), Norway (78%), China (63.5%) and Australia (58%),[47] one can start to understand how much the public is giving up in the interest of oil and gas profits—all while Alberta accumulates what's expected to reach $115.8 billion in provincial debt this year.[48]

41 Energy Resources Conservation Board. (1989, December). Recommendations to limit the public risk from corporate insolvencies involving inactive wells;
Nichol, John. (1991, April). Orphan wells: Who is responsible, for how long, and at what cost? *Canadian Association of Drilling Engineers/Canadian Association of Oilwell Drilling Contractors Spring Drilling Conference Paper 91-30.*

42 Alberta Energy and Utilities Board. (1997, November 17). Long term inactive well requirements. *Interim Directive 97-08;*
Alberta Energy and Utilities Board. (2000, October 24). Replacement of the Long-Term Inactive Well Program with the monthly corporate licensee liability rating. *Informational Letter 2000-4.*

43 Alberta Energy and Utilities Board. (2000, October 24). Energy development license transfer requirements and monthly corporate licensee liability rating. *Interim Directive 2000-11;*
Alberta Energy and Utilities Board. (2000, December 18). Clarification: Energy development license transfer requirements and monthly corporate licensee liability: ID 2000-11 and Guide 69. *General Bulletin 2000-28.*

44 Alberta Energy and Utilities Board. (2001, January 31). Important information on the expanded orphan program. *General Bulletin 2001-5;*
Alberta Energy and Utilities Board. (2001, December 4). Revised Licensee Liability Rating (LLR) program and energy d evelopment license transfer requirements. *Interim Directive 2001-8.*

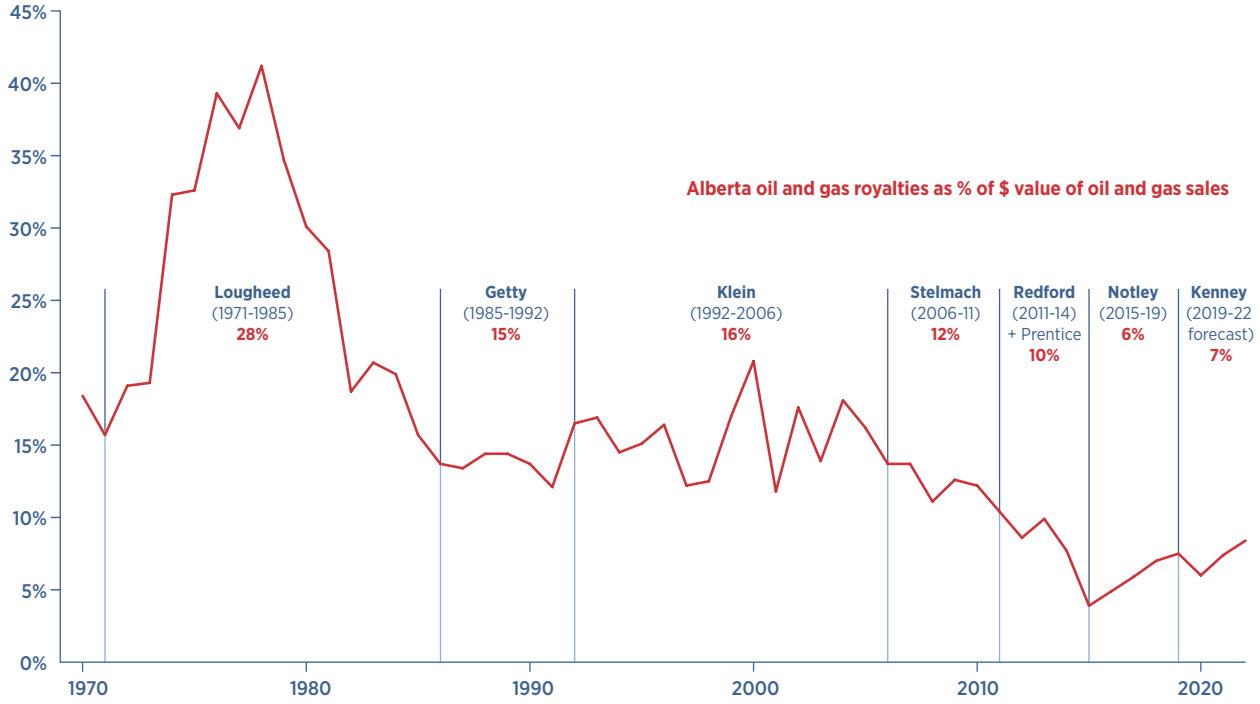
45 Alberta Energy Regulator. (n.d.). Liability Management. Last Accessed May 30, 2021.

46 Boychuk, Regan. (2016, February 7). Royalty decision compounds past mistakes. *Edmonton Journal.*

47 Wilt, James. (2018, August 14). Are Albertans collecting a fair share of oilsands wealth? *The Narwhal.*

48 Hudes, Sammy. (2021, February 26). How Alberta went from Klein's 'paid in full' years to record debt in 2021 budget. *Calgary Herald.*

ALBERTA OIL AND GAS ROYALTY RATE BY BY YEAR & PROVINCIAL PREMIER



HOW CAN WE TELL IF A REGULATOR IS CAPTURED BY INDUSTRY?

"Regulatory capture" takes place when a regulator ceases to be independent and instead advances the commercial interests of the industry it is charged with regulating.[49] In Alberta, the Energy Regulator is 100% funded by the ***industry that it is*** mandated to both regulate and promote. It is, arguably, captured by design.

Perhaps that's why today in Alberta:

- companies don't have to put up any cleanup deposits to drill a new well, while across the border in North Dakota, companies post a $50,000 bond—and a new bill proposed in the U.S. would increase the deposit amount for wells on public lands to $150,000;[50]
- unlike in many U.S. states, there are no enforced timelines for oil and gas well cleanup, meaning companies can "put off remediation work indefinitely";[51]
- the regulator calls its own liability system for oil and gas companies "*not an accurate measure*" of whether a company will be able to pay for cleanup;[52]
- only 3% of wells that have been certified as "reclaimed" by the regulator are inspected first;[53]

[49] See Taft, Kevin. (2017). *Oil's Deep State: How the Petroleum Industry Undermines Democracy and Stops Action on Global Warming—in Alberta, and in Ottawa*. Ottawa: Lorimer.

[50] Groom, Nichola. (2021, April 8). US House bill seeks $8 billion for abandoned oil and gas well clean up. *Reuters.*

[51] D'Aliesio, R., Lewis, J., & Wang, C. (2018, November 23). In Western Canada surge of inactive wells a brewing 'disaster'. *Globe and Mail.*
Johnson, Tracy. (2017, February 9). Report calls for Alberta to put a time limit on inactive oil and gas wells. *CBC News.*

[52] Alberta Energy Regulator. (n.d.). Liability Management. Last Accessed May 30, 2021.

