

# Best Practice

## Kindersley Waste Water Agreement

### CONTACT

Town of Kindersley  
Bernie Morton  
P. 306-463-2675  
Email: cao@kindersley.ca  
Box 1269, Kindersley, SK S0L 1S0  
Project Date: Ongoing — began in July 2013, implemented August 2014

### THE PRACTICE

The Town of Kindersley created an agreement to give the oil and gas sector access to utilize the waste water from the water treatment plant. This allows the sector to meet their water needs for extraction activities, while alleviating the pressure on the town's water treatment plant and finding a use for the 18 per cent of their daily treated water that was otherwise wasted.

### THE PROCESS

In 2013, the Town of Kindersley issued a Request for Proposals to form a partnership to access and utilize the backwash waste water discharged from the water treatment plant. A partnership would allow private capital investment — rather than the Town — to produce the infrastructure, while encouraging business growth, corporate partnership with the Town, and an opportunity to cater to an industry need.

Three proposals were received; after evaluation by staff and council, council approved Holland's Hot Oiling Ltd. As the successful proponent. Holland's and the Town's department of engineering, planning, and development worked together to complete a design, build, operate, and maintain agreement for the project. Construction began in fall 2013, and the facility was granted approval to begin operating in August 2014.

### THE RESULTS

The reservoir moved 38 million litres of backwash water between when operation began in August 2014 and when the nomination was submitted in 2015 — water that would have otherwise come from the potable water supply, with the associated costs of treatment and potential to divert from the needs of residents.

As part of the agreement between Holland's and the Town, revenue from the commercial sale of the waste water is split between the two parties. By the time the nomination was submitted, the Town had received \$86,000 in new revenue from its portion of water sales.

### LESSONS LEARNED

This project required an element of education to local industry. Providing more information about the benefits of the project to industry could have enhanced the project. General publications were used to inform the community, but perhaps greater buy-in from the industry could have reduced confusion.

Establish a solid liaison with the Water Security Agency early in the process to ensure all regulations are understood and planned for in advance.

There were challenges with storage space and aeration of the lagoon. More bacteria built up than expected (due to the time it took to get approval from the Water Security Agency), requiring an air bubbler, compressor unit, and chlorination to achieve customer standards for bacteria before it could be sold. (Once the reservoir was in operation, water flow and adequate aeration was much easier to achieve.)

Other issues included:

- needing to repair the reservoir's lining during winter month, as it had ripped due to not being completely tight to the ground;
- securing a customer base and educating local industry created a storage issue, as it took several months to get rolling;
- constructing a new stone dam after operations began, as the force of the water run-off proved the initial dam was not adequate; and
- undertaking safety measures such as a textured liner material for greater traction for those needing access to the water, and continuous metal safety fencing to secure the area against trespassers.



***Celebrating Municipal Excellence***

# **Nomination Form**

***Deadline: 4:00 p.m. on Wednesday, September 9, 2015***

<b>Nominee Contact Information</b>	
<b>Name of municipality/ municipalities being nominated:</b> <small><i>(please include the names of all partner municipalities)</i></small>	Town of Kindersley
<b>Contact Name:</b>	Bernie Morton
<b>Telephone #:</b>	306-463-2675
<b>Mailing Address:</b>	Box 1269, 106 5 <sup>th</sup> Avenue East Kindersley, SK S0L1S0
<b>E-mail Address:</b>	<a href="mailto:cao@kindersley.ca">cao@kindersley.ca</a>
<b>Name of Nominated Practice or Project:</b>	Kindersley Waste Water Project
<b>Date of Project or Practice Initiation:</b>	July 2013
<b>Date of Project or Practice Completion:</b> <small><i>(If ongoing, please indicate)</i></small>	Implementation complete August 2014. Project ongoing.
	<b>Ongoing:</b> <input checked="" type="checkbox"/>

<b>Nominator Contact Information</b>	
<b>Name:</b>	Wayne Gibson
<b>Organization:</b>	Town of Kindersley
<b>Position:</b>	Manager of Communications
<b>Mailing Address:</b>	Box 1269, 106 5 <sup>th</sup> Avenue East Kindersley, SK S0L1S0
<b>Telephone #:</b>	306-463-2675
<b>E-mail Address:</b>	communications@kindersley.ca

**Please remember when filling out your nomination that winning practices are posted in the Best Practices Library, so be sure to include all information that may be helpful to others if it were to be used as a reference or resource.**

## The Practice

1. What was the issue that inspired the nominated project or practice?
2. What has this project or practice done to address the issue?

