

MAKING CONNECTIONS



PEMBINA PIPELINE CORPORATION

Spring Newsletter

2013

Welcome to the Spring 2013 edition of Making Connections

Pembina uses this newsletter to inform stakeholders, like you, of the various projects and initiatives we are undertaking both corporately and as an active member of your community.

UNDERGROUND STORAGE EXPANSION PROJECT



Pembina is currently increasing our underground storage capacity at our Redwater Fractionation and Storage Facility (RFS) from an existing 10 caverns to a total of 17 caverns. Two new caverns were brought into service April 2013, and the remaining five caverns are in various stages of development. The caverns will be approximately 90,000 m³ in size and used to store a variety of specification hydrocarbons including natural gas liquids (NGL) and synthetic crude oil.

The caverns are formed in the salt layer that exists beneath the site. Underground salt formations are well suited to NGL storage since salt caverns, once formed, are essentially impermeable; meaning no fluid or gas can escape through the surrounding rock salt. The Lotsburg salt formation of Alberta contains salt deposits that span a total area of 390,000 sq. km.

“To create a new storage cavern, like the ones currently underway at RFS, we bring a drilling rig on site to drill a hole to a depth suitable for cavern development,” said Brad Kohlsmith, Manager of Engineering. “The drilling typically takes 45 days from start to finish. The drill hole is lined with pipe, called the casing.”

For the washing phase, two tubing strings are inserted into the casing (one inside the other), and a wellhead is attached to the casing at the surface. This creates three channels, allowing water and brine to flow separately between the surface and the cavern. It is important to note, this process does not affect any drinking water.

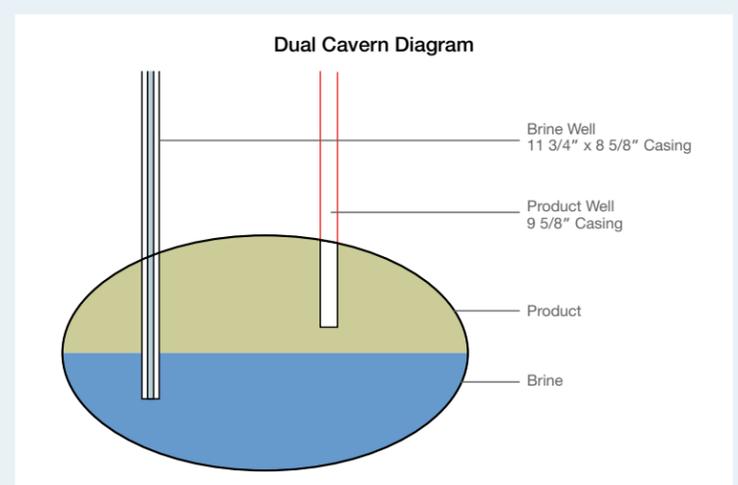
With the tubing in place, water is pumped down into the salt formation. The water dissolves the salt, becoming brine. The brine is then returned to the surface and placed in existing disposal wells on-site. Condensate or diesel fuel is typically injected into the top of the salt cavity to act as a buffer to protect the integrity of the cavern ceiling.

Over 24 to 30 months, water pumped into the formation gradually enlarges the cavern, creating a pear-shaped profile. When the cavern has reached its optimal size, saturated brine is used instead of water to ensure the cavern doesn't grow any larger.

After about one year of washing, a second entry is typically drilled to create a dual-entry cavern. The

dual-entry cavern has separate wells for brine and product which allows for higher flow rates in and out of the cavern and/or prevents hydrate formation in the well casing.

Once operational, as NGLs are pumped into the cavern for storage, brine is displaced to the surface and temporarily stored in large brine ponds. To remove hydrocarbon from storage for delivery to customers, brine from the surface ponds is allowed back into the cavern, displacing hydrocarbon to the surface.



2 Read about: our growth projects and the exciting opportunities they bring.



3 Discover: some of the ways Pembina maintains our pipelines.



4 Learn about: our new community investment strategy to help the communities in which we operate continue to be vibrant places to live, work and play.

UPDATE ON ANTHONY HENDAY PROJECT

The City of Edmonton is in the process of completing the final segment of the ring road around the city, known as Anthony Henday Drive. As a result of the road construction, six of Pembina's pipelines are effected.

Just as all roads led to Alberta, all pipelines lead to Edmonton. Pembina will be the pipeline company most impacted by the proposed road because we have so many assets in the area, including many in the critical Pipeline Alley Corridor (located in the northeast quadrant of Edmonton, directly adjacent to the new road).