[53] Riley, Sharon. (2020, January 23). Report 'buried' by Alberta government reveals 'mounting evidence' that oil and gas wells aren't reclaimed in the long run. *The Narwhal.*

- almost 40% of wells drilled before 1964 still have not been remediated;[54]
- almost 50% of the wells that changed hands in Western Canada between 2015-18 were sold to companies of "subpar financial status"[55]—unlike in Alaska, where regulators negotiate Financial Assurance Agreements with each company, typically requiring third-party independent estimates of cleanup costs and upfront bonding before a sale takes place;[56]
- the province faces a growing backlog of unfunded orphaned wells, while North Dakota—despite being the second-largest crude oil producer in the U.S.—has almost no orphan wells;[57]
- the Orphan Well Association collects only a fraction of the cleanup costs of new orphan wells from industry each year, even though the law requires them to collect the full amount;[58]
- the oilpatch received an unprecedented $1.56 billion in federal and provincial subsidies in 2020 for the cleanup of their aging oil and gas wells;[59]
- ...all while managing to reclaim less wells in 2020 than they had in 2019.[60]

"In Alberta, we live by a simple rule: if energy companies are going to profit from the province's energy resources, they must be responsible and properly abandon, remediate, and reclaim their sites."

Alberta Energy Regulator, "Liability Management Programs and Processes"[61]

Despite what the AER claims, it has been serving—not regulating—Alberta's oil and gas industry. It fails to enact the basic tools of oil and gas well regulation, such as accurate cleanup estimates and strict cleanup timelines and deposits; it doesn't collect sufficient funds from industry to clean up the growing backlog of orphan wells; it hasn't prevented big companies from sellings billions in aging well assets to smaller players who will never be able to pay for their cleanup; and it barely enforces the regulatory tools it does have, like inspecting wells before issuing reclamation certificates.

With some of the lowest oil and gas royalty and tax rates in the world and a captured and permissive regulator, companies in Alberta's traditional oil and gas sector have made record profits, but are increasingly walking away without paying their cleanup bill.

54 Morgan, Geoffrey. (2019, December 19). Alberta ranchers, farmers furious over oil and gas companies' failure to clean up their geriatric wells. *Financial Post.*

55 Lewis, Jeff, Jeffrey Jones, Renata D'Aliesio, and Chen Wang. (2018, November 23). Hustle in the oil patch: Inside a looming financial and environmental crisis. *Globe and Mail.*

56 Nelson, Kristen. (2020, March 22). Primer on financial assurance agreements. *Petroleum News,* vol. 25(12).

57 Morgan, Geoffrey. (2016, March 28). North Dakota's last orphan: Why is America so much better at cleaning up the oil bust? *Financial Post.*

58 In October 2020, the AER warned of 12,000 new orphan wells, but 'Ultimately, the Alberta Energy Regulator will decide what sites land with the OWA'. Graney, Emma. (2020, October 4). Number of new stranded oil, gas wells in Alberta on pace to hit 12,000, regulator says. *Globe and Mail;* that same year, the AER only increased the industry's Orphan Levy by $5 million, or about $417/potential orphan. Alberta Energy Regulator. (2021, April 6). 2021/22 Orphan Fund Levy - LLR and OWL Programs. Bulletin 2021-09.

59 See Page 25-26 for breakdown of subsidies to the industry in 2020 to clean up oil and gas wells.

60 Riley, Sharon. (2021, May 7). $100 million in federal funding for clean up of Alberta oil and gas wells went to sites licensed to CNRL. *The Narwhal.*

61 Accessed on June 9, 2021.

GROWING INSOLVENCY IN TRADITIONAL OIL AND GAS—BUT NOT ALL OVER

So far we've seen how both Alberta's industry and regulators have publicly underestimated the costs of cleaning up Alberta's oil and gas wells—despite the AER having the ability to determine detailed well-by-well cleanup estimates.

We've explored the concept of economic limit, a well's "best-before date," when its remaining profits are equal to the cost of cleaning it up—and how thousands of families like Regan's have ended up with aging and leaking wells on their land with no path or funding to clean them up.

We've shared the AER's data that about 80% of unreclaimed wells in Alberta are likely already past their "best-before date"—the period of time when they'd still have enough future revenue to fund their own cleanup.

And we've laid out a short story of how Alberta ended up collecting some of the lowest royalties and taxes in the world from the oil and gas industry, and how the industry-funded AER has weakly-enforced the regulatory regime around it.

With all of these gifts from the government and regulator, you would think the owners of Alberta's oil and gas wells would be thriving. But instead, this aging part of the industry is increasingly **insolvent**: a state where a company's liabilities (their debts) are greater than their assets. And as that happens, the public is increasingly being asked to pick up their cleanup bills.

Alberta's energy regulator rates the solvency of its oil and gas companies each month through the Liability Management Rating (LMR), using a simple formula: if a company's 'deemed assets' are greater than their 'deemed liabilities,' their LMR remains above 1.0, and they are considered to be solvent.

If their rating falls below 1.0, demonstrating insolvency, they are required to pay a deposit equivalent to the difference to the regulator to restore their solvent rating. You read that right: **the regulator doesn't collect any cleanup deposits from a company until they judge them insolvent.**[62]

By the regulator's own measure, 49% of all licensed oil and gas producers are insolvent in Alberta. The June 2021 LMR report listed 342 Alberta oil and gas licensees—*49% of the total*—as being insolvent, designated by a rating below 1.0. Collectively, these 342 companies hold 34,683 licenses with a 'deemed liability' totalling over $2.6 billion dollars.[63]

TRIDENT EXPLORATION WENT BROKE, BUT CASH STILL FLOWED

Trident Exploration collapsed in May 2019 despite producing more than 10,000 barrels of oil equivalent generating approximately $100,000 in daily revenue.[62] Even failing companies still produce significant revenues that can be directed towards cleanup.

[62] Boychuk, Regan. (2019, May 2). Kenney already facing Alberta's reckoning over mismanaged oilfield cleanup. *National Observer.*

[63] Alberta Energy Regulator. (2021, June 5). Liability Management Rating (LMR) Results Report #44024.

PERCENTAGE OF INSOLVENT OIL & GAS COMPANIES

Alberta Energy Regulator Liability Management Rating (LMR) Results Report

Liability Run Date: June 5, 2021 - *Modified to organize & show % of licensees per category*

LMR Range	Number of Licensees	% of Total Licensees	Number of Licences/ Approvals	Total Deemed Liabilities
Total Insolvent (<1.00)	**342**	**48.93**	**34,683**	**$2,629,484,539.00**
Total 1.00 - 1.99	137	**19.60**	104,673	$6,569,290,921.40
Total 2.00 - 4.99	121	**17.31**	154,829	$14,023,012,984.77
Total 5.00 - 9.99	54	**7.73**	24,066	$3,181,295,764.44
Total 10.00 or >	45	**6.44**	25,205	$3,507,592,560.58
Total	699	**100.00**	343,456	

We need to be clear: while the growing number of insolvent companies and unfunded cleanup liabilities are hugely alarming, they are not an indicator that Alberta's oil and gas industry, as a whole, is going broke.

