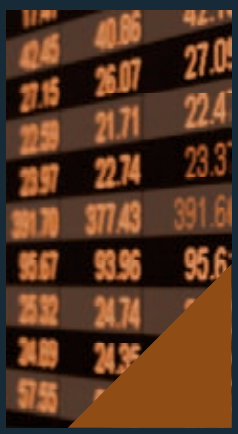
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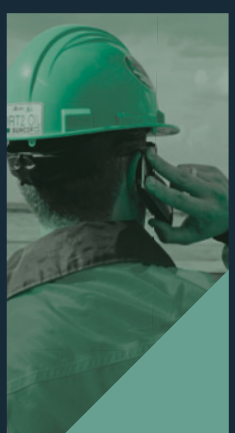
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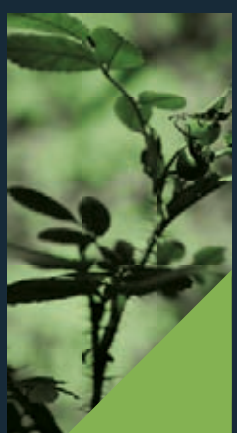
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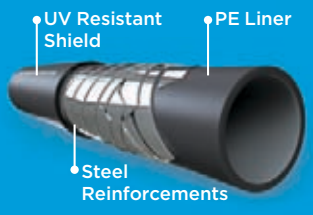


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EDITOR'S NOTE



Heavy oil and oilsands industry watchers often talk about how this sector's story is not millennial, and that innovators and builders were advancing it forward well before the early 2000s, when those outside their circles took notice. Many of the architects of the industry have also always known that in order for it, and by extension Canada's place on the energy stage, to reach its full potential, its tentacles would need to stretch far beyond the borders of North America.

Observers have long accepted that, in order to continue expansion in an economically sustainable fashion, Canada's heavy oil and oilsands producers would have to expand their markets beyond the U.S. Midwest. Perhaps what they didn't realize was that time was not on their side. In hindsight, new infrastructure projects needed to be launched sooner in order to manage the combined and somewhat surprising forces of booming tight oil production in the United States and effective development opposition—the not-entirely unforeseen "bitumen bubble" whirlwind of 2012 and early 2013 that reeled corporate and government coffers.

The discounts Canadian crudes have been receiving due to constrained market access have been painful, but certainly not the "crushing blow" to the heavy oil and oilsands industry that some media outlets have asserted. As TD Economics pointed out in a March 2013 research note, "Canadian crude price conditions have improved so far in 2013 and recent data on investment intentions show that the crude industry is not pulling in its horns."

That's because there is momentum in the development of these resource assets. The infrastructure projects are happening to rebalance supply and demand, even just within North America, in the near term. But the future, of course, lies overseas. Not just in market access, but in financing, continuing the industry's long history of being backed by international players.

For years we have known that Canada's heavy oil and oilsands sector would need to better engage the globe in order to truly flourish—the size of the resource is just too big for one country, and possibly even two, to produce and consume. And now it's happening. Another set of transitions for a sector in constant flux.

— Deborah Jaremko | Editor

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Message from

The Canadian Heavy Oil Association

A very warm welcome to the eighth, feature-packed edition of the *Heavy Oil & Oilsands Guidebook*. I have no doubt that this guidebook will provide you with greater understanding and insight into the drivers, the people, the successes, the challenges and the future initiatives throughout the dynamo of the Canadian energy industry.

As natural gas prices continued to slide and crude oil prices recovered to robust levels in the wake of the global financial crisis, it seemed we might be entering the golden age for heavy oil and oilsands. Industry veterans knew better. Exciting times in the industry have turned to challenging times in the course of this past year. We are back to the game that fits our tough western spirit, slogging it out, overcoming the technical challenges, driving improved environmental performance, providing great careers for so many in western Canada and always finding a way to prove the naysayers wrong. If we are lucky, we even make a little profit for our companies along the way.

This year's new supply chain section reveals the secrets behind a service and supply company's status of supplier of choice. Current supply chain dynamics necessitate global reach, and the publication traces the evolving financial tentacles of the oilsands sector in Canada and around the world.

Marketing is a huge challenge. Find out how bitumen producers are using strategy and innovation to access different markets and realize higher prices, plus get an update on current developments in pipelines and the logistics of rail. What are the realities of incorporating bitumen transport by train car into a business?

Of course, the very popular people section is back, featuring Q&As with key individuals driving change in the heavy oil and oilsands industry in the coming year. Sustainability continues to rank top billing and this guidebook updates you on the fruits of industry collaboration and the status of projects led by Canada's Oil Sands Innovation Alliance. Also, look for a sneak peak on where the industry is heading through experimental and developmental pilot projects.

All this and much more will leave you enriched and enlightened with a deeper appreciation of how the heavy oil and oilsands industry continues to evolve.

John Parr
Secretary, Canadian Heavy Oil Association
2012-2013

Canadian Heavy Oil Association



Message from

The Premier of Alberta

On behalf of the Government of Alberta, I am pleased to extend greetings to readers of the *Heavy Oil & Oilsands Guidebook*—an informative and unique look at the heavy oil and oilsands industry in Canada.

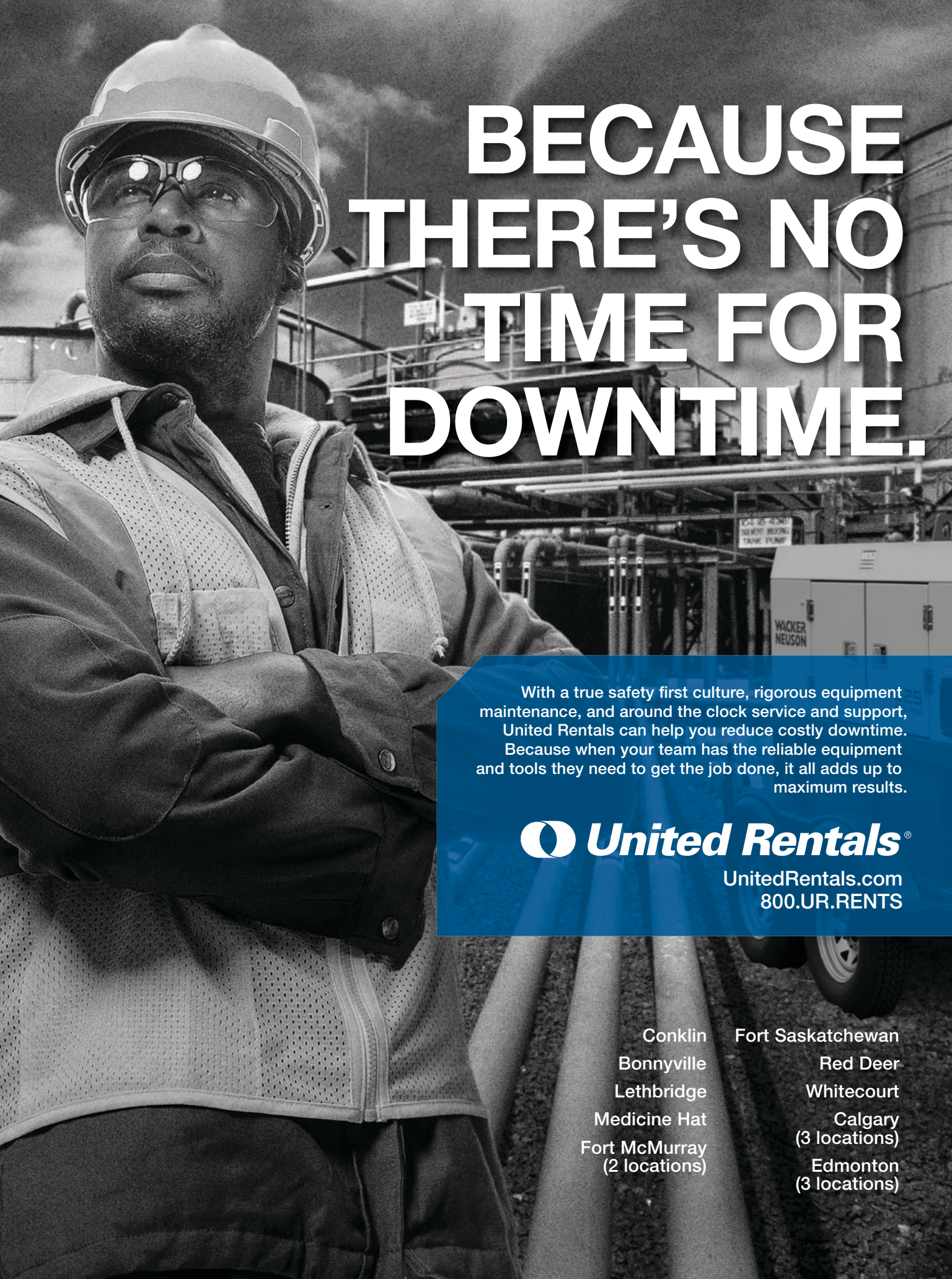
Energy has been key to Alberta's growth and prosperity for a long time. Albertans believe that the abundant resources with which our province and our country are blessed come with the responsibility to be leaders in innovation and responsibility. What sets us apart, as Albertans, is not freed from challenges—it is the approach we take to meeting those challenges. We will meet them, but we know we can't do it alone.

With all of us working together, alongside our international partners, we can find solutions to the issues we face and help strengthen our presence on the world energy stage.

Thank you to all the dreamers and innovators who have stepped up to the challenge of developing our world-class resources.

Alison Redford
Premier of Alberta

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Message from

The Government of Saskatchewan

Saskatchewan's oil and gas resources continue to bring prosperity and opportunity to the province. Thanks to the industry's entrepreneurial spirit and an inviting investment climate, the oil and gas sector continues to be a major contributor to our economic growth. Our oil and gas sales generated $12.5 billion in 2012, helping to shape our province today and into the future.

Saskatchewan is the second largest oil producer in Canada and the third largest producer of natural gas. In 2012, our crude oil production hit a new record of 172.9 million barrels. That's up more than seven per cent from the banner production year we experienced in 2008.

We have oil and gas opportunities throughout the province. In addition to the well-known Bakken oil play in southeastern Saskatchewan, we have several other areas garnering attention: the Viking light oil play of west-central Saskatchewan; the Shaunavon medium oil play located in the southwestern corner; and in our Lloydminster heavy oil belt, we have the opportunity to unlock vast quantities of resource that are unrecoverable with today's technologies.

Saskatchewan also has potential for oilsands in an estimated area of 27,000 square kilometres in the northwestern part of the province that continues to attract investor interest. Two oilsands exploratory permits were acquired through the Crown land sale process in 2012, and Cenovus Energy Inc. purchased the assets of Oilsands Quest Inc. last October, including a 34,000-hectare oil shale lease in east-central Saskatchewan.

With advancements in horizontal well drilling, hydraulic fracturing, thermal recovery and vapour extraction, we have seen considerable success in tapping our oil and gas resources, and we encourage the development of other innovative technologies that will assist in future extraction.

We are gaining accolades from leading institutions including the Fraser Institute, where in its *2012 Global Petroleum Survey*, Saskatchewan rated second in Canada for oil and gas investment. The industry concurred, investing $4.7 billion in projects around the province in 2012.

We appreciate the investment that the industry makes in Saskatchewan, and we plan to continue updating our petroleum and natural gas regulations, and their supporting processes, to increase self-service options and government response time capacity. And to continue to remain competitive, we will begin to lower the corporate tax rate from 12 per cent to 10 per cent over the next three years.

Saskatchewan has exceptional oil and gas opportunities, and we would like to invite you to join us in building this vibrant industry, to be a part of Saskatchewan's future of "real growth and real opportunity."

Tim McMillan
Minister of Energy and Resources

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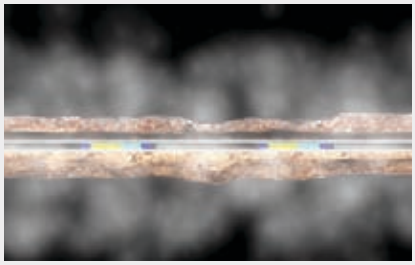
Regent Energy Group is a full service sand control company focused on enhanced oil recovery, steam optimization and sand control products. A privately owned independent company established 12 years ago, Regent Energy Group is in a high growth period. It has gone from being a small slotting firm with one product line to a mid-sized company with nearly 200 employees, and a series of innovative new technologies and customized tools focused on enhancing oil recovery.

"We are not a small slotting company anymore. We are an enhanced oil recovery company," says Butch Loewen, Regent Director, Sales & Marketing, noting that slotting is now just one aspect of what Regent does. "We are a solutions-driven company. We custom design everything along with our customers—we have no on-the-shelf products of any kind, and we are constantly looking for new innovations and new technologies to enhance oil recovery."

The company's administration and manufacturing headquarters are located in Nisku, Alberta, with a sales office in Calgary, a manufacturing facility in Oman, and a sales, marketing and engineering office in Mexico. After CEO Laurie Venning took full control of Regent two years ago, the company has rapidly expanded its international growth focus.

Staging Diverter Pup

Regent's latest technology is a Staging Diverter Pup (SDP), which optimizes steam distribution



downhole in SAGD or CSS wells. "As an industry, we've been discovering that steam is not getting to all the right parts of the reservoir," Loewen says, noting that Regent worked very closely with its customers to develop the SDP, which offers a multitude of options to control steam distribution.

"It is retrievable, and each individual joint can be adjusted downhole, so you can pretty much put steam wherever you want it."

This new technology works in conjunction with Regent's thermal liner hanger, which the company has been using for the past seven years. "Because it is a high pressure and a debris seal, it is a true seal. The steam gets down to where it's supposed to go, instead of leaking off in the heel of the well. We already have 350 of those in the ground, and they all work great," Loewen says.

Flow Control Joint

The SDP is based on another tool invented by Regent—the Flow Control Joint (FCJ), another steam optimization tool, which is a proven



technology, with 700 units installed in CSS wells. The SDP is the next stage of the FCJ, modified to work in SAGD.

Rotating/Reciprocating Cement Head

Regent is about to introduce a new cement head, which both rotates and reciprocates, to the market. "Right now, the industry has a problem with getting true cement bonds, especially in slant wells," Loewen notes. "This cement head rotates and the cement is completely distributed around the casing, so it is a true, complete cement bond. The cement head has been tested downhole, and will be introduced to the market by the end of this year on a commercial basis."

Hot Pig™

Regent's innovations also include the Hot Pig™, a patented, exclusive way of cleaning the inside of a pipe after it has been slotted. "It is a thermal deburring," Loewen explains. "We singe off the wickers and burrs inside the casing, which allows full open channel flow, ensuring the slots are clean before they go downhole."

The Hot Pig™, which has been on the market for close to a decade, is a competitive advantage for Regent.

Regent also developed the seamed slotted liner, which is engineered to control the erosive reservoir sands and allow for the smooth production of fluids, an achievement that dates back more than a dozen years.

Ongoing R&D

The company's dynamic Product Development department works closely with Core Design, a Nisku-based company that has played a key role in helping design and build Regent's tools. Regent's brand new machine shop, located in Leduc, is equipped with "all sorts of machinist-type tools, so we can build and create custom-built tools for the customer," Loewen says.

In addition, several more tools are being developed and will be out on the market soon. "We think we will have another half-dozen patents issued by this time next year, all geared toward enhancing oil recovery. We are growing so fast, the future looks outstanding. We are continually hiring new people and looking at new markets in the Middle East, Latin America, and Asia. The heavy oil market is a multi-billion dollar industry globally, and steam is being used more and more around the world. Our opportunities are almost limitless right now."

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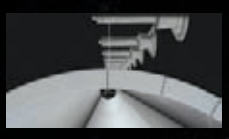
Developing the right tools to fully optimize oil recovery.

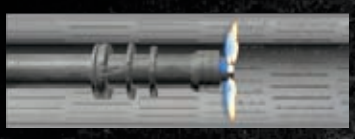
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Effectively cleans approximately 95% of the slots, allowing for full open channel flow.





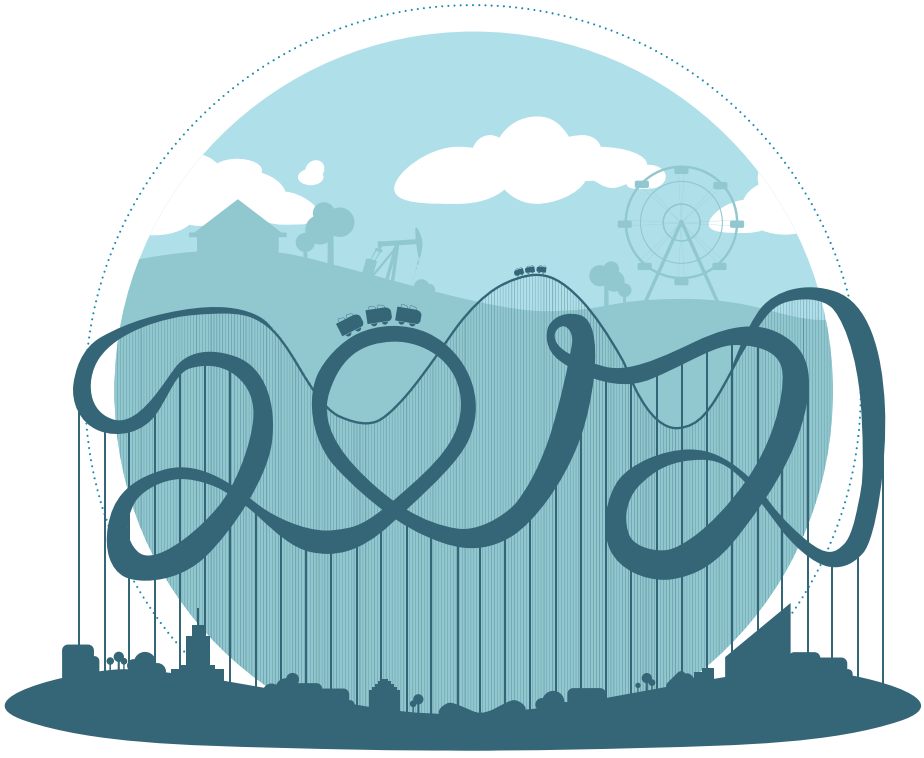
During the cutting process, wickers and burrs can bend back into the slot and cause significant pressure drops upon deployment. Traditional cleaning methods leave a minimum of 30% of slots at least partially blocked. Regent's thermal deburring technology uses a flaming torch to eliminate these wickers and burrs from the inside diameter of the pipe post slotting. Regent's patented Hot Pig™ effectively cleans approximately 95% of the slots, allowing for full open channel flow.

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UPS AND DOWNS: REFLECTIONS ON 2012

CHINA TAKES ITS BIGGEST STEP IN THE OILSANDS YET

In summer 2012, CNOOC Limited, the third-largest state-controlled oil company in China, announced its intention to acquire Nexen Inc., operator of the Long Lake steam assisted gravity drainage project, in addition to significant conventional holdings in Canada and internationally. The $15.1-billion transaction is the largest Chinese acquisition into Canada's oil and gas sector, required approval by the federal governments of both Canada and the United States, and triggered the release of new oilsands foreign investment rules. All approvals in place, the deal was closed early in 2013. Nexen will continue to operate as a subsidiary of CNOOC.

INDUSTRY ICON RICK GEORGE RETIRES

After 21 years as chief executive officer of Canada's biggest oilsands heavyweight, Rick George officially retired from Suncor Energy Inc. in spring 2012. In late 2011, Suncor revealed a succession plan in which chief operating officer Steve Williams would take over as president and chief executive officer.

George says the most exciting times for the oilsands industry are yet to come, in part because the relatively recent influx of global energy players has resulted in substantial increases in research and development budgets.

"The technology changes that you're going to see in this industry in the next 10 years on the mining side and the in situ side and the land reclamation side are going to be off-the-charts good. The next 20 [years are] going to be about technology and how quickly we go up this technology curve."

Williams says the inspiration George leaves him is the championing of a sustainable energy company.

"We have an environmental impact, we recognize that, and our job is to be absolutely at the leading edge of best practices," he says, adding that George's guidance of Suncor from $1-billion market capitalization to $50 billion is an incredible achievement. "My challenge is to bring it up to $100 billion."

ILLUSTRATION: CHRISTINA BOROWIECKI

OILSANDS MINERS RELEASE NEW TAILINGS ROAD MAP

There is no "silver bullet" technology that can address all tailings challenges at all oilsands mining sites, but in summer 2012, an industry/government collaborative group identified nine "suites" of promising technologies whose implementation should be sped up. Nine tailings technology deployment plans, or "road maps," were developed by the Tailings Roadmap and Action Plan project.

"All of these suites hold a lot of promise. They all have challenges to overcome. Oilsands [producers] have been really good at overcoming their tailings challenges over time, but ultimately haven't met that kind of test for what the public and regulators are looking for, and so we're hoping this speeds that process," says Gordon McKenna, who co-led the compiling of information and the states of practice for the report.

The project has been a collaboration of Alberta Innovates – Energy and Environment Solutions (AI-EES) and the Oil Sands Tailings Consortium (OSTC) in partnership with Alberta Energy, Natural Resources Canada, Alberta Environment and Sustainable Resource Development, and Alberta's Energy Resources Conservation Board. The OSTC is now being rolled into Canada's Oil Sands Innovation Alliance.

All Alberta oilsands miners shared their in-development tailings technologies. The operators, together with AI-EES, examined the recommendations of the road map project over the following months and are planning and implementing demonstrations of these suites of technologies in 2013.

U.S. TIGHT OIL BOOM PUTS HEAVY OIL AND OILSANDS UNDER PRESSURE

Heavy oil and oilsands producers in Canada have known for years that access to new and expanded markets would be critical for the sustained economics of the industry as production grows. This issue inflamed in 2012 due to pipeline project delays and rapid production growth from U.S. tight oil plays, costing producers and government finances billions in revenue.

"Canada's oil industry is facing a serious challenge to its long-term growth," wrote analysts with TD Economics in late 2012. "Current oil production in western Canada coupled with the significant gains in U.S. domestic production have led the industry to bump against capacity constraints in existing pipelines and refineries. Production growth cannot occur unless some of the planned pipeline projects out of the Western [Canadian] Sedimentary Basin go ahead. Not doing so would create significant economic loss for the country."

Previous TD Economics calculations asserted that that the contribution from increased investment in Canada's oil and gas sector accounted for 20 per cent of Canada's economic growth experienced in 2010 and 2011 and could be a major contributor to growth in the future, but only if new markets were accessed.

"In a 2012 report, the Canadian Energy Research Institute estimated that if the current major pipeline expansion projects [that] are in the works do not get built, thereby constraining future oil production in western Canada, Canada would forego as much as $1.3 trillion of gross domestic product (in 2010 Canadian dollars) and $276 billion in taxes from 2011 to 2035."

14 MAJOR PRODUCERS FOR CANADA'S OIL SANDS INNOVATION ALLIANCE

It's being called the most aggressive and largest collaboration of its type on the planet, bringing in a "new era" of oilsands development—12 (now 14) of the biggest players in the oilsands sector announced in spring 2012 a plan to pool their technology research and development resources to accelerate improvements in environmental performance by the industry as a whole.

In early March, senior executives from BP Canada Energy Group ULC, Canadian Natural Resources Limited, Cenovus Energy Inc., ConocoPhillips Canada, Devon Canada Corporation, Imperial Oil Limited, Nexen Inc., Shell Canada Limited, Statoil Canada Ltd., Suncor Energy Inc., Teck Resources Limited and Total E&P Canada Ltd. joined to publicly sign into the creation of Canada's Oil Sands Innovation Alliance (COSIA). Later in the year, the companies were joined by Syncrude Canada Ltd. and CNOOC Canada Inc.

COSIA is essentially the next step in the accelerated evolution of a number of collaborative organizations that have been working to improve the sector's performance.

"We believe environmental stewardship is a shared responsibility, whether on tailings, water, land or greenhouse gases. It's this recognition and genuine desire to do better that has brought us [to the] formation of Canada's Oil Sands Innovation Alliance," said Steve Williams, president and chief executive officer of Suncor, at the COSIA launch. "Our 12 companies have come together, recognizing that none of us has a monopoly on ideas or wisdom when it comes to the environment. We know that the sum of what we do will be greater when we work together than when we work as individuals."

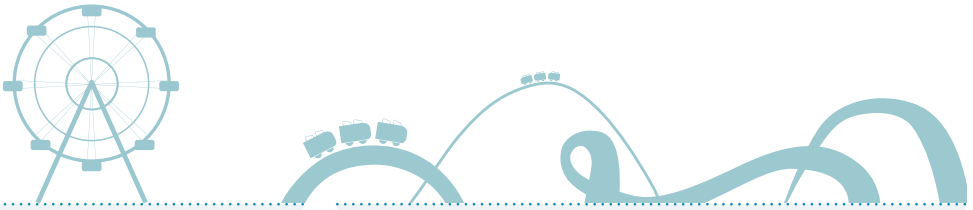
ALBERTA FORMALIZES NEW LAND-USE PLANNING STRATEGY IN THE ATHABASCA REGION

While there have been many recent changes in regulatory processes in Canada, one of the more important changes the oilsands industry must familiarize itself with is the Lower Athabasca Regional Plan (LARP) in Alberta, according to Dufferin Harper, partner and head of the environmental group in Calgary with Blake, Cassels & Graydon LLP.

On Aug. 22, 2012, the Alberta government approved LARP, which is the product of more than three years of consultations with Albertans, First Nations and experts on social, economic and environmental issues.

As the first regional plan under Alberta's land-use framework, LARP identifies and sets resource and environmental management outcomes for air, land, water and biodiversity, and will guide future resource decisions while considering social and economic impacts.

"LARP is probably more significant to oilsands operators than the Responsible Energy Development Act and the single regulator," Harper says. "I still think the concepts behind LARP are being underplayed and [in terms of] the impact of LARP on individual operations in the oilsands, people are not really understanding the significance of what is going to happen."



SAYING GOODBYE TO TWO DARLINGS OF FUTURE BITUMEN PROMISE

In 2012, two previously promising oilsands projects hit the skids for the last time, ending short-term hopes for commercial bitumen development in Saskatchewan and the commercial application of toe to heel air injection (THAI) in bitumen deposits.

Oilsands Quest Inc., the junior company that identified oilsands deposits east of the Saskatchewan border and mapped out a preliminary plan for development, went into creditor protection in November 2011 and in October 2012 sold all of its remaining assets to Cenovus Energy Inc. for $10 million. The Saskatchewan leases are adjacent to Cenovus's proposed Telephone Lake steam assisted gravity drainage (SAGD) project, but their development future remains unclear.

As for the proponents of THAI, Petrobank Energy and Resources Ltd.—who once said that the oilsands was the "torture test" for a technology with global heavy oil potential—development has stalled indefinitely. While Petrobank continues to test THAI in conventional oil at Kerrobert, Sask., the company sold its suspended oilsands THAI pilot and significant associated acreage to junior Grizzly Oil Sands ULC in January 2012 for $225 million. Grizzly plans to develop the asset using SAGD.

AFTER YEARS OF WAITING, ALBERTA'S FIRST MERCHANT BITUMEN UPGRADER GETS SANCTIONED

Six years ago, the Alberta construction industry was worrying about whether it would have enough skilled workers to build the seven new oilsands upgraders planned at the time.

And then, in the midst of the economic downturn, one after the other, six of the upgraders were cancelled or deferred. This left just one project, the Sturgeon Refinery, still on the books, and an entire industry and its supply chain waiting for years with great anticipation for a sanction decision.

And then it finally came. In mid-November of 2012, the North West Redwater Partnership, a venture between privately owned North West Upgrading Inc. and Canadian Natural Resources Limited, announced it would go ahead with the $5.7-billion first phase of the Sturgeon Refinery, to be located in an industrial park 45 kilometres northeast of Edmonton.

The first phase of the refinery will convert 50,000 barrels of bitumen per day into diesel, ethane, naphtha, butane and propane, all value-added products with ready markets. The bitumen processed by the Sturgeon Refinery will come from Canadian Natural and the Government of Alberta through its Bitumen Royalty in-Kind program. It is expected to be operational in 2016.



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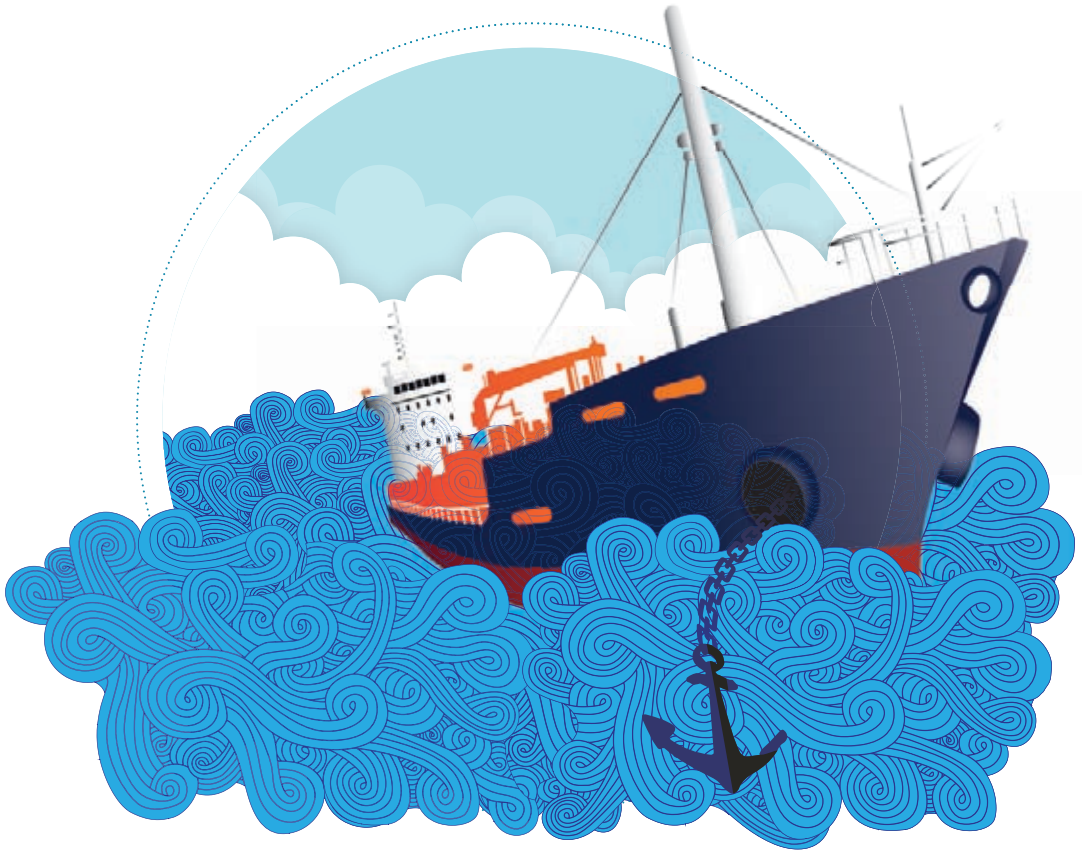
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HEARINGS CONTINUE ON NORTHERN GATEWAY

It will be at least another year until a regulatory decision is issued on Enbridge Inc.'s proposed Northern Gateway Pipeline project, which would enable up to 525,000 barrels per day of oilsands crude to reach tidewater export markets, including thirsty Asia. The project has become a heated topic of Canadian environmental and political debate, seen by some as critical for the country's economy and by others as catastrophic for the environment locally and globally.

The Canadian government's joint review panel will continue its public hearing process in 2013, and has been tasked with issuing its final report on the project by December 31.

ILLUSTRATION: CHRISTINA BOROWIECKI

HEAVY OIL DIFFERENTIALS ARE POISED TO HEAD BACK TOWARDS EQUILIBRIUM

The differential between heavy oil and light benchmark West Texas Intermediate was "blown out" in 2012, approaching $30 per barrel at times. Analysts at Raymond James Ltd. say this is due to quickly growing tight oil production, pipeline bottlenecks in the U.S. Midwest, increased Canadian production and refinery outages. They say, however, that this is a short-term problem.

"While the crude market is out of balance today, we believe the stars have already started to realign in favour of heavy crudes," wrote Justin Bouchard, Kristopher Zack and Luc Mageau in early November 2012. "We believe that there are a number of initiatives underway that will bring differentials back to 2009-10 levels and more importantly, to keep light-heavy differential volatility in check."

These include increased takeaway capacity from Cushing, Okla., retooling of the U.S. Midwest refining complex for heavier crudes and new pipeline projects unclogging the crude oil log jam in the U.S. Midwest. Raymond James analysts also say there could be positives associated with growing production of light oil in the U.S. Midwest, envisioning a scenario where the demand for heavy crudes increases to balance the crude supply slate in order to achieve an optimal distillation curve.

After 2015, the analysts say that projected increases in Canadian heavy will necessitate new infrastructure projects. "Keystone XL and crude by rail [are] the most logical candidates medium term. Looking out even further, projects like the Trans Mountain Expansion, Gateway or even the potential to convert existing underused natural gas pipelines running east are likely projects."

THE EUROPEAN UNION WILL VOTE ON "ANTI-OILSANDS" FUEL QUALITY DIRECTIVE

The European Union (EU) is set to vote in early 2013 on its proposed Fuel Quality Directive (FQD), a greenhouse gas–reducing measure that is seen by industry and its supporters as unfairly discriminatory to Canadian oilsands crude. The FQD is designed to reduce greenhouse gas emissions of fuels by six per cent by 2020, compared to emissions levels in 2010. The legislation singles out oilsands feedstocks, assigning them a higher average emissions profile than other global crudes with similar or even more significant actual numbers.

Natural Resources Canada says the FQD is "not science-based" and would make oilsands crude uncompetitive in the EU unless discounted in price. While the legislation would not practically have much effect as Europe is not currently a Canadian crude export market, optically and politically the repercussions of potential enactment could be widespread.

The vote on the FQD was originally slated for spring 2011, but was delayed after intense lobbying by industry and government officials.

DEEP POCKETS: FOREIGN DEALS TO LOOK OUT FOR IN 2013

With the groundbreaking $15.1-billion takeover of Nexen Inc. by Chinese state oil company CNOOC Limited now complete (and despite new investment rules imposed on foreign entities by the Government of Canada), the investment landscape of the oilsands sector in 2013 and long into the future is sure to continue to be coloured by foreign entities.

"Canada is rich in resources, but those resources need capital in order to be developed and companies in Canada don't have enough capital on their own," notes Tom Pavic, vice-president of Sayer Energy Advisors.

Other major deals that could occur in 2013 include a potential sale of Marathon Oil Corporation's 20 per cent stake in the 255,000-barrel-per-day Athabasca Oil Sands Project, operated by Shell Canada Limited. The company is rumoured to be in talks with India's state-owned Oil and Natural Gas Corporation Ltd. (ONGC) on the project.

Over the past year, many rumours have flown around about Indian companies taking a stake in the oilsands sector, but a deal has yet to be inked. In fall 2012, it was reported that ONGC and another Indian firm had bid $5 billion for some of the oilsands assets of ConocoPhillips Canada, which are up for sale, including the soon-to-be massive Surmont steam assisted gravity drainage (SAGD) project. Shell has also put the Orion SAGD project up for sale.

A DECISION IS COMING ON KEYSTONE XL

The U.S. Department of State has said previously that it will issue a decision on the revised route of the controversial Keystone XL Pipeline in the first quarter of 2013, and while many are cautiously optimistic that the project will be approved, significant opposition remains. Keystone XL, proposed by TransCanada Corporation, would stretch from Hardisty, Alta., to Steele City, Neb., effectively linking from there with the southern leg of the pipeline, which is currently under construction, to the Gulf Coast. In January 2012, U.S. President Barack Obama denied the project its presidential permit—required because it crosses the border between Canada and the United States—largely because of the project's planned route through a sensitive area in Nebraska. But now that the route has been changed and the U.S. Department of State has said it is environmentally sound, many say Obama has little reason to deny the permit. Eurasia Group asserts there is an 80 per cent chance the approval will be secured by summer 2013.

That hasn't stopped the project's opponents, who in mid-November 2012 and early 2013 marched around the White House, calling theirs a "David-and-Goliath struggle" against climate change.

With a presidential permit in place, TransCanada says construction on the 700,000-barrel-per-day, market-shifting pipeline would basically begin immediately, with service starting in late 2014 or early 2015.

CAPITAL SPEND REMAINS ROBUST, BUT SHORT-TERM CHALLENGES THREATEN MODERATION

A combination of growing tight oil production in the United States and Canada, difficulties in gaining pipeline access and the continued sluggishness of the global economy will have an impact on capital spending in the oilsands in 2013, analysts say. However, the sector is still looking ahead to a pretty rosy year.

The Canadian Association of Petroleum Producers is forecasting $23 billion in new capital investment in 2013, trending steady against the actual spend of approximately $23 billion in 2012.

The technology-driven advent of tight oil has grown production in North Dakota alone from just 50,000 barrels per day five years ago to 650,000 barrels per day today. This, combined with growing production elsewhere in North America, has created a lower-cost alternative to the high cost and long lead times of some oilsands projects, in addition to a glut of crude oil in traditional markets and lower realized prices.

NEW SINGLE REGULATOR DESIGNED TO SPEED APPLICATION PROCESS IN ALBERTA

June 2013 is expected to be the start of operations for Alberta's new single energy regulator, which in part is designed to streamline the application process for the industry. According to Terry Abel, executive manager of the Energy Resources Conservation Board (ERCB)'s oilsands and coal branch, the ERCB is seeing about three times the number of applications for commercial development of oilsands projects than it did three years ago, from both large and new players.

"It's become apparent that guidelines need updating so that companies know what they need to include in applications, and the board has been putting a great deal of effort into that for the past year or so," he says, adding that Directive 23 (Guidelines Respecting an Application for a Commercial Crude Bitumen Recovery and Upgrading Project) has not been updated since the early 1990s, so it's significantly outdated.

Some amendments truly need public involvement, while others are more technical and are really an issue between the regulator and industry, says Abel. The ERCB plans to begin consultations soon, and hopes to implement changes in 2013.





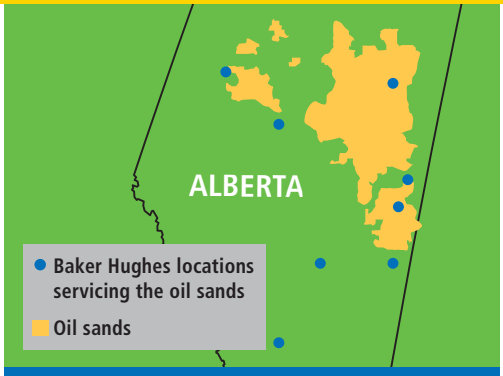
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TECHNOLOGY



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IMAGE: CONNACHER OIL AND GAS LIMITED

CASE STUDY

GRADUAL GROWTH

Cenovus Energy develops and deploys environmental footprint–reducing technology at Christina Lake

By Peter McKenzie-Brown

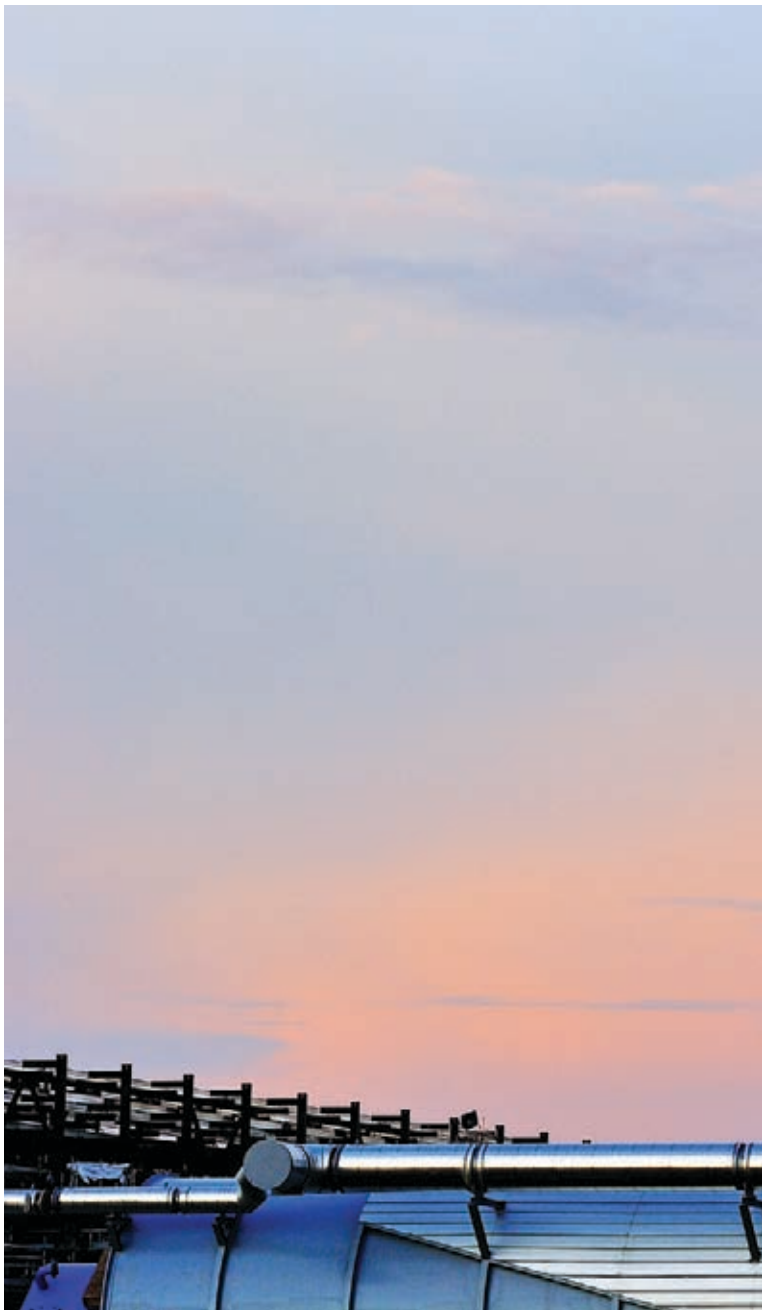


PHOTO: CENOVUS ENERGY INC.

Sometimes great innovations come from technologies that are old hat. In the oilsands, a great example comes from an environmentally important technology application developed by Candice Paton, energy management and environment engineer in technology development with Cenovus Energy Inc.

Flue gas recirculation—taking waste from an industrial heat source and recycling it through the system to reduce emissions—has been used for many years in many industries. Indeed, long ago the automobile industry began installing such systems into car and truck engines to reduce pollution and increase efficiency. Fast forward to the present, where Paton recently led a Cenovus initiative to test such a system in steam assisted gravity drainage (SAGD) operations. "This is new for large steam generators like the ones we use in SAGD facilities," Paton says. "For the very large boilers we're seeing in SAGD, this is new."

Paton became the champion for this idea when she joined Cenovus four years ago. During that period, she and her team developed a flue gas recirculation demonstration project for the steam boilers in use for the company's Christina Lake Phase D expansion. The result? Cenovus was able to cut its nitrogen oxide (NO_x) emissions, which were already lower than current regulations allow, by about 50 per cent. Paton notes, "We anticipate that, with further testing, we can maintain emissions at about 20 parts per million [ppm]." Current regulations allow for 76 ppm.

The test was so successful that the technology will now be commercialized at the company's Christina Lake SAGD operation.

Environmental response

Paton stresses the environmental importance of reducing NO_x emissions: these pollutants can result in "acidification of our soils and water systems, respiratory problems and so on. It's definitely something we have to keep our eyes on. [NO_x] is one of the five major air pollutants regulated by Alberta Environment [and Sustainable Resource Development]."

In SAGD, of course, steam is the energy source used to release bitumen from its reservoir.

"At Christina Lake and Foster Creek, the major place we're seeing NO_x emissions is from our steam generators," she explains. "The reason is that any time you've got a very hot flame, like in a generator—any kind of combustion, really—you've got air, which is high in nitrogen, reacting with oxygen to create NO_x." The hotter the flame, the more nitrogen oxides produced.

Here's a look at the numbers:

Cenovus reports that flame temperatures in its steam generators range from about 1,750 degrees Celsius to 1,900 degrees Celsius at the core of the flame and about 1,300 degrees Celsius at the edge of the flame. In its flue gas recirculation demonstration project, Cenovus has seen a 10 per cent reduction in flame temperature. This reduction of temperature reflects the company's calculation that, optimally, the demonstration project should recycle about
15 per cent of total steam generator exhaust.

"What we do with this flue gas recirculation is to bring some of the flue gas down from the top of the stack and re-inject it into the fuel burner. What this does is to dilute the air a little bit, which causes the



flame inside the boiler to cool very slightly. Because of the cooling of the flame, you get significantly less NO_x forming. The change is quite small, but the relationship between temperature and NO_x creation is exponential. You only need a small decrease in temperature to get a significant reduction in NO_x."

Of course, these boilers can't be considered in a vacuum. For optimal boiler performance, "there are many things you have to take into consideration when you start this process. You have to think about your flame, your boiler performance, safety performance, energy efficiency.... The reason we don't reduce the flame more is that we need a good, hot flame to generate steam. We have to optimize the boiler's performance." In practice, introducing flue gas recirculation by retrofitting an existing system reduced the effectiveness of the boiler by less than half a per cent. The cost of the test was $1.6 million.

Cenovus Energy's tests of low-NO_x steam boilers have been so successful that the company will now deploy them commercially at the Christina Lake thermal project.

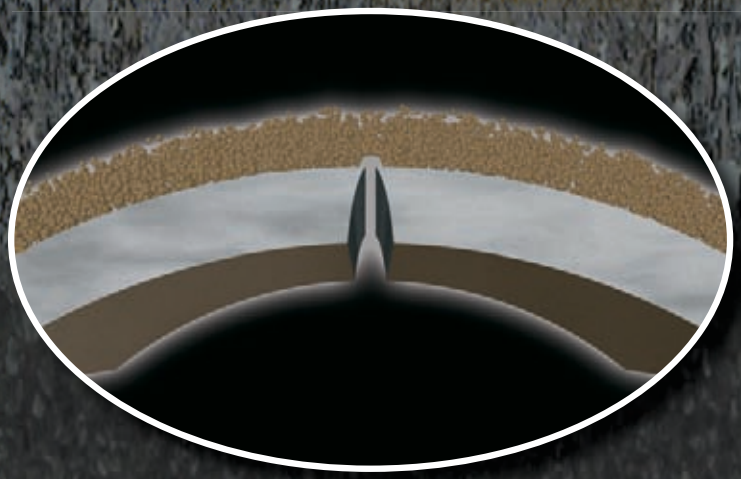
Because of the success of the project, Cenovus has now adopted this technology for commercial purposes. In the future, boilers will be delivered with this technology essentially built in. Because the company is designing these new-fangled boilers right into its expansion plans at Christina Lake Phase E and at Narrows Lake, boiler performance will be even better.

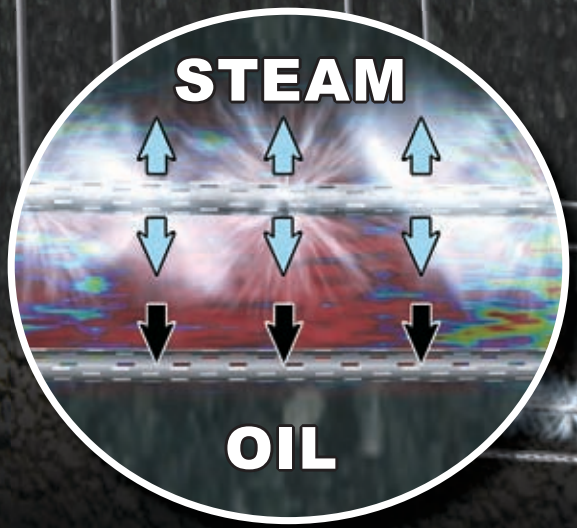
Paton says that the most exciting part of her project is probably "that the company enables us to pitch a project about improving our environmental performance and the company will buy into it. The company really does believe that good environmental practice is good business." ■

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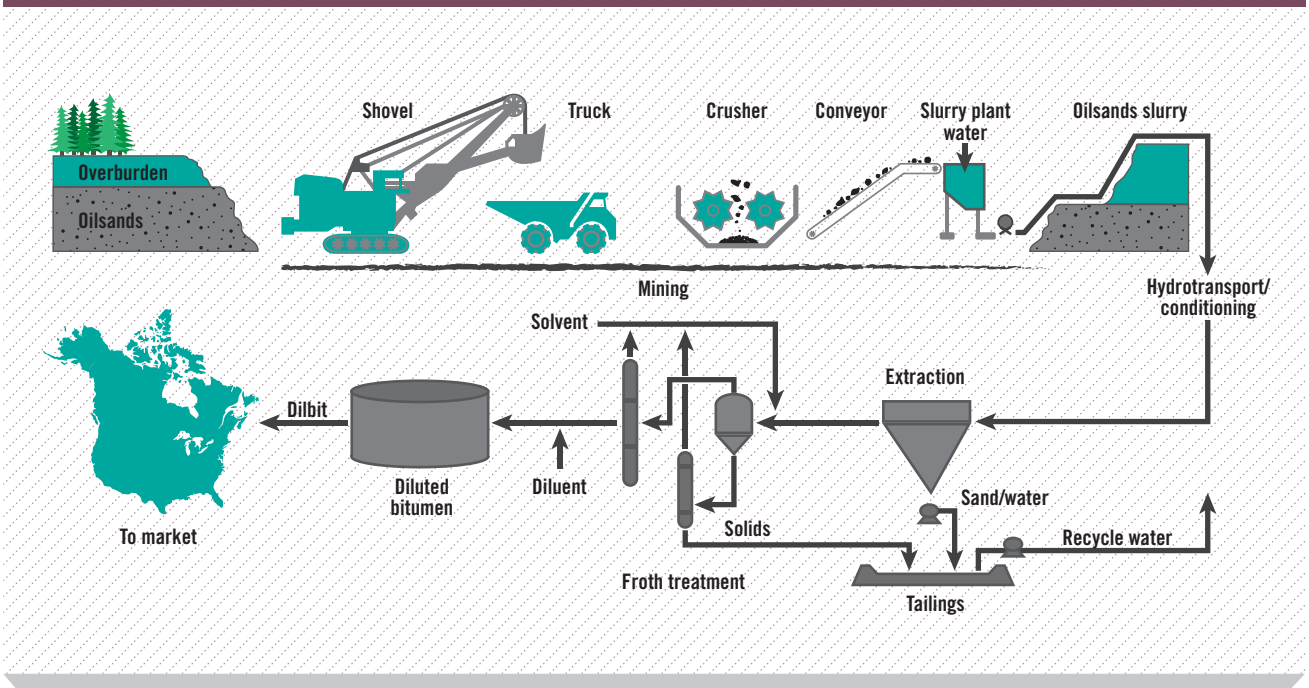


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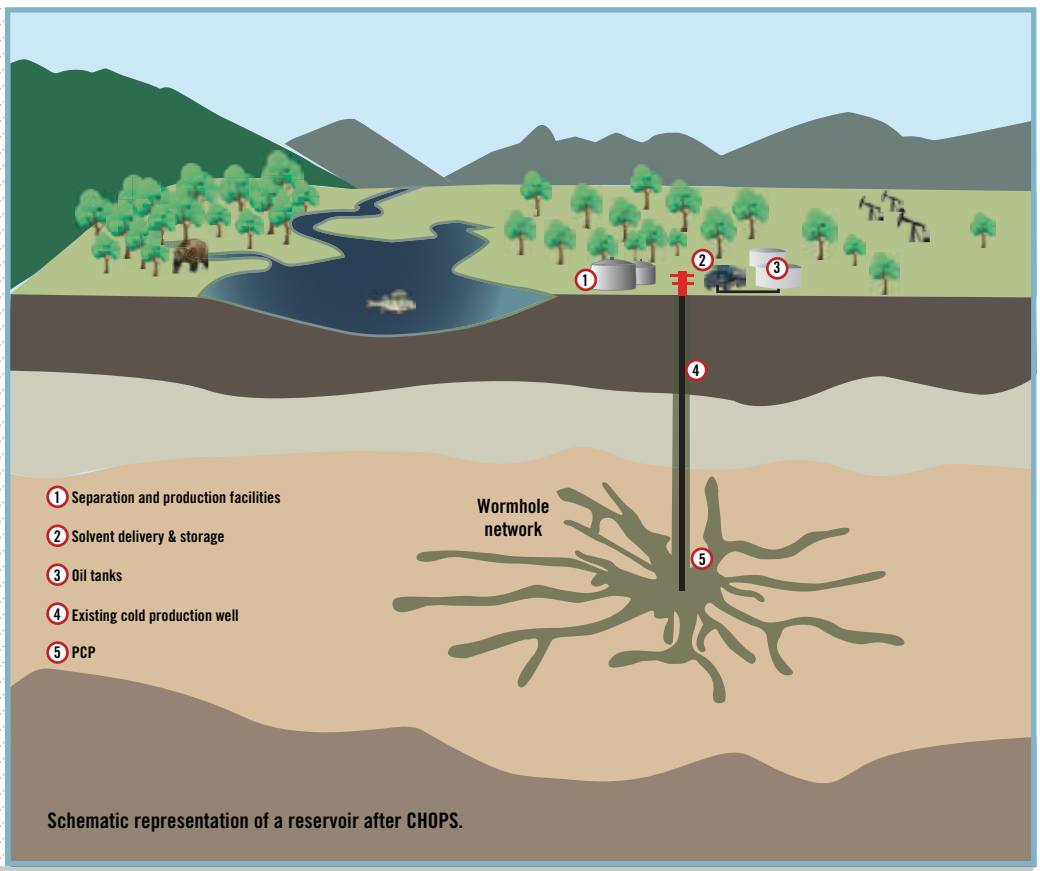
Commercial oilsands mining began in 1967 at the Great Canadian Oil Sands (now Suncor Energy Inc.) plant. In the 1990s, producers moved away from costly and inefficient bucket-wheel and dragline equipment to more versatile trucks and shovels, which remain in use today. Oilsands miners recently joined together to collaborate on addressing tailings, their most significant challenge. Less than 20 per cent of the oilsands resource is economically recoverable using surface mining.



SOURCE: IMPERIAL OIL LIMITED

Cold heavy oil production with sand (CHOPS)

CHOPS is a non-thermal heavy oil production technology that involves the continuous production of sand to enhance recovery from the reservoir. Wormholes are formed in the unconsolidated sand, creating high-permeability pathways that provide for significantly increased oil production using artificial lift. As with all enhanced oil recovery methods, well placement is critical to a successful CHOPS project, requiring detailed geological characterization.

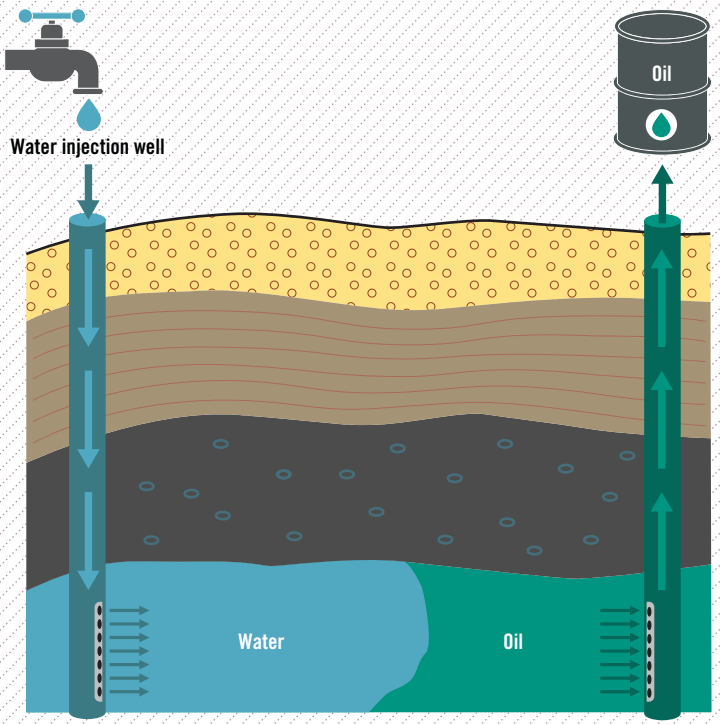


SOURCE: ALBERTA INNOVATES

PROVEN TECHNOLOGIES

Water/ polymer flood

Waterflooding is the most widely used fluid injection process for oil recovery in the world today. Although more commonly used in lighter reservoirs, there are a number of heavy oil projects employing this recovery method. Two major projects at Pelican Lake, owned by Cenovus Energy Inc. and Canadian Natural Resources Limited, also incorporate polymers in the flood to improve production.

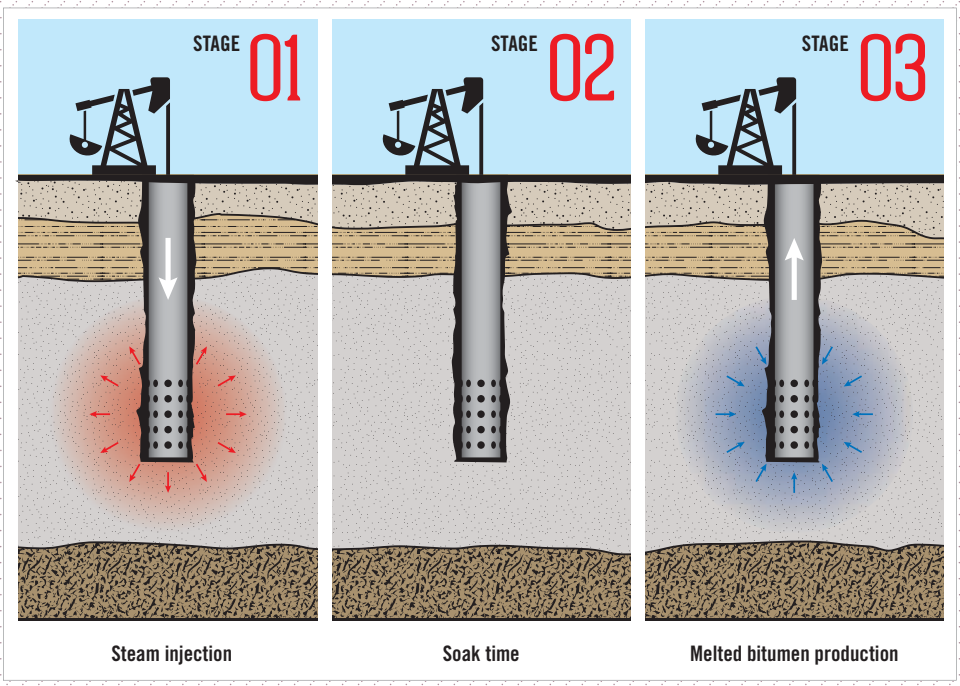


SOURCE: DEPARTMENT OF ENERGY

Cyclic steam stimulation (CSS)

CSS was developed by Imperial Oil Limited at Cold Lake, Alta. In the same area, it is now also used by Canadian Natural Resources Limited, and a variation has been used by Shell Canada Limited at Peace River since the 1980s.

A single well is used to inject high-pressure steam into the reservoir to heat the oil and reduce its viscosity. The pressure dilates the formation, inflating the reservoir. As it cools, the reservoir deflates, providing a drive mechanism. Following injection, the well remains suspended for a required period of time to allow heat to soak into the formation. After the soak phase, the operation of the injector well is reversed to produce the oil.

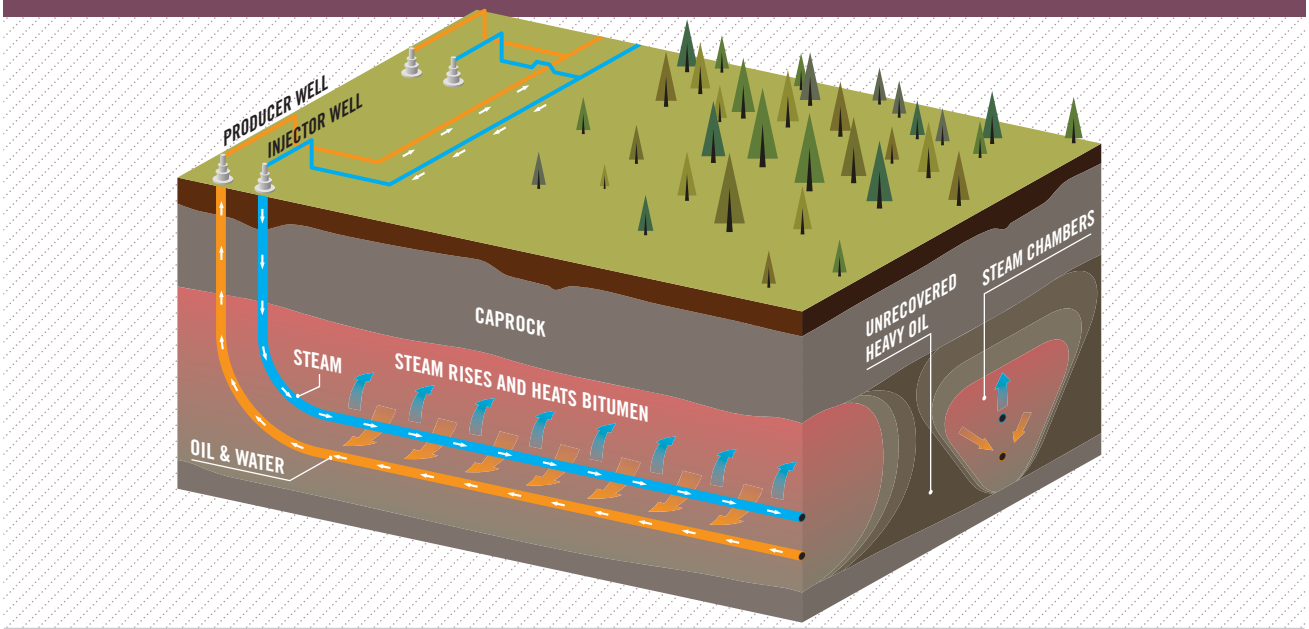


SOURCE: GOVERNMENT OF ALBERTA

Steam assisted gravity drainage (SAGD)

Originally conceived by Imperial Oil Limited engineer Roger Butler, and proven viable by the Alberta Oil Sands Technology and Research Authority at its Underground Test Facility in the Athabasca region, SAGD has been commercial since 2001 and has changed the dynamics of the industry. The technology was first commercialized by Alberta Energy Company Ltd., which is now Cenovus Energy Inc.

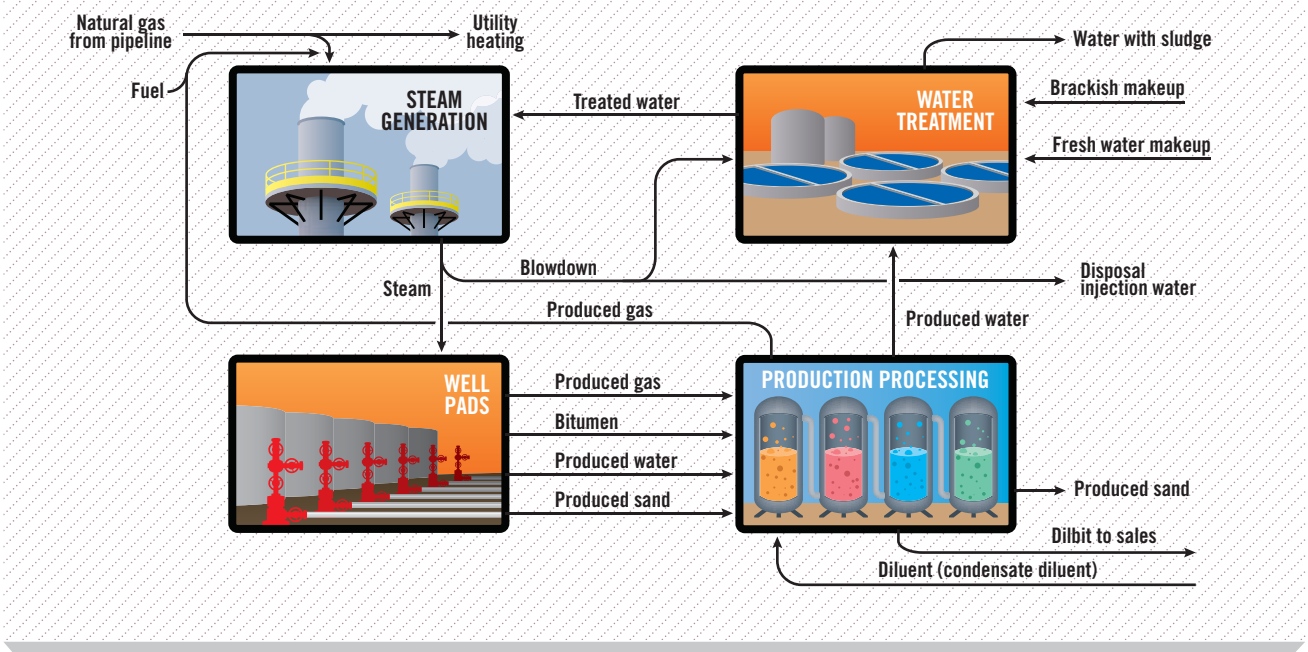
Two parallel horizontal oil wells are drilled in the formation. The upper well injects steam, which heats the heavy oil or bitumen and lowers its viscosity, allowing it to flow down into the lower wellbore, where it is raised to the surface by steam lift, gas lift or downhole pump. SAGD is the reason why in situ oil-sands production is expected to surpass mining by 2015.



SOURCE: CONNACHER OIL AND GAS LIMITED

Central processing facility

Thermal in situ heavy oil and oilsands production facilities are essentially water processing plants that produce oil or bitumen as a by-product. At the heart of these plants is the central processing facility where water is treated and steam is generated to be sent to production well pads via above-ground pipelines. The produced water and oil emulsion is returned via pipeline to the central processing facility where water, gas and impurities are removed and oil is sent to market.

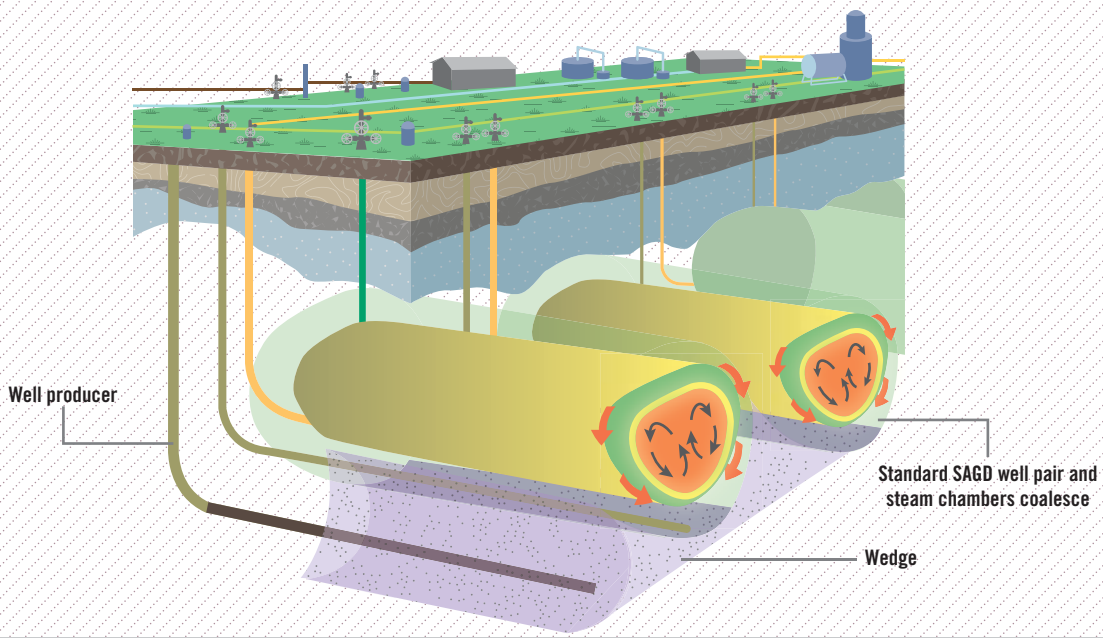


SOURCE: STATOIL CANADA LTD./JEREMY SEEMAN

PROVEN TECHNOLOGIES

Infill wells

Steam assisted gravity drainage (SAGD) infill wells, or "wedge wells," as they are called by Cenovus Energy Inc., are horizontal wells drilled between SAGD well pairs designed to access bitumen that has been heated by steam injection, but is stranded from the production wells. The technology allows for increased oil production with little to no extra steam, reducing environmental impacts while adding to the bottom line.

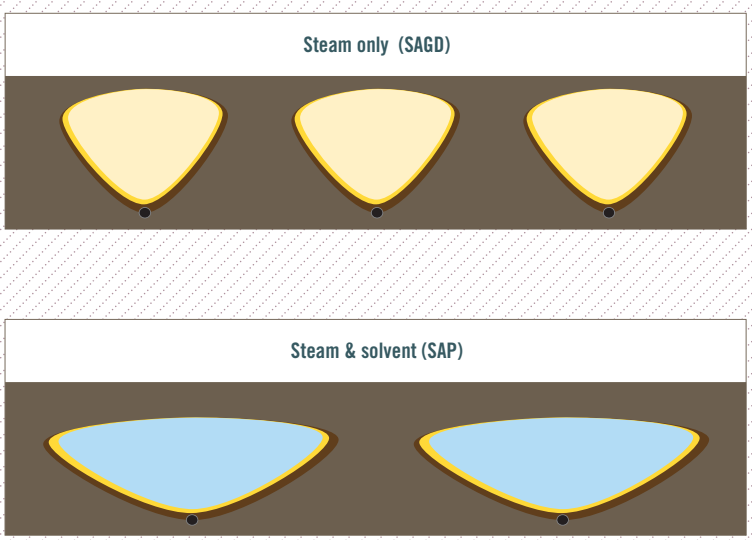


SOURCE: CENOVUS ENERGY INC.

EMERGING TECHNOLOGIES

Solvent injection with steam

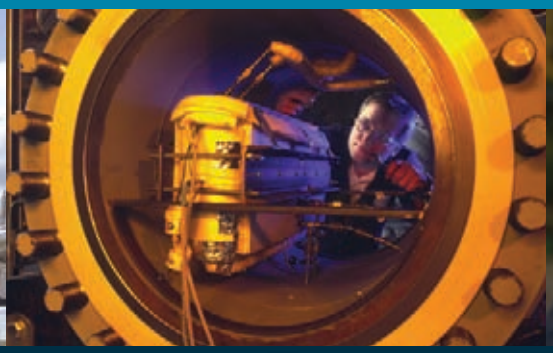
The co-injection of solvents with steam is a principal area of current technology research and development for in situ oilsands operators, with multiple producers testing different application configurations. According to Alberta Innovates – Energy and Environment Solutions, the main advantages of solvent co-injection are up to 30 per cent more oil recovery, up to 30 per cent lower steam requirements and less water usage.



SOURCE: CENOVUS ENERGY INC.