*Recent water usage trends show that water consumption has been steadily increasing in Kindersley as a result of a growing population and a thriving commercial and industrial sector led primarily by oil and gas activity. The Town of Kindersley has already invested a significant amount into its water infrastructure in recent years, including approximately \$20 million in upgrades to the water treatment plant and filtration system, construction of a new water tower, and twinning of the Eston-Kindersley water pipeline (known as the Water West project.) Despite these improvements, the trends in consumption and development activity indicate the Town may yet need to invest more into water infrastructure upgrades in order to meet future demand.*

*The Town of Kindersley offers potable water to its residents, which is piped from the South Saskatchewan River to the Water Treatment Plant where it is treated through a state-of-the-art filtration and treatment system that was upgraded in 2011. Regular maintenance of this filtration system requires that the filters be cleaned a minimum of twice daily through the process of 'backwashing'. Backwashing is the process of running treated water back through the filters to rinse out any particles that may have accumulated through regular usage. This treated but "dirty" water is expelled from the Water Treatment Plant into a natural creek, amounting to about 400 to 500 cubic meters per day, or approximately 18 percent of the daily treated water supply. The thriving energy sector in West Central Saskatchewan includes several companies that utilize the fracking method to extract oil from new and existing oil wells. This fracking practice requires high quantities of water. Many local companies source this water from the Town's potable water filling station, located in the industrial area. The water at the filling station is treated, potable water and, as a result, the draw on this treated water greatly impacts the amount of water that the Town must pipe and treat. It also impacts, and potentially limits, the amount of water that is available to other consumers upon immediate demand.*

*In 2013, the Town of Kindersley issued a Request for Proposals (RFP) from interested and qualified companies to form a partnership to access and utilize the backwash wastewater that is discharged from the Kindersley Water Treatment Plant, hence finding a commercial use for this 18 percent of our daily treated water that was otherwise wasted. The Town of Kindersley has always encouraged industry to thrive in the community and will continue to support and promote this kind of growth.*

*The objective of the RFP was to provide and increase availability to an alternate source of water for commercial and industrial use in order to alleviate the pressure placed on the town's treated water*

*supply; and to accomplish this through a capture and repurposing of backwash water that would otherwise be 'wasted.'*

*A partnership would allow for private capital investment to produce the infrastructure required as it fell outside the Town's fiscal means to address. It also encourages business growth, corporate partnership with the Town, and an opportunity to cater to an industry need, thus providing a mutually beneficial solution to Kindersley's water consumption issue by making use of the semi-treated wastewater for fracking purposes. While the Town supports industry and growth in Kindersley, it is imperative to ensure that a sufficient potable water supply is available at all times and that growth can occur with as little environmental impact as possible. The Waste Water Project has the potential to reconcile the need for industrial growth and environmental sustainability while solving Kindersley's overconsumption trends.*

## **The Process**

*This section should be the longest and most detailed part of your nomination. Include enough information so that a municipality interested in applying the same project or practice can follow your steps.*

3. Indicate who had a direct role in this project or practice:

- Municipal Council
- Municipal Administration
- Other

4. What was the role of the municipal council and/or municipal staff in this project or practice?

5. Were other groups were involved in developing this project or practice? If so, who were they and what role did they play?