For example, in the first quarter of 2021, six of the largest oil, gas, and bitumen producers in Canada generated $3 billion in profits. This stark divide between billions and bankruptcy is an indicator of what the *Financial Post* recently called "a split in industry fortunes" between increasingly insolvent drillers, and more profitable companies operating in the oilsands.[64]

And from reporting in the *Globe and Mail* and other outlets, we know resurgent profits in the oilsands are partly a result of the industry successfully dumping billions of their well cleanup liabilities to small companies with no ability to clean them up.[65]

AN INSOLVENCY CASE STUDY: *PRICEWATERHOUSECOOPERS V. PERPETUAL ENERGY* (2021 ABCA 16)

Perpetual Energy owned many assets in Alberta's oil and gas fields. Then in 2016, they sold thousands of their "uneconomic assets"—wells which carried hundreds of millions in cleanup debts—for one dollar to Sequoia Resources Corp., a new firm created by foreign investors.

A year and a half later, Sequoia filed for bankruptcy. The bankruptcy trustee, PricewaterhouseCoopers, is now attempting to reverse the sale based on the argument that Sequoia was insolvent when the transfer occurred.

The challenge is that the *Bankruptcy and Insolvency Act's* 1919 definition of insolvency excludes oilfield cleanup costs. That has got to change—and we have recommendations on how in Part 3.

[64] Varcoe, Chris (2021, May 12) A $10B turnaround: After tough 2020, biggest oil and gas producers generate more than $3B in earnings. *Financial Post.*

[65] Lewis, J., Jones, J,. D'Aliesio, R., & Wang, Chen. (2018, November 23). Hustle in the oil patch: Inside a looming financial and environmental crisis. *Globe and Mail.*

The oil and gas industry has made billions in drilling profits for decades—and are now walking away from the cleanup, pleading poverty and leaving the mess for the public to deal with.

Despite the "we're all in it together" rhetoric, it's the public who are getting ditched with the bill. And we need to hold the industry as a whole to account—not just the small companies who got left holding the hot potato of unreclaimed wells.

This is not a far-off crisis: Albertans are feeling the effects today. Last year alone, oil and gas companies refused to pay over $20 million dollars in compensation to landowners who were hosting their wells, leaving the public (via the provincial government) to foot the bill.[66]

And oil and gas companies—many of which are still operational—have engaged in a massive, multi-year tax strike in Alberta, withholding an astonishing $245 million dollars in municipal taxes in the past three years, and forcing municipalities to make drastic cuts to services or implement tax increases of up to 500% to make up the difference.[67]

The bills are piling up. And it's the public who are increasingly being asked to pay them—from the industry's compensation to landowners, to their municipal taxes and their cleanup bills, to name just a few.

HOW THE PUBLIC PAYS POLLUTERS' BILLS

Despite the federal Liberal's promises to cut "inefficient fossil fuel subsidies" by 2025,[68] **Canada ranks last among G20 countries in actually phasing them out**.[69]

In fact, **Canada's oil and gas subsidies actually** *increased* **by 200% between 2018 and 2020.**[70]

So how much in public handouts are going to the cleanup of the industry's wells? Last year, owners and operators of Alberta's oil and gas wells received $1.565 billion in public subsidies via:

- a $1,000,000,000 grant from the federal government for idle well cleanup;[71]
- $245,000,000 in unpaid municipal taxes from oil and gas companies;[72]
- a $200,000,000 loan from the federal government to the Orphan Well Association;
- a $35,000,000 investment in methane reduction programs for oil and gas operators by the Alberta government;[73]
- $65,000,000 in delayed payments by industry to the Orphan Well Association, for well cleanup in 2020;[74]

66 Riley, Sharon. (2021, March 9). Alberta covered $20 million in unpaid land rent for oil and gas operators in 2020. *The Narwhal.*

67 Seskus, Tony. (2020, January 21). Cash-strapped rural Alberta 'can't wring money' from struggling oil and gas firms, premier says. *CBC News.*

68 Government of Canada. (n.d.). A Healthy Environment and a Healthy Economy. Last accessed May 25, 2021.

69 Geddes, A., Gerasimchuk, I., Viswanathan, B., Suharsano, A., Corkal, V., Mostafa, M., Roth, J., Picciariello, A., Tucker, B., Doukas, A., & Gençsü, I. (2020, November). Doubling back and doubling down: G20 scorecard on fossil fuel funding. International Institute for Sustainable Development.

70 Corkal, Vanessa. (2021, February). Federal Fossil Fuel Subsidies in Canada. International Institute for Sustainable Development.

71 Prime Minister of Canada. (2020, April 17). Prime Minister announces new support to protect Canadian jobs [News release].

72 Rural Municipalities of Alberta. (2021, February 18). Rural municipalities continue to struggle as unpaid tax amounts owed by oil and gas companies increase. [News release].

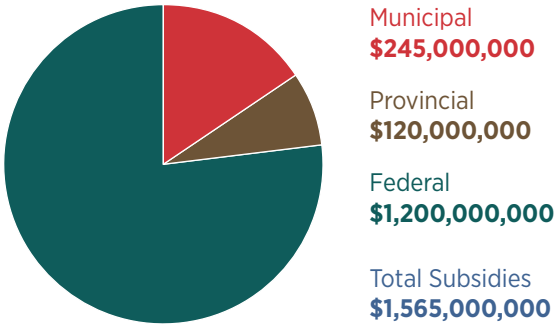
73 Government of Alberta. (n.d.). Reducing methane emissions. Accessed on May 26, 2020.

74 Riley, Sharon. (2020, May 13). Alberta delays $65 million in oil and gas company payments for orphan well clean up. *The Narwhal.*

- $20,000,000 in surface rights compensation for landowners hosting oil and gas development, paid by the Alberta government on behalf of oil and gas companies.[75]

For a total of $1,565,000,000 in subsidies.

OIL AND GAS WELL CLEANUP SUBSIDY TOTALS IN 2020



When the polluter doesn't pay, the public does. And when we apply those costs to every one of us, they add up. In 2020, the Canadian public paid about **$4.3 million a day, every day** for the cleanup of private companies' oil and gas wells.[76]

You read that right.

Put another way, each and every Albertan taxpayer handed over $145 to the oil and gas industry in 2020 to cover the cost of their cleanup bill.[77]

For taxpayers outside of Alberta, their payments were a more modest $44 each[78]—but they didn't have to absorb the additional indignities of the provincial government slashing health care and education budgets, service cuts in their municipalities due to unpaid taxes, unsellable land due to abandoned wells, or the negative health effects of aging and leaking wells around their family homes.

DAILY PUBLIC SUBSIDIES FOR OIL AND GAS COMPANIES IN 2020

Alberta's situation is in some ways uniquely dysfunctional—a combination of a permissive government, a captured regulator and weak enforcement of the rules that are in place.