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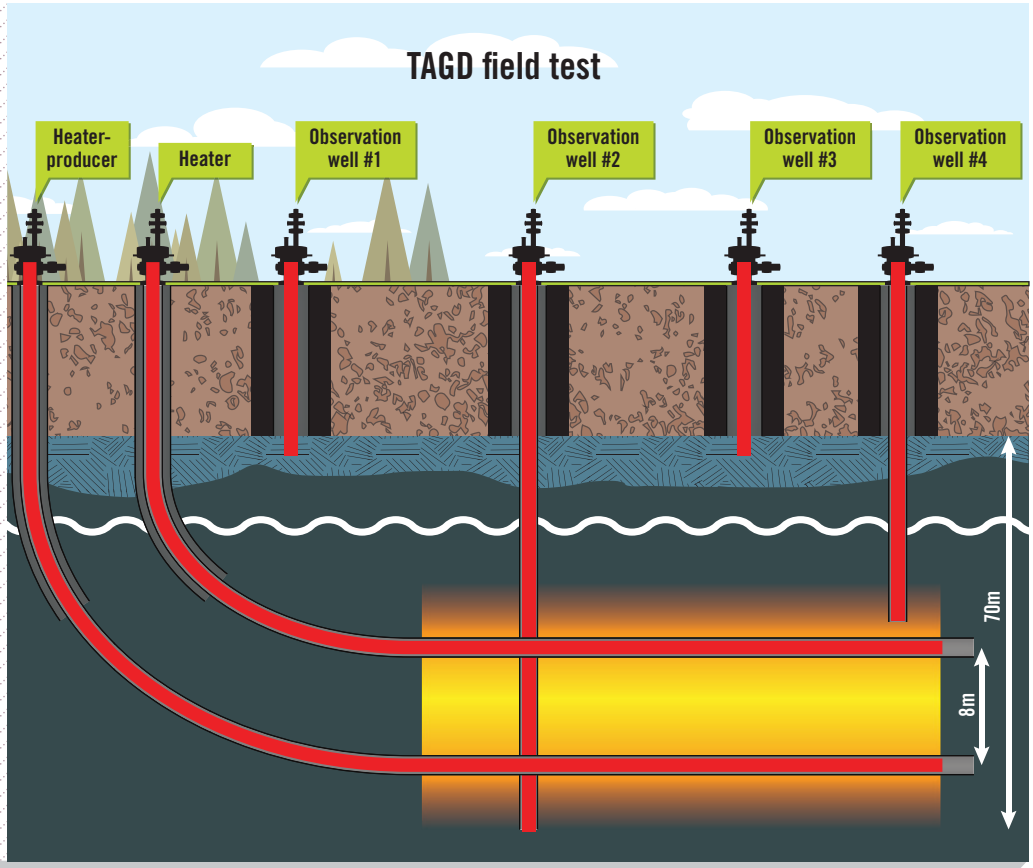
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EMERGING TECHNOLOGIES

Thermal assisted gravity drainage (TAGD)

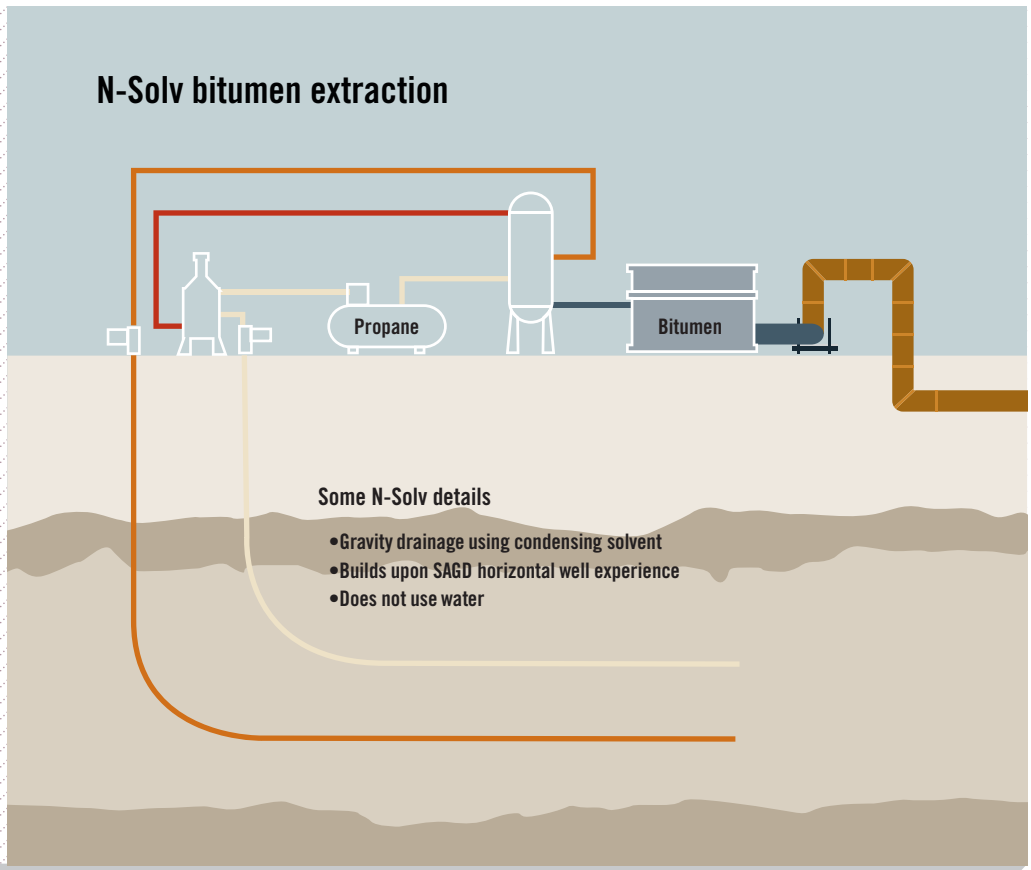
TAGD is a proprietary technology owned by Athabasca Oil Corporation that uses an array of downhole heaters installed in horizontal wells to heat the reservoir via thermal conduction. The bitumen reservoir is heated to approximately 140–160 degrees Ceslius—a modest temperature when compared to SAGD operations—producing a viscosity similar to that of medium crude oil. Via gravity drainage, the bitumen flows to the bottom of the reservoir where it is recovered by several horizontal production wells.



SOURCE: ATHABASCA OIL CORPORATION

Bitumen extraction solvent technology (BEST, N-Solv)

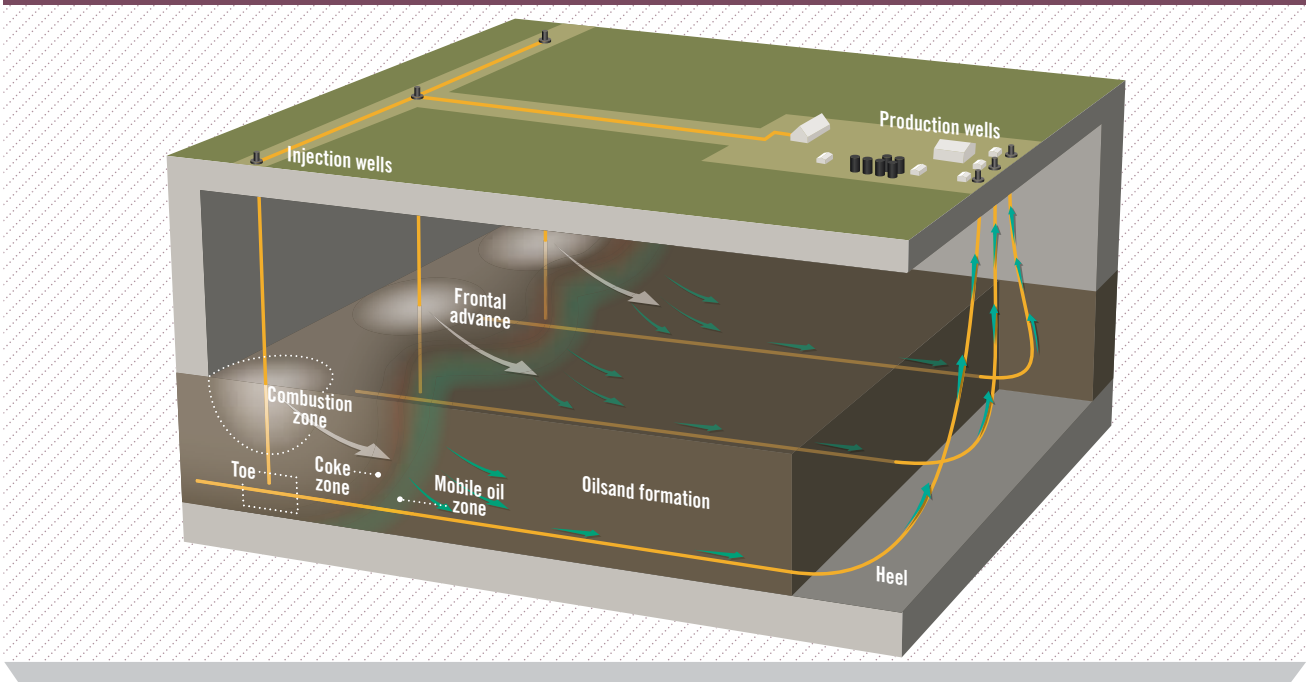
BEST technology, a proprietary method owned by N-Solv Corporation, is described as the injection of a pure, heated solvent vapour into an oilsands reservoir where it condenses, delivering heat to the reservoir and subsequently dissolving the bitumen, with the resulting miscible liquids flowing by gravity to a production well.



SOURCE: N-SOLV CORPORATION

Toe to heel air injection (THAI)

Petrobank Energy and Resources Ltd.'s THAI process is an in situ combustion technology for the in situ recovery of heavy oil that combines a vertical air injection well with a horizontal production well. As with conventional air combustion, the process ignites oil in the reservoir and creates a vertical combustion front moving from the "toe" of the horizontal well toward the "heel." The lighter oil fraction, which has been displaced to the producing well, is recovered to the surface using artificial lift.



SOURCE: PETROBANK ENERGY AND RESOURCES

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ACADEMIC INTELLIGENCE

Research and development at universities in Alberta and across Canada pursue a more holistic approach to heavy oil and oilsands development

By Jim Bentein

Canada must find new approaches for developing the oilsands that encompass not only newer and cleaner technologies, but also business models that move innovation from the laboratory to the field much faster, or the industry will face extinction, says a University of Calgary (U of C) petroleum geologist who is considered one of the world's foremost experts on fluids in reservoirs.

"Overall, we need to develop better and cleaner technologies and we need to do it faster," says Stephen Larter, who holds the U of C's Canada research chair in petroleum geology, is scientific director to government-funded Carbon Management Canada Inc., is a fellow of the Royal Society of Canada, and is affiliated with the U of C's Institute for Sustainable Energy, Environment and Economy. "We don't have decades. The oilsands will be toast if we don't come up with new technologies faster."

Larter believes that the tight oil boom in the United States and environmental opposition to oilsands development threaten the future of the industry. He argues that the oil and gas industry lacks a business model that can bring on innovation quickly enough to overcome the environmental and economic challenges facing the sector.

"It's a question of focus and mindset," he says. "It's largely not a technical problem."

There is a vast amount of research taking place in universities in Canada, much of it ready to be applied at the field level, Larter says, but "Canada needs leaders" who can bring that technology to market.

The oilsands industry continues to rely on long-established technologies, he continues, such as the basic hot water separation process devised in a University of Alberta (U of A) lab in 1921 by Karl Clark and used in oilsands mining. This also extends to the basics of in situ development techniques like steam assisted gravity drainage (SAGD) and cyclic steam stimulation, which demand new step-change developments in order to move into the future.

Larter says the energy industry takes decades to introduce new technologies, which is inexcusable. By contrast, the atom bomb was developed in less than a decade, and Apple Inc.'s late chief executive officer Steve Jobs helped the company develop innovative technologies like the iPhone and iPad in less than a decade.

A more all-encompassing, holistic approach must be adopted to ensure that innovative approaches move into the field faster, Larter says. That's why he works with departments beyond the natural sciences at the U of C, such as the Haskayne School of Business, the engineering faculty and others.

PHOTO: JOEY PODLUBNY

A principal focus of academic R&D into oilsands development is on decreasing emissions of CO_2 and other waste matter.

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"I'm with the geoscience department, and there is a lot of work going on dealing with the technical side," he says. "But there's also a lot going on at the business school, concentrated on changing the business model. There's also work in the legal area."

Here's some of the technical oilsands research going on at the U of C:

- New recovery technologies, especially from more complex reservoirs;
- Work in the biology department looking at the use of micro-organisms to treat tailings and to improve recoveries;
- Work at the geoscience level on the heterogeneous nature of reservoirs;
- Research by biologists and geoscientists on water-based issues, including new methods of treating water waste in mine tailings (including a study of complex acids that are present);
- Work on what determines the viscosity of bitumen and on the use of microbes to reduce viscosities;
- Work within the engineering and geoscience departments on using nanotechnology in reservoirs;
- Research in the engineering department dealing with the use of sensors to monitor oilsands processes;
- Work on low-emission hydrogen propulsion in upgrading and in producing hydrogen from asphaltenes;
- Using computer modelling to develop oilsands-related technologies;
- Research by the engineering department on life-cycle analysis of various technologies; and
- Numerous projects, in cooperation with Carbon Management Canada, on carbon capture.

Some of this work is recognized as potentially groundbreaking.

For instance, researchers have worked on the biological treatment of bitumen in situ, converting it to hydrogen or natural gas.

"There has been little interest on the part of industry in this," Larter says, even though it could deal with many of the concerns about the environmental implications of bitumen production. "If I was going to name a game-changer technology from left field, I would bet that 21st century technology will come from biology."

Despite Larter's criticism of the speed of energy industry technology deployment, he is an optimist about the oilsands industry's future.

"I'm quite encouraged," he says, adding that what is required is leadership to advance the implementation of new business approaches and technologies.

Murray Gray is hopeful as well.

Gray is the director of the Centre for Oil Sands Innovation (COSI) at the U of A.

COSI, which concentrates mostly on the oilsands mining area, is funded by Imperial Oil Limited and Alberta Innovates – Energy and Environment Solutions. It receives about $4 million per year from those sources.

Gray says COSI is involved in about 20 projects right now, with the overall mandate of:

- Reducing the footprint of current mining methods, with an emphasis on tailings ponds;

- Lowering water consumption in the oilsands mining sector;
- Helping to develop bitumen upgrading processes that will lead to the production of a wider range of value-added petrochemicals and other products; and
- Finding ways of using less energy in the process.

COSI funds research at universities throughout Canada, as well as at the University of Nuremberg in Germany, although that is led by a former U of A student.

In Canada, it works with researchers at the U of A, U of C, the University of Victoria, the University of British Columbia, the University of Ottawa, Queen's University in Kingston, Ont., the University of Toronto and the University of Montreal. Researchers involved are members of the engineering, chemistry and physics faculties, among others.

Gray says several projects revolve around non-aqueous approaches to mined oilsands extraction, with the use of solvents instead of water. COSI also works with industry in that area.

> Overall, we need to develop better and cleaner technologies and we need to do it faster. We don't have decades. The oilsands will be toast if we don't come up with new technologies faster.
>
> — Stephen Larter, Canada research chair in petroleum geology, University of Calgary

The group has had difficulty forming alliances with U.S. universities.

"We've found the universities in the U.S. place a high value on protecting intellectual property and so are reluctant to collaborate with others," Gray explains.

In Canada, on the other hand, there's a strong tradition of collaboration between academia and industry.

COSI oilsands research at the U of A represents only a small portion of the total work being undertaken at any one time.

Gray estimates there are as many as 100 researchers at the U of A studying other areas of oilsands and energy development. Some are involved in in situ research, some in carbon capture and carbon sequestration, some in pipeline research and some in the use of artificial intelligence in the energy industry.

Gray estimates that 80–90 per cent of the oilsands research in Canada—which is where virtually all of it is being done—is being undertaken in Alberta, much of it at the U of A and the U of C. ■





RESEARCH FOR *competitive commerce*

Alberta's provincially funded research organization approaches 100 years

By Peter McKenzie-Brown

You've come a long way, baby.

Alberta has been pursuing innovation in the oilsands since 1920, when it made the decision to create the Scientific and Industrial Research Council of Alberta. Soon renamed the Alberta Research Council, under legendary researcher Karl Clark, the council developed a hot water process for separating bitumen from the oilsands. The council's first patent—issued in 1929—was for this system, which in modified form is used in all of the province's oilsands mines.

In those days, though, there were no efficient ways to turn bitumen into fuel, so the council proposed using it as a road paving material. That was the innovation of the day.

Fast forward to the present. Over the last nine decades, the council has morphed from a provincially funded research facility at the University of Alberta to a part of Alberta Innovates – Technology Futures (AITF), focused on building globally competitive commerce in the province. As far as bitumen and heavy oil are concerned, it provides support to the in situ and surface mining sectors, with a focus on extraction and environmental concerns. The group's mantra has three parts: increase production, reduce costs and reduce environmental impacts.

The organization has three divisions. Applied Research Centres provide fee-for-applied-research services to enhance the productivity and competitiveness of Alberta businesses and operations. The Business Innovation Services division provides commercialization support services and networks

PHOTO ILLUSTRATION: JENNA O'FLAHERTY

to support business development and growth. Finally, the organization's Innovates Centre of Research Excellence works to attract top talent to focus and develop world-class research and knowledge capabilities in Alberta.

INDUSTRY FOCUS

The Heavy Oil & Oil Sands group at AITF is a recognized leader in research and development, as well as in cooperating with industry in technology deployment. Its reservoir engineers and scientists continue to improve relatively mature technologies such as steam assisted gravity drainage (SAGD) and enhanced heavy oil waterflooding. They also continue to create and develop newer technologies such as expanding solvent SAGD, which co-injects solvent with steam, and cyclic solvent injection, which is a solvent injection analogue to cyclic steam stimulation.

Their Alberta Research Council Core Industry (AACI) Research Program focuses on in situ heavy oil and oilsands research and innovation. Consisting of 21 members from industry and three from the Alberta government, companies pay a fee to participate.

According to John Ivory—AACI's subsurface portfolio manager—"Consortium work is industry-focused. Technical committee members decide what projects go forward. As a researcher, I can put forth proposals, but the steering committee votes on which ones go ahead." Ivory stresses that "mostly what we do in the AACI program is develop new or improved recovery processes in the lab. The participants get our lab results and a royalty-free licence to use any process arising while they are members."

Companies participate because they can gain a great deal in their understanding of new processes—steam/solvent injection, for example. "In those areas, we are likely to be ahead of the game because we have a great deal of experience in looking at recovery processes through experimentation and reservoir simulation. Our main expertise is in doing large-scale experiments and computer simulation. We like to back up our numerical models with experiments."

Ivory is just one of a great many people who work on oilsands research. "We have a lot of technical expertise," he says. "We want innovative people from many backgrounds in addition to reservoir engineering, for example, from physics, chemistry, geology, etc. We choose in-house or contract personnel with the appropriate background for particular projects. A very important thing that we do in field projects, really, is to make sure that measurements are accurate as this is crucial in interpreting the performance of recovery processes."

CASE STUDY

Of course, as part of its initiative to make Alberta competitive, AITF participates in funding projects. A case study from the University of Calgary illustrates the process.

Three groups funded the study: the iCORE division of AITF and Foundation CMG contributed $1.25 million each to the study, while the Natural Sciences and Engineering Research Council of Canada provided another $1 million. The project was led by University of Calgary researcher Mario Costa Sousa, an associate professor who specializes in computer science.

Stressing that "being able to correctly interpret and analyze complex technical data about oil and natural gas reservoirs is a critical skill for people in the energy industry," Costa Sousa says interactive visualization "lets the user visually explore, analyze and interpret large, complex reservoir datasets and results at every stage of the oil and gas exploration and production cycle.... With quick visual information, you can explore various ideas and scenarios more rapidly and effectively, which means better decisions are made, technologically as well as environmentally and economically."

Costa Sousa's research will ultimately influence decision making that will benefit the environment and the bottom line of companies in Calgary and around the world. It's worth remembering that the beneficiaries of these projects won't just be in Alberta. New production technologies like these will help boost business competitiveness around the world. ■



PHOTO: JOEY PODLUBNY

THE NEXT AOSTRA

Will Alberta follow through on its innovation promise?

By Peter McKenzie-Brown

A year ago, the *Heavy Oil & Oilsands Guidebook* introduced the idea of AOSTRA 2—a provincial-funding program that would encourage and support the oilsands industry in development of new extraction technologies. The idea was to emulate the highly successful original AOSTRA (Alberta Oil Sands Technology and Research Authority), which the late premier, Peter Lougheed, introduced in the 1970s.

The notion originated with Doug James and Bob Taylor, two Calgary policy wonks. The main forces behind the Energy Futures Network, a think tank, they had put forward to both government and industry the notion that the province needed to bring more resources to bear on the oilsands. In a paper titled *AOSTRA 2*, they made a strong case for a new collaborative industry/government research and development program. "This must be a private-public initiative from the beginning," they argue, "but it would be best if it were industry led." When this publication was barely hot off the press, Alberta Premier Alison Redford made AOSTRA 2 the first plank in her 2012 election platform.

Following her election in June, Redford confirmed at an industry event that her government would fund a new incarnation of AOSTRA. It would be a 20-year, $3-billion show of government support for oilsands development.

THE VALUE OF INNOVATION

Taylor illustrates the importance of the kind of technological innovation AOSTRA can fund. Important research is now investigating new technologies and processes that can shorten the pre-heat time before steam assisted gravity drainage (SAGD) well pairs can begin production. "If you can get production from a 1,000-barrel-per-day well at least one day earlier, at $60 per barrel, that would be worth $60,000," he says. That's "not very exciting until you look at the potential of speeding start-up by 10 days and doing that for the six well pairs on a new well pad. Now you're talking $3.6 million, a little more interesting. But when you apply that to the next 500,000 barrels per day of Alberta SAGD production, we are looking at a $300-million upside. And that is pure profit because all of the capital and operating expenses are already being accounted for.

"So why should the Crown be excited in moving forward AOSTRA 2?" Taylor asks. "Because the Crown share [collected on behalf of all Albertans] is about 33 per cent at current WTI [West Texas Intermediate] prices—or something like $100 million of that benefit. And that's just for this one improvement in getting wells on production faster."

Then there are all the yet-to-be-developed technologies that will either increase production rates, decrease life-of-well steam to oil ratios and/or recover incremental reserves.

WHAT HAS THE PROVINCE DONE SO FAR?

While AOSTRA 2 has been under discussion for a year, the province has done little with it. According to Darrell Winwood, a spokesman for Alberta's Ministry of Enterprise and Advanced Education, the idea is "still in the planning and development stages." Since the 2012 election, two other ministries—Energy, and Environment and Sustainable Resource Development—have been working with the Enterprise ministry on a comprehensive AOSTRA 2 package. Winwood says the government would announce the details of the project in the spring, but "would not speculate" on the implications of the hard-times budget that the government has said it will announce about the same time. ■

One of AOSTRA 1's biggest successes was the proof-of-concept of steam assisted gravity drainage, without which these steam generators would not be at work today.



PHOTO: JOEY PODLUBNY



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INVESTMENT

44 **Forging ahead**

Oilsands capital investment remains robust at $23 billion in 2013, but moderation may be on the horizon

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New foreign investment rules will affect—but not eliminate—state-owned enterprises investing in the Canadian oilsands

50 **Failure to launch**

Early operator in Saskatchewan oilsands exploration aborts mission, but new players give hope for the future

PHOTO: ISTOCK.COM/ MDDPHOTO



FORGING AHEAD

Oilsands capital investment remains robust at $23 billion in 2013, but moderation may be on the horizon

By Deborah Jaremko

The stability and long-term rewards of oilsands investment continue to attract big dollars in new project capital, but the challenges presented by deeply discounted Canadian crude against world prices and rising project costs are threatening to dampen the pace of development.

Last year at this time, the Canadian Association of Petroleum Producers (CAPP) was forecasting about $20 billion in new oilsands capital in 2012. When CAPP revisited the numbers as the year went by, the actual total reached $23 billion, and that's the figure CAPP is forecasting for capital investment in 2013.

"Given the projects that are kind of mid-stream right now, we're going to keep spending on those," says Greg Stringham, CAPP's vice-president of oilsands and markets. "There is still some confidence, but equally important, there is momentum.... The expansions that are underway at some of the in situ projects are still going ahead and so there really isn't much need for us to pull back on [the forecast] until we get the new numbers coming in the April-May time frame, and we'll see if it's changed significantly or not."

Peters & Co. Limited analysts are also confident in robust oilsands investment levels in 2013, but warn of tightening in the near future.

"Oilsands development continues to be a major focus among super-majors, national oil companies and North American independents, given the scale of the resource and opportunities to increase long-term production rates. We continue to expect robust activity levels, as 90 per cent of our spending forecast over the next three to five years is driven by these larger, well-financed companies, and a number of major expansions are already underway," reads the recent Peters & Co. *Oil and Gas Overview: Winter 2013*.

"However, given the near-term weakness in Canadian heavy oil pricing, the number of assets for sale, recent changes to investment rules for [state-owned enterprises] and continued inflation issues, there remains risk that the pace of development for projects scheduled to come on stream beyond this period will moderate."

Peters & Co. projects that oilsands production will increase from 1.7 million barrels per day today to two million barrels per day by 2015, which includes projects currently ramping up or under construction. However, the energy investment dealer has reduced its long-term risked production forecast to 3.4 million barrels per day by 2020, a drop of seven per cent, thanks to slower activity levels driven by overall reduced cash flow. ■

ILLUSTRATION: JEREMY SEEMAN

FOREIGN OILSANDS INVESTMENT TRANSACTIONS 2004-12

	BUYER	SELLER	DESCRIPTION	COST [C$ thousand]
2012	**CNOOC Limited**	Nexen Inc.	Company, Long Lake project	US$15,100,000
	Teck Resources Limited	SilverBirch Energy Corporation	50% Frontier	435,000
2011	**PetroChina Company Limited**	Athabasca Oil Sands Corp.	MacKay River	680,000
	CNOOC Limited	OPTI Canada Inc.	Nexen/OPTI Long Lake SAGD	2,100,000
	PetroChina Company Limited	Dover Operating Corp.	Joint-venture projects	83,000
	Total E&P Canada Ltd.	Suncor Energy Inc.	Strategic alliance—Joslyn/Voyageur/Ft. Hills INPEX (Indonesia) has 10% interest in Joslyn	1,750,000
2010	**Teck Cominco**	UTS Energy Corporation	50% Lease 14	177,000
	PTT Exploration and Production Public Co.	Statoil Canada Ltd.	40% interest in Kai Kos Dehseh project from Statoil	2,225,173
	Total SA	UTS Energy Corporation	UTS Energy	1,145,000
	China Investment Corporation	Penn West Exploration	45% interest in joint venture to develop resources	817,000
	Sinopec Corp.	ConocoPhillips Company	9.03% interest in Syncrude	4,538,181
2009	**Devon Energy Corporation**	BP p.l.c.	50% interest in Pike oilsands leases from BP; form joint venture with BP for Pike	634,369
	Exxon Mobil Corporation	UTS Energy Corporation	Acquisition with Imperial Oil Limited—50% of UTS oilsands Lease 421	125,000
2008	**PetroChina International Co. Ltd.**	Athabasca Oil Sands Corp.	60% interest in AOSC's MacKay River and Dover oilsands projects	1,900,000
	Occidental Petroleum Corporation	Enerplus Corp.	Acquisition of Enerplus's 15% working interest in Joslyn oilsands	489,387
2007	**Total SA**	Synenco Energy Inc.	Synenco Energy	541,000
	Korea National Oil Corporation	Newmont Mining Corporation	BlackGold oilsands lease	270,000
	Marathon Oil Corporation	Western Oil Sands, Inc.	Western Oil Sands	6,495,065
2006	**Statoil ASA**	North American Oil Sands Corporation	North American Oil Sands	1,951,906
	Surge Global Energy, Inc.	Peace Oil Corp.	Peace Oil	9,144
	ConocoPhillips Company	EnCana Corporation	Joint venture to develop integrated North American heavy oil business	2,635,073
	Royal Dutch Shell plc	BlackRock Ventures Inc.	BlackRock Ventures	2,400,000
	Royal Dutch Shell plc	Alberta public offering	Acquisition of five parcels of oilsands land	101,200
	Korea National Oil Corporation	Harvest Energy Trust	Harvest Energy	264,483
2005	**Royal Dutch Shell plc**	Alberta public offering	Acquisition of one parcel of oilsands land from public offering	465,000
	Total SA	Deer Creek Energy Limited	Deer Creek Energy	1,674,000
	Sinopec Corp.	Northern Lights Partnership	40% joint-venture interest	149,700
2004	**China National Offshore Oil Corporation**	MEG Energy Corp.	Acquisition of 16.69% shares	119,720
	INPEX Corporation	Canada Oil Sands Co., Ltd.	Acquisition of 3.1% of company	3,803



OILSANDS ON THE GLOBAL MARKET

New foreign investment rules will affect—but not eliminate—state-owned enterprises investing in the Canadian oilsands

By Jim Bentein

When Prime Minister Stephen Harper closed the door on the takeover of large companies involved in the Canadian oilsands by Chinese and other state-owned enterprises (SOEs) in late 2012, his government ignored another possibility: the potential for privately owned oil and gas companies—or even non-SOEs from China currently not involved in the oilsands—wanting to make a strategic investment in the sector.

That's the spectre that one of Canada's foremost experts on Chinese investment in Canada foresees going forward. "It's entirely possible a privately owned Chinese company may get involved in the [Canadian] oil and gas industry," says Gordon Houlden, director of the China Institute at the University of Alberta. "It's likely they would first get involved in the service and supply area since they are already heavily involved in that sector in China. Private-sector investment [by Chinese companies] grew by 89 per cent in 2012, and investment by the SOEs only by three per cent."

Harper announced in December that his Conservative government would approve the $15.1-billion Nexen Inc. takeover by Chinese SOE CNOOC Limited, and the less controversial $5.3-billion acquisition of Canadian natural gas producer Progress Energy Resources Corp. by Malaysian state-owned PETRONAS. When he did so, he announced new foreign-investment rules would limit future investment by SOEs in the oilsands to minority-stake joint ventures, which would deny the SOEs control of oilsands-related companies.

ILLUSTRATION: JEREMY SEEMAN



Harper also announced a phase-in increase of the threshold that would trigger a review of foreign investment from its current $330 million to $1 billion.

Houlden is critical of the decision, arguing that it appears to target Chinese and other Asian SOEs: "I wouldn't use the term unfair, but Norway, France and other countries have what are close to SOEs," he says. (Norway's Statoil ASA is 62.5 per cent government-owned, and France's Total SA began life as a French state-dominated company, although it is now only one per cent owned by the government.)

Houlden also pointed out that both CNOOC and Sinopec Corp., another large Chinese SOE with interest in Syncrude Canada Ltd. and other minority oilsands interests, are listed on stock exchanges in the United States and elsewhere, and that large blocks of their shares trade freely.

CHANGING PERSPECTIVES

Houlden, who served for more than 30 years as a diplomat for the Canadian Foreign Service in East Asia and China, and previously held the role of director general of the East Asian Bureau of the Department of Foreign Affairs and International Trade, also argued that the perception of China as a government-dominated economy is wrong. "About 52 per cent of the GDP [gross domestic product] of France comes from government, while in the U.S. and Canada, it's just below 40 per cent. But it's 22 per cent in China," he points out.

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It's true that SOEs dominate the exploration and production sector in China: PetroChina Company Limited, which also trades on the New York Stock Exchange, is the fifth largest oil and gas producer in the world (by volume). But the service and supply sector is dominated by privately owned firms and Houlden says most of China's economic growth in recent years has come from the private sector. "But you wouldn't recognize the names of most of the private companies in China," he says.

Houlden says the SOE decision was likely partially influenced by public opinion and the political baggage attached to China, mentioning the Chinese government's suppression of a populist uprising in Tiananmen Square in 1989 and other moves to stifle political dissent. Canadian perceptions translate into a slightly higher percentage of Canadians opposing Chinese takeovers than supporting them.

> An estimated 84 per cent of global oil reserves are held by state-owned oil and gas companies. Of the remaining 16 per cent, 60 per cent is in the Canadian oilsands. For that reason, there will still be interest in the Canadian oilsands.
>
> — Chris Cox, senior analyst, AltaCorp Capital Inc.

However, Houlden also points to polls that show Canadians generally have a more positive view of China than the United States. This perception will only grow as the influence of Chinese Canadians and Chinese students increases.

INVESTMENT NEEDED (AND WANTED)

Minister of Natural Resources Joe Oliver recently announced that it would take more than $650 billion in capacity to develop Canada's oil and gas resources. And, according to Houlden, Asian countries not only have the need to gain access to Canadian oil and gas assets, they also have the financial capacity. "It could be over $1 trillion, and that would need to be patient capital," he says. "That won't come from hedge funds," which want quick returns.

The Chinese are significant money savers, which, along with the country's rapid economic growth, means there is a great deal of investment capital there and in other parts of Asia. By contrast, Canadians spend more than they save, similar to Americans and many other European nations.

And, despite the Canadian government's decision to legislate against Chinese (and other Asian) SOEs, Houlden says Asian investment dollars will continue to flow into the Canadian energy industry—partially because of necessity. "Asia is an energy-deficient region," he says. "China was a net exporter up to the 1990s, but isn't any longer [and is unlikely to be again]. India won't be an energy exporter, nor will southeast Asia. I'm confident there will continue to be significant amounts of capital coming from that region into the Canadian energy industry."

Houlden says the Canadian government's decision on SOEs, while not the ideal outcome from a Chinese perspective, will be relatively well-received. "The Chinese will see it as face-saving [since the government didn't rule out investments outside of the oilsands]," he says.

In addition, joint ventures were not ruled out, and Chinese (and other Asian) SOEs have already shown an appetite for partnerships, including the Syncrude partnership, and investment holdings in companies such as MEG Energy Corp. and Sunshine Oilsands Ltd.

ASIAN INVESTMENT GOING STRONG

Greg Stringham, vice-president of oilsands and markets for the Canadian Association of Petroleum Producers, doesn't see the decision on SOEs having much of an effect on Canada: "Asia is an important source of capital investment, but it's not the most substantial [source]," he says.

In fact, of the $62 billion in capital investment coming into the sector yearly, about 50 per cent comes from Canadian sources, with American-based corporations coming next, followed by European-based companies. Asian companies have invested about $30 billion over the last four to five years, meaning they are responsible for about 10 per cent of the annual capital flow into the industry.

And while Asian countries aren't the largest single foreign investors in the Canadian energy industry right now, Houlden predicts they will be in the future.

Stringham agrees that Canada will continue to attract foreign investment, pointing out that Canada has already attracted investors

from a variety of nations, which may include India in the future and even countries from the Middle East, which have their own significant energy production. For example, TAQA North Ltd., a division of the Abu Dhabi National Energy Company, PJSC, has significant Canadian natural gas investments, and Kuwait Petroleum Corporation is reported to be in negotiations with Athabasca Oil Corporation to get involved in its Hangingstone and Birch oilsands projects.

Stringham says the government's limits on foreign investment in the Canadian energy industry are not as restrictive as they might appear, pointing to the lack of restrictions on joint ventures and on investments outside of the oilsands. For instance, PETRONAS will likely have majority ownership of a future liquified natural gas export terminal in British Columbia, and there were no limits announced on other energy investments, such as Canadian shale oil and gas.

"China is investing, along with 28 countries across the world," says Stringham. "Canada is rich in resources, not just in the oilsands, but in oil and gas in general. It is also seen as politically safe and predictable."

Chris Cox, senior analyst of exploration and production and oilsands with Calgary-based brokerage and investment research firm AltaCorp Capital Inc., isn't quite as sanguine as Houlden and Stringham about the impact the restrictions on oilsands investment will have on the industry.

He says some smaller, less capitalized oilsands players may now find it more difficult to attract investors, since the SOEs might have been logical places to turn to for capital investment in projects and an eventual takeover. SOEs will now be interested only in joint ventures with well-capitalized, long-term partners.

Just as the 2006 decision by Finance Minister Jim Flaherty to limit the growth of income trusts eliminated buyers for the assets of junior oil and gas assets and companies, the foreign investment limitation may remove SOEs as possible investors in some oilsands assets and companies.

Cox says most Canadian oilsands producers are well capitalized and aren't likely to sell many assets or to be open to majority ownership, suggesting the decision to leave joint ventures open to SOEs was influenced by the dynamics of the industry as much as by politics.

In any case, it's not likely global privately owned players like Exxon Mobil Corporation (which owns a majority stake in Imperial Oil Limited), Royal Dutch Shell plc (which has major oilsands investments) and other privately owned majors are going to abandon the oilsands anytime soon.

"An estimated 84 per cent of global oil reserves are held by state-owned oil and gas companies," he says. "Of the remaining 16 per cent, 60 per cent is in the Canadian oilsands. For that reason, there will still be interest in the Canadian oilsands." ■

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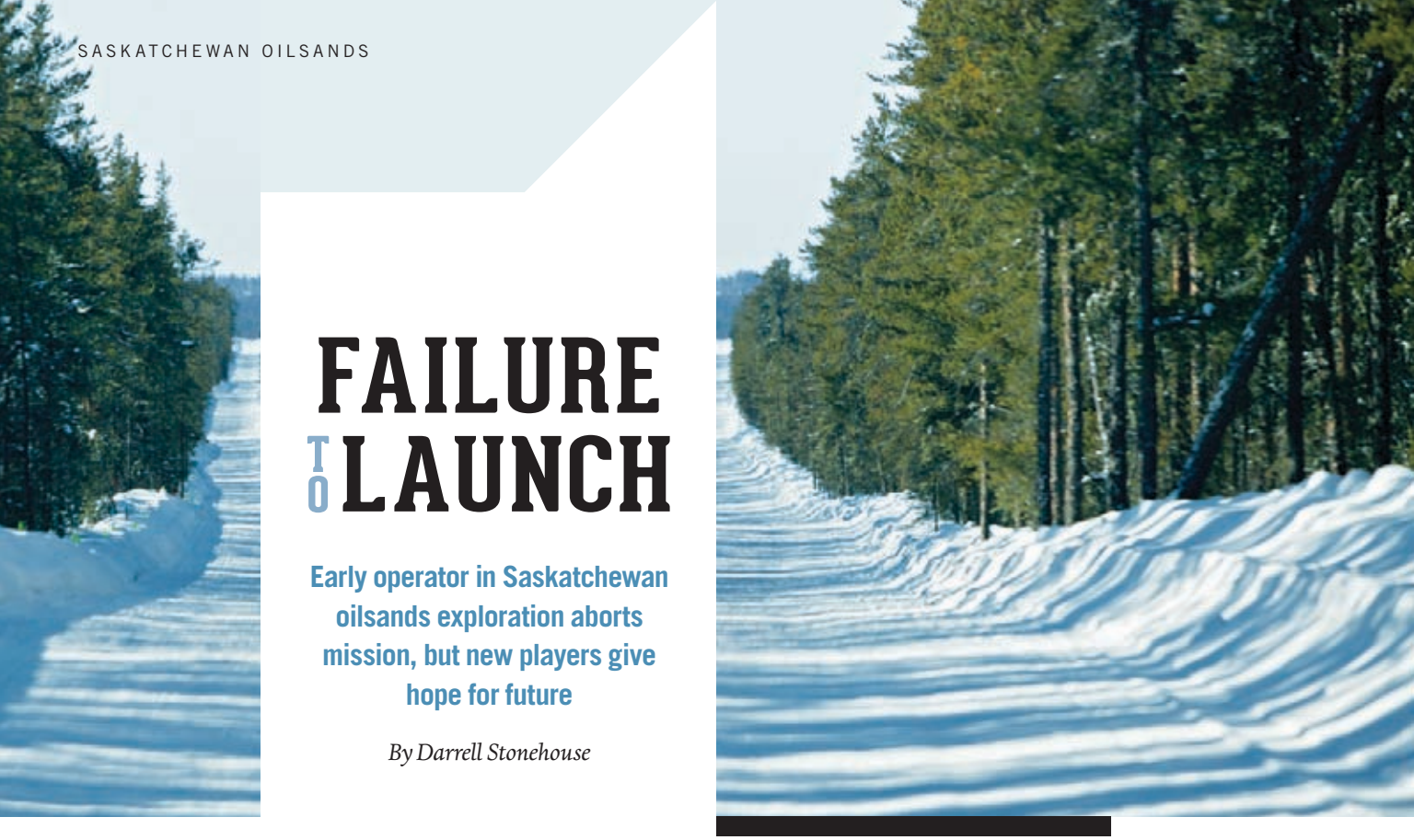
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FAILURE TO LAUNCH

Early operator in Saskatchewan oilsands exploration aborts mission, but new players give hope for future

By Darrell Stonehouse

Now-defunct junior Oilsands Quest Inc. built this road in northwestern Saskatchewan in 2005-06 to support project development.

Four years ago, it looked like Saskatchewan was on the cusp of beginning to develop the projected 60 billion barrels of bitumen in place in the northwest area of the province.

Oilsands Quest Inc., which had begun exploring for bitumen resources in Saskatchewan in 2005 on lands showing promise during earlier tests in the 1970s, had invested $260 million drilling 400 test holes on its 620,000 acres of exploration permits and licences. The process had identified a best-estimate bitumen resource of 3.1 billion barrels. Plans for a 30,000-barrel-per-day commercial operation were developed.

Then it all began falling apart.

The global financial collapse of 2008 cut off funding for the emerging oilsands player. Technical difficulties finding economic means to produce the oilsands reservoir that lacked the caprock needed to contain the steam used in thermal recovery also cast a pall on the project.

By 2011, Oilsands Quest ran out of time and money. After failing to sell some of its assets to keep going, in early 2012 the company that showed so much promise filed for bankruptcy, ending one of the more interesting oilsands stories of the early 21st century.

But the end of Oilsands Quest isn't the end of interest in exploring and developing Saskatchewan's bitumen resources. Thermal oilsands giant Cenovus Energy Inc. has picked up part of the company's assets straddling the border for a price of $10 million. And in the province's December 2012 land sale, two special exploratory permits north of the Primrose Lake Air Weapons Range totalling almost 200,000 acres were sold for a little over $1 million.

The Saskatchewan government was encouraged by the land sale and the investment it will bring in to the province, says Energy and Resources Minister Tim McMillan, but he admits exploration is in the early stages, with the outcome less than certain.

"These permits require a minimum work commitment expenditure to be spent in exploration over the five-year term of the permits," says McMillan. "We're cautiously optimistic that the results of this exploratory work will provide further insight into the potential of the resource in the province."

The Cenovus acquisition consists of three oilsands leases covering approximately 59,000 hectares in Alberta and Saskatchewan that adjoin the company's Telephone Lake property. In late 2012, Cenovus submitted a joint regulatory application and environmental impact assessment for an initial 90,000-barrel-per-day project at Telephone Lake.

SASKATCHEWAN: UNIQUE OILSANDS GEOLOGY

The unique geology in the Saskatchewan oilsands will be a factor in any future development. Unlike in Alberta, where the Clearwater shale formation overlies most bitumen deposits, providing a cap to contain the high-pressure steam injected in thermal recovery operations, in Saskatchewan there is no caprock yet identified.

Oilsands Quest tested a variety of recovery technologies to solve this issue. In one pilot, they tested an inverted steam assisted gravity drainage (SAGD) scheme. In a normal SAGD well, when steam is initially injected into the top well of a SAGD well pair, it creates a V-shape. The steam then continues to rise until it reaches the caprock, and then it expands. This creates a steam chamber that heats the bitumen so it flows to the bottom producing wellbore. Oilsands Quest planned to turn the triangle upside down and build a hot base in the bottom of the formation using a mix of low-pressure steam and hot water. As the chamber grew, they hoped to control it with the injection of methane.

The company also ran a second test site using electric heat to learn how heating affected the bitumen reservoir. A third site was built to test non-thermal recovery methods.

Finding a means to produce bitumen with no caprock would have a significant impact on the oilsands industry outside of Saskatchewan. In Alberta, there are tens of billions of barrels of shallow oilsands resources too deep to mine, but without sufficient caprock to operate conventional high-pressure steam recovery processes such as cyclic steam or SAGD. ■

PHOTO: JOEY PODLUBNY

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SUPPLY CHAIN

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The maintenance, repairs and operations sector expects to reap major benefits from increasing oilsands development

PHOTO: JOEY PODLUBNY

CASE STUDY

NO EXCHANGES

Workers at leading oilsands MRO company wouldn't trade their employer for a million dollars

By Jim Bentein

Thirty-eight years ago, skilled boilermaker Henry Gusse decided to leave his secure, unionized job to risk founding his own company to focus on turnarounds and maintenance. He couldn't have possibly realized just how large that tiny firm would one day become, but then again, who could have predicted just how large Alberta's developing oilsands extraction and processing sector would grow to be?

Gusse, now 81, still drops by the Edmonton head office of the Edmonton Exchanger Group of Companies on most days. However, with the company's three shops covering hundreds of thousands of square feet and a fourth on the way, it's impossible for him to maintain the hands-on relationship he had with his small team in the beginning.

But that doesn't mean the business, which now employs about 500 people year-round and another 1,700 during the peak spring and fall shutdown and turnaround periods, has become an impersonal colossus where workers are just numbers.

It may be one of Canada's leaders in the maintenance, repair and operations (MRO) area. It may do millions of dollars in business each year (as a privately owned company, Edmonton Exchanger does not release revenue numbers), but it still retains something of a small-business atmosphere.

"Being an employee here is like being part of a family," says Glenn Tardif, who is vice-president of field operations and has been with the company for 24 years, having started out as a welder. "One of the secrets to our success is our ability to retain a core of people for a very long time. I don't think you would find that in any other company in North America."

The company remains family-run, with Henry's son, Larry Gusse, now acting as president. However, even employees without the same last name as the boss share a similar lifelong dedication to Edmonton Exchanger.

"There are a number of other employees and managers who have been with the company almost from day one," Tardif says. For example, Dale Green, who is the firm's project manager, has been with the company since it started.

Most could retire if they wanted—managers and other long-time employees have been well rewarded financially over the years, Tardif says—but they stay because they like working for the company.

HITTING THE JACKPOT

Even lottery winners stay with the firm.

Last September, 18 employees involved in maintenance at Suncor Energy Inc.'s Edmonton refinery shared a Lotto Max jackpot worth over $20 million. At the time, the group said they would spend the money on paying off mortgages, travelling or buying new cars.

"Eight of them have already returned to work," Tardif says. "If they weren't happy working here, they wouldn't have come back."

> This year will likely be one of our busiest years ever, and I don't see that changing until 2020. There are more plants being built, and you have to maintain them, and the plants are getting larger.
>
> — Glenn Tardif, vice-president, field operations, Edmonton Exchanger Group of Companies

Most of the other lottery winners were in their 60s and were ready to retire anyway, he adds.

Those same workers and others involved in maintenance at the Suncor refinery received some other good news last year when they and the company were awarded the Suncor President's Operational Excellence Award for personal and process safety in the contractor individual or team category.

"This category recognizes standout businesses for personal or process safety and looks for above-and-beyond performance," Suncor said in a statement about the award. "A key aspect of this category is transferability—methodologies that can be learned by others and used with a predictable outcome."

LOYAL WORKFORCE

The company has five broad areas of operations, including petrochemical and refinery maintenance, heat exchanger services, pressure vessel components, steel plate services and machining services. It very rarely gets involved in new construction, recognizing that its strengths lie in the MRO area.

While most of its work involves turnarounds, necessary repairs and maintenance at refineries, oilsands upgraders, gas plants, fertilizer plants, petrochemical plants and other industrial facilities, the company also has contracts for ongoing maintenance and operations at several refineries and other sites.

Ongoing contracts are key to maintaining a loyal workforce. Edmonton Exchanger strives to keep a large number of workers employed year-round, even though many of its contracts involve turnarounds that take place in the spring and fall. However, it has tapped a consistent number of skilled workers for those jobs, which involve a good deal of overtime, albeit spread over several months a year.

Many workers are drawn to that lifestyle, which usually means winters off. But like most companies in Alberta, Edmonton Exchanger is facing a looming shortage of skilled workers.

"We're starting to bring in foreign-trained workers," Tardif says.

The company works with a Calgary-based organization called the Alberta Council of





PHOTOS: EDMONTON EXCHANGER

Turnaround Industry Maintenance Stakeholders, which represents the industry and maintains a job board to deal with issues like accessing foreign workers. In the past, Edmonton Exchanger has brought in boilermakers, machinists, pipefitters and other skilled workers from the United States, Ireland, Argentina and elsewhere.

Tardif says it will need foreign workers this year as well.

UNION MADE

The company stresses that it is a "union shop," and it is strongly affiliated with the Building Trades of Alberta and such unions as the International Brotherhood of Boilermakers, United Association of Plumbers and Pipefitters, and other representatives of organized labour.

"We feel we get better access to skilled tradespeople that way," Tardif says. "We've never done any non-union work."

The union connections have other benefits, such as allowing the company to tap union halls in Newfoundland and Labrador and elsewhere in Canada. With the economy in Newfoundland picking up, even that reliable source of skilled workers is beginning to dry up.

"This year will likely be one of our busiest years ever, and I don't see that changing until 2020," he says. "There are more plants being built, and you have to maintain them, and the plants are getting larger."

The MRO industry also finds itself competing for labour resources with the very plants it will service. Tardif notes that it is easier to find workers suited for new construction work than for turnarounds.

Work volumes are only going to increase. The new $5.7-billion Sturgeon Refinery is going ahead this year near Redwater, Alta., while there are a number of new oilsands off-gas plants being built. Turnaround work will also be needed in the future at steam assisted gravity drainage plants, where boilers and other equipment will need to be maintained.

Edmonton Exchanger Group of Companies, which specializes in maintenance, repairs and operations for the oilsands sector, recently won the Suncor Energy Inc. President's Operational Excellence Award for personal and process safety in the contractor individual or team category.

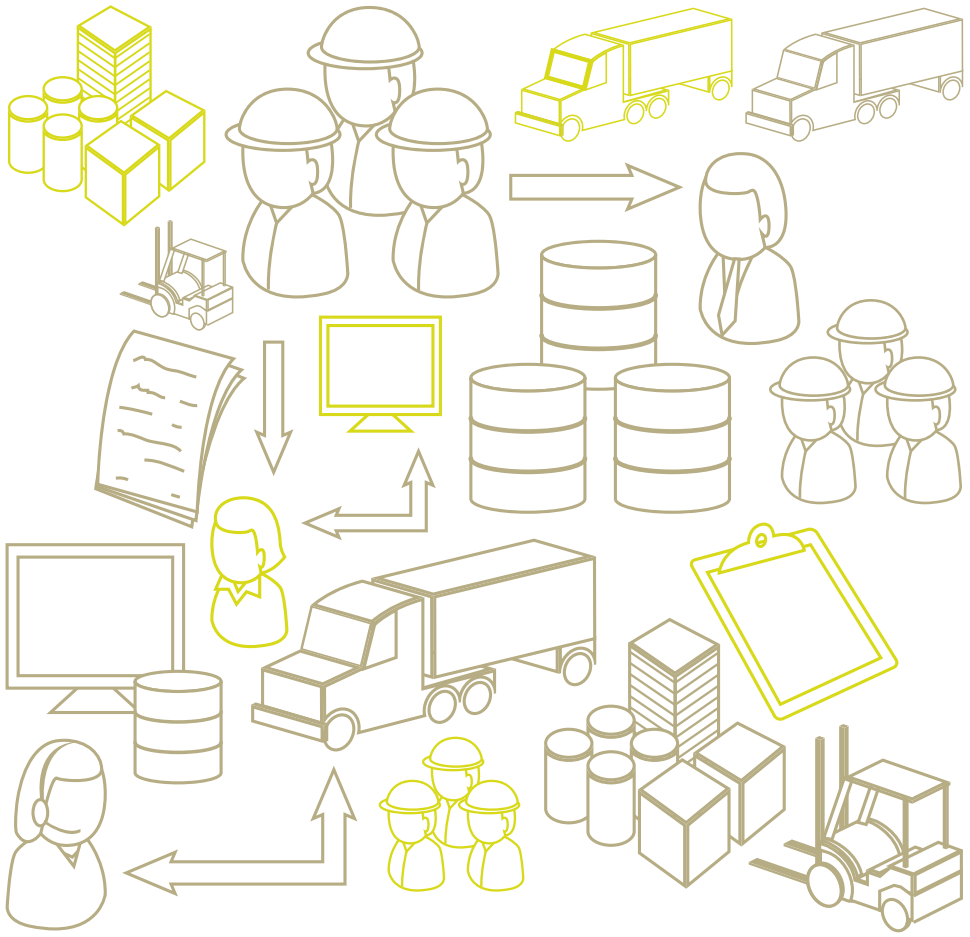
With so much activity expected and so many companies competing for those MRO dollars, one might expect Edmonton Exchanger to be out there knocking on doors and trying to convince plant owners to hire it. Yet one of the more remarkable features of the company's operations is that it has never had a salesperson to market its field services.

"The company's track record sells itself," Tardif says. ■

ROOM FOR THE REST

Service and supply companies from across Canada are carving out niches in oilsands and heavy oil

By Joseph Caouette



Early in 1955, as U.S. political leaders debated how to fund an interstate highway system, then-president Dwight Eisenhower sent a message to congress urging it to resolve the issue. The unity of the nation depended on the strength of its transportation and communication systems, he declared. "Without them, we would be a mere alliance of many separate parts," the president wrote at the time.

Over the years, a combination of tolls and taxes has helped to fund half a trillion dollars' worth of investment in the massive 76,000-kilometre highway system. That's an eye-catching sum by any standard, but it's particularly relevant for the Canadian oil industry, according to Michael Burt, director, industrial economic trends, for the Conference Board of Canada. He expects the oilsands to see roughly that same amount of investment in the coming decades.

"We're talking about $364 billion over the next 25 years [in oilsands investment]," he says. "If you add in the investment that's already taken place, we're talking about something equivalent to building the interstate highway system."

Along with Todd Crawford and Alan Arcand, Burt has co-authored *Fuel for Thought: The Economic Benefits of Oil Sands Investment for Canada's Region*, a report on the wide-reaching effects of the oilsands supply chain (the Alberta government and Industry Canada funded the

IMAGE: JENNA O'FLAHERTY

study). The trio built their estimates around the expectation that the oilsands industry will see $364 billion in investment between 2012 and 2035, on top of the $100 billion already invested over the past 10 years.

Half a trillion dollars will invariably cause ripple effects throughout the oilsands supply chain. A total of 3.2 million person-years of employment are tied to that investment: 880,000 years of direct employment, another 880,000 years in indirect employment and 1.45 million years of domestic supply chain employment. Break those numbers down and it works out to 8,800 person-years of employment for every $1 billion invested.

Naturally, the largest effects travel the shortest distance. Alberta will see 70 per cent of the total supply chain benefits, but each region receives a share, no matter how small: 14.8 per cent to Ontario, 6.7 per cent to British Columbia, 3.9 per cent to Quebec, 3.7 per cent to the prairies and 0.8 per cent to Atlantic Canada. From wholesale trade in British Columbia to tire manufacturing in Nova Scotia, each area of the country has at least a few products and services to market to the oilsands.

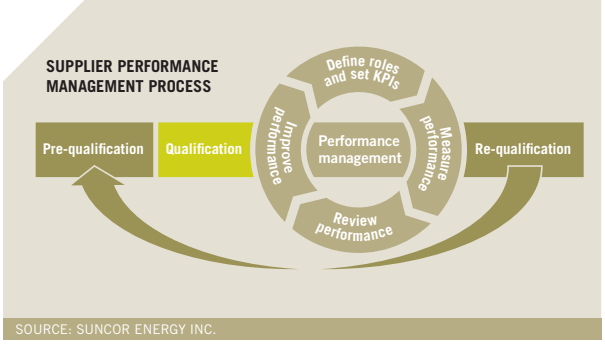
Perhaps the most striking feature of these numbers is how they shift once international supply chain benefits are factored in. Alberta remains on top with 53.7 per cent of the total, but the international supply chain receives 27 per cent of the benefits—considerably more than the 19.3 per cent share divided between the remaining provinces.

Burt points out that these numbers are not out of line with the way trade traditionally operates in Canada.

"It's not unusual for us to trade more north-south than east-west," he says. "But we are seeing growing interest in other provinces to take advantage of this opportunity, and it really does show that there is a lot of space where we may be able to capture market share from foreign markets."

Chasing those opportunities can lead Canadian companies into some rather unexpected places. Consider the case of the Quebec firm whose road to the oilsands leads right through the very foreign markets competing for those same supply-chain benefits.

Based in the Montreal suburbs, ADF Group Inc. can produce 100,000 tons of structural steel at its main facility in Terrebonne, Que. The company is currently spending US$24 million on building a structural steel fabrication plant located 160 kilometres south of the Alberta border in Great Falls, Mont. When operational in the fall of 2013, the plant will add another 25,000 tons to ADF's production capacity.

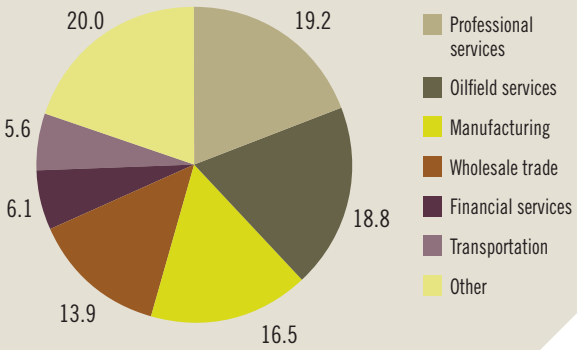


SOURCE: SUNCOR ENERGY INC.

Suncor Energy's supplier performance management process sets an important example for all companies operating on either side of the owner/vendor balance.

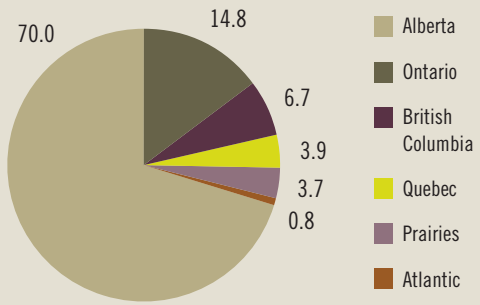
Key sectors that experience supply chain effects

(Share of supply chain employment effects, per cent)



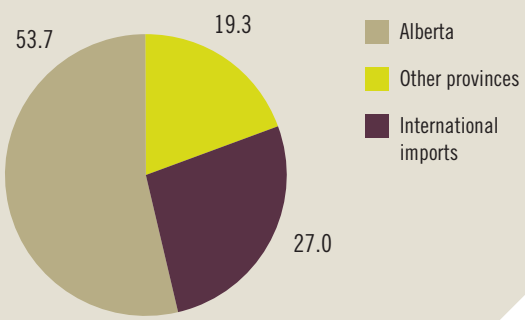
Nearly one-third of domestic inputs are sourced from outside Alberta

(Share of supply chain employment effects, by region, per cent)



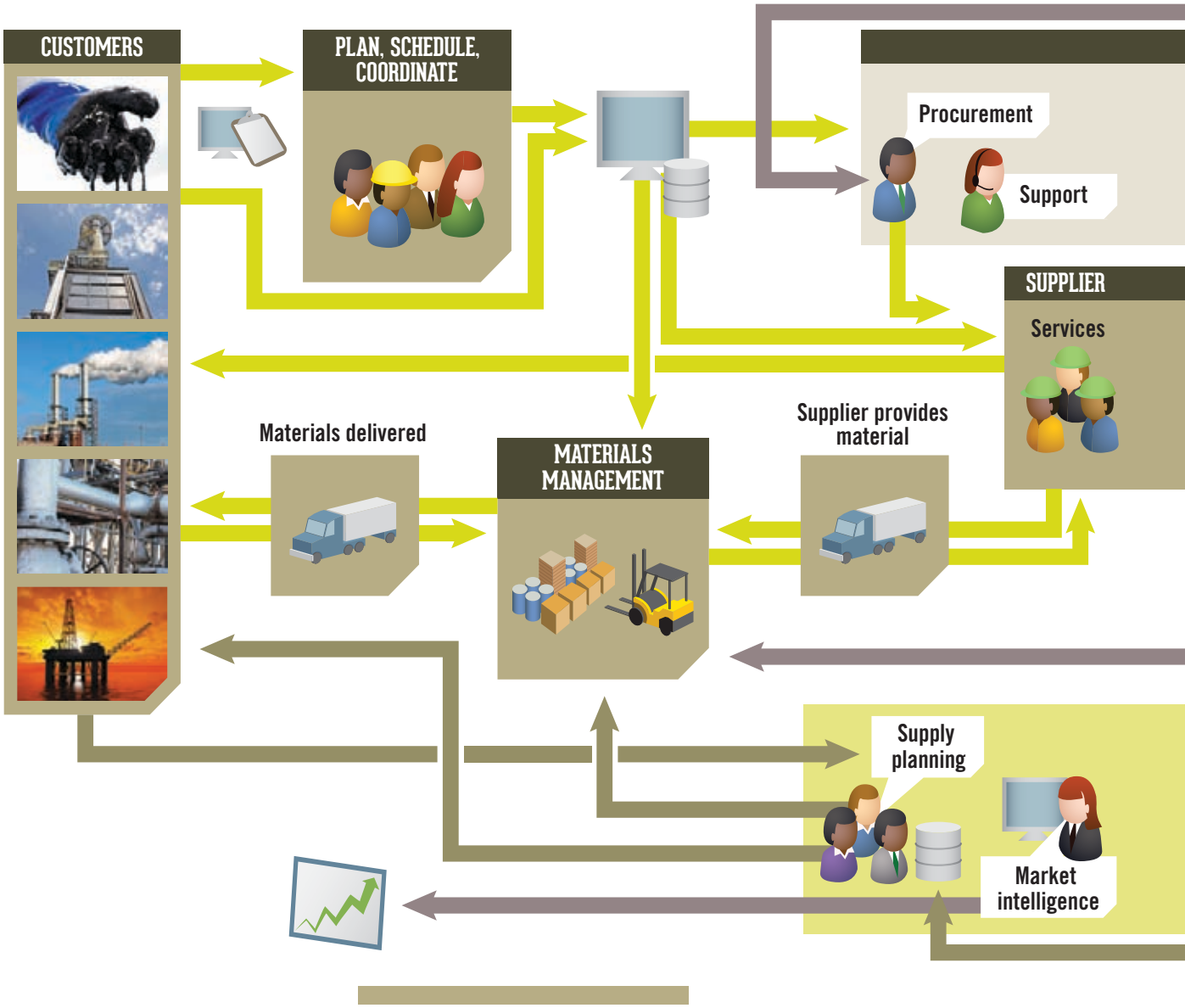
International supply chain effects are greater than interprovincial effects

(Share of supply chain effects, by region, per cent)



SOURCE: THE CONFERENCE BOARD OF CANADA

The oilsands supply chain process



At the 2012 National Buyer/Seller Forum, a business development event held in Edmonton, oilsands heavyweight owner Suncor Energy outlined its supply chain management process.

While no stranger to Alberta—ADF supplied 14,000 tons of structural steel for the new Bow tower in Calgary, to name one project—the company has just begun to make its presence felt in the oilsands. Early efforts at reaching out to the industry in 2008 were stymied by the sudden crash of the global economy, which led producers to scale back project plans or suspend construction altogether.

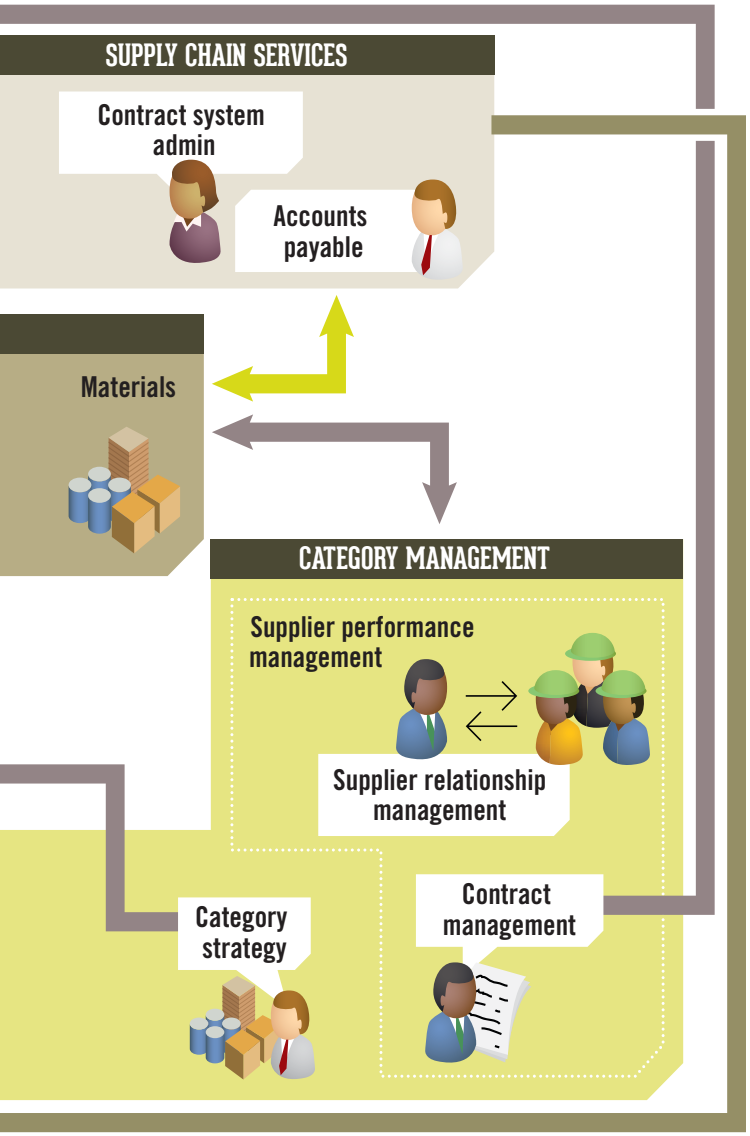
The economy is back on surer footing, but that doesn't necessarily mean contracts are any easier to come by. Like so many Alberta businesses, ADF has watched with growing concern as producers look to Asia for structural steel and other supplies. The company's commercial director, Eric Ducharme, says the Montana plant is part of ADF's plan to keep some of that work a little closer to home.

"We're getting closer to these projects to ship steel and bigger pieces in a more cost-effective way," he says. "Eventually, those oil companies may change their minds and look at a company like ours instead of going to Asia for their steel needs."

In July 2012, the company announced its first oilsands-related contract—a deal to supply structural steel and engineering services for modules that will be used by Syncrude Canada Ltd. Once the Montana plant is up and running, Ducharme hopes more producers like Syncrude will be attracted by ADF's considerable 125,000-ton production capacity.

"Since the projects are huge, oil companies don't want to be dealing with two, three or even five subcontractors at the same time for the same product," he says. "It's too much coordination, so with a group like ADF, they can deal directly with one company and get their steel from one place and get better quality control."

Most businesses looking to crack open the oilsands market have to offer something that can't be easily found in Alberta. For ADF, that special something is its steel-producing capacity. Dale Dye, president of Ramsay



SOURCE: SUNCOR ENERGY INC.

International companies a crucial link in oilsands supply chain

In the fall of 2012, Texas manufacturer Bay Ltd. completed its first big order for the oilsands—29 modules, all produced from a plant in Billings, Mont.

With unemployment in the United States at 7.9 per cent at the end of 2012, many American firms like Bay are looking north for the opportunities sorely lacking in their own struggling economy. Montana's cheaper labour costs and close proximity make it an ideal launch pad for businesses looking to tap into the oilsands supply chain.

Bay president Ken Luhan sums up his company's oilsands ambitions in the *Billings Gazette*: "We're taking a dream opportunity to take jobs out of a foreign country and bring those jobs to the U.S., particularly Montana."

Canadian manufacturers may not like Luhan's ambitions, but there's no denying the economic impact of the oilsands far beyond the Canadian border. The Conference Board of Canada estimates every $1 billion in oilsands investment will produce $312 million in supply chain imports, as well as another $70 million in imports related to wage spending. In total, oilsands-related imports in Canada will tally $139 billion between 2012 and 2035—equivalent to 29.5 per cent of Canada's total imports in 2011.

Manufacturing accounts for 91.1 per cent of foreign supply chain effects, and the United States has the most to gain in this category: 192,000 person-years of manufacturing employment and $65.4 billion in exports. By comparison, China, the second-largest supplier of manufactured goods to the oilsands, will only earn $13.5 billion for its exports.

But while the benefits of oilsands investment will almost certainly be felt south of the border, Billings residents may have to wait a little longer to grab their full share. The *Billings Gazette* reports that after Bay completed its 29-module contract, the company scaled back the workforce at its Montana plant from a peak of 279 to a core of 85 people.

Group, hopes to entice new clients with his company's mix of tidewater access, an experienced workforce and research ingenuity. And if all else fails, there's always the weather.

Ramsay's fabrication shop is located on Sidney Island in British Columbia, a mild coastal region that Dye describes as "Canada's Hawaii." He suggests that the temperate weather offers several advantages over frostier Alberta, such as increased productivity and a more stable workforce drawn to the warmer environment and all the attendant quality-of-life perks.

"It [the weather] does lend itself to extremely high levels of productivity and quality," Dye says. "If you don't have to do a large weld pre-heat before the weld...it cuts down on the amount of time considerably."

Right now, the oilsands accounts for less than five per cent of Ramsay's total business, according to Dye's estimate. Mostly, it has dabbled in the sector—some aluminum work here, a bit of structural steel there. With the Alberta supply chain already stressed to the breaking point, the company is talking with oilsands producers "intrigued by the specialization that we have in all sorts of metal, and the diversity that we can bring to the plate," he says.

Dye argues that producers should also be looking outside Alberta for fresh perspectives on familiar problems like water usage and tailings ponds. "I think the oil industry as a whole appears to be coming to the conclusion it cannot simply rely on increasing oil prices to cover off its inefficiencies, so I think there's more of an openness for outside opinions," he says.

There's one more reason for producers to make the oilsands "a pan-Canadian benefit," as Dye describes it. Eisenhower envisioned the U.S. Interstate Highway System as a nation-building project that could combine the disparate states into a stronger, more unified group. The oilsands supply chain, while less tangible than any highway, can similarly link Canada's regions into an integrated economic force.

"The oilsands is the largest engineering project in the world," Dye says. "There's room for everybody to prosper and to develop the resource in an environmentally sensitive manner." ■





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CLEANING UP

The maintenance, repairs and operations sector expects to reap major benefits from increasing oilsands development

By Jim Bentein



PHOTO: JOEY PODLUBNY

Unfortunately for producers and operators, oilsands plants don't run on their own. Fortunately for maintenance, repair and operations (MRO) companies, keeping those plants running smoothly is becoming big business—almost as big as the task of building new plants, in fact.

Observers are saying that companies will soon be spending as much—or more—on MRO for existing plants as they will on new capital expenditures. Equipment needs to be carefully maintained or even replaced, and that need will only grow as more facilities come on stream in the coming decades.

"As more and more projects are executed, we will get to a position where MRO exceeds capital expenditures," says Lynn Wyton, senior director of supply chain development, Alberta Enterprise and Advanced Education. "These are giant manufacturing sites and they have high maintenance costs. When you turn these machines [the oilsands plants] on, you never turn them off."

Capital expenditures on oilsands projects reached about $23 billion in 2012, up from about $19 billion the year before, and Wyton estimates MRO spending will equal capital expenditures in the next five years.

Frederic Bastien, a researcher with brokerage Raymond James Ltd., led a team that produced a report last year on the construction sector's involvement in the oilsands, called *Canada's Contractors: Time for Investors to Climb Back into the Sand Box*. The report cites an Alberta government estimate that MRO spending will grow to $50 billion by 2022 and describes the sector as a "growth market" for large construction firms.

"Some of these companies we follow have experienced huge growth," Bastien says. But success carries challenges with it, and many of these same companies have struggled with serious issues surrounding the availability of skilled labour and equipment shortages, he observes.

In the report, Raymond James cites an estimate from the Construction Owners Association of Alberta that there will be a demand for one person-year of employment on a continuing basis for every six person-years spent on new construction.

Raymond James says the firms already involved in the MRO sector are the ones most likely to benefit from this trend. This group includes PCL Construction Inc.; Jacobs Engineering Group Inc.; KBR, Inc.; Edmonton Exchanger Group of Companies; CEDA International Corporation; Churchill Services Group; and Flint Transfield Services Limited, with relatively new entrants like Bird Construction Inc. also grabbing market share.

Dinara Millington, senior research director for the Canadian Energy Research Institute (CERI), says MRO expenses are probably at close to $20 billion per year and will be at least $50 billion (in today's dollars) by 2045.

That's based on the think tank's estimate of the most likely pace of oilsands development over the next several decades. In a 2012 study, CERI sees oilsands production rising from 1.5 million barrels per day in 2010 to 5.4 million barrels per day by 2045 in its most probable scenario. The organization's lowest scenario still forecasts 4.6 million barrels per day, while its highest calls for 6.2 million barrels daily.