6. What resources were involved?

7. How was the project or practice developed?

*A Request for Proposals was prepared by Town of Kindersley staff and advertised in July 2013 on Merx, the Town of Kindersley website, local newspaper publications, and through social media networks. A total of 3 proposals were received and evaluated by a committee of staff and Council members. A report and recommendation was prepared for Town Council and subsequently, a motion was made to approve local company Holland's Hot Oiling Ltd. as the successful proponent.*

*The Town of Kindersley's Department of Engineering, Planning, and Development worked closely with Holland's to complete a Design, Build, Operate, and Maintain agreement for the backwash waste water project, allowing construction to get underway by fall 2013. Holland's was responsible for all costs associated the construction, installation of infrastructure, and obtaining permits and approval from the*

*Saskatchewan Water Security Agency.*

*Holland's utilized the existing infrastructure so that no part of the reservoir operation would cause conflict with the ability to backwash. A fully lined reservoir with a depth of 18 feet was constructed downstream of the existing infrastructure and pipes were built into the liner to suck the water out.*

*Construction continued throughout winter 2013-2014 and the facility was granted approval to begin operating from the Water Security Agency in August 2014. Now in operation, this water can be sold by Holland's to industrial customers by way of pumps that suck the water from the newly constructed reservoir into the truck tanks. By agreement between Holland's and the Town, revenues from the commercial sale of this water will be split between the two parties.*



## **The Results**

8. What effect did this project or practice have on the community?
9. Was a formal evaluation done after the project or practice was completed?

10. Describe any challenges faced.

*Since beginning operation in August 2014, the Waste Water Reservoir has moved 38,000 cubic metres (38 million litres) of backwash water to industrial customers serving Kindersley and area. This provides a significantly reduced impact to the draw on the treated water supply while sustaining the demands of the local oil industry without any additional cost to the taxpayer. Since the start of operation, the Town of Kindersley has received \$86,000 in new revenue from its portion of water sales generated.*

*The Saskatchewan Water Security Agency puts a restriction that no more than 12,000 m<sup>3</sup> of water be moved through this reservoir per month, based on 80 percent of the backwash flow. Summer 2015 volumes averaged 8,000 m<sup>3</sup> per month.*



*Some challenges were experienced with regard to storage space and aeration of the lagoon. Within the time required to obtain approval from the Water Security Agency, it was underestimated how much bacteria would build up and require treatment in order to achieve customer standards for bacteria and be sold. An air bubbler and compressor unit was used in addition to chlorination to achieve this. Once the reservoir was in operation, water flow and adequate aeration was much easier to achieve.*

*Storage was also an issue as it took several months to educate the local industry about the project and secure a customer base. The liner of the reservoir also required repair during winter months as it had ripped due to not being completely tight to the ground.*

*A new stone dam was also built after operations began when the force of the water run-off proved the initial dam was not adequate to match the force of the water.*



## **Lessons Learned**

11. What lessons were learned and what would you recommend doing differently?  
Remember, all nominations will become part of the Best Practices Library, so be sure to include specific information.

*As noted above, this project required an element of public education to the local industry, which could have been enhanced by providing more material about the benefits of the project to the fracking industry as well as the reduction in impact to the treated water system. General publications were used to address the community at large but perhaps greater buy-in from the industry itself could have reduced confusion.*

*Other lessons included the need to establish a solid liaison with the Water Security Agency to ensure all regulations were understood and planned for in advance.*

*Several safety measures were also undertaken, including a textured (as opposed to flat) liner material that provides greater traction for individuals needing to access the water. In addition, continuous metal safety fencing provides for a higher degree of security from trespassers. To date, there have been no issues with security and unauthorized personnel in the area.*

Please submit your completed nomination package to:

**E-mail:** [awards@municipalawards.ca](mailto:awards@municipalawards.ca) or

**Fax:** Attn: Saskatchewan Municipal Awards Program, 306-798-2568; or

**Mail:** Saskatchewan Municipal Awards, Room 1010 – 1855 Victoria Avenue, Regina, SK S4P 3T2

**Contact:** Phone No. 306-525-4398

***Thank you for submitting a nomination for the 2015 Saskatchewan Municipal Awards.***





**Canadian Teachers are Waiting to Educate Over 119,000 Canadian Students About Drinking Water Quality Issues and Solutions**

Canadian teachers are currently waiting for the opportunity to educate over 119,000 Canadian students about drinking water quality issues and solutions. In order to be able to do this they will need over 3,800 sponsored Operation Water Drop, Operation Water Pollution and Operation Water Biology kits to be sent to their schools. Individuals and companies can sponsor kits for schools. If you/your company sponsors kits, you/your company will be acknowledged in the letter that accompanies the kit. You can even decide in which geographic area your kits will be dispersed or to which specific school(s). Please e-mail [info@safewater.org](mailto:info@safewater.org) if you would like to sponsor Operation Water Drop, Operation Water Pollution and/or Operation Water Biology kits or if you would like more information.