But the situation is *not* inevitable, and can still be turned around. We have the power to enforce Polluter Pay, hold the industry to account, and unlock a quarter-century reclamation boom in the process.

So let's reimagine Alberta's future and start the work of building it.

75 Riley, Sharon. (2021, March 9). Alberta covered $20 million in unpaid land rent for oil and gas operators in 2020. *The Narwhal.*

76 $1.565 billion / 365 days = $4.27 million per day.

77 There are 30,754,887 adults 18+ in Canada, which we used as a proxy for taxpayers. 3,445,146 (11.2%) live in Alberta, 27,309,741 (88.8%) outside. Alberta's provincial + municipal subsidies divided by every Albertan taxpayer = $106 + Alberta's 11.2% portion of federal government subsidies divided by every Albertan taxpayer = $39 for a total of $145.

78 We assigned each non-Albertan adult Canadians their portion of the 88.8% of $1.2 billion in Federal subsidies, leading to a calculation of $44/per person.

PART THREE

A RECLAMATION BOOM IN ALBERTA—HOW TO MAKE IT HAPPEN

RECOMMENDATIONS FOR A CLEAN, FAIR FUTURE

There is no question that the Polluter Pay principle in Alberta has been weakened through decades of giveaways, deregulation and weak enforcement. But it doesn't have to be this way.

Strengthening, funding and enforcing the Polluter Pay principle isn't complicated. There's a range of ways politicians, regulators and even landowners can make it happen, and help spur an industry-funded reclamation boom in Alberta in the process.

We've divided our recommendations into three areas: **getting real about the cost of cleanup, funding the cleanup, and enforcing the cleanup.**

A. GET REAL ABOUT THE COST OF CLEANUP—AND WHO MADE THE MESS

For years the oil and gas industry has used lowball estimates and accounting tricks to mask and minimize their real cleanup debt, while profiting from Alberta's resource riches. To get real about the costs of cleanup—and who made the mess—we need to:

1. Adopt independent and transparent estimates of well cleanup costs

We can't solve a problem we can't see. For too many years, the real cost of cleaning up Alberta's over 300,000 unreclaimed oil and gas wells has been minimized and obfuscated by both industry and regulators.

We need the regulator to provide full and accurate estimates of the scale and cost of the cleanup required. And that starts with independent and transparent cleanup estimates, updated, and shared with the public every year.

We know the Alberta Energy Regulator has the data and methodology to apply accurate cleanup costs to every well in Alberta—because we used them for the estimates in this report.

The AER should release detailed, independent estimates for the plugging, remediation, and reclamation of every well in Alberta. Cleanup estimates for each wellsite are a key part of a company's Abandonment and Reclamation Obligations. They establish the true cost to responsibly sunset their operations and are **recorded as liabilities on their balance sheet.** And here's the rub—because the calculation of

liabilities are such a key part of how the AER measures a company's health, when cleanup costs are inaccurate, we can't get a true picture of a company's solvency.

2. Reform industry accounting

Once we have accurate cleanup costs, the industry needs to use them. In Alberta, we need the AER to help hold the oil and gas industry fiscally accountable to their real and growing liabilities. Once the AER has posted independent well cleanup estimates (see recommendation #1), they should require industry to use or disprove them. Currently, firms are allowed to keep the details of their estimates secret since they are considered sensitive internal information. This is wrong—they should be disclosed in full detail.

Oil and gas companies should have to publicly report their full, undiscounted cleanup liabilities and explain any large variances from the regulator's estimates. Shining a light on liabilities and compelling companies to justify questionable estimates will ensure the public and investors can accurately gauge the health of these companies—and how close their wells are to their economic limit, the point when the value of the oil or gas left in the ground beneath the well is equal to the cost of cleaning it up.

3. Start tracking polluters

Stories like that of well #0776062502000 on Regan Boychuk's family's farm provide a good picture of the millions of dollars in revenues that companies extract from a single well when the oil and gas is flowing. Alberta regulators don't keep a public register of the different owners of a well over time. So if we don't know who owned the well when it was profitable, we won't be able to make them pay for the mess left behind when it's not.

We need the AER to create a public 'licensee registry' for every well in Alberta, so that cleanup costs can be traced back and equitably distributed amongst the companies that profited from it; more on that below.

B. FUND THE CLEANUP

Once we get real about the full extent of the cleanup bill and which companies are responsible for it, we need to make sure the oil and gas industry funds the work ahead.

These recommendations are a mix of ways to make sure industry doesn't walk away from their cleanup bill, and leave the public with the tab.

4. Stop paying polluters

We can't get polluters to pay for cleanup when we're *paying them* to pollute. Despite their wealth, oil and gas companies have benefitted from a huge range of public subsidies for decades that artificially lower the cost of doing business and inflate corporate profits.

In this report, we've shown how Alberta's oil and gas industry received $1.56 billion in public subsidies for the cleanup of their oil and gas wells. The public needs to stop paying the industry's cleanup bills. **And governments need to stop undermining our polluter pay laws, and put an end their handouts to industry with public funds.**

5. Collect cleanup costs before companies become insolvent

Under the Alberta Energy Regulator's liability management rating (LMR) program, the regulator doesn't require any bonds before drilling an oil or gas well, and only tries collecting a cleanup deposit from a company *after* it becomes insolvent. That's way too late.

For active wells, cleanup security should be collected during the course of its productive life—it's just common sense. Economic limit[79] is an easy way to map the well's cleanup cost to its remaining production value. When a well has only double its economic limit (2EL) remaining in oil or gas output, then the AER should begin collecting the well's cleanup security from the owner.[80] By the time the well hits its economic limit, at 1EL, full funds for plugging, remediation, reclamation, and monitoring should be collected. And if companies can't or haven't set the cleanup costs aside before their wells reach their economic limit? We have a proposal for them, too.

6. Create a Reclamation Trust to responsibly wind down failing companies and fund the cleanup of their wells

We know from the AER's own data that 49% of their oil and gas licensees are already insolvent, with an LLR rating below 1.0 (see table in Part 2).[81] If these companies can't afford to put up the cleanup costs for their wells before they reach their economic limit, we need another way to uphold the Polluter Pay principle.

We need to **create a Reclamation Trust in Alberta: an independent, non-profit body that can take over end-of-life companies and use their remaining revenue to fund the cleanup of their wells.**

How would it work? For example, Calgary-based Trident Exploration went bankrupt in 2019 leaving perhaps an up to $1 billion unfunded cleanup liability, after being foreclosed on by ATB Financial. In addition to a massive cleanup debt, Trident left behind more than 4,000 wells that will require cleanup and reclamation.[82]

A Reclamation Trust would make lemonade out of lemons like Trident.[83]

Typically, Trident's wells would be sold off or given away for the benefit of the company's creditors. But rather than fire-selling the assets, a Reclamation Trust would instead step in and operate Trident's >10,000 barrel/day of oil equivalent production, and use that approximately $100,000/day in revenue to pay landowners, royalties, and taxes—with the remainder creating good jobs in cleaning up Trident's end-of-life wells.