> As more and more projects are executed, we will get to a position where MRO exceeds capital expenditures. These are giant manufacturing sites and they have high maintenance costs. When you turn these machines [the oilsands plants] on, you never turn them off.
>
> — Lynn Wyton, senior director, supply chain development, Alberta Enterprise and Advanced Education

By 2045, the share of production from oilsands mines is also expected to drop from about 58 per cent in 2010 to 40 per cent, with in situ projects making up the rest. "Those projects are smaller scale and don't require as much cement and steel," she says. "But it's still essentially a manufacturing process that requires ongoing MRO expenditures."

MRO CASE STUDY: MELLOY ON THE MOVE

Roger Keglowitsch, senior vice-president of heavy industrial for Edmonton-based PCL, says the company expects its Melloy Industrial Services Inc. subsidiary to be one of its fastest-growing areas in the future.

"In 2010, Melloy did about $200 million in business and in 2012 it was closer to $160 million, but we expect it to grow again to $200 million," he says. "Eventually, Melloy will be a $500-million or $600-million-a-year company."

PCL bought the Edmonton-based Melloy division in 2004 specifically to take advantage of the increasing MRO investment it sees occurring in the oilsands and other energy-related sectors in Alberta. The company envisions annual growth of 10–15 per cent in MRO spending, Keglowitsch says.

Melloy, which has been in business for 15 years, has specialized in the MRO area since it was established. "That's why we bought the company," he says. "We purchased their contracts and their people."

The people were a key part of the deal because the MRO sector requires people with different skill sets than PCL would normally attract, Keglowitsch explains. This would include boilermakers and pipefitters, for example.

Melloy's list of contracts doubles as a who's who of the Canadian oilsands: Nexen Inc.'s Long Lake project, Shell Canada Limited's Peace River operations, the Syncrude Canada Ltd. project near Fort McMurray and Imperial Oil Limited's Strathcona refinery, as well as other oilsands-related sites.

"The MRO business is all about relationships," Keglowitsch says. "There are people at Melloy who have spent their careers [on MRO] at Syncrude. They have a very good knowledge of the plant."

Because oilsands projects often operate in very cold winter environments while requiring processes that operate at high temperatures, there will always be a good deal of MRO required. "On top of that, we have more plants now, and they're getting larger," he says.

Provincial regulators also require continued maintenance. For instance, the government-created Alberta Boilers Safety Association is responsible for pressure equipment safety in the province. As such, it oversees safety codes, inspects and registers pressure equipment designs and construction procedures, issues regular inspection permits, and certifies power engineers and others who operate pressure equipment.

MRO CYCLES

Melloy now has 70 management staff and about 500 craft employees, while bringing on about 1,800 tradespeople during the busy spring and summer periods.

"There are cycles in the MRO sector," Keglowitsch says, referring to the shutdown periods when equipment is idled for maintenance and repair. "The shutdowns usually start in March and stretch to November. You don't want to do this in the winter."

It normally takes 30–40 days for a turnaround—the time when MRO is done—to occur.

"They're very disruptive and the revenue stream of operators is affected [because bitumen production is either non-existent or reduced]," he says.

Melloy still has some crews that work year-round. For instance, it has workers replacing valves or doing repairs to electric motors and other equipment at Imperial's Strathcona refinery.

However, most of its MRO employees work during the traditional shutdown period of the spring and summer, making this the perfect job for a skilled worker who wants to take the winter off. "But from March to September or October, they're working 10–12 hours a day, seven days a week," Keglowitsch adds.

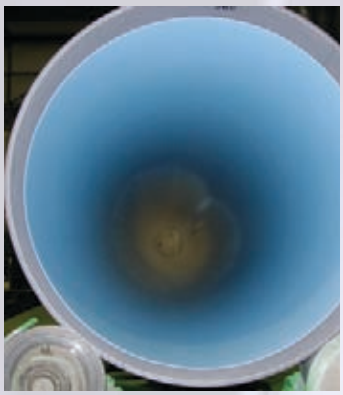
Companies involved in MRO are cooperating to access skilled workers for now and the future, tapping temporary foreign workers from outside of Canada and finding the workers they need within the country. There's a good reason companies are looking beyond the province's borders for workers, Keglowitsch explains.

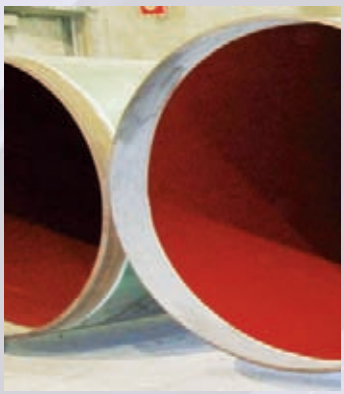
"To service the maintenance and turnaround work required at existing facilities in Alberta today, it would take all the unionized tradespeople in the province," he says.

Of course, that only touches on the current industry. If the Alberta government's estimates about MRO growth hold true, demand for workers will vastly exceed the capacity of the local labour force. That's why Keglowitsch believes the combination of Melloy with PCL, the largest general contracting company in Canada, is so fortunate.

With over 3,500 salaried employees and 6,500 tradespeople at PCL, Melloy has access to the financial and management background that it will need to meet the growing demands of the MRO sector, he says. ■

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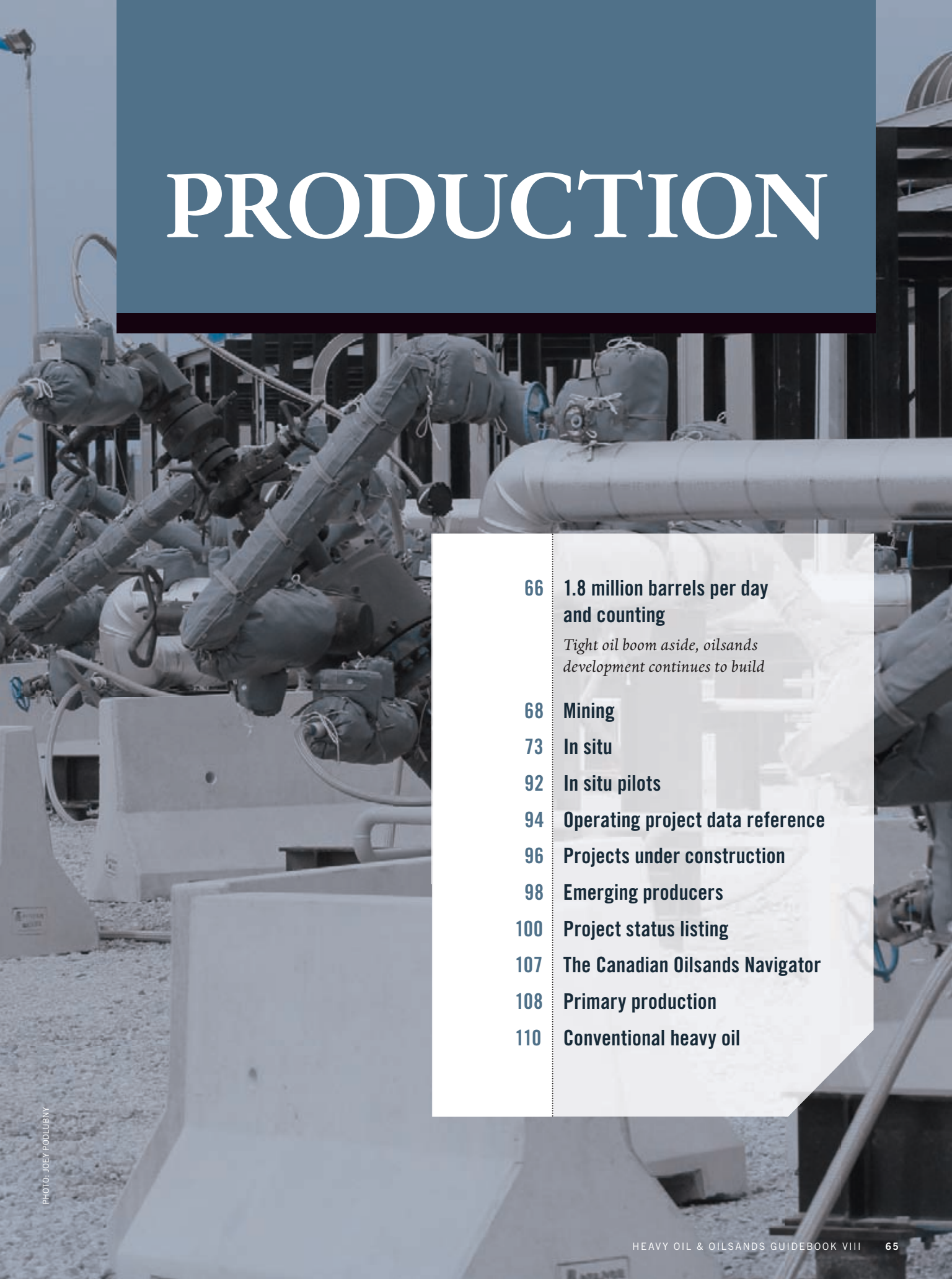
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PRODUCTION



66 **1.8 million barrels per day and counting**
Tight oil boom aside, oilsands development continues to build

68 **Mining**

73 **In situ**

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94 **Operating project data reference**

96 **Projects under construction**

98 **Emerging producers**

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108 **Primary production**

110 **Conventional heavy oil**

PHOTO: JOEY PODLUBNY

1.8 MILLION BARRELS PER DAY AND COUNTING

Tight oil boom aside, oilsands development continues to build

By Deborah Jaremko

The oilsands industry has a significant challenge in front of it—bitumen and synthetic crude oil production volumes are now competing with quickly growing tight oil production in the shared U.S. Midwest market, creating a glut that threatens future development. The situation presents two key issues for oilsands producers: diversify markets and stay competitive. On the second point, the oilsands industry already has some upside.

"The emergence of new unconventional crude oil plays in North America has increased the competitive landscape for investing in oil opportunities. However, we believe that the attraction of the oilsands, namely its scale and more stable production profile, remains for companies with long-term investment horizons," write Peters & Co. Limited analysts. "On a longer-term basis, in situ projects decline at approximately 15 per cent per year in the absence of additional capital investment, which compares to an annual decline rate of ~45 per cent for a development in the Eagle Ford or North Dakota Bakken. [Additionally], the oilsands provides more leverage to higher long-term crude prices due to the nature of the production profile—long dated combined with higher up front capital—and greater potential leverage to changing technology."

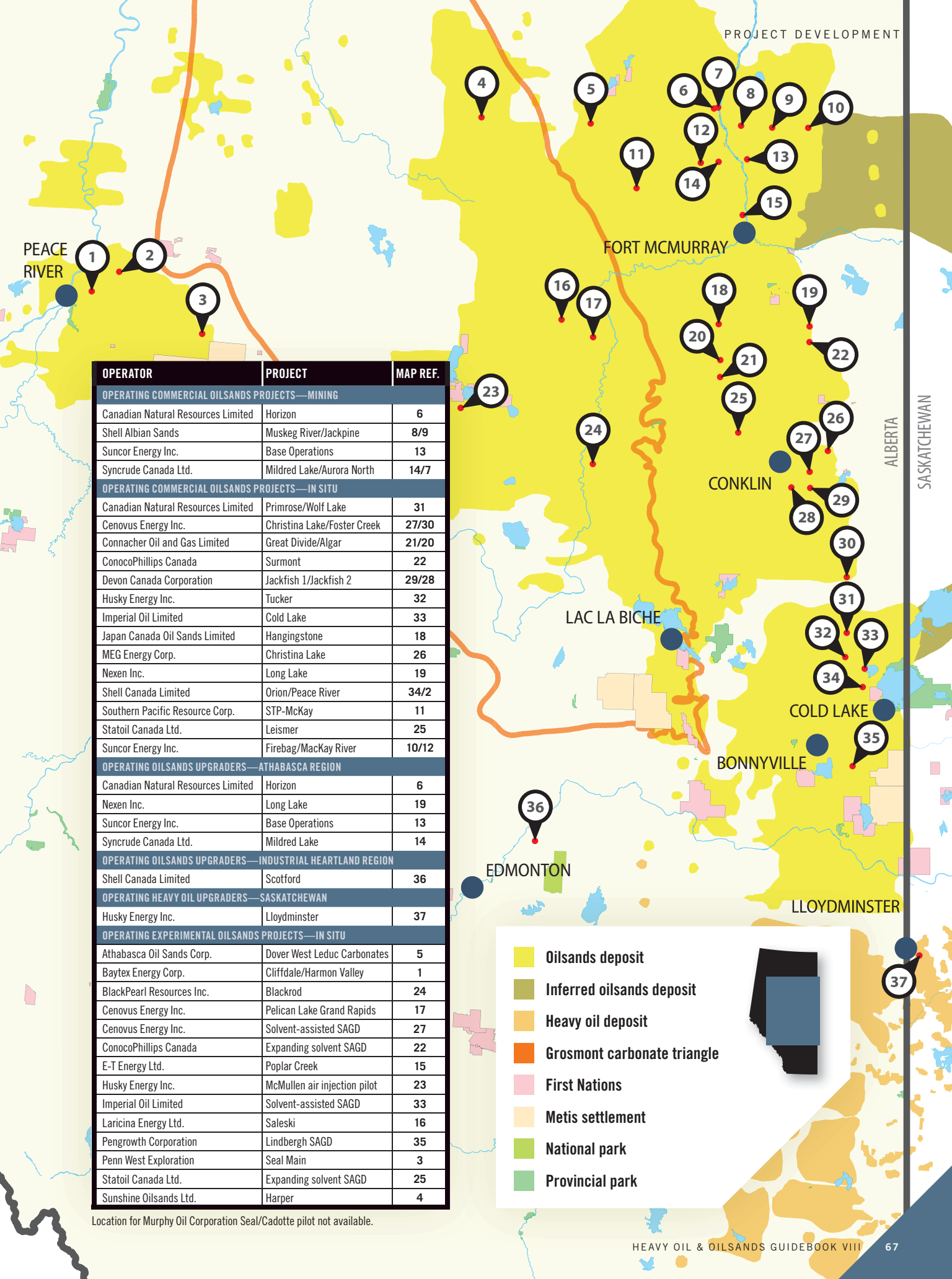
On the market diversification front, Greg Stringham, vice-president of oilsands and markets with the Canadian Association of Petroleum Producers, says there are "good signs on the horizon" that Canadian producers will soon start to close their gap to world oil prices, including the recent start up of the 400,000-barrel-per-day reversed Seaway Pipeline system from Cushing, Okla., to Freeport, Texas.

"With Seaway opening up, we saw some narrowing of [the differential] by a few dollars, but the real kicker is the southern leg of Keystone XL, which is under construction and gets in service by the end of the third quarter," he says. "And then the Seaway expansion goes ahead beginning of next year, and we think that there could actually be some uplift from getting connected to world oil prices for that volume of oil that gets out of Cushing. That will help alleviate one part of the bottleneck. It won't solve all the problems, but that could give some added momentum to the confidence that people have to get to market.

"Clearly, that's short term. Longer term, the companies are absolutely focused on market access, but it's not just Gulf Coast. What can we do to get to the eastern part of Canada, what can we do to get to the Gulf Coast and, longer term, what can we do to get offshore by going to the West Coast?" ■

ERNST & YOUNG'S TOP 10 OILSANDS RISKS AND OPPORTUNITIES IN 2013

OPPORTUNITIES	RISKS
Global demand is growing	Rising supply and falling demand in the United States
Oilsands remains economically important for Canada	Market access and infrastructure constraints
Canada remains an attractive place to do business	Cost inflation
Technological innovation advances	Labour availability
Environmental awareness is increasing	Environmental impact
Foreign interest is growing	Reputation management
Project activity is increasing in a controlled way	Large upfront capital investment
The business model is evolving	Changing policy and regulation
Players are working together	High demand for water
The United States remains a key customer	First Nations relations



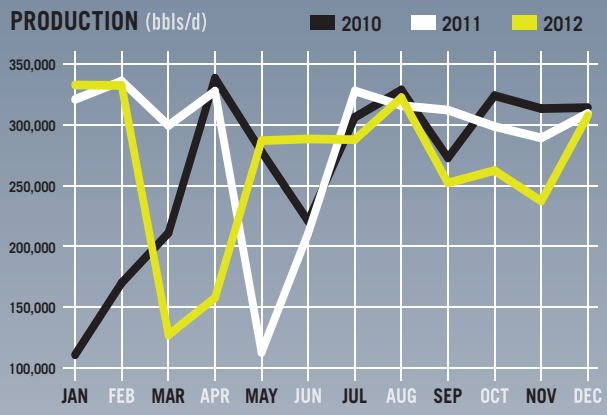
OPERATOR	PROJECT	MAP REF.
OPERATING COMMERCIAL OILSANDS PROJECTS—MINING		
Canadian Natural Resources Limited	Horizon	6
Shell Albian Sands	Muskeg River/Jackpine	8/9
Suncor Energy Inc.	Base Operations	13
Syncrude Canada Ltd.	Mildred Lake/Aurora North	14/7
OPERATING COMMERCIAL OILSANDS PROJECTS—IN SITU		
Canadian Natural Resources Limited	Primrose/Wolf Lake	31
Cenovus Energy Inc.	Christina Lake/Foster Creek	27/30
Connacher Oil and Gas Limited	Great Divide/Algar	21/20
ConocoPhillips Canada	Surmont	22
Devon Canada Corporation	Jackfish 1/Jackfish 2	29/28
Husky Energy Inc.	Tucker	32
Imperial Oil Limited	Cold Lake	33
Japan Canada Oil Sands Limited	Hangingstone	18
MEG Energy Corp.	Christina Lake	26
Nexen Inc.	Long Lake	19
Shell Canada Limited	Orion/Peace River	34/2
Southern Pacific Resource Corp.	STP-McKay	11
Statoil Canada Ltd.	Leismer	25
Suncor Energy Inc.	Firebag/MacKay River	10/12
OPERATING OILSANDS UPGRADERS—ATHABASCA REGION		
Canadian Natural Resources Limited	Horizon	6
Nexen Inc.	Long Lake	19
Suncor Energy Inc.	Base Operations	13
Syncrude Canada Ltd.	Mildred Lake	14
OPERATING OILSANDS UPGRADERS—INDUSTRIAL HEARTLAND REGION		
Shell Canada Limited	Scotford	36
OPERATING HEAVY OIL UPGRADERS—SASKATCHEWAN		
Husky Energy Inc.	Lloydminster	37
OPERATING EXPERIMENTAL OILSANDS PROJECTS—IN SITU		
Athabasca Oil Sands Corp.	Dover West Leduc Carbonates	5
Baytex Energy Corp.	Cliffdale/Harmon Valley	1
BlackPearl Resources Inc.	Blackrod	24
Cenovus Energy Inc.	Pelican Lake Grand Rapids	17
Cenovus Energy Inc.	Solvent-assisted SAGD	27
ConocoPhillips Canada	Expanding solvent SAGD	22
E-T Energy Ltd.	Poplar Creek	15
Husky Energy Inc.	McMullen air injection pilot	23
Imperial Oil Limited	Solvent-assisted SAGD	33
Laricina Energy Ltd.	Saleski	16
Pengrowth Corporation	Lindbergh SAGD	35
Penn West Exploration	Seal Main	3
Statoil Canada Ltd.	Expanding solvent SAGD	25
Sunshine Oilsands Ltd.	Harper	4

Location for Murphy Oil Corporation Seal/Cadotte pilot not available.

SUNCOR

Of interest:

Suncor Energy Inc. began mining from its new North Steepbank extension in late 2011, and the company reports ramp-up is demonstrating progress on operational excellence and cost management.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE

13

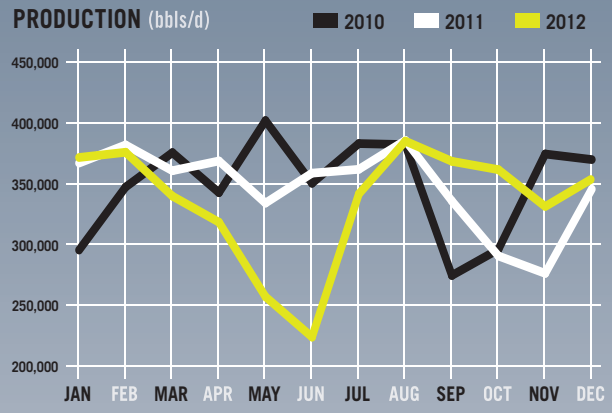
PROJECT	Suncor—Base and Millennium
LOCATION	North Athabasca
OWNERSHIP	Suncor Energy Inc. 100%
PRODUCTION START	1967
AVERAGE TOTAL VOLUME TO BITUMEN IN PLACE	8.1:1
AVERAGE ORE GRADE (WEIGHT %)	11.61
AVERAGE STRIP RATIO	1.3:1
CURRENT PRODUCTION CAPACITY (BBL/D)	321,000
AVERAGE DAILY BITUMEN PRODUCTION 2012 (BBL/D)	290,932
AVERAGE DAILY BITUMEN PRODUCTION 2011 (BBL/D)	287,869
BARRELS MINED 2012	1,107,956,327.8
BARRELS MINED 2011	1,183,361,262
MONTHLY AVERAGE MINED ORE GRADE 2012 (WEIGHT %)	11.14
MONTHLY AVERAGE MINED ORE GRADE 2011 (WEIGHT %)	11.38
2012 AVERAGE REALIZED PRICE PER BBL	See stats for Suncor upgrader (page 120)
2011 AVERAGE REALIZED PRICE PER BBL	

PHOTO: JOEY PODLUBNY

SYNCRUDE

Of interest:

Syncrude Canada Ltd. has announced it will embark on an extension to the Mildred Lake mine, which will leverage current investments in the replacement of two mine trains to access nearby bitumen deposits. The project is expected to extend the life of Mildred Lake operations by about a decade, into the 2030s. Project scoping is underway.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



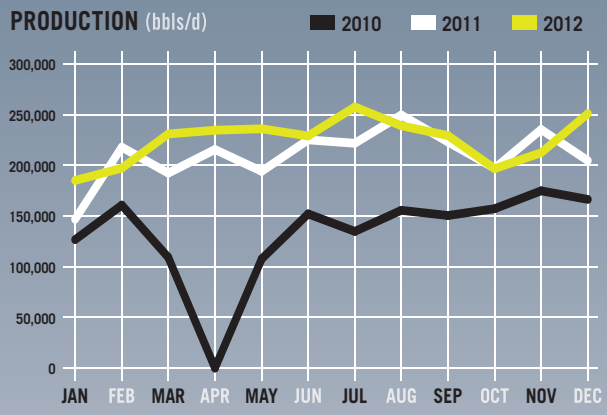
PHOTO: JOEY PODLUBNY

PROJECT	Syncrude Mildred Lake and Aurora
LOCATION	North Athabasca
OWNERSHIP	Canadian Oil Sands Limited 36.74%, Imperial Oil Resources Limited 25%, Suncor Energy Inc. 12%, Sinopec Oil Sands Partnership 9.03%, Nexen Oil Sands Partnership 7.23%, Mocal Energy Limited 5%, Murphy Oil Company Ltd. 5%.
PRODUCTION START	1978
AVERAGE TOTAL VOLUME TO BITUMEN IN PLACE	n/q
AVERAGE ORE GRADE (WEIGHT %)	n/q
AVERAGE STRIP RATIO	n/q
CURRENT PRODUCTION CAPACITY (BBL/D)	350,000
AVERAGE DAILY BITUMEN PRODUCTION 2012 (BBL/D)	366,650
AVERAGE DAILY BITUMEN PRODUCTION 2011 (BBL/D)	346,887
BARRELS MINED 2012	192,933,043
BARRELS MINED 2011	1,498,045,140
MONTHLY AVERAGE MINED ORE GRADE 2012 (WEIGHT %)	Mildred Lake 10.73, Aurora 11.30
MONTHLY AVERAGE MINED ORE GRADE 2011 (WEIGHT %)	Mildred Lake 10.50, Aurora 11.04
2012 AVERAGE REALIZED PRICE PER BBL	See stats for Syncrude upgrader (page 121)
2011 AVERAGE REALIZED PRICE PER BBL	

ATHABASCA OIL SANDS PROJECT

Of interest:

Marathon Oil Corporation is in talks to sell its 20 per cent ownership stake in the Athabasca Oil Sands Project, reportedly to focus on more profitable assets. Marathon acquired the interest when it purchased Western Oil Sands Inc. in 2007 for $6.5 billion.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



PROJECT	Athabasca Oil Sands Project
LOCATION	North Athabasca
OWNERSHIP	Shell Canada Limited 60%, Chevron Corporation 20%, Marathon Oil Corporation 20%
PRODUCTION START	2002, Jackpine 2010
AVERAGE TOTAL VOLUME TO BITUMEN IN PLACE	Muskeg River 7:1, Jackpine 7.2:1
AVERAGE ORE GRADE (WEIGHT %)	Muskeg River 11.4:1, Jackpine 10.4:1
AVERAGE STRIP RATIO	Muskeg River 0.7:1, Jackpine 0.6:1
CURRENT PRODUCTION CAPACITY (BBL/D)	255,000
AVERAGE DAILY BITUMEN PRODUCTION 2012 (BBL/D)	246,085
AVERAGE DAILY BITUMEN PRODUCTION 2011 (BBL/D)	209,973
BARRELS MINED 2012	1,000,834,447
BARRELS MINED 2011	913,906,401
MONTHLY AVERAGE MINED ORE GRADE 2012 (WEIGHT %)	Muskeg River 11.08, Jackpine 11.83
MONTHLY AVERAGE MINED ORE GRADE 2011 (WEIGHT %)	Muskeg River 10.54, Jackpine 11.41
2012 AVERAGE REALIZED PRICE PER BBL	See stats for Scotford upgrader (page 122)
2011 AVERAGE REALIZED PRICE PER BBL	

PHOTO: JOEY PODLUBNY



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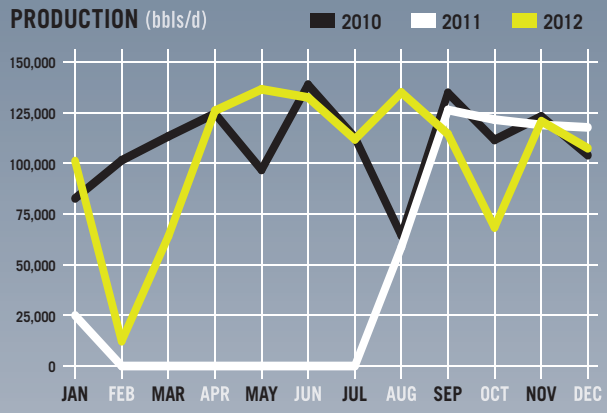
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HORIZON

Of interest:

Canadian Natural Resources Limited's strategy of breaking its 140,000-barrel-per-day expansion at Horizon into phases is reportedly working, with all project costs tracking on or below budget. The first 5,000-barrel-per-day phase is expected to be complete in 2014, followed by 10,000-, 45,000- and 80,000-barrel-per-day capacity increases.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE **6**

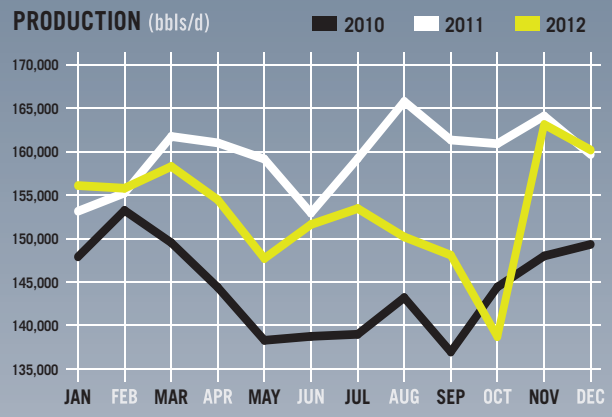
PROJECT	Horizon
LOCATION	North Athabasca
OWNERSHIP	Canadian Natural Resources Limited 100%
PRODUCTION START	2008
AVERAGE TOTAL VOLUME TO BITUMEN IN PLACE	10.3:1
AVERAGE ORE GRADE (WEIGHT %)	10.8
AVERAGE STRIP RATIO	1.2:1
CURRENT PRODUCTION CAPACITY (BBL/D)	135,000
AVERAGE DAILY BITUMEN PRODUCTION 2012 (BBL/D)	112,408
AVERAGE DAILY BITUMEN PRODUCTION 2011 (BBL/D)	47,574
BARRELS MINED 2012	431,898,443.3
BARRELS MINED 2011	216,430,799
MONTHLY AVERAGE MINED ORE GRADE 2012 (WEIGHT %)	11.37
MONTHLY AVERAGE MINED ORE GRADE 2011 (WEIGHT %)	10.78
2012 AVERAGE REALIZED PRICE PER BBL	See stats for Horizon upgrader (page 123)
2011 AVERAGE REALIZED PRICE PER BBL	

PHOTO: JOEY PODLUBNY

COLD LAKE

Of interest:

In early 2012, Imperial Oil Limited sanctioned a $2-billion, 40,000-barrel-per-day expansion at Cold Lake called Nabiye. It is expected to start up by year-end 2014.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



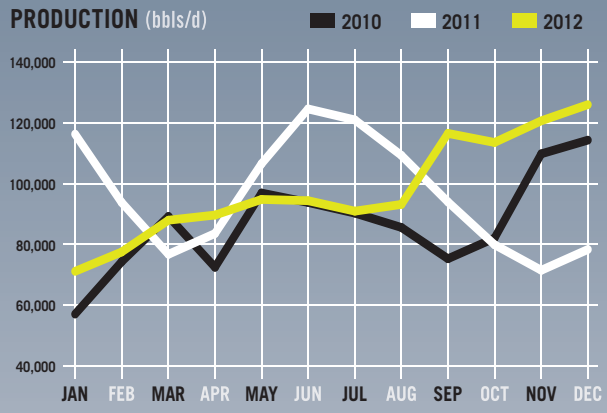
PHOTO: JOEY PODLUBNY

PROJECT	Cold Lake
LOCATION	Cold Lake
OWNERSHIP	Imperial Oil Limited 100%
PRODUCTION START	1985
FORMATION/POOL	Clearwater
AVERAGE RESERVOIR DEPTH	400 m
TECHNOLOGY	Cyclic steam stimulation
CURRENT PRODUCTION CAPACITY (BBL/D)	140,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	153,590.1
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	159,719
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	531,310.4
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	549,992.5
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	2,973/4,548
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	3,249/4,461
AVERAGE STEAM TO OIL RATIO 2012	3.42:1
AVERAGE STEAM TO OIL RATIO 2011	3.40:1
AVERAGE REALIZED PRICE PER BARREL 2012	$59.76
AVERAGE REALIZED PRICE PER BARREL 2011	$63.95

PRIMROSE/ WOLF LAKE

Of interest:

Canadian Natural Resources Limited says it has a significant number of new cost-effective well-pad addition and steaming-optimization opportunities at Primrose to pursue before going ahead with a future expansion or bottleneck.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



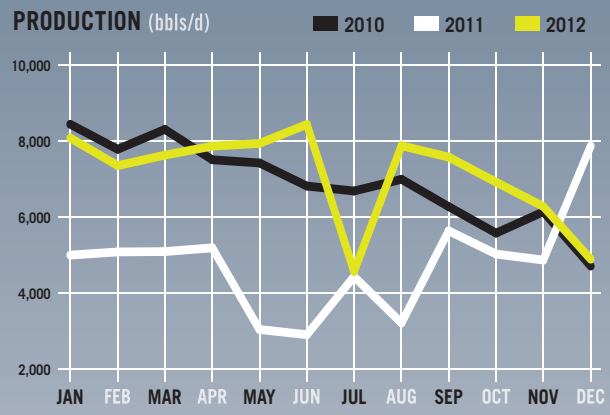
PROJECT	Primrose/Wolf Lake
LOCATION	South Athabasca, Cold Lake
OWNERSHIP	Canadian Natural Resources Limited 100%
PRODUCTION START	1985
FORMATION/POOL	Clearwater, Upper Grand Rapids
AVERAGE RESERVOIR DEPTH	450 m
TECHNOLOGY	Cyclic steam stimulation, steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	120,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	98,008.7
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	96,248
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	278,902.3
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	269,460
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	870/1,033
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	806/958
AVERAGE STEAM TO OIL RATIO 2012	4.06:1
AVERAGE STEAM TO OIL RATIO 2011	3.98:1
AVERAGE REALIZED PRICE PER BARREL 2012 (TO END OF Q3)	$67.99
AVERAGE REALIZED PRICE PER BARREL 2011	$68.55

PHOTO: JOEY PODLUBNY

PEACE RIVER

Of interest:

Shell Canada Limited is planning a two-stage, 80,000-barrel-per-day expansion at Peace River. The application is currently before the regulator.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



PHOTO: SHELL CANADA LIMITED

MAP REFERENCE

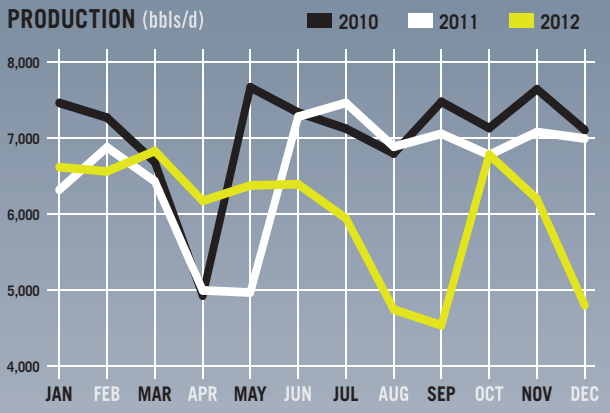
2

PROJECT	Peace River
LOCATION	Peace River
OWNERSHIP	Shell Canada Limited 100%
PRODUCTION START	1986
FORMATION/POOL	Bluesky-Gething
AVERAGE RESERVOIR DEPTH	550 m
TECHNOLOGY	Cyclic steam stimulation
CURRENT PRODUCTION CAPACITY (BBL/D)	12,500
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	7,108.2
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	4,770
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	24,219.2
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	20,234
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	82/118
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	77/115
AVERAGE STEAM TO OIL RATIO 2012	3.68:1
AVERAGE STEAM TO OIL RATIO 2011	6.88:1
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

HANGINGSTONE

Of interest:

In late 2012, Japan Canada Oil Sands Limited owner Japan Petroleum Exploration Co., Ltd. sanctioned a 20,000-barrel-per-day expansion to its Hangingstone operations.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



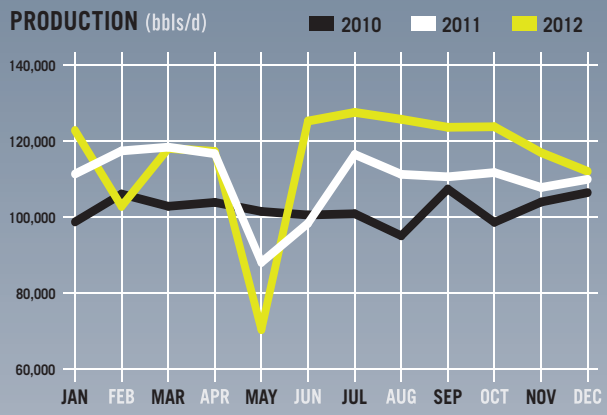
PHOTO: JAPAN CANADA OIL SANDS LIMITED

PROJECT	Hangingstone
LOCATION	South Athabasca
OWNERSHIP	Japan Canada Oil Sands Limited 100%
PRODUCTION START	1999
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	280–310 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	10,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	5,996.5
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	6,592
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	25,140.4
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	25,994
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	44/47
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	40/44
AVERAGE STEAM TO OIL RATIO 2012	4.54:1
AVERAGE STEAM TO OIL RATIO 2011	4.23:1
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

FOSTER CREEK

Of interest:

Cenovus Energy Inc. reports that Foster Creek operated above its operating capacity for much of 2012. Work on the next three phases of expansion is underway, with the first 45,000 barrels per day expected to come online in 2014.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



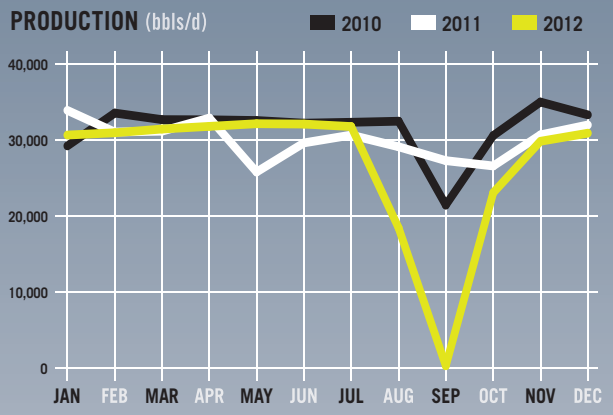
PHOTO: CENOVUS ENERGY INC.

PROJECT	Foster Creek
LOCATION	South Athabasca
OWNERSHIP	Cenovus Energy Inc. 50%, ConocoPhillips Canada 50%
PRODUCTION START	2001
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	450 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	120,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	115,471.8
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	109,730
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	274,875.6
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	251,196
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	381/436
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	339/378
AVERAGE STEAM TO OIL RATIO 2012	2.16:1
AVERAGE STEAM TO OIL RATIO 2011	2.16:1
AVERAGE REALIZED PRICE PER BARREL 2012	$64.55
AVERAGE REALIZED PRICE PER BARREL 2011	$67.38

MACKAY RIVER

Of interest:

Alberta regulators are currently reviewing an application to expand the MacKay River steam assisted gravity drainage project by 40,000 barrels per day.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE **12**

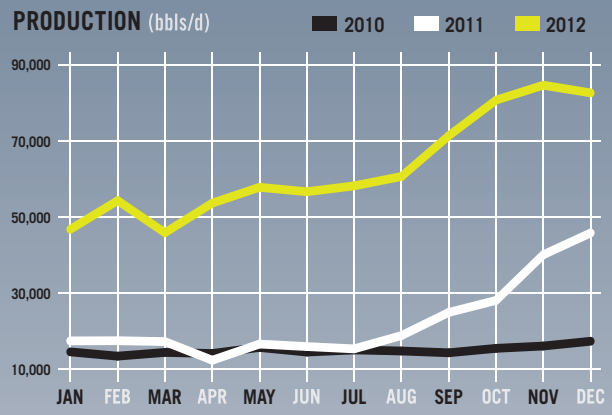
PROJECT	MacKay River
LOCATION	North Athabasca
OWNERSHIP	Suncor Energy Inc. 100%
PRODUCTION START	2002
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	150 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	33,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	26,938.9
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	30,046
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	62,588.3
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	66,326
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	119/140
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	112/121
AVERAGE STEAM TO OIL RATIO 2012	2.39:1
AVERAGE STEAM TO OIL RATIO 2011	2.16:1
AVERAGE REALIZED PRICE PER BARREL 2012	See stats for Suncor upgrader (page 120)
AVERAGE REALIZED PRICE PER BARREL 2011	

PHOTO: SUNCOR ENERGY INC.

CENOVUS CHRISTINA LAKE

Of interest:

Since early 2011, Cenovus Energy Inc. has commissioned two 40,000-barrel-per-day expansions at Christina Lake, and another 40,000-barrel-per-day capacity increase is under construction.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



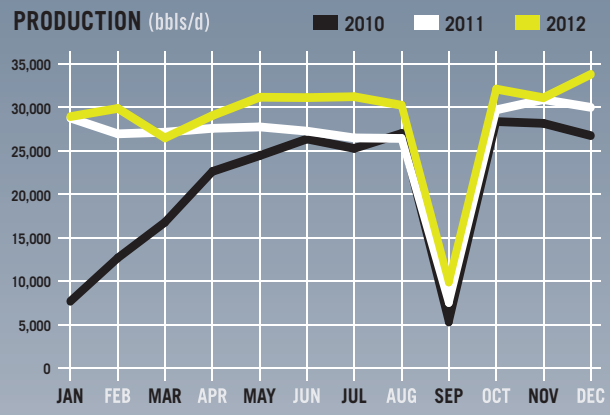
PHOTO: CENOVUS ENERGY INC.

PROJECT	Christina Lake
LOCATION	South Athabasca
OWNERSHIP	Cenovus Energy Inc. 50%, ConocoPhillips Canada 50%
PRODUCTION START	2003
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	400 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	98,800
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	62,696
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	22,404
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	121,454.4
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	51,413
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	95/98
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	47/47
AVERAGE STEAM TO OIL RATIO 2012	1.91:1
AVERAGE STEAM TO OIL RATIO 2011	2.29:1
AVERAGE REALIZED PRICE PER BARREL 2012	$47.73
AVERAGE REALIZED PRICE PER BARREL 2011	$61.86

MEG CHRISTINA LAKE

Of interest:

In the second half of 2013, MEG Energy Corp. plans to commission the Phase 2B expansion, which will more than double capacity at Christina Lake. The existing project consistently exceeds nameplate production capacity.

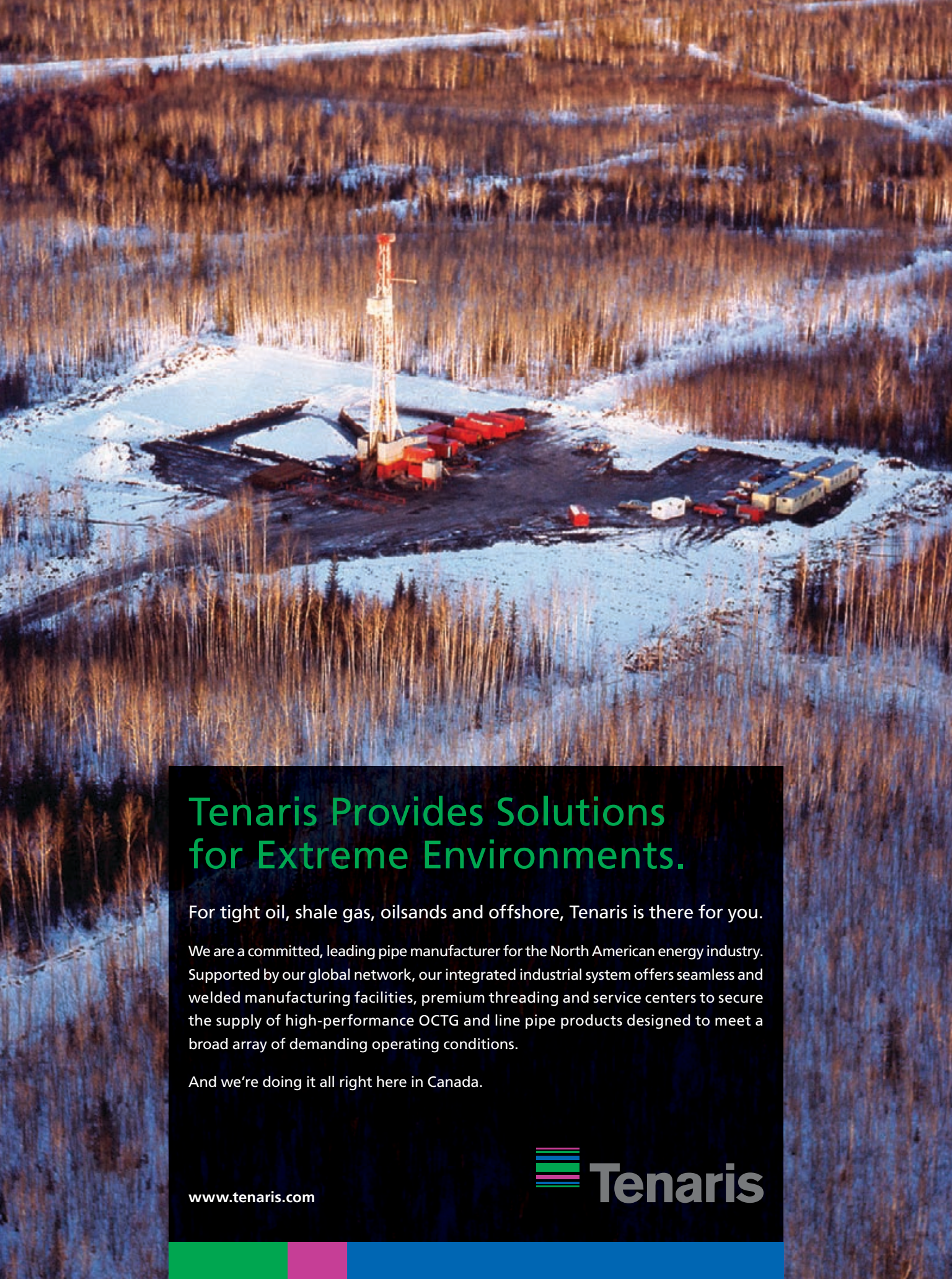


SOURCE: ENERGY RESOURCES CONSERVATION BOARD



PROJECT	Christina Lake
LOCATION	South Athabasca
OWNERSHIP	MEG Energy Corp. 100%
PRODUCTION START	2003
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	350 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	25,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	28,749
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	26,372
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	65,766.5
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	59,212
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	80/83
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	69/71
AVERAGE STEAM TO OIL RATIO 2012	2.43:1
AVERAGE STEAM TO OIL RATIO 2011	2.46:1
AVERAGE REALIZED PRICE PER BARREL 2012	$64.76
AVERAGE REALIZED PRICE PER BARREL 2011	$71.30

PHOTO: MEG ENERGY CORP.



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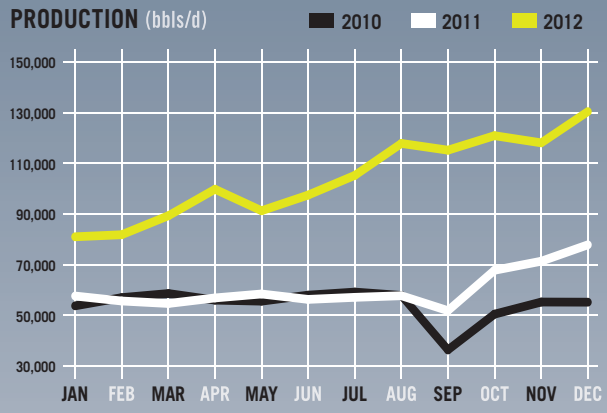
www.tenaris.com

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FIREBAG

Of interest:

Since early 2011, Suncor Energy Inc. has commissioned two 42,500-barrel-per-day expansions at Firebag. Production is now ramping up from Stage 4, which was brought online about 16 per cent under its $2-billion budget.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE **10**

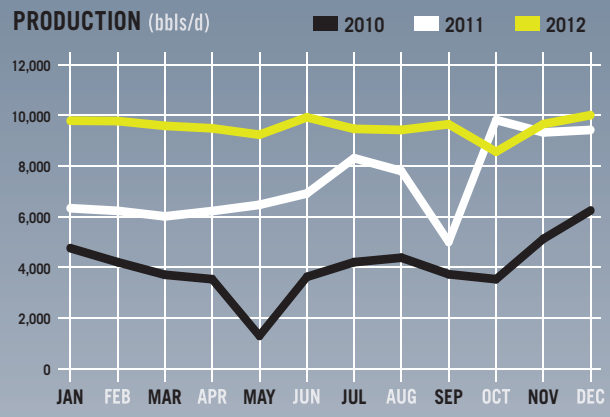
PROJECT	Firebag
LOCATION	North Athabasca
OWNERSHIP	Suncor Energy Inc. 100%
PRODUCTION START	2004
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	320 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	180,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	103,724.4
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	59,473
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	362,597
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	205,574.8
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	188/191
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	102/105
AVERAGE STEAM TO OIL RATIO 2012	3.44:1
AVERAGE STEAM TO OIL RATIO 2011	3.57:1
AVERAGE REALIZED PRICE PER BARREL 2012	See stats for Suncor upgrader (page 120)
AVERAGE REALIZED PRICE PER BARREL 2011	

PHOTO: SUNCOR ENERGY INC.

TUCKER

Of interest:

Husky Energy Inc. is now drilling steam assisted gravity drainage well pairs into the Grand Rapids formation, as well as the Clearwater at Tucker. The company is maintaining production near 10,000 barrels per day, a significant improvement over previous volumes.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



PHOTO: JOEY PODLUBNY

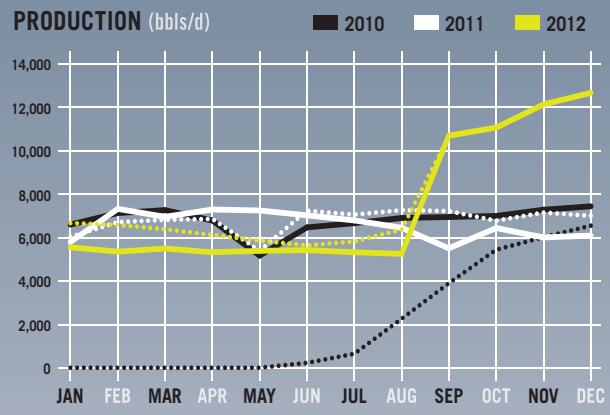
PROJECT	Tucker
LOCATION	Cold Lake
OWNERSHIP	Husky Energy Inc. 100%
PRODUCTION START	2006
FORMATION/POOL	Clearwater/Grand Rapids
AVERAGE RESERVOIR DEPTH	400 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	30,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	9,550.9
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	7,320
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	62,271.7
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	48,759
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	92/116
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	83/106
AVERAGE STEAM TO OIL RATIO 2012	6.54:1
AVERAGE STEAM TO OIL RATIO 2011	6.16:1
AVERAGE REALIZED PRICE PER BARREL 2012	$55.29
AVERAGE REALIZED PRICE PER BARREL 2011	$61.77

GREAT DIVIDE/ ALGAR

Of interest:

Connacher Oil and Gas Limited underwent sweeping management changes in 2012, and a strategic review has yet to result in any corporate or asset transactions. The company's focus at Great Divide is to increase production to fill the two plants.

Note: Connacher combined Great Divide (solid line) and Algar (dotted line) into one project (Great Divide) for reporting purposes effective September 2012.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE GREAT DIVIDE **21**

MAP REFERENCE ALGAR **20**

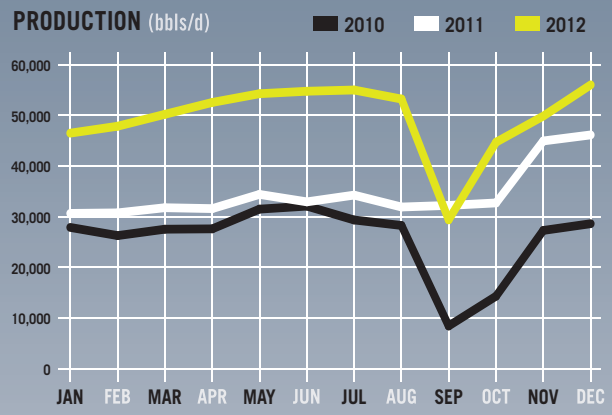
PROJECT	Great Divide
LOCATION	South Athabasca
OWNERSHIP	Connacher Oil and Gas Limited 100%
PRODUCTION START	2007
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	Great Divide 200 m, Algar 450 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	Great Divide 10,000, Algar 10,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	Great Divide 7,473.1, Algar 6,185.9
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	13,380
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	Great Divide 32,142.3, Algar 27,140.3
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	50,814
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	Great Divide 49/50
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	72/72
AVERAGE STEAM TO OIL RATIO 2012	Great Divide 4.79:1, Algar 4.60:1
AVERAGE STEAM TO OIL RATIO 2011	Great Divide 4.05:1, Algar 3.91:1
AVERAGE REALIZED PRICE PER BARREL 2012	$58.52 (to end of Q3)
AVERAGE REALIZED PRICE PER BARREL 2011	$53.04

PHOTO: JOEY PODLUBNY

JACKFISH

Of interest:

In 2011, Devon Canada Corporation commissioned a 35,000-barrel-per-day expansion at Jackfish. A third 35,000-barrel-per-day phase is under construction and expected for completion by year-end 2014.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



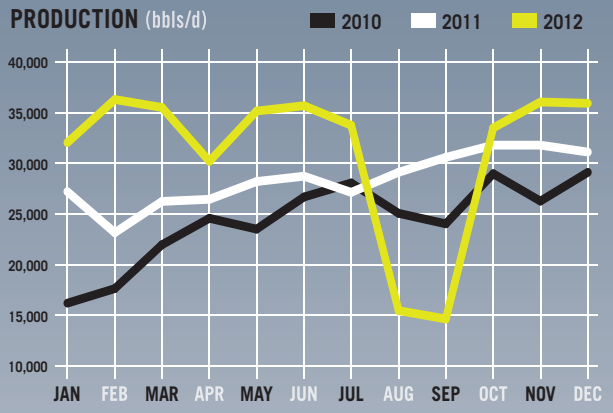
PHOTO: JOEY PODLUBNY

PROJECT	Jackfish
LOCATION	South Athabasca
OWNERSHIP	Devon Canada Corporation 100%
PRODUCTION START	2007
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	415 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	70,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	49,520.7
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	34,524
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	121,909.2
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	81,580
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	139/139
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	71/76
AVERAGE STEAM TO OIL RATIO 2012	2.81:1
AVERAGE STEAM TO OIL RATIO 2011	2.58:1
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

LONG LAKE

Of interest:

The $15.1-billion acquisition of Nexen Inc. by CNOOC Limited has been completed. Nexen will continue to operate as a CNOOC subsidiary.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



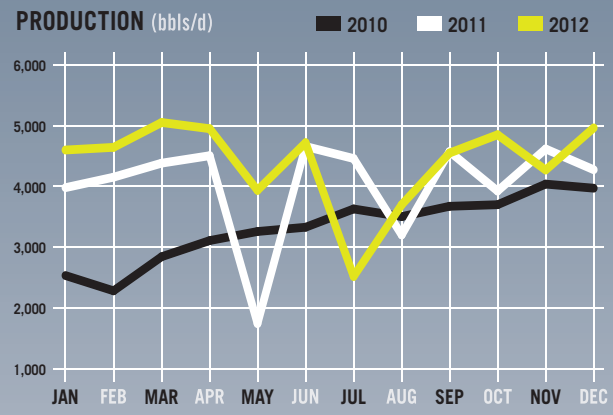
PHOTO: NEXEN INC.

PROJECT	Long Lake
LOCATION	South Athabasca
OWNERSHIP	Nexen Inc. 65%, CNOOC Limited 35%
PRODUCTION START	2007
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	200–250 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	72,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	31,188.1
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	28,453
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	140,429.4
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	145,902
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	190/207
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	169/181
AVERAGE STEAM TO OIL RATIO 2012	5.05:1
AVERAGE STEAM TO OIL RATIO 2011	5.20:1
AVERAGE REALIZED PRICE PER BARREL 2012	See stats for Long Lake upgrader (page 124)
AVERAGE REALIZED PRICE PER BARREL 2011	

ORION

Of interest:

In spring 2012, Shell Canada Limited put its underperforming Orion steam assisted gravity drainage project up for sale.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



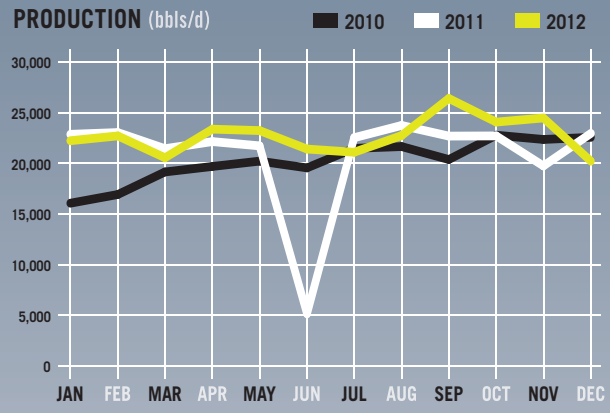
PHOTO: SHELL CANADA LIMITED

PROJECT	Orion
LOCATION	Cold Lake
OWNERSHIP	Shell Canada Limited 100%
PRODUCTION START	2007
FORMATION/POOL	Clearwater
AVERAGE RESERVOIR DEPTH	400 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	10,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	4,395.1
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	4,037
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	19,606.5
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	19,545
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	41/44
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	43/44
AVERAGE STEAM TO OIL RATIO 2012	4.38:1
AVERAGE STEAM TO OIL RATIO 2011	4.96:1
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

SURMONT

Of interest:

ConocoPhillips Canada has put up for sale up to 50 per cent working interest in a package of its oilsands leases including the Surmont project, which will soon be 109,000-barrels-per-day larger.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE

22

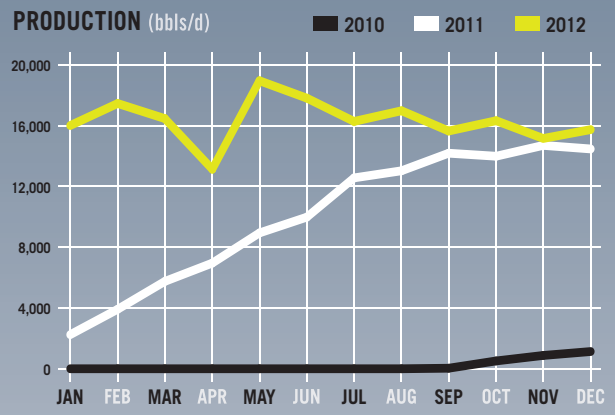
PROJECT	Surmont
LOCATION	South Athabasca
OWNERSHIP	ConocoPhillips Canada 50%, Total E&P Canada Ltd. 50%
PRODUCTION START	2007
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	400 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	27,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	22,712.6
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	20,888
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	52,626.7
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	50,603
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	63/68
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	56/61
AVERAGE STEAM TO OIL RATIO 2012	2.33:1
AVERAGE STEAM TO OIL RATIO 2011	2.36:1
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

PHOTO: CONOCOPHILLIPS CANADA

LEISMER

Of interest:

Statoil Canada Ltd.'s ramp up of the Leismer project, which began in fall 2010, has been one of the most successful greenfield steam assisted gravity drainage start-ups in the industry.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



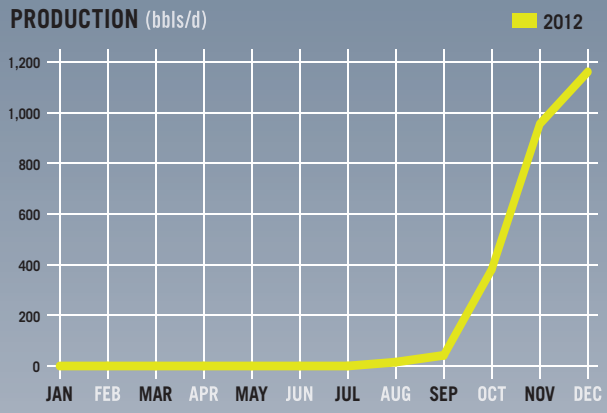
PHOTO: JOEY PODLUBNY

PROJECT	Leismer
LOCATION	South Athabasca
OWNERSHIP	Statoil Canada Ltd. 60%., PTT Exploration and Production Plc. 40%
PRODUCTION START	2010
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	400 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	10,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	16,329
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	10,052
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	40,314.8
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	25,685
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	44/44
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	41/41
AVERAGE STEAM TO OIL RATIO 2012	2.48:1
AVERAGE STEAM TO OIL RATIO 2011	3.07:1
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

STP-MCKAY

Of interest:

Southern Pacific Resource Corp. achieved first production from the STP-McKay project in August 2012. The company is being conservative in its ramp-up strategy and is experiencing steady progress.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE
11

PHOTO: JOEY PODLUBNY

PROJECT	STP-McKay
LOCATION	North Athabasca
OWNERSHIP	Southern Pacific Resource Corp. 100%
PRODUCTION START	2012
FORMATION/POOL	Wabiskaw-McMurray
AVERAGE RESERVOIR DEPTH	190 m
TECHNOLOGY	Steam assisted gravity drainage
CURRENT PRODUCTION CAPACITY (BBL/D)	12,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	510.9
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	0
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	9,336.8
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	0
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	12/12
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	0
AVERAGE STEAM TO OIL RATIO 2012	142.8:1
AVERAGE STEAM TO OIL RATIO 2011	0
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

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OPERATING IN SITU TECHNOLOGY FIELD PILOTS

SAGD IN THE LLOYDMINSTER FORMATION

Between 1973 and 1996, Murphy Oil Corporation operated first a pilot and then a commercial project using cyclic steam stimulation in the Lloydminster formation in the Cold Lake oilsands deposit. In 2004, Pengrowth Energy Corporation acquired the asset and has modified its facilities to operate bitumen production using steam assisted gravity drainage (SAGD), reportedly a more effective and economic method. This is believed to be the first "bona fide" use of SAGD in the Lloydminster formation.

OPERATOR	PROJECT	LOCATION	START-UP	TECHNOLOGY	STATUS
Pengrowth Energy Corporation	Lindbergh	Cold Lake	2012	Steam assisted gravity drainage	Pengrowth says production has averaged as high as 1,300 barrels per day. The company has announced it will pursue asset sales to support Lindbergh development, and plans to build an inventory of Lindbergh-like assets in the coming years. A phased 30,000-barrel-per-day project has been announced and the regulatory application has been filed for the first 12,500-barrel-per-day installation.

ELECTRICITY IN THE MCMURRAY FORMATION

There are significant volumes of bitumen in place in the oilsands that exist too deep for surface mining, yet too shallow for high-pressure thermal methods like cyclic steam stimulation and steam assisted gravity drainage. Electrothermal dynamic stripping is a technology that is in commercial use decontaminating soils in the United States, and its backers are piloting it for development in the oilsands. This technology could help access massive deposits of "stranded" bitumen while minimizing energy and water inputs.

OPERATOR	PROJECT	LOCATION	START-UP	TECHNOLOGY	STATUS
E-T Energy Ltd.	Poplar Creek	North Athabasca	2006	Electrothermal dynamic stripping	In 2012, regulators denied E-T Energy's application for a 10,000-barrel-per-day pilot, citing that based on available data, the technology has not demonstrated its ability to obtain or sustain commercial bitumen rates. E-T reported it was in agreement and that the data required for approval will come from its Stage 3 of pilot testing, which is ongoing. The company says it will reapply after Stage 3 is complete.

SAGD IN THE GRAND RAPIDS FORMATION

The vast majority of in situ oilsands operations target the McMurray formation in the Athabasca region, the Clearwater formation around Cold Lake and Bluesky-Gething at Peace River. The Grand Rapids formation is a new steam assisted gravity drainage (SAGD) production target in Athabasca and Cold Lake that is prospective for up to 55 billion barrels of oil in place. Canadian Natural Resources Limited is the only producer to successfully exploit SAGD in the Grand Rapids so far.

OPERATOR	PROJECT	LOCATION	START-UP	TECHNOLOGY	STATUS
Cenovus Energy Inc.	Grand Rapids	South Athabasca	2010	Steam assisted gravity drainage	While regulators review Cenovus's application for a phased 180,000-barrel-per-day commercial project at Grand Rapids, the company continues to operate its pilot and is working on the installation of a third mobile steam generator.
BlackPearl Resources Inc.	Blackrod	South Athabasca	2011	Steam assisted gravity drainage	BlackPearl says that the commercialization of the Blackrod project is "moving rapidly ahead." The pilot continues to move in line with the company's expectations, and now that it has produced at commerical rates, alternate operating strategies are being tested. Regulators are reviewing an 80,000-barrel-per-day commercial application.

THERMAL EXTRACTION IN THE PEACE RIVER DEPOSIT

Canada's smallest oilsands deposit is also its most untapped. Although Shell Canada Limited has operated a thermal project at Peace River since the 1980s, the region has yet to see variations of this technology application proliferate. The Peace River deposit holds an estimated 130 billion barrels of oil in place.

OPERATOR	PROJECT	LOCATION	START-UP	TECHNOLOGY	STATUS
Baytex Energy Corp.	Harmon Valley/ Cliffdale Pilot	Peace River	2008/2009	Horizontal cyclic steam stimulation	Baytex's strategy is to first deploy primary production to create voidage, then follow with mulitple short steam cycles to accelerate injectivity for subsequent, lengthened cycles. In the coming years, the company plans to continue expanding operations by drilling new production pads.
Murphy Oil Company, Ltd.	Seal/ Cadotte	Peace River	2010	Cyclic steam stimulation	n/q
Penn West Exploration	Seal Main	Peace River	2011	Horizontal cyclic steam stimulation	Penn West's Seal operations began with primary production development. In fall 2012, the company applied for regulatory approval of a 10,000-barrel-per-day commercial cyclic steam stimulation project at Seal.

EXTRACTION FROM BITUMEN CARBONATES

There is understood to be more bitumen in place in Alberta's carbonate reservoirs than in the conventional oilsands. In the 1970s and 1980s, a number of pilot tests targeted bitumen carbonates, with "spectacular but erratic results." Robust oil prices and advances in technology have spurred a new wave of bitumen carbonate pilot testing that could revolutionize the industry.

OPERATOR	PROJECT	LOCATION	START-UP	TECHNOLOGY	STATUS
Laricina Energy Ltd.	Saleski	South Athabasca	2010	Solvent-cyclic steam assisted gravity drainage	Laricina says the project has demonstrated two out of three pieces of the commercialization puzzle—drilling and completions, and start-up. The last step is steady ongoing operations. The company expects to confirm commercialization by 2015, when operations are expected to start at its 10,000-barrel-per-day project. A regulatory application has been filed.
Sunshine Oilsands Ltd.	Harper	North Athabasca	2011	Thermal stimulation	Sunshine says Harper has demonstrated its primary objective—that bitumen in carbonates is mobilized by the application of steam. The company plans to use operational information to design future testing.
Athabasca Oil Corporation	Dover West	North Athabasca	2011	Thermal assisted gravity drainage (electrical-resistance heaters)	Athabasca says its pilot has confirmed bitumen mobilization. A regulatory application for a 6,000-barrel-per-day demonstration project has been filed, and is expected to start up in 2015. The next steps are to confirm commercial recovery factors and energy requirements.

SOLVENT CO-INJECTION

The co-injection of solvents with steam is a principal area of current technology research and development for in situ oilsands operators, with multiple producers testing different application configurations. Cenovus Energy Inc. has even now begun construction on what will be the first commercial solvent–steam assisted gravity drainage (SAGD) project, at Narrows Lake. According to Alberta Innovates – Energy and Environment Solutions, the main advantages of solvent co-injection are up to 30 per cent more oil recovery, up to 30 per cent lower steam requirements and less water usage.

OPERATOR	PROJECT	LOCATION	START-UP
Cenovus Energy Inc.	Solvent-aided process pilot	South Athabasca (Christina Lake)	2009
Connacher Oil and Gas Limited	SAGD+	South Athabasca (Algar)	2011
ConocoPhillips Canada	Solvent-enhanced SAGD pilot	South Athabasca (Surmont)	2012
Devon Canada Corporation	Solvent-aided SAGD pilot	South Athabasca (Jackfish)	2012
Imperial Oil Limited	Liquid addition to steam for enhanced recovery	Cold Lake (Cold Lake)	2011
Imperial Oil Limited	Solvent-assisted SAGD pilot	Cold Lake (Cold Lake)	2011
Laricina Energy Ltd.	Solvent-cyclic SAGD	South Athabasca (Saleski)	2012
Statoil Canada Ltd.	Solvent co-injection pilot	South Athabasca (Leismer)	2013

OPERATING COMMERCIAL IN SITU OILSANDS PROJECTS

PROJECT	COLD LAKE	PRIMROSE/WOLF LAKE	PEACE RIVER	HANGINGSTONE	FOSTER CREEK	MACKAY RIVER	CHRISTINA LAKE
LOCATION	Cold Lake	South Athabasca, Cold Lake	Peace River	South Athabasca	South Athabasca	North Athabasca	South Athabasca
OWNERSHIP	Imperial Oil Limited 100%	Canadian Natural Resources Limited 100%	Shell Canada Limited 100%	Japan Canada Oil Sands Limited 100%	Cenovus Energy Inc. 50%, ConocoPhillips Canada 50%	Suncor Energy Inc. 100%	MEG Energy Corp. 100%
PRODUCTION START	1985	1985	1986	1999	2001	2002	2003
TECHNOLOGY	CSS	CSS	CSS	SAGD	SAGD	SAGD	SAGD
CURRENT PRODUCTION CAPACITY (BBL/D)	140,000	120,000	12,500	10,000	120,000	33,000	25,000
AVERAGE DAILY PRODUCTION 2012 (BBL/D)	153,590	98,008	7,108	5,996	115,471	26,938	28,749
AVERAGE DAILY PRODUCTION 2011 (BBL/D)	159,719	96,248	4,770	6,592	109,730	30,046	26,372
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2012 (BBL/D)	531,310	278,902	24,219	25,140	274,875	62,588	65,766
AVERAGE WATER PRODUCTION PER CALENDAR DAY 2011 (BBL/D)	549,992	269,460	20,234	25,994	251,196	66,326	59,212
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2012 (AVG.)	2,973/4,548	870/1,033	82/118	44/47	381/436	119/140	80/83
WELLS PRODUCING OR INJECTING/CAPABLE OF PRODUCING OR INJECTING 2011 (AVG.)	3,249/4,461	806/958	77/115	40/44	339/378	112/121	69/71
AVERAGE STEAM TO OIL RATIO 2012	3.42:1	4.06:1	3.68:1	4.54:1	2.16:1	2.39:1	2.43:1
AVERAGE STEAM TO OIL RATIO 2011	3.40:1	3.98:1	6.88:1	4.23:1	2.16:1	2.16:1	2.46:1
AVERAGE REALIZED PRICE PER BARREL 2012	$59.76	$67.99	n/q	n/q	$64.55	See stats for Suncor upgrader	$64.76
AVERAGE REALIZED PRICE PER BARREL 2011	$63.95	$68.55	n/q	n/q	$67.38		$71.30

*Connacher started reporting Great Divide and Algar as one project (Great Divide) in August 2012.

OPERATING COMMERCIAL OILSANDS MINING PROJECTS

PROJECT	SUNCOR—BASE AND MILLENNIUM	SYNCRUDE MILDRED LAKE AND AURORA	SHELL ALBIAN SANDS—MUSKEG RIVER AND JACKPINE	HORIZON
LOCATION	North Athabasca	North Athabasca	North Athabasca	North Athabasca
OWNERSHIP	Suncor Energy Inc. 100%	Canadian Oil Sands Limited (36.74%), Imperial Oil Resources Limited (25%), Suncor Energy Inc. (12%), Sinopec Oil Sands Partnership (9.03%), Nexen Oil Sands Partnership (7.23%), Mocal Energy Limited (5%), Murphy Oil Company, Ltd. (5%).	Shell Canada Limited 60%, Chevron Corporation 20%, Marathon Oil Corporation 20%	Canadian Natural Resources Limited 100%

	CHRISTINA LAKE	FIREBAG	TUCKER	LONG LAKE	JACKFISH	SURMONT	GREAT DIVIDE/ ALGAR*	ORION	LEISMER	STP-MCKAY
	South Athabasca	North Athabasca	Cold Lake	South Athabasca	South Athabasca	South Athabasca	South Athabasca	Cold Lake	South Athabasca	North Athabasca
	Cenovus Energy Inc. 50%, ConocoPhillips Canada 50%	Suncor Energy Inc. 100%	Husky Energy Inc. 100%	Nexen Inc. 65%, CNOOC Limited 35%	Devon Energy Corporation 100%	ConocoPhillips Canada 50%, Total E&P Canada Ltd. 50%	Connacher Oil and Gas Limited 100%	Shell Canada Limited 100%	Statoil Canada Ltd. 60%., PTT Exploration and Production Plc. 40%	Southern Pacific Resource Corp. 100%
	2003	2004	2006	2007	2007	2007	2007	2007	2010	2012
	SAGD	SAGD	SAGD	SAGD	SAGD	SAGD	SAGD	SAGD	SAGD	SAGD
	98,800	162,500	30,000	72,000	70,000	27,000	Great Divide 10,000, Algar 10,000	10,000	10,000	12,000
	62,696	103,724	9,550	31,188	49,520	22,712	Great Divide 7,473.1, Algar 6,185	4,395	16,329	510
	22,404	59,473	7,320	28,453	34,524	20,888	13,380	4,037	10,052	0
	121,454	362,597	62,271	140,429	121,909	52,626	Great Divide 32,142, Algar 27,140	19,606	40,314	9,336
	51,413	205,574	48,759	145,902	81,580	50,603	50,814	19,545	25,685	0
	95/98	188/191	92/116	190/207	139/139	63/68	Great Divide 49/50	41/44	44/44	12/12
	47/47	102/105	83/106	169/181	71/76	56/61	72/72	43/44	41/41	0
	1.91:1	3.44:1	6.54:1	5.05:1	2.81:1	2.33:1	Great Divide 4.79:1, Algar 4.60:1	4.38:1	2.48:1	142.8:1
	2.29:1	3.57:1	6.16:1	5.20:1	2.58:1	2.36:1	Great Divide 4.05:1, Algar 3.91:1	4.96:1	3.07:1	--
	$47.73	See stats for Suncor upgrader	$55.29	See stats for Long Lake upgrader	n/q	n/q	$58.52 (to end of Q3)	n/q	n/q	n/q
	$61.86		$61.77		n/q	n/q	$53.04	n/q	n/q	n/q

PROJECT	SUNCOR—BASE AND MILLENNIUM	SYNCRUDE MILDRED LAKE AND AURORA	SHELL ALBIAN SANDS— MUSKEG RIVER AND JACKPINE	HORIZON
PRODUCTION START	1967	1978	2002	2008
CURRENT PRODUCTION CAPACITY	321,000	350,000	255,000	135,000
AVERAGE DAILY BITUMEN PRODUCTION 2012 (BBL/D)	290,932	366,650	246,085	112,408
AVERAGE DAILY BITUMEN PRODUCTION 2011 (BBL/D)	287,869	346,887	209,973	47,574
BARRELS MINED 2012	1,107,956,327	192,933,043	1,000,834,447	431,898,443
BARRELS MINED 2011	1,183,361,262	1,498,045,140	913,906,401	216,430,799
MONTHLY AVERAGE MINED ORE GRADE 2012 (WEIGHT %)	11.14	Mildred Lake 10.73, Aurora 11.30	Muskeg River 11.08, Jackpine 11.83	11.37
MONTHLY AVERAGE MINED ORE GRADE 2011 (WEIGHT %)	11.38	Mildred Lake 10.50, Aurora 11.04	Muskeg River 10.54, Jackpine 11.41	10.78

OILSANDS PROJECTS UNDER CONSTRUCTION

TECHNOLOGY LEGEND	
MINING	Truck and shovel mining and extraction
SAGD	Steam assisted gravity drainage
CSS	Cyclic steam stimulation
SAP	Solvent aided process
SC-SAGD	Solvent-cyclic steam assisted gravity drainage
BEST	Bitumen extraction solvent technology
UPG	Bitumen upgrader
THAI	Toe to heel air injection



Imperial Oil's Kearl mine—the fifth operation of its kind to open—is expected to officially start up early in 2013.