Pembina is not the only company to be affected. The impacted area contains the highest concentration of utilities within Alberta. These include: oil, gas, and municipal pipelines (over 40 owners identified), power lines, railways (CNR, CPR) and transportation roadway systems.

Caryn Campbell, Coordinator, Special Projects within the Technical Services Department explained the effect of the new road on Pembina. "All of our assets in the area of the new road construction will be impacted in some way, specifically six of our pipelines. Pembina's Swan Hills 12", Swan Hills 20", Swan Hills (Nipisi) 16", Redwater 16", Horizon 22", and 12" Midstream Business Unit Edmonton Nexus Terminal to Pipeline Alley connection are all in the way of the road and will need to be relocated. As well, we plan to complete some integrity work in the area on pipelines that are not impacted by the Anthony Henday project," said Caryn.



Construction of Anthony Henday

Construction began in March 2013 and will end for the entire project in October 2013. To maintain the tight schedule, the construction will look much like a moving assembly line. The project will be broken into specific construction areas in coordination with the customer-driven outages and the Northeast Anthony Henday road construction crews. Construction activities will utilize highly specialized and qualified workgroups, each with its own responsibilities.

As one crew completes its work, the next crew will move into position to complete its piece of the construction process. For example, when one crew finishes digging the trench and stringing the pipe, they will move on to the next site while the next team moves in behind to complete the positioning of the pipe, backfilling and pressure testing. Relocation segments range from 200 metres to 1.8 kilometres in length.

PROMISING GROWTH PROJECT AHEAD FOR PEMBINA

These are exciting times at Pembina with the announcement of a new growth project earlier this year. Pembina's expansion plans are along the natural gas liquids (NGL) value chain and will cost approximately \$1 billion in capital costs. Here is a quick overview of one of the projects:

Redwater Fractionation and Storage Facility (RFS 2)

Pembina is about to twin our existing Redwater Fractionator with a new project called RFS 2 pending regulatory and environmental approvals. This expansion project is a result of strong demand for incremental fractionation capacity in the Fort Saskatchewan, Alberta area. In fact, the facility isn't even built and we already have contracts in place for 97 percent of the operating capacity. Ethane produced at both RFS 1 and RFS 2 will be sold under long-term agreements with NOVA Chemicals Corporation.

Pembina entered into the fractionation business with the acquisition of Provident Energy Ltd. in April 2012, positioning Pembina to offer fully integrated NGL services to its customers, from wellhead to the consumer gate.

At the time, Pembina announced plans to expand fractionation capacity at the Redwater site to support increasing demand. "The opportunity to develop RFS 2 was a key driver in our acquisition of Provident," said Mick Dilger, Pembina's President and Chief Operating Officer.

Pembina expects RFS 2 to be in service late in Q4 of 2015 and cost approximately \$415 million to construct.

Redwater Fractionation and Storage Facility



SATURN TOWER LIFT

On Saturday, March 2, Pembina achieved a tremendous feat with the raising of a 180-foot demethanizer tower at the Saturn Deep Cut Gas Plant construction site. The demethanizer tower is needed to process the natural gas liquids (NGL) produced by the deep cut extraction process to ensure it meets specific customer NGL product requirements.

Led by Pembina's Gas Services Business Unit project team, the 280,000-pound, stainless-steel vessel was lifted into place by the expert handling of two very large cranes provided by Northern Crane Services Group Ltd. The main crane, an 1,100-ton Leibherr, is the largest hydraulic crane in North America. Upon arriving in North America, this particular piece of equipment was sent directly to the World Trade Centre site, where it spent its first three years. Although it took months to prepare, the lift crew of ten raised and set the tower in 2 1/2 hours, and according to Project Coordinator Keith Innes, "the entire process of raising the tower went safely and very well."

Construction of the Saturn facility is expected to be complete by the end of 2013.



Crane lifts demethanizer tower



Demethanizer being placed in position

"Did you Know?"

Pembina's Corunna, ON facility has nine underground storage caverns in operation.

PEMBINA RECOGNIZES THE IMPORTANCE OF ABORIGINAL RELATIONS



Pembina recognizes that our Aboriginal neighbours have special and unique interests in the land on which we operate. Building mutually beneficial relationships with Aboriginal communities is important to us and we strive to ensure we maintain these relationships.

“Thirty years ago, we only dealt with Aboriginal Relations on a piecemeal basis or when there was a problem. At that time, there wasn’t an official duty to consult,” says Fred Kuipers, Executive Advisor for Land, Regulatory and Aboriginal Relations. “This changed in 2005 when the Crown delegated consultation responsibilities to corporations. In 2005, we had our first staff dedicated to Aboriginal Relations, and this role has continued to grow, evolving into the department we have today.”