**Educational Kits for Schools**

Many school divisions and districts from coast to coast are recommending the Safe Drinking Water Foundation's education programs to their teachers! Thank you to all of the administrators who are promoting our programs! To find out whether a sponsored kit is available for your school, send an e-mail to [info@safewater.org](mailto:info@safewater.org) or phone 306-934-0389.



Learn More About Our Two New Education Programs  
[Operation Water Biology](#)  
[Operation Community](#)

You are here: [Home](#) ▶ [Resources](#) ▶ [News](#) ▶ [In the News](#) ▶ Kindersley looks to reuse waste water

**Kindersley looks to reuse waste water**

Hannah Spray, The StarPhoenix August 8, 2013

The Town of Kindersley wants to make its water treatment system more efficient, in part due to the demand on its water supply from oil and gas companies engaged in fracking in the area.

The town put out a request for proposals, which closed last Friday, "to access and utilize the waste water" from its water treatment plant.

Bernie Morton, the town's chief administrative officer, said the main goal is to maximize the efficiencies of their water treatment system, which was recently upgraded with a brand new facility.

Even after the upgrade, 18 per cent of the treated water is lost when it's used for "backwashing," or flushing out the cleaning system twice a day. It's a typical issue for water treatment plants, but the Town of Kindersley would like to see if it could improve on the efficiency.

Companies involved in servicing the oil and gas sector could be good partners on the project, Morton said.

"When you have 18 per cent of your water that you are producing, you're cleaning, you're making available for human consumption and then you have to lose it through the backwash system - and this happens in many communities - the question is what are the steps you have to take to repurpose the water so it's not lost?" Morton said.

"How they're going to use it is really neither here nor there for us. We want to find ways to be as efficient as we can with our water."

Once the town decided to look at efficiencies, administrators didn't want to limit the scope of the search. Waste water and the backwash water flows into a lagoon, and the town would be open to companies also exploring treating the lagoon water for use by industry.

Morton said there is "no doubt" that fracking uses a significant amount of water, but he noted the town would be exploring the concept even if fracking wasn't in the picture. Fracking, or hydraulic fracturing, is a technique in which water is injected into a well site to create fractures and release fluids such as oil and gas.

"During certain times of the year, (oil and gas companies) are using a significant amount of water - on the high end, enough to sustain a community of 1,200 people," Morton said.

Fracking has been used in Saskatchewan's oil and gas industry for 40 or 50 years, but has recently garnered media attention due to cases in the U.S. in which groundwater was contaminated by fracking fluid, said Brad Wagner, manager of liability and environment in the petroleum development branch of the Ministry of the Economy. There haven't been any cases of that occurring in Saskatchewan, he said.

Oil and gas companies account for about one per cent of the freshwater used in Saskatchewan. Agriculture accounts for 67 per cent, and municipalities 21 per cent.

"The volume of water used to frack a well is not insignificant, for sure, but I guess when you compare it to water use in that overall water demand scheme, the percentage used by the oil and gas industry is actually quite small," Wagner said.

He said he isn't aware of any other municipalities in the province looking to increase their efficiencies through partnerships with the private sector in the way that Kindersley is.

Last September, Shell Canada opened a sewagewaste water treatment facility in Dawson Creek, B.C., that was touted as virtually eliminating Shell's need to draw on local fresh water for its natural gas operations in the area, which had used up to 20 per cent of the city's water in the past.