OPERATOR NAME	PROJECT NAME	PHASE NAME	TECHNOLOGY	CAPACITY (BBL/D)	BUDGET (MILLION $)	START-UP
IMPERIAL OIL LIMITED	Kearl	Phase 1	Mining	110,000	$10,900	2013
IMPERIAL OIL LIMITED	Kearl	Phase 2	Mining	110,000	$8,900	2015
CENOVUS ENERGY INC.	Christina Lake	Phase E	SAGD	40,000	$2,700	2013
HUSKY ENERGY INC.	Sunrise	Phase 1	SAGD	60,000	$2,700	2014
CONOCOPHILLIPS CANADA	Surmont	Phase 2	SAGD	109,000	$2,490	2015
CENOVUS ENERGY INC.	Foster Creek	Phase F	SAGD	45,000	$2,000	2014
IMPERIAL OIL LIMITED	Cold Lake	Phase 14-16	CSS	40,000	$2,000	2014
CENOVUS ENERGY INC.	Narrows Lake	Phase 1	SAP	45,000	$1,600	2017
MEG ENERGY CORP.	Christina Lake	Phase 2B	SAGD	35,000	$1,400	2013
DOVER OPERATING CORP.	MacKay River	Phase 1	SAGD	35,000	$1,300	2014
CANADIAN NATURAL RESOURCES LIMITED	Kirby South	Phase 1	SAGD	40,000	$1,250	2013
DEVON CANADA CORPORATION	Jackfish	Phase 3	SAGD	35,000	$1,200	2015
ATHABASCA OIL CORPORATION	Hangingstone	Phase 1	SAGD	12,000	$536	2014
HARVEST OPERATIONS CORP.	BlackGold	Phase 1	SAGD	10,000	$500	2014
SUNSHINE OILSANDS LTD.	West Ells	Phase A1	SAGD	5,000	$480	2013
LARICINA ENERGY LTD.	Germain	Phase 1 CDP	SC-SAGD	5,000	$435	2013
GRIZZLY OIL SANDS ULC	Algar Lake	Phase 1	SAGD	5,500	$220	2013
SUNCOR ENERGY INC.	Dover	Demonstration plant	BEST	500	$50	2013
CANADIAN NATURAL RESOURCES LIMITED	Horizon	Phase 2A	UPG	10,000	n/q	2014
CANADIAN NATURAL RESOURCES LIMITED	Horizon	Phase 2A	Mining	10,000	n/q	2014
PETROBANK ENERGY AND RESOURCES LTD.	Dawson	Experimental THAI demonstration	THAI	10,000	n/q	2013

PHOTO: IMPERIAL OIL LIMITED









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EMERGING PRODUCERS

By Deborah Jaremko

ALBERTA OILSANDS INC.
After the concerns of a group of shareholders forced a new slate of board of directors on Alberta Oilsands Inc. in summer 2012, the company has adjusted its strategy and is pursuing international asset development. Meanwhile, it is leaving the application process for its Clearwater steam assisted gravity drainage (SAGD) project to a third party.

ANDORA ENERGY CORPORATION
The subsidiary of Calgary-based Pan Orient Energy Corp., Andora Energy Corporation is developing a 1,400-barrel-per-day SAGD project in the Peace River oilsands region called Sawn Lake. Pan Orient says Andora is fully funded for the pilot, and activities are underway to commence steam injection in the second quarter of 2013, with first production to follow before the end of the year.

ATHABASCA OIL CORPORATION
Publicly traded junior Athabasca Oil Corporation is currently executing its first SAGD project, at Hangingstone, south of Fort McMurray. First oil from the 12,000-barrel-per-day installation is expected in 2014. Athabasca has four other project areas on its substantial lease holdings in various stages of early development, including the Dover project, which it holds in a 40/60 partnership with PetroChina Company Limited.

BIRCHWOOD RESOURCES INC.
In May 2012, private junior Birchwood Resources Inc. announced plans for a 5,000-barrel-per-day SAGD project in the Cold Lake oilsands region it calls Sage. In December 2012, the company filed regulatory applications for the project.

BLACKPEARL RESOURCES INC.
Publicly traded junior BlackPearl Resources Inc. has declared commerciality at its Blackrod SAGD pilot, an installation located south of Fort McMurray that started operations in 2011. In May 2012, the company filed regulatory applications for a phased 80,000-barrel-per-day commercial Blackrod project.

BP P.L.C.
As the 50 per cent joint-venture owner of Husky Energy Inc.'s Sunrise SAGD project, BP p.l.c. will see its first oilsands production as the 60,000-barrel-per-day project is commissioned in 2014. BP is also the operator of the Terre de Grace SAGD project, a 10,000-barrel-per-day installation with regulatory approval but uncertain timing.

CAVALIER ENERGY INC.
The oilsands spinoff of Paramount Resources Ltd., Cavalier Energy Inc.'s main asset is the proposed Hoole SAGD project south of Fort McMurray. Cavalier submitted the regulatory application for the first 10,000-barrel-per-day phase at Hoole in November 2012. Assuming regulatory approval and favourable market conditions, construction is expected to start in 2014, with first steam in 2015.

CNOOC LIMITED
In 2011, junior firm and 35 per cent owner of the Long Lake SAGD project OPTI Canada Inc. was acquired by CNOOC Limited for $2.1 billion. CNOOC is now acquiring Nexen Inc., which owns the remaining 65 per cent of Long Lake in addition to numerous oilsands and conventional oil and gas assets in Canada and internationally, for $15.1 billion. Nexen will remain operating as a CNOOC subsidiary.

DOVER OPERATING CORP.
Dover Operating Corp. is the joint-venture entity of PetroChina Company Limited and Athabasca Oil Corporation that is developing the Dover and MacKay River SAGD projects north of Fort McMurray. Construction is underway on the first 35,000-barrel-per-day phase at MacKay River, with first production expected in 2014.

E-T ENERGY LTD.
In 2012, private junior E-T Energy Ltd. became the first company to have an oilsands project application denied by Alberta regulators, which cited insufficient data on the commercial viability of E-T's electrothermal dynamic stripping in situ production method. E-T has been piloting the technology on a lease just north of Fort McMurray since 2006. The company is currently working on further testing and is working to re-apply for its commercial project.

GRIZZLY OIL SANDS ULC
First oil from privately held junior Grizzly Oil Sands ULC's first SAGD project, a modular 5,500-barrel-per-day facility called Algar, is anticipated in 2013. Through a number of phases at Algar and four other projects—including the May River asset Grizzly acquired from Petrobank Energy and Resources Ltd.—the company plans to be producing 355,000 barrels per day by 2030.

HARVEST OPERATIONS CORP.
Harvest Operations Corp., which is owned by Korea National Oil Corporation, started building the 10,000-barrel-per-day BlackGold SAGD project south of Fort McMurray in 2010. The project has experienced cost and schedule pressures, and first production is now anticipated in 2014, extended from the original 2013 target.

NORTH WEST UPGRADING INC.
In fall 2012, construction on the first 50,000-barrel-per-day phase of the Sturgeon Refinery began in

Alberta's Industrial Heartland after long-awaited sanction from joint-venture partners North West Upgrading Inc. and Canadian Natural Resources Limited. First production from this $5.7-billion project—a merchant installation that will process volumes including the Government of Alberta's Bitumen Royalty in-Kind—is expected in 2016.

NORTHERN ALBERTA OIL LTD.
Northern Alberta Oil Ltd. is the subsidiary of Edmonton-based junior Deep Well Oil & Gas Inc. Its main oilsands asset is a proposed 700-barrel-per-day cyclic steam stimulation pilot project in the Peace River region called Sawn Lake. Deep Well says preliminary engineering work is underway.

N-SOLV CORPORATION
N-Solv Corporation, owned in part by Hatch Ltd., has for years been stewarding a solvent-based in situ gravity drainage technology that was originally developed in the 1970s. In 2012, it was announced that Suncor Energy Inc. would host a 500-barrel-per-day pilot of the bitumen extraction solvent technology on its Dover lease. Solvent injection and bitumen production are expected in the second quarter of 2013.

IVANHOE ENERGY INC.
Publicly traded junior Ivanhoe Energy Inc. is working towards commercialization of its in situ oilsands assets and, eventually, its proprietary field upgrading technology it calls HTL. Ivanhoe filed a regulatory application for a phased 40,000-barrel-per-day SAGD project called Tamarack in late 2010 (which could include the field upgrader if market conditions permit). Regulatory approval is anticipated early in 2013.

LARICINA ENERGY LTD.
Privately held junior Laricina Energy Ltd. says it is nearing the last step in its commercialization of SAGD in the potentially vastly prolific bitumen carbonates. The company started operating the first SAGD carbonate pilot in 2010, and has submitted a commercial project application it hopes to be up and running in 2015.

OAK POINT ENERGY LTD.
In early 2013, privately held junior Oak Point Energy Ltd. received regulatory approvals for its Lewis SAGD project, a small modular facility designed to produce 1,200 barrels per day. The company is working on financing the project and plans to initiate detailed engineering in mid-2013.

OSUM OIL SANDS CORP.
Privately held junior Osum Oil Sands Corp.—which named former Suncor Energy Inc. chief executive officer Rick George to its board of directors in 2012—is advancing two oilsands project areas. Its primary asset is the proposed 23,000-barrel-per-day Taiga SAGD project at Cold Lake, which received regulatory approval in fall 2012. The company has also announced an in situ carbonate project called Sepiko Kesik, one kilometre away from Laricina Energy Ltd.'s Saleski pilot, in which Osum is a partner.

PENGROWTH ENERGY CORPORATION
Intermediate oil and gas producer Pengrowth Energy Corporation is increasing its focus on oilsands assets, particularly in the Lindbergh area of the Cold Lake region, where the company is operating a SAGD pilot that has shown "excellent" results. Pengrowth is advancing a commercial project application and has announced plans to pursue asset sales to support Lindbergh's future.

SILVERWILLOW ENERGY CORPORATION
Publicly traded junior SilverWillow Energy Corporation is proceeding with the design for a 12,000-barrel-per-day SAGD project on its Audet leases north of Fort McMurray. These leases were acquired, and SilverWillow created, through the Teck Resources Limited 2012 acquisition of SilverBirch Energy Corporation's mining assets. An Audet regulatory application is expected to be filed in 2013.

SUNSHINE OILSANDS LTD.
Traded on the Toronto and Hong Kong stock exchanges, junior Sunshine Oilsands Ltd. has substantial oilsands lease holdings and multiple projects in varied stages of development. Its first SAGD project, a 5,000-barrel-per-day installation north of Fort McMurray called West Ells, is under construction and expected to start up in 2013.

SURMONT ENERGY LTD.
Incorporated in October 2011, in fall 2012 private junior Surmont Energy Ltd. filed its regulatory application for a 12,000-barrel-per-day SAGD project called Wildwood, located south of Fort McMurray. Production is targeted to start in 2015.

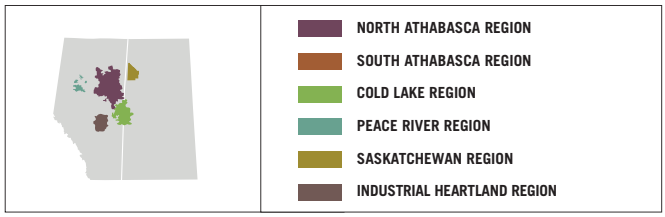
TECK RESOURCES LIMITED
Conventional miner Teck Resources Limited owns 20 per cent of Suncor Energy Inc.'s proposed 190,000-barrel-per-day Fort Hills mine, as well as its 100 per cent owned, proposed 275,000-barrel-per-day Frontier asset. A sanction decision is expected by the Fort Hills partners in the second half of 2013, and a regulatory decision on Frontier is expected in 2015 at the earliest.

VALUE CREATION INC.
In 2012, private junior Value Creation Inc. announced plans for a third SAGD project, called Advanced TriStar. Regulators are now reviewing the proposed phased 75,000-barrel-per-day project, as well as the 1,000-barrel-per-day TriStar pilot. Terre de Grace, a SAGD project Value Creation owns with BP p.l.c., has regulatory approval but uncertain timing.

PROJECT STATUS

Sourced from company releases, the Energy Resources Conservation Board and the *Daily Oil Bulletin*, with files from Strategy West.

This listing is updated on a monthly basis in *Oilsands Review* magazine and is available in even greater detail at oilsandsreview.com.



PROJECT UPDATES AS OF MARCH 2013

moreOnline | Canadian Oilsands Navigator
ATHABASCA REGION

For more detailed project data, visit oilsandsreview.com. To explore projects in the Athabasca oilsands region using our interactive web tool, visit the Canadian Oilsands Navigator at navigator.oilsandsreview.com.

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
NORTH ATHABASCA REGION — MINING			
Canadian Natural Resources Limited			
Horizon			
Canadian Natural says it continues its strategy of staged expansion to 250,000 barrels per day and work remains on track. Projects currently under construction are trending at or below estimates.			
Phase 1	135,000	2008	Operating
Phase 2A	10,000	2014	Construction
Phase 2B	45,000	TBD	Approved
Phase 3	80,000	TBD	Approved
Tranche 2	5,000	2012	Operating
Imperial Oil Limited			
Kearl			
Imperial Oil says construction on Phase 1 is complete and start-up activities are underway. The project is now expected to cost $12.9 billion, a $2-billion increase from previous estimates. At the end of Q4/2012, the company says Kearl Phase 2 was 27 per cent complete.			
Phase 1	110,000	2013	Construction
Phase 2	110,000	2015	Construction
Phase 3 Debottleneck	70,000	2020	Approved
Shell Albian Sands			
Jackpine			
A decision from the federal joint review panel on the Jackpine project is expected in 2013.			
Expansion	100,000	2017	Application
Phase 1A	100,000	2010	Operating
Phase 1B	100,000	TBD	Approved
Muskeg River			
Commercial	155,000	2002	Operating
Expansion & Debottlenecking	115,000	TBD	Approved
Pierre River			
A joint review panel of the Canadian Environmental Assessment Agency and the ERCB has been established to review the proposed Pierre River mine project. The timeline for the joint review panel to submit its report is 550 days (18 months) from coming into force in July 2012.			
Phase 1	100,000	2018	Application
Phase 2	100,000	TBD	Application
Suncor Energy Inc.			
Base Operations			
Suncor says that, during Q4/2012, a number of new assets were brought into service to support oilsands operations: the Wood Buffalo Pipeline, which connects the company's Athabasca terminal at the base plant in Fort McMurray to other third-party pipeline infrastructure in Cheecham, Alta., and the first two of four new storage tanks in Hardisty, Alta., which will connect to the Enbridge Mainline Pipeline in 2013.			
Millennium Debottlenecking	23,000	2008	Operating
Millennium Mine	294,000	1967	Operating
North Steepbank Extension	180,000	2012	Operating
Steepbank Debottleneck Phase 3	4,000	2007	Operating
Fort Hills			
A sanction decision on Fort Hills is expected in the second half of 2013.			
Debottleneck	25,000	TBD	Approved
Phase 1	165,000	2016	Approved
Voyageur South			
Suncor considers Voyageur South to be a "longer-term" project and has not confirmed a start-up date.			
Phase 1	120,000	TBD	Application
Syncrude Canada Ltd.			
Mildred Lake/Aurora			
Canadian Oil Sands Limited says Syncrude is expected to produce between 105 million and 115 million barrels in 2013, incoporating a planned turnaround of Coker 8-1 in the second half of the year.			
Aurora South Train 1	100,000	2016	Approved
Aurora South Train 2	100,000	2018	Approved
Base Mine Stage 1 & 2 Expansion	290,700	1978	Operating
Stage 3 Expansion	116,300	2006	Operating
Teck Resources Limited			
Frontier			
Teck says it received the final supplemental information requests relating to the Frontier regulatory application in Q3/2012 and filed its responses in January 2013. The Canadian Environmental Assessment Agency estimates the federal review schedule for the project application to be approximately two years, so 2015 would be the earliest approval would be granted. A field exploration program is being developed for 2013 to acquire additional resource delineation and geotechnical information to support future engineering studies.			
Phase 1	75,000	2021	Application
Phase 2	80,000	2024	Application
Phase 3	80,000	2027	Application
Phase 4 Equinox	40,000	2030	Application
Total E&P Canada Ltd.			
Joslyn North Mine			
Project partner Suncor Energy says an updated timing for the Joslyn sanction decision will be made available when it is ready.			
Phase 1	100,000	2018	Approved
NORTH ATHABASCA REGION — IN SITU			
Athabasca Oil Corporation			
Birch			
AOS says $28.9 million was spent at Birch in the first nine months of 2012, mainly on drilling of one water and 22 delineation wells. In addition, the company shot 54 square kilometres of 3-D seismic. Winter delineation drilling and seismic programs are being evaluated for 2013.			
Phase 1	12,000	TBD	Announced
Dover West Carbonates (Leduc)			
AOS says regulatory approval for the demonstration project is anticipated imminently. The design basis memorandum is complete and the engineering design specification work is well underway. Construction is also ongoing on a TAGD-related heater assembly facility near Strathmore, Alta.			
Phase 1 Demonstration	6,000	2015	Application
Phase 2 Demonstration	6,000	TBD	Application
Dover West Sands & Clastics			
In the first nine months of 2012, AOS acquired approximately 30,000 acres of oilsands leases contiguous to its existing Dover West assets. The company says its Dover West Sands project could now eventually support development up to 270,000 barrels per day. Regulatory approval and internal sanction for the first 12,000-barrel-per-day phase are expected in 2013. AOS says it is leveraging work done on FEED for its Hangingstone project for Dover West.			
Phase 1	12,000	2015	Application
Phase 2	35,000	2018	Announced
Phase 3	35,000	2020	Announced
Phase 4	35,000	2022	Announced
Phase 5	35,000	2024	Announced

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
BP p.l.c.			
Terre de Grace			
BP says that ongoing appraisal activities include delineation drilling, seismic acquisition and appraisal of water sources.			
Pilot	10,000	TBD	Approved
Canadian Natural Resources Limited			
Birch Mountain			
Canadian Natural says geological scoping is underway.			
Phase 1	60,000	2019	Announced
Phase 2	60,000	2023	Announced
Cenovus Energy Inc.			
East McMurray			
Phase 1	30,000	TBD	Announced
Steepbank			
Phase 1	30,000	TBD	Announced
Telephone Lake Borealis			
Cenovus says it continues to progress the Telephone Lake regulatory application while it operates its dewatering pilot, with water production and air injection proceeding as planned. Regulatory approval is expected in early 2014.			
Phase A	45,000	TBD	Application
Phase B	45,000	TBD	Application
Dover Operating Corp.			
Dover			
The ERCB has scheduled a public hearing for the Dover project to be held in Fort McMurray in April. Reportedly, the reason for the hearing is that the Fort McKay First Nation says that without a buffer zone, the project will impact the last remaining traditional land on the west side of the Athabasca River.			
Dover North Phase 1	50,000	2016	Application
Dover North Phase 2	50,000	2018	Application
Dover South Phase 3	50,000	2020	Application
Dover South Phase 4	50,000	2022	Application
Dover South Phase 5	50,000	2024	Application
MacKay River			
The ERCB granted project approval in January 2012. Dover OpCo says construction is underway.			
Phase 1	35,000	2014	Construction
Phase 2	40,000	2017	Approved
Phase 3	40,000	2019	Approved
Phase 4	35,000	TBD	Approved
E-T Energy Ltd.			
Poplar Creek			
E-T Energy has reinstated Bruce McGee as CEO based on his technological expertise as it works on pilot operations to support a new commercial project application. Its previous application was denied by the ERCB earlier in 2012.			
Experimental Pilot	1,000	2007	Operating
Phase 1	10,000	TBD	Announced
Phase 2	40,000	TBD	Announced
Grizzly Oil Sands ULC			
Thickwood			
Grizzly filed the regulatory application for the Thickwood project in December 2012.			
Phase 1	6,000	2017	Application
Phase 2	6,000	TBD	Application
Husky Energy Inc.			
Saleski			
Husky plans to submit a regulatory application for the Saleski project in 2013.			
Carbonate Pilot	TBD	2016	Announced
Sunrise			
Husky says the central processing facility is approaching 50 per cent completion with piling work substantially completed and foundation work proceeding at the site. Major equipment continues to be delivered and placed into position, with approximately half of the modules fabricated and moved to site. Construction of the field facilities is more than 75 per cent complete. The design basis memorandum for the next phase of expansion is expected to be completed in 2013.			
Phase 1	60,000	2014	Construction
Phase 2	50,000	2016	Approved
Phase 3	50,000	2019	Approved
Phase 4	50,000	TBD	Approved

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Imperial Oil Limited			
Aspen			
Phase 1	40,000	TBD	Announced
Ivanhoe Energy Inc.			
Tamarack			
Alberta Environment has deemed the environmental impact assessment for the Tamarack project complete.			
Phase 1	20,000	2016	Application
Phase 2	20,000	TBD	Application
Marathon Oil Corporation			
Birchwood			
Marathon said that based on results of completed appraisal drilling, a regulatory application would be filed in 2012.			
Demonstration	12,000	2017	Application
Oak Point Energy Ltd.			
Lewis			
The ERCB and Alberta Environment have approved Oak Point's Lewis project, which is estimated to cost $65 million. The company expects to begin construction in a couple of months and anticipates first steam in approximately one year.			
Pilot	1,720	2014	Approved
SilverWillow Energy Corporation			
Audet			
SilverWillow is proceeding with design of a 12,000-barrel-per-day project, which analysts at Peters & Co. Limited say implies the company expects at least 120 million barrels are recoverable at the site. The application is expected to be filed this year, and caprock work will be completed.			
Pilot	12,000	2016	Announced
Southern Pacific Resource Corp.			
STP-McKay			
Southern Pacific says it continues to be conservative in the initial stages of converting wells to SAGD, utilizing installed downhole technology to ensure even termperature conformance and chamber development has occurred along the horizontal length of the wells before they are converted. The strategy is designed to ensure long-term integrity of the wellbores.			
Phase 1	12,000	2012	Operating
Phase 1 Expansion	6,000	2014	Application
Phase 2A	12,000	2017	Application
Phase 2B	6,000	2017	Application
Suncor Energy Inc.			
Dover			
Reports are that first results from a $60-million N-Solv field test are expected in spring 2013.			
Demonstration Plant	500	2013	Construction
Firebag			
Suncor reports that Firebag Stage 4 was commissioned ahead of schedule in Q4/2012, and is expected to come in 15 per cent under the estimated budget of $2 billion. Production is expected to reach capacity of 180,000 barrels per day over the next year.			
Cogeneration and Expansion	25,000	2007	Operating
Stage 1	35,000	2004	Operating
Stage 2	35,000	2006	Operating
Stage 3	42,500	2011	Operating
Stage 3-6 Debottleneck	23,000	TBD	Application
Stage 4	42,500	2012	Operating
Stage 5	62,500	2018	Approved
Stage 6	62,500	2019	Approved
Lewis			
Phase 1	40,000	TBD	Application
Phase 2	40,000	TBD	Application
MacKay River			
MR2	40,000	2016	Application
Phase 1	33,000	2002	Operating

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Sunshine Oilsands Ltd.			
Harper			
Sunshine says that steam cycle injection operations at Harper have proven thermally induced oil mobility.			
Carbonate Pilot	1,000	TBD	Operating
Legend Lake			
Sunshine says regulatory approval for Legend Lake is anticipated in the first half of 2013.			
Phase A1	20,000	2016	Application
Phase A2	30,000	TBD	Announced
Phase B1	30,000	TBD	Announced
Phase B2	30,000	TBD	Announced
Thickwood			
Sunshine says FEED for Thickwood is approximately 10 per cent complete. Approval is anticipated in the first half of 2013.			
Phase A1	10,000	2015	Application
Phase A2	30,000	2018	Announced
Phase B	30,000	2021	Announced
West Ells			
Sunshine says construction on West Ells remains on schedule and on budget. The access road is now complete and ready for heavy hauls, and pilings for the central processing facility have commenced. Some of the major equipment is in transit. Civil construction of the central processing facility is 40 per cent complete, with facilities engineering 75 per cent complete. The first SAGD well pair has been spudded.			
Phase A1	5,000	2013	Construction
Phase A2	5,000	2014	Approved
Phase A3	30,000	2018	Announced
Phase B	20,000	2025	Announced
Phase C1	30,000	TBD	Announced
Phase C2	30,000	TBD	Announced
SOUTH ATHABASCA REGION — IN SITU			
Alberta Oilsands Inc.			
Clearwater West			
Alberta Oilsands says it has now responded to all outstanding supplemental information requests relating to the Clearwater project application and will continue to work with the ERCB during the coming months to advance approval.			
Phase 1 Pilot	4,350	TBD	Application
Phase 2	25,000	2016	Announced
Athabasca Oil Corporation			
Hangingstone			
AOS has sanctioned the first phase of its $536-million Hangingstone SAGD project at a projected cost of $44,700 per flowing barrel. SAGD drilling is expected to commence mid-2013. Alberta Environment has issued the proposed terms of reference for the Hangingstone expansion project, with public comment available until April 4.			
Phase 1	12,000	2014	Construction
Phase 2	35,000	2017	Announced
Phase 3	35,000	2019	Announced
BlackPearl Resources Inc.			
Blackrod			
BlackPearl says that detailed engineering design work for the first phase of the commercial Blackrod project began in Q4/2012. The company plans to expand the pilot in 2013, drilling an additional well pair early in the year.			
Phase 1	20,000	2015	Application
Phase 2	30,000	2018	Application
Phase 3	30,000	2021	Application
Pilot	800	2011	Operating
Canadian Natural Resources Limited			
Gregoire Lake			
Canadian Natural says geological scoping is underway.			
Phase 1	60,000	TBD	Announced
Phase 2	60,000	TBD	Announced

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Grouse			
Canadian Natural says timing of Grouse has been adjusted to accommodate the potential inclusion of recently acquired lands adjacent to the company's Kirby area and provide a more balanced capital expenditures profile going forward. First steam at Grouse is now expected between 2017 and 2019.			
Commercial	50,000	TBD	Application
Kirby North			
Canadian Natural has budgeted approximately $205 million for Kirby North in 2013 to progress detailed engineering, order modules and construct camp facilities. Project sanction is targeted for the first half of 2013. To accommodate the acquisition of lands adjacent to the Kirby area that Canadian Natural may include in the project, first steam at Phase 1 is now anticipated in 2016.			
Phase 1	40,000	2016	Application
Phase 2	60,000	2019	Application
Kirby South			
Canadian Natural says construction of Phase 1 continues to progress ahead of plan, and is now 74 per cent complete, with 89 per cent of capital expenditures committed.			
Phase 1	40,000	2013	Construction
Phase 2	20,000	2020	Application
Cavalier Energy Inc.			
Hoole			
Cavalier submitted the regulatory application for the first phase at Hoole in November 2012. Assuming regulatory approval and favourable market conditions, construction is expected to begin in 2014, with first steam in 2015.			
Phase 1	10,000	2016	Application
Phase 2	35,000	TBD	Announced
Phase 3	35,000	TBD	Announced
Cenovus Energy Inc.			
Christina Lake			
Cenovus says the overall Phase E expansion is about 65 per cent complete, while the central plant is nearly 87 per cent complete. First production is anticipated in Q3. Piling and foundation work, engineering and major equipment fabrication continue for Phase F, and design engineering work is underway for Phase G.			
Future Optimization	12,000	TBD	Announced
Phase 1A	10,000	2002	Operating
Phase 1B	8,800	2008	Operating
Phase C	40,000	2011	Operating
Phase D	40,000	2012	Operating
Phase E	40,000	2013	Construction
Phase F	50,000	2016	Approved
Phase G	50,000	2017	Approved
Phase H	50,000	2019	Announced
Foster Creek			
Cenovus says that overall progress on the combined Phase F, G and H expansion is about 40 per cent complete, while the Phase F central plant is 67 per cent complete. First production at Phase F is expected in Q3/2014. Spending on piling work, steel fabrication, module assembly and major equipment procurement is underway at Phase G and design engineering continues on Phase H.			
Future Optimization	15,000	TBD	Announced
Phase A	24,000	2001	Operating
Phase B Debottleneck	6,000	2003	Operating
Phase C Stage 1	10,000	2005	Operating
Phase C Stage 2	20,000	2007	Operating
Phase D	30,000	2009	Operating
Phase E	30,000	2009	Operating
Phase F	45,000	2014	Construction
Phase G	40,000	2015	Approved
Phase H	40,000	2016	Approved
Phase J	50,000	2019	Announced
Narrows Lake			
Site preparation is underway, with construction of the Phase A plant scheduled to begin in Q3/2013.			
Phase 1	45,000	2017	Construction
Phase 2	45,000	TBD	Approved
Phase 3	40,000	TBD	Approved

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Pelican Lake Grand Rapids			
Cenovus says it anticipates regulatory approval for the commercial Grand Rapids pilot in 2013.			
Phase A	60,000	2017	Application
Phase B	60,000	TBD	Application
Phase C	60,000	TBD	Application
Pilot	600	2011	Operating
West Kirby			
Phase 1	30,000	TBD	Announced
Winefred Lake			
Phase 1	30,000	TBD	Announced
Connacher Oil And Gas Limited			
Great Divide			
Connacher received regulatory approval for the two-phase, 24,000-barrel-per-day expansion at Great Divide in September 2012. The company says the approval allows it to advance its evaluation of project costs, timing and financing alternatives.			
Algar Pod 2	10,000	2010	Operating
Expansion 1A	12,000	2014	Approved
Expansion 1B	12,000	2016	Approved
Pod 1	10,000	2007	Operating
ConocoPhillips Canada			
Surmont			
ConocoPhillips Canada says it plans to "lighten" its oilsands position, potentially selling off assets including its stake in the Surmont project.			
Phase 1	27,000	2007	Operating
Phase 2	109,000	2015	Construction
Pilot	1,200	1997	Operating
Devon Canada Corporation			
Jackfish			
Devon says combined production at Jackfish 1 and 2 averaged a record 49,000 barrels per day during Q4/2012. Construction on Jackfish 3 is now approximately 50 per cent complete.			
Phase 1	35,000	2007	Operating
Phase 2	35,000	2011	Operating
Phase 3	35,000	2015	Construction
Jackfish East			
Expansion	20,000	2018	Announced
Pike			
Devon filed the regulatory application for all three phases of the Pike project in June 2012. The company says facility construction and SAGD drilling for the first phase will begin in late 2013 or early 2014, pending corporate approvals. The company has also submitted its environmental impact assessment report for the project.			
1A	35,000	2016	Application
1B	35,000	2017	Application
1C	35,000	2018	Application
Grizzly Oil Sands ULC			
Algar Lake			
Grizzly has entered into a memorandum of understanding that outlines the rate structure for a 10-year agreement with Canadian National Railway to transport its bitumen to the U.S. Gulf Coast. The Algar Lake project is expected to start up in the first half of 2013.			
Phase 1	5,500	2013	Construction
Phase 2	5,500	2014	Approved
May River			
Grizzly is currently conducting a well delineation program at May River, recently expanding the program to 28 wells, with 25 wells completed. Following the 2012/13 winter drilling season, Grizzly part owner Gulfport Energy says the company will have explored the area sufficiently to support its SAGD project application.			
Phase 1	6,800	TBD	Announced
Phase 2	6,800	TBD	Announced
Harvest Operations Corp.			
BlackGold			
Harvest says the engineering, procurement and construction portion of the EPC contract relating to the central processing facility is approximately 83 per cent complete. The facility construction portion of the contract is approximately 43 per cent complete. Production is expected to begin in 2014.			
Phase 1	10,000	2014	Construction
Phase 2	20,000	TBD	Application

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Husky Energy Inc.			
McMullen			
Husky says that 32 slant wells have been put on cold production at McMullen. Drilling operations for the 2013 program have commenced, with a total of 15 new slant development wells drilled before the end of 2012. At the air injection pilot, first production was achieved from the horizontal producer and ongoing testing continues.			
Air Injection Pilot-Experimental	755	2012	Operating
Japan Canada Oil Sands Limited			
Hangingstone			
Japan Canada Oil Sands owner JAPEX has sanctioned the Hangingstone expansion project. Project partner Nexen is expected to sanction its share of the development early in 2013.			
Expansion	20,000	2016	Approved
Hangingstone Pilot			
Pilot	11,000	1999	Operating
Koch Exploration Canada Corporation			
Muskwa			
Koch's Canadian subsidiaries are seeking a strategic investor to advance development and monetize certain oilsands interests, including the Muskwa asset.			
Pilot	10,000	2015	Application
Laricina Energy Ltd.			
Germain			
Laricina says construction of Germain is 75–80 per cent complete, and the project will begin taking steam in June.			
Phase 1 CDP	5,000	2013	Construction
Phase 2	30,000	2015	Application
Phase 3	60,000	TBD	Application
Phase 4	60,000	TBD	Application
Saleski			
Laricina has filed a project update to the Saleski Phase 1 regulatory application to reflect the change of well configuration to a single horizontal well cyclic SAGD from a dual-well SAGD process.			
Experimental Pilot	1,800	2011	Operating
Phase 1	10,700	2015	Application
MEG Energy Corp.			
Christina Lake			
MEG says its 2012 exit production volumes exceeded 2012 guidance and achieved record rates. Agreements are now in place to enable substantial volumes to be transported by rail and barge to high-value markets. At Phase 2B, all major components have been fabricated and delivered to site.			
Phase 1 Pilot	3,000	2008	Operating
Phase 2A	22,000	2009	Operating
Phase 2B	35,000	2013	Construction
Phase 3A	50,000	2016	Approved
Phase 3B	50,000	2018	Approved
Phase 3C	50,000	2020	Approved
Surmont			
MEG's environmental impact assessment report for Surmont was filed in late October, while the regulatory application was filed in September. Public consultation is ongoing.			
Phase 1	41,000	2018	Application
Phase 2	41,000	TBD	Application
Phase 3	41,000	TBD	Application
Nexen Inc.			
Long Lake			
The $15.1-billion acquisition of Nexen by CNOOC Limited was completed in February 2013. Nexen will continue to operate as a subsidiary of CNOOC.			
Long Lake South (Kinosis) Phase 1	40,000	TBD	Approved
Long Lake South (Kinosis) Phase 2	40,000	TBD	Approved
Phase 1	72,000	2008	Operating
Phase 2	72,000	TBD	Approved
Phase 3	72,000	TBD	Application
Phase 4	72,000	TBD	Announced

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Osum Oil Sands Corp.			
Sepiko Kesik			
Alberta Environment has issued the final terms of reference for the Sepiko Kesik project.			
Phase 1	30,000	2018	Announced
Phase 2	30,000	TBD	Announced
Statoil			
Kai Kos Dehseh			
Statoil says its next projects will be an expansion to Leismer and the Corner project. Corner will be sanctioned late in 2013 or early in 2014.			
Corner	40,000	2017	Approved
Corner Expansion	40,000	TBD	Application
Hangingstone	20,000	TBD	Application
Leismer Commercial	10,000	TBD	Approved
Leismer Demonstration	10,000	2010	Operating
Leismer Expansion	20,000	TBD	Approved
Leismer Northwest	20,000	TBD	Application
Leismer South	20,000	TBD	Application
Thornbury	40,000	TBD	Application
Thornbury Expansion	20,000	TBD	Application
Suncor Energy Inc.			
Chard			
Phase 1	40,000	TBD	Announced
Meadow Creek			
Phase 1	40,000	TBD	Approved
Phase 2	40,000	TBD	Approved
Surmont Energy Ltd.			
Wildwood			
Phase 1	12,000	2015	Application
Value Creation Inc.			
Advanced TriStar			
Value Creation has submitted an environmental assessment report for the Advanced TriStar project.			
ATS-1	15,000	2016	Application
ATS-2	30,000	2018	Application
ATS-3	30,000	2020	Application
TriStar			
Pilot	1,000	2014	Application
COLD LAKE REGION — IN SITU			
Baytex Energy Corp.			
Cold Lake			
Baytex says it will build facilities and drill one SAGD well pair in 2013. Following successful operations of this pilot, the company will proceed with construction of the 5,000-barrel-per-day first commercial phase in 2014.			
Commercial	5,000	2016	Approved
Pilot	1,200	TBD	Approved
Birchwood Resources Inc.			
Sage			
Birchwood has filed its regulatory application for the $230-million Sage project. Propak Systems of Airdrie, Alta., will execute modular surface facility construction.			
Pilot	5,000	2015	Application
Canadian Natural Resources Limited			
Primrose & Wolf Lake			
Canadian Natural has completed additional pad drilling at Primrose on schedule and drilled on budget. These wells are expected to come on production in 2013.			
Primrose East	32,000	2008	Operating
Primrose North	30,000	2006	Operating
Primrose South	45,000	1985	Operating
Wolf Lake	13,000	1985	Operating

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Devon Canada Corporation			
Walleye			
Devon filed its regulatory application for Walleye in June 2012. The company says construction will start in 2013.			
Phase 1	9,000	2016	Application
Husky Energy Inc.			
Caribou			
Demonstration	10,000	TBD	Approved
Tucker			
Husky says that, during Q4/2012, drilling commenced on five new Grand Rapids well pairs at Tucker.			
Phase 1	30,000	2006	Operating
Imperial Oil Limited			
Cold Lake			
Imperial says that, at the end of Q4/2012, the Nabiye expansion project was 37 per cent complete. Module construction is underway, and drilling has been completed on two of seven well pads.			
Phase 1-10	110,000	1985	Operating
Phase 11-13	30,000	2002	Operating
Phase 14-16	40,000	2014	Construction
Osum Oil Sands Corp.			
Taiga			
Osum received regulatory approval for the 35,000-barrel-per-day Taiga project. The company says it is now considering financing options.			
Phase 1	23,000	2016	Approved
Phase 2	22,000	2017	Approved
Pengrowth Energy Corporation			
Lindbergh			
Pengrowth has announced it is pursuing asset sales in order to fund development of the Lindbergh commercial project. The company says excellent pilot results and associated reserve potential have provided the confidence to accelerate and expand the first phase of commercial development.			
Phase 1	12,500	2015	Application
Phase 2	17,500	2017	Announced
Phase 3	20,000	2018	Announced
Pilot	1,200	2012	Operating
Royal Dutch Shell plc			
Orion			
Shell is looking to sell the Orion property, reportedly to focus on in situ operations at Peace River.			
Phase 1	10,000	2007	Operating
Phase 2	10,000	TBD	Approved
PEACE RIVER REGION — IN SITU			
Andora Energy Corporation			
Sawn Lake			
Andora Energy majority owner Pan Orient Energy says pilot equipment procurement is underway, with production anticipated in Q4/2013.			
Demonstration	1,400	2013	Construction
Baytex Energy Corp.			
Cliffdale			
Baytex has signed a 10-year agreement with Genalta Power Inc. whereby the majority of excess gas associated with its Peace River heavy oil operations will be delivered to a power generation facility being constructed by Genalta in the area. Baytex says the project will reduce its emissions.			
Pilot	1,900	2010	Operating
Harmon Valley			
Pilot	TBD	2011	Operating
Murphy Oil Company Ltd.			
Cadotte			
Pilot	TBD	TBD	Application
Seal/Cadotte			
Pilot	TBD	2012	Operating

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Northern Alberta Oil Ltd.			
Sawn Lake			
Company owner Deep Well Oil & Gas says WorleyParsons has launched preliminary engineering work on the Sawn Lake pilot project. The work will include a pilot plan, process flow diagrams, material balances for hydrocarbons, sulphur and water, description of the capacity and content of emissions.			
Pilot	700	TBD	Approved
Penn West Petroleum Ltd.			
Harmon Valley South			
Penn West says that 2013 capital plans will include further assessment of the Harmon Valley South thermal project.			
Pilot	TBD	TBD	Approved
Seal Main			
Penn West says that 2013 capital expenditures will include additional engineering work at the Seal Main pilot and commercial project.			
Commercial	10,000	2015	Application
Pilot	75	2011	Operating
Petrobank Energy And Resources Ltd.			
Dawson			
Petrobank is developing cold-production operations on two horizontal wells at Dawson in order to pre-condition the reservoir prior to THAI operations.			
Experimental THAI Demonstration	10,000	2013	Construction
Phase 2	10,000	TBD	Announced
Royal Dutch Shell plc			
Peace River			
Alberta's environmental assessment director has deemed complete Shell Canada's environmental impact assessment report for the Carmon Creek expansion.			
Cadotte Lake	12,500	1986	Operating
Carmon Creek - Phase 1	40,000	2015	Application
Carmon Creek - Phase 2	40,000	2018	Application
Southern Pacific Resource Corp.			
Red Earth			
Southern Pacific has yet to release its future development plans for the Red Earth project.			
Commercial	10,000	TBD	Announced
Pilot	1,000	2009	Operating
Pilot Expansion	3,000	TBD	Announced
SASKATCHEWAN REGION — IN SITU			
Cenovus Energy Inc.			
Axe Lake			
Cenovus Energy acquired the Axe Lake project in fall 2012. The company has not yet announced plans for the asset, stating only that it is a good "bolt-on" addition to the emerging Telephone Lake project, which is adjacent.			
Commercial	30,000	TBD	On Hold
NORTH ATHABASCA REGION — UPGRADER			
BP p.l.c.			
Terre de Grace			
BP says that ongoing appraisal activities include delineation drilling, seismic acquisition and appraisal of water sources.			
Pilot	8,400	TBD	Approved
Canadian Natural Resources Limited			
Horizon			
Canadian Natural says it continues its strategy of staged expansion to 250,000 barrels per day and work remains on track. Projects currently under construction are trending at or below estimates.			
Phase 1	114,000	2009	Operating
Phase 2A	10,000	2014	Construction
Phase 2B	45,000	TBD	Approved
Phase 3	80,000	TBD	Approved
Tranche 2	5,000	2012	Operating
Ivanhoe Energy Inc.			
Tamarack			
Alberta Environment has deemed the environmental impact assessment for the Tamarack project complete.			
Phase 1	34,784	2016	Application

CURRENT PROJECT	CAPACITY	START-UP	REGULATORY STATUS
Suncor Energy Inc.			
Base Operations			
Suncor says that, during Q4/2012, a number of new assets were brought into service to support oilsands operations: the Wood Buffalo Pipeline, which connects the company's Athabasca terminal at the base plant in Fort McMurray to other third-party pipeline infrastructure in Cheecham, Alta., and the first two of four new storage tanks in Hardisty, Alta., which will connect to the Enbridge Mainline Pipeline in 2013.			
Millennium Coker Unit	97,000	2008	Operating
Millennium Vacuum Unit	35,000	2005	Operating
U1 and U2	225,000	1967	Operating
Fort Hills			
A sanction decision on Fort Hills is expected in the second half of 2013.			
Phase 1	145,000	TBD	On Hold
Phase 2 & 3	145,000	TBD	On Hold
Voyageur Upgrader 3			
Suncor and partner Total have agreed to an immediate minimum spend program on Voyageur. A go/no-go decision on the project is now expected in Q1/2013.			
Phase 1	127,000	2016	Approved
Phase 2	63,000	TBD	Approved
Syncrude Canada Ltd.			
Mildred Lake/Aurora			
Canadian Oil Sands Limited says Syncrude is expected to produce between 105 million and 115 million barrels in 2013, incoporating a planned turnaround of Coker 8-1 in the second half of the year.			
Base Plant Stage 1 & 2 Debottleneck	250,000	1978	Operating
Stage 3 Debottleneck	75,000	TBD	Announced
Stage 3 Expansion (UE-1)	100,000	2006	Operating
SOUTH ATHABASCA REGION — UPGRADER			
Nexen Inc.			
Long Lake			
The $15.1-billion acquisition of Nexen by CNOOC Limited was completed in February 2013. Nexen will continue to operate as a subsidiary of CNOOC.			
Phase 1	58,500	2008	Operating
Phase 2	58,500	TBD	Approved
Phase 3	58,500	TBD	Application
Phase 4	58,500	TBD	Announced
Value Creation Inc.			
Advanced TriStar			
Value Creation has submitted an environmental assessment report for the Advanced TriStar project.			
ATS-1	12,750	2016	Application
ATS-2	25,500	2018	Application
ATS-3	25,500	2020	Application
TriStar			
Pilot	840	2014	Application
INDUSTRIAL HEARTLAND REGION — UPGRADER			
North West Upgrading Inc.			
Redwater Upgrader			
North West Upgrading says its project team has grown to over 350 people, and it is expanding office space in the Town of Redwater, Alta. Winter conditions following project sanction have meant that much of the preliminary site preparation work will have to wait until spring 2013, but design work continues by about 1,000 technical staff. Some pipeline relocation work within and near the site is planned for Q1 and early Q2, and major civil works contracts will be executed in spring and summer, followed by deep underground piping and foundation work and site mechanical construction.			
Phase 1	77,000	2016	Approved
Phase 2	77,000	TBD	Approved
Phase 3	77,000	TBD	Approved
Shell Albian Sands			
Scotford Upgrader 1			
Commercial	158,000	2003	Operating
Expansion	91,000	2011	Operating
Value Creation Inc.			
Heartland			
Construction was suspended in September 2008.			
Phase 1	46,300	TBD	On Hold
Phase 2	46,300	TBD	Approved
Phase 3	46,300	TBD	Approved

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Canadian Oilsands Navigator makes the Athabasca region interactive



IMAGE: ROBERT ADRIAN HILLMAN/PHOTOS.COM

Canada's oilsands is the third-largest deposit of oil on earth, with reserves of approximately 170 billion barrels and potential resources of up to 1.8 trillion barrels. Of Canada's three major oilsands deposits—Athabasca, Cold Lake and Peace River—the Athabasca region is the richest, containing over 80 per cent of the original oil in place. This is the heart of the oilsands.

Now a new interactive website allows visitors to delve deeper into the individual Athabasca oilsands projects that make the industry tick. In 2012, *Oilsands Review* launched the Canadian Oilsands Navigator, an innovative resource that combines rich data with maps and graphics to support a variety of business needs. Featuring easy customization and up-to-date information, the site provides a wide range of oilsands project metrics, including:

- Lease ownership information;
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- Operating project details such as technology, ownership structures and target formations;
- Upcoming project development timelines;
- Key performance indicators including steam to oil ratios and operational wells (in situ), production rates versus capacity, and electricity production and purchase (mining);
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COOL OPERATORS

Primary heavy oil and bitumen producers leverage reservoir knowledge and drilling technologies to generate wealth

By Darrell Stonehouse



PHOTO: JOEY PODLUBNY

Massive, multi-billion dollar oilsands mining and thermal projects generate all the headlines in the oilpatch in Canada these days, leaving more traditional cold heavy oil and bitumen production off the radar.

But beneath the surface, it's conventional heavy oil production in the Lloydminster area and cold-flow bitumen projects across northern Alberta that are paying the bills and generating the profits, allowing many companies to develop and expand mining and thermal operations.

Just ask Steve Laut, president of Canadian Natural Resources Limited.

"Primary heavy oil provides the highest return of capital projects in our portfolio and generates significant free cash flow," Laut told investors and analysts at the company's 2013 Budget Day presentation in January.

Canadian Natural is Canada's largest primary heavy oil operator, producing around 125,000 barrels per day in 2012. The company has put major efforts into developing its huge heavy oil land holdings the last five years, working to turn its almost 250 million barrels of proven and probable reserves into producing assets. It drilled a record 900 cold wells in 2012, raising production by 21 per cent. Laut said he expects Canadian Natural to spend around $1.1 billion drilling around 890 wells and re-completing another 490 wells in 2013.

"Our capital spend is the same as 2012, and will deliver an additional 12 per cent growth in production to just over 140,000 barrels a day. We expect that with our inventory, we will be able to grow production to roughly 150,000 barrels a day and then see production plateau due to the high-decline nature of primary heavy oil," he predicted, adding the company will drill 120 horizontal wells in 2013.

SECONDARY RECOVERY

Canadian Natural has identified 8,500 drilling locations to keep production stable. It is also testing a number of waterflood pilots on its heavy oil production base to stem declines.

The company has a well-established heavy oil recovery plan in place. Vertical wells with progressing cavity pumps are the norm in the heavy oil belt. Canadian Natural continues drilling around 750 of these wells annually, to depths of 350–650 metres. It is using directional (or slant) drilling and multi-well pads, and is completing one to three zones per well.

Older existing vertical wells are being re-completed to access untapped horizons as production declines in older zones.

Canadian Natural began its horizontal program in 2009, drilling two wells to test the technology in heavy oil applications. In 2012, it drilled 100 horizontals. The horizontal wells are being used for two purposes. The first is to access reserves where the oil lies over water. The second is to access heavy oil in less permeable pools previously discovered, but not producible using vertical wells.

The company also has a number of enhanced heavy oil recovery schemes in the pilot phases. It has an ongoing water flood at Salt Lake and pilots underway at Lone Rock, Golden Lake and Epping. It is also testing polymer flooding. Laut said ultimate recovery could double or triple if the enhanced recovery projects are successful.

Canadian Natural is also in the process of proving up a new heavy oil play targeting the Wabiskaw formation at Woodenhouse, about an hour north of Pelican Lake, that could greatly add to its production. The last available production statistics for the play show Woodenhouse averaged 9,300 barrels per day in October, and it was projected to exit 2012 at approximately 12,600 barrels per day. Its current plan is to drill around 250 wells on 45 pads at Woodenhouse. Further exploration may add to the play.

A CASH COW

Like Canadian Natural, Baytex Energy Corp. also uses its base of heavy oil production at Lloydminster to provide cash to grow operations into other plays. Baytex produces around 20,000 barrels per day in the Lloydminster area, and expects that rate to continue well into the future.

"Lloydminster is the traditional bread and butter of Baytex," company chief financial officer Derek Aylesworth recently told an investor conference. "It's kind of a cash cow for us. We don't see that there are a lot of growth opportunities, but it's an area that has the opportunity to stay flat, we think, for the foreseeable future."

Aylesworth described Lloydminster as a multi-stacked heavy oil reservoir with opportunities varying by geographical area.

"When you look at technical development of the Lloyd area, Lloyd is a very desperate area. So in some areas we'll develop with single verticals that intercept multiple pay zones. In some areas we use horizontal wells," he explained.

Vertical wells are completed in multiple zones, making capital efficiencies very good, he noted. Finding and development costs have been around $12 per barrel.

Baytex has used its cash flow from Lloydminster to pioneer heavy oil and bitumen development in the Peace River oilsands, where it has over 320 sections of land in the Seal area.

"We started our first production in Seal in 2005," Aylesworth said. "We went from a standing start of no production to about 21,000 barrels a day at the end of the third quarter of 2012. Cost metrics at Seal using primary development are outstanding, literally amongst the best in the world and certainly amongst the best in North America."

Baytex is using a multilateral well configuration at Seal, and the results speak for themselves.

"Capital expenditure for an eight-well multilateral is about $2.1 million to drill, complete and equip," said Aylesworth. "For that, we're getting initial production rates between 400 and 500 barrels a day, and ultimate recoverable reserves in the neighbourhood of 450,000 barrels per day. That translates to finding and development costs of about $4.50 per barrel. Operating expense is extremely low. We've averaged about $3.80 per barrel on this play, largely because the wells are quite prolific."

Aylesworth said the big advantage at Seal is that the multiple layers of oil beneath the surface allow Baytex to concentrate a number of wells from single surface facilities.

"The multilaterals that we've been using at Seal for cold production, we think, are an innovation that probably initiated with Baytex," he noted. "Occasionally, Seal is about 20 metres thick in the Bluesky sands. But the oil is more viscous the deeper you get into the reservoir. So we've been facing our cold producers in the top third of the pay zone."

The company is now drilling most horizontals with 13 laterals. Once these wells decline, it will focus on the bottom two-thirds of the reservoir.

"A lot of the future development at Seal is going to be thermal," Aylesworth explained. "The cold wells are going in the top third of the reservoir. In due course, when we've exhausted cold production in the top third, we'll go back and put thermal producers in the bottom two-thirds to extract the reserves left behind."

Baytex expects to recover around five to seven per cent of original oil using cold production.

"When we move to thermal, we believe that that recovery rate jumps up to about 30 per cent," said Aylesworth. ■

Primary production operations using progressing cavity pumps and cold heavy oil production with sand are paying the bills and generating profits for many producers, funding larger oilsands projects.



HOT PLAYERS

Thermal technologies and polymer floods drive enhanced conventional heavy oil rush

By Darrell Stonehouse

With a resource base of over 30 billion barrels and a current recovery factor of less than 10 per cent, western Canada's heavy oil areas still have a lot of potential lying beneath the surface.

The means to economically capture more of that resource are emerging as innovative heavy oil operators commercialize a variety of enhanced recovery technologies custom-fit for the different circumstances found play-by-play.

THERMAL RECOVERY

There are a number of companies using thermal development like steam assisted gravity drainage (SAGD) to maximize recovery from conventional heavy oil reservoirs. The argument in favour of the technology is recovery rates as high as 50 per cent.

Husky Energy Inc., which has been operating in the Lloydminster heavy oil fields for 70 years, is leading the charge. Speaking at Husky's Investor Day, company president and chief executive officer Asim Ghosh said that after years of decline in its heavy oil division, Husky is now reversing the trend. Ghosh said much of the credit for this reversal has been the application of SAGD in its fields around Lloydminster.

Thermal recovery of heavy oil is nothing new for Husky. Its first development, Pikes Peak, has been on stream since 1982. Two other developments, Celtic and Bolney, began in 1996. But in the last two years, the company has cranked up production.

"Thermal production for us is already big and it's getting bigger," said Ghosh, who explained the company has already surpassed its target set last year to grow thermal production to 35,000 barrels per day by 2016. "We're running about 38,000 barrels a day, so we're going to set the bar even higher at 55,000 barrels a day by 2017."

Husky's two most recent thermal expansions, Pikes Peak South and Paradise Hill, reached full design capacity within two months of first oil and are both exceeding design rates. Ghosh said the use of thermal technologies has added a generation of production to Husky's Lloydminster land base.

"When you look at the overall heavy oil portfolio, we have a very, very large resource in place, and over the past 70 years, somewhere of the order of magnitude of 800 million barrels have been extracted from our Lloyd heavy oil complex. And with our new focus, with the technology now in place, we have great confidence that we can recover that amount again in the future," said Ghosh.

Husky chief operating officer Robert Peabody says what makes the company's SAGD heavy oil projects profitable are the low upfront development costs and low operating costs.

PHOTO: HUSKY ENERGY INC.



Husky Energy Inc.'s Pikes Peak SAGD project in the Lloydminster region is an example of the growing application of thermal production methods in conventional heavy oil.

"The good margins we're getting are driven by finding and development costs of around $12 a barrel for these thermal projects, and operating costs of about $10 a barrel," Peabody notes.

Husky's effort to grow thermal production has been building for much of the last decade, Peabody says. The company has shot 3-D seismic over almost all of its two million acres of Lloydminster leases to identify suitable targets.

"Through that enhanced technical understanding of how the entire resource is laid down, and improvements in 3-D seismic technology, we can really see where we can put these projects now," he explains. "How the heavy oil is distributed in the subsurface also determines the size of the SAGD projects."

The smaller SAGD projects are easier to execute, as well. Peabody points to the success Husky had at Pikes Peak and Paradise Hill as examples.

"Both of the projects were delivered about eight per cent under our budgets, and were delivered with capital efficiencies in the $24,000–$28,000-a-flowing-barrel range. This delivery was worth about an extra $50 million of net income this year, compared to going on as planned for commissioning these projects."

Peabody says Husky has a robust pipeline of thermal projects to be developed in the next few years. A pilot project at Rush Lake is currently producing, with plans for a 10,000-barrel-per-day commercial project. A smaller 3,500-barrel-per-day project is under construction at Sandall. Further ahead, the company has identified seven more thermal projects, with potential production totalling more than 30,000 barrels per day.

Peabody says while thermal development projects are making the headlines at Lloydminster, they are only part of Husky's growth story.

"With horizontal wells, we're going after thinner reservoirs that were not previously considered commercial. New technologies have allowed us to grow production to over 8,000 barrels per day in a few years. And we're in good shape to hit our target of 16,000 barrels per day by 2017. Using pad drilling and multilaterals, not only are we growing production, we're also improving netbacks. Operating costs for horizontal wells are about $12 per barrel. And we haven't finished with cold heavy oil production with sand [CHOPS] yet. Our focus on CHOPS is to high-grade the remaining locations. We still have an inventory of over 1,000 locations in CHOPS and we keep adding to that inventory every year. And we also have an active program re-completing existing CHOPS wells in new zones that we've previously not exploited."

A different sort of thermal project is underway in western Saskatchewan at Kerrobert, where Petrobank Energy and Resources Ltd. is testing its toe to heel air injection (THAI) technology. After a rocky start, the project is beginning to build momentum, says senior vice-president and chief operating officer, heavy oil, Chris Bloomer.

Petrobank has 47 million barrels of heavy oil in place on its Saskatchewan lands, with proved-plus-probable THAI reserves of 8.5 million barrels at Kerrobert. The field was placed on production in late 2011. At the end of the third quarter of 2012, production averaged a little over 300 barrels per day. The break-even point for the play is around 1,000 barrels per day. Bloomer says the company believes this rate of production is achievable.

"As operations continue to see more air injection and production growth, we do think this project will become an economic project, and that can lead to other projects going forward. So we're certainly not satisfied with 300 barrels a day, and that's something that we hope to see change in the near term."

> **Using pad drilling and multilaterals, not only are we growing production, we're also improving netbacks. Operating costs for horizontal wells are about $12 per barrel.**
>
> — Robert Peabody, chief operating officer, Husky Energy Inc.

Bloomer says the company expects production to climb as it ups air injection and expands the combustion front in the field.

"Our target ultimate injection rate per well is about 3 million cubic feet per day. So with 12 wells, that's 36 million cubic feet of total injection capacity for the whole project. Right now, we are injecting at about 4.5 million cubic feet per day, which is around 12 per cent of the targeted 3 million cubic feet a day per well, or 36 million cubic feet a day for the whole project," he says.

Work continues at Petrobank's Dawson demonstration project in the Bluesky heavy oil play in the Peace River area. Petrobank drilled two THAI well pairs in 2011 and is working on plans for development. The current plan is to drill cold production wells into the play to "pre-condition" the reservoir for THAI development.

POLYMER FLOODS

Heat isn't the only thing being pumped downhole to drive conventional heavy oil production. Polymer floods are also proliferating in an effort to capture more resources.

Pelican Lake is the most advanced polymer flood play, with both Cenovus Energy Inc. and Canadian Natural Resources Limited in the midst of expansion efforts. Canadian Natural is well into total field development at Pelican Lake.

"We have over 550 million barrels to develop on our polymer flood," says Steve Laut, president of Canadian Natural. "Our plan in 2013 is to continue the development at the polymer flood, with 56 per cent of the pool converting to polymer flood by the end of the year. We're seeing good production response from our polymer flood, and we'll see production increase by 19 per cent in 2013."

Cenovus plans on spending as much as $620 million at Pelican Lake in 2013. In 2012, growth slowed in the play as infill drilling resulted in lower field pressure, reports Cenovus executive vice-president and chief operating officer John Brannan.

"We continue to run with four rigs on our infill drilling and polymer flood program," he says. "Production from the new wells is coming on as expected, and we are slowly seeing production rates returning to normal from the existing wells as operating pressures are restored."

Brannan says that as more and more of the field is polymer flooded, costs are rising at Pelican Lake. The company is beginning construction of a 30,000-barrel-per-day oil battery. Its goal is to raise production to 55,000 barrels per day from the field.

Outside Pelican Lake, Murphy Oil Corporation is using polymer flooding to capture more resource at Seal in the Peace River oilsands.

Murphy recently added almost 150,000 acres and 2,200 barrels of production at Seal after buying assets from Shell Canada Limited. It now has over 330,000 acres in the play and 9,000 barrels per day of production.

"We currently have three rigs drilling horizontal wells and a fourth rig drilling water source wells for our polymer injection process. We expect to drill and complete 78 wells at Seal this year," says Murphy executive vice-president and chief operating officer Roger Jenkins. "Polymer injection on Phase 1 of our commercial polymer project began in August. We have just received regulatory approval for a cyclic steam project with steam injection scheduled for the fourth quarter of this year. Additionally, in July, we submitted an application for a vertical steam drive project scheduled to start in the second half of 2014."

Murphy expects production from its Seal assets to climb to 20,000 barrels per day as development progresses.

CO_2 FLOOD

Husky is also in the midst of piloting a number of enhanced recovery schemes, using CO_2 from its ethanol plant in nearby fields surrounding Lloydminster. The company piloted the technology in two heavy oil reservoirs near Mervin, Sask., with help from the Saskatchewan government. In one pilot, cyclic steam stimulation, or "huff and puff," technology was used, while more traditional flood injection technology was used in the other reservoir. The effort is the first known use of CO_2 in a heavy oil reservoir in the world. Husky has since expanded its pilot program into reservoirs at Tangleflags and Lashburn, both in Saskatchewan.

In May 2012, the company announced its carbon capture and liquefaction project at its Lloydminster ethanol plant was complete. In opening the facility, Husky's Ghosh said the project would recover more oil from existing fields while reducing emissions at its ethanol plant.

"This remarkable project gives us two bangs for the same buck," he said.

The facility converts approximately 250 tonnes of CO_2 per day into a high-pressure liquid. The liquid is then stored on site in three 900,000-gallon bullets, each holding one day's worth of production, until it is transferred to the heavy oil fields by tanker trucks. Once there, the CO_2 is vaporized and injected into reservoirs.

No results have been released from the CO_2 floods. ■



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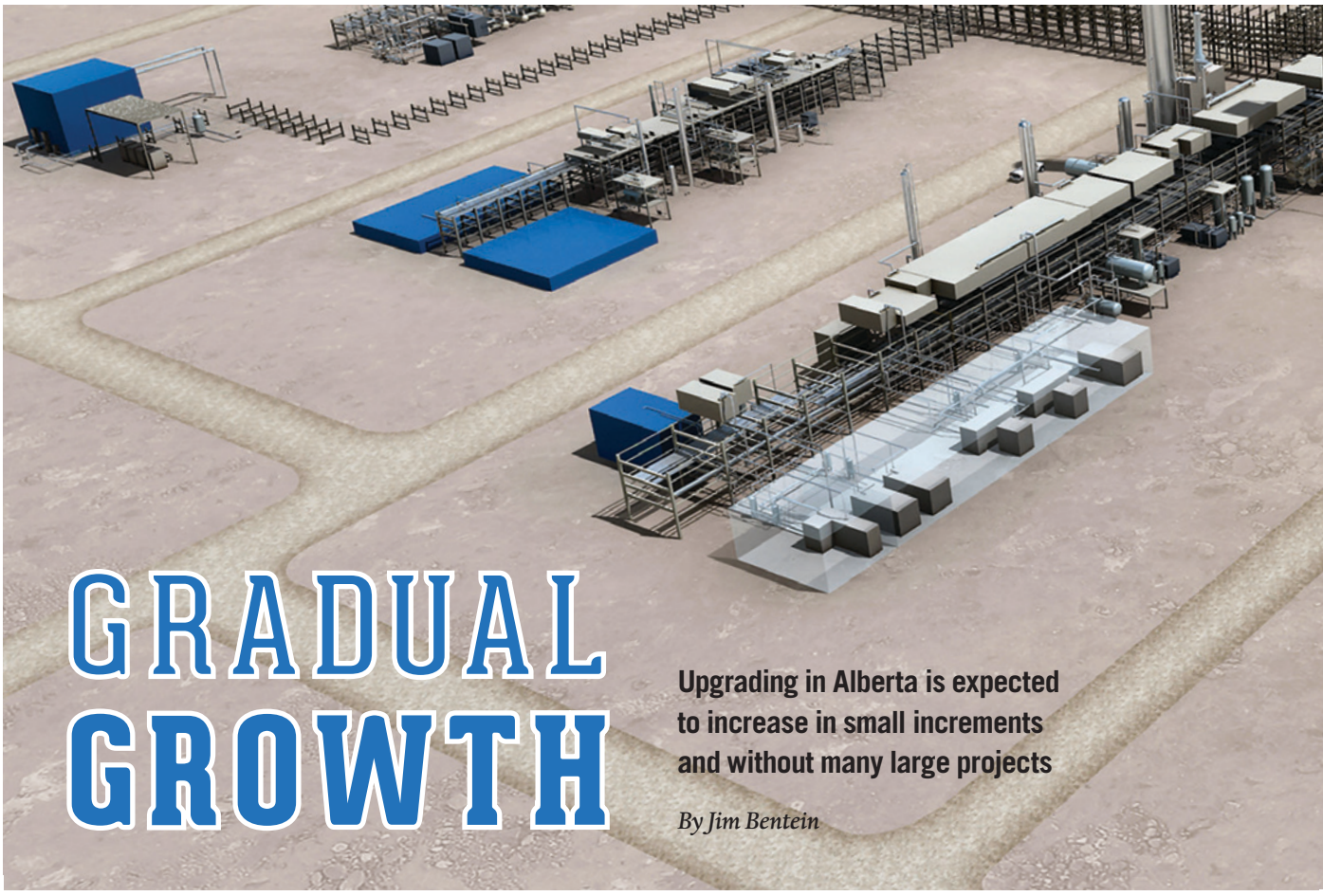
UPGRADING

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Gradual growth anticipated without many major projects

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PHOTO: SUNCOR ENERGY INC.



GRADUAL GROWTH

Upgrading in Alberta is expected to increase in small increments and without many large projects

By Jim Bentein

The head of an Alberta government program that tries to kick-start the development of new energy industry and related environmental technologies says the future of oilsands bitumen and heavy oil upgrading in the province will likely be marked by "niche technologies" rather than giant, multi-billion dollar projects.

"The idea is to look at next-generation technologies for upgrading," says Eddy Isaacs, chief executive officer of Alberta Innovates – Energy and Environment Solutions (AI-EES). "[Such as], how do we get better-quality crude to refineries and how do we reduce or eliminate diluent use?"

Isaacs sees AI-EES's role as one of helping to maximize the market value and marketability of oilsands crudes, especially in light of growing tight oil production in the United States, transportation bottlenecks and other issues.

Since 2006, AI-EES (then the Alberta Energy Research Institute) has analyzed and funded a number of industry-led projects aimed at upgrading Alberta's hundreds of billions of barrels of bitumen into higher-quality crude and other products. That initiative is called the Hydrocarbon Upgrading Demonstration Program (HUDP).

The agency, which receives funding of $25 million per year from the province, concentrates on a number of energy technologies—including those aimed at reducing CO_2 emissions—environmental management technologies, renewable and emerging resource technologies, and water resources.

Isaacs says the HUDP isn't about reinventing the wheel and replacing existing upgraders and refineries with some groundbreaking technology. That's why he has no quarrel with the argument that there is economic logic in moving Alberta bitumen to existing heavy oil upgraders on the U.S. Gulf Coast and elsewhere.

However, there are "unique approaches" that can lead to more upgrading within Alberta and Canada.

One example is the OrCrude technology used now for several years at Nexen Inc.'s Long Lake oilsands project in northeastern Alberta. Although the process, which uses Lurgi gasifier technology, has run into ongoing operational problems, Isaacs says it's an example of the kind of approach that can transform the oilsands industry.

His department played a role in funding and analyzing that technology.

North West: A new approach to upgrading in Alberta

Another novel approach is that being taken by North West Upgrading Inc., operator of the recently sanctioned $5.6-billion Sturgeon Refinery in Alberta's Industrial Heartland. Development of the first phase of that project, which will upgrade 50,000 barrels of bitumen per day, will start this spring, with two future phases bringing processing capacity to 150,000 barrels per day. The long-awaited sanction announcement came in fall 2012.

Development of the Sturgeon Refinery was stimulated by the province's Bitumen Royalty in-Kind (BRIK) program, which makes

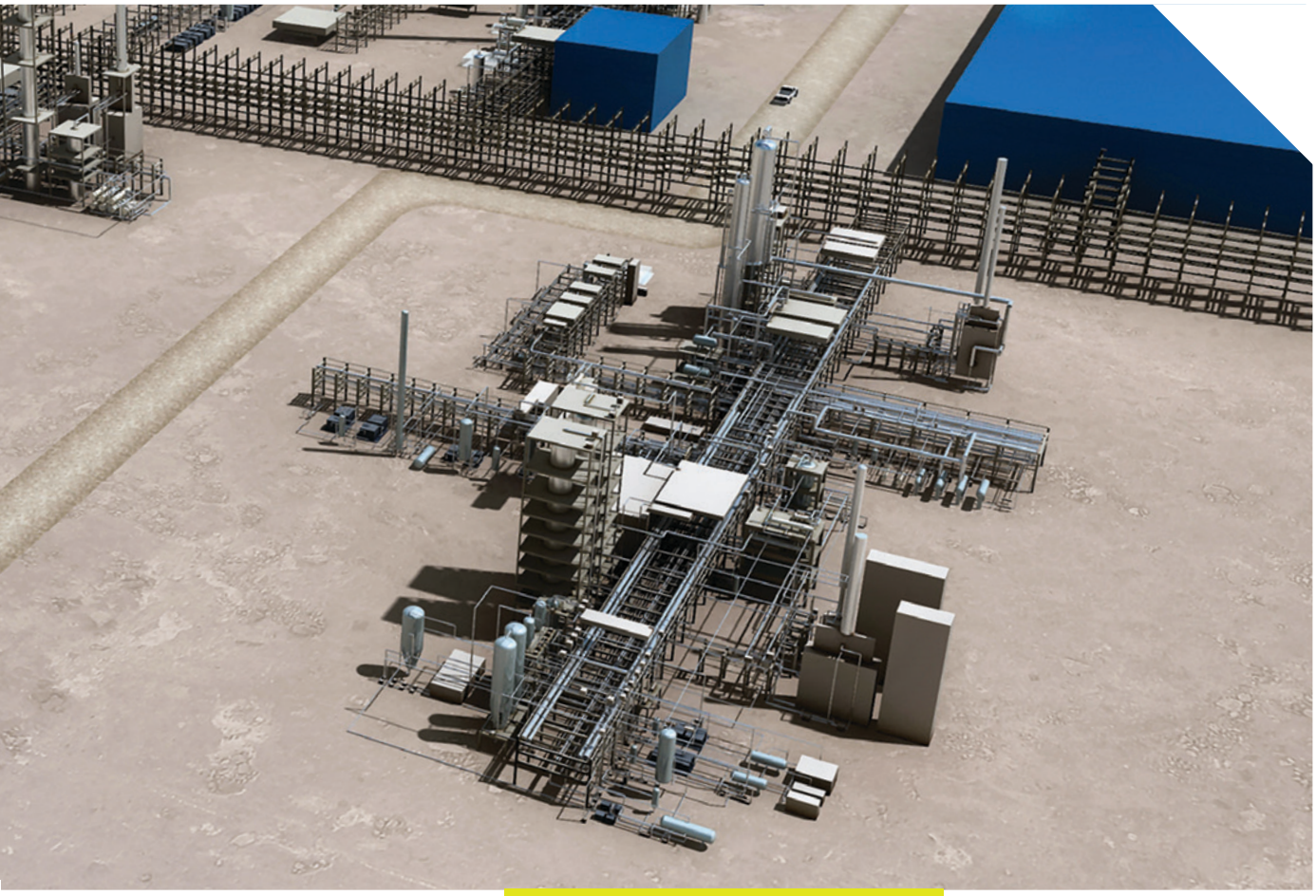


PHOTO: NORTH WEST UPGRADING INC.