According to John Young, Manager, Aboriginal Relations and Surface Land, “Pembina knows that project success is directly tied to the support of our neighbours – many of whom are Aboriginal.” John has many ties to the Aboriginal community, having 25 years of municipal and federal Aboriginal police experience, and in addition to Aboriginal relations oil and gas experience, he has been adopted by eight different Aboriginal families and speaks several Aboriginal dialects.

According to John, Aboriginal Relations has five key undertakings:

1. Helping with regulatory approvals through the consultation process.
2. Advising on Aboriginal business development and contracting, and Aboriginal community investment.
3. Responding to issues in the community.
4. Providing Aboriginal Awareness training to Pembina’s staff.
5. Evolving the Aboriginal Human Resources strategy. This includes an Aboriginal bursary program and starting a Pembina Gas Services Business Unit Aboriginal Operator program.

As our business continues to grow, so does the importance of this department. As with most areas of Pembina’s business, last year’s acquisition of Provident Energy Ltd. had a significant impact on the Aboriginal Relations group. “In 1997, Pembina had sold all of its Ontario assets,” explains John. “With the acquisition, it meant having to re-introduce ourselves to the relevant Aboriginal communities in Ontario. It also means we are now dealing with a larger scope, more reserves and more exposure throughout North America. And this will only continue to grow as we look at future expansion projects.”

If you would like to know more about this area, please contact the Aboriginal Relations department at: community@pembina.com.

CALL BEFORE YOU DIG

To protect people and the environment, and to reduce the risk of pipeline damage, it’s important to contact Pembina directly (1-888-428-3222 or landrequests@pembina.com) at least three days before you do any type of excavation that might be on or near a pipeline right-of-way. You should also always call your provincial One Call Service at:

Alberta One Call:
1-800-242-3447

British Columbia One Call:
1-800-474-6886

Ontario One Call:
1-800-400-2255

“Did you Know?”

Pembina has relationships with approximately 50 First Nation bands.

KEEPING OUR PIPELINES IN GOOD WORKING ORDER

At Pembina, safe, reliable operations are the cornerstone of our business, and maintaining pipeline integrity is a joint effort between our Calgary Integrity and Technical Services Team (ITS) and Business Unit operations staff.

The foundation for maintaining and verifying pipeline integrity is the use of in-line inspection (ILI) tools, which are run inside the pipelines. These tools inspect the condition of the pipeline and, depending on the tool technology, measure features that could occur over time due to metal loss, deformation, cracks and changing conditions. Pembina’s Integrity team in Calgary reviews the results of each ILI, against the Company’s Defect Assessment and Repair Manual and determines which features need to be excavated, inspected and repaired.

During each ILI, above-ground markers are placed along the pipeline route. These above-ground markers are picked up by the tool as it goes by, which enables us to more accurately locate each anomaly when it comes time to excavate.



Pipeline Integrity Dig



Pipeline Integrity Dig

Once all of this data has been collected, if there is an anomaly that meets the excavation criteria, our Regulatory, Land and Aboriginal departments are contacted to ensure that all applicable stakeholders and Aboriginal communities are contacted and the necessary permits are in place.

“If an area has been identified and all permits and ground disturbance documents are obtained, we would then send out specialized teams and inspectors,” says Lonnie Cissell, Construction Coordinator, ITS. “We then expose the pipe and sand blast it so that we are working with a nice clean surface, which is necessary in order to do a proper inspection of the pipe. Then we do a non-destructive examination (NDE) of the pipe and the data collected

is reviewed by the Integrity Specialists in ITS to determine what type of mitigation may required. They might indicate certain repairs, which could include a simple repair of the coating or buffing out a stress concentrator such as a crack, or in some cases installing a reinforcing sleeve. In rare instances, a cut out and replacement with new pipe is required.

“Each dig site takes an average of two days to complete at the field level. Last year, our group did over 300 digs to make sure our pipelines were in good working order, and that doesn’t include the seven horizontal directional drills (water courses) and tie-ins, four slope mitigations, 11 creek mitigations and four pipeline removals. As you can imagine, we are kept quite busy making sure our lines are in tip top shape.”

PEMBINA IN THE COMMUNITY: FUNDING PRIORITIES UPDATE

Pembina strives to be a great community partner. To help ensure we are continuously working towards this goal, we have made some strategic changes to our community investment funding priorities. The result is a more logical and effective program that offers four distinct funding priorities.

Our community investment funding priorities have changed from Education, Environment and Culture & Wellness to now include:

1. Education

Pembina believes that supporting education not only enhances opportunities for people to improve their quality of life, but also provides our company with a potential source of trained and educated workers for our own workforce. We support educational programs in our operating areas that range from small, unique donations to partnering with larger community-based education and training programs.