A Reclamation Trust helps answer the question: If so much of the drilling industry is insolvent, how can it fund its own cleanup? The truth is, many failing companies are like Trident: insolvent on paper, but still pumping thousands of barrels of revenue every day.

Companies like Trident need to be taken into a form of conservatorship before it's too late. The Reclamation Trust would wind down their operations in the public good. Wells would be retained and operated to pay for cleanup, and holding licenses, surface and mineral rights would further enable the Trust to fund ongoing

[79] Every well has a "best-before" date—the point when the value of the oil or gas left in the ground beneath the well is equal to the cost of cleaning up the well. In industry terms, this is known as the well's economic limit. Economic Limit is the point at which a private liability becomes a public liability.

[80] The solution we're proposing was the basis of an effective regulatory program introduced in 2000, and in place until industry lobbying had it cancelled and replaced with today's LLR, which measures the economic health of companies, rather than their wells. Alberta Energy and Utilities Board. (2000, October 24). Replacement of the Long-Term Inactive Well Program with the monthly corporate licensee liability rating. *Informational Letter 2000-4.*

[81] Alberta Energy Regulator. (2021, June 5). Liability Management Rating (LMR) Results Report #44024.

[82] Boychuk, Regan. (2019, May 2). Kenney already facing Alberta's reckoning over mismanaged oilfield cleanup. *National Observer.* NOTE: Contemporary Trident daily production volume and estimated liability data were provided by CanOils.

[83] The main inheritor of Trident wells was Ember Resources, which has gone to great lengths trying to shortchange landowners: Morgan, Geoffrey. (2021, June 9). Oil is at $70—pay your bills: Farmers fume as frustration mounts over oil companies' unpaid leases and rural taxes. *Financial Post.*

reclamation work. In managing an inventory of liabilities, the Trust could carry out cleanup work efficiently, organizing it by region and utilizing economies of scale.

And because the Reclamation Trust would be a non-profit entity, profits from its wells wouldn't flow to executives or shareholders, but generate good-quality reclamation jobs for Albertans, pay surface compensation to landowners, and taxes and royalties to the government.

The creation of a Reclamation Trust isn't a catch-all solution. As we described in Part 2, only some of Alberta's oil and gas wells are still pumping enough to potentially fund cleanup through the Trust model, but there is a massive opportunity in taking them over now, once as a company demonstrates it can't pay for well cleanup.

For wells that are orphaned and have no company which can be held liable for their cleanup costs, we'll need another solution.

7. Require the Orphan Well Association to collect their full industry levy

The Orphan Well Association (OWA) is designed to be industry-funded, and by law it is required to collect sufficient levy (or fees) from industry to fund the cleanup of ***all*** the orphan infrastructure in its inventory each year.[84]

If the OWA applied accurate cleanup costs to its inventory, and collected the full annual levy from industry, it would never have any unfunded inventory or any need to borrow from the public—and it would create thousands of jobs in the process.

Instead, the OWA collects only a small percentage of the funds required for the full cleanup of their growing inventory. In response, provincial and federal governments have lent $535,000,000 to the Orphan Well Association since 2017 to help close the gap.[85]

Instead of needlessly subsidizing industry with public dollars, let's enforce the *Oil and Gas Conservation Act* to make sure the OWA is fully funded by polluters every year—and that every cent of public loans to the OWA are repaid.

8. Introduce an industry-wide levy to recoup public investments in cleanup

Grants. Loans. Tax breaks. Payments to landowners. Methane reduction supports. The list of public subsidies to oil and gas companies for the cleanup of their wells goes on and on. Will the public ever get paid back?

Australia has modeled a simple solution for recouping public investments in private infrastructure cleanup: earlier this year, the **Australian government hit oil producers with a $200 million dollar levy to cover the cost of removing facilities and cleaning an oil field** off northwest Australia, after the small company that owned the project collapsed.[86]

Governments here could use a similar model to recoup public investments in cleanup that are not covered by the solutions outlined above: **we can simply send the entire industry the bill.** All it takes is political will.

C. ENFORCE THE CLEANUP

Once we have real cleanup costs, and find the cash to pay the cleanup bill, system change is needed to enforce the Polluter Pays principle. Our governments must take a hard look at our banking, regulatory, and public disclosure systems and close the loopholes through which

[84] Sections 73(2) & 70(1) of the *Oil and Gas Conservation Act.*

[85] Bankes, N., Fluker, S., Olszynski, M., & Yewchuk, D. (2020, April 24). Governance and accountability: Preconditions for committing public funds to orphan wells and facilities and inactive wells. *Ablawg.*

[86] Paul, Sonali. (2021, May 11). Australia hits oil producers with levy to decommission abandoned Timor Sea field. *Reuters.*

industry has dashed, leaving a mess in their wake. We need effective monitoring by the regulator and significant enforcement penalties through the courts.

9. Stop the fraudulent transfer and dumping of oil and gas wells[87]

Tens of thousands of aging and idle wells have been sold by big producers to small operators as a way of offloading cleanup liabilities from their balance sheets, in what the *Globe and Mail* deemed a "hustle in the oilpatch" in their bombshell 2018 report on the practice. The full impact of the "hustle" becomes obvious when the small operators go belly up (see sidebar on Perpetual Energy on page 24), leaving a huge legal, economic and cleanup mess behind.

According to the *Bankruptcy and Insolvency Act,* dumping assets remains legal because the court's test of a company's solvency currently excludes oilfield cleanup costs. This has to change to stop companies from restructuring to keep still-profitable wells while downloading cleanup liabilities on small companies for as little as $1. Thankfully, the necessary changes were recommended by the Uniform Law Conference of Canada in 2012 and endorsed by the Alberta Law Reform Institute in 2016.[88]

But until the ***Bankruptcy and Insolvency Act*** is updated to close this loophole, the dumping will continue.

10. Use lookback powers to assign cleanup liabilities to previous well owners

Another way to get around the practice of dumping wells is to use lookback powers to assign cleanup liabilities retroactively.

Tracking previous owners, like a proper regulator would do, would identify polluters to pay and help distribute eventual cleanup costs equitably amongst previous beneficiaries. It would also take the point and power out of dumping wells, and push the cleanup costs back uphill to where they belong, to profitable companies that dashed on their bills.