**SDWF is in need of donors to continue to educate students, engineers, community leaders and others. Every penny and every drop counts!**



**Contact Us!**  
#1-912 Idylwyld Dr. North  
Saskatoon, SK S7L 0Z6  
1-306-934-0389  
[info@safewater.org](mailto:info@safewater.org)



**View Previous Webinars!**

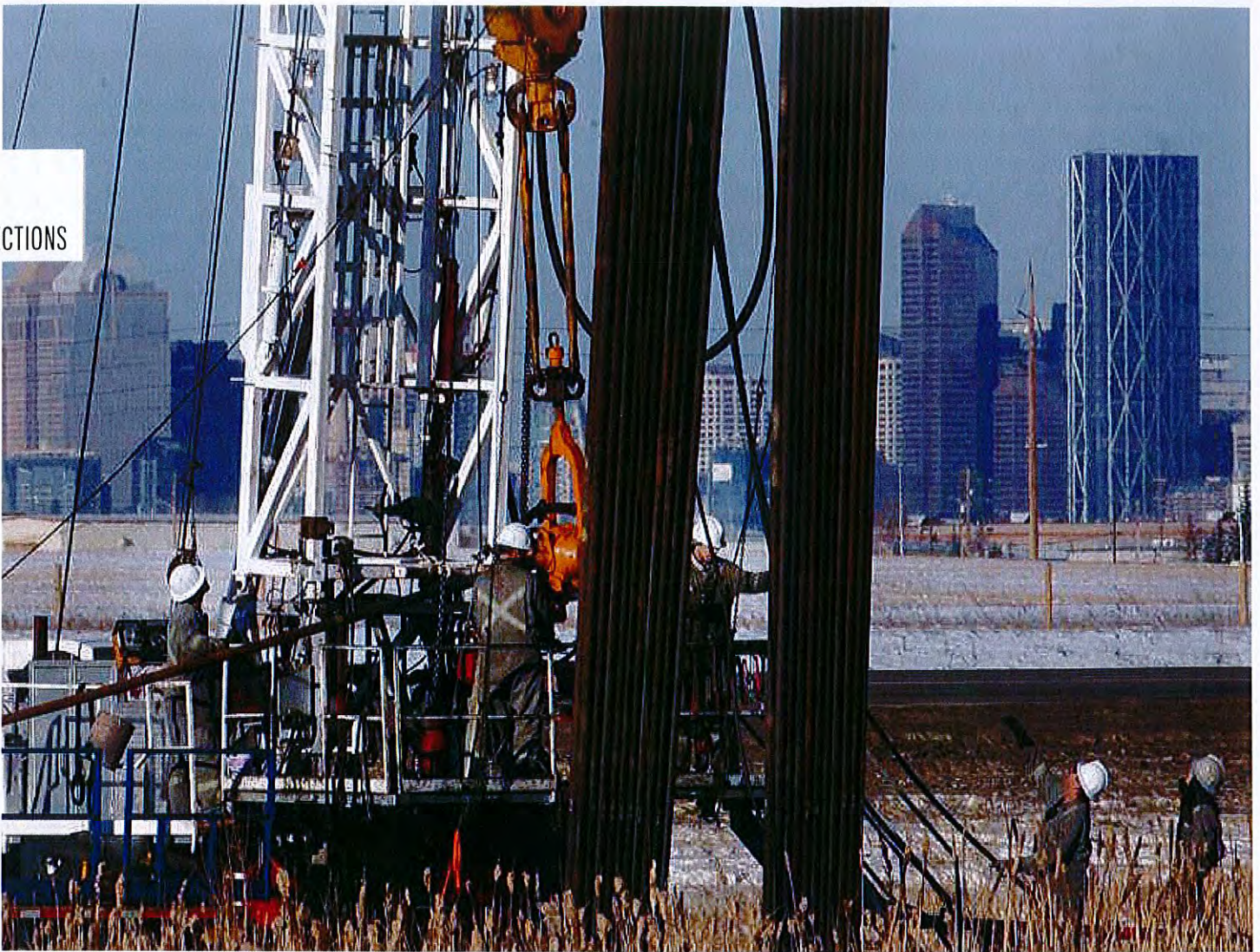
To view the recordings of previous webinars please [click here](#). For more information about our webinars and/or to register for webinars [click here](#).

**Thanks to our sponsors!**



S.M. Blair Family Foundation

A big thank you to all of our anonymous and individual donors as well.