The Sturgeon Refinery, owned by North West Upgrading Inc. and Canadian Natural Resources Limited, received long-awaited sanction in fall 2012. It is a unique project based on merchant volumes including goverment bitumen as royalty in-kind.

discounted bitumen available to developers of the refinery on a merchant upgrading basis. Canadian Natural Resources Limited is also a partner and will contribute bitumen to the plant.

The design incorporates gasification technology and includes a number of novel approaches, such as the capture of CO_2, the production of diesel—for which there is a ready market in western Canada—and the production of petrochemical feedstock. Sturgeon will also be linked via pipeline to transport captured CO_2 to depleted oilfields for enhanced oil recovery.

"The integration of all of those elements is brilliant," says Isaacs.

Outlook for the province

While the Sturgeon Refinery is a major development for Alberta—which used to be stacked with new upgrading proposals and is now essentially dry—Isaacs says that, going forward, it is likely that upgrading capacity will grow only gradually in the province. Field upgrading, which will allow producers to rely less on diluent and to ship a higher-quality product to refineries, is likely to play a growing role.

Meanwhile, Alberta Energy Minister Ken Hughes says there's little beyond the BRIK program and advocating for more pipeline access for Alberta crude that the government can do. It has no plans to take a direct interest in upgraders, for instance.

"There's no need for us to be involved if we have diverse markets for our products," he says, pointing to the fact that large bitumen producers such as Imperial Oil Limited, Cenovus Energy Inc. and Husky Energy Inc. have access to existing heavy oil processing refineries in the United States through joint ownership positions.

Hughes points out that more than 50 per cent of Alberta's 1.7 million barrels of bitumen produced per day already has access to five upgraders in the province, with the Sturgeon Refinery being the sixth.

Michael Ervin, vice-president and director of consulting services of London, Ont.–based Kent Marketing Services Limited, and one of Canada's foremost authorities on the upgrading and refining sectors, argues that there is no great need to kick-start upgrader construction in Alberta.

"As more raw bitumen flows to the U.S., there is a vested interest that that bitumen continues to flow there," Ervin says, adding that oilsands producers should want to perpetuate the need for their raw bitumen in the United States, Asian and other export markets in the future. "I think it's in the strategic interest of Canadian oilsands producers to ship bitumen south."

For example, China is planning to add three million barrels of upgrading and refining capacity in the next five to seven years.

In fact, Ervin suspects that's why CNOOC Limited is so eager to acquire Nexen, which is a significant leaseholder, with other Asian firms also taking up position in oilsands assets.

"It's not a bad thing to be shipping raw bitumen to upgraders and refineries outside of Alberta," he says, adding that those who lobby for more upgrader development in Canada fail to recognize that when it comes to oil and gasoline demand in North America, "there effectively is no border."

Ron Liepert, former minister of energy and minister of finance in Alberta (he retired from politics last spring) and now a senior adviser with government consulting firm Canadian Strategy Group, says the most important recent decision regarding the future of upgrading was the announcement in November 2012 that Suncor Energy Inc. and joint-venture partner Total E&P Canada Ltd. would put the proposed Voyageur Upgrader on the back burner.

That project, first proposed as a Suncor-only development, with Total coming on as a partner after it cancelled plans for its own upgrader, was seen as the next logical upgrader project to proceed after the Sturgeon Refinery. Indeed, much of the physical foundation for the upgrader already exists, as construction was started and then stopped again in 2008 as global markets collapsed.

Steve Williams, Suncor's president and chief executive officer, recently said that "Voyageur economics appear challenged in light of the projected ramp up of tight oil production in the North American market."

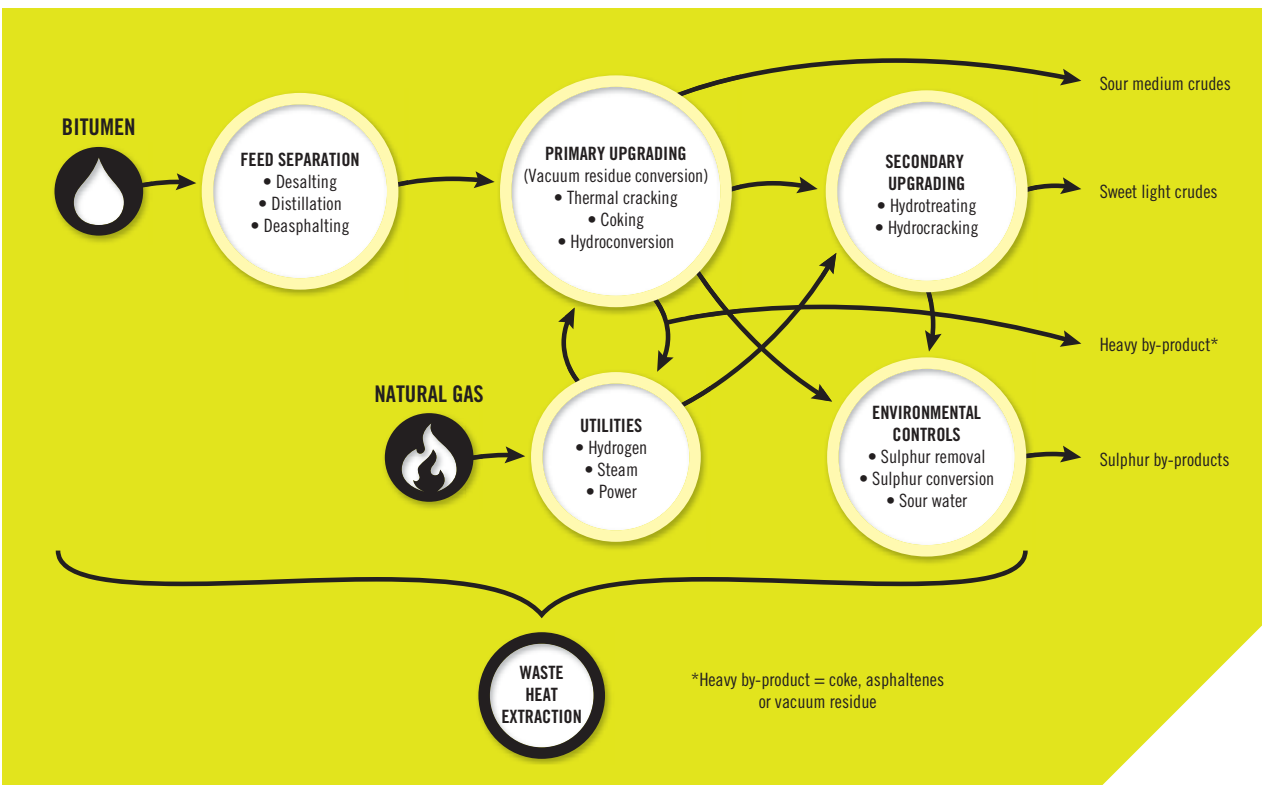
Suncor and Total have agreed to minimal spending on Voyageur, and a sanction decision is anticipated early in 2013.

Liepert, who was energy minister when the BRIK program was crafted, says the Voyageur delay and potential deferral is a serious setback for those hoping for more upgrading and refining within Alberta.

"Steve Williams knows a lot more about upgrading than I do," he says. "What chance does a greenfield project have of proceeding when a project like Voyageur, on which a few billion dollars has already been spent, can't proceed?" ■

> **It's not such a bad thing to be shipping raw bitumen to upgraders and refineries outside of Alberta.**
>
> — Michael Ervin, vice-president and director of consulting services, Kent Marketing Services Limited

The bitumen upgrading process: A general scheme



SOURCE: OILSANDS UPGRADING CHAIR, UNIVERSITY OF ALBERTA

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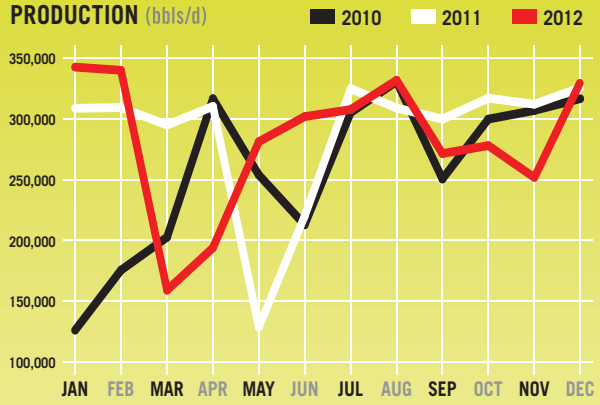
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SUNCOR

Of interest:

Between 2008 and 2011, Suncor Energy Inc. increased upgraded bitumen production by an average of 18,000 barrels per day per year. In 2012, the company commissioned the Millennium Naphtha Unit, which it says is expected to increase sweet synthetic crude production capacity by about 10 per cent and stabilize secondary upgrading processes by providing flexibility during planned or unplanned maintenance.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



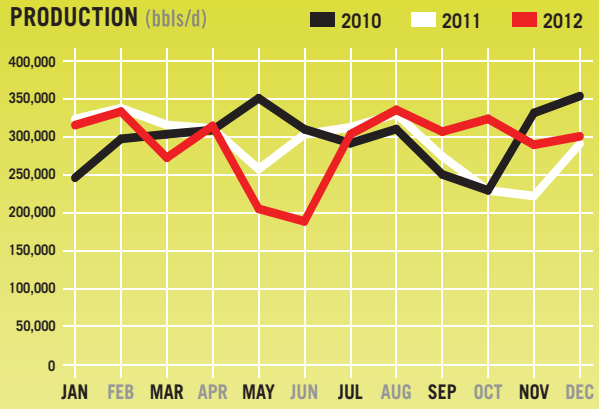
PHOTO: JOEY PODLUBNY

PROJECT	Suncor Base and Millennium
LOCATION	North Athabasca
OWNERSHIP	Suncor Energy Inc. 100%
PRODUCTION START	1967
CURRENT UPGRADING CAPACITY (BBL/D)	357,000
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2012 (BBL/D)	290,932
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2011 (BBL/D)	288,080
PLANT NATURAL GAS PURCHASED 2012 (10^3M^3)	1,469,797
PLANT NATURAL GAS PURCHASED 2011 (10^3M^3)	1,301,721
PLANT NATURAL GAS GENERATED 2012 (10^3M^3)	0
PLANT NATURAL GAS GENERATED 2011 (10^3M^3)	0
PLANT ELECTRICITY PURCHASED 2012 (MWh)	1,407,922
PLANT ELECTRICITY PURCHASED 2011 (MWh)	230,526
PLANT ELECTRICITY GENERATED 2012 (MWh)	2,795,432
PLANT ELECTRICITY GENERATED 2011 (MWh)	2,688,215
AVERAGE REALIZED PRICE PER BARREL 2012	$91.17
AVERAGE REALIZED PRICE PER BARREL 2011	$98.50

SYNCRUDE

Of interest:

The Syncrude upgrader has recently achieved two milestones in reliability, achieving run lengths of 36 months twice on one of its cokers. The previous record was 28 months.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



PHOTO: JOEY PODLUBNY

PROJECT	Syncrude Mildred Lake
LOCATION	North Athabasca
OWNERSHIP	Canadian Oil Sands Limited (36.74%), Imperial Oil Resources Limited (25%), Suncor Energy Inc. (12%), Sinopec Oil Sands Partnership (9.03%), Nexen Oil Sands Partnership (7.23%), Mocal Energy Limited (5%), Murphy Oil Ltd. (5%)
PRODUCTION START	1978
CURRENT UPGRADING CAPACITY (BBL/D)	350,000
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2012 (BBL/D)	317,439
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2011 (BBL/D)	291,915
PLANT NATURAL GAS PURCHASED 2012 (10^3M^3)	1,923,409
PLANT NATURAL GAS PURCHASED 2011 (10^3M^3)	2,038,203
PLANT NATURAL GAS GENERATED 2012 (10^3M^3)	0
PLANT NATURAL GAS GENERATED 2011 (10^3M^3)	0
PLANT ELECTRICITY PURCHASED 2012 (MWh)	588,386
PLANT ELECTRICITY PURCHASED 2011 (MWh)	759,560
PLANT ELECTRICITY GENERATED 2012 (MWh)	2,109,813
PLANT ELECTRICITY GENERATED 2011 (MWh)	3,234,702
AVERAGE REALIZED PRICE PER BARREL 2012	$91.90
AVERAGE REALIZED PRICE PER BARREL 2011	$101.20

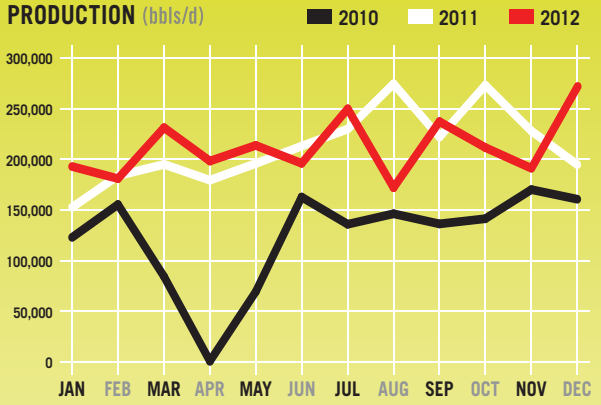
Natural gas and electricity may include operations beyond upgrading.

SOURCE: CANADIAN OIL SANDS LIMITED

SCOTFORD

Of interest:

In 2012, Shell Canada Limited and its partners in the Athabasca Oil Sands Project sanctioned Quest, a carbon capture and storage (CCS) project designed to capture CO_2 volumes from the Scotford Upgrader. This will be the first CCS project in the oilsands, and is being financially supported by both the federal and provincial governments.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



PHOTO: JOEY PODLUBNY

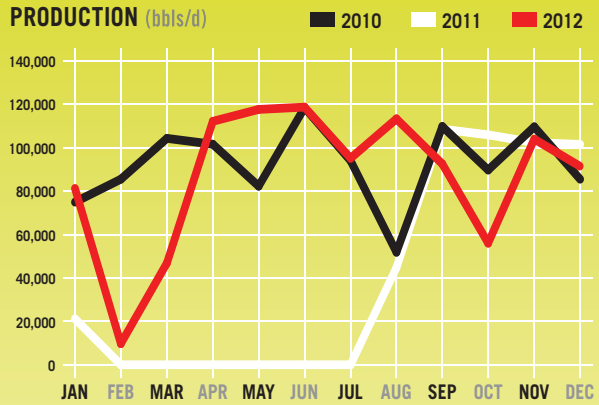
PROJECT	Scotford Upgrader
LOCATION	Industrial Heartland
OWNERSHIP	Shell Canada Limited 60%, Chevron Corporation 20%, Marathon Oil Corporation 20%
PRODUCTION START	2003
CURRENT UPGRADING CAPACITY (BBL/D)	249,000
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2012 (BBL/D)	232,279
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2011 (BBL/D)	211,993
PLANT NATURAL GAS PURCHASED 2012 (10^3M^3)	1,775,052
PLANT NATURAL GAS PURCHASED 2011 (10^3M^3)	379,928
PLANT NATURAL GAS GENERATED 2012 (10^3M^3)	0
PLANT NATURAL GAS GENERATED 2011 (10^3M^3)	0
PLANT ELECTRICITY PURCHASED 2012 (MWh)	236,607
PLANT ELECTRICITY PURCHASED 2011 (MWh)	86,219
PLANT ELECTRICITY GENERATED 2012 (MWh)	1,132,387
PLANT ELECTRICITY GENERATED 2011 (MWh)	1,098,346
AVERAGE REALIZED PRICE PER BARREL 2012	$81.72
AVERAGE REALIZED PRICE PER BARREL 2011	$93.81

Natural gas and electricity may include operations beyond upgrading.

HORIZON

Of interest:

Canadian Natural Resources Limited is currently working on a phased expansion of 140,000 barrels per day at the Horizon mine and upgrader. The first stage, a capacity increase of 5,000 barrels per day, is 84 per cent complete as of January 2013, while the next phase of 10,000 barrels per day is 39 per cent complete. The overall expansion is 16 per cent complete. A major fire at the Horizon upgrader in January 2011 resulted in zero bitumen and synthetic oil production between February and August 2011, reducing average volumes for the year.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



PHOTO: JOEY PODLUBNY

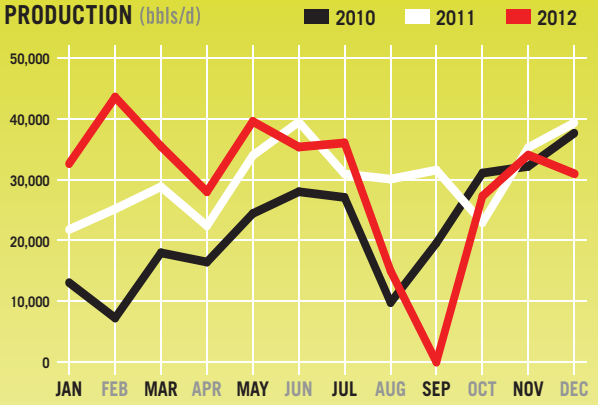
PROJECT	Horizon
LOCATION	North Athabasca
OWNERSHIP	Canadian Natural Resources Limited 100%
PRODUCTION START	2008
CURRENT UPGRADING CAPACITY (BBL/D)	114,000
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2012 (BBL/D)	94,759
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2011 (BBL/D)	40,512
PLANT NATURAL GAS PURCHASED 2012 (10^3M^3)	777,278
PLANT NATURAL GAS PURCHASED 2011 (10^3M^3)	465,951
PLANT NATURAL GAS GENERATED 2012 (10^3M^3)	0
PLANT NATURAL GAS GENERATED 2011 (10^3M^3)	0
PLANT ELECTRICITY PURCHASED 2012 (MWh)	64,098
PLANT ELECTRICITY PURCHASED 2011 (MWh)	154,464
PLANT ELECTRICITY GENERATED 2012 (MWh)	854,649
PLANT ELECTRICITY GENERATED 2011 (MWh)	565,551
AVERAGE REALIZED PRICE PER BARREL 2012	$87.34
AVERAGE REALIZED PRICE PER BARREL 2011	$103.16

Natural gas and electricity may include operations beyond upgrading.

LONG LAKE

Of interest:

Nexen Inc. has been acquired by CNOOC Limited for $15.1 billion, which would give CNOOC 100 per cent ownership of the Long Lake project. Operators continue their strategy to fill the Long Lake upgrader through new steam assisted gravity drainage drilling.



SOURCE: ENERGY RESOURCES CONSERVATION BOARD



MAP REFERENCE

19

PROJECT	Long Lake
LOCATION	South Athabasca
OWNERSHIP	Nexen Inc. 65%, CNOOC Limited 35%
PRODUCTION START	2008
CURRENT UPGRADING CAPACITY (BBL/D)	58,500
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2012 (BBL/D)	32,564
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2011 (BBL/D)	30,148
PLANT NATURAL GAS PURCHASED 2012 (10^3M^3)	145,702
PLANT NATURAL GAS PURCHASED 2011 (10^3M^3)	211,300
PLANT NATURAL GAS GENERATED 2012 (10^3M^3)	0
PLANT NATURAL GAS GENERATED 2011 (10^3M^3)	0
PLANT ELECTRICITY PURCHASED 2012 (MWh)	727,482
PLANT ELECTRICITY PURCHASED 2011 (MWh)	699,540
PLANT ELECTRICITY GENERATED 2012 (MWh)	1,207
PLANT ELECTRICITY GENERATED 2011 (MWh)	15,471
AVERAGE REALIZED PRICE PER BARREL 2012*	$80.13
AVERAGE REALIZED PRICE PER BARREL 2011	$97.28

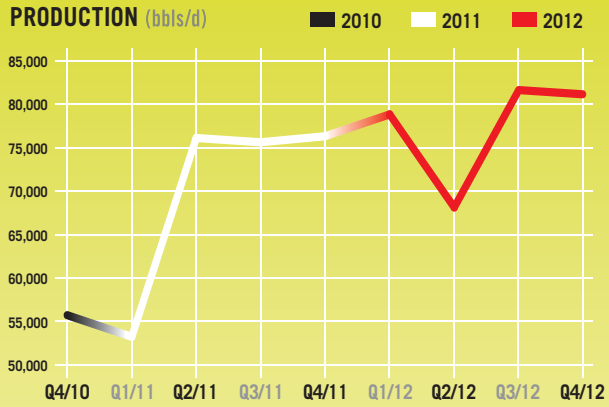
*Premium sweet crude to September 30

PHOTO: JOEY PODLUBNY

LLOYDMINSTER

Of interest:

Feedstock for Husky Energy Inc.'s Lloydminster Upgrader comes from the company's heavy oil operations in north-eastern Alberta and western Saskatchewan, as well as the Tucker steam assisted gravity drainage (SAGD) project in the Cold Lake oilsands deposit. Bitumen volumes from Husky's Sunrise SAGD project, under construction and slated for commissioning in 2014, will be processed at the company's 50 per cent–owned refinery in Toledo, Ohio.



SOURCE: HUSKY ENERGY INC.



PHOTO: JOEY PODLUBNY

PROJECT	Lloydminster Upgrader
LOCATION	Lloydminster, Sask.
OWNERSHIP	Husky Energy Inc. 100%
PRODUCTION START	1992
CURRENT UPGRADING CAPACITY (BBL/D)	82,000
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2012 (BBL/D)	77,400
AVERAGE DAILY SYNTHETIC CRUDE OIL PRODUCTION 2011 (BBL/D)	69,600
PLANT NATURAL GAS PURCHASED 2012 (10^3M^3)	--
PLANT NATURAL GAS PURCHASED 2011 (10^3M^3)	--
PLANT NATURAL GAS GENERATED 2012 (10^3M^3)	--
PLANT NATURAL GAS GENERATED 2011 (10^3M^3)	--
PLANT ELECTRICITY PURCHASED 2012 (MWh)	--
PLANT ELECTRICITY PURCHASED 2011 (MWh)	--
PLANT ELECTRICITY GENERATED 2012 (MWh)	--
PLANT ELECTRICITY GENERATED 2011 (MWh)	--
AVERAGE REALIZED PRICE PER BARREL 2012	n/q
AVERAGE REALIZED PRICE PER BARREL 2011	n/q

Because the Lloydminster Upgrader is located in Saskatchewan, it is not tracked by the Energy Resources Conservation Board, making comparable data to Alberta upgraders unavailable.



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MARKETS



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PHOTO: ISTOCKPHOTO.COM/MAOGG



AN ISSUE *of* ACCESS

Without new export pipelines, oilsands development threatens to moderate

By Ashok Dutta

Heavy oil and oilsands producers in Canada have a major problem. Despite the West Texas Intermediate (WTI) North American benchmark oil price hovering around $90 per barrel, the returns and prospects for producers, and Albertans, are diminishing—and while solutions are on the horizon, the short term promises to sting.

In the recent past, it was commodity price fluctuations, rising capital costs and inordinate delays in project approvals that were major obstacles for the oilsands sector. This time around, the issue is more strategic: constrained market access.

It is not the first time—and it will not be the last—that major producers around the world have had to grapple with this issue, including difficulties like pipeline sabotage in places like Nigeria, Sudan, Russia and Iraq. In Alberta, the situation is a bit different, however, and something of its own making, as it relies on a single market (the United States) for over 90 per cent of its bitumen exports.

The issue is the boom in American tight oil production that has emerged in recent years thanks to hydraulic fracturing technology.

In addition to potential investment slowdowns in heavy oil and oilsands, the market issue has resulted in what is being called a bitumen bubble by the Alberta government—severe financial losses in royalty income.

"Our industry is currently on an evolutionary path, as they prepare to move from a continental to a global market," says Ken Hughes, Alberta's minister of energy. "In 2013, the biggest obstacle to be overcome will be the lack of a tidewater access for which producers are suffering major losses in revenue."

Hughes says that "constricted pipeline capacity, oversupply of crude oil from the Bakken and unfavourable price differentials between [bitumen blends] and WTI ranging from $35 to $40 per barrel are becoming a long-term problem for the industry and is also of deep concern for the Alberta government."

Alberta is bracing itself for a shortfall of $6 billion for 2013/14, and it could get worse if development slows.

"Production growth will become constrained unless more pipeline capacity is built to access new markets," wrote TD Economics researchers in a December 2012 research note.

Analysts at Peters & Co. Limited project that oilsands production will increase from 1.7 million barrels per day today to two million barrels per day by 2015, which includes projects currently ramping up or under construction. However, the energy investment dealer has reduced its long-term risked production forecast to 3.4 million barrels per day by 2020, a drop of seven per cent thanks to slower activity levels driven by overall reduced cash flow.

There are, however, "good signs on the horizon" that Canadian producers will soon start to close their gap to world oil prices, says Greg Stringham, vice-president of oilsands and markets with the Canadian Association of Petroleum Producers. These include the recent start up of the 400,000-barrel-per-day reversed Seaway Pipeline system from Cushing, Okla., to Freeport, Texas.

"With Seaway opening up, we saw some narrowing of [the differential] by a few dollars, but the real kicker is the southern leg of Keystone XL, which is under construction and gets in service by the end of the third quarter," he says. "And then the Seaway expansion goes ahead beginning of next year, and we think that there could actually be some uplift from getting connected to world oil prices for that volume of oil that gets out of Cushing. That will help alleviate one part of the bottleneck. It won't solve all the problems, but that could give some added momentum to the confidence that people have to get to market.

"Clearly, that's short term. Longer term, the companies are absolutely focused on market access, but it's not just Gulf Coast. What can we do to get to the eastern part of Canada, what can we do to get to the Gulf Coast and, longer term, what can we do to get offshore by going to the West Coast?"

ILLUSTRATION: JENNA O'FLAHERTY



1 OPPORTUNITY ONE: U.S. GULF COAST

The U.S. Gulf Coast is one of the world's leading refinery centres, hosting over 40 per cent of U.S. refining capacity. It may be more than 5,000 kilometres from the Alberta oilsands, but it is of crucial importance for oilsands market expansion.

"The U.S. Gulf Coast is a huge crude oil market—nearly equivalent to all of China today," wrote researchers with IHS CERA in a late-2012 research report. "Consequently, the U.S. Gulf Coast will be a critical part of the future for oilsands, particularly bitumen blends."

In recent years, U.S. Gulf Coast refinery owners have made large investments in retrofitting their facilities to use heavier blends of crude as feedstock, which is traditionally imported from countries other than Canada. IHS CERA reports that total U.S. Gulf Coast refining throughput is in excess of eight million barrels per day, a significant portion of which is heavy ready.

"The region's refineries can consume about 2.4 million barrels per day of heavy crudes, like bitumen blends. Today, the majority of heavy supply comes from Mexico [0.7 million barrels per day] and Venezuela [0.8 million barrels per day], with smaller contributions from Colombia [0.3 million barrels per day] and Brazil [0.2 million barrels per day]," writes IHS CERA.

But while the U.S. Gulf Coast provides an enormous growth market for the oilsands at the outset of access, the area's capacity to process heavy oil is not expected to increase in the future.

"Although the region's appetite for heavy crude is substantial, further growth is not expected. Surplus light crude in the region from tight oil production will discourage refiners from investing in retooling their refineries to consume more heavy supply."

The opportunity for oilsands producers is to displace imports from other suppliers, according to IHS CERA, particularly Venezuela, where future supply is uncertain, and Mexico, where it is expected to decline.

"If oilsands could displace most of the Mexican and Venezuelan imports, the opportunity for bitumen blends would be about 1.5 million barrels per day. From a Gulf Coast refiner perspective, Canadian heavy supply offers an alternative to other less-certain crude suppliers."

Light sweet crude—or synthetic crude oil from the oilsands—has room to move in the U.S. Gulf Coast as well. IHS CERA notes that light sweet refining capacity in the region is approximately two million barrels per day, enough to absorb all synthetic crude oil growth to 2030. This will have to compete, however, with domestic volumes of tight light oil.



2 OPPORTUNITY TWO: PACIFIC RIM

When it comes to future markets for oilsands production opening doors for sustained, steady production growth, all eyes are on Asia. And although, as IHS CERA reports, the Asian opportunity is more about future potential than current prospects, the decisions to enable this market on both sides of the Pacific need to happen today.

"China is expected to nearly double its 10-million-barrel-per-day refining capacity by 2030. However, issues of timing create uncertainty," write IHS CERA analysts in a recent research report. "Current refinery capacity is geared to light oil, so opportunities for synthetic crude oil are greater than for heavy bitumen blends.... China clearly has an interest in Canadian crude oil, investing over $10 billion in the oilsands over the past five years.... If it became clear that significant volumes of oilsands crude oil would become available for export to Asia, Chinese refining capacity could be purpose-built to process it.

"Time is a factor since China is making investment decision for the future today. Over the next five years [2012–16], China plans to add over 2.7 million barrels per day of refining capacity. Assuming oilsands could reach this market in the next 10–15 years, before the bulk of the refining build-out is complete, there is greater potential to build refineries geared toward processing oilsands crudes."

Critical to achieving clarity around access to the Asian market, and China in particular, would be approval of new pipeline projects to access Canada's coastlines, enabling tanker oilsands transport. But those projects face significant opposition from environmental groups.



3 OPPORTUNITY THREE: EASTERN AND ATLANTIC CANADA

As a new market for oilsands crudes, eastern Canada does not compare to the massive refining centres presented in the U.S. Gulf Coast and Asia, but its access could have both strategic and tangible value.

"Refinery capacity in eastern Canada is about 900,000 barrels per day, with about half of this capacity aimed at exporting refined products, primarily to the United States," write analysts with IHS CERA, adding that capacity is underutilized, and only about 760,000 barrels per day were consumed during 2011. So there is empty space, but unlike other potential markets, eastern Canada is not oilsands feedstock ready.

"Refining capacity is relatively small, dispersed and geared toward light oil. Lacking any meaningful heavy crude oil capacity, expensive refinery conversion projects would be required to increase opportunities for bitumen blends," IHS CERA continues in an early 2013 report, asserting that opportunities do exist for oilsands-derived synthetic crude oil (SCO).

"However, since conventional refineries are restricted in how much SCO they can consume, the opportunity is limited. We estimate that, under existing configurations, the ultimate potential for SCO in the region is in the range of 250,000 barrels per day [and] given that competition from tight oil is anticipated, actual SCO consumption could be lower."

Strategically, accessing eastern Canada could help reduce offshore imports, in turn strengthening North American energy security. The region could also help in an incremental way to alleviate the crude oil oversupply in the American Midwest.

And pipelines don't have to stop in Quebec—infrastructure could be developed to take oilsands crude to Canada's east coast for tidewater export.

"No applications have been made yet, but building a pipeline to Saint John, New Brunswick, has significant advantages," wrote analysts with TD Economics in late December. "A pipeline could serve both the Irving Refinery—the largest in Canada—and the port at Saint John is a deep-water/non-freezing tidal port, which can accommodate the largest crude oil super tankers." ■

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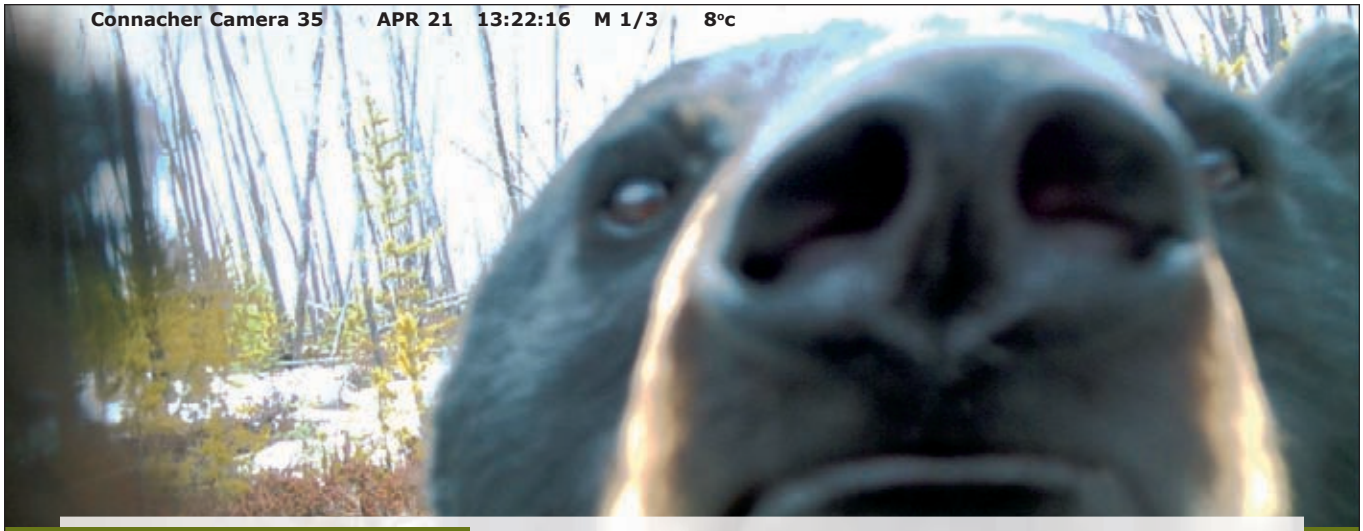


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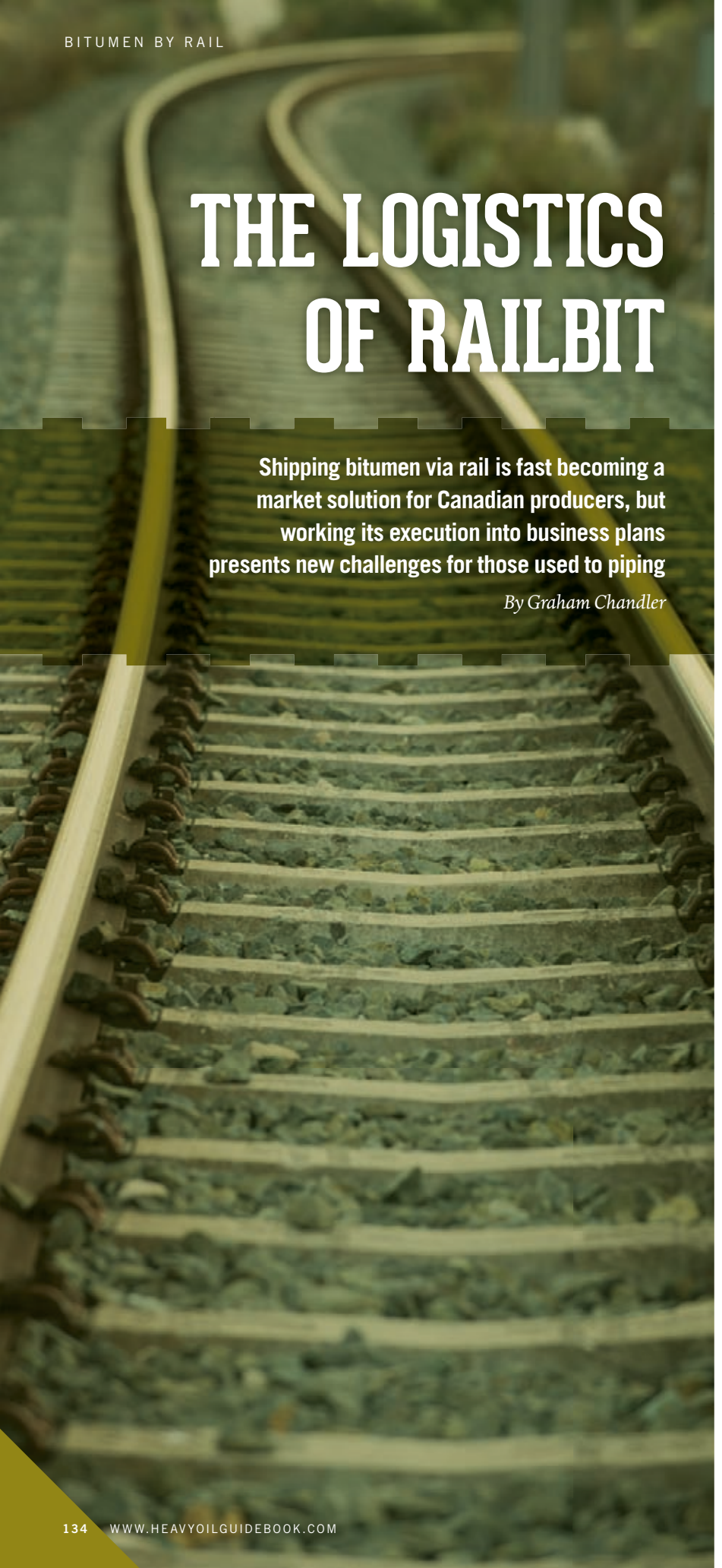
MAJOR PIPELINE PROJECTS
CONNECTING OILSANDS TO FUTURE MARKETS

DESTINATION	PROPONENT	PROJECT	ROUTE	DISTANCE (KM)	CAPACITY (BBL/D)
U.S. GULF COAST 	Enbridge Inc./ Enterprise Products Company	Seaway Crude Pipeline System reversal	Cushing, Okla., to Freeport, Texas	800	150,000
		Seaway – Phase 2			250,000
		Seaway – Phase 3			450,000
	Enbridge Inc.	Flanagan South	Flanagan, Ill., to Cushing, Okla.	960	585,000
	TransCanada PipeLines Limited	Keystone XL	Hardisty, Alta., to Port Arthur, Texas	2,750	700,000
	Enbridge Inc./ Energy Transfer Partners, L.P.	Eastern Gulf Coast access	Patoka, Ill. to St. James, La.	More than 1,100	420,000–660,000
CANADA – WEST COAST 	Kinder Morgan Canada Inc.	Trans Mountain Pipeline expansion	Edmonton to Westridge Marine Terminal in Burnaby, B.C.	1,150	450,000
	Enbridge Inc.	Northern Gateway	Bruderheim, Alta., to Kitimat, B.C.	1,180	525,000
CANADA – EAST COAST 	Enbridge Inc.	Full Line 9 reversal	Sarnia, Ont., to Montreal	640	300,000
	TransCanada PipeLines Limited	Canadian natural gas mainline conversion	Alberta to Montreal and Quebec City	3,500	300,000–800,000
	Montreal Pipe Line Limited	Portland to Montreal pipeline reversal	Montreal to South Portland, Maine	380	140,000

SOURCE: ADAPTED FROM IHS CERA'S *FUTURE MARKETS FOR CANADIAN OIL SANDS*, DECEMBER 2012



	STATUS	NOTES	PROPOSED IN-SERVICE DATE
	In service	Demand to move crude oil on the newly reversed Seaway Pipeline system is reportedly so strong that its owners have had to adjust the timing of the shipper space applications. The three combined project phases are projected to cost $2.4 billion.	2012
	Under construction		2013
	Application		2014
	Announced	The $2.8-billion Flanagan South Pipeline is planned to be installed adjacent to Enbridge's Spearhead Pipeline for the majority of the route.	2014
	Regulatory review	TransCanada's initial application to the U.S. Department of State was rejected in late 2012 due in part to its route across an environmentally sensitive area of Nebraska. TransCanada filed a new application in spring 2012, to be later supplemented with an alternative route plan through Nebraska. The new route was approved by the governor of Nebraska in January 2013, and a federal decision on the $7-billion project is anticipated by summer. Meanwhile, the southern portion of the Keystone XL Pipeline (separated from the main project in spring 2012) is under construction and is expected to be complete late in 2013. Keystone XL is a hotly debated topic with much opposition from environmental groups.	2015
	Application	This proposed joint development by Enbridge and Energy Transfer involves reversal and conversion of one of Energy Transfer subsidiary Trunkline Gas Company, LLC's three natural gas pipelines to crude oil service. The project is designed to provide U.S. Gulf Coast access to western Canada and Bakken oil producers. A decision on the proposal to take the gas line out of service is before the Federal Energy Regulatory Commission, with a decision anticipated in 2013.	2015
	Announced	The Trans Mountain Pipeline system has been operating since the 1950s and was most recently expanded in 2008. Kinder Morgan has strong shipper support to proceed with the expansion. The company plans to file its application with the National Energy Board late in 2013. Because it would travel along an existing right-of-way, the project is not seen to be as contentious as greenfield developments, but opposition promises to still be strong.	2017
	Regulatory review	Enbridge's controversial Northern Gateway project—due to environmental as well as First Nations issues—began the public hearing process in January 2012. This process will continue into May 2013, after which a final report must be issued by the Canadian government's joint review panel by December 31.	2018
	Regulatory review	Enbridge says that sufficient capacity has been requested by refineries seeking to secure access to ample crude oil supplies from western Canada and the Bakken region in North Dakota to warrant proceeding with the project. The Line 9 reversal faces opposition from environmental groups.	2014
	Conceptual	TransCanada says it has determined that a conversion of a portion of its Canadian mainline natural gas pipeline system to crude oil service is both technically and economically feasible. This would displace Canadian crude imports from the Middle East with Canadian volumes. TransCanada is soliciting input from stakeholders and prospective shippers to determine market acceptance. Environmental groups do not support this initiative.	TBD
	Conceptual	The Portland-Montreal pipeline first opened in 1941 and has reportedly delivered over four billion barrels of crude to Canada. Plans to reverse that flow are developing, although contested by enviromental groups.	TBD



THE LOGISTICS OF RAILBIT

Shipping bitumen via rail is fast becoming a market solution for Canadian producers, but working its execution into business plans presents new challenges for those used to piping

By Graham Chandler

As approvals for new market diversification pipelines going east, west and south from the oilsands continue to dither, the topic du jour among bitumen producers has quickly become rail shipment—either as a stopgap or permanent measure to move product to distant refiners. But rail requires some different logistics thinking for company business planners.

Momentum is building. Crude shipments already spurred record revenues for Canadian National Railway (CN) last year, which hopes to double its 30,000 annual carloads this year. Canadian Pacific Railway has identified crude shipment as "a particularly strong growth area," anticipating a climb to more than 70,000 carloads annually.

Producers are already onto it, with more eyeing it. Cenovus Energy Inc., for example, shipped about 6,000 barrels per day in December 2012 by rail and, for 2013, is "looking to increasing that to about 10,000 barrels per day," says Cenovus media relations advisor Jessica Wilkinson. Although those were conventional medium-light crudes, she says, "there is a potential to include heavy oil in rail transport as we expand capacity." Nexen Inc. is reported to be looking at the concept of moving crude by rail to Prince Rupert, B.C.

Things are ramping up fast, and producers contemplating the rails have new things to look at.

"I would say to them, 'You'd better get on it as quickly as possible,'" says Jeff Barefoot, vice-president, business development, at Southern Pacific Resource Corp., which recently completed its first shipment of bitumen from its STP-McKay steam assisted gravity drainage project to the Gulf Coast by rail. He outlines the critical considerations.

"Right now, infrastructure is key. And by that, I mean your loading terminal, your unloading terminal, and then the railcars—railcars are 18–24 months delivery. It will probably take you a year or two to build a terminal depending on how big it is and where you're building it." Barefoot says it's important for shippers to really understand what their unique situation is and how it impacts their bottom line. "Just because we have been fortunate with ours, it may not be 100 per cent duplicable," he adds.

Securing sufficient railcars is primary. Like Southern Pacific, most shippers lease through a company like Procor Limited, and terms are important. Doug Reece, Procor's

PHOTO: ALFREDO MAIQUEZ/PHOTOS.COM

director of marketing and business development, says leases "certainly are longer these days. That's part of the situation with tightening of car supply. Leasing companies would prefer longer lease terms." Customer retention of leased cars is also at record levels in the industry—industry tank car fleet utilization is over 99 per cent, he says.

Reece recommends leasing over buying. "Tank car fleet ownership is often viewed as a non-core business activity," he advises. "Full-service railcar leasing provides financial advantages, risk reduction and administrative savings." This is because tank cars are usually provided on a full-service lease basis, with support infrastructure including a network of maintenance locations, maintenance scheduling, technical and engineering support, and information systems—items shippers and producers don't usually handle.

Car size and type will need to be selected too. "The typical tank car for heavy crude, including bitumen, is a general-purpose, non-pressure design with insulation and exterior heater coils," Reece explained in a recent article for the *Journal of the Canadian Heavy Oil Association*. "The heater coils enable product reheating at the unloading facility, and the purpose of the insulation is principally to retain heat during the reheating process."

Using a non-insulated, non-coiled tank type (e.g. general-purpose 30,000 U.S. gallon car commonly used for light crude service) can be suitable for diluted bitumen service, depending on the product viscosity and other factors. "But the use of insulated and exterior coiled tank cars allows you to eliminate diluent and the costs associated with shipping it (freight, terminal handling, etc.), which may be substantial," Reece says. "Although insulated and coiled cars have a lower capacity, the realized volume of bitumen transported per car could be significantly greater." The necessary product reheating at destination, including access to steam and the time required for this step, should be a consideration.

Southern Pacific went for the dilbit option. They currently dilute to around 25 per cent, but "the design of our plant is it's going to be around 20 per cent dilbit blend when it's more of a steady state operation," says Barefoot. "One thing we built into our economics is shipping backhaul [diluent] out of the Gulf Coast where you typically have a discount to what you pay in Alberta."

Rounding out early planning should include confirming compatibility of car dimensions and specifications with loading and unloading infrastructure, as well as confirming access to steam at the destination for product reheating, adds Reece in his article.

After the network is up and running, Barefoot warns the logistics can get complex and require constant monitoring. "We have crude moving by truck from our plant to the Lynton terminal at Fort McMurray [about 60 kilometres] and then trans-loading from truck into tanks, and then tanks into railcars," he says. "And then down by rail. At the port of Natchez, it goes from rail to tank, and then it waits until we accumulate a critical mass, then we load it onto a barge and it goes to the refinery. So there are a lot of logistics involved."

Currently, CN controls the only rail line from Fort McMurray to Edmonton. Barefoot says trucking to Edmonton, one could access other lines, but trucking is costly. "It costs almost as much to truck from Fort McMurray to Edmonton as it does to rail it from Fort McMurray down to the Gulf Coast—at least the same order of magnitude."

But infrastructure grows. Arc Terminals LP announced last November that it's working with CN to build a 75,000-barrel-per-day rail tank car unloading terminal in Mobile, Ala., to handle western Canadian heavy and Bakken light crude oils destined to Gulf Coast refineries with condensate loading for backhaul. And CN announced in a June 2012 joint communiqué a pipeline system to its Lynton terminal is under consideration.

At present, CN is not moving crude to Canada's West Coast ports. Although a line exists to Prince Rupert, "there is no infrastructure in place at those ports to unload crude oil from railcars to vessels," says Mark Hallman, CN's director of communications and public affairs. Nevertheless, "CN's unique franchise offers important benefits to producers of heavy crudes or bitumen in northern Alberta. CN is the only railway that connects heavy oil with existing and new markets."

Barefoot has in fact found rail to be cheaper than pipeline despite the larger logistical workload. Whether industry pipelines end up going east, west or south, Southern Pacific will stick with rail. The company has sourced enough cars to cover all of its projected STP-McKay volumes and, by 2014, expects total project production of 12,000 barrels per day will all go by rail. "We are definitely locked in for the next number of years," he says. "We are dedicated at this point." ■

> **Right now, infrastructure is key.... Railcars are 18-24 months delivery [and] it will probably take you a year or two to build a terminal depending on how big it is and where you're building it...there are a lot of logistics involved.**
>
> — Jeff Barefoot, vice-president, business development, Southern Pacific Resource Corp.

QUESTIONS IN *co$_2$nsumer markets*

The development of low-carbon fuel standards in California, Europe and China could spell significant impact for the oilsands

By Ashok Dutta



PHOTO: ANASTASIYA ZOLOTNITSKAYA/PHOTOS.COM

New pipeline projects designed to expand the market for oilsands crude are facing meaningful opposition, and the overriding concerns that trump even fears of local pipeline spills are greenhouse gas (GHG) emissions and the oilsands industry's role in climate change.

Even absent the pipelines issue, GHGs are a challenge for the industry that cannot be ignored—particularly as production grows.

"A recent political hurdle that has emerged for Alberta's oilsands production is the introduction of new policies in consumer markets that require oil suppliers to reduce the carbon footprint of their motor fuels," wrote Bennett Jones LLP partners Donald Greenfield, Patrick Maguire and Robert Booth in a 2012 oilsands backgrounder. "Production in the oilsands is shifting away from traditional mining and towards steam injection, which results in higher emissions due to natural gas consumption."

California—the largest gasoline consumption market in the United States—has adopted a low-carbon fuel standard (LCFS). A vote is expected this spring on a similar fuel-quality directive (FQD) in the European Union (EU) and even China is looking to cut emissions of consumer fuels—all developments that could impact the future of the oilsands sector.

"Some countries are already moving toward encouraging the use and import of lower-carbon fuels, while Canada has actively lobbied against such initiatives, including the European fuel-quality directive, California's low-carbon fuel standard and the European Union inclusion of international aviation in their emissions trading system," wrote the Pembina Institute's Jennifer Grant, Marc Huot, Nathan Lemphers, Simon Dyer and Matt Dow in a January 2013 report.

"While proponents argue that oilsands emissions appear insignificant relative to the global total, it is clear that oilsands expansion and the corresponding rise in emissions from this sector represent a serious barrier to Canada playing a constructive role in the global fight to reduce greenhouse gas emissions." Canada has indeed been working to minimize the impact of low-carbon fuel standards in its consumer markets. In January 2013, two provincial government officials—Diana McQueen, minister of environment and sustainable resource development, and Cal Dallas, minister of international and intergovernmental relations—were on separate tours, visiting nearly a dozen European cities to drum up support and create public awareness of Alberta's efforts to reduce GHG emissions.

> The evolution of California's new [low-carbon fuel] standard is being closely watched, as 11 further states and even the EU are seeking to adopt a similar standard.
>
> — Bennett Jones LLP 2012 oilsands backgrounder

COMPOSITE ILLUSTRATION: JOEL KADZIOLKA; PHOTOS.COM

World's first oilsands carbon capture and storage project gets the go-ahead



In fall 2012, Shell Canada Limited announced it had approved Quest, the first carbon capture and storage (CCS) project for Canada's oilsands. While the current plan is simply to inject the CO_2 into the ground while the technology is proven up, there is the possibility that other Alberta producers could use the carbon for enhanced oil recovery in the future.

The $1.35-billion Quest project will be built on behalf of the Athabasca Oil Sands Project joint-venture owners with a total of $865 million in support from the governments of Canada and Alberta.

Starting in late 2015, Quest will capture and store deep underground more than one million tonnes per year of CO_2 produced in bitumen processing from the Scotford Upgrader located near Edmonton.

The CO_2 will be transported via an 80-kilometre underground pipeline to a storage site north of the Scotford facility.

Here, the CO_2 will be injected more than two kilometres underground into a porous rock formation called the Basal Cambrian Sands, which is located beneath layers of impermeable rock.

CCS is critical to meeting the huge projected increase in global energy demand while reducing CO_2 emissions, said Peter Voser, chief executive officer of Royal Dutch Shell plc, in a release. "If you want to achieve climate change goals, CCS has to be part of the solution. We are helping to advance CCS technology on a number of fronts around the world, but Quest will be our flagship project."

Quest will reduce direct emissions from the upgrader by up to 35 per cent—the equivalent of taking 175,000 North American cars off the road annually, according to Shell.

"The FQD will place our crude in a new category called natural bitumen, and this would result in discrimination," says Wayne Wood, a spokesman for McQueen's office. "Our government has in place several instruments to closely monitor GHG emissions, and we have been a source of innovation in both resource development and environmental management."

In late 2011, Joe Oliver, the federal natural resources minister, asserted his opposition for the planned FQD, stating there is no credible scientific course that differentiates oilsands as a unique feedstock.

"Rather than being a separate feedstock, oil sands crude is a heavy crude oil with GHG emissions and chemical properties similar to other heavy crudes found and produced throughout the world and currently used in Europe," Oliver said then in a letter written to the EU's commissioner for energy, Günther Oettinger.

Similar views were echoed by Greg Stringham, vice-president of oilsands and markets with the Canadian Association of Petroleum Producers, who added that oilsands producers do not oppose CO_2 reduction policies.

"But, like any good policy," Stringham notes, "the EU directive should be based on certain principles that include not being selectively discriminating, avoid duplication, judge using policies of sound science and not penalize transparency."

He emphasizes that Canada has been transparent in reporting emission data, while some other producing nations have not.

Oilsands producers are not currently exporting crude to any EU member states, but it represents a potential future expansion market. The FQD could also set an unwelcome precedent for other regions developing climate legislation. Of immediate concern, however, is the United States, where both congress and the environmental lobby are burning the midnight oil to brand oilsands crude as highly carbon intensive.

"If the [Keystone XL] pipeline from Canada is approved, the world will face millions of tonnes of carbon pollution each year for decades to come," Democratic congressman Henry Waxman said in mid-January.

His statements come at a time when pressure is mounting on the Department of State to deliver its decision on Keystone XL, which could eventually deliver 1.1 million barrels per day of diluted bitumen to refineries on the U.S. Gulf Coast. The project is considered to be critically important for the near-term economic future of the industry.

The political rumblings will go on, but there is no denying that Alberta will have to grapple with new policies in consumer markets that require oil suppliers to reduce the carbon footprint of motor fuels.

Bennett Jones says a prime example of these new policies is in the state of California, which adopted its LCFS in 2007.

"This standard measures the carbon footprint not just by its emissions, but also across the full product life cycle, which could potentially force change in the production technologies of oilsands producers," Bennett Jones notes. "The evolution of California's new standard is being closely watched, as 11 further states and even the EU are seeking to adopt a similar standard."

In China, too, the government has introduced a plan to cut CO_2 emissions per unit of gross domestic product by nearly 45 per cent by 2020 and to further reduce GHG emissions in specific cities.

"The long-term trajectory of China's carbon plan remains unclear, as China's energy demand growth is estimated to grow by 75 per cent between 2008 and 2035, accounting for about 36 per cent of all projected growth worldwide," says the Bennett Jones report.



"Therefore, its emission policies will play an integral role in the future."

According to a late-2012 report from IHS CERA, there is still a lack of clarity over the extent to which GHG is emitted from crude oil.

"This is not simply an academic question, but one that has implications for policy decisions and energy economics. GHG emissions levels from specific crude sources factor into energy policy in a number of jurisdictions, with the potential to affect the market for higher-carbon crudes, such as oilsands," the report said, adding LCF standards use life-cycle GHG emissions as a basis for regulation, requiring a reduction in emissions from the total life cycle of a fuel.

Asserting that it is important to get the numbers right, the IHS CERA report said life-cycle analysis aims to account for all GHG emissions associated with a product, starting with production through its end use.

For transportation fuels, life-cycle analysis encompasses all GHG emissions. This includes production, refining, transporting and, finally, combusting in a vehicle's engine.

> The oilsands industry did reduce its overall greenhouse gas intensity [emissions per barrel produced] by 29 per cent from 1990 to 2009. However, for now it appears that these per-barrel improvements also have stalled.
>
> — Pembina Institute oilsands report, January 2013

"For road transport, life-cycle emissions are often referred to as 'well-to-wheels' emissions. On this basis, emissions released during the combustion of gasoline and diesel make up 70–80 per cent of total emissions. These combustion emissions are the same for all crudes," it said.

But measured on a life-cycle basis or not, it is clear that emissions from the oilsands are growing, and development of new technologies to curb this is not necessarily keeping up.

"The oilsands industry did reduce its overall greenhouse gas intensity [emissions per barrel produced] by 29 per cent from 1990 to 2009," reads the Pembina report. "However, for now it appears that these per-barrel improvements also have stalled. And, in order to maintain absolute greenhouse gas emissions across the industry at 2009 levels [45 metric tonnes per year], the industry would need to reduce its emissions intensity by 53 per cent by 2020 and 72 per cent by 2030 based on the current forecasts. This would mean reducing emissions more than three times faster than the reductions made by industry between 1990 and now.

"Per-barrel improvements are unlikely to resume without substantially increasing the ambition of climate policies at both the provincial and federal levels." ■



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TEN PEOPLE AT THE FOREFRONT OF CANADIAN OILSANDS ISSUES

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PHOTO: JOEY PODLUBNY



Jalal Abedi

Director, Solvent/Heat Assisted Recovery Processes research consortium

UNIVERSITY OF CALGARY

It's a little more than 20 years since Jalal Abedi came to Canada for his masters degree, followed by his PhD at the University of Toronto looking at phase behaviour of bitumen and solvent, then a stint co-directing a modelling and simulation lab in Georgia.

The use of solvent in bitumen extraction is not yet a commercial technique, but holds great promise for producers to reduce costs and environmental impacts—hence their collaboration in the Solvent/Heat Assisted Recovery Processes (SHARP) research consortium.

What are the goals of the SHARP research consortium?

Our goals are three-fold. We want to generate pure knowledge; we want to prepare students to work effectively in industry; and we want to inform industry's progress in developing complex technologies that lessen the environmental impacts of bitumen production. To accomplish these goals, we want to:

- Provide basic data and the mechanistic understanding needed for quantitative assessments of solvent-assisted processes.
- Develop the ability to predict solvent-bitumen interactions through a universal equation of state for a variety of solvent-oil systems.
- Develop models of multi-phase flow in unconventional resources and

PHOTO: CHARLES HOPE

The research in this program is targeted to develop environmentally intelligent technologies that can be commercialized.

provide opportunities for collaborators to validate their own models.

- Improve the environmental impact of recovery processes by developing efficient solvent-based processes. The resulting models and the application of these models by industry will facilitate goals to reduce CO_2 emissions and maximize the injection of greenhouse gases for oil and gas recovery processes.
- Educate and train highly qualified personnel at the graduate level capable of undertaking a broad range of highly advanced research and technology development endeavours. The industry partners are very interested in having personnel trained in this field as they have difficulty in recruiting experts in this field and want to improve their comprehension of the subject area. This program improves the transfer of knowledge and skills within and between academia, industry and government.
- Develop and invent new schemes to utilize solvent in bitumen recovery processes.

Why is this an important area of study?

Oil samples and solvents provided by industry are used in our laboratory to generate data that can be directly applied to field design. Industry and collaborators use the data and modelling outcomes to further their own goals both in research and development, and in the recovery of energy resources in Canada.

Our research group helps to identify and/or invent and commercialize new technologies through experiments conducted in the lab. Desirable results will lead to pilot tests and the development of methods that can be commercialized and applied in field-scale projects.

We are fostering the development of a knowledge-based entrepreneurial culture through the training of highly qualified personnel who become experienced in skill transfer among industry, academia and government while they are still students. They are well prepared to work in industry by the time they graduate.

What stands in the way of large-scale commercial application of solvent-assisted recovery in the oilsands, and how far away is it?

Because of the advantages solvents offer compared to steam, there have been numerous attempts to utilize solvents. Because they have shown promising results in laboratory-scale tests, the different approaches have been patented. Researchers have conducted limited pilot tests to investigate the performance of their processes and it seems that, in the near future, field-scale projects definitely will exploit the advantages of solvents.

However, extensive research is still required to improve the economics and the environmental impacts of any processes developed.

The research in this program is targeted to develop environmentally intelligent technologies that can be commercialized, and to generate knowledge that can be applied to the recovery and production of Alberta's energy resources to ensure the province's competitive role in the global economy. ■

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Ian Anderson

President

KINDER MORGAN CANADA INC.

Ian Anderson has been instrumental in shaping Canadian utility and pipeline regulatory policy and development for decades. Now, as oilsands producers race to get their crude to Canada's West Coast for tidewater export, it is Anderson and Kinder Morgan Canada's Trans Mountain Pipeline expansion that could provide the ultimate solution.

What was the genesis for Kinder Morgan's Trans Mountain Pipeline project—the only access point for Canadian crude to the West Coast—when it was originally built in the 1950s?

Building the Trans Mountain Pipeline ranks among the important industrial achievements of Canada. During the Korean War, it was conceived in 1950 as a strategic military asset to provide a reliable energy supply to the Pacific Northwest, from growing Canadian oil production. The region had been heavily dependent on tanker supply, putting it in an exceedingly vulnerable position militarily.

Despite engineering challenges in terrain never before crossed by a big-inch pipeline, project cost in a difficult economy and post-war steel shortages, [the project] was accomplished rapidly because of cooperation among the oil industry, the public, and the Canadian

PHOTO: CHARLES HOPE

I'm confident we can respond to environmental concerns, and we know we can involve First Nations prudently because we have done it before.

and U.S. governments. Oil first moved through the 1,200-kilometre, $93-million system in 1953.

Why do you think Kinder Morgan Canada's bid to more than double the capacity of this pipeline system is viable, when other initiatives to reach the West Coast are facing so much opposition?

I think there's a belief that expansion of existing infrastructure is a feasible way to go. The facilities are there today, the port is there, the pilots, the tug operators and the first responders. We already move 80 per cent of the gasoline consumed in B.C.'s Lower Mainland, supply Washington state refineries and supply offshore exports through Port Metro Vancouver. Expansion has won overwhelming support from oilsands producers, refiners and overseas—700,000 barrels per day of long-term commitments—because it offers tanker access to new markets in Asia through our existing Westridge terminal.

What do you think will be the biggest project challenges, and how will Kinder Morgan Canada overcome them?

The discussion about moving fossil fuel energy to market is often black and white—either support it or limit resource development and new infrastructure. But it needs to include environmental sustainability, economic benefits, B.C.'s future in a Canada where resource development enables new, sustainable technologies, impacts on our communities, and social impacts and benefits of today's decisions on future generations.

In my years as president of Kinder Morgan Canada, one thing has become abundantly clear: it's impossible to make genuine progress on anything difficult without establishing real, personal and respectful relationships. It's these that lead to meaningful dialogue and decisions.

I believe thoughtful, factual and open-minded community engagement is critical, so we are underway on an open, extensive and thorough process. I'm confident we can respond to environmental concerns, and we know we can involve First Nations prudently because we have done it before on this pipeline. We value the input and advice from local interests, and the relationships we've built with communities over 60 years.

Discussions become strained when the facts are unclear. This is a $5.4-billion project, building a parallel 1,150-kilometre pipeline from Edmonton through Burnaby, along the existing right-of-way wherever possible. Routing will be one of the most debated and difficult tasks, so we'll make every effort to minimize community disruption and landowner impacts.

The real hard part about this project is going to be the Lower Mainland, so we'll call on the marine community, Port of Vancouver, ship pilots and first responders, oilsands producers and other pipeline supporters to increase public understanding of pipelines and tanker safety, how risks are mitigated, the oilsands and climate change.

Safety is our priority. Our record in this heavily regulated sector is first class. Without this safe, efficient route providing the only West Coast access for Canadian oil products, it would take 1,400 tanker trucks travelling between Edmonton and Burnaby to carry what our pipeline now can carry in one day. ■





Craig Dotson

Project director,
Surmont 2 surface facilities

CONOCOPHILLIPS CANADA

Currently, the joint-venture partnership of ConocoPhillips Canada and Total E&P Canada Ltd. is constructing a steam assisted gravity drainage (SAGD) expansion project with unprecedented scope. At 109,000 barrels per day, the Surmont 2 SAGD project will be the largest one ever constructed, boasting a production capacity that rivals conventional oilsands mines.

Successfully choreographing the multitude of contractors, materials and tasks is up to Craig Dotson, whose project-management experience includes major energy-processing projects on Alaska's remote north slope.

You are currently managing construction of the largest single phase of a SAGD project ever built. What does your experience in project management teach you about executing this facility?

My role as the project director is to make sure we have a well-considered execution plan that we can deliver safely and predictably. Once we have the plan, we need to communicate it to the team and measure our performance against the plan. We need to make adjustments to the plan in a timely matter to avoid major impacts to the execution of the work.

PHOTO: JOEY PODLUBNY

My job is to ensure we never lose sight of the fact that it takes accomplished, dedicated people at the site to deliver this project.

A well-planned and -executed job is a safe and successful job. I have a group of people looking out four to six months ahead of schedule to remove any obstacles they can foresee, and to make sure we have everything the team needs to deliver the plan.

Lastly, I believe in being very transparent with ConocoPhillips's senior management and our joint-venture partner Total E&P Canada Ltd. Support and commitment from the highest levels of ConocoPhillips and Total is key to our continued success.

Labour is at a premium in the oilsands sector. How do you keep people safe, engaged and productive on your site?

It's simple. We strive to make the ConocoPhillips Surmont 2 project the best place to work in the oilsands by treating people with respect and dignity, ensuring the work is well-planned and not only communicating our commitment to safety, but demonstrating it too. That way, we will have a safe, engaged and productive workforce. My job is to ensure we never lose sight of the fact that it takes accomplished, dedicated people at the site to deliver this project. This is how I've approached every job I've ever worked on, and I think it's key to my success as a project director.

When it comes to turning over a major project from construction to operations, what are the most important points to keep in mind?

The most important thing is to have a safe, efficient start-up. And you do that by ensuring high-quality, complete systems and documentation. We will start commissioning activities well in advance of completing construction activities.

The minute we energize the first system, the rules change at the Surmont 2 site. We will have our team trained in lockout, tag out procedures [which ensure machinery is properly shut off and not started up again prior to the completion of maintenance or servicing work], and we will have numerous communications around the site in order to let everyone know how conditions have changed and how they are personally affected.

Surmont 2's success for ConocoPhillips includes the flawless start up of the facility and early plant reliability. My team has a role in that. The planning effort for the start up of the facility began last year, and we continue to work together to integrate the system turnover sequence with the start-up and commissioning plan. The construction group will transition into a support role as operations starts up the systems. ■





Paul Huizinga

Senior vice-president,
Canada operations

WORLEYPARSONS LTD.

Five years ago, Australia-based engineering, procurement and construction (EPC) giant WorleyParsons acquired Calgary-based Colt Companies in order to get a grip on the oilsands market, capitalizing on the long-established operations of Colt. The critical importance of quality EPC in the multi-billion dollar oilsands sector cannot be understated, and WorleyParsons continues to dominate.

In the decade-plus Paul Huizinga has been with WorleyParsons and its legacy companies, he has held executive roles in business development and operations. He recently returned to Canada to assume responsibility for its largest operation in Canada—the 2,400-person Calgary office.

When WorleyParsons acquired Colt Companies in 2007, it was a case of a global firm taking over a Canadian success story. Has it been a challenge to integrate the Colt Companies into the wider operations of WorleyParsons?

Bringing two organizations like WorleyParsons and Colt together was a significant endeavour. Colt was the largest privately held

PHOTO: CHARLES HOPE

We are working with many of our customers to bring international project delivery to the Canadian oilsands.

engineering company in Canada, with offices across the country and in Alaska, and a roster of oilsands heavyweights as clients. Based in Australia, WorleyParsons has had a history of growing through acquisition since 1987, so we have experience combining cultures under our banner. We now have a presence in Australia and in New Zealand, of course, and in China, Africa, the Middle East, Europe, Latin America, southeast Asia and the U.S., as well as Canada.

Our partnering model is based on the understanding that local partners provide the essential knowledge to develop their regional markets.

To bring Colt into the fold, we had a great starting point in that the two companies had very strong cultural similarities, so that our people came together quickly. Within a very short time, the former Colt businesses across Canada were fully integrated into WorleyParsons.

As of today, we work with the entire WorleyParsons global organization on a routine basis, either to bring about the delivery of projects for international customers, or the flip side of it, cooperating on global development initiatives to improve our business in Canada.

The oilsands supply chain is highly relationship-based, and many oilsands players in a sense grew up with Colt. Has WorleyParsons been able to maintain and develop these relationships, and if so, how?

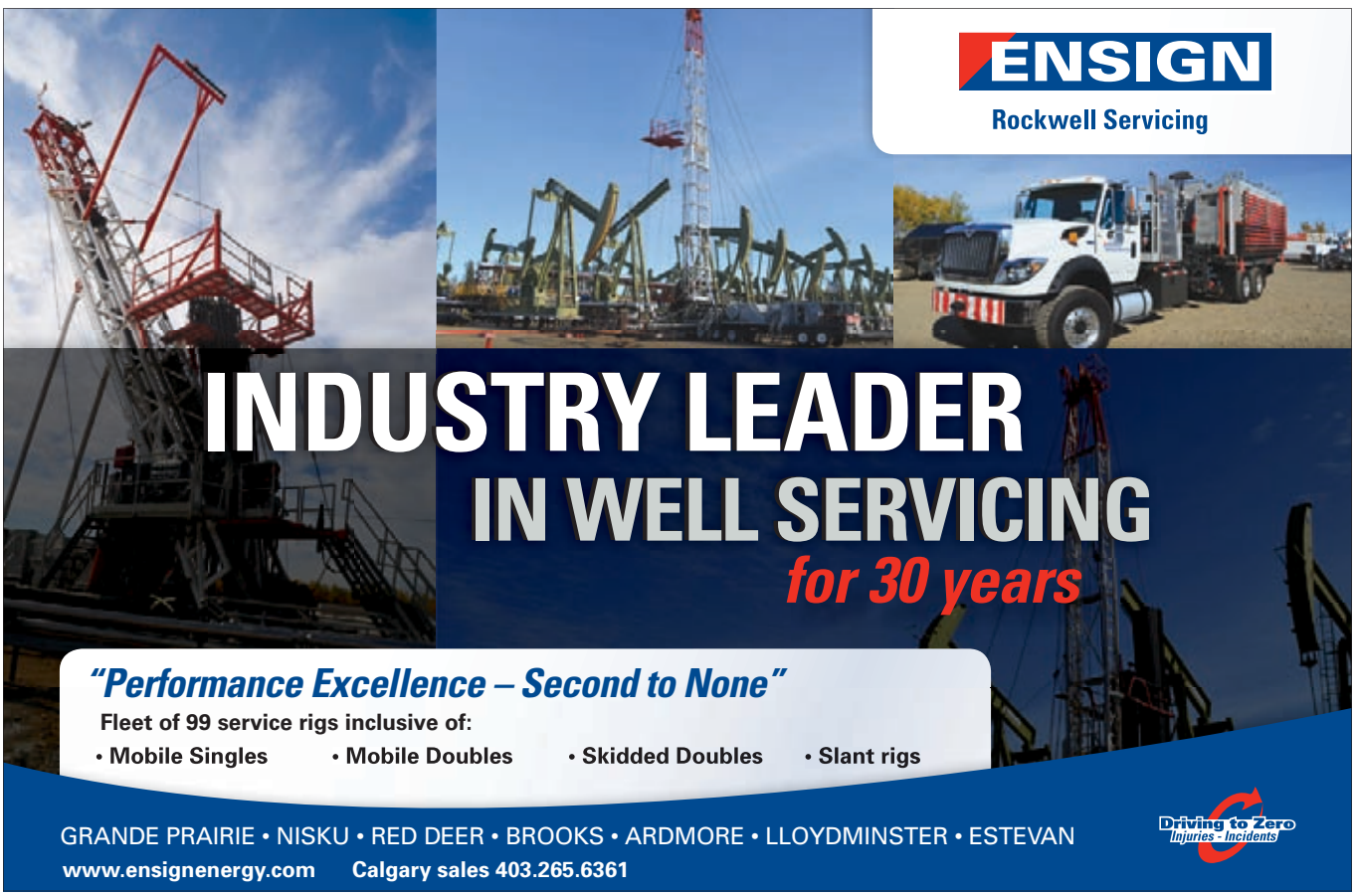
Absolutely. We have retained our core customer base that was developed by Colt. We have been working with some of our customers for more than two decades, and they see the value that WorleyParsons brings. By having the WorleyParsons brand, we have expanded our business with many of our core customers because we are able to integrate the expanded capability and capacity of WorleyParsons' global business into our offering.