Regulators have the authority to issue environmental protection orders directing well operators to perform any work necessary for reclamation, even if a reclamation certificate has already been issued. But because our regulator regularly waits until it is too late and an operator is insolvent, it needs to establish its power to enforce orders against failed companies. Regulators launched the *Northern Badger* case as a test whether regulators have a "super-priority" in bankruptcy to step in front of secured creditors and were successful.[89] Unfortunately, before Alberta's Chief Justice delivered the unanimous Appeal Court decision in *Northern Badger*, the regulator had shifted course, ensuring it would not look back to previous owners.[90] That fateful promise not to make polluters pay remains in place today.[91]

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87 Adkisson, Jay. (2019, July 8). Fraudulent transfers and the Statute of 13 Elizabeth translated to contemporary legal english. *Forbes;* Comerford, M. E., & Delano, C.C. (2014, February 12). Tronox v. Kerr-McGee: Game changing ruling on fraudulent transfer and spin-offs to shed legacy liabilities. *Strafford;* In economic terms, this problem is known as Judgment Proofing—see in particular Ringleb, Al H. and Steven N. Wiggins. (1990, June). Liability and Large-Scale, Long-Term Hazards. *Journal of Political Economy,* 98(3): 574-95; and Boomhower, Judson. (2019, February). Drilling Like There's No Tomorrow: Bankruptcy, insurance, and environmental risk. *American Economic Review,* 109(2): 391-426.

88 Uniform Law Conference of Canada. (2012). Uniform Reviewable Transactions Act, p. 11; Alberta Law Reform Institute. (2016, March). Reviewable Transactions. Final Report #108, p. 47, para. 102.

89 *PanAmericana de Bienes y Servicios v. Northern Badger Oil & Gas Limited,* (1991 ABCA 181).

90 Nichol, John. (1991, April). Orphan wells: Who is responsible, for how long, and at what cost? *Canadian Association of Drilling Engineers/Canadian Association of Oilwell Drilling Contractors Spring Drilling Conference Paper* 91-30.

91 "Even where other parties may fall within the relevant definitions of 'operator' and 'person responsible' in the reclamation and release provisions of the EPEA, [regulators] will, generally speaking, pursue the last licensee only. ...this practice differs markedly from the language of the current legislative schemes governing these two liabilities [remediation and reclamation] in Alberta." Vlavianos, Nickie. (2000, September). *Liability for well abandonment, reclamation, release of substances and contaminated sites in Alberta: Does the polluter or beneficiary pay?* [Master's thesis, University of Calgary Faculty of Law], p. 70.
Newton, Mike. (2018, August 15). What happens to chain of title during insolvencies? XI Technologies.

The courts have been clear: regulators have the power to make the polluter pay. **Now the AER needs to *finally use it*.**

11. Create a public list of tax strikers

By the end of 2020, oil and gas companies had refused to pay over $245 million in taxes to municipal governments across Alberta, triggering layoffs, service cuts, and tax increases for rural Albertans—but a shrug from the provincial government.

We need to know who they are. Municipal governments have lists of these tax striking companies. Many still operate wells, pay executives, and even receive public funds through the billion-dollar federal grant for idle oil and gas wells, among other subsidies. Municipalities should be required to post a list of oilpatch tax strikers in an accessible manner to allow journalists to investigate and citizens to apply pressure to them.

Currently, municipalities are required by law to publicly post tax delinquents, but these are listed by land location and hard to parse. To find the owners, researchers must do a title search to see the nature of the property and, only then, can they see whether any oil or gas company is involved. **In other words, the public data is posted according to the law, but is so inaccessible that it's hard to track down the companies behind Alberta's $245 million dollar tax strike.**

12. Increase transparency and public accountability at the Orphan Well Association

We need a transparent, accountable organization dedicated to orphan wells in Alberta whose job is to protect the public interest, not industry. Alberta's secretive, industry-run Orphan Well Association should be subject to Alberta's Access to Information laws, and needs to "open their books" to the public. Another crucial reform to the OWA would be to openly recruit public representatives of communities affected by oil and gas development to its Board, increasing public accountability.

13. Reform the AER

We need the Alberta Energy Regulator to operate without fear of, or favour to, the industry it oversees. A public inquiry can help Albertans understand the role the regulator has played in undermining the Polluter Pay principle, and drive desperately needed reform.

In this report, we've already called on the AER to transparently disclose their best internal estimates for the projected costs of oil and gas infrastructure cleanup—no one should have to FOIP the regulator to get them, as we did.

They can also go much further in enforcing the powers they do have, like ending the automation of reclamation certification; inspectors should be required to visit every site they certify.

The AER could also do much more to draw on legal precedents to flex their regulatory muscle. Using lookback powers to assign cleanup costs to previous well owners, detailed above, is one idea. Another would be for the AER to issue Environmental Protection Orders against companies that are entering receivership, allowing them to exercise the regulators' environmental "super-priority" to fund cleanup ahead of the company's debts.

The AER has much more power than it uses to hold the oil and gas industry to account and uphold the Polluter Pay principle. We need them to use it.

A RECLAMATION BOOM IN ALBERTA

We believe a better future for Alberta is not just possible, but within our reach. Enforcing Polluter Pay can spur a massive cleanup of oil and gas wells that will help heal our land, air and water—and create decades of good jobs in the process.

An industry-funded cleanup of Alberta's 300,000 unreclaimed oil and gas wells could spark an *annual* economic boom of:

- 10,112 full-time jobs;
- $727,632,421 in employment income;
- $1.96 billion in contribution to Alberta's Gross Domestic Product (GDP);

... every year, for the next 25 years.

By getting real about the true cost of cleanup, making sure industry follows the law and pays that bill, **we could kick off a province-wide jobs boom totalling 252,803 job years, generating $18.2 billion in wages (average salary = $72,000) and $48.97 billion in GDP benefits.**[92]

And these numbers are a *conservative* calculation—using our medium-level estimate of cleanup costs for each wellsite, and conservative economic coefficients for the jobs, wages, and GDP impact of the cleanup work. And in reaching our totals, we only counted the *direct* economic impact of the cleanup work itself, and not all of the secondary industries (restaurants, lodging etc.) that support it.

It's also important to note that our numbers don't include the cleanup of Alberta's 433,000+ kms of pipelines (there's enough pipeline in Alberta to reach from the earth to the moon) and tens of thousands of facilities supporting these wells. These are likely to cost at least another $30 billion to clean up, generating tens of thousands more jobs in the process. And that's before we turn our sights to cleaning up the oilsands.

In short: over 10,000 quality jobs a year for a quarter century is a floor, not a ceiling of the economic and employment benefits of a reclamation boom in Alberta.

Appendix B gives an overview of the many types of workers that would benefit from this work. It's an exciting list: jobs that require little or no retraining are awaiting thousands of energy workers who have lost work in recent years.

Add in the economic and social benefits of 410,000+ hectares of newly-remediated land opened up for farming, hunting, recreation and redevelopment[93]—and you start to sense the scale of benefits awaiting an Alberta that can muster the political courage to enforce the law and make the polluter pay.

The massive cleanup ahead is also a chance to advance reconciliation with Indigenous peoples, with opportunities at every stage for community leadership, economic development for Indigenous businesses and strengthening restoration efforts with traditional knowledge.