A drill crew works on a rig inside the Calgary city limits at Stoney Trail near Peigan Trail. *TED RHODES / CALGARY HERALD*

**The boom in fracture stimulation isn't merely revolutionizing the oil and gas world – from horizontal drilling to declining commodity prices – it's also transforming small towns like Kindersley, Sask.**

A growing population, subdivisions under construction and rising new hotels are all signs of the good times in the oilfield.

“The fracking story is really a small town story,” said one senior executive at a leading oil producer in Western Canada. “It’s revitalized legacy oilfields ... it’s like a new lease on life.”

Kindersley, for example, has embraced the oil production renaissance and is selling its treated municipal wastewater to oilfield service companies to use in fracking or other industrial uses at well sites.

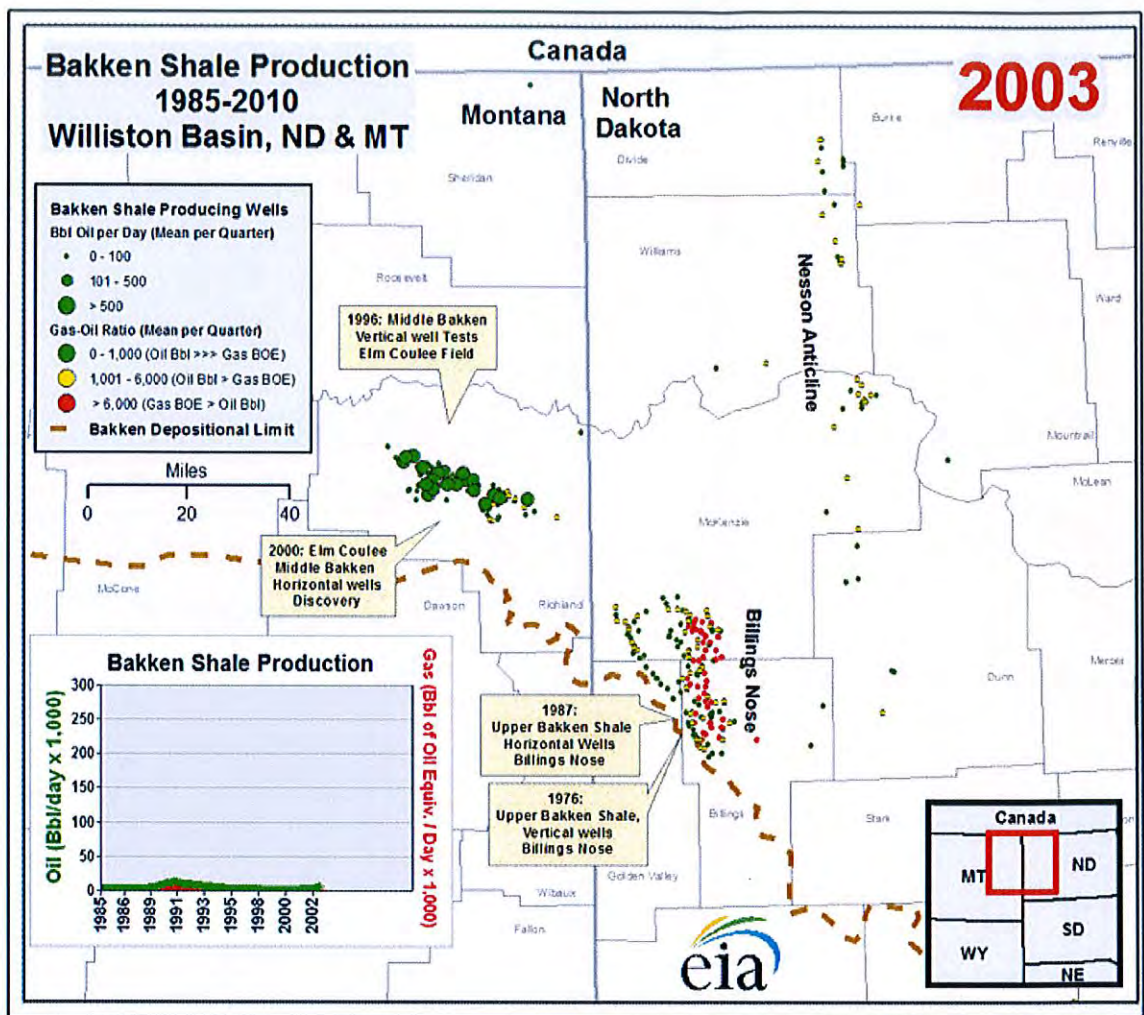
“There’s a realization there’s certain realities at play here,” said John Enns-Wind, mayor of the century-old town that is now home to more than 5,000 people in west central Saskatchewan’s resource-rich farm country.