Many of our local customers are international oil companies who know us from successful relationships elsewhere on the globe. This has led to new opportunities with these customers, as they know our capabilities. Globally, our experience and capabilities span numerous sectors across four primary areas: infrastructure and environment; power; hydrocarbons; and minerals, metals and chemicals.

In the heavy oil and oilsands area, WorleyParsons can point to its experience in processing heavy oil from Canada, Oman, Yemen, China, Venezuela and the U.S., and we can reference 30 years' experience in the oilsands with involvement in every aspect of more than 3,000 oilsands upgrading and extraction projects.

As oilsands project owners become increasingly international, has it become necessary for engineering, procurement and construction management companies to have international intelligence?

We are working with many of our customers to bring international project delivery to the Canadian oilsands. This includes global sourcing of goods, where we can leverage our international purchasing hubs, and bringing additional engineering capacity to the oilsands by taking advantage of our major engineering centres in locations such as Beijing, London and the U.S. ■





Nathan Lemphers

Senior oilsands policy analyst

PEMBINA INSTITUTE

The Pembina Institute is recognized as a "tough but fair" think tank advocating for sustainable industrial development, including the oilsands. Since 2009, Nathan Lemphers has been with Pembina, analyzing oilsands economics and environmental management and speaking to the media on oilsands-related issues. He focuses on macroeconomic effects of oilsands development, transboundary environmental impacts, liability management of oilsands mines and the economics of Enbridge Inc.'s proposed Northern Gateway Pipeline. Pembina says the public hearing process for the Northern Gateway project, which would open the doors for Canadian crude to be exported to Asia, has been mishandled, in addition to the potential environmental impacts.

Pembina has been critical of Enbridge's approach to the Northern Gateway hearings process, saying Enbridge has missed the point. How would you explain the point of the hearings process to Enbridge?

At these hearings, Enbridge has the chance to understand better the concerns about the Gateway pipeline and tanker project, and to show the federal government why this project would be in the public interest. Enbridge could examine the evidence

PHOTO: DWAYNE BROWN

We are not opposed to pipelines, but we say development has to be responsible.

assembled in opposition to the project, respond to that evidence and use it to improve the project.

Instead, Enbridge is more interested in trying to undermine the credibility of our organization than in examining the substance of the evidence, when Pembina submitted research on the environmental impacts of the pipeline at the request of ForestEthics, an environmental organization intervening in the hearings.

What specific steps would you recommend Enbridge take to engage Canadians effectively?

Enbridge could begin by acknowledging the larger impacts of the proposed Gateway project. No development occurs in isolation. Real social, economic and environmental impacts extend beyond the pipeline right-of-way, e.g. oil supertankers travelling the Douglas Channel or unresolved climate impacts from the rapid expansion of oilsands development, an area of research in which the Pembina Institute has considerable expertise.

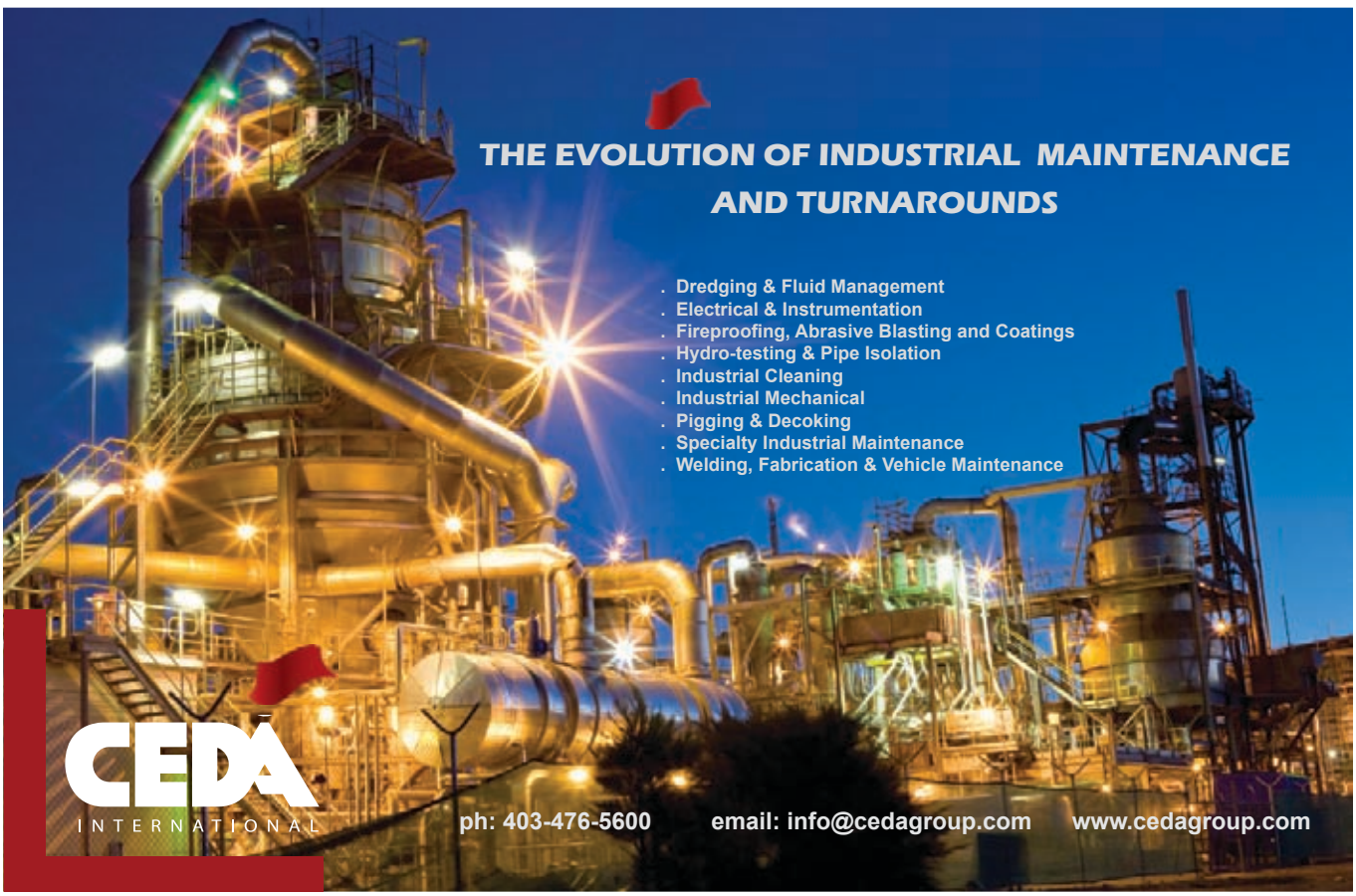
Many energy companies realize they can't just look to governments to approve projects anymore. Canadian citizens must be convinced a project is in the public interest. Companies must do their homework to minimize potential harm before citizens will accord a project social licence. Enbridge would be wise to present Canadians with a credible, balanced perspective on both the risks and benefits, and the government would be wise to demand such detailed analysis before assessing whether a project is in the public interest. Environmental groups, First Nations and local communities play an important role in raising concerns and challenging assumptions, but their inadequate funding and access to information put limits on the depth and detail at which potential issues are examined, so many questions remain unanswered.

Do you recognize a need to build a pipeline anywhere, or otherwise increase pipe capacity, to transport crude? If so, what route would you recommend?

Pembina would welcome a discussion on a broad national energy strategy and energy infrastructure requirements that would include a serious attempt to integrate environmental outcomes with economic goals.

But a better question is whether Enbridge and the federal government recognize a need for Canada to meet its international commitments to reduce greenhouse gases. In the continued absence of suitable federal regulations, it is clear the proposed Gateway project would facilitate oilsands expansion that would contribute to Canada's failure to meet its promises.

Having spent nearly two decades working on the climate and regional impacts of oilsands development, Pembina takes a solutions-oriented and pragmatic view. We are not opposed to pipelines, but we say development has to be responsible. Unresolved upstream impacts must be addressed, including regional environmental impacts and the sector's unmanaged greenhouse gas emissions. Only then would it be appropriate to consider which transportation routes would be economically and environmentally optimal. The sobering reality behind the opposition we have been seeing to various pipeline projects is that until we show the world we are making serious progress on these upstream issues, we will face barriers to downstream markets. ■





Mark Little

Executive vice-president, oilsands and in situ

SUNCOR ENERGY INC.

Mark Little leads improvements in competitiveness, safety and sustainability at oilsands giant Suncor's mining, extraction and upgrading operations, and in situ facilities.

As Canada's dominant oilsands producer, everything the company does relating to this industry is closely scrutinized, from its on-the-ground project execution and operations to its overall strategic direction.

What would you say are the biggest challenges oilsands producers currently face in terms of project competitiveness?

There are three big ones—getting qualified people, managing costs and market constraints.

We spend a lot of time finding qualified candidates and ensuring we're a good match. As a result, our employee attrition rate is among the lowest in the industry.

Over the past decade, costs have increased dramatically as a result of a variety of factors, including competition for limited resources. Our success depends on deploying capital and operating, and maintaining our assets as efficiently as possible.

Infrastructure constraints such as pipeline capacity have been driving down the price of the

PHOTO: SUNCOR ENERGY INC.

Fortunately, our integrated model allows us to take advantage of changing market conditions.

commodities, adding to the challenges despite our resource quality.

What are Suncor's strategies to overcome these challenges?

While safety is paramount, we're relentless in driving efficiencies both in how we run our facilities and in the cash we invest in them. Take our recent successes with Firebag. In 2012, Firebag 3 ramped up to full capacity much faster than anticipated, and Firebag 4 is expected to come in 15 per cent under the most recent estimate of $2 billion.

With scrupulous cost management, we lowered our oilsands cash operating costs per barrel by $2. For 2013, we are targeting average cash costs in the $35-per-barrel range.

Finally, as a fully integrated company, we can run oilsands material in three of our four refineries, offsetting the crude price discounts in our downstream business. In 2012, we estimate approximately 96 per cent of our crude effectively captured world crude prices.

It sometimes seems the mining side of the oilsands sector is viewed as "old" technology while the in situ side is seen as "new." Suncor has significant assets in both—why?

Suncor has extensive high-quality holdings in both shallow and deep resources, a significant advantage to us and our shareholders. For oilsands material with less than 70 metres of overburden, we mine to extract the bitumen. This process has great recovery and high operating flexibility, but the disadvantages of surface disturbance and tailings. In situ technology accesses resources too deep to be mined, causing less land disturbance but using more energy and with less operating flexibility.

The dynamics of the North American oil market have changed significantly due to the massive growth of tight oil production. What impact does this have on Suncor's bitumen upgrader projects?

In 2012, we saw a deteriorating price environment because the mid-continent tight oil came into production quickly and because our upgrading capacity in the U.S. is currently offline, being expanded.

Looking five years out, we're forecasting a mix challenge on the continent—too much sweet and too little heavy crude. This will put pressure on economics for new upgrading capacity. That's why we're zeroing in on operational excellence and really driving down our oilsands cash costs per barrel.

Fortunately, our integrated model allows us to take advantage of changing market conditions. We sell our bitumen direct to market, upgrade it to crude oil at our oilsands base operations or refine our crude into gasoline, diesel, home heating oil and jet fuel at our own refineries. ■





Kathleen Olivotto

Vice-president, corporate and investment banking

BMO CAPITAL MARKETS

With an honours Bachelor of Commerce degree from Queen's School of Business, Kathleen Olivotto is the sole female vice-president in BMO's Calgary corporate and investment banking office. Initially a summer analyst, she graduated in 2005 and joined BMO Capital Markets where every investment project is handled by a team.

Her unit is a leading merger and acquisition (M&A) advisor and bookrunner, the bank in charge of the syndicate of underwriters for an equity offering.

What are the biggest challenges currently for oilsands sector companies seeking project or corporate financing?

Investors are concerned about several macro industry challenges and the potential impact of each of these challenges on project economics. Primary challenges include the constrained market access for Canadian oil and resulting discount received by Canadian heavy oil producers relative to global benchmarks; the potential for cost escalation and labour shortages that could undermine the economics of new projects; and the continuing public attention on environmental performance, which puts a focus on potential changes to regulations. With over $25 billion of industry investment

PHOTO: CHARLES HOPE

[The oilsands industry] offers unique and attractive investment opportunities for both capital markets and strategic investors.

forecast for 2013, the pace of investment is expected to continue to strain labour and infrastructure.

Recently, the wider light-heavy differential has captured the market's attention and put pressure on the oilsands sector's equity valuation. The uncertain outlook for commodity prices and perceived risks associated with these challenges have many companies trading well below net asset value.

A challenge for certain oilsands companies looking to raise equity capital is the popularity of yield-oriented investments. In 2012, more than 70 per cent of total equity issuance included dividend-paying common equity, preferred shares or convertible debentures. The cash profile of a greenfield oilsands project, which includes large up-front capital investment and a year or more time lag to production, is often not conducive to paying a dividend, especially for growth-oriented producers building an initial project.

Still, several companies raised considerable equity capital in 2012, though frequently with support from existing shareholders. Others, both large and small, looked for strategic partners or buyers to fund project development, though relatively few transactions have been announced to date.

How do you see this evolving into the future?

BMO Capital Markets is forecasting relatively flat oil prices, which we expect will temper broad energy-sector equity performance over the next 12 months. However, infrastructure coming on stream will likely improve the light-heavy differential in 2013-14. For example, Keystone XL approval would add considerable clarity about access to sales markets. More immediate infrastructure improvements include 270,000 barrels per day of heavy oil processing capacity [in the United States] in 2013 and enhanced pipeline access to the Gulf Coast through 2014. A decreasing light-heavy differential or North American–global crude gap would boost equity values for oilsands companies and access to capital markets.

We believe debt markets will continue to fund prudently capitalized projects and companies—including sub–investment grade debt for junior developers. Current interest rates allow companies to lock in an attractive cost of capital.

We do not see new federal limits on foreign state-owned enterprise control of oilsands assets having an immediate impact given most operators' strong stand-alone investment plans. Foreign buyers have been a large majority of M&A activity over the last five years, but mostly for non-controlling positions. We expect foreign M&A activity to continue, including activity by state-owned enterprises contributing to sector investment. The rules may enhance competition in joint-venture processes, thereby offering attractive capital to project developers.

What can oilsands companies do to ensure they are able to finance their ongoing operations and projects in this environment?

Companies that demonstrate a track record of execution in project construction and operations, establish a market access solution and manage costs through technology development are expected to have the most success accessing capital markets and strategic investors. We are excited to see continuing innovation in the industry, which offers unique and attractive investment opportunities for both capital markets and strategic investors. ■







Alison Redford

Premier

PROVINCE OF ALBERTA

The Government of Alberta carries the task of managing oilsands development in the best possible way for Albertans, the resource owners. In 2013, the province is facing a projected $6-billion loss in energy royalties due to a "bitumen bubble" of lower realized oilsands prices. Ultimately, the way this is handled will fall to Alison Redford.

Reduced oilsands revenues due to constrained market access are being blamed for a quickly growing deficit in Alberta that will impact provincial spending. For years both industry and government have been predicting massive supply increases. Why was the Alberta government caught off guard by this issue?

Even before this was an issue, we had been working on a plan. Alberta has known that energy prices are an issue, and we've been studying the issue of market access closely. We know getting Alberta oil to markets makes a big difference to our revenues and the profitability of our oil and gas industry.

Oil supply was expected to increase, but the impact of the speed of oil production in the U.S. on oil prices was not predicted by many.

PHOTO: GOVERNMENT OF ALBERTA

Securing access to new markets is this province's strategic imperative: we must find places where we can sell at a higher price, and find ways to get the oil there.

Advancements in technology have helped increase production and put pressure on the existing lines that get oil products to markets. We also cannot ignore the impact that delayed infrastructure has had on Alberta oil prices.

Securing access to new markets is this province's strategic imperative: we must find places where we can sell at a higher price, and find ways to get the oil there.

How does the Alberta government plan to rectify the situation to the benefit of its citizens—the resource owners—while still encouraging development?

There are significant economic benefits that are felt in Alberta, and all across Canada, as a result of the development of our resources, but we also need to get these resources to more customers.

The full value of the resource can only be realized if we can bring our product to global markets. That is why we are advocating for a Canadian energy strategy, looking to increase exports to Asia and supporting upgrading in Alberta.

The private sector has identified a wide variety of potential options going in all directions—east, west, south and even north—and the Government of Alberta supports all economically viable options that will reach new markets and encourage continued investment in the oilsands.

In the meantime, we are making sure our fiscal priorities are in order. We have held conversations with Albertans about their fiscal priorities and the rules around how we budget—like how we save and how we pay for infrastructure. On the spending side, we are looking at every dollar we spend to make sure it is being spent effectively through results-based budgeting.

When is Alberta's new joint provincial-federal oilsands monitoring system expected to be in place, and why is its establishment not happening faster?

The first phase of the joint provincial-federal oilsands monitoring is already in place. The program will be fully implemented in 2015. Once fully implemented, it will be one of the most progressive of any industrially developed region in the world.

It takes time for all of the necessary infrastructure, people, and appropriate data management and reporting systems to be put in place. That's why we, together with our federal counterparts, are using a phased approach to implement the program.

Enhancements in the first phase focused on increased sampling locations, parameters, and frequency for water and air. This included new air, surface water and groundwater monitoring stations, and sampling in areas never regularly monitored before, such as river ice and snow.

Second- and third-year enhancements include additional monitoring locations, initiation of new studies related to air, water and biodiversity, and improvements to data management and data sharing to ensure the highest quality, consistency and accuracy. ■





Sveinung Svarte

President and chief executive officer

ATHABASCA OIL CORPORATION

Born and raised in Norway, Sveinung Svarte enjoyed a European career with Conoco Inc. (now ConocoPhillips Company) and Total SA before moving to Canada to help guide the French giant towards critical size in the oilsands.

At Athabasca, his team's big-picture thinking and deliberate decisions shape a company whose directions are influential for the future of the oilsands in financing, strategy and technology. The company has a significant existing partnership with PetroChina Company Limited and is working on partnering with Kuwait Petroleum Corporation. These partially internationally funded oilsands operations include the testing of important new technology to unlock bitumen carbonates.

It's unusual for a producer to play in both the oilsands and tight oil spaces. What drives this choice for Athabasca?

You're going to see more of it. We use a lot of natural gas and condensate to produce bitumen. By producing those yourself, you have a natural hedge against gas prices in the future, and the cost of the condensate we mix with bitumen to transport it is a very important cost. If you have to buy it, you are really penalized.

PHOTO: CHARLES HOPE

Two things define [international joint-venture] success. To have the deal done, and to actually manage to live well together with that partner.

In acquiring the assets, we had identified the [tight oil] opportunity and thought it was favourable timing. Other people hadn't looked at it, but we saw large acreage open, realized we had a lot of cash from the PetroChina deal in 2010 and were convinced our experienced team could do this because they have operated assets worldwide.

Athabasca Oil Corporation has assembled a large oilsands portfolio with multiple opportunity streams. What will ensure the company's success in this sector?

Back when we started Athabasca, we said we will need to have help in financing from joint ventures. We didn't think you could finance such huge projects through normal markets because they are capital intensive, so to attract partners we had to have large land masses of good quality. That we are extremely well financed and have good, quality partners is key.

Once you have the assets in place, you have to maintain a good corporate culture—we expend a lot of effort on it—then you attract the very best talent as well. We have no turnover whatsoever. Many employees here came from big companies and basically see that it's like giving them oxygen—they can start functioning and breathing again. With good assets, financing and the best talents, there's no reason you cannot deliver.

Athabasca has executed and is executing some interesting deals with international players. What do you think are the most important considerations for a Canadian company to ensure a successful venture deal with an international firm?

Two things define success. To have a deal done, and to actually manage to live well together with that partner.

A lot of it comes down to attitude. We deliberately built Athabasca on a few large players who had experience from international ventures before, so they knew what to expect. In 2010, we hand-picked about 30 employees to be working with our partner and build that partnership. It's important to identify cultural differences that could lead to problems. We are good friends with them, and I just wish we had more time to interact socially, which is important, too.

Secondly, governance rules worldwide are different than what you see onshore North America. In an international milieu, they're bigger projects. You have regular partner meetings and show your plans; you need partner buy-in.

Third, educate foreign partners coming in. We spent a lot of time with our partner illustrating how things are done in Canada, what you can change, what you can't. They're smart people and have learned how to adapt in a new country. ■



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Dan Wicklum

Chief executive

CANADA'S OIL SANDS INNOVATION ALLIANCE

In spring 2012, a group of Canada's largest oilsands producers launched a collaborative organization called Canada's Oil Sands Innovation Alliance (COSIA), designed to have a "laser focus" on speeding the development and deployment of technologies and strategies designed to minimize environmental impacts. They named Dan Wicklum, former CFL linebacker and Government of Canada scientist, to lead their efforts.

How is COSIA different from other collaborative organizations in the oilsands and other industrial sectors?

COSIA builds on work done over the past several years by other oilsands industry and research and development organizations. With 14 oilsands producers accounting for almost 90 per cent of oilsands production as shareholders, COSIA embodies an unprecedented level of collaboration.

The key ways in which COSIA differs from previous initiatives are:

- Leadership: COSIA's founding charter was signed by the chief executives of the shareholder companies. Support for work on our four environmental priority areas—land, water, tailings and greenhouse gases

PHOTO: CHARLES HOPE

We are interested in the best ideas, no matter where they come from.

[GHGs]—extends through the individual companies.

- Line of sight: COSIA is a single organization with a clear focus on accelerating the pace of environmental performance improvement. The participating companies are setting regional environmental performance goals and will report publicly on progress towards meeting these goals.
- Leverage: COSIA is designed to be the collaborative hub through which environmental innovation developed by individual companies is shared, thus avoiding duplication of effort and building on one another's successes.
- Linkages: COSIA is founded on openness and is designed to connect with anyone who is developing innovative solutions within and outside of Canada. Our mandate is to listen to and work with stakeholders to address evolving regional needs and conditions.

When can watchers of this industry expect to see some solid results from this collaboration in terms of reductions in environmental impacts?

There has been a great deal of time, money and effort invested into addressing environmental impacts of oilsands development, including a great deal of collaborative exchange to find innovative ways to address those impacts.

For example, the oilsands industry has reduced the GHG emissions per barrel of oil 26 per cent since 1990 through energy efficiency measures [heat capture and natural gas co-fired electrical generation] and improved recovery technology [low-temperature extraction and additives to reduce use of steam].

In another example, Suncor [Energy Inc.] alone is investing $1.2 billion constructing infrastructure to implement its TRO tailings management technology. This is a significant investment.

Having said this, we have more work to do and are looking forward to realizing COSIA's full potential.

How will you know when COSIA has been successful?

COSIA is already showing success. Companies are sharing their innovation and best practices. We recently had a workshop where 90 COSIA-company water-technology specialists from around the world came to Calgary and shared details about environmental water technologies. They are learning from each other and leveraging their experience and intellectual property.

COSIA will continue to break down barriers to innovation by identifying, developing, sharing and applying environmental innovations. However, we have more work to do.

In early 2013, we will roll out our associate membership program so that contributions to the COSIA vision can be leveraged from individuals or organizations that are not oilsands producers. We are interested in the best ideas no matter where they come from.

Given that the members of COSIA are in competition with each other for investment dollars, how will this collaboration work when breakthroughs happen?

COSIA companies have committed to share their environmental innovation. This commitment to sharing holds not only for existing technologies, but also for any future breakthroughs. The value of innovation, ranging from patents to research results, is preserved by ensuring individual companies retain ownership of the innovation. But through COSIA, the owner of the breakthrough technology would allow other companies to apply it in their oilsands operations. ■

















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PHOTO: JOEY PODLUBNY

CASE STUDY

SOCIAL PERFORMANCE

Working with the local community, Devon Canada helped bring a high school to the hamlet of Conklin

By Dina O'Meara

Located about 115 kilometres southwest of Fort McMurray, the small community of Conklin, Alta., has often depended in the past upon its larger neighbour for many essentials—including the education of its high school students.

Devon Canada Corporation discovered this fact after the company had been connecting with the community for several years while developing its Jackfish and Pike steam assisted gravity drainage oilsands operations. Discussions with village leadership revealed an ongoing concern about the lack of easily accessible secondary education for Conklin's youth. The community school only went to Grade 9, with high school students having to board either in Fort McMurray or Lac La Biche, Alta.

The combination of being away from family and thrust into an unknown environment resulted in few students finishing their high school education. In fact, only one person had gone from elementary school to obtaining a high school diploma within the community in six years.

"One of the challenges for the oil and gas industry is determining what our role is in a community," Devon aboriginal relations manager Greg Brady says. "In discussions with the local leadership, we landed on how we would support the community and make a difference. Building a high school seemed like one option that would be the most impactful."

The project also made business sense by creating an environment for future growth.

"If we could get kids educated in the community, have the support from their families, be seen as successful in that community and then have the opportunity to work at our facilities, well then, it would be a win-win for everybody," Brady says. "We would have access to local skilled people, and we would be bringing a positive because of our activities, from an economic standpoint and from a social standpoint."

PLAN: BRING IN THE EXPERTS

Over the course of the year, Devon sat down with aboriginal advisors to map out a strategy that would take into account Conklin's unique requirements and challenges.

A key to the program being successful and sustainable was making sure Conklin had the capacity to support the educational levels required in high school. Sunchild E-Learning Community, an innovative online program designed for aboriginal students, which Devon had supported in the Frog Lake Metis settlement, was seen as the best fit.

Students log on during class hours to real-time classes presented by a teacher. They engage in online discussions with other students and the instructor by text or microphone, and are supported by an on-site mentor. They can also catch up with archived classes if they miss a session.

While people are receptive to the online learning format, "it's not an ideal learning situation because most people like to be social," admits Conklin mentor and facilitator Sara Loutitt. "The cyber format attempts to create opportunities to engage people with others in discussions."

The Northland School Division—together with the Conklin school board, school principal Jack Howell and community leaders—was brought in to determine the financial and human resources and the direct support needed to establish a high school in the community.

ACTION: STARTING FROM THE GROUND UP

The final approvals from all the stakeholders initiated a whirlwind of activity to capture a short construction window or wait until the following year.

Devon decided to bring in a portable, prefabricated school unit to the community for students to work in. Activity went from breaking ground for sewer and power lines to welcoming students in about a two-month turnaround.

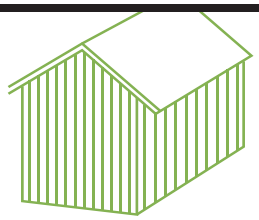
The fast pace was made possible in large part by the Regional Municipality of Wood Buffalo,



In the past, students from the remote community of Conklin, Alta., would travel more than an hour each way to attend high school in Fort McMurray.

PHOTO: JOEY PODLUBNY

CONKLIN HIGH SCHOOL



CONSTRUCTION:
$275,000,
including a $240,000 pre-fabricated module

Operating costs: approximately
$130,000 PER YEAR, INCLUDING:

SCHOOL PROGRAM:
$50,000
per year
for the Sunchild
E-learning curriculum

Facilitator salary & costs:
$80,000

LONG-TERM RESULTS:
PRICELESS

which jumped on the school bandwagon, providing access to the land and fast-tracking building permits.

A pre-season lull provided an experienced Devon workforce at no extra cost.

"We had all our guys ready to go for the winter season, but it wasn't winter yet. And so we were able to utilize all of our resources before they jumped on their winter work," says Brady. "It was great; we had an army of folks that knew what they were doing."

RESULTS: A WORKING HIGH SCHOOL

The program was launched in September 2010 with 11 students. From bolstering junior high students' academic standards to making sure students get into the classroom, Conklin's efforts have been fruitful.

Today, five students, aged 15 to 44, are taking courses at the high school. It might not sound like a big class, but for a community of 300 that had struggled to keep students in school at all, the results have been encouraging.

For Savannah Adby, the program's first high school graduate, Devon Canada's initiative has opened doors not just for her, but also for the entire community.

"This celebration isn't just for me; it's for our community, past and present, and especially for the future—the younger generation," Adby, 16, said in her commencement speech. "I want this diploma to show everyone that just because we come from a small community, we can accomplish our goals and attain success." ■

PHOTO: DEVON CANADA CORPORATION

STUDENT PROFILE:
Savannah Adby

If being stranded on the side of the highway for 10 hours during a frigid January night is the price high school students at Conklin have to pay to study at home, they say, "Bring it on."

"Coming from a small community where most people didn't finish high school, it makes me feel good to graduate," Savannah Adby, 16, says. "And I feel that I am a good example for younger kids in school, to show that they can do it, too."

This year, Adby will become the first to graduate from high school within Conklin's boundaries, through an e-learning program set up in part by Devon Canada.

The third eldest of seven siblings, the sunny 16-year-old used her desire to build a better future to overcome the feeling of isolation that comes from being in a cyber classroom.

"The tough part was staying focused while doing it online," she says. "It's tough to stay motivated when you're alone in the classroom."

Adby has a strong interest in math and science and, after touring Devon's Jackfish thermal oilsands operations, is planning to study power engineering. Learning about the seven-days-on and seven-days-off shifts employed at the project also got her thinking about using that free time to help tutor and mentor students back in Conklin.

"I am the only one graduating today, but I know I am not going to be the last from Conklin to attain a high school diploma," she says. "There will be many more to follow."



Canadian Association of Petroleum Producers

RESPONSIBLE CANADIAN ENERGY (RCE) DATA 2011—OILSANDS

	2007	2008	2009	2010	2011
Safety & well-being					
Fatalities (number/yr)	3	5	2	2	1
Employee hours worked (hours/yr)	28,044,320	32,809,836	36,640,997	42,711,306	46,962,185
Contractor hours worked (hours/yr)	-	-	100,085,588	117,821,993	116,079,115
Employee recordable injuries (number/yr)	100	105	107	132	144
Contractor recordable injuries (number/yr)	-	-	379	468	500
Employee TRIF (injuries/200,000 hrs)	0.71	0.64	0.58	0.62	0.61
Contractor TRIF (injuries/200,000 hrs)	1.12*	1.02*	0.76	0.79	0.86
Combined worker TRIF (injuries/200,000 hrs)	1.01*	0.93*	0.71	0.75	0.79

*Prior to 2009, frequencies are calculated based on voluntary disclosure of contractor hours. Therefore, frequencies are representative for those years.

COMMENTS

- Data source: CAPP RCE data
- Employee and contractor injuries include fatalities.
- Total recordable injury frequency (TRIF) = (recordable injuries*200,000 hrs)/hrs worked
- 2010 combined worker TRIF was updated from what was published in the 2011 RCE report due to data restatements from member companies.

	2007	2008	2009	2010	2011
Air & energy management (NO_x)					
NO_x emissions (tonnes/yr)	54,591	58,255	69,307	82,342	84,037
Total production (m^3OE/d)	202,056	195,281	226,121	252,567	276,586
NO_x intensity (tonnes per 10^3m^3 OE)	0.74	0.83	0.84	0.89	0.83

COMMENTS

- Data source: CAPP RCE data
- NO_x reporting became mandatory in 2009.
- 2010 NO_x intensity was updated from what was published in the 2011 RCE report due to data restatements from member companies.

	2007	2008	2009	2010	2011
Air & energy management (SO_2)					
SO_2 emissions (tonnes/yr)	124,942	116,405	131,655	114,267	101,111
Total production (m^3OE/d)	202,056	195,281	226,121	252,567	276,586
SO_2 intensity (tonnes per 10^3m^3 OE)	1.69	1.64	1.60	1.24	1.00

COMMENTS

- Data source: CAPP RCE data
- SO_2 intensity = (1000*SO_2 emissions)/(production*365)
- 2010 SO_2 intensity was updated from what was published in the 2011 RCE report due to data restatements from member companies.

	2007	2008	2009	2010	2011
Air & energy management (CO_2)					
Direct CO_2 equivalent emissions (tonnes/yr)	30,406,408	31,556,622	35,798,677	41,830,694	43,155,201
Indirect CO_2 equivalent emissions (tonnes/yr)	4,059,013	5,776,035	4,684,321	4,422,435	3,922,197
Total CO_2 equivalent emission (tonnes/yr)	34,465,421	37,332,657	40,482,998	46,253,129	47,077,398
Total production (m^3OE/d)	202,056	195,281	226,121	252,567	276,586
Tonnes GHG emitted per m^3 OE	0.47	0.52	0.49	0.50	0.47

COMMENTS

- Data source: CAPP RCE data
- Greenhouse gas (GHG) intensity = (CO_2 emissions)/(production*365)
- 2008 and prior data may be impacted by fluctuations in CAPP membership.

Year	EPEA approved footprint (ha)	Mine site footprint (ha)	Plant site footprint (ha)	Total active footprint (ha)	Cleared (ha)	Disturbed: used for mine or plant purposes (ha)	Ready for reclamation: no longer used for mine or plant purposes (ha)
2009	134,155	63,285	4,045	67,330	18,395	41,419	913
2010	135,157	67,836	3,527	71,363	17,047	46,773	394
2011	136,647	72,504	3,566	76,070	17,050	51,334	250

2011 RCE water data—oilsands

	2007	2008	2009	2010	2011
Water management (in situ)					
Fresh water withdrawal (millions m^3/yr)	15.8	18.5	16.6	17.5	17.8
Non-fresh water withdrawal (millions m^3/yr)	15.3	14.8	16.6	18.4	16.9
Total in situ bitumen production (millions m^3/yr)	31.1	34.0	38.5	43.9	49.4
Fresh water as a percentage of total water withdrawal	51%	56%	50%	49%	51%
Barrels of fresh water withdrawal per barrel of bitumen produced	0.51	0.54	0.43	0.40	0.36

COMMENTS

- Data source: Government of Alberta

	2007	2008	2009	2010	2011
Water management (mining)					
Fresh water withdrawal (millions m^3/yr)	125.6	184.3	162.4	152.4	140.4
Total mined bitumen production (millions m^3/yr)	45.5	42.0	47.9	49.7	51.8
Barrels of fresh water withdrawal per barrel of bitumen produced	2.76	4.39	3.39	3.07	2.71

COMMENTS

- Data source: Government of Alberta

2011 mining fresh water withdrawals compared to natural flows in the Athabasca River

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Minimum monthly Athabasca River flow (cubic metres per second)	122	119	119	148	802	911	1,330	656	387	319	158	159
Oilsands mining withdrawal as a percentage of lowest monthly flow	3%	2%	2%	2%	1%	0%	0%	1%	1%	1%	3%	2%

COMMENTS

- Flow data from the Athabasca River provided by Water Survey of Canada, Environment Canada
- Mining withdrawal data provided by Alberta Environment and Sustainable Resource Development
- The lowest weekly flow from each month was used.

	In situ 2007	In situ 2008	In situ 2009	In situ 2010	In situ 2011
Land management					
Active operated wells (number)	8,894	9,514	9,405	10,229	10,196
Inactive operated wells (number)	6,518	7,010	7,863	8,030	9,034
Annual well abandonments (number)*	113	49	135	424	212
Temporarily deferred abandoned wells (number)*					813
Abandoned wells in active reclamation/remediation (number)*	617	853	404	1,363	3,981
Abandoned wells in monitoring/ assessment or application (number)*	82	59	1,128	4,019	2,477
Annual reclamation certifications or releases received (number)*	40	3	53	115	339

*Data source: CAPP RCE data

COMMENTS

- Data source: Alberta Environment and Sustainable Resource Development
- Annual well abandonments metric became mandatory in 2010.
- Abandoned wells in active reclamation/ remediation became mandatory in 2010.
- Abandoned wells in monitoring/assessment or application became mandatory in 2010.
- Starting in 2009, reclamation certificates for oilsands exploration wells were reported per well instead of per program to more accurately reflect the work completed.

Soils placed (terrestrial, wetlands and aquatics) (ha)	Permanent reclamation (terrestrial) (ha)	Permanent reclamation (wetlands and aquatics) (ha)	Temporary reclamation (terrestrial) (ha)	Certified (ha)
1,090	3,494	1,158	863	104
1,534	3,643	1,192	780	104
1,510	3,537	1,150	1,241	104

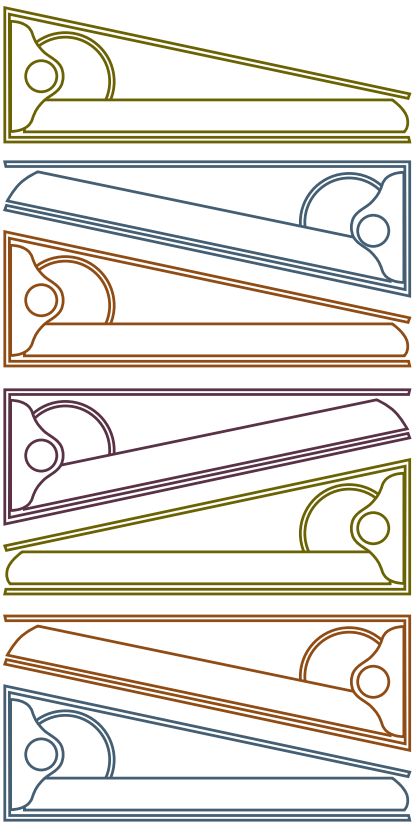
COMMENTS

- Data source: Alberta Environment and Sustainable Resource Development
- Data summarizes reclamation and disturbance statistics for oilsands mining operations.

REWRITING THE RULE BOOK

A series of regulatory and monitoring changes may bring a new perspective to oilsands oversight

Dina O'Meara



Last year was one of upheavals for the oilsands regulatory environment, with numerous shakeups on the horizon bringing the hope of years of certainty to follow. In the space of six months, Alberta announced plans to revamp the agencies regulating energy projects, launched the first of seven regional plans under land-use framework and stewardship acts, and initiated a world-class joint provincial/federal environmental monitoring agency.

Out of all of these changes, the one that will likely have the largest immediate impact is the Responsible Energy Development Act (REDA). Under this law, passed in December 2012 but yet to be proclaimed into force, the province created a new entity for energy and energy-related environmental regulatory issues.

The Alberta Energy Regulator, set to launch in June 2013, will create a new framework for oilsands, conventional oil and gas, and coal projects in the province, covering the full life cycle of a project from application to reclamation.

The oilpatch has largely welcomed news of the realigned regulator, although some are waiting to see what final shape the organization takes before celebrating. The government's goal is to amalgamate the provincial Energy Resources Conservation Board (ERCB) with energy-related portions of Alberta Environment and Sustainable Resource Development.

"They are putting the components of a significant integrative resource management system in place, and that's kind of a once-in-a-generation retooling," says Brad Herald, manager of Alberta operations for the Canadian Association of Petroleum Producers. "It should really do us well, as a province, [to have this as] the platform for the next 25 years."

Proponents of the new entity argue its centralized management of air, water, land, facility and mine authorizations will be more efficient. The one-window approach will allow companies to apply to a single office rather than several regulators for project approvals.

Under the act, the regulator will be responsible for administering legislation currently directed by the ERCB, including the Oil and Gas Conservation Act and the Oil Sands Conservations Act. Special enactments will allow the act to administer the Water Act, the Public Lands Act, and a part of the Mines and Minerals Act. It will also regulate remediation and reclamation in accordance

The new joint federal/provincial monitoring system

The Canadian and Alberta governments have acknowledged that the structures for monitoring oilsands pollution in the past were deficient. Both governments are hoping to improve oilsands oversight with the launch of a new joint provincial/federal environmental monitoring panel.

The arm's-length organization—tentatively called the Alberta Environmental Monitoring Agency—will report to Alberta Environment and focus on science, research and data collection to monitor, evaluate and report on land, air, water and biodiversity. The data, initially from the Lower Athabasca region, will also be made public.

The agency will not monitor whether companies comply with environmental laws, but instead examine broader ecological trends, Premier Alison Redford's government said in October 2012.

Industry has pledged $50 million per year for the next three years in support of the joint agency's work, but wants a firm federal policy on collecting the funds. As the agency expands scrutiny from the oilsands to all of Alberta, questions remain around how it will be funded. Some suggestions include a hydrocarbon tax, industry levies, general government revenues or a combination.

Initially, the new plans will increase the cost of oilsands development, but should pay returns in better public relations, according to Brad Herald, manager of Alberta operations for the Canadian Association of Petroleum Producers.

"Given the scrutiny on the sector, it's absolutely essential that we are able to, in a credible scientific fashion, put factual information out there about what the real impacts are over time of these developments," he says.

"And I'd say that social licence is priceless."

ILLUSTRATION: JENNA O'FLAHERTY

Land use: The Lower Athabasca Regional Plan

In the coming years, seven regional land-use frameworks will manage the cumulative effects of industry on the environment. The Lower Athabasca Regional Plan (LARP), which was approved by the Alberta government in August 2012, is the first of the seven to be revealed. It will have a strong impact on the province's energy regulation environment.

The Lower Athabasca region encompasses the bulk of active oilsands development in the province, as well as critical caribou habitat, recreational-use areas and the community demands of energy hub Fort McMurray.

"The Lower Athabasca Regional Plan identifies and sets resource and environmental management outcomes for air, land, water and biodiversity, and will guide future resource decisions while considering social and economic impacts," Alberta Energy said on announcing the plan.

Under the framework, environmental limits are established to create boundaries in the environmental system that are not to be exceeded. Triggers are used as warning signals that provide monitoring agents the means to evaluate, adjust and innovate action on an ongoing basis.

"This proactive and dynamic management approach will help ensure trends are identified and assessed, regional limits are not exceeded, and the air and water remain healthy for the region's residents and ecosystems," Alberta Energy said.

LARP immediately sets regional environment limits for air and surface water quality and a regional groundwater management framework with interim triggers. It also increased conserved land in the region to two million hectares, or 22 per cent of the region.

"For oilsands developers, it gives more certainty on the landscape," says Brad Herald, manager of Alberta operations for the Canadian Association of Petroleum Producers. "They know where they can and cannot develop, there were new conservation areas, there's certainty around tenure and certainly around development trajectory, and those values have been balanced in a modern regional plan with stakeholder input. So it gives us certainty as an industry.

"And that clarity is really important to us. Our development trajectory is very predictable now."

Environmental think tank Pembina Institute applauds the land-use initiative for increasing protected land and setting maximum limits on how much industry impact can occur at any time. But monitoring is only one component of an adequate system, says Jennifer Grant, director of Pembina's oilsands program.

"We need cumulative environmental triggers and limits that protect wildlife, air and water quality," she says.

"To complete the remaining pieces of the plan, we need to roll it out as soon as possible," Grant adds. "To continue to approve the expansion of the oilsands without a long-term land-use plan is a concern. [We] need to see the implementation of the plan."

She notes several substances, including toxic methinic acid and polycyclic aromatic hydrocarbons, were not listed as indicators. The latter was a key indicator in a recent study that traced airborne pollutants from oilsands operations in the Wood Buffalo region.

with the Environmental Protection and Enhancement Act.

However, a lack of details on if and how new applications and approvals for energy projects will proceed has oilsands developers such as MEG Energy Corp. taking a wait-and-see approach.

The Calgary-based company expects to take its production up to 260,000 barrels per day by 2020 with expansions to its existing Christina Lake thermal oilsands operations and its 50,000-barrel-per-day Surmont project, which is currently under regulatory review.

"From where we sit, we have applications that will take us to the end of the decade, or [are] already in progress," says Brad Bellows, director of external communications for MEG. "We work with industry groups to be part of the voice to provide industry feedback."

Herald lauds the integrated resource management because it transitions the regulatory system from a silo approach to an interconnected one.

"This will provide a mechanism in government to attempt to reconcile policy gaps/conflicts," he says. "That has not normally been the case—you'd get one at a time and integration as an afterthought."

The new legislation could also impact the relationship between the government and aboriginals. Regarding regulatory decisions under the act, First Nations and Metis groups will have to go to court rather than demand a hearing on any claim that the Crown's duty to consult and accommodate their concerns about a project were not met.

"REDA provides that the regulator has no jurisdiction with respect to assessing the adequacy of aboriginal Crown consultation. As a result, the long-standing debate on this issue with respect to the ERCB will effectively come to an end," wrote Calgary law firm Borden Ladner Gervais LLP (BLG) in an early-February review.

While the Alberta Energy Regulator's mandate has been set, exactly how it will work has yet to be firmly established, pending consultations with industry and stakeholders such as municipalities, First Nations and landowners, says Mike Deising, press secretary to Energy Minister Ken Hughes.

"We don't expect that it will be fully operational; it depends on what comes out of the regulation consultation," Deising says. "That will really guide exactly where we are in the process. The aim is to be there by June, but will every regulation be in place? It's too early to tell because we have to have those consultations first."

Undefined regulations will likely leave industry sweating right up until June, while environmental groups will wonder if the one-window regulator will more closely resemble a drive-through for megaprojects. Whether the regulatory changes actually result in effective co-management of resource development and environmental responsibility remains to be seen, BLG noted in its remarks on the law.

"Once the regulator has been in place, an assessment will be able to be made as to the legitimacy of the criticisms suggesting that the appointment of the regulator will remove some or all of the current environmental checks and balances and shift the regulator's role to one of permitting only," the firm said. ■

OIL vs. OIL

Bitumen and tight oil are competing for pipeline space and capital dollars, but are the two resources really that different?

Dina O'Meara

At first glance, oilsands and tight oil projects present contrasting options to investors.

Bitumen production requires billions of dollars in initial capital and years of lead time before projects go commercial. Tight oil wells, while admittedly costly, produce oil at high rates within months, enabling producers to pay out their investment quicker.

Yet a closer look reveals both offer similar break-even thresholds over time, particularly when pitting high-quality thermal oilsands projects against shale oil.

Lower-cost tight oil projects, such as those with easier access to the payload and less need for multistage fracking, break even at as little as $50 per barrel, notes Chad Friess, analyst with UBS Securities Canada Inc. But most tight oil wells require significant work and need $70 per barrel to generate an economic return on investment—within the same range as steam assisted gravity drainage (SAGD) projects, which look at $60–$70 per barrel as providing a good rate of return.

And once the SAGD project is commercial, the payback will flow for decades at a steady rate, compared to decline rates as high as 50 per cent seen with tight oil. "For big companies wanting to make a big splash, oilsands is a better investment," Friess says.

Experts predict both resources will be needed to meet demand for oil from the United States, which saw its crude production jump by one million barrels per day to 2.2 million barrels per day last year on new shale oil volumes. IHS CERA expects total production will reach 4.8 million barrels per day by 2020.

At the same time, oilsands production in Canada is forecast to reach an estimated 3.2 million barrels per day, up from 1.8 million barrels per day last year, according to the Canadian Association of Petroleum Producers.

Athabasca Oil Corporation is well aware of the pros and cons of the two resources. The Calgary-based company was producing 10,000 barrels per day of light tight oil by year-end 2012, and sanctioned its 12,000-barrel-per-day Hangingstone thermal oilsands project in November.

At a recent investor showcase, company president Bryan Gould described the oilsands as having a "very long, flat life" and a "very secure resource base." He went on to tell investors: "The light oil business complements [the oilsands]; we view it as a higher rate of return, but the wells decline quite rapidly, and you're continually drilling to keep production up.

"Then again, we think that gives us a nice commodity mix and a nice portfolio mix," he added.

However, not everyone is as interested as Athabasca Oil is in creating a nicely mixed asset base. The exploitation of tight oil through horizontal drilling and multistage fracturing has made the resource accessible and available on both sides of the border. With relatively quick turnarounds on investments and high initial production rates, tight oil has become the it girl of the oilpatch—available, sexy and given to high returns.

> Typically, the time value of money metrics of a good tight oil project is better than an oilsands project, [but] the lower cost of capital over time is skewered towards oilsands. With an oilsands project, producers aren't fighting declines as much as with a tight oil well.
>
> — Michael Dunn, vice-president, institutional research, FirstEnergy Capital Corp.

A good tight oil well might have the potential of 60–80 per cent returns versus a 10–25 per cent rate of return on a SAGD project, notes Michael Dunn, vice-president of institutional research with FirstEnergy Capital Corp.

"Typically, the time value of money metrics of a good tight oil project is better than an oilsands project," he says.

But metrics can be deceptive. For companies with long-time horizons and deep pockets, thermal oilsands projects have better recycle ratios and provide a better return on capital than a tight oil project.

"The lower cost of capital over time is skewered towards oilsands versus a decent tight oil project," Dunn says. "With an oilsands project, producers aren't fighting declines as much as with a tight oil well." ■

ILLUSTRATION: JENNA O'FLAHERTY

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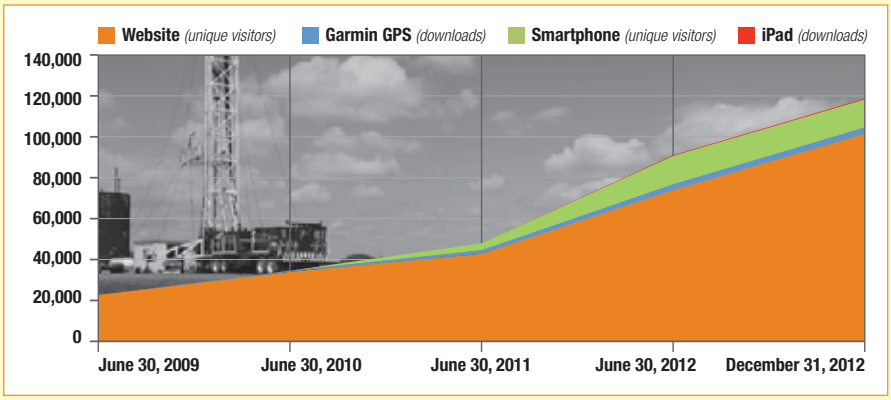
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Oilfield purchasing technology is changing rapidly

Purchasing patterns are changing in Canada's oil and gas industry, and buyers are using technology to access more and better information. The *COSSD*, a new database of service and supply companies, is helping them control costs and maximize productivity. In 2012, more than 170,000 people used it.

In Canada's Western Canadian Sedimentary Basin, explorers and producers are changing the way they work. In many plays, their focus is on repeatable, factory-like approaches to drilling, completion and tie-in of new wells, and to the service and operation of existing wells. More and more, they are focused on efficiency and cost control.



Engineers, planners, managers and buyers are using new approaches and technologies to make sure they purchase services and supplies at the lowest possible cost. Just as important, they are making sure that services and supplies are delivered when they are needed. Time is money in the oilfield, and they're focused on saving both.

To save time and money, a buyer needs to have more than one option—they need choices in products and vendors.

They may have information on some vendors in their accounting, enterprise resource planning and compliance systems. That's usually not enough—they must extend their search for suppliers, so they need other sources.

However, finding what a buyer needs in Canada's oilfield is a complex process. The service and supply industry is made up of over 3,000 companies, and they are constantly changing. Mergers and acquisitions and company start-ups and closures happen frequently. Vendors change the products and services they offer, and move their head offices or open and close branch locations.

Luckily, the *Canadian Oilfield Service and Supply Database* (*COSSD*) is constantly updated, so a buyer can count on it to find what they need. They can use the *COSSD* for free, and it's available in six ways: website, smartphone, iPad, Garmin GPS, digital edition and print. Whether in an office or in the field, it's proving to be a buyer's best source for vendor information—that's why its usage is growing so rapidly. In 2012, over 53,000 people used its print or digital edition. The fastest growth is in digital usage—in 2012, over 118,000 used it through the website, smartphone, iPad and Garmin GPS. That's more than 170,000 in total.

COSSD is also proving to be a vendor's best choice for connecting to their customers. Buyers are now using COSSD.com on their web browsers and iPhone, BlackBerry or Android smartphones. They can search a vendor's company profile, product catalogue, display advertisements, categories of service and locations. They're also able to use its proximity search features to find a service or product close to a town, city or even their smartphone's current location.

An analysis of 1,000 companies who visited COSSD.com in the second to third quarter of 2012 showed that many were primary buyers—explorers and producers such as Encana Corporation or Talisman Energy Inc., and pipeline operators like TransCanada Corporation. Many more are secondary buyers—service and supply companies such as Weatherford Canada Partnership and Halliburton.

If you're a buyer, visit COSSD.com to learn how this database can help you. If you're a vendor, use the *COSSD* to ensure 170,000 or more buyers can find you.

Become part of this fast-growing buyer/seller community—email Christopher Kuntz at ckuntz@junewarren-nickles.com or call 403.516.3492.

Company type	Per cent of total visits
Primary purchasers	
Exploration & Production	
Engineering	
Pipeline	
Construction	
Refining & Petrochemicals/ Gas Processing	
Total—primary purchasers	**22**
Secondary purchasers	
Service & Supply	
Transportation	
Manufacturing & Fabrication	
Electrical, Instrumentation & Control	
Health, Safety & Environmental	
Total—secondary purchasers	**21**
Occasional purchasers	
Legal, Financial & Investment	
Government, Agencies & Consulates	
Universities, Research Institutions & Public Libraries	
Other	
Total—occasional purchasers	**57**

From a sample of 1,000 companies who visited COSSD.com in Q2-Q3 2012.

LEFT: *Digital usage of the* COSSD *has grown substantially since 2009.* ABOVE: *Many of Canada's leading explorers and producers use COSSD.com—as do many other primary and secondary purchasers of oilfield services and supplies.*

CANADIAN OILFIELD SERVICE&SUPPLY DATABASE

THE ***buyer's guide*** TO CANADA'S OIL & GAS INDUSTRY



Storage tanks at Enbridge Inc.'s Cheecham Terminal, south of Fort McMurray.

GLOSSARY OF TERMS

API
An American Petroleum Institute measure of liquid gravity. Water is 10 degrees API, and a typical light crude is from 35 to 40. Bitumen is 7.5–8.5 API.

Barrel
The traditional measurement for crude oil volumes. One barrel equals 42 U.S. gallons (159 litres). There are 6.29 barrels in one cubic metre of oil.

Bitumen
Naturally occurring, viscous mixture of hydrocarbons that contains high levels of sulphur and nitrogen compounds. In its natural state, it is not recoverable at a commercial rate through a well because it is too thick to flow. Bitumen typically makes up about 10 per cent by weight of oilsand, but saturation varies.

Condensate
Mixture of extremely light hydrocarbons recoverable from gas reservoirs. Condensate is also referred to as a natural gas liquid, and is used as a diluent to reduce bitumen viscosity for pipeline transportation.

Cyclic steam stimulation (CSS)
For several weeks, high-pressure steam is injected into the formation to soften the oilsand before being pumped to the surface for separation. The pressure created in the underground environment causes formation cracks that help move the bitumen to producing wells. After a portion of the reservoir has been saturated, the steam is turned off and the reservoir is allowed to soak for several weeks. Then the production phase brings the bitumen to the surface.

PHOTO: JOEY PODLUBNY

Density
The heaviness of crude oil, indicating the proportion of large, carbon-rich molecules, generally measured in kilograms per cubic metre (kg/m^3) or degrees on the American Petroleum Institute (API) gravity scale. In western Canada, oil up to 900 kg/m^3 is considered light to medium crude—oil above this density is deemed as heavy oil or bitumen.

Diluent
See Condensate.

Established recoverable reserves
Reserves recoverable under current technology and present and anticipated economic conditions, plus that portion of recoverable reserves that is interpreted to exist, based on geological, geophysical or similar information, with reasonable certainty.

Established reserves
Reserves recoverable with current technology and present and anticipated economic conditions specifically proved by drilling, testing or production, plus the portion of contiguous recoverable reserves that are interpreted to exist from geological, geophysical or similar information with reasonable certainty.

Extraction
A process, unique to the oilsands industry, which separates the bitumen from the oilsand using hot water, steam and caustic soda.

Froth treatment
The means to recover bitumen from the mixture of water, bitumen and solids "froth" produced in hot-water extraction (in mining-based recovery).

Gasification
A process to partially oxidize any hydrocarbon, typically heavy residues, to a mixture of hydrogen and carbon monoxide. Can be used to produce hydrogen and various energy by-products.

Greenhouse gases
Gases commonly believed to be connected to climate change and global warming. CO_2 is the most common, but greenhouse gases also include other light hydrocarbons (such as methane) and nitrous oxide.

In situ
Latin for "in place." In situ recovery refers to various methods used to recover deeply buried bitumen deposits.

In situ combustion
A displacement enhanced oil recovery method. It works by generating combustion gases (primarily CO and CO_2) downhole, which then "pushes" the oil towards the recovery well.

Initial established reserves
Established reserves prior to the deduction of any production.

Initial volume in place
The volume calculated or interpreted to exist in a reservoir before any volume has been produced.

Lease
A legal document from the Province of Alberta giving an operator the right to extract bitumen from the oilsand existing within the specified lease area. The land must be reclaimed and returned to the Crown at the end of operations. ◣

Muskeg
A water-soaked layer of decaying plant material, one to three metres thick, found on top of the overburden.

Oilsands
Bitumen-soaked sand, located in four geographic regions of Alberta: Athabasca, Wabasca, Cold Lake and Peace River. The Athabasca deposit is the largest, encompassing more than 42,340 square kilometres. Total deposits of bitumen in Alberta are estimated at 1.7 trillion to 2.5 trillion barrels.

Overburden
A layer of sand, gravel and shale between the surface and the underlying oilsand. Must be removed before oilsands can be mined. Overburden underlies muskeg in many places.

Pilot plant
Small model plant for testing processes under actual production conditions.

Proven recoverable reserves
Reserves that have been proven through production or testing to be recoverable with existing technology and under present economic conditions.

Reclamation
Returning disturbed land to a stable, biologically productive state. Reclaimed property is returned to the Province of Alberta at the end of operations.

Remaining established reserves
Initial reserves less cumulative production.

Royalty
The Crown's share of production or revenue. About three-quarters of Canadian crude oil is produced from lands, including the oilsands, on which the Crown holds mineral rights. The lease or permit between the developer and the Crown sets out the arrangements for sharing the risks and rewards.

Solvent technologies
Solvent-steam technology uses solvents along with steam to increase the efficiency of steam-assisted oilsands production while still minimizing environmental impacts

Steam assisted gravity drainage (SAGD)
An in situ production process using two closely spaced horizontal wells: one for steam injection and the other for production of the bitumen/water emulsion.

Synthetic crude oil
A manufactured crude oil comprised of naphtha, distillate and gas oil-boiling range material. Can range from high-quality, light sweet bottomless crude to heavy, sour blends.

Tailings
A combination of water, sand, silt and fine clay particles that is a by-product of removing the bitumen from the oilsand.

Tailings settling basin
The primary purpose of the tailings settling basin is to serve as a process vessel allowing time for tailings water to clarify and silt and clay particles to settle, so that the water can be reused in extraction. The settling basin also acts as a thickener, preparing mature fine tailings for final reclamation.

Thermal recovery
Any process by which heat energy is used to reduce the viscosity of bitumen in situ to facilitate recovery.

Toe to heel air injection (THAI)
An in situ combustion method for producing heavy oil and oilsand. In this technique, combustion starts from a vertical well, while the oil is produced from a horizontal well having its toe in close proximity to the vertical air-injection well. This production method is a modification of conventional fire flooding techniques in which the flame front from a vertical well pushes the oil to be produced from another vertical well.

Truck-and-shovel mining
Large electric or hydraulic shovels are used to remove the oilsand and load very large trucks. The trucks haul the oilsand to dump pockets where it is conveyed or pipelined to the extraction plant. Trucks and shovels are more economic to operate than the bucket-wheel reclaimers and draglines they have replaced at oilsands mines.

Upgrading
The process of converting heavy oil or bitumen into synthetic crude, either through the removal of carbon (coking) or the addition of hydrogen (hydroconversion).

Viscosity
The ability of a liquid to flow. The lower the viscosity, the more easily the liquid will flow. ■



One of hundreds of modules being placed at ConocoPhillips Canada's Surmont 2 SAGD project.

PHOTO: JOEY PODLUBNY



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Outside the central processing facility at ConocoPhillips Canada's operating Surmont SAGD project.

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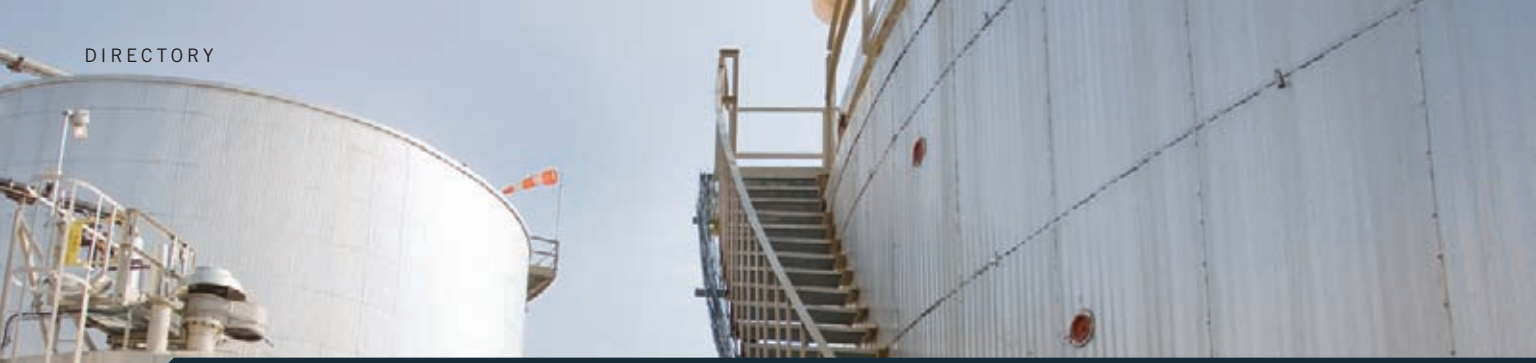
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Phone: (780) 990-0839
Fax: (780) 425-4921
www.venturepublishing.ca

Wellhub
5020 12A St SE
Calgary AB T2G 5K9
Phone: (403) 243-2220
Fax: (403) 243-2872
admin@wellhub.com
www.wellhub.com



Cenovus Energy's Christina Lake SAGD project.

Producers

Lease Holders

Amer Oilsands Corporation
117-918 16 Ave NW
Calgary AB T2M 0K3
Phone: (604) 613-1334

Bancroft Oil & Gas Ltd
PO Box 6853 Stn D
Calgary AB T2P 2E9
Phone: (403) 229-1500
Fax: (403) 245-0074

Blackjack Oilfield Services
PO Box 721
Carnduff SK S0C 0S0
Phone: (306) 483-8588
Fax: (306) 482-3505
blackjack@sasktel.net

Bounty Developments Ltd.
1250-340 12 Ave SW
Calgary AB T2R 1L5
Phone: (403) 264-4994
www.bountydev.com

Bristol Land & Leasing
1600-144 4 Ave SW
Calgary AB T2P 3N4
Phone: (403) 233-8822
Fax: (403) 538-2317

Britt Land Services
1100-630 6 Ave SW
Calgary AB T2P 0S8
Phone: (403) 266-5746
Fax: (403) 266-1293
www.brittland.com

Calico Land Services Ltd
901-825 8 Ave SW
Calgary AB T2P 2T3
Phone: (403) 237-5570
Fax: (403) 237-5568

Canadian Coastal Resources Ltd
900-202 6 Ave SW
Calgary AB T2P 2R9
Phone: (403) 261-1002

Cavador Resources Ltd
948 W Chestermere Dr
Chestermere AB T1X 1B7
Phone: (403) 272-2734
Fax: (403) 569-2566

Enerplus Corporation
3000-333 7 Ave SW
Calgary AB T2P 2Z1
Phone: (403) 298-2200
Fax: (403) 298-2211

Grizzly Oil Sands ULC
2700-605 5 Ave SW
Calgary AB T2P 3H5
Phone: (403) 930-6400
www.grizzlyoilsands.com

Joslyn Energy Development Incorporated
1120-396 11 Ave SW
Calgary AB T2R 0C5
Phone: (403) 269-8300
Fax: (403) 269-8350
info@joslynenergy.com

Keppoch Energy Ltd
1400-350 7 Ave SW
Calgary AB T2P 3N9
Phone: (403) 260-0241
Fax: (403) 260-0332

LandSolutions Inc
200-601 10 Ave SW
Calgary AB T2R 0B2
Phone: (403) 290-0008
Fax: (403) 290-0050
www.landsolutions.ca

Manitok Energy Inc
2500-639 5 Ave SW
Calgary AB T2P 0M9
Phone: (403) 984-1750
Fax: (403) 984-1749

Maverick Land Consultants Ltd
310-6940 Fisher Rd SE
Calgary AB T2H 0W3
Phone: (403) 537-1158
Fax: (403) 243-7947
www.maverickland.ca

Northern Alberta Oil Ltd
700-10150 100 St NW
Edmonton AB T5J 0P6
Phone: (780) 409-8144
Fax: (780) 409-8146

Norwegian Petroleum Inc
203-200 Barclay Parade SW
Calgary AB T2P 4R5
Phone: (403) 231-8250
Fax: (403) 265-4632

1226591 Alberta
143 Hamptons Heath NW
Calgary AB T3A 5E7
Phone: (403) 875-2129
Fax: (403) 455-7674

Petroland Services (1986) Ltd
1250-396 11 Ave SW
Calgary AB T2R 0C5
Phone: (403) 229-1500
Fax: (403) 245-0074
shawn.irwin@petroland.ca
www.petroland.ca

Petroleo La Plata, Inc
650-633 6 Ave SW
Calgary AB T2P 2Y5
Phone: (403) 262-2265
Fax: (403) 262-2270
info@petrolaplata.com
www.petrolaplata.com

Primary Petroleum Corporation
480-700 4 Ave SW
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Phone: (403) 262-3132
Fax: (403) 262-3175
info@primarypetroleum.com
www.primarypetroleum.com

Prosper Petroleum Ltd
1000-521 3 Ave SW
Calgary AB T2P 3T3
Phone: (403) 532-7655
Fax: (403) 532-7644

Rockford Land Ltd
119-2526 Battleford Ave SW
Calgary AB T3E 7J4
Phone: (403) 287-3500
Fax: (403) 287-3505
www.rockfordland.ca

Sandstone Land & Mineral Company Ltd
1300-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 265-1116
Fax: (403) 265-1118

Scott Land & Lease Ltd
900-202 6 Ave SW
Calgary AB T2P 2R9
Phone: (403) 261-1000
Fax: (403) 263-5263
www.scottland.ca

Silver Willow Energy
1500-202 6 Ave SW
Calgary AB T2P 2R9
Phone: (403) 538-7030
Fax: (403) 538-7033
www.swenergy.ca

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At the central processing facility for ConocoPhillips Canada's Surmont SAGD project.