The rollout of a province-wide oil and gas well cleanup effort can unfold in a manner that reaffirms the Treaty rights of First Nations, answers the Truth and Reconciliation Commission's *Calls to Action*, and upholds the United Nations Declaration on the Rights of Indigeneous People (*UNDRIP*)—including free,

[92] These estimates are based on our site-by-site detailed cleanup costs for the reclamation of the 282,877 oil and gas wellsites (many with multiple wells) that were unreclaimed as of 2018. We used a 25-year theoretical reclamation period assuming the same number of wells would be reclaimed every year from the inventory. Reclamation estimates assume a constant inflation adjusted cost over the 25 year time period. We used land remediation sector coefficients, drawn from Statistics Canada for Alberta, and applied these to our remediation costs estimates per well to generate our estimated impacts.

[93] Because the information of land use by oil and gas wells is not transparent or publicly available, each wellsite was assumed to average 1.45 hectares; total area of the 282,877 wellsites (2018 count - many with multiple wells) would be 410,173 hectares of total landscape footprint and potential (an area ~72.5% of the land area of Prince Edward Island).

prior and informed consent for any reclamation activities taking place.

The cleanup is a massive opportunity to incorporate Indigenous knowledge about the land itself in the restoration process: in what wellsites to prioritize for cleanup, the surrounding areas that should not be disturbed in the process and what restoring land to its functional equivalent of its pre-drilling state—the original promise of reclamation—means in a local context. Both the Alberta[94] and British Columbia[95] regulators have experimented with collaboration with Indigneous communities around reclamation work, and much more can be done. This work has the added benefit of creating quality jobs in Indigenous communities, including targeting cleanup contracts to Indigenous-owned companies.

The municipalities with the biggest oil and gas well liabilities also have the most potential benefit from an industry-funded cleanup—tens of thousands of jobs generating billions of dollars in employment income and activity in their local economy. We list just the top twenty here. You can find your municipality on the full list posted on the Alberta Liabilities Disclosure Project website.

TOP 20 MUNICIPALITIES' MEDIUM-ESTIMATE CLEANUP COSTS AND ASSOCIATED ECONOMIC BENEFITS

County	Average Total Reclamation Spending	Estimated Wages Paid	Job Years Employment
Cypress County	$4,827,623,236	$ 1,597,943,291	22,207
M.D. of Greenview No. 16	$3,212,919,488	$ 1,063,476,351	14,779
Yellowhead County	$2,959,841,264	$ 979,707,458	13,615
County of Newell	$2,702,729,407	$ 894,603,434	12,433
Brazeau County	$2,221,198,745	$ 735,216,785	10,218
Clearwater County	$2,206,577,892	$ 730,377,282	10,150
Special Areas 2	$2,085,436,954	$ 690,279,632	9,593
County of Vermilion River	$1,668,842,381	$ 552,386,828	7,677
Mackenzie County	$1,259,753,878	$ 416,978,534	5,795
M.D. of Wainwright No. 61	$1,259,753,530	$ 416,978,418	5,795
M.D. of Provost No. 52	$1,195,419,814	$ 395,683,958	5,499
Saddle Hills County	$1,062,047,636	$ 351,537,768	4,885
Wheatland County	$1,014,126,751	$ 335,675,954	4,665
Big Lakes County	$979,099,253	$ 324,081,853	4,504
Lacombe County	$900,042,076	$ 297,913,927	4,140
Leduc County	$883,602,973	$ 292,472,584	4,065
County of Grande Prairie No. 1	$880,298,996	$ 291,378,968	4,049
Red Deer County	$857,628,967	$ 283,875,188	3,945
Flagstaff County	$846,085,612	$ 280,054,338	3,892
Special Areas 4	$845,148,320	$ 279,744,094	3,888

[94] Alberta Energy Regulator. (2019, May 23). Wihtamâtotan – Telling Each Other: Indigenous Knowledge Remediation, Reclamation and the AER: A Project with the Woodland Cree First Nation.

[95] BC Oil & Gas Commission. (2019, May 31). The BC Oil and Gas Commission and Saulteau First Nations announced today that they are working together to advance several new land restoration initiatives in northeast British Columbia. [New release].

The opportunity is clear: we can defuse the ticking time bomb of oil and gas liabilities with twenty-five years of good jobs for oil and gas workers. It's work that will heal and restore Alberta's land, air and water.

But only if Albertans and Candians can muster the political courage to make the polluters pay. **Most of what we have to do is enforce our existing laws and develop the mechanisms to activate them.**

AN ALTERNATIVE ENDING FOR REGAN'S FAMILY WELL

Let's imagine how the story of oil well #0776062502000 could play out differently, in a province governed by Polluter Pay:

Shortly after the oil well was drilled near Rycroft in 1986, two independent assessors came to estimate cleanup costs at the end of its life cycle.

The detailed cleanup estimates, based on the well type, geographic area, drilling depth and soil type, averaged $306,107. Everyone involved knew that unless the company set aside that amount either in advance of drilling, or in portions year-by-year while the well was producing, the day when there was $306,107 in profit left in the well would be circled on the calendar. That was the well's "best-before date"—its economic limit—and ownership of the well and its future profits would be held as the collateral on that $306,107 bill.

Over the years of active drilling, the company didn't set aside that $306,107 for cleanup. So as the well's economic limit approached, the lien was called in and the company and the independent Reclamation Trust prepared for the transfer of ownership.

Alberta's Reclamation Trust took over ownership and operation of the well on the day it reached its economic limit in 2012. For Regan's family, nothing was different about how the well was running day-to-day—it was still being maintained, pumping oil, and paying compensation to landowners and to all Albertans in royalties and taxes.

But the change of ownership also meant a change in priority for the well.

Instead of the well's remaining profits going to executives and shareholders, the Reclamation Trust was setting aside that money for the well's upcoming abandonment, reclamation and remediation—work that was getting closer every day as the oil began to run dry.

The week after the well stopped producing in 2016, the cleanup began. And because the cost of that $306,107 liability had been set aside in advance, that liability quickly turned into a positive economic generator—good jobs for the dozens of workers and specialists involved in every stage of the cleanup, who then had more money to spend to support their families and contribute to Alberta's economy.

Because the land was carefully restored to the same state of ecological health it had been in before the well was drilled, the air around it was clean with no methane leaks, the soil decontaminated and the water around it ran clean. After three decades, a few-acre shadow was lifted from Regan's family's farm.

Instead of being left with a multi-billion dollar environmental disaster, Alberta was in a massive reclamation boom—and would continue to be for years. By strengthening and enforcing its regulations and bankruptcy law, our province-wide well cleanup became the jumping-off point for our next energy economy—an economic future beyond oil and gas.

CONCLUSION

As researchers, scientists, academics and industry veterans, we've spent years working to untangle the challenges of Alberta's unpaid oil and gas well cleanup. In the process, the solutions have become clear to us too.

We wrote this report in an effort to make both the problems and solutions to this crisis accessible to the public and all the public servants, political leaders, and activists working to address it.