## **Saskatchewan soaring**

The oil and gas boom, along with record crops in recent years, means Saskatchewan is experiencing record growth, one of the highest employment rates in Canada and a population that has risen more than 10 per cent in seven years to a record of almost 1.13 million.

They’ve been pumping oil and gas around Kindersley for 50 years and the fracking boom — like all the others — comes with challenges.

The fact a major oil producer fears being singled out by environmental activists as a “fracking” company speaks to how polarized the national discussion about fracking, and oil and gas production overall, has become.



Growth in Bakken shale production, 1985-2010. Source: U.S. Energy Information Administration, based on data from HPDI, LLC.

The “dirty oil” campaign against oilsands development has unsettled the industry.

However, a new — much more price-sensitive — concern is emerging as an immediate threat to the fracking boom that’s redrawn the North American energy map. The big concern now is OPEC heavyweight Saudi Arabia pointing to the fracking boom as the reason for the sharp drop in oil prices.

The most-anticipated meeting of the Organization of Petroleum Exporting Countries in years takes place Thursday in Vienna as their ministers attempt to address an almost 30 per cent decline in benchmark crude prices since June.

**Read More:** [Five facts about fracking](#)

<http://calgaryherald.com/business/energy/ewart-five-facts-on-fracking>

Saudi Arabia has reportedly — speculation and leaked stories abound before a major OPEC meeting — blamed the slide in West Texas Intermediate crude to below \$75 US on North America pumping 1.4 million barrels a day more oil, even as growth in global demand was waning.

Only 170,000 barrels a day of that additional crude was produced from oilsands, the remainder came from fracking.

## U.S. takes top spot

Fracking has helped the U.S. overtake Saudi Arabia as the world's largest producer of liquid petroleum — crude and liquids such as propane and ethane — at about 12 million barrels a day.

This week's OPEC meeting should determine if the Saudis are willing to maintain production and accept lower prices to force high-cost producers from the market.

“The Saudis are freaking out because they've lost a lot of market share so they're now discounting to recapture it in the U.S.,” said Glen Hodgson, chief economist at the Conference Board of Canada. “It's almost a game of chicken now between the Saudis and frackers in North Dakota and Texas.”

The playing surface extends into the tight oil plays across Alberta Saskatchewan and Manitoba.



(<https://postmediacalgaryherald2.files.wordpress.com/2014/11/nashale.jpg?quality=55&strip=all>)

“It’s been a four- to five-year boom in town based on fracking,” Kindersley’s Enns-Wind said. “We live in a community where everybody’s job, in one way or another, is connected to the oil industry ... the phrase (people) are using around here these days is ‘cautious optimism.’ ”

The oil price slide is more likely to impact towns like Kindersley than megaproject developments in the oilsands, where investments are often judged over decades, not the next quarterly results.

## Measured growth

Even with a pressing need for permanent housing in Kindersley, Enns-Wind said the municipal growth plan is focused against overbuilding in a boom.

Dozens of communities in Saskatchewan have placed moratoriums on publicly funded infrastructure to facilitate economic growth as they address strains on the system on a smaller scale than well-documented challenges in places like Calgary or Fort McMurray.

About 60 per cent of wells drilled this year in Saskatchewan, 70 per cent in Alberta and 90 per cent in B.C., will be fractured, says the Canadian Association of Petroleum Producers.

The earlier shale gas boom from fracking boosted production so much that it drove prices too low for years to justify spending on gas drilling. About 90 per cent of the wells to be drilled in Canada in 2015 will target oil pools.