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Calgary AB T2P 2V7
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info@shpacific.com
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Calgary AB T2P 3P8
Phone: (403) 265-1116
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standard@standardland.com
www.standardland.com

STOPE Corporation
344-918 16 Ave NW
Calgary AB T2M 0K3
Phone: (604) 613-1334

Storm Exploration
62C Riel Dr
St Albert AB T8N 5C4
Phone: (780) 460-9994

Terrene Resources
351 Hampstead Way NW
Calgary AB T3A 6E6
Phone: (403) 389-2554

Township Land Co Ltd
31218 Elbow River Dr
Calgary AB T3Z 2T8
Phone: (403) 234-8134
Fax: (403) 233-0203

Triton Energy Corp
600-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 266-5541
Fax: (403) 266-5579
www.tritonenergy.ca

US Oil Sands Inc
1600-521 3 St SW
Calgary AB T2P 3T3
Phone: (403) 233-9366
www.usoilsandsinc.com

Western Land Services Co Ltd
220-1509 Centre St SW
Calgary AB T2G 2E6
Phone: (403) 266-3076
Fax: (403) 262-3430
wlsmain@telusplanet.net
www.wlslimited.com

Windfall Resources Ltd
900-202 6 Ave SW
Calgary AB T2P 2R9
Phone: (403) 261-1000
Fax: (403) 263-5263

Producers

Advantage Oil & Gas Ltd
700-400 3 Ave SW
Calgary AB T2P 4H2
Phone: (403) 718-8000
Fax: (403) 718-8300
www.advantageog.com

Alberta Oilsands Inc
2800-350 7 Ave SW
Calgary AB T2P 3N9
Phone: (403) 263-6700
Fax: (403) 263-6702
www.aboilsands.ca

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Fort McMurray AB T9H 4W1
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Fax: (780) 793-2575
www.albiansands.ca

Arrowwood Oil & Gas Ltd
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Atlas Energy Ltd
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Calgary AB T2P 3Y6
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Fax: (403) 262-5123

AvenEx Energy Corp
300-311 6 Ave SW
Calgary AB T2P 3H2
Phone: (403) 263-3495
Fax: (403) 263-0643
www.avenexenergy.com

BA Energy Inc
1100-635 8 Ave SW
Calgary AB T2P 3C5
Phone: (403) 539-4500

Baytex Energy Ltd
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Calgary AB T2P 0R3
Phone: (587) 952-3000
Fax: (587) 952-3029
investor@baytex.ab.ca
www.baytex.ab.ca

Bellatrix Exploration Ltd
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Calgary AB T2P 3S8
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www.bellatrixexploration.com

BlackPearl Resources Inc
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www.blackpearlresources.ca

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Fax: (403) 262-5184
www.bonavistaenergy.com

BP Canada Energy Company
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Calgary AB T2P 2H8
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Fax: (403) 233-5610
www.bp.com

Canadian Natural Resources Limited
2500-855 2 St SW
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Phone: (403) 517-6700
www.cnrl.com

Canadian Oil Sands Trust
2500-350 7 Ave SW
Calgary AB T2P 3N9
Phone: (403) 218-6200
Fax: (403) 218-6201

Canol Resources Ltd
2040-605 5 Ave SW
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Phone: (403) 269-6400
Fax: (403) 269-8050

Caspian Energy Inc
410-396 11 Ave SW
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Phone: (403) 252-2462
Fax: (403) 252-1399
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Celtic Exploration Ltd
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Fax: (403) 201-9163
www.celticex.com

Cenovus Energy Inc
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Fax: (403) 766-7600
www.cenovus.com

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pamsumont@chevron.com
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www.chinookenergyinc.com

Clampett Energy Ltd
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Fax: (403) 266-8935

CNPC International (Canada) Ltd
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Calgary AB T2P 3N3
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www.cnpc-canada.com

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www.connacheroil.com

ConocoPhillips Canada Limited
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Fax: (403) 233-5143
www.conocophillips.com

Deep Well Oil & Gas Inc
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www.deepwelloil.com

Devon Canada Corporation
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Fax: (403) 232-7211
www.dvn.com

Diaz Resources Ltd
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www.diazresources.com

Dover Operating Corp
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Fax: (403) 265-6636
www.doveropco.com

Duel Energy Inc
249-708 11 Ave SW
Calgary AB T2R 0E4
Phone: (403) 237-8410
Fax: (403) 206-7425

Encana Corp
1800-855 2 St SW
Calgary AB T2P 4Z5
Phone: (403) 645-2000
Fax: (403) 645-3400
www.encana.com

Enerplus Corporation
3000-333 7 Ave SW
Calgary AB T2P 2Z1
Phone: (403) 298-2255
Fax: (403) 298-2211
www.enerplus.com

Enterra Energy Corp
2700-500 4 Ave SW
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Phone: (403) 263-0262
Fax: (403) 294-1197
bighorn@enterraenergy.com
www.enterraenergy.com

E-T Energy Ltd
550-525 11 Ave SW
Calgary AB T2R 0C9
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Fax: (403) 264-9438
www.e-tenergy.com

ExxonMobil Canada Ltd
PO Box 800 Stn M
Calgary AB T2P 2J7
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Fax: (403) 237-2197
pat_j_oscienny@email.mobil.com
www.exxonmobil.com

439 GP Partnership
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Phone: (403) 571-4466
Fax: (403) 571-4474

Freehold Royalty Trust
400-144 4 Ave SW
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Phone: (403) 221-0802
Fax: (403) 221-0888
kctaylor@freeholdtrust.com
www.freeholdtrust.com

Frog Lake Energy Corp
Frog Lake First Nations
General Delivery
Frog Lake AB T0A 1M0
Phone: (780) 943-3737
Fax: (780) 943-3966

Frog Lake Energy Resources Corp
410-396 11 Ave SW
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Phone: (403) 216-7698
Fax: (403) 252-1399

Habanero Resources Inc
1470-701 West Georgia St
Vancouver BC V7Y 1C6
Phone: (604) 646-6900
Fax: (604) 689-1733
info@habaneroresources.com
www.habaneroresources.com

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Edmonton AB T5S 1T1
Phone: (780) 451-0071
Fax: (780) 451-3716

Harvard Energy
2100-300 5 Ave SW
Calgary AB T2P 3C4
Phone: (403) 261-2950
Fax: (403) 264-2251
www.harvardenergy.com

Harvest Operations Corp
2100-330 5 Ave SW
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Phone: (403) 265-1178
Fax: (403) 265-3490
info@harvestenergy.ca
www.harvestenergy.ca

Highpine Oil & Gas Limited
4000-150 6 Ave SW
Calgary AB T2P 3Y7
Phone: (403) 265-3333
Fax: (403) 508-9503
info@highpineog.com
www.highpineog.com

Hunt Oil Company of Canada, Inc
2700-255 5 Ave SW
Calgary AB T2P 3G6
Phone: (403) 531-1530
Fax: (403) 215-8600
www.huntoil.com

Huron Energy Corp
1000-202 6 Ave SW
Calgary AB T2P 2R9
Phone: (403) 264-1200
Fax: (403) 264-2200

Husky Energy Inc
707 8 Ave SW
Calgary AB T2P 1H5
Phone: (403) 298-6111
Fax: (403) 298-7464
www.huskyenergy.ca

Imperial Oil Resources Limited
237 4 Ave SW
Calgary AB T2P 3M9
Phone: (800) 567-3776
Fax: (403) 237-4017
www.imperialoil.ca

Indian Oil & Gas Canada
100-9911 Chiila Blvd SW
Tsuu T'ina AB T2W 6H6
Phone: (403) 292-5625
Fax: (403) 292-5618
www.iogc.gc.ca

ISH Energy Ltd
900-700 4 Ave SW
Calgary AB T2P 3J4
Phone: (403) 262-2244
Fax: (403) 265-1792

Ivanhoe Energy
2100-101 6 Ave SW
Calgary AB T2P 3P4
Phone: (403) 269-2871
www.ivanhoeenergy.com

Jaco Energy Ltd
240 Lake Mead Rd SE
Calgary AB T2J 4A5
Phone: (403) 278-7129
Fax: (403) 278-7129
jaco.energy@shaw.ca

Japan Canada Oil Sands Limited
PO Box 5120
Fort McMurray AB T9H 3G2
Phone: (780) 799-4000
Fax: (780) 799-4010
www.jacos.com

Kaiser Exploration Ltd
1200-700 4 Ave SW
Calgary AB T2P 3J4
Phone: (403) 263-4245

Kinderock Resources Ltd
21 Capilano Dr
Saskatoon SK S7K 4A4
Phone: (306) 244-6721
Fax: (306) 653-5710

Koch Oil Sands Operating ULC
1500-111 5 Ave SW
Calgary AB T2P 3Y6
Phone: (403) 716-7800
Fax: (403) 716-7602
info@kochind.com
www.kochind.com

Korea National Oil Corporation
2100-330 5 Ave SW
Calgary AB T2P 0L4
Phone: (403) 999-6572
www.knoc.co.kr

Laricina Energy Ltd
800-425 1 St SW
Calgary AB T2P 3L8
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Fax: (403) 263-0767
laricina@laricinaenergy.com
www.laricinaenergy.com

Marathon Oil Canada Corporation
2400-440 2 Ave SW
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Phone: (403) 233-1700
Fax: (403) 294-9006
www.marathonoil.com

Marauder Resources East Coast Inc
720-440 2 Ave SW
Calgary AB T2P 5E9
Phone: (403) 262-3907
Fax: (403) 269-4232

MEG Energy Corp
11 Flr-520 3 Ave SW
Calgary AB T2P 0R3
Phone: (403) 770-0446
Fax: (403) 264-1711
www.megenergy.com

Midway Energy Ltd
210-4838 Richard Rd SW
Calgary AB T3E 6L1
Phone: (403) 216-2705
Fax: (403) 290-0587
info@midwayenergy.com
www.midwayenergy.com

Mistahiya Resources Ltd
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Phone: (403) 263-4292
Fax: (403) 263-0477

Murphy Oil Company, Ltd
4000-520 3 Ave SW
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Phone: (403) 294-8000
Fax: (403) 294-8853
www.murphyoilcorp.com

Nexen Inc
801 7 Ave SW
Calgary AB T2P 3P7
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Fax: (403) 699-5800
www.nexeninc.com

North Peace Energy Corp
630-505 3 St SW
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Fax: (403) 269-5273

Northpine Energy Ltd
103-1601 Westmount Rd NW
Calgary AB T2N 3M2
Phone: (403) 262-8410
Fax: (403) 262-7173

NorthWest Redwater Partnership
2800-140 4 Ave SW
Calgary AB T2P 3N3
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Fax: (403) 451-4197
info@northwestupgrading.com
www.nwrpartnership.com

N-Solv Corp
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Calgary AB T2P 3W3
Phone: (403) 920-3210
Fax: (403) 233-8754
www.n-solv.com

Oilsands Quest Inc
800-326 11 Ave SW
Calgary AB T2R 0C5
Phone: (403) 263-1623
Fax: (403) 263-9812
info@oilsandsquest.com
www.oilsandsquest.com

OSUM Oil Sands Corp
1900-255 5 Ave SW
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Phone: (403) 283-3224
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www.osumcorp.com

Pan Orient Energy
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Fax: (403) 294-1780
www.panorient.ca

Pan Pacific Oils Ltd
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Calgary AB T2P 0W7
Phone: (403) 266-8726
www.panpacificoils.com

Paramount Resources Ltd
4700-888 3 St SW
Calgary AB T2P 5C5
Phone: (403) 290-3600
Fax: (403) 262-7994

Pearl E & P Canada Ltd
700-444 7 Ave SW
Calgary AB T2P 0X8
Phone: (403) 215-8313
Fax: (403) 262-5123

Pembina Pipeline Corporation
3800-525 8 Ave SW
Calgary AB T2P 1G1
Phone: (403) 231-7500
Fax: (403) 237-0254
www.pembina.com

Pengrowth Energy Corporation
2100-222 3 Ave SW
Calgary AB T2P 0B4
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Fax: (403) 265-6251
pengrowth@pengrowth.com
www.pengrowth.com

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Fax: (403) 777-2699
www.pennwest.com

Penn West Petroleum Ltd
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Fax: (403) 777-2598
www.pennwest.com

Perpetual Energy Inc
380-435 4 Ave SW
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Fax: (403) 237-6103
www.perpetualenergyinc.com

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Phone: (403) 290-3600
Fax: (403) 262-7994
www.perpetualenergyinc.com

Perpetual Energy Operating Corp
3200-605 5 Ave SW
Calgary AB T2P 3H5
Phone: (403) 269-4400
Fax: (403) 269-4444
www.perpetualenergyinc.com

Petrobank Energy and Resources Ltd
3000-525 8 Ave SW
Calgary AB T2P 1G1
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Fax: (403) 266-5794
www.petrobank.com

Petromin Resources Ltd
390-1090 W Georgia St
Vancouver BC V6E 3V7
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Fax: (604) 682-8683
petromin@direct.ca
www.petromin-resources.com

Ranger Canyon Energy Inc
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Phone: (403) 265-5115
Fax: (403) 265-2798

Rock Energy Inc
800-607 8 Ave SW
Calgary AB T2P 0A7
Phone: (403) 218-4380
Fax: (403) 234-0598
www.rockenergy.ca

Roland Resources (87) Inc
62 Mission Rd SW
Calgary AB T2S 3A2
Phone: (403) 243-7833
Fax: (403) 243-7947

Sedna Oil and Gas Ltd
804-825 8 Ave SW
Calgary AB T2P 2T3
Phone: (403) 538-0024
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eanderson@sogl.ca

Sentinel Rock Oilsands Corp
700-602 12 Ave SW
Calgary AB T2R 1J3
Phone: (403) 538-8448
Fax: (403) 206-7746
www.sroc.ca

Shell Canada Limited
PO Box 100 Stn M
Calgary AB T2P 2H5
Phone: (403) 691-3111
Fax: (403) 691-4894
vasu.ramaswai@shell.ca
www.shell.ca

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Fax: (403) 538-7033
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www.swenergy.ca

SinoCanada Petroleum Corporation
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Phone: (403) 261-8885
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Sinopec Daylight Energy Ltd
2700-112 4 Ave SW
Calgary AB T2P 0H3
Phone: (403) 266-6900
Fax: (403) 266-6988
ir@daylightenergy.ca
www.sinopecdaylight.com

Skylight Energy Resources Ltd
1210 8 Ave W
Kindersley SK
Phone: (306) 463-4800
Fax: (306) 463-4779

Spry Energy Ltd
720-540 5 Ave SW
Calgary AB T2P 0M2
Phone: (403) 265-7770
Fax: (403) 265-7010

Statoil Canada Ltd
3600-308 4 Ave SW
Calgary AB T2P 0H7
Phone: (403) 234-0123
www.statoil.com

Strata Oil & Gas
408-918 16 Ave NW
Calgary AB T2M 0K3
Phone: (403) 668-6539
Fax: (403) 770-8882
www.strataoil.com

Sun Century Petroleum Corp
1400-550 6 Ave SW
Calgary AB T2P 0S2
Phone: (403) 269-2880
Fax: (403) 269-2897

Suncor Energy Inc
150 6 Ave SW PO Box 2844
Calgary AB T2P 3E3
Phone: (403) 296-8000
Fax: (403) 296-3030
www.suncor.com

Sunshine Oilsands Ltd
1400-700 4 Ave SW
Calgary AB T2P 3J4
Phone: (403) 984-1450
Fax: (403) 455-7674
www.sunshineoilsands.com

Syncrude Canada Ltd
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Vancouver BC V6C 2K2
Phone: (604) 699-4000
Fax: (604) 699-4750
www.teckcominco.com

Total E&P
4 place de Saverne Courbevoie
Paris La Defense Cedex 92971
Phone: 330 147444546
www.total-ep-canada.com

Total E&P Canada Ltd
2900-240 4 Ave SW
Calgary AB T2P 4H4
Phone: (403) 571-7599
Fax: (403) 571-7595
www.total-ep-canada.com

Triton Energy Corp
600-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 266-5541
Fax: (403) 266-5579
www.tritonenergy.ca

Value Creation Inc
1100-635 8 Ave SW
Calgary AB T2P 3M3
Phone: (403) 539-4500
Fax: (403) 539-4501
www.vctek.com

Williams Energy (Canada) Inc
600-604 1 St SW
Calgary AB T2P 1M7
Phone: (403) 444-4500
Fax: (403) 444-4505
www.williams.com



The Athabasca River running through Fort McMurray on its way north past oilsands mining production facilities.

PHOTO: JOEY PODLUBNY

Service & supply

Accommodations

Alta-Fab Structures Ltd
504 13 Ave
Nisku AB T9E 7P6
Phone: (780) 955-7733
www.altafab.com

Athabasca Open Camp Ltd
Rge Rd 203 Hwy 55
Athabasca AB
Phone: (780) 499-3670

Best Western Wainwright Inn & Suites
1209 27 St
Wainwright AB T9W 0A2
Phone: (780) 845-9934

Boyle Motor Lodge
PO Box 64
Boyle AB T0A 0M0
Phone: (780) 689-3944

Canada North Open Camps
PO Box 208
Wabasca AB T0G 2K0
Phone: (780) 891-3391
www.canadanorthcamp.com

Chard Camp Catering Ltd
113 Wood Buffalo Way
Fort McMurray AB T9K 1W5
Phone: (780) 791-0232

Christina Lake Lodge
3790 98 St NW
Edmonton AB T6E 6B4
Phone: (780) 577-1552
www.christinalakelodge.com

Clearwater Suites Hotel
Fort McMurray Hotel Group 4
Haineault St
Fort McMurray AB T9H 1R6
Phone: (780) 799-7676
www.fortmcmurrayhotels.ca

Corona Hotel
PO Box 236
Thorhild AB T0A 3J0
Phone: (780) 398-3534

CRC Open Camp & Catering Ltd
PO Box 2100
Lac La Biche AB T0A 2C0
Phone: (780) 623-3788

Crown Camp Services
207-10020 Franklin Ave
Fort McMurray AB T9H 2K6
Phone: (780) 790-5447

Edmonton Destination Hotels – South Side
1-9301 50 St
Edmonton AB T6B 2L5
Phone: (780) 628-2509
www.tanneryoung.com

Gold Eagle Lodge
12004 Railway Ave E
North Battleford SK S9A 3W3
Phone: (306) 446-8877
www.goldeaglelodge.com

Hamburg Open Camp
PO Box 818
Manning AB T0H 2M0
Phone: (780) 836-3220

Jennifer's Open Camp
1091 Hwy 813
Wabasca AB T0G 2K0
Phone: (780) 891-2267

MM Limited Partnership
345 MacAlpine Cres
Fort McMurray AB T9H 4Y4
Phone: (780) 791-1020

Nakoda on the Lake
PO Box 149
Morley AB T0L 1N0
Phone: (403) 881-3949
www.nakodalodge.com

Noralta Lodge Ltd
Fort McMurray AB
Phone: (780) 791-3334
www.noraltalodge.com

Northgate Industries Ltd
12345 121 St NW
Edmonton AB T5L 4Y7
Phone: (780) 448-9222
www.northgateindustries.com

Paramount Structures Inc.
1600-505 3 St SW
Calgary AB T2P 3E6
Phone: (403) 244-7411
www.paramountstructuresinc.com

PTI Group Inc
3790 98 St NW
Edmonton AB T6E 6B4
Phone: (780) 463-8872
www.ptigroup.com

Red Earth Lodge Ltd
275 Hwy 88
Red Earth Creek AB
Phone: (780) 649-2422
www.redearthlodge.ca

Red Rest Motel
5311 48 Ave
Redwater AB
Phone: (780) 942-3066

Sawridge Inn & Conference Centre
530 MacKenzie Blvd
Fort McMurray AB T9H 4C8
Phone: (780) 791-7900
www.sawridge.com

Strong Creek Open Camp Ltd
PO Box 6325
Peace River AB T8S 1S2
Phone: (780) 624-2267
www.strongcreek.ca

Super 8 Motel
5108 47 Ave
Vermilion AB T9X 1J6
Phone: (780) 853-4741
www.super8.com

Super 8 Motel
1006 Hwy 16
North Battleford SK S9A 3W2
Phone: (306) 446-8888
www.super8.com

Third Mission Heritage Suites
PO Box 7505
Peace River AB T8S 1T1
Phone: (780) 624-3883
www.thirdmission.ca

Travelodge Canada
201-609 14 St NW
Calgary AB T2N 2A1
Phone: (403) 270-9002
www.travelodge.ca

Western Budget Motel
6026 50 Ave
Bonnyville AB T9N 2N4
Phone: (780) 812-2131
www.westernbudgetmotel.com

Air Charter Services

Air Mikisew Ltd
Box 2 CPT 2 RR 1
Fort McMurray AB T9H 5B5
Phone: (780) 743-8218
www.airmikisew.com

Airco Aircraft Charters Ltd
6-11930 109 St NW
Edmonton AB T5G 2T8
Phone: (780) 471-4771
www.aircocharters.com

Black Swan Helicopters
PO Box 263
Berwyn AB T0H 0E0
Phone: (780) 338-2964
www.blackswanhelicopters.com

Born Flying Ltd
5613 37 St
Lloydminster AB T9V 1Z2
Phone: (780) 871-1213

Can-West Corporate Air Charters Ltd
PO Box 40
Slave Lake AB T0G 2A0
Phone: (780) 849-5353
www.canwestair.com

Delta Helicopters Ltd
13-26004 Twp Rd 544
Sturgeon County AB T8T 0B6
Phone: (780) 458-3564
www.deltahelicopters.com

Emirates Airlines
90 Sheppard Ave E
Toronto ON M2N 3A1
Phone: (800) 777-3999
www.emirates.com

McMurray Aviation
Site 1 Box 5 RR 1
Fort McMurray AB T9H 5B4
Phone: (780) 791-2182
www.mcmurrayaviation.com

Northern Air Charter Inc
Hangar 5, Peace River Airport
Peace River AB
Phone: (780) 624-1911
www.flynorthernair.com

Phoenix Heli-Flight
Site 1 Box 6 RR 1
Fort McMurray AB T9H 5B4
Phone: (780) 799-0141
www.phoenixheliflight.com

Remote Helicopters
PO Box 1340
Slave Lake AB T0G 2A0
Phone: (780) 849-2222
www.remotehelicopters.com

Rupert's Land Operations Inc
PO Box 6099
Bonnyville AB T9N 2G7
Phone: (780) 826-7777

Swanberg Air Inc
102-11010 Airport Dr
Grande Prairie AB T8V 7Z5
Phone: (780) 513-8977
www.swanbergair.com

Wood Buffalo Helicopters
Bldg 29 Airport Rd
Fort McMurray AB
Phone: (780) 743-5588
www.woodbuffalohelicopters.com

Building Products & Services

AECON Mining
316 MacKay Cres
Fort McMurray AB T9H 4E4
Phone: (780) 791-5477
www.aecon.com

All Weather Shelters Inc
12304 184 St NW
Edmonton AB T5V 0A5
Phone: (780) 930-1551
www.allweather-shelters.com

Aluma Systems
304 69 Ave
Edmonton AB T6P 0C1
Phone: (780) 440-1320
www.aluma.com

Aluma Systems Canada Inc
55 Costa Rd
Concord ON L4K 1M8
Phone: (905) 660-8176
www.aluma.com

ATCO Structures & Logistics Ltd
115 Peacekeepers Dr SW
Calgary AB T3E 7X4
Phone: (403) 292-7804
www.atcosl.com

Atco Sustainable Communities
1243 McKnight Blvd NE
Calgary AB T2E 5T1
Phone: (403) 292-7660
www.atcosc.com

Badger Daylighting
6740 65 Ave
Red Deer AB T4P 1A5
Phone: (403) 343-0303
www.badgerinc.com

Bexson Construction Ltd
3705 51 Ave
Lloydminster AB T9V 2C3
Phone: (780) 875-0333
www.bexsonconstruction.com

Big Eagle Services
3815A 47 Ave
Camrose AB T4V 4S4
Phone: (780) 672-3863
www.bigeagle.ca

Cam-Trac Inspection Services
RR 1
Legal AB T0G 1L0
Phone: (780) 460-5440
www.cam-trac.ca

Chinook Industrial Ltd
516 60 Ave SE
Calgary AB T2H 0P9
Phone: (403) 253-8291
www.chinook.ca

ClearSpan Fabric Structures
1395 John Fitch Blvd
South Windsor CT 06074
Phone: (866) 643-1010

Comec Industrial Services LP
7301 50 Ave
Bonnyville AB T9N 2P3
Phone: (780) 826-4450

Con-Force Structures
205-26229 Twp Rd 531A Zone 2
Acheson AB T7X 5A4
Phone: (403) 998-6022
www.con-force.com

Container West
11660 Mitchell Rd
Richmond BC V6V 1T7
Phone: (604) 322-0533
www.containerwest.com

Crossterra
200-7317 Railway Ave
Fort McMurray AB T9H 1B9
Phone: (780) 743-3745

D & G Polyethylene Products Ltd
PO Box 276
Neilburg SK S0M 2C0
Phone: (306) 823-4789
www.dgpolyproducts.com

Doug's Bobcat & Backhoe Services
PO Box 166
Mannville AB T0B 2W0
Phone: (780) 763-3991

Fisher Building Systems Inc
PO Box 2689
Lloydminster SK S9V 0Y3
Phone: (306) 825-4513

HAMMERSTONE Corporation
PO Box 5636
Fort McMurray AB T9H 3G6
Phone: (780) 743-1853
www.hammerstonecorp.com

Hart Construction (911478 Alberta Ltd)
PO Box 89
Tofield AB T0B 0J0
Phone: (780) 662-2541
www.hartconstruction.ca

MakLoc Buildings Inc
706 17 Ave
Nisku AB T9E 7T1
Phone: (780) 955-2951
www.makloc.com

Matakana Scaffolding & Enclosures
204-2304 Ellwood Dr
Edmonton AB T6X 0A9
Phone: (780) 986-6844

Norseman Structures
3815 Wanuskewin Rd
Saskatoon SK S7P 1A4
Phone: (306) 385-2768
www.norsemanstructures.com

One 4 Haul Trans4mer Ltd
105-10110 Fraser Ave
Fort McMurray AB T9H 5C2
Phone: (780) 881-7702

Rolled Alloys-Canada, Inc
19-7251 67 St NW
Edmonton AB T6B 3N3
Phone: (780) 469-9469
www.rolledalloys.ca

Shandro George Contracting
PO Box 7556
Bonnyville AB T9N 2H8
Phone: (780) 826-2211

Shoe Inn
1482 Linda Way
Sparks NV 89431
Phone: (775) 356-2778
www.theshoecovers.com

Skyway Canada Limited
3408 76 Ave NW
Edmonton AB T6B 2N8
Phone: (780) 413-8007
www.skywaycanada.ca

Slave Lake Specialties
PO Box 87
Slave Lake AB T0G 2A0
Phone: (780) 849-3863

Sprung Instant Structures
PO Box 62 Maple Leaf Rd
Aldersyde AB T0L 0A0
Phone: (403) 601-2292
www.sprung.com

Star Concrete & Construction
PO Box 93
Mallaig AB T0A 2K0
Phone: (780) 635-3082

Stuart Olson Dominion Construction Ltd
15505 137 Ave NW
Edmonton AB T5V 1R9
Phone: (780) 452-4260
www.sodcl.com

Thompson Cats Ltd
PO Box 240
Kitscoty AB T0B 2P0
Phone: (780) 846-2908

ThyssenKrupp Safway Inc
11237 87 Ave
Fort Saskatchewan AB T8L 2S3
Phone: (780) 992-1929
www.safway.com

Triple M Structures
3501 Giffen Rd N
Lethbridge AB T1H 0E8
Phone: (403) 320-8588
www.triplestructures.com

Universal Fabric Structures
3115 State Rd
Telford PA 18951
Phone: (800) 634-8368
www.ufsinc.com

Valard Construction Ltd
14310 97 St
Grande Prairie AB T8V 7B6
Phone: (780) 539-4750
www.valard.com

Vertical Building Solutions
PO Box 366 Stn Main
Grande Prairie AB T8V 3A5
Phone: (780) 532-0366
www.verticalbuildings.com

Wood Buffalo Scaffolding Ltd
6215 82 Ave
Edmonton AB T6B 0E8
Phone: (780) 440-3099

Completion Products & Services

Alberta Oil Tool
6939 68 Ave NW
Edmonton AB T6B 3E3
Phone: (780) 434-8566
www.albertaoiltool.com

Baker Hughes Canada Company
805 Memorial Dr
Fort McMurray AB T9K 0K4
Phone: (780) 714-6672
www.bakerhughes.com

Champion Technologies Ltd
2200-144 4 Ave SW
Calgary AB T2P 3N4
Phone: (403) 234-7881
www.champ-tech.com

Cobra Energy Consultants
5014 50 Ave
Elk Point AB T0A 1A0
Phone: (780) 724-4444

Logan Completion Systems
6402 56 St
Lloydminster AB
Phone: (780) 808-8788
www.logancompletionsystems.com

Logan Completion Systems
210-600 6 Ave SW
Calgary AB T2P 0S5
Phone: (403) 930-6810
www.logancompletionsystems.com

Lone Wolfe Distributors
c/o Sci-Tech Engineered Chemicals
340-53016 Hwy 60
Acheson AB T7X 5A7
Phone: (780) 960-1200

NEXEO Solutions
1720 106 Ave NW
Edmonton AB T6P 1X9
Phone: (780) 417-9385
www.ashland.com

Noralco Consulting Ltd
5707 39 St
Lloydminster AB T9V 2P2
Phone: (780) 875-2337

Pro-Rod
1220-633 6 Ave SW
Calgary AB T2P 2Y5
Phone: (403) 269-5116
www.prorod.com

Quadra Chemicals (Western) Ltd
470-700 4 Ave SW
Calgary AB T2P 3J4
Phone: (403) 232-8130
www.quadrachemicals.com

Raise Production Inc
2620 58 Ave SE
Calgary AB T2C 1G5
Phone: (403) 699-7675
www.raiseproduction.com

Regent Energy Group
1600-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 269-8088
www.regentenergygroup.com

RG Industries Ltd
6939 68 Ave NW
Edmonton AB T6B 3E3
Phone: (780) 496-7473
www.rodguideindustries.com

Rock Solid Nitrogen Services Ltd
4538 47 Ave
Vermilion AB T9X 1H8
Phone: (780) 853-6604
www.rocksolidcompanies.ca

Select Energy Systems Inc
4215 54 Ave SE
Calgary AB T2C 2A2
Phone: (403) 243-7542
www.selectesi.com

Synerchem International Inc
4333 46 Ave SE
Calgary AB T2B 3N5
Phone: (403) 203-1481
www.synerchem.com

W E Greer Ltd
14704 119 Ave NW
Edmonton AB T5L 2P1
Phone: (780) 451-1516
www.wegreer.com

Weatherford PC Pump
4604 62 Ave
Lloydminster AB T9V 2G2
Phone: (780) 875-0103
www.weatherford.com

Windale Oilfield Services Ltd
5517 38 St
Lloydminster AB
Phone: (780) 871-1999

Winterhawk Enterprises (Provost) Ltd
PO Box 2925
Wainwright AB T9W 1S8
Phone: (780) 842-2841
www.winterhawk.ca

Construction

A 1 Topsoil & Construction Services Ltd
15 May Cres
Fort McMurray AB T9H 1J8
Phone: (780) 799-0233

Aecon Industrial
53367 Rge Rd 232
Sherwood Park AB T8A 4V2
Phone: (780) 433-9321
www.aecon.com

All Terrain Road
11724 180 St NW
Edmonton AB T5S 1N7
Phone: (780) 437-8107
www.allterrainroad.com

Allan's Backhoe Service
PO Box 135
Minburn AB T0B 3B0
Phone: (780) 593-2256

Almita Piling Inc
Site 1 Box 8 RR 4
Ponoka AB T4J 1R4
Phone: (403) 783-5800
www.almita.com

Bellamy Backhoe Service Ltd
Site 1 Box 156 RR 1
Dapp AB T0G 0S0
Phone: (780) 954-2029
www.bellamybackhoeservice.com

Benoit Oilfield Construction (1997) Ltd
PO Box 277
Chauvin AB T0B 0V0
Phone: (780) 858-3794
www.benoitoilfield.ca

Bird Construction Company
16815 117 Ave NW
Edmonton AB T5M 3V6
Phone: (780) 452-8770
www.birdindustrial.ca

Bob's Backhoe Service
PO Box 1916
Lloydminster SK S9V 1N4
Phone: (306) 825-2596

Border City Concrete Ltd
PO Box 1618 Stn Main
Lloydminster SK S9V 1K5
Phone: (780) 875-0550
www.bordercityconcrete.com

Border Paving Ltd
4217 41 St
Camrose AB T4V 3V8
Phone: (780) 672-3389
www.borderpaving.com

Bryce & Youngman Construction Ltd
PO Box 1476
Lloydminster SK S9V 1T4
Phone: (780) 875-2660

Cameron Construction Services
5-285145 Wrangler Way SE
Calgary AB T1X 0K3
Phone: (403) 735-1021
www.cameronconstruction.ca

Canam Group
270 chemin Du Tremblay
Boucherville QC J4B 5X9
Phone: (450) 641-4000
www.canamgroup.ws

Cardinal's Backhoe Service
PO Box 522
Lac La Biche AB T0A 2C0
Phone: (780) 623-7987

Carmacks Enterprises Ltd
701 25 Ave
Nisku AB T9E 0C1
Phone: (780) 955-5545
www.carmacksent.com

Casman Group of Companies
330 MacKenzie Blvd
Fort McMurray AB T9H 4C4
Phone: (780) 791-9283
www.casman.ca

CBS Construction Ltd
150 MacKay Cres
Fort McMurray AB T9H 4W8
Phone: (780) 743-1810
www.cbsconstruction.ca

CEMATRIX (Canada) Inc
5440 53 St SE
Calgary AB T2C 4B6
Phone: (403) 219-0484
www.cematrix.com

Centerfire
Lot 50A First Nations 468
Fort McMurray AB T9H 3G4
Phone: (780) 334-2277
www.centerfire.ca

Chinchaga Anchors & Pilings Ltd
PO Box 489
Manning AB T0H 2M0
Phone: (780) 836-3800

Churchill Services Group
11825 149 St NW
Edmonton AB T5L 2J1
Phone: (780) 454-3667
www.churchillcorporation.com

Consolidated Gypsum Supply Ltd
11660 170 St NW
Edmonton AB T5S 1J7
Phone: (780) 452-7786
www.consolidatedgypsum.ca

Copp's Services Inc
231-28042 Hwy 11 Burnt Lake Business Pk
Red Deer County AB T4S 2L4
Phone: (403) 347-6222
www.coppspiledriving.com

D R C Construction Ltd
PO Box 8026
Bonnyville AB T9N 2J3
Phone: (780) 826-3994

Danny's Picker Service Ltd
PO Box 131
Slave Lake AB T0G 2A0
Phone: (780) 849-5441
www.dannyspickerservice.com

Datum Energy Projects Inc
PO Box 40059 RPO Southridge
Medicine Hat AB T1B 4S6
Phone: (403) 580-9876
www.datumenergyprojects.com

DBY Contractors Inc
PO Box 39
Tangent AB T0H 3J0
Phone: (780) 359-2363

Demers Contracting Services Ltd
240 MacLennan Cres
Fort McMurray AB T9H 4G1
Phone: (780) 799-3222
www.dcsl.ca

Dipper Oilfield Developments
PO Box 2340
Lac La Biche AB T0A 2C0
Phone: (780) 559-2244
www.dipperoilfield.com

Elk Point Sand & Gravel
PO Box 690
Elk Point AB T0A 1A0
Phone: (780) 724-4144

FAM Canada Inc
1000-888 3 St SW
Calgary AB T2P 5C5
Phone: (780) 481-1177
www.fam-canada.com

Ferbey Sand & Gravel Ltd
4509 47 Ave
Vermilion AB T9X 1H9
Phone: (780) 853-4960

Finning (Canada)
16830 107 Ave NW
Edmonton AB T5P 4C3
Phone: (780) 930-4800
www.finning.ca

Fleming Cats Inc
PO Box 1320
Lac La Biche AB T0A 2C0
Phone: (780) 623-4701
www.flemingcats.com

Floyd's Backhoe & Vacuum Truck Service
PO Box 7491
Bonnyville AB T9N 2H8
Phone: (780) 826-5340

General Fence Ltd
2215 59B Ave
Lloydminster AB T9V 3J3
Phone: (780) 875-8894
www.generalfence.ca

Genivar
132-2693 Broadmoor Blvd
Sherwood Park AB T8H 0G1
Phone: (780) 410-6740
www.exheng.com

H. Wilson Industries Ltd
PO Box 5660
Fort McMurray AB T9H 3G6
Phone: (780) 743-1881
www.wilson-industries.com

Hammer's Gravel Supplies Ltd
PO Box 385
Viking AB T0B 4N0
Phone: (780) 336-3232

Helical Pier Systems Ltd
8610 111 St
Fort Saskatchewan AB T8L 3T4
Phone: (780) 992-0007
www.hpier.com

IPAC Services Corporation
8701 102 St
Clairmont AB T0H 0W0
Phone: (780) 532-7350
www.ipacservices.com

IRISNDT Corp
5311 86 St NW
Edmonton AB T6E 5T8
Phone: (780) 437-4747
www.irisndt.com

J W Contracting
PO Box 1157
Redwater AB T0A 2W0
Phone: (780) 942-4000

Jacobs Catalytic
PO Box 5244 Stn A
Calgary AB T2H 2N7
Phone: (403) 258-6533
www.jacobs.com

Jim Wagner Enterprises Ltd
PO Box 351
Mannville AB T0B 2W0
Phone: (780) 763-3860

JLG Ball Enterprises
PO Box 211
Boyle AB T0A 0M0
Phone: (780) 689-2395
www.jlgball.com

KBR Canada Ltd
3300 76 Ave NW
Edmonton AB T6P 1J4
Phone: (780) 468-1341
www.kbr.com

Ketron Construction Ltd
PO Box 772 Stn Main
Cold Lake AB T9M 1P2
Phone: (780) 594-2085

KMC Mining
Bldg 30-60 Flight Line Rd NW
Edmonton AB T5G 3G2
Phone: (780) 454-0664

Ledcor Industrial Ltd
9910 39 Ave NW
Edmonton AB T6E 5H8
Phone: (780) 462-9616
www.ledcor.com

Lehigh Hanson Canada Region
12640 Inland Way NW
Edmonton AB T5V 1K2
Phone: (780) 420-2500
www.inlandcanada.com

Lloyd's & Frank's Backhoe Services Ltd
3401 Canyon Rd
Athabasca AB T9S 1J6
Phone: (780) 675-2762

Lockerbie & Hole Contracting
14940 121A Ave NW
Edmonton AB T5V 1A3
Phone: (780) 452-1250
www.lockerbiehole.com

Mainroad
200-17474 56 Ave
Surrey BC V3S 1C3
Phone: (604) 575-7045

MCL Industrial Insulating
PO Box 2117
Slave Lake AB T0G 2A0
Phone: (780) 849-2994

Melloy Industrial Services Inc
2305 5 St
Nisku AB T9E 7X1
Phone: (780) 955-8500
www.melloy.com

Monad Industrial Constructors Inc
9744 45 Ave NW
Edmonton AB T6E 5C5
Phone: (780) 468-8026
www.monad.ca

Mywaart Construction
188 Saprae Cres
Fort McMurray AB T9H 5B4
Phone: (780) 791-1559

NEC Contractors Ltd
PO Box 2100
Lac La Biche AB T0A 2C0
Phone: (780) 623-4643
www.neccontractors.com

Nuna Innovations Inc
104-39149 Discovery Way
Squamish BC V6B 0E6
Phone: (604) 815-4385

Olson's Sand & Gravel Ltd
PO Box 218
Chauvin AB T0B 0V0
Phone: (780) 858-2360

PCL Industrial Management Inc
5404 99 St NW
Edmonton AB T6E 3N7
Phone: (780) 733-5700
www.pcl.com

PCL Pipe Fabrication & Module Construction Facilities
2107 4 St
Nisku AB T9E 7W6
Phone: (780) 979-6300
www.pcl.com

Process Plant Construction Ltd
PO Box 5178
Fort McMurray AB T9H 3G3
Phone: (780) 334-4365

R P Oilfield Construction
502 5 St
Wainwright AB T9W 1A7
Phone: (780) 842-3940

R T Grading & Roadbuilding
PO Box 6033
Peace River AB T8S 1S1
Phone: (780) 624-8298

Reda Enterprises Ltd
PO Box 7130
Bonnyville AB T9N 2H5
Phone: (780) 826-2737
www.redaent.ca

Reinhart Group of Companies
PO Box 12628
Lloydminster AB T9V 0Y4
Phone: (780) 808-2233
www.reinhartpm.com

Reon Oilfield Contractors Ltd
B-4902 48 St
Athabasca AB T9S 1B8
Phone: (780) 675-2614

Rickard Excavation Ltd
PO Box 5057 Stn Main
Fort McMurray AB T9H 3G2
Phone: (780) 791-2867

Roberge Construction Ltd
PO Box 82
Jarvie AB T0G 1H0
Phone: (780) 954-2534

Rogo Holdings Ltd
PO Box 4031
Spruce Grove AB T7X 3B2
Phone: (780) 962-9209

Rondell Road Contracting
PO Box 1145
St Paul AB T0A 3A0
Phone: (780) 645-5083

Sabre Cats Ltd
PO Box 1078
Lac La Biche AB T0A 2C0
Phone: (780) 623-2113

Seisland Surveys Ltd
7235 Flint Rd SE
Calgary AB T2H 1G2
Phone: (403) 255-2770
www.seisland.com

Seko Construction Ltd
201-425 Gregoire Dr
Fort McMurray AB T9H 4K7
Phone: (780) 743-1636
www.sekoconstruction.com

Simplex/UAH Universal Air Hydraulics
1008 16 Ave
Nisku AB T9E 0A9
Phone: (780) 955-7073

Site Energy Services
170-120 Pembina Rd
Sherwood Park AB T8H 0M2
Phone: (780) 400-7483
www.siteenergy.com

Snelgrove R & Sons Ltd
4605 47 St
Vermilion AB T9X 1L6
Phone: (780) 853-4040

Steeplejack Industrial Insulation Services Ltd
8925 62 Ave NW
Edmonton AB T6E 5L2
Phone: (780) 465-9016
www.steeplejack.ca

Superior Propane
4431 6 St SE
Calgary AB T2G 4E8
Phone: (403) 287-1356

Supermetal Structures Inc
3813 75 Ave
Leduc AB T9E 0K3
Phone: (780) 980-4830
www.supermetal.com

Sureway Construction Management Ltd
7331 18 St NW
Edmonton AB T6P 1P9
Phone: (780) 440-2121
www.surewaygroup.ca

Surmont Sand Gravel Ltd
290 McLennan Cres
Fort McMurray AB T9H 5M5
Phone: (780) 743-2533
www.surmont.ca

Swamp Cats Ltd
PO Box 1885
Lac La Biche AB T0A 2C0
Phone: (780) 623-2891
www.swampcats.ca

T B G Contracting Ltd
Hwy 63N
Fort McMurray AB
Phone: (780) 743-8474
www.tbgcontracting.com

Thermal Energy Services Inc
12 Derrick Dr
Devon AB T9G 2A1
Phone: (780) 987-5917
www.thermalenergy.ca

Thiel Scaffolding Canada
27324 Twp Rd 513
Spruce Grove AB T7Y 1H8
Phone: (780) 968-1420

Triton Projects Inc
8525 Davies Rd NW
Edmonton AB T6E 4N3
Phone: (780) 485-6717
www.tritonprojects.com

Tuccaro Group Companies
283 MacAlpine Cres
Fort McMurray AB T9H 4Y4
Phone: (780) 791-9386
www.tuccaroinc.com

Valley C Construction Ltd
PO Box 2157 Stn Main
Lloydminster SK S9V 1R6
Phone: (780) 875-1659

Voice Construction Ltd
7545 52 St NW
Edmonton AB T6B 2G2
Phone: (780) 469-1351
www.voiceconstruction.com

Ward's Hydraulic Services Ltd
291C MacAlpine Cres
Fort McMurray AB T9H 4Y4
Phone: (780) 799-7340
www.wardshydraulic.com

Westlock Sand & Gravel Co Ltd
4819 50 St
Clyde AB
Phone: (780) 348-5252

Whitemud Ironworks Limited
7727 18 St NW
Edmonton AB T6P 1N9
Phone: (780) 465-5888
www.whitemud.com

Contractors-General Oilfield

Arnett & Burgess Oilfield Construction Limited
2930-715 5 Ave SW
Calgary AB T2P 2X6
Phone: (403) 265-0900
www.abpipeliners.com

Athabasca Industrial Maintenance
PO Box 549
Boyle AB T0A 0M0
Phone: (780) 689-2440

Basarab Garry Construction & Grader
PO Box 1467
High Prairie AB T0G 1E0
Phone: (780) 523-4793

Battle River Oilfield Construction Ltd
PO Box 957
Manning AB T0H 2M0
Phone: (780) 836-3498
www.battleriveroilfield.com

Bear Slashing Inc
PO Box 7610
Bonnyville AB T9N 2H9
Phone: (780) 826-8048
www.bearslashing.com

Beder Holdings Limited
PO Box 116
Marwayne AB T0B 2X0
Phone: (780) 847-3815

BFL Energy Services Ltd
PO Box 7447
Bonnyville AB T9N 2H7
Phone: (780) 826-4412
www.bflenergy.ca

Big D Contracting Ltd
PO Box 816
Slave Lake AB T0G 2A0
Phone: (780) 849-4443

B-Line Directional Drilling
PO Box 1240
Elk Point AB T0A 1A0
Phone: (780) 210-2225

Boisson Contracting Inc
PO Box 1868
High Prairie AB T0G 1E0
Phone: (780) 523-2561

Boxer Petroleum Services Inc
PO Box 6819
Bonnyville AB T9N 2H3
Phone: (780) 826-5002
www.boxervalve.com

Brother's Oilfield Services
PO Box 3273
Wainwright AB T9W 1T2
Phone: (780) 842-4220

Calibre Production Operators Ltd
202-9835 104 St
Fort Saskatchewan AB T8L 2E5
Phone: (780) 997-0037

Carson Energy Services Ltd
PO Box 12188
Lloydminster AB T9V 3C4
Phone: (780) 808-8450
www.carsonwelding.com

CD Rouleau Construction
PO Box 327
Eaglesham AB T0H 1H0
Phone: (780) 837-1712

Central Peace Contracting Ltd
Peace River AB
Phone: (780) 338-3898

CERA Contracting Ltd
PO Box 338
Waskatenau AB T0A 3P0
Phone: (780) 358-2792

Christina River Enterprises (1987) Ltd
PO Box 6040
Fort McMurray AB T9H 4W1
Phone: (780) 334-2446
www.clac.ca

Consun Contracting Ltd
280G MacLennan Cres
Fort McMurray AB T9H 4G1
Phone: (780) 743-3163
www.consun.ca

Crude Energy Services Inc
PO Box 2635
Lac La Biche AB T0A 2C0
Phone: (780) 623-4409
www.crude-energy.ca

C's Oilfield Consulting & Construction Service Ltd
PO Box 1155
Lloydminster AB T9V 1G1
Phone: (780) 808-2272

D Prpich Enterprises Ltd
PO Box 597
High Prairie AB T0G 1E0
Phone: (780) 523-3661

Denision Contractors Ltd
7912 97 Ave
Peace River AB T8S 1W5
Phone: (780) 624-5718

Denmax Energy Services
PO Box 2881
Wainwright AB T9W 1S7
Phone: (780) 842-3661
www.denmax.ca

Deynaka Developments Ltd
PO Box 935
High Prairie AB T0G 1E0
Phone: (780) 523-2420

Digrite Backhoe Service Ltd
PO Box 305
Chauvin AB T0B 0V0
Phone: (780) 858-3976

E Construction Ltd
10130 21 St NW
Edmonton AB T6P 1W7
Phone: (780) 467-7701
www.ecltd.ca

E G Gas Operators Ltd
PO Box 26
Innisfree AB T0B 2G0
Phone: (780) 592-3733

East Village Eagle Ridge Developments Ltd
36 Riedel St
Fort McMurray AB T9H 3E1
Phone: (780) 791-1500

Enmax Corporation
141 50 Ave SE
Calgary AB T2G 4S7
Phone: (403) 689-6150
www.enmax.com

Estabrook Construction Ltd
PO Box 258
Grimshaw AB T0H 1W0
Phone: (780) 332-4111

Fearless Oilfield Service (FOS)
PO Box 691
Slave Lake AB T0G 2A0
Phone: (780) 849-8554

First Nation Reclamation Consulting Ltd
PO Box 76
Red Earth Creek AB T0G 1X0
Phone: (780) 649-0060

Flint Field Services Ltd
PO Box 8029
Bonnyville AB T9N 2J3
Phone: (780) 826-5523
www.flintenergy.com

Fort McKay Group of Companies
PO Box 5360 Stn Main
Fort McMurray AB T9H 3G4
Phone: (780) 828-2400
www.fortmckay.com

Foster Bulldozing Services Ltd
PO Box 540
Mannville AB T0B 2W0
Phone: (780) 763-3750
www.fosterbulldozing.com

GEM Grant Energy Maintenance
PO Box 1683
High Prairie AB T0G 1E0
Phone: (780) 523-3470
www.grantenergy.ca

Gift Lake Metis Settlement
PO Box 60
Gift Lake AB T0G 1B0
Phone: (780) 767-3794

Gill's Vacuum Service Ltd
PO Box 5
Kinsella AB T0B 2N0
Phone: (780) 336-3520

Glen Armstrong Construction Ltd
8122 102 Ave
Peace River AB T8S 1M6
Phone: (780) 624-2101
www.glenarmstrongconstruction.com

Granite Oilfield Services Inc
6006 52 Ave
Lloydminster AB T9V 2S8
Phone: (780) 875-1652

Grimm Mel Holdings Ltd
PO Box 630
Manning AB T0H 2M0
Phone: (780) 836-3632

Homeland Well Servicing Ltd
GD
Fishing Lake AB T0A 3G0
Phone: (780) 943-2466

Hugo Zbinden Contracting
50 Cougarstone Terrace SW
Calgary AB T3H 4Z8
Phone: (403) 454-6241

ICJ Artificial Lift
1100-540 5 Ave SW
Calgary AB T2P 0M2
Phone: (780) 875-5504
www.natoil.com

Jay's Salvage & Cats Ltd
Site 632 Comp 3 RR 1
Lac La Biche AB T0A 2C1
Phone: (780) 623-4096

JMB Crushing Systems Ltd
4725 Railway Ave
Elk Point AB
Phone: (780) 724-3960

K G Enterprises Ltd
PO Box 787
Lamont AB T0B 2R0
Phone: (780) 895-7554

L Robert Enterprises Ltd
125 MacKay Cres
Fort McMurray AB T9H 4C9
Phone: (780) 791-0118
www.lre.ca

Lakeshore Contracting Ltd
Lot C2 Airport
Fort McMurray AB
Phone: (780) 714-3665
www.lakeshorecontractingltd.com

Lorenzen's Oilfield Service Ltd
PO Box 353
Manning AB T0H 2M0
Phone: (780) 836-3786

LTD Oilfield Services Inc
PO Box 859
Redwater AB T0A 2W0
Phone: (780) 942-4484
www.ltdoil.com

M & J Cats Ltd
PO Box 749
Lac La Biche AB T0A 2C0
Phone: (780) 623-7653

Macmillan Construction Ltd
PO Box 7080
Peace River AB T8S 1S7
Phone: (780) 624-3777
www.maccon.ca

Millennium Cats Inc
PO Box 1914
Lac La Biche AB T0A 2C0
Phone: (780) 623-4036

Monte's Mechanical
144 Beaconwood Pl
Fort McMurray AB T9H 2S7
Phone: (780) 791-9162

Neegan Development Corp Ltd
283 McAlpine Cres
Fort McMurray AB
Phone: (780) 791-0654
www.tuccaroinc.com

NorDen Contracting Ltd
PO Box 2307
Lac La Biche AB T0A 2C0
Phone: (780) 623-7567

Northern Backhoe Ltd
PO Box 149
Manning AB T0H 2M0
Phone: (780) 836-2617

Northsite Contractors Ltd
PO Box 712
Grimshaw AB T0H 1W0
Phone: (780) 332-4592

Permasteel Projects Ltd
17430 103 Ave NW
Edmonton AB T5S 2K8
Phone: (780) 452-7281
www.permasteel.com

Peter Kiewit Infrastructure Co
11211 215 St NW
Edmonton AB T5S 2B2
Phone: (780) 447-3509
www.kiewit.ca

Phoenix Industrial
3703 38 Ave
Whitecourt AB T7S 0A2
Phone: (780) 778-5883
www.phoenixindustrial.ca

Powell Cats Ltd
PO Box 248
Chauvin AB T0B 0V0
Phone: (780) 858-3978

Prairie Tech Oilfield Services
PO Box 819
Elk Point AB T0A 1A0
Phone: (780) 614-1873

Precision Contractors Ltd
PO Box 10578
Lloydminster AB T9V 3A7
Phone: (780) 875-1962
www.precisioncontractors.com

Predator Logistics
PO Box 1816
Vegreville AB T9C 1S9
Phone: (780) 632-9394

Riverside Oilfield Services
5709 50 Ave
Bonnyville AB
Phone: (780) 826-9327

Rocky Pine Oilfield Services Ltd
PO Box 739 Stn Main
Lloydminster SK S9V 1C1
Phone: (780) 724-2625

S N R Contracting Ltd
PO Box 357
Wabasca AB T0G 2K0
Phone: (780) 891-2169

Shamrock Valley Enterprises Ltd
PO Box 505
Elk Point AB T0A 1A0
Phone: (780) 724-3177
www.shamrockvalley.ca

Skully's Oilfield Maintenance Ltd
PO Box 272
Viking AB T0B 4N0
Phone: (780) 336-4064

Spirig Welding Ltd
PO Box 68
Dixonville AB T0H 1E0
Phone: (780) 971-3730

Stony Valley Contracting
245 Taiganova Cres
Fort McMurray AB T9K 0T4
Phone: (780) 743-0527
www.stonyvalley.ca

Stuber's Cat Service Ltd
Site 7 Box 12 RR 2
Barrhead AB T7N 1N3
Phone: (780) 785-2173
www.stubers.ca

Swamp Mats Inc.
1600-505 3 St SW
Calgary AB T2P 3E6
Phone: (403) 265-8757
www.swampmats.ca

Szmyrko Construction
PO Box 300
Boyle AB T0A 0M0
Phone: (780) 689-9497
www.szmyrko.com

Tenaris
400-530 8 Ave SW
Calgary AB T2P 3S8
Phone: (403) 767-0100
www.tenaris.com

Thompson Bros (Constr) LP
411 South Ave
Spruce Grove AB
Phone: (780) 962-1030
www.thompsonbros.com

Trans Tech Contracting Inc
811-53016 Hwy 60
Acheson AB T7X 5A7
Phone: (780) 447-3700
www.transtechcontracting.com

Tri-Rez Oil & Gas Productions Ltd
PO Box 1769 Stn Main
Cold Lake AB T9M 1P4
Phone: (780) 594-7183

Tuc's Contracting
283 MacAlpine Cres
Fort McMurray AB T9H 4Y4
Phone: (780) 791-9386

TWB Construction Ltd
210 Weston Ave W
Maidstone SK S0M 1M0
Phone: (306) 893-4500

W.A.T. Holdings Ltd
PO Box 1170
Wabasca AB T0G 2K0
Phone: (780) 891-3006

West Can Seal Coating Inc
PO Box 669
Didsbury AB T0M 0W0
Phone: (403) 335-9137
www.west-cansealcoating.com

West Penetone Inc
11411 160 St NW
Edmonton AB T5M 3T7
Phone: (780) 454-3919
www.westpenetone.com/en

Wiebe Construction
PO Box 818
Manning AB T0H 2M0
Phone: (780) 836-9026

Drilling Products & Services

Aable Directional Boring
Box 14 Site 15 RR 3
Olds AB T4H 1P4
Phone: (403) 391-3227

AKITA Drilling Ltd
900-311 6 Ave SW
Calgary AB T2P 3H2
Phone: (403) 292-7979
www.akita-drilling.com

Alfa Laval Inc
305-2912 Memorial Dr SE
Calgary AB T2A 6R1
Phone: (403) 269-5300
www.alfalaval.ca

Anchor Industries Ltd
RR 240
Edmonton AB
Phone: (780) 921-2144

Anchors First Ltd
PO Box 2388 Stn Main
Lloydminster SK S9V 1W5
Phone: (306) 825-6535

Apex Oilfield Services (2000) Inc
910-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 257-5152
www.apexoil.ca

Black Gold Drilling
PO Box 56
Nampa AB T0H 2R0
Phone: (780) 322-2123

Boart Longyear Drilling Services
4025 96 Ave SE
Calgary AB T2C 4T7
Phone: (403) 287-1460
www.boartlongyear.com

Bonnyville Drilling Services
5210 54 Ave
Bonnyville AB T9N 2H9
Phone: (780) 826-3906

Brian Steed Contracting & Horizontal Directional Drilling Ltd
PO Box 6934
Peace River AB T8S 1S7
Phone: (780) 624-8609

Canadian Mat Systems Inc
241 76 Ave NW
Edmonton AB T6P 1P2
Phone: (780) 485-0808
www.matsystems.ca

Carnwood Wireline Service Ltd
108-3907 98 St NW
Edmonton AB T6E 6M3
Phone: (780) 434-1122
www.carnwood.com

Cheyenne Rig Repair & Supply Ltd
PO Box 1319
Gibbons AB T0A 1N0
Phone: (780) 414-1477
www.chevron.ca

Clean Harbors Directional Boring
256-28042 Hwy 11
Red Deer AB T4S 2L4
Phone: (403) 346-7332
www.cleanharbors.com

D & D Oilfield Rentals
PO Box 237
Blackfoot AB T0B 0L0
Phone: (780) 875-5171
www.ddoil.net

Edcon Power Tongs and Oilfield Services Ltd
PO Box 209
Lac La Biche AB T0A 2C0
Phone: (780) 623-4808

Emco Corporation – Waterworks & Geosynthetics
1-270 MacKay Cres
Fort McMurray AB T9H 5C6
Phone: (780) 713-2433
www.emcoltd.com

ENCORE Coring & Drilling Inc
1345 Highfield Cres SE
Calgary AB T2G 5N2
Phone: (403) 287-0123
www.ensignenergy.com/encore

Enerig Supply
PO Box 456
Bashaw AB T0B 0H0
Phone: (780) 372-3883

Essential Coil & Stimulation Services
7755 Edgar Industrial Way
Red Deer AB T4P 3R2
Phone: (403) 347-6717
www.essentialenergy.ca

FMC Technologies Inc
PO Box 1370
Tupelo MS 38802
Phone: (662) 869-5711

Fourth Meridian Enterprises Ltd
PO Box 1908 Stn Main
Lloydminster SK S9V 1N4
Phone: (306) 753-7424

G & L Slotco Oil Field Services
1110-700 4 Ave SW
Calgary AB T2P 3J4
Phone: (403) 261-1717
www.gl-slotco.com

Garritty And Baker Geotechnical Drilling Inc
5715 56 Ave NW
Edmonton AB T6B 3G3
Phone: (780) 433-8786
www.garrittyandbakerdrilling.com

GE Oil & Gas
3500-525 8 Ave SW
Calgary AB T2P 1G1
Phone: (403) 775-8630
www.ge.com/oilandgas

Hallmark Tubulars Ltd
400-308 4 Ave SW
Calgary AB T2P 0H7
Phone: (403) 266-3807
www.hallmarksolutions.ca

Hunting Energy Services (Canada) Ltd
5550 Skyline Way NE
Calgary AB T2E 7Z7
Phone: (403) 543-4477
www.hunting-intl.com

Hurricane Industries Ltd
PO Box 2038
Lloydminster AB S9V 1R5
Phone: (780) 875-5597
www.hurricanefoam.com

Impact Rock Bits
PO Box 6448
Peace River AB T8S 1S3
Phone: (780) 624-2640
www.impactrockbits.com

Import Tool Corp Ltd
930-910 7 Ave SW
Calgary AB T2P 3N8
Phone: (403) 261-3032
www.importtool.com

Inspectrite Services Inc
PO Box 6235
Bonnyville AB T9N 2G8
Phone: (780) 826-3480

J & L Supply Co Ltd
4511 Manitoba Rd SE
Calgary AB T2G 4B9
Phone: (403) 287-3300
www.jandlsupply.com

JayNart Directional Drilling Ltd
PO Box 400
Redwater AB T0A 2W0
Phone: (780) 942-4105
www.jaynartdrilling.ca

J.E.D. Anchors & Environmental Ltd
RR 3
Eckville AB T0M 0X0
Phone: (403) 746-3408
www.jed-drilling.com

K & S Power Tongs Ltd
3614 63 Ave Close
Lloydminster AB T9V 2W1
Phone: (780) 875-0000
www.kspowertongs.com

Kodiak Wireline Services Partnership
9702 90 Ave
Morinville AB
Phone: (780) 939-5554
www.kodiakservices.ca

Marquis Fluids Inc
700-706 7 Ave SW
Calgary AB T2P 0Z1
Phone: (403) 264-1588
www.marquisfluids.com

McAllister Drilling Inc
PO Box 1189 Stn Main
Lloydminster SK S9V 1G1
Phone: (780) 875-2409

McCoy Coatings & Hydraulics Inc
4263 95 St NW
Edmonton AB T6E 5R6
Phone: (780) 461-8333
www.inotec-inc.com

M-I Drilling Fluids
500-700 2 St SW
Calgary AB T2P 2W2
Phone: (403) 290-5336

Mid-East Oilfield Services Inc
PO Box 56
Minburn AB T0B 3B0
Phone: (780) 593-3946

Mighty Mite Power Tongs
PO Box 1088
Gibbons AB T0A 1N0
Phone: (780) 554-5453
www.mightymitetongs.ca

Mitee Industries Inc
PO Box 1088
Gibbons AB T0A 1N0
Phone: (780) 554-5453
www.mightymitetongs.ca

Nabors Canada
2800-500 4 Ave SW
Calgary AB T2P 2V6
Phone: (403) 263-6777
www.naborscanada.com

National Energy Equipment Inc
1850 Derry Rd E
Mississauga ON L5S 1Y6
Phone: (905) 564-2422
www.nee.ca

Newpark Canada Inc
300-635 6 Ave SW
Calgary AB T2P 0T5
Phone: (403) 266-7383
www.newpark.ca

Newsco Directional & Horizontal Services Inc
7000 Railway St SE
Calgary AB T2H 3A8
Phone: (403) 243-2331
www.newsco.ca

Northstar Drillstem Testers Inc
201-736 1 Ave NE
Calgary AB T2E 0B8
Phone: (403) 265-8987
www.northstardst.com

NOV Downhole
2700-144 4 Ave SW
Calgary AB T2P 3N4
Phone: (403) 234-9999
www.nov.com/downhole

NOV FluidControl/ Brandt Product Sales
1700-715 5 Ave SW
Calgary AB T2P 2X6
Phone: (403) 264-9646
www.nov.com

Peak Energy Services
900-222 3 Ave SW
Calgary AB T2P 0B4
Phone: (403) 543-7325
www.peak-energy.com

Petroline Rentals Ltd
PO Box 118
High Prairie AB T0G 1E0
Phone: (780) 523-0063

Prairie Dog Directional Drilling
PO Box 7921 Stn Main
Bonnyville AB T9N 2J2
Phone: (780) 812-9145

Precision Drilling
800-525 8 Ave SW
Calgary AB T2P 1G1
Phone: (403) 264-4882
www.precisiondrilling.com

ProDrill Fluid Technologies
1740-840 7 Ave SW
Calgary AB T2P 3G2
Phone: (403) 269-8260
www.ccscorporation.ca

Pro-Rod Coiled Rod Solutions
3201 84 Ave NW
Edmonton AB T6P 1K1
Phone: (780) 449-7101
www.prorod.com

Q'Max Solutions Inc
1700-407 2 St SW
Calgary AB T2P 2Y3
Phone: (403) 269-2242
www.qmaxsolutions.com

RBI Canada 2000 Inc
5677 Burleigh Cres SE
Calgary AB T2H 1Z7
Phone: (403) 255-3730
www.rbi-canada.com

Remote Wireline Services
8804 98 St
Morinville AB T8R 1K6
Phone: (780) 939-6655
www.remotewireline.com

Ryan Directional Services Inc
2900-500 4 Ave SW
Calgary AB T2P 2V6
Phone: (403) 269-5981
www.ryanenergy.com

Savanna Drilling
1800-311 6 Ave SW
Calgary AB T2P 3H2
Phone: (403) 503-0652
www.savannaenergy.com

Scormac Oilfield Bits Inc
4710 62 Ave
Lloydminster AB
Phone: (780) 808-6462

Shield Wireline Ltd
6006A 50 Ave
Lloydminster AB T9V 2T9
Phone: (780) 875-2772
www.shieldwireline.ca

Sicotte Drilling Tools
1101 77 Ave NW
Edmonton AB T6P 1M8
Phone: (780) 440-6700
www.sicottedrillingtools.com

Silverline Coil
PO Box 570
Slave Lake AB T0G 2A0
Phone: (780) 849-8377

Silvertip Rentals and Fishing Tools
PO Box 207
Slave Lake AB T0G 2A0
Phone: (780) 849-8372
www.silvertiprentals.com

Smith Bits
700-396 11 Ave SW
Calgary AB T2R 0C5
Phone: (403) 264-6077
www.smithbits.com

Smith International Canada Ltd
710-396 11 Ave SW
Calgary AB T2R 0C5
Phone: (403) 264-6077
www.smith.com

Smith Services
710-396 11 Ave SW
Calgary AB T2R 0C5
Phone: (403) 264-6077

Stream-Flo Industries Ltd
400-202 6 Ave SW
Calgary AB T2P 2R9
Phone: (403) 269-5531
www.streamflo.com

Summit Wireline Inc
PO Box 11439
Lloydminster AB T9V 3B7
Phone: (306) 825-4191
www.summitwirelineinc.com

Superheat FGH Canada, Inc
1303 77 Ave NW
Edmonton AB T6P 1M8
Phone: (780) 469-8008
www.superheatfgh.com

Tallrig International Safety
PO Box 12387
Lloydminster AB T9V 3C6
Phone: (780) 808-5311
www.tallrig.ca

Tartan Controls Inc
350-1201 5 St SW
Calgary AB T2R 0Y6
Phone: (403) 232-1490
www.tartancontrols.com

Ted's Power Tongs & Laydown Machine Ltd
PO Box 267
Manning AB T0H 2M0
Phone: (780) 836-2460

Titus Tools Inc
6014 52 Ave
Lloydminster AB T9V 2S8
Phone: (780) 875-6280
www.titustools.com

Tomtruck Enterprises Ltd
PO Box 1705
Lloydminster SK S9V 1M6
Phone: (780) 205-1535
www.tomtruck.ca

Tornado Technologies Inc
5605 48 St SE
Calgary AB T2C 4X8
Phone: (403) 244-3333
www.tornadotech.com

Trendon Bit Service Ltd
PO Box 548
Redcliff AB T0J 2P0
Phone: (403) 548-7242
www.trendonbitservice.com

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Calgary AB T2R 1L9
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www.treodrilling.com

Trinidad Drilling Ltd
2500-700 9 Ave SW
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www.trinidaddrilling.com

Tryton Tool Services
PO Box 10667
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Phone: (780) 875-0800
www.trytontoolservices.com

Tundra Environmental & Geotechnical Drilling
Hwy 12
Stettler AB T0B 1H0
Phone: (403) 742-6601
www.tundraenvirodrilling.ca

Unique Boring
PO Box 1122
Slave Lake AB T0G 2A0
Phone: (780) 849-0232

Val's Drilling Ltd
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Phone: (403) 226-0572
www.vdrill.com

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www.varelrockbits.com

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Calgary AB T1Y 4T7
Phone: (403) 250-7263
www.variperm.com

Volant Products Inc
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Edmonton AB T6B 3R8
Phone: (780) 490-5185
www.volantproducts.ca

Vortex Energy Pumping Services Inc
5115 62 St
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Phone: (780) 632-3558

Wavefront Sandpumps & Rentals Ltd
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www.wellheaddistributors.com

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www.welltec.com

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5617 50 Ave
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Phone: (780) 812-2585
www.welltec.com

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Calgary AB T2P 3N8
Phone: (403) 663-4860
www.westrock-energy.com

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www.abb.com

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www.ainsworth.com

Aircom Industries
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Edmonton AB T6E 5K3
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www.teamaircom.com

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Phone: (780) 808-5209

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Stettler AB T0C 2L1
Phone: (403) 742-1833

APEX Distribution Inc
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www.apexdistribution.com

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www.RigakuEDXRF.com

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www.bjelectric.ca

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www.ebaldor.ca

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Fort McMurray AB T9H 4A6
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www.baldor.com

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www.benchmarkinc.ca

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www.scadalink.com

Bi-Systems Electric & Controls Ltd
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Phone: (780) 875-4047

Bredon Electrical Systems Ltd
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www.canonbie.ca

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Calgary AB T2Z 4M3
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www.carboncontrolsltd.com

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www.cdnova.com

Centurion Energy Services Ltd
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Phone: (780) 791-5661
www.centurionenergy.ca

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Fort McMurray AB T9H 2G5
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PO Box 6021
Peace River AB T8S 1S1
Phone: (780) 624-5749

Concept Controls Inc
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Calgary AB T2E 7C7
Phone: (403) 208-1065
www.conceptcontrols.com

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www.csa-international.org

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Phone: (780) 849-4316

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www.eecol.com

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Phone: (780) 849-2771
www.emeselectric.com

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www.ca.endress.com

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Calgary AB T2H 1J1
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www.enerfest.ca

Energy Electric Ltd
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Bonnyville AB T9N 1P4
Phone: (780) 826-7795

Energy Navigator Inc
1200-777 8 Ave SW
Calgary AB T2P 3R5
Phone: (403) 233-9400
www.energynavigator.com

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Edmonton AB T5S 2T4
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PO Box 104
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Phone: (780) 961-3545
www.fluidlift.com

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Fort McMurray AB T9H 5C6
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Lloydminster SK S9V 2C1
Phone: (306) 825-5484

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Edmonton AB T6E 5Z7
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Slave Lake AB T0G 2A0
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www.honeywellprocess.com

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Cleveland OH 44130
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www.ips.us

JAG Instrument Services Ltd
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www.lairdelectric.com

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www.matrikon.com

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www.nomadservices.ca

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www.noralta.com

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Grimshaw AB T0H 1W0
Phone: (780) 332-3944
www.nor-techsystems.com

North Star Electric
PO Box 517
High Prairie AB T0G 1E0
Phone: (780) 523-5511

Northern Electric Canada Ltd
4610 112 Ave SE
Calgary AB T2C 2K2
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www.northernelec.ca

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Edmonton AB T6E 5L7
Phone: (780) 733-5300
www.pcl.com

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Calgary AB T2C 2S4
Phone: (403) 258-3670
www.pmcprocess.com

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4003 97 St NW
Edmonton AB T6E 5Y5
Phone: (780) 440-0109
www.primaryflowsignalcanada.com

Procon Systems Inc
6025 99 St
Edmonton AB T6E 3P1
Phone: (780) 437-0244
www.proconsystems.com

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Calgary AB T2C 3H3
Phone: (403) 720-2526
www.pronghorn.ca

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2308 8 St
Nisku AB T9E 7Z2
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Bonnyville AB T9N 2M5
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R.L. Electric Motor Rewinding (1995) Ltd
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Phone: (780) 875-6880

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www.rockwellautomation.com

Rotork Controls (Canada) Ltd
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Calgary AB T2A 6K1
Phone: (403) 569-9455
www.rotork.com

Simark Controls Ltd
10509 46 St SE
Calgary AB T2C 5C2
Phone: (403) 236-0580
www.simark.com

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Edmonton AB T5M 2S1
Phone: (780) 451-2630
www.smsequip.com

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Calgary AB T2A 7V2
Phone: (403) 207-0700
www.spartancontrols.com

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Calgary AB T2H 0T2
Phone: (403) 279-8367
www.stes.ca

Sterling Technical Services Ltd
PO Box 261
Ardmore AB T0A 0B0
Phone: (780) 812-3567

Stone Eagle Electrical Supply
385 MacKenzie Blvd
Fort McMurray AB T9H 5E2
Phone: (780) 715-4463
www.StoneEagleSupply.com

Studon Electric & Controls Inc
1030-540 5 Ave SW
Calgary AB T2P 0M2
Phone: (403) 781-6302
www.studon.com

Studon Electric & Controls Inc
102-8024 Edgar Industrial Cres
Red Deer AB T4P 3R3
Phone: (800) 825-1646
www.studon.com

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www.tarponenergy.com

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Bonnyville AB T9N 2K7
Phone: (780) 826-2461
www.techmationelectric.com

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18060 109 Ave NW
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Phone: (780) 444-8933
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www.toranpower.com

Tracer Industries Inc
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Phone: (780) 455-8111

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www.turbocare.com

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www.vulcanelectrical.com

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Fort McMurray AB T9H 5E2
Phone: (780) 799-4337
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www.wika.ca

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www.cti-advantage.com

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www.amec.com

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Calgary AB T2C 3G3
Phone: (403) 248-4331
www.amec.com

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Edmonton AB T5J 5B9
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Calgary AB T2N 1M1
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www.atech.ca

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www.CBI.com

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Edmonton AB T6N 1H2
Phone: (780) 450-8989
www.cfertech.com

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Calgary AB T2R 0E4
Phone: (403) 266-4141
www.chapeng.ab.ca

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Calgary AB T2G 1B1
Phone: (403) 407-6000
www.ch2m.com

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Calgary AB T2M 3Y7
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www.cmgl.ca

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Calgary AB T2W 4B8
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Equinox Engineering Ltd
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Calgary AB T2P 3G5
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Calgary AB T2K 5X7
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www.falcon-edf.com

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www.fekete.com

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Phone: (403) 537-4600
www.fluor.com

Focus Corporation
300-9925 109 St
Edmonton AB T5K 2J8
Phone: (780) 466-6555

Focus Corporation Ltd
Bay 1-118 Millennium Dr
Fort McMurray AB T9K 2S8
Phone: (780) 790-0704
www.focus.ca

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Calgary AB T3H 2N7
Phone: (403) 242-1240

Frontier Engineering & Consulting Ltd
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Calgary AB T2N 3M2
Phone: (403) 265-3900
www.frontier-ltd.ca

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Calgary AB T1Y 4T8
Phone: (403) 785-2995
www.gasliquids.com

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Calgary AB T2P 3C8
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www.geminicorp.ca

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Phone: (403) 266-9500
www.gljpc.com

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Calgary AB T2A 7W5
Phone: (403) 299-5600
www.golder.com

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Calgary AB T2P 3G2
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www.hatch.ca

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Phone: (780) 452-1800
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www.hocs.ca

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Phone: (780) 743-0114
www.cbi.com

IFP Technologies (Canada) Inc
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Calgary AB T2P 3T4
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www.ifp-canada.com

IMV Projects Inc
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Calgary AB T2P 3L5
Phone: (403) 537-8811
www.imvprojects.com

JA Sprinkle Engineering Ltd
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Phone: (780) 875-5307

JPI Geo-Industry Engineering Consultants
8403 187 St NW
Edmonton AB T5T 1H9
Phone: (780) 443-2290
www.jpicanada.com

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Calgary AB T2P 3H6
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Calgary AB T2R 1L9
Phone: (403) 206-1533
www.kbcat.com

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www.kilowatts.com

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Phone: (780) 429-7300
www.kpmg.ca

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Calgary AB T1Y 6B5
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www.noetic.ca

Norwest Corporation
2700-411 1 St SE
Calgary AB T2G 0R3
Phone: (403) 237-7763
www.norwestcorp.com

PCL Constructors Inc
5410 99 St NW
Edmonton AB T6E 3P4
Phone: (780) 733-5000
www.pcl.com

Petrel Robertson Consulting Ltd
500-736 8 Ave SW
Calgary AB T2P 1H4
Phone: (403) 218-1618
www.petrelrob.com

Petroleum Geomechanics Inc
PO Box 31062, RPO Bridgeland 112 4 St NE
Calgary AB T2E 9A3
Phone: (403) 874-7066
www.petroleumgeomechanics.com

Petrospec Engineering Ltd
5311 72A Ave NW
Edmonton AB T6B 2J1
Phone: (780) 468-6901
www.petrospeceng.com

POLARIS Laboratories
5140 75 St NW
Edmonton AB T6E 6W2
Phone: (877) 808-3750
www.polarislabs.ca

Post Process Consultants Corp
700-736 6 Ave SW
Calgary AB T2P 3T7
Phone: (403) 237-7160
www.post-process.com

PROJEX
500-404 6 Ave SW
Calgary AB T2P 0R9
Phone: (403) 705-4100
www.projex.ca

Purvin & Gertz Inc
1720-144 4 Ave SW
Calgary AB T2P 3N4
Phone: (403) 266-7086
www.purvingertz.com