We believe the situation we are in—a $40-70 billion dollar cleanup liability and an industry pleading poverty in the face of it—is outrageous. And we think Albertans should be outraged, too.

The power of the Polluter Pay principle as a solution to this mess lies in its simplicity: by law, the polluter must pay for the cleanup of their infrastructure. Any solution to the oil and gas well crisis that isn't based on this principle—whether billion-dollar grants of public funds to industry, updates to the AER's broken liability management system that don't start with accurate cleanup costs, or vague reforms to clean up standards without teeth for enforcement—are a distraction from the real work ahead: holding the industry to account.

We hope readers of this report will raise two important questions every time a new policy or regulatory solution to the oil and gas well crisis is proposed: first, how does it make polluters pay? And second: how will it be enforced?

The challenges presented in this report are significant—the true cost of cleanup, the drilling industry's growing insolvency, the paucity of wells still generating revenues—can feel overwhelming. But there is still plenty of money coming out of the ground in Alberta, and it's not too late to hold the industry to its debts.

Enforcing the Polluter Pay principle can create hundreds of thousands of quality jobs in Alberta, generating billions in wages and GDP, and liberating hundreds of thousands of hectares of land for other use. And we can do so while advancing reconciliation with Indigenous peoples through informed participation respecting Treaty rights and implementing the Truth and Reconciliation *Calls to Action* and *UNDRIP*.

We believe this better future is possible. We're calling on Albertans to take control of our relationship with the oil and gas industry, enforce the Polluter Pay principle—and unlock a quarter-century of good jobs in the process. Let's get to work.

> *"Life is not only human life, but the life of the forest, the trees, the elements of nature, and so on. The elders were saying that unless modern society is in tune with those things, it will continue to destroy, pollute, and make bigger machines and greater weapons that eventually will destroy the planet Earth.*
>
> *The elders believe we must teach all of our brothers and sisters that life is sacred and very valuable and was created for a purpose. Everything is interrelated, and we must live in harmony in the renewal process of the seasons.*
>
> *The fundamental basis of our teachings is to respect the Great Spirit's creation—Mother Earth and her inhabitants—and to remember them in our prayers and our ceremonies."*[96]
>
> **The late Reverend, Dr & Chief John Snow Sr.**
> Author, *These Mountains Are Our Sacred Places*, Stoney Tribe

[96] Snow, Chief John. (2005). *These Mountains Are Our Sacred Places: The Story of the Stoney People* (p. 239). Markham: Fifth House.

PART FOUR

APPENDICES

APPENDIX A: HOW WE ARRIVED AT A $40-70 BILLION DOLLAR CLEANUP BILL

Our $40-70 billion cost estimate for the cleanup of Alberta's over 300,000 unreclaimed wells is 2-3.5 times higher than the costs estimates the Alberta Energy Regulator shares publicly.

In 2019, AER's Vice-President of Closure and Liability, Robert Wadsworth made a startling presentation, pegging the cost to clean up Alberta's entire oil and gas industry—wells, pipelines, oilsands mines and tailings ponds—at $260 billion++. It made headlines and the regulator quickly backtracked, issuing a press release that said *"using these estimates was an error in judgement and one we deeply regret."*[97]

As researchers, we were interested in how Alberta's industry-funded regulator arrived at the $260 billion++ number. So we filed a Freedom of Information request for the methodology behind the presentation. To our surprise, they released impressively detailed estimations of oil and gas wellsite reclamation costs.

In their internal study, the AER had organized every wellsite in Alberta into 128 different categories based on the relevant well and site characteristics. They then solicited detailed cleanup cost estimates from four experienced private sector service companies active in Alberta, and applied them to each wellsite type.

But the AER did not finish their work—all those detailed estimates were never properly applied to all the different kinds of wells in Alberta.

We were intrigued by the prospect of a true well-by-well cleanup estimate, so we decided to finish the work.

[97] Alberta Energy Regulator. (2018, November 1). Statement from the Alberta Energy Regulator. [News release].

In 2019, we completed the project the AER had abandoned. We applied the AER's data and methodology to create site-tailored high and low estimates for the plugging, remediation, and reclamation of every unreclaimed wellsite in Alberta, and compared them with the AER's public estimates. That gave us three estimates each for almost 300,000 oil and gas wells, resulting in approximately one million data points.

Using the AER's methodology, our data set shows that we are facing a $40-70 billion cleanup bill on oil and gas wells alone.[98]

Next, we partnered with ALCES' industry-leading modelling and simulation software to map the data geographically to each wellsite, using their data to add in:

- each well's location, soil type, depth and proximity to watersheds;
- each well's current operator;
- an outline of each well's production history.

Since then, we've added new layers of data to the research, including organizing our cleanup estimates by municipal and reserve jurisdictions so we know the level of liabilities within every county, riding, or reserve.

DETAILS OF OUR DATA SET

Well ID

Geographic Location

Well Depth

Soil Type

Proximity To Watersheds

License Granted To

Year Drilled

Operating History

Annual Output

Projections Of Profits and Royalties Paid

Low, Medium, and High Cleanup Estimates

We believe the ALDP estimates are close to a global gold standard for detail and comprehensiveness of well cleanup costs. We're committed to utilizing this data in the public interest and offering it to landowners, municipalities, First Nations and journalists. For more information, contact us at aldpcoalition@gmail.com.

[98] Alberta Liabilities Disclosure Project. (2019, July). Description of ALDP's Methodology for Completing the Alberta Energy Regulator's Internal Study of Oil and Gas Well Reclamation Costs.

APPENDIX B: JOBS INVOLVED IN A RECLAMATION BOOM

JOBS DIRECTLY INVOLVED IN WELL ABANDONMENT, REMEDIATION AND RECLAMATION

Job title (Alphabetized)	**Assessment** Stage 1 & Stage 2	**Plugging** Sealing well & tidying site	**Remediation** Spills & leaks remedied	**Reclamation** Returning land to near original state
Agrologists	✓		✓	✓
Drilling and service rig managers		✓		
Environmental advisors and assessors	✓		✓	✓
Environmental geophysicists	✓		✓	✓
Environmental engineers	✓		✓	✓
Hazardous waste management technologists			✓	
Health and safety personnel	✓	✓	✓	✓
Heavy equipment operators			✓	✓
Hydrologists	✓		✓	✓
Laboratory technicians	✓		✓	
Oil and gas well loggers and testers		✓		
Oil and gas transportation services occupations			✓	✓
Project managers	✓	✓	✓	✓
Qualified wetland science practitioner	✓		✓	✓
Remediation and reclamation specialists			✓	✓
Regulatory specialists	✓	✓	✓	✓
Service rig personnel		✓		
Site audit and reclamation advisors	✓			✓
Snubbing services operators and supervisors		✓		
Soil scientists			✓	✓
Tree planters				✓
Truck drivers			✓	✓
Valve technicians		✓		
Well service equipment operators		✓		
Well testing services supervisors		✓		
Wireline operators		✓		

ALDP