Lower cash flows will cut into oil drilling activity going forward.

"It's not just \$30 in profit that's going away, it's the investment in the next well that is going away," said Ali Daneshy, principal at Daneshy Consultants International in Houston, which advises on hydraulic fracturing.

The Canadian Association of Oilwell Drillers and the Petroleum Services Association of Canada have forecast the oil price slide means drilling is likely to decline about 10 per cent to close to 10,000 wells in 2015. With longer horizontal legs, PSAC said total metres drilled will actually increase year over year.

## **Production doubles**

Tight oil production in Canada has doubled since 2011, according to the National Energy Board, surpassing 400,000 barrels a day in 2014. Increased production from the Bakken, Cardium, Viking and Montney formations has reversed a decade-long slide in conventional oil production in Western Canada.

The basic elements of hydraulic fracturing date to the 1950s in Western Canada, but the multiple-stage process applied now is more powerful, far reaching and typically uses large amounts of water and sand.



Raging River Exploration produces all of its 10,000-barrels-per-day of oil in the Viking formation and is among the companies that use Kindersley as a regional operating base. CEO Neil Roszell doesn't make much of the suggestion the Saudis are focused on far-flung junior producers like Raging River.

"I think we're completely irrelevant," he said "They really look at the big picture."

Roszell is feeling a definite sense of caution for 2015 in an industry that last dealt with a price shock in 2008, just as fracking was emerging as a game-changer in the oilpatch. He said analysts want producers benchmarking their spending plans at \$75, \$70 and \$65 a barrel.



Raging River CEO Neil Roszell doesn't think companies like his are on Saudi Arabia's radar.  
*TIJANA MARTIN / CALGARY HERALD*

Even with the fall in oil prices, he expects Canada's short winter drilling season will ensure activity levels are high through the first quarter.

"Guys are looking at it and saying, 'we'll adjust budgets and activity in the back half of 2015' and that's when the pain of a lower price tricking

through to the economy really would get felt," he said.

Roszell said companies with strong balance sheets can still grow until oil prices "fix themselves" over the 12 to 18 months. He also understands the "cautious optimism" in Kindersley that have been through the ups and downs of oil prices before.

"They've seen booms come and go," he said.

Enns-Wind embraces the town's revitalization due to fracking but will admit he'd be content with a pace of growth that would ensure temporary housing wasn't an issue or Tim Hortons or McDonald's would have enough staff available that they could go back to being open 24 hours.

"It might be nice to take our foot off the gas a little bit and catch up," he said.

*Stephen Ewart is a Calgary Herald columnist*

[sewart@calgaryherald.com](mailto:sewart@calgaryherald.com) (<mailto:sewart@calgaryherald.com>)

[twitter.com/stephen\\_ewart](http://twitter.com/stephen_ewart) ([http://twitter.com/stephen\\_ewart](http://twitter.com/stephen_ewart))

## Calgary Flyers

The image displays four promotional flyers from Calgary. Each flyer is titled "HOVER FOR FLYER" and includes a logo for the respective store.

- Home Depot:** Features a "LONG WEEKEND BIG SAVINGS" banner. Promotions include "More savings. More things." and "THIS WEEK ONLY \$7 OR \$25".
- Visions Electronics:** Features a "STOREWIDE PRICE CUTS" banner. Promotions include "DRASTIC DISCOUNTS THROUGHOUT THE STORE!" and "40% OFF".
- London Drugs:** Features a "BACK SCHOOL EVEN" banner. Promotions include "Nobody does it better" and "FREE Nutella".
- NAPA Auto Parts:** Features a "BUY ONE 26.99 GET ONE FREE" banner. Promotions include "STARTING AT 14.98" and "STARTING AT 6.29".

## Comments

We encourage all readers to share their views on our articles and blog posts. We are committed to maintaining a lively but civil forum for discussion, so we ask you to avoid personal attacks, and please keep your comments relevant and respectful. If you encounter a comment that is abusive, click the "X" in the upper right corner of the comment box to report spam or abuse. We are using Facebook commenting. Visit our FAQ page (<http://www.calgaryherald.com/news/story.html?id=7195492>) for more information.