2. Safety & Environment

Pembina believes we have a responsibility to do the right things to protect the health and safety of people and of the environment. Safety and the environment are top

priorities for Pembina, and in addition to taking steps to minimize our impact on the environment and working towards a goal of zero incidents, we invest in programs that raise safety or environmental awareness in our operating communities.

3. Community Building

Pembina believes in providing opportunities for members of the communities in which we operate to come together. We support initiatives aimed at creating or renovating community spaces that are accessible for all.

4. Health & Recreation

Pembina understands that communities thrive when they have access to exceptional health care, nutrition, fitness and recreational programs. Pembina supports programs and activities that promote healthy living, active lifestyles, wellness and the enhancement of medical services.

To learn more about Pembina's community investment program, please visit the Giving Back page of Pembina's website or email us at community_investment@pembina.com.

Bluewater Health Foundation

Ensuring our operating communities have access to exceptional health care is an important goal of Pembina's community investment program. That's why we committed \$25,000 to the Bluewater Health Foundation's capital campaign to be paid over the next five years.

Pembina's support helped the Foundation purchase a new MRI scanner that will deliver higher-quality images for faster, more accurate diagnoses. This machine will now allow the Health Foundation in Sarnia to do pediatric exams, neurological tests and breast examinations, and reduce travel time for patients that previously had to travel to Windsor, London, and Chatham, ON.

Pembina supports several other Health Foundations throughout our operating communities, including Swan Hills, Fox Creek, Grande Prairie, and Calgary for a grand total of \$155,000 committed over the next five years.



Calgary Greenway Project

The Greenway Project involves adding 118 km of pathway and parks to link with Calgary's existing pathway network, which runs for about 1,000 km around the city. Included along the pathway system will be off-leash dog parks, rest areas, family fitness parks and educational wetlands.



The first phase of the project, called the "East Calgary Greenway", which starts at 17 Avenue SE and runs north to Airport Trail is complete and construction of phase two is now under-way.

During phase two, part of the Greenway will be built very close to a chain of natural wetlands. To help protect the natural environment of this area, Pembina has committed \$125,000 over five years to introduce Bird Blind Nodes to the area.

These blinds will allow visitors to view wildlife in their natural habitat while looking over an open body of water. In turn, the blind helps to protect wildlife. Interpretative signage will be placed at each wetland site to help educate visitors on wetland habitats and watershed ecosystems.

For more information on the Greenway project visit www.parksfdn.com.

APEGA EnGenious Program

We are proud to support the Association of Professional Engineers and Geoscientists of Alberta (APEGA) in a very innovative approach to educating junior high students. EnGenious is an interactive online gaming website created by APEGA to teach youth about career opportunities in engineering geosciences.



APEGA believes the website will help address the forecasted labour shortage of skilled engineers and geoscientists within the next 10 years.

The website offers teachers a resource to keep Junior High students interested and engaged in math and science topics before they make decisions about high school courses. Games such as "Time Refine" require students to make modifications to a crude oil distillery to keep up with market demand.

Vertigo Theatre

Calgary's Vertigo Theatre is the only professional theatre company in Canada producing a series of plays based in the mystery genre. Vertigo recognizes the importance of connecting youth with the arts and has created a series of workshops that aligns theatre with school curriculum.

These structured and interactive workshops are facilitated by artist-educators and can be held at the Calgary school or combined with a class field trip to watch a performance at Vertigo. Workshops are offered on a variety of topics including movement, voice, performance, devising theatre and stage combat. Study guides are provided for each of the workshops.

Pembina's support will allow Vertigo Theatre to ensure the workshop program maintains momentum and continues to build strong relationships with schools and communities.

DO YOU KNOW US BY A SUBSIDIARY NAME?

In British Columbia, Pembina's pipelines are known by our subsidiary company name, **Plateau Pipe Line Ltd.** Crossing the B.C. / Alberta border, we operate under **Pouce Coupé Pipe Line Ltd.**, and our pipelines within the Edmonton / Fort McMurray corridor are operated as **Alberta Oil Sands Pipeline Ltd. (AOSPL)**.



United Way

Pembina is also a large supporter of the United Way. During our 2012 campaign, all of Pembina's field offices came together with the Calgary office to raise a collective total of \$1.2 million dollars for the communities where they live, work, and play.



MAKE YOUR OWN CONNECTION WITH PEMBINA

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www.pembina.com 24-Hour Emergency Contact: 1-800-360-4706 Email: communityrelations@pembina.com



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FPO