RAE Engineering & Inspection Ltd
4810 93 St NW
Edmonton AB T6E 5M4
Phone: (780) 469-2401
www.raeengineering.ca

Rangeland Engineering
400-534 17 Ave SW
Calgary AB T2S 0B1
Phone: (403) 265-5130
www.rangelandeng.com

RPS Energy
1400-800 5 Ave SW
Calgary AB T2P 3T6
Phone: (403) 265-7226
www.rpsgroup.com

Sacre-Davey Engineering Inc
315 Mountain Hwy
North Vancouver BC V7J 2K7
Phone: (604) 986-0663
www.sacre-davey.com

Serpa Petroleum Consulting Ltd
403 Oakside Cir SW
Calgary AB T2V 4P1
Phone: (403) 861-6753
www.serpaconsulting.com

SNC-Lavalin Inc
1700-605 5 Ave SW
Calgary AB T2P 3H5
Phone: (403) 294-2431
www.snc-lavalin.com

Sproule Associates Limited
900-140 4 Ave SW
Calgary AB T2P 3N3
Phone: (403) 294-5500
www.sproule.com

Stantec Consulting Ltd
600-4808 Ross St
Red Deer AB T4N 1X5
Phone: (403) 341-3320
www.stantec.com

Stewart Weir & Co Ltd
PO Box 6938
Bonnyville AB T9N 2H3
Phone: (780) 812-3183
www.swg.ca

Technip Canada Ltd
2110-801 6 Ave SW
Calgary AB T2P 3W2
Phone: (403) 266-2007
www.technip.com

Teknica Overseas Ltd
2700-350 7 Ave SW
Calgary AB T2P 3N9
Phone: (403) 269-4386
www.teknicaltd.com

Terracon Geotechnique Ltd
800-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 266-1150
www.terracon.ca

Thimm Engineering Inc
214-3916 64 Ave SE
Calgary AB T2C 2B4
Phone: (403) 265-0792
www.hfthimm.com

Thurber Engineering Ltd
200-9636 51 Ave NW
Edmonton AB T6E 6A5
Phone: (780) 438-1460
www.thurber.ca

Toyo Engineering Canada Ltd
1400-727 7 Ave SW
Calgary AB T2P 0Z5
Phone: (403) 266-4400
www.toyo-eng.ca

TWD Technolgies
905 Century Dr
Burlington ON L7L 5J8
Phone: (905) 634-3324

United Oil & Gas Consulting Ltd
910-396 11 Ave SW
Calgary AB T2R 0C5
Phone: (403) 265-0111
www.uogc.com

Upside Engineering Ltd
409 10 Ave SE
Calgary AB T2G 0W3
Phone: (403) 290-4650
www.upsideeng.com

Vista Projects Limited
330-4000 4 St SE
Calgary AB T2G 2W3
Phone: (403) 255-3455
www.vistaprojects.com

Westwater Environmental Ltd
900-808 4 Ave SW
Calgary AB T2P 3E8
Phone: (403) 233-0202
www.westwaterenv.com

WorleyParsons
400-10201 Southport Rd SW
Calgary AB T2W 4X9
Phone: (403) 258-8660
www.worleyparsons.com

WorleyParsons Canada Ltd
1150-10201 Southport Rd SW
Calgary AB T2W 4X9
Phone: (403) 258-8000
www.worleyparsons.com

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Phone: (780) 955-8980
www.acevegetation.com

Altus Energy Services Partnership
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Phone: (780) 826-2290
www.altusenergy.com

Apex Geoscience Ltd
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Edmonton AB T6E 5V8
Phone: (780) 439-5380
www.apexgeoscience.com

Aquatech International Corp
205-259 Midpark Way SE
Calgary AB T2X 1M2
Phone: (403) 256-8700
www.aquatech.com

Atco Emissions Management
1243 McKnight Blvd NE
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Phone: (403) 292-7804
www.atcoem.com

Beaver Regional Waste Management Commission
PO Box 322
Ryley AB T0B 4A0
Phone: (780) 663-2038
www.beavermunicipal.com

Bulldog Protective Coatings
605 Caribou Trl SW
Slave Lake AB
Phone: (780) 849-2581
www.bulldogcoatings.ca

C. Herman Trucking Ltd
PO Box 1132
Slave Lake AB T0G 2A0
Phone: (780) 849-5399

Cave Inspection Ltd
PO Box 25
Kitscoty AB T0B 2P0
Phone: (780) 846-2437

Century Environmental Services
3422 Millar Ave
Saskatoon SK S7K 5Y7
Phone: (306) 934-4549
www.century-environmental.com

Chedkor Contracting Ltd
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Lac La Biche AB T0A 2C0
Phone: (780) 623-2407

Clariant Oil Services
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Phone: (403) 262-7846
www.oil.clariant.com

Clean Harbors Canada Inc
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Phone: (780) 663-3828
www.cleanharbors.com

Contain Enviro Services Ltd
13535 97 St
Grande Prairie AB T8X 1S8
Phone: (877) 513-8885
www.contain.ca

Core Laboratories Canada Ltd
2810 12 St NE
Calgary AB T2E 7P7
Phone: (403) 250-4000
www.corelab.com

Cozy Cats Ltd
PO Box 1282
Lac La Biche AB T0A 2C0
Phone: (780) 623-1926

Dentor Enterprises
PO Box 5665 Stn Main
Fort McMurray AB T9H 3G6
Phone: (780) 743-9446

Deuce Disposal Ltd
PO Box 362
Slave Lake AB T0G 2A0
Phone: (780) 849-3334

Dow Chemical Canada Inc
2100-450 1 St SW
Calgary AB T2P 5H1
Phone: (403) 267-3500
www.dowcanada.com

Dziengielewski Enterprises Ltd
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Peace River AB T8S 1S2
Phone: (780) 624-5532

EBA Engineering Consultants Ltd
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Edmonton AB T5V 1B4
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www.eba.ca

Elemental Controls Ltd
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Mississauga ON L4X 2C1
Phone: (905) 282-9974

Enviro Vault Canada Ltd
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Calgary AB T3H 4H9
Phone: (403) 263-4433
www.envirovault.com

EnviroSORT Inc.
700-540 5 Ave SW
Calgary AB T2P 0M2
Phone: (403) 509-2150
www.cleanharbors.com

Evergreen Solutions
110-3506 118 Ave SE
Calgary AB T2Z 3X1
Phone: (403) 273-8000
www.evergreensolutions.com

Excel Vegetation Services
RR 4
Tofield AB T0B 4J0
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9321 48 St NW
Edmonton AB T6B 2R4
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www.fluidlife.com

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Lloydminster SK S9V 0Y2
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GCHEM Ltd
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Lloydminster AB T9V 2E9
Phone: (780) 871-4668
www.gchem.ca

Global Analyzer Services Ltd
305-4625 Varsity Dr NW
Calgary AB T3A 0Z9
Phone: (403) 286-6556

Gourley Construction Ltd
4606 49 Ave
Vermilion AB T9X 1R6
Phone: (780) 853-5087

Gower & Co Vegetation Management Inc
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Phone: (780) 808-3141
www.gowerandcompany.com

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Fort McMurray AB T9H 1Y5
Phone: (780) 743-4290
www.hatfieldgroup.com

HAZCO Environmental Services
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Calgary AB T2Z 0K7
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www.hazco.com

Highland Maintenance
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Lloydminster SK S9V 1G1
Phone: (780) 875-6882

Hobblestone Enterprises Inc
PO Box 28
Blackfoot AB T0B 0L0
Phone: (780) 875-7282
www.hobblestoneplastics.com

IDE Technologies Ltd
PO Box 5016
Kadima 60920
Phone: 972 9-8929-777
www.ide-tech.com

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INTEGRA Technologies Limited
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www.integratechnologies.com

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Calgary AB T2E 8M5
Phone: (403) 236-4901
www.envirospill.com

Intrinsik Environmental Sciences Inc
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Calgary AB T2P 1H4
Phone: (403) 237-0275
www.intrinsikscience.com

Ivanhoe Waste Water Rentals Ltd
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Grande Prairie AB T8W 0G2
Phone: (780) 538-3904
www.ivanhoewastewater.com

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Phone: (918) 234-2707
www.johnzink.com

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www.kaizenenviro.com

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www.katchkan.com

Kenton Environmental Inc
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Lac La Biche AB T0A 2C0
Phone: (780) 623-4545

Key Maintenance Technologies
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Edmonton AB T6R 2K6
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www.kmt1.ca

Kinsella Plastics
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Kinsella AB T0B 2N0
Phone: (780) 336-3308
www.kinsellaplastic.com

Kleen-Bee Lloydminster
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Lloydminster AB T9V 0P8
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Klohn Crippen Berger Ltd
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Lloydminster AB T9V 0Y1
Phone: (780) 871-0711
www.klohn.com

Layfield Geosynthetics & Industrial Fabrics Ltd
11603 180 St NW
Edmonton AB T5S 2H6
Phone: (780) 453-6731
www.geomembranes.com

Little Dipper Holdings Ltd
PO Box 10457
Lloydminster AB T9V 3A6
Phone: (780) 875-0657
www.littledipper.ab.ca

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Calgary AB T2G 3G5
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www.lorrnel.com

Manning Disposals
PO Box 637
Manning AB T0H 2M0
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Lloydminster AB T9V 3E7
Phone: (780) 875-1210
www.marksmeninc.com

Maxxam Analytics
4404 14 St NE
Calgary AB T2E 6T7
Phone: (403) 291-3077
www.maxxam.ca

MB Mighty Mulching Ltd
PO Box 7479
Bonnyville AB T9N 2H8
Phone: (780) 826-9660

Millennium EMS Solutions Ltd
208-4207 98 St NW
Edmonton AB T6E 5R7
Phone: (780) 496-9048
www.mems.ca

Morgan Construction & Environmental Ltd
702 Acheson Rd
Acheson AB T7X 5A7
Phone: (780) 960-6966
www.mcel.ca

MWH Canada Inc
1010-600 6 Ave SW
Calgary AB T2P 0S5
Phone: (403) 543-5353
www.mwhglobal.com

Neegan Technical Services Ltd (NTS)
PO Box 5570
Fort McMurray AB T9H 3G5
Phone: (780) 715-2444
www.tuccaroinc.com

Newalta Corporation
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Calgary AB T2R 0C6
Phone: (403) 806-7000
www.newalta.com

Nilex Inc
9222 40 St SE
Calgary AB T2C 2P3
Phone: (403) 543-5454
www.nilex.com

Noise Solutions Inc
210-3015 5 Ave NE
Calgary AB T2A 6T8
Phone: (403) 232-0916
www.noisesolutions.com

Norwesco Canada Ltd
12015 152 St NW
Edmonton AB T5V 1G4
Phone: (780) 474-7440
www.norwescocanada.com

Panther Environmental Inc
PO Box 7793
Bonnyville AB T9N 2J1
Phone: (780) 812-2702

Pembina Institute
219 19 St NW
Calgary AB T2N 2H9
Phone: (403) 269-3344
www.pembina.org

PHH ARC Environmental Ltd
111-11505 35 St SE
Calgary AB T2Z 4B1
Phone: (403) 250-5722
www.phharcenv.com

Prodahl Environmental Services Ltd
3705 52 St Close
Lloydminster SK S9V 1K4
Phone: (306) 825-5933
www.prodahlenv.ca

PROECO Corporation
7722 9 St NW
Edmonton AB T6P 1L6
Phone: (780) 440-1825
www.proeco.com

PSC Cleaning Systems Inc
3300 Steeles Ave W
Concord ON L4K 2Y4
Phone: (905) 761-7733
www.pscclean.com

Quik Pick Waste Disposal
PO Box 710
Lloydminster SK S9V 0Y7
Phone: (780) 875-4100
www.quikpick.biz

Radium Reclamation Ltd
PO Box 26
Mallaig AB T0A 2K0
Phone: (780) 635-2225

Red Oak Industries Inc
PO Box 582
Bruderheim AB T0B 0S0
Phone: (780) 796-3851

RemedX Remediation Services Inc
305-1550 5 St SW
Calgary AB T2R 1K3
Phone: (403) 209-0004
www.remedx.net

SDS Environmental Services Ltd
1811 17 Ave
Wainwright AB T9W 1L2
Phone: (780) 842-6365
www.sdsenvironmental.ca

Sethi Research & Testing Ltd
10-431 MacKenzie Blvd
Fort McMurray AB T9H 4C5
Phone: (780) 791-2000
www.sethiresearch.com

Strata Environmental Ltd
5807 51 Ave
Vermilion AB T9X 1V8
Phone: (780) 853-3396
www.strataenv.net

Tarbender Family of Degreasers
142 Tusselwood Hts NW
Calgary AB T3L 2M7
Phone: (403) 375-0062
www.detsaw.ca

Target Vegetation Control Ltd
PO Box 396
Athabasca AB T9S 2A4
Phone: (780) 675-4995

Top Spray
305 Griffin Rd W
Cochrane AB T4C 2C4
Phone: (403) 932-1464

Total Combustion Inc
1510-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 309-7731
www.tciburners.com

Tri-Gen Construction Ltd
PO Box 399
Boyle AB T0A 0M0
Phone: (780) 689-3831
www.tri-genconstruction.com

Veracity Energy Services Ltd
200-744 4 Ave SW
Calgary AB T2P 3T4
Phone: (403) 537-1300
www.veracityenergy.com

Waste Management of Canada Corporation
7940 25 St NW
Edmonton AB T6P 1M9
Phone: (780) 440-1700
www.wm.com

Wave Control Systems Ltd
9612 60 Ave NW
Edmonton AB T6E 0C1
Phone: (780) 468-4320
www.wavecontrol.ca

Welclean Land Reclamation Services Ltd
2306 52A Ave Close
Lloydminster AB T9V 2R5
Phone: (780) 875-6354

Williams Engineering Canada Inc
10010 100 St NW
Edmonton AB T5J 0N3
Phone: (780) 424-2393
www.williamsengineering.com

WorleyParsons
4500 16 Ave NW
Calgary AB T3B 0M6
Phone: (403) 247-0200
www.worleyparsons.com

X-Terra Environmental Consulting Ltd
4201 66 Ave
Lloydminster AB T9V 2Y7
Phone: (780) 875-1442
www.xtec.ca

Zazula Process Equipment Ltd
4609 Manitoba Rd SE
Calgary AB T2G 4B9
Phone: (403) 244-0751
www.zazula.com

Zeeco
22151 E 91 St
Broken Arrow OK 74014
Phone: (918) 286-0263
www.zeeco.com

Financial Institutions & Legal Firms

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Fort McMurray AB T9H 2J9
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Acumen Capital Partners
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Phone: (403) 571-0314
www.acumencapital.com

Allegro Energy Capital Corporation
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www.energycapital.ca

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Aston Hill Financial
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Phone: (403) 770-4800
www.astonhill.ca

ATB Corporate Financial Services
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Borden Ladner Gervais LLP
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www.blgcanada.com

Border Credit Union
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Business Development Bank of Canada
110-444 7 Ave SW
Calgary AB T2P 0X8
Phone: (403) 292-5600
www.bdc.ca

Canaccord Capital Corp
2200-450 1 St SW
Calgary AB T2P 5H1
Phone: (403) 508-3800
www.canaccord.com

Canaccord Enermarket Ltd
2200-450 1 St SW
Calgary AB T2P 5H1
Phone: (403) 262-1442
www.canaccordenermarket.com

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Canadian Western Bank
606 4 St SW
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Phone: (403) 262-8700
www.cwbank.com

Canalta Business Brokers Inc
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Edmonton AB T6H 5P9
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CCS Income Trust
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www.ccsincometrust.com

Chrysalis Capital Advisors Inc
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www.chrysaliscapital.ca

CIBC World Markets Inc
900-855 2 St SW
Calgary AB T2P 4J7
Phone: (403) 260-0500
www.cibc.ca

Community Futures Wood Buffalo
102-9816 Hardin St
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Phone: (780) 791-0330
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1000-250 2 St SW
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Phone: (403) 296-4470
www.davis.ca

Deloitte & Touche
700-850 2 St SW
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Phone: (403) 267-1700
www.deloitte.ca

Eagle Insurance
2-4228 50 Ave
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www.firstenergy.com

Foster Park Baskett Insurance Ltd
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Phone: (780) 489-4961
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www.gecapitalcanada.com

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www.gowlings.com

Grant Thornton LLP
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Haywood Securities Inc
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Hutchinson & Company
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www.leedefinancial.com

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www.nbc.ca

Native Venture Capital Co Ltd
27 Pointe Artist View
Calgary AB T3Z 3N3
Phone: (403) 208-5380

Norfolk Group The
1100-940 6 Ave
Calgary AB T2P 3T1
Phone: (403) 232-8545
www.norfolkgrp.com

Norton Rose Canada LLP
3700-400 3 Ave SW
Calgary AB T2P 4H2
Phone: (403) 267-8222
www.nortonrose.com

Orion Securities Inc
1210-335 8 Ave SW
Calgary AB T2P 1C9
Phone: (403) 218-6650

Parlee McLaws LLP
1500-10180 101 St NW
Edmonton AB T5J 4K1
Phone: (780) 423-8500
www.parlee.com

Peters & Co Limited
2300 Jamieson Pl 308 4 Ave SW
Calgary AB T2P 0H7
Phone: (403) 261-2203
www.petersco.com

Poyry Energy
1610-700 6 Ave SW
Calgary AB T2P 0T8
Phone: (403) 237-5334
www.poyry.ca

Priority Leasing Inc
200-7909 Flint Rd SE
Calgary AB T2H 1G3
Phone: (403) 216-1930
www.priorityleasing.net

PwC
111 5 Ave SW
Calgary AB T2P 5L3
Phone: (403) 509-7555
www.pwc.com/ca/energy

Raymond James Ltd
2500-707 8 Ave SW
Calgary AB T2P 1H5
Phone: (403) 509-0500
www.raymondjames.ca

RBC Capital Markets
3900-888 3 St SW
Calgary AB T2P 5C5
Phone: (403) 299-7111
www.royalbank.com

RBC Rundle
3900-888 3 St SW
Calgary AB T2P 5C5
Phone: (403) 299-7111
www.rundleenergy.com

Rogers Insurance Ltd
600-1000 Centre St NE
Calgary AB T2E 7W6
Phone: (403) 296-2400
www.rogersinsurance.ca

Rothschild (Canada) Inc
1910-525 8 Ave SW
Calgary AB T2P 1G1
Phone: (403) 537-6300
www.rothschild.com

Roynat Capital
3900-700 2 St SW
Calgary AB T2P 2W2
Phone: (403) 269-7755
www.roynat.com

RSM Richter
3810-205 5 Ave SW
Calgary AB T2P 2V7
Phone: (403) 233-8462
www.rsmrichter.com

Sayer Energy Advisors
1620-540 5 Ave SW
Calgary AB T2P 0M2
Phone: (403) 266-6133
www.sayersecurities.com

SCF Partners
3430-400 3 Ave SW
Calgary AB T2P 4H2
Phone: (403) 244-7888
www.scfpartners.com

Sphere Energy Corp
750-815 8 Ave SW
Calgary AB T2P 3P2
Phone: (403) 233-2822
www.sphereenergy.ca

Stikeman Elliott LLP
1600-50 O'Connor St
Ottawa ON K1P 6L2
Phone: (613) 566-0530
www.stikeman.com

Tax Back Ltd
710-7015 Macleod Trl S
Calgary AB T2H 2K6
Phone: (403) 252-3128
www.taxback.ab.ca

TD Securities
800-324 8 Ave SW
Calgary AB T2P 2Z2
Phone: (403) 299-8572
www.tdsecurities.com

The Co-operators
Unit 1-310 Thickwood Blvd
Fort McMurray AB T9K 1Y1
Phone: (780) 588-2667
www.thecooperators.ca

Trans Action Oil & Gas Ventures Inc
445-708 11 Ave SW
Calgary AB T2R 0E4
Phone: (403) 263-9270
www.taog.ca

Union Bank
730-440 2 Ave SW
Calgary AB T2P 5E9
Phone: (403) 233-4800
www.uboc.com

Valiant Trust Company
310-606 4 St SW
Calgary AB T2P 1T1
Phone: (403) 233-2801
www.valianttrust.com

Van Helden Agencies Ltd
1215 14 Ave SW
Calgary AB T3C 0W1
Phone: (403) 244-8957
www.vanheldenagencies.com

Veracity Financial Services
4909 49 St
Lloydminster SK S9V 0M2
Phone: (306) 825-6200
www.veracityfinancial.ca

Willis Canada Inc
1600-520 5 Ave SW
Calgary AB T2P 3R7
Phone: (403) 263-6117
www.willis.com

Working Capital Corporation
2806-505 6 St SW
Calgary AB T2P 1X5
Phone: (403) 262-2803
www.workingcapitalcorp.com

Land Agents

Allied Land Services (1978) Ltd
200-718 15 Ave SW
Calgary AB T2R 0R6
Phone: (403) 244-5530

Antelope Land Services Ltd
1920 10 Ave SW
Calgary AB T3C 0J8
Phone: (403) 265-2855

Aurora Land Consulting Ltd
200-11907 111 Ave NW
Edmonton AB T5G 0E4
Phone: (780) 423-0211

Britt Resources Ltd
1100-630 6 Ave SW
Calgary AB T2P 0S8
Phone: (403) 266-5746
www.brittland.com

Canada West Land Services Ltd
101-1933 18 St NE
Calgary AB T2E 7T8
Phone: (403) 250-7240
www.canadawestland.com

Caribou Land Services Ltd
200-1638 10 Ave SW
Calgary AB T3C 0J5
Phone: (403) 276-1940
www.cariboland.ca

Cavalier Land Ltd
400-520 3 Ave SW
Calgary AB T2P 0R3
Phone: (587) 952-8282
www.cavalierland.ca

Charchun Consulting Ltd
1000-10909 Jasper Ave NW
Edmonton AB T5J 5B9
Phone: (780) 453-5783

Dallas E Maynard & Associates Inc
91 Lombard Cres
St Albert AB T8N 3N1
Phone: (780) 458-7123

D.R. Hurl & Associates Ltd
210-7710 5 St SE
Calgary AB T2H 2L9
Phone: (403) 264-8550
www.hurland.com

Heritage Freehold Specialists & Co Ltd
165-6815 8 St NE
Calgary AB T2E 7H7
Phone: (403) 291-2804

Horizon Land Services Ltd
1807 Bowness Rd NW
Calgary AB T2N 3K5
Phone: (403) 261-7787

Integrity Land Inc
9940 99 Ave
Fort Saskatchewan AB T8L 4G8
Phone: (877) 998-1500
www.integrityland.com

Majestic Land Services Ltd
E-7239 Flint Rd SE
Calgary AB T2H 1G2
Phone: (403) 281-8025
www.majesticland.ca

Meridian Land Services (90) Ltd
100-1721 10 Ave SW
Calgary AB T3C 0K1
Phone: (403) 266-2858
www.meridianland.com

Pioneer Professional Services Group
200-1711 10 Ave SW
Calgary AB T3C 0K1
Phone: (403) 229-3969
www.pioneer-group.ca

Progress Land Services Ltd
12831 163 St NW
Edmonton AB T5V 1M5
Phone: (866) 454-4717
www.progressland.com

Ranger Land Services Ltd
211-1215 13 St SE
Calgary AB T2G 3J4
Phone: (403) 265-2225
www.rangerland.ca

Reid-Bicknell Land Ltd
420 Christie Knoll Pt SW
Calgary AB T3H 2V2
Phone: (403) 240-2880

Remco Land Services Ltd
258 Vista Dr
Sherwood Park AB T8A 4J4
Phone: (780) 449-3120

Sundance Land Services Ltd
23 Slocan Rd SW
Calgary AB T2W 0S9
Phone: (403) 255-1996

Thompson G B Resource Consultants Ltd
2200-801 6 Ave SW
Calgary AB T2P 3W2
Phone: (403) 264-4352

Tryton
1100-250 2 St SW
Calgary AB T2P 0C1
Phone: (403) 263-6778
www.essentialenergy.ca

Oilfield Equipment Manufacturing - Welding Products/Services

A Amyotte & Sons Welding Ltd
PO Box 96
Mallaig AB T0A 2K0
Phone: (780) 635-3880
www.amyotteweld.ca

Accurate Machining Ltd
PO Box 10402
Lloydminster AB T9V 3A5
Phone: (780) 875-8756
www.accuratemachining.ca

Advance Engineered Products Group
615 71 Ave SE
Calgary AB T2H 0S7
Phone: (403) 255-5578
www.advanceengineeredproducts.com

Advantage Products Inc
273-1811 4 St SW
Calgary AB T2S 1W2
Phone: (403) 264-1647
www.advantageproductsinc.com

AGI-Envirotank
PO Box 879
Biggar SK S0K 0M0
Phone: (306) 948-5262
www.envirotank.com

Aker Solutions
110-115 Quarry Park Rd SE
Calgary AB T2C 5G9
Phone: (403) 640-4230
www.akersolutions.com

Almita Manufacturing Ltd
2 Flr-8750 58 Ave
Edmonton AB T6E 6G6
Phone: (780) 431-9582
www.almita.com

A-Plus Machining Ltd
4702 62 Ave
Lloydminster AB T9V 2G2
Phone: (780) 875-6969
www.aplusmachining.com

Aqua Industrial Ltd
205-9912 Franklin Ave
Fort McMurray AB T9H 2K5
Phone: (780) 799-7300
www.aquaindustrialltd.com

Argus Machine Co Ltd
5820 97 St NW
Edmonton AB T6E 3J1
Phone: (780) 434-9451
www.argusmachine.com

Bartan Machine & Welding Co Ltd
285 MacDonald Cres
Fort McMurray AB T9H 4B7
Phone: (780) 743-1817

Battle River Ironworks Inc
4708 43 Ave
Forestburg AB
Phone: (780) 582-3596

Bend Tec Fabricating
PO Box 11793
Lloydminster AB T9V 3C1
Phone: (780) 872-5234
www.bendtec.ca

Big B's Portable Welding
224 Cheechem Dr
Anzac AB T0P 1J0
Phone: (780) 881-3977

Black Diamond Welding Ltd
PO Box 616
Turtleford SK S0M 2Y0
Phone: (306) 845-3198

Bonnyville Sandblasting Ltd
PO Box 6296
Bonnyville AB T9N 2G8
Phone: (780) 826-4532

Bonnyville Welding Ltd
PO Box 8075
Bonnyville AB T9N 2J3
Phone: (780) 826-3847
www.bonnyvillewelding.com

Border Steel
PO Box 710
Lloydminster SK S9V 0Y7
Phone: (780) 875-3235

Boyd Lay's Welding
PO Box 6551
Bonnyville AB T9N 2H1
Phone: (780) 826-7717

Bradken
9624 35 Ave NW
Edmonton AB T6E 5S3
Phone: (780) 434-3402
www.bradken.com

Bushrat Welding & Picker Service
Site 4 Box 7 RR 1
Westlock AB T7P 2N9
Phone: (780) 954-2239

Cameron Process Systems
PO Box 850 Stn T
Calgary AB T2H 2H3
Phone: (403) 236-1850
www.c-a-m.com

C.B. Inspection Services
Site 3 Box 10 RR 3
Eckville AB T0M 0X0
Phone: (780) 603-7301

Century Machining Services Ltd
8-235 MacKay Cres
Fort McMurray AB T9H 4T5
Phone: (780) 743-5109

Cessco Fabrication & Engineering Ltd
7310 99 St NW
Edmonton AB T6E 3R8
Phone: (780) 433-9531
www.cessco.ca

Clearwater Welding & Fabricating Ltd
355 Mackenzie Blvd
Fort McMurray AB T9H 5E2
Phone: (780) 743-2171
www.clearwaterweldfab.com

CleaverBrooks
6940 Cornhusker Hwy
Lincoln NE 68507
Phone: (402) 434-2080

Collins Industries Ltd
3740 73 Ave NW
Edmonton AB T6B 2T8
Phone: (780) 440-1414
www.collins-industries-ltd.com

Corlac Industries
PO Box 10050
Lloydminster AB T9V 3A2
Phone: (780) 875-8459
www.fulp.ca

Dacro Industries Inc
9325 51 Ave NW
Edmonton AB T6E 4W8
Phone: (780) 434-8900
www.dacro.com

Dale's Welding 2008 Ltd
PO Box 1155
Lloydminster AB T9V 1G1
Phone: (780) 875-0032

Damik Machine Ltd
RR 1
Westlock AB T7P 2N9
Phone: (780) 349-3431
www.damik.ca

Davco Welding & Crane Service Ltd
402 4 Ave S
Wainwright AB
Phone: (780) 842-5559
www.davco.cc

Dewan's Welding
PO Box 7586
Bonnyville AB T9N 2H9
Phone: (780) 826-2531

Don Hiebert's Welding Ltd
PO Box 3492
Wainwright AB T9W 1T5
Phone: (780) 842-3238

Donnelly Machining & Fabricating Ltd
PO Box 289
Donnelly AB T0H 1G0
Phone: (780) 925-2021

Double B Machining & Fabricating Ltd
PO Box 786
Slave Lake AB T0G 2A0
Phone: (780) 849-6688

DTS Welding Ltd
3501 51 Ave
Lloydminster AB T9V 1C9
Phone: (780) 871-5979

DWH Welding Ltd
PO Box 493
Marwayne AB T0B 2X0
Phone: (780) 847-2186

E & E Radiator Service (1992)
10003 94A Ave
Westlock AB T7P 2M7
Phone: (780) 349-4234

Edmonton Exchanger & Manufacturing Ltd
5545 89 St NW
Edmonton AB T6E 5W9
Phone: (780) 468-6722
www.edmontonexchanger.com

Electra Welding (1988) Ltd
2152 1 Ave
Wainwright AB T9W 1L7
Phone: (780) 842-4066

Ellett Industries Ltd
1575 Kingsway Ave
Port Coquitlam BC V3C 4E5
Phone: (604) 941-8211
www.ellett.ca

Endura Manufacturing Company Ltd
12425 149 St NW
Edmonton AB T5L 2J6
Phone: (780) 451-4242
www.endura.ca

ENG Machining Ltd
3-5202 63 St
Lloydminster AB T9V 2E6
Phone: (780) 875-1500

Feldspar Excavating & Redi-Mix
5002 65 St
Lloydminster AB T9V 2K2
Phone: (780) 875-2208

Foremost
1225 64 Ave NE
Calgary AB T2E8P9
Phone: (403) 295-5800
www.foremost.ca

Ganotec West
131-26230 Twp Rd 531A
Acheson AB T7X 5A4
Phone: (780) 960-7450
www.ganotecwest.com

Garneau Manufacturing Inc
PO Box 3154
Morinville AB T8R 1S1
Phone: (780) 939-2129
www.garweld.com

G.L.M. Industries LP
1508 8 St
Nisku AB T9E 7S6
Phone: (780) 955-2233
www.glmindustries.com

Golden View Fabricating Ltd
PO Box 71
Smoky Lake AB T0A 3C0
Phone: (780) 656-3575
www.goldenviewfabricating.com

Greg Chapman Welding
3104 55A Ave
Lloydminster AB T9V 1S6
Phone: (780) 875-7539

Grit Industries Inc
PO Box 10448
Lloydminster AB T9V 3A5
Phone: (780) 875-5577
www.gritindustries.com

Guthrie Mechanical Services Ltd
9916 Manning Ave
Fort McMurray AB T9H 2B9
Phone: (780) 715-0946

Hirschfeld Industries
112 West 29 St
San Angelo TX 76902
Phone: (325) 486-4784
www.hirschfeld.com

Hitachi Power Systems Canada Ltd
826 58 St E
Saskatoon SK S7K 5Z4
Phone: (306) 242-9222
www.hitachi-hpsca.ca

Hritzuk Peter Welding Ltd
PO Box 106
Tofield AB T0B 4J0
Phone: (780) 662-4664

ICI Artificial Lift Inc
PO Box 21027
Lloydminster AB T9V 2S1
Phone: (780) 872-7470
www.icisolutions.ca

Inproheat Industries Ltd
207-4999 43 St SE
Calgary AB T2B 3N4
Phone: (403) 253-2228
www.inproheat.com

ITW Welding North America
3750B Laird Rd
Mississauga ON L5L 0A6
Phone: (780) 868-2627

JV Driver Projects Inc
212-3601 82 Ave
Leduc AB T9E 0H7
Phone: (780) 980-5837
www.jvdriver.com

Kinetic Process Systems
400-839 5 Ave SW
Calgary AB T2P 3C8
Phone: (403) 258-1971
www.kineticprocess.ab.ca

Koenders Manufacturing (1997) Ltd
PO Box 171
Englefeld SK S0K 1N0
Phone: (877) 581-8877
www.koendersmfg.com

KTI Corporation
11700 Katy Fwy Ste 150
Houston TX 77079
Phone: (281) 249-2455
www.kticorp.com

Lemax Machine & Welding Ltd
175 MacDonald Cres
Fort McMurray AB T9H 4B3
Phone: (780) 791-1445

Liburdi Automation Inc
5411 82 Ave
Edmonton AB T6B 2J6
Phone: (780) 868-5203

Liebherr-Canada Ltd
208-53016 Hwy 60
Acheson AB T7X 5A7
Phone: (780) 962-6088
www.liebherr.com

Lor-Lin Tank & Fabrication
PO Box 218
Lloydminster AB
Phone: (780) 871-5951

M H Welding Ltd
PO Box 6027
Bonnyville AB T9N 2G7
Phone: (780) 826-3906

Magnum Energy Services Ltd
PO Box 5348
Bonnyville AB T9N 2G5
Phone: (780) 826-3092
www.magnumenergyservicesltd.com

Maloney Industries
8825 Shepard Rd SE
Calgary AB T2C 4N9
Phone: (403) 279-5000
www.maloneyindustries.ca

MaXfield Inc
6235B 86 Ave SE
Calgary AB T2C 2S4
Phone: (403) 258-3680
www.maxfield.ca

MaXXiMaT
2107 5 St
Nisku AB T9E 7X4
Phone: (780) 979-6588
www.maxximat.com

Metal Fabricators & Welding Ltd
12509 124 St NW
Edmonton AB T5L 0N6
Phone: (780) 455-2186
www.metalfab.ca

Metaltek Machining Ltd
PO Box 10433
Lloydminster AB T9V 3A5
Phone: (780) 875-6535
www.metaltekmachining.com

Murland Projects Inc
PO Box 256
Lloydminster SK S9V 0Y2
Phone: (780) 871-4671

Nardei Fabricators Ltd
8915 44 St SE
Calgary AB T2C 2P5
Phone: (403) 279-3301
www.nardei.com

Noremac Industrial Coatings
PO Box 6231
Fort McMurray AB T9H 4W1
Phone: (780) 743-5968

NorthWest Fabricators Ltd
4001 Elleffson St
Athabasca AB T9S 1T7
Phone: (780) 675-4900
www.nwfltd.net

O & K Orenstein & Koppel Inc
395 MacKenzie Blvd
Fort McMurray AB T9H 5E2
Phone: (780) 791-0887
www.essltd.com

Orion Machining & Manufacturing Inc
8-6202 48 St
Lloydminster AB T9V 2G2
Phone: (780) 875-1535
www.orionmachining.com

Peerless Engineering Sales Ltd
7316 18 St NW
Edmonton AB T6P 1N8
Phone: (780) 439-3322
www.peerlessengineering.com

Penfabco Ltd
5715 56 Ave NW
Edmonton AB T6B 3G3
Phone: (780) 434-0222
www.penfabco.com

Plainsman Mfg. Inc
8305 McIntyre Rd NW
Edmonton AB T6E 5J7
Phone: (780) 496-9800
www.plainsmanmfg.com

Plamondon Welding Ltd
PO Box 1192
Lac La Biche AB T0A 2C0
Phone: (780) 623-2149

Porterco Oilfield Service Inc
5B Parkdale Way
Slave Lake AB T0G 2A0
Phone: (780) 805-4000

Powell Canada Inc
6005 72A Ave NW
Edmonton AB T6B 2J1
Phone: (780) 465-7038
www.powellind.ca

Propak Systems Ltd
440 East Lake Rd
Airdrie AB T4A 2J8
Phone: (403) 912-7000
www.propakenergy.com

PWM Steel Services Ltd
6300 59 Ave
Lloydminster AB
Phone: (780) 875-3167

R & R Stress Relieving Service Ltd
2103 6 St
Nisku AB T9E 7X8
Phone: (780) 955-7559
www.rrstress.com

Riverside Machine & Welding Ltd
5111 58 St
Athabasca AB T9S 1S6
Phone: (780) 675-2048

Sabre Machining Ltd
PO Box 10717
Lloydminster AB T9V 3A7
Phone: (780) 875-4780
www.sabremachining.com

S.C.K. Welding Ltd
Site 1 Box 67 RR 2
Tofield AB T0B 4J0
Phone: (780) 662-3733

Shaw Cat & Equipment Ltd
PO Box 3354
Wainwright AB T9W 1T3
Phone: (780) 842-2195

Sinclair Welding
PO Box 454
St Paul AB T0A 3A0
Phone: (780) 645-5242

Sorge's Welding Ltd
PO Box 5768 Stn Main
Fort McMurray AB T9H 4V9
Phone: (780) 743-9739
www.ace-ind.com

Standard Machine Ltd/Hamilton Gear
868 60 St E
Saskatoon SK S7K 8G8
Phone: (306) 931-3343
www.hamiltongear.com

Strad Energy Services-Manufacturing
2315 5A St
Nisku AB T9E 8G6
Phone: (780) 955-9393
www.stradenergy.com

Streamline Services
PO Box 69069 RPO Skyview
Edmonton AB T6V 1G7
Phone: (780) 649-2225

Supreme Steel Ltd
10457 184 St NW
Edmonton AB T5S 1G1
Phone: (780) 483-3278
www.supremesteel.com

Terry's Welding
5204 54 Ave
Bonnyville AB T9N 2E1
Phone: (780) 826-2158

TIW WESTERN Inc
7770 44 St SE
Calgary AB T2C 2L5
Phone: (403) 279-8310
www.tiwwestern.com

Tomco Production Services Ltd
6219 52 Ave
Bonnyville AB T9N 2H4
Phone: (780) 826-2522

Triangle Machine Shop
PO Box 2061
High Prairie AB T0G 1E0
Phone: (780) 523-2479

Ultimate Sandblasting & Painting Ltd
PO Box 138
Lloydminster AB T9V 0N9
Phone: (780) 875-5574

VaporTech Energy Services Inc
20711 107 Ave NW
Edmonton AB T5S 1W5
Phone: (800) 485-7175
www.vaportechinc.com

Wabash Mfg Inc
9312 110A St
Westlock AB T7P 2M4
Phone: (780) 349-4282
www.wabash.ca

Waiward Steel Fabricators Ltd
10030 34 St NW
Edmonton AB T6B 2Y5
Phone: (780) 469-1258
www.waiward.com

Westech Industrial Ltd
5636 Burbank Cres SE
Calgary AB T2H 1Z6
Phone: (403) 252-8803
www.westech-ind.com

Westech Vac Systems Ltd
1002 15 Ave
Nisku AB T9E 7S5
Phone: (780) 955-3030
www.westechvac.com

Western Truck Body Mfg
6115 30 St NW
Edmonton AB T6P 1J8
Phone: (780) 466-8065
www.westerntruckbody.com

Whitemud Groups
300-8170 50 St NW
Edmonton AB T6B 1E6
Phone: (780) 701-3296

(WWL) Weaver Welding Ltd
7501 107 Ave
Peace River AB T8S 1M6
Phone: (780) 618-7522
www.weaverwelding.ca

ZCL Composites Inc
1420 Parsons Rd SW
Edmonton AB T6X 1M5
Phone: (780) 466-6648
www.zcl.com

Pipeline Products & Services

A H McElroy Sales & Service (Canada) Ltd
13212 146 St NW
Edmonton AB T5L 4W8
Phone: (780) 454-0638
www.ahmcelroy.com

AABB-X-Air Ltd
PO Box 7454
Bonnyville AB T9N 2H8
Phone: (780) 812-3246
www.aabbxair.com

Alberta Line Find Inc
440 Aquaduct Dr
Brooks AB T1R 1C4
Phone: (403) 793-2800
www.linefind.com

ATCO Pipelines
1200-909 11 Ave SW
Calgary AB T2R 1L8
Phone: (403) 245-7060
www.atcopipelines.com

Baker Hughes
5816 50 Ave
Bonnyville AB T9N 2N6
Phone: (780) 826-3409
www.bakerhughes.com

Bandit Pipeline
PO Box 12248
Lloydminster AB T9V 3C5
Phone: (780) 875-8764
www.banditpipeline.com

Bayou Perma-Pipe Canada Ltd
104-221 18 St SE
Calgary AB T2E 6J5
Phone: (403) 264-4880
www.bayoupermapipe.com

Bendtec Inc
366 Garfield Ave
Duluth MN 55802
Phone: (218) 722-0205

Beretta Pipeline Construction Ltd
PO Box 21042 RPO Lloydmall
Lloydminster AB T9V 2S1
Phone: (780) 875-6522
www.berettapipeline.com

BJ Process & Pipeline Services
9010 34 St NW
Edmonton AB T6B 2V1
Phone: (780) 465-6495
www.bjservices.com

Brenntag Canada Inc
1900-777 8 Ave SW
Calgary AB T2P 3R5
Phone: (403) 263-8660
www.brenntag.ca

Buryn Construction
PO Box 651
Redwater AB T0A 2W0
Phone: (780) 942-3635

CG Industrial Specialties Ltd
2812 Ellwood Dr SW
Edmonton AB T6X 0A9
Phone: (780) 462-1014
www.cgis.ca

CIDRA Oilsands Ltd
50 Barnes Park N
Wallingford CT 06492
Phone: (203) 265-0035
www.cidra.com

Comco Pipe & Supply Ltd
300 MacDonald Cres
Fort McMurray AB T9H 4B6
Phone: (780) 743-3404

Crane Supply Inc
324 58 Ave SE
Calgary AB T2H 0P2
Phone: (403) 252-7811
www.cranesupply.com

Deer Creek Oilfield Services
PO Box 265
Bruderheim AB T0B 0S0
Phone: (780) 446-6972

Doran Stewart Oilfield Services
PO Box 1750
Rocky Mountain House AB T4T 1B3
Phone: (403) 845-4044
www.doranstewart.com

Edgen Murray Canada
8524 Roper Rd NW
Edmonton AB T6E 6V4
Phone: (780) 440-1475

Enbridge Inc
3000-425 1 St SW
Calgary AB T2P 3L8
Phone: (403) 231-5768
www.enbridgetechnology.com

Evraz Inc NA Canada
400-505 3 St SW
Calgary AB T2P 3E6
Phone: (403) 543-8000
www.evrazincna.com

Exact Oilfield Developing Ltd
PO Box 755
Slave Lake AB T0G 2A0
Phone: (780) 849-2211
www.exactoilfield.com

Flexpipe Systems
3501 54 Ave SE
Calgary AB T2C 0A9
Phone: (403) 503-0548
www.flexpipesystems.com

FlexSteel Pipeline Technologies Inc
2103 City West Blvd Ste 1450
Houston TX 77042
Phone: (832) 531-8555

Fullkote Pipeline Services (1996) Ltd
4873 46 St
Lacombe AB T4L 2B2
Phone: (403) 782-3176
www.fullkote.com

Global Fusion Coating Inc
1710 18 St
Wainwright AB T9W 1L2
Phone: (780) 842-6860
www.globalfusioncoating.com

Global Steel Ltd
401-888 4 Ave SW
Calgary AB T2P 0V2
Phone: (403) 237-8108
www.globalsteel.ca

Hefei Ziking Steel Pipe Inc
1200 W 73 Ave
Vancouver BC V6P 6G5
Phone: (604) 638-2716

Hex-Hut Shelter Systems Ltd
120-2719 7 Ave NE
Calgary AB T2A 2L9
Phone: (403) 293-7333
www.hex-hut.com

Houlder Construction
PO Box 560
Grimshaw AB T0H 1W0
Phone: (780) 332-4691
www.houlders.ca

Hy-Pro Plastics Inc
2628 58 Ave SE
Calgary AB T2C 1G5
Phone: (403) 263-4373
www.hyproplastics.com

IR Corrosion Control Ltd
37 Camelot Ave
Leduc AB T9E 4L7
Phone: (780) 986-5553

K. Kenn Industries Ltd
PO Box 60
Mannville AB T0B 2W0
Phone: (780) 763-3924
www.kkennindustries.com

Kinder Morgan Canada Inc
2700-300 5 Ave SW
Calgary AB T2P 5J2
Phone: (403) 514-6400
www.kindermorgan.com

Kool Welding Ltd
PO Box 64
St Brides AB T0A 2Y0
Phone: (780) 645-2388

Krantz Contracting Ltd
PO Box 728
Manning AB T0H 2M0
Phone: (780) 836-2830
www.kclcontracting.ca

Lincoln County Oilfield Services Ltd
1-3603 53 St
Athabasca AB T9S 1A9
Phone: (780) 675-9613
www.lcos.ca

Line Finders Ltd
PO Box 147
Marshall SK S0M 1R0
Phone: (306) 387-6264

Maverick Oilfield Services Ltd
PO Box 597
Provost AB T0B 3S0
Phone: (780) 753-2992
www.mavoil.com

Mistras Group Inc
195 Clarksville Rd
Princeton Jct NJ 08550
Phone: (609) 716-4038

North American Construction Group
2-53016 Hwy 60
Acheson AB T7X 5A7
Phone: (780) 960-7171
www.nacg.ca

O.J. Pipelines Canada
1409 4 St
Nisku AB T9E 7M9
Phone: (780) 955-3900
www.ojpipelines.com

Page OCL
PO Box 767
Lloydminster SK S9V 1C1
Phone: (780) 875-2402
www.pageocl.com

Pinpoint Locating & Hydrovac Service
PO Box 1642
Athabasca AB T9S 2B4
Phone: (780) 675-5228

Pipetech Corporation Ltd
3311 114 Ave SE
Calgary AB T2Z 3X2
Phone: (403) 287-3558
www.pipetechcorp.com

Pro Line Locators Ltd
5108 27 St
Lloydminster AB T9V 2K9
Phone: (780) 808-8393

Proline Pipe Equipment Inc
7141 67 St NW
Edmonton AB T6B 3L7
Phone: (780) 465-6161
www.proline-global.com

RD Scan Inc
PO Box 7159
Bonnyville AB T9N 2H5
Phone: (780) 812-6699
www.rdscan.biz

Red Flame Industries
6736 71 St
Red Deer AB T4P 3Y7
Phone: (403) 343-2012
www.redflame.ca

River Valley Energy Services Ltd
Box 1038-5301 57 Ave
Grimshaw AB T0H 1W0
Phone: (780) 332-1330
www.rivervalleyservices.com

Round Pipeline Inspection & Consulting Ltd
PO Box 5716 Stn Main
Lacombe AB T4L 1X3
Phone: (780) 782-3623

Saddle Tech. Inc
4015 53 St
Athabasca AB T9S 1A7
Phone: (780) 675-5661
www.saddletech.ca

Santec Tool Services Ltd
5209 63 St
Lloydminster AB
Phone: (780) 875-1216
www.santectool.com

Sharp Underground
1808 19 Ave
Wainwright AB T9W 1L2
Phone: (780) 842-3336
www.sharpunderground.com

Shaw Pipe Protection Ltd
3200-450 1 St SW
Calgary AB T2P 5H1
Phone: (403) 263-2255
www.shawpipe.ca

ShawCor CSI Services
1607 10 St
Nisku AB T9E 7X3
Phone: (780) 955-2856
www.shawcorcsi.com

Specialty Polymer Coatings Inc
104-20529 62 Ave
Langley BC V3A 8R4
Phone: (604) 514-9711
www.spc-net.com

Summit Tubulars Corp
2400-350 7 Ave SW
Calgary AB T2P 3N9
Phone: (403) 232-6066
www.summit-tubulars.com

Tartan Industrial Contractors Ltd
PO Box 9
Redwater AB T0A 2W0
Phone: (780) 942-3802
www.tartan.ca

T.D. Williamson Canada ULC
9503 28 Ave NW
Edmonton AB T6N 0A3
Phone: (780) 440-6637
www.tdwilliamson.com

TransCanada
A-128 28 Ave NW
Calgary AB T2M 2K2
Phone: (403) 920-7651

TransCanada PipeLines Ltd
450 1 St SW
Calgary AB T2P 5H1
Phone: (403) 920-2000
www.transcanada.com

Triple D Bending
4707 Glenmore Trl SE
Calgary AB T2C 2R9
Phone: (403) 255-2944
www.pipebending.com

Viking Power Dozer Ltd
PO Box 204
Viking AB T0B 4N0
Phone: (780) 336-3032
www.powerdozer.com

Wachs Canada Ltd
5411 82 Ave NW
Edmonton AB T6B 2J6
Phone: (780) 469-6402
www.ehwachs.com

Waschuk Equipment Rentals
PO Box 5003
Red Deer AB T4N 6A1
Phone: (403) 342-2447
www.waschukpipeline.com

Willbros Canada
261 Seneca Rd
Sherwood Park AB T8A 4G6
Phone: (780) 400-4200
www.willbroscanada.com

Wolseley Engineered Pipe Alberta
3780 98 St
Edmonton AB T6E 6B4
Phone: (780) 461-9400
www.hdpe.ca

Production Products & Services

A-Fire Burner Systems
5508 59 Ave
Lloydminster AB T9V 3A8
Phone: (780) 875-0672
www.a-fire.ca

ALBRICO KAEFER Services Ltd
4-6923 Farrell Rd SE
Calgary AB T2H 0T3
Phone: (403) 251-2556
www.albricokaefer.com

Alstom Group Canada Inc
3122 114 Ave SE
Calgary AB T2Z 3V6
Phone: (403) 236-3389
www.alstom.com

A-1 Oilfield Services
PO Box 6469
Bonnyville AB T9N 2H1
Phone: (780) 826-7763

Apex Equipment Ltd
116-5726 Burleigh Cres SE
Calgary AB T2H 1Z8
Phone: (403) 214-2049
www.apexequipmentltd.com

Argo Sales Ltd
1300-717 7 Ave SW
Calgary AB T2P 0Z3
Phone: (403) 265-6633
www.argosales.com

Armour Valve Ltd
6-2221 41 Ave NE
Calgary AB T2E 6P2
Phone: (403) 229-3171
www.armourvalve.com

Babcock & Wilcox Canada Ltd
17611 105 Ave NW
Edmonton AB T5S 1T1
Phone: (780) 489-0404
www.babcock.com

Baker Hughes Canada Company
1000-401 9 Ave SW
Calgary AB T2P 3C5
Phone: (403) 537-3400
www.bakerhughes.com

Baytex Energy Corp
2200-205 5 Ave SW
Calgary AB T2P 2V7
Phone: (403) 269-4282
www.baytex.ab.ca

Beartrax Pumpjack Services Inc
PO Box 2465
Slave Lake AB T0G 2A0
Phone: (780) 849-3388

Bornemann Inc
310-441 5 Ave SW
Calgary AB T2P 2V1
Phone: (403) 294-0777
www.bornemann.com

Braiker Oilfield Services Ltd
5214 62 St
Lloydminster AB T9V 2E4
Phone: (780) 808-2999

Bucyrus Canada Limited
18131 118 Ave NW
Edmonton AB T5J 2L9
Phone: (780) 454-9000
www.bucyrus.com

Canada Pump & Power
53113 Rge Rd 211
Ardrossan AB T8G 2C5
Phone: (877) 898-3494
www.canadapumpandpower.com

Canadian Advanced ESP Inc
5307 72A Ave NW
Edmonton AB T6B 2J1
Phone: (780) 469-0770
www.cai-esp.com

Canadian Dewatering LP
8350 1 St NW
Edmonton AB T6P 1X2
Phone: (780) 400-2260
www.canadiandewatering.com

Canitron Systems Inc
220 Pump Hill Rise SW
Calgary AB T2V 4C8
Phone: (403) 259-8732

Caradan Chemicals Inc
1914 19 Ave
Wainwright AB T9W 1L2
Phone: (780) 955-3050
www.caradanchemicals.com

CCI Thermal Technologies Inc
5918 Roper Rd NW
Edmonton AB T6B 3E1
Phone: (780) 466-3178
www.ccithermal.com

Chamco Industries Ltd
8900 Venture Ave SE
Calgary AB T3S 0A2
Phone: (403) 777-1206
www.chamco.com

CHEP Catalyst & Chemical Containers
5106 51 St
Lloydminster AB T9C 0P4
Phone: (780) 875-3271
www.chep.com

Christie Corrosion Control (1983) Ltd
PO Box 1458
Lloydminster AB T9V 1K4
Phone: (780) 875-6559
www.christiecorrosion.com

Cougar Pump Supply & Service Ltd
1802 1 Ave
Wainwright AB T9W 1L7
Phone: (780) 842-6710

Danco Equipment Inc
308 53 Ave SE
Calgary AB T2H 0N3
Phone: (403) 253-6421
www.dancoequipment.com

Deerborn Oilfield Services Ltd
5301 55 St
Bonnyville AB T9N 2K6
Phone: (780) 573-1273

Eadie Engineering Inc
704 Wilkin Close
Edmonton AB T6N 2H9
Phone: (780) 906-0577
www.eadie.com

Electric Motor Service Limited
201 MacKay Cres
Fort McMurray AB T9H 4T5
Phone: (780) 790-9550
www.emsl.ca

Enerflex Ltd
2103 8 St
Nisku AB T9E 7Z1
Phone: (403) 955-5628
www.enerflex.com

Ensol Systems Inc
2-5550 Panorama Dr
Surrey BC V3S 1B7
Phone: (604) 576-8333
www.ensolsystems.com

Express Integrated Technologies Canada
611-550 11 Ave SW
Calgary AB T2R 1M7
Phone: (403) 263-1016
www.ExpressTechTulsa.com

Fleetwood Air Equipment Ltd
5622 76 Ave NW
Edmonton AB T6B 0A6
Phone: (780) 432-1616
www.fleetwoodairequipment.com

FMC Technologies
1000-333 11 Ave SW
Calgary AB T2R 1L9
Phone: (403) 262-4000
www.pure-energy.ca

Gas Drive
4700 47 St SE
Calgary AB T2B 3R1
Phone: (403) 387-6300
www.gasdriveglobal.com

Gateway Compression Inc
10-11 Rowland Cres
St Albert AB T8N 5B3
Phone: (780) 458-1770
www.gatewaycompress.com

GE Oil & Gas Artificial Lift
3500-525 8 Ave SW
Calgary AB T2P 1G1
Phone: (403) 263-7166
www.geoilandgas.com

GEA Mechanical Equipment Canada Inc
835 Harrington Crt
Burlington ON L7N 3P3
Phone: (289) 288-5511
www.gea-westfalia.ca

GIW Industries
500 Wrightsboro Rd
Grovetown GA 30813-2842
Phone: (706) 863-1011
www.giwindustries.com

Grenco Energy Services Inc
3710 78 Ave NW
Edmonton AB T6B 3E5
Phone: (780) 468-2000
www.grenco.com

Grithog Sand Control Systems Ltd
PO Box 11698
Lloydminster AB T9V 3B9
Phone: (780) 875-2741
www.grithog.com

Guest Controls (2001) Ltd
6320 63 Ave
Lloydminster AB T9V 3A1
Phone: (780) 875-5822
www.guestcontrols.com

Halliburton
1600-645 7 Ave SW
Calgary AB T2P 4G8
Phone: (403) 231-9300
www.halliburton.com

HC Starck North American Trading LLC
45 Industrial Pl
Newton MA 02461-1951
Phone: (617) 630-5800

Hiltap Fittings Ltd
1-3140 14 Ave NE
Calgary AB T2A 6J4
Phone: (403) 250-2986
www.hiltap.com

Holyoke Contracting Ltd
PO Box 7284
Bonnyville AB T9N 2H6
Phone: (780) 826-7626

Hot Tools
6014 52 Ave
Lloydminster AB T9V 2S8
Phone: (780) 875-2468
www.2hottools.ca

ICS Group Inc
8124 Manning Ave
Fort McMurray AB T9H 1V7
Phone: (780) 791-4484
www.icsgroup.ca

ITW Devcon
30 Endicott St
Danvers MA 01923
Phone: (978) 646-5876

Kema Enterprizes
PO Box 769
Redwater AB T0A 2W0
Phone: (780) 736-2232

Kenilworth Combustion Ltd
PO Box 12118
Lloydminster AB T9V 3C4
Phone: (780) 744-3974
www.kenilworth.ca

Klaus Enterprises Ltd
123 Cree Rd
Sherwood Park AB T8A 3X9
Phone: (780) 467-7823
www.klaus.ca

Krupp Canada Inc
500-7 11 Ave SW
Calgary AB T2R 0G5
Phone: (403) 245-2866
www.krupp.ca

Lufkin Industries Canada Ltd
1050-808 4 Ave SW
Calgary AB T2P 3E8
Phone: (403) 234-7692
www.lufkin.com

Marking Services Canada Ltd
3902 81 Ave
Leduc AB T9E 0C3
Phone: (780) 986-8480
www.markserv.com

MJB Slickline Services
40-608 7 St SW
Calgary AB T2P 1Z2
Phone: (403) 262-7432
www.mjbslickline.com

Mosquito Enterprises
3828 63A Ave Close
Lloydminster AB T9V 3G5
Phone: (780) 871-4221

Nalco Canada Energy Services
180-3553 31 St NW
Calgary AB T2L 2K7
Phone: (403) 284-6275
www.nalco.com

National Process Equipment
5-3401 19 St NE
Calgary AB T2E 6S8
Phone: (403) 219-0270
www.natpro.com

Northern Industrial Insulation Contractors Inc
18910 111 Ave
Edmonton AB T5S 0B6
Phone: (780) 483-1850
www.northern-insulation.ca

Oil Lift Technology Inc
37-19 Aero Dr NE
Calgary AB T2E 8Z9
Phone: (403) 291-5300
www.oilliftechnology.com

Oilflow Solutions Inc
Ste 840-355 4 Ave SW
Calgary AB T2M 4E2
Phone: (403) 648-4959
www.oilflowsolutions.com

P & H MinePro Services of Canada
10-2256 29 St NE
Calgary AB T1Y 7G4
Phone: (403) 730-9851
www.minepro.com

PC Compression Inc
6023 52 Ave
Bonnyville AB T9N 2M3
Phone: (780) 826-6680
www.pccompression.com

The Pickford Group Ltd
5759 67 St NW
Edmonton AB T6B 0B4
Phone: (780) 469-6002
www.pickford.com

Prime Pump Industries
550-407 2 St SW
Calgary AB T2P 2Y3
Phone: (403) 234-7033

ProMinent Fluid Controls Ltd
490 Southgate Dr
Guelph ON N1G 4P5
Phone: (519) 780-3006
www.prominent.ca

Quadrise Canada Fuel Systems Inc
331 3750 46 Ave SE
Calgary AB T2B 0L1
Phone: (403) 290-1100
www.quadrisecanada.com

Quinn Pumps
PO Box 846 Stn Postal Box Ctr
Red Deer AB T4N 5H2
Phone: (403) 347-1128
www.quinnpumps.com

RamEx Exchanger Inc
253-54150 Rge Rd 224
Fort Saskatchewan AB T8L 3Y5
Phone: (780) 992-8333
www.ramex.ca

Rivard Enterprises Ltd
155 MacLean Rd
Fort McMurray AB T9H 4X2
Phone: (780) 743-3003

RJV Gas Field Services
4901 Bruce Rd
Vegreville AB T9C 1C3
Phone: (780) 632-7774
www.terravestindustries.com

Robbins & Myers
10586 US Hwy 75 N
Willis TX 77378-5715
Phone: (936) 890-1064

Rocanda Enterprises Ltd
1352 Victor Ave
Mississauga ON L5G 3A3
Phone: (647) 208-3987
www.rocanda.com

Sandale Utility Products
4435 90 Ave SE
Calgary AB T2C 2S6
Phone: (403) 663-2101
www.sandale.ca

Seven Lakes Oilfield Services Corp
PO Box 779
Cold Lake AB T9M 1P2
Phone: (780) 594-1630

Shaw Pipe
3200-450 1 S SW
Calgary AB T2P 5H1
Phone: (403) 263-2255
www.shawpipe.ca

SlurryFlo Valve Corp
5304 68 Ave
Edmonton AB T6B 3M4
Phone: (780) 468-6945
www.slurryflo.com

Smith-Cameron Pump Solutions
4422 97 St NW
Edmonton AB T6E 5R9
Phone: (780) 432-6202
www.smithcameron.com

StonCor Group
95 Sunray St
Whitby ON L1N 9C9
Phone: (800) 263-3112
www.stoncor.ca

Summit Valve & Controls Inc
5304 68 Ave NW
Edmonton AB T6B 3M4
Phone: (780) 468-6900
www.summitvalve.com

Talmek Energy Services Ltd
1208 12 St SE SS 3
Slave Lake AB T0G 2A3
Phone: (780) 849-6844

Texacana Turbines Inc
6132 46 St SE
Calgary AB T2C 4X4
Phone: (403) 720-8080
www.texacanaturbines.com

Tex-Fin Inc
19115 Aldine Westfield Rd
Houston TX 77073
Phone: (281) 821-7150

Thermex Engineered Systems Inc
101-2469 Pauline St
Abbotsford BC V2S 3S1
Phone: (604) 859-4351
www.thermex-systems.com

Thermon Canada Inc
8734 51 Ave NW
Edmonton AB T6E 5E8
Phone: (780) 437-6326
www.thermon.com

Tracerco Process Diagnostics
8908 60 Ave NW
Edmonton AB T6E 6A6
Phone: (780) 469-0055
www.tracerco.com

Tri-Alta Oilfield Industries Ltd
PO Box 813
Redwater AB T0A 2W0
Phone: (780) 942-6000

Universal Industries
5014 65 St
Lloydminster AB T9V 2K2
Phone: (780) 875-6161
www.uic.ca

Wajax Equipment
17604 105 Ave NW
Edmonton AB T5S 1G4
Phone: (780) 483-6641
www.wajaxequipment.com

Weir Minerals Canada
2715 18 St NE
Calgary AB T2E 7E6
Phone: (403) 250-7000

Wellstream Canada Ltd
300-840 6 Ave SW
Calgary AB T2P 3E5
Phone: (403) 261-8873
www.wellstream.com

Westcomm Pump & Equipment Ltd
2-3424 26 St NE
Calgary AB T1Y 4T7
Phone: (403) 215-7867
www.westcommpump.com

Wild Rows Pump & Compression Ltd
5901 63 Ave
Lloydminster AB T9V 3C1
Phone: (780) 875-0650
www.wildrowspump.com

Zirco 1989 Ltd
5614A Burbank Rd SE
Calgary AB T2H 1Z4
Phone: (403) 259-3303
www.zirco.com

Rig-Moving

Allnite Trucking Ltd
PO Box 99
Boyle AB T0A 0M0
Phone: (780) 689-2121
www.allnitetrucking.com

Calnash Trucking (South) Ltd
1 Parker Rd
Lac La Biche AB T0A 2C0
Phone: (780) 623-4817

ENTREC Corporation
PO Box 5476 Stn M
Fort McMurray AB T9H 3G5
Phone: (780) 790-0279
www.entrec.com

ENTREC Corporation
10612 24 St SE
Calgary AB T2C 4Z7
Phone: (403) 777-1644
www.entrec.com

Mammoet Canada Western Ltd
12920 33 St NE
Edmonton AB T6S 1H6
Phone: (780) 449-0552
www.mammoet.com

Marvin Sheehan Services – MSS
5902 57 Ave
Grimshaw AB
Phone: (780) 332-4777
www.msstrucking.com

Mullen Trucking Inc
PO Box 87
Aldersyde AB T0L 0A0
Phone: (403) 652-8888
www.mullentrucking.com

Premay Equipment Ltd
11310 215 St NW
Edmonton AB T5S 2B5
Phone: (780) 447-5555
www.premay.com

QIS Trucking Ltd
PO Box 6479
Peace River AB T8S 1S3
Phone: (780) 624-3778

Singer Specialized
235132 84 St SE
Calgary AB T1X 0K1
Phone: (403) 569-8605
www.singerspecialized.com/media/impactmovie/

URS Flint
700-300 5 Ave SW
Calgary AB T2P 3C4
Phone: (403) 218-7100
www.flintenergy.com

Safety Products & Services

Aeromedical Industrial Services
10713 95 St
High Level AB T0H 1Z0
Phone: (780) 926-2166
www.aeromedical.ca

Alberta Health Services EMS
Peace River AB
Phone: (780) 624-3375

Alberta Traffic Supply Ltd
9015 14 St
Edmonton AB T6P 0C9
Phone: (780) 440-4114
www.atstrafficgroup.com

Ansell Canada Inc
105 Lauder
Cowansville QC J2K 2K8
Phone: (450) 266-1850
www.ansellcanada.ca

Arctic Response Canada Ltd
203-23033 Wye Rd
Sherwood Park AB T8B 1H9
Phone: (780) 570-5600
www.arcticresponse.ca

ASTEC Safety Inc
2602 50 Ave
Lloydminster AB T9V 2S3
Phone: (780) 875-0331
www.astecsafety.com

Atco Energy Sense
400-909 11 Ave SW
Calgary AB T2R 1L8
Phone: (403) 310-7283

Athabasca Fire & Safety Inc
PO Box 3003
Athabasca AB T9S 2B9
Phone: (780) 675-5572

Audits & Safety Services
9420 85 Ave
Peace River AB T8S 1G2
Phone: (780) 624-0615
www.peaceriversafetytraining.com

Bigstone Industrial Medical Services
PO Box 1080
Wabasca AB T0G 2K0
Phone: (780) 891-0973
www.bigstonehealth.ca

Bonnyville Municipal Ambulance
4902 47 Ave
Bonnyville AB T9N 1M4
Phone: (780) 826-6224
www.bonnyvilleems.ca

Bootie Butler (Protexer)
3925 Papermill Dr
Knoxville TN 37909
Phone: (865) 670-1085

Bulwark Protective Apparel Ltd
9146 Yellowhead Trl NW
Edmonton AB T5B 1G2
Phone: (780) 479-4444
www.bulwark.com

Bumper to Bumper
PO Box 510
High Prairie AB T0G 1E0
Phone: (780) 523-4521

BW Technologies by Honeywell
2840 2 Ave SE
Calgary AB T2A 7X9
Phone: (403) 248-9226
www.gasmonitors.com

Canadian Linen & Uniform Service
8631 Stadium Rd NW
Edmonton AB T5H 3W9
Phone: (780) 665-3905
www.canadianuniform.com

CannAmm Occupational Testing Services
140-4808 87 St
Edmonton AB T6E 5W3
Phone: (800) 440-0023
www.cannamm.com

Cansafe Inc
3-4720 50 St
Lloydminster SK S9V 0M7
Phone: (306) 825-8845
www.cansafesafety.com

Checkers Industrial Safety Products Inc
620 Compton St
Broomfield CO 80020
Phone: (720) 890-1187

Community Futures Lesser Slave Lake Region
PO Box 2100
Slave Lake AB T0G 2A0
Phone: (780) 849-3232
www.cflsl.com

ComplyWorks Ltd
235 17 Ave SE
Calgary AB T2G 1H5
Phone: (403) 219-4792
www.complyworks.com

CTS Industries Ltd
4530 101 St NW
Edmonton AB T6E 5G9
Phone: (780) 465-9645
www.cts-industries.com

D C Safety and Welding Supplies
621 Main St NE
Slave Lake AB T0G 2A2
Phone: (780) 849-9898

Dino Holdings Inc (o/a In-Spec)
PO Box 149
Smoky Lake AB T0A 3C0
Phone: (780) 656-0101

DuPont Personal Protection
PO Box 27069 RPO Tuscany SDM
Calgary AB T3L 2Y1
Phone: (403) 217-9696
www.personalprotection.dupont.ca

ElectroGas Monitors Ltd
1-7961 49 Ave
Red Deer AB T4P 2V5
Phone: (403) 341-6167
www.electrogasmonitors.com

ESS Support Services
14610 115 Ave NW
Edmonton AB T5M 3B9
Phone: (780) 429-4949
www.ess-global.com

Fire Power Oilfield Firefighting Ltd
400-635 6 Ave SW
Calgary AB T2P 0T5
Phone: (403) 233-7904
www.firepower.ca

Firemaster Oilfield Services Inc
4728 78A St Close
Red Deer AB T4P 2J2
Phone: (403) 342-7500
www.firemaster.ca

Geroline Inc
18-2275 Regional Rd 20
Pelham ON L3B 5N5
Phone: (905) 380-3697

Goodfish Lake Development Corporation
PO Box 273
Goodfish Lake AB T0A 1R0
Phone: (780) 636-2863
www.gfldc.ca

Government of Alberta Apprenticeship & Industry Training
7-9915 Franklin Ave
Fort McMurray AB T9H 2K4
Phone: (780) 743-7150
www.tradesecrets.gov.ab.ca

Harsco Infrastructure
7030 51 Ave NW
Edmonton AB T6B 2P4
Phone: (780) 468-3292
www.harsco-i.com

Honey Well Safety Products
6303 Roper Rd NW
Edmonton AB T6B 3G6
Phone: (780) 437-2641
www.northsafety.com

Honeywell Analytics
2840 2 Ave SE
Calgary AB T2A 7X9
Phone: (403) 248-9226
www.honeywellanalytics.com

Horizon Enterprises Inc
170-22555 Twp Rd 530
Sherwood Park AB T8A 4T7
Phone: (780) 467-5149
www.horizoncanada.net

HSE Integrated Ltd
1-350 MacAlpine Cres
Fort McMurray AB T9H 4A8
Phone: (780) 715-2088
www.hseintegrated.com

Imagewear
9230 41 Ave NW
Edmonton AB T6E 6R7
Phone: (780) 437-4887
www.imagewear.ca

Industrial Life Support
PO Box 1815
Slave Lake AB T0G 2A0
Phone: (780) 849-6787
www.industriallifesupport.com

Industrial Paramedic Services Ltd
100-630 6 Ave SW
Calgary AB T2P 0J9
Phone: (403) 264-6435
www.ipsems.com

Just-In Case Fire Ltd
309-11979 40 St SE
Calgary AB T2Z 4M3
Phone: (403) 243-9728
www.firecaddy.com

Lea-Der Coatings
PO Box 4086 Stn Main
Spruce Grove AB T7X 3B3
Phone: (780) 962-5060
www.lea-der.com

Leeway Heavy Oil (1996) Ltd
4609 51 Ave
Elk Point AB T0A 1A0
Phone: (780) 724-3026

Levitt-Safety
9241 48 St NW
Edmonton AB T6B 2R9
Phone: (780) 461-8088
www.levitt-safety.com

Lloydminster Emergency Care Services
4734 42 St
Lloydminster SK S9V 0E1
Phone: (306) 825-7077

Mine Safety Appliances Company
222-5535 Eglinton Ave W
Toronto ON M9C 5K5
Phone: (416) 620-4225
www.msanet.com

MISAFETY
PO Box 1231
Nisku AB T9E 8A8
Phone: (780) 987-3465
www.misafety.ca

Mobile Industrial Health Services
225E MacKay Cres
Fort McMurray AB T9H 5C6
Phone: (780) 791-9898
Fax: (780) 791-9807
www.mobilehealth.ca

Northern Factory Workwear
4006 50 Ave
Lloydminster AB T9V 1B2
Phone: (780) 875-4800
www.factoryworkwear.ca

Onysty Environmental Services Ltd
PO Box 1212
Athabasca AB T9S 2B1
Phone: (780) 213-0133

Peace Safety & Environmental Training
PO Box 6215 Stn Main
Peace River AB T8S 1S2
Phone: (780) 624-4886
www.peacesafety.ca

Pipe Oil Management
307-102 Cartier Rd
Fort McMurray AB T9K 2L2
Phone: (780) 743-2038
www.pipeoil-management.com

Primco Dene (EMS) LP
PO Box 2070
Cold Lake AB T9M 1P5
Phone: (780) 594-4034
www.primcodene.com

Protective Clothing Supplies Ltd
7-8802 Franklin Ave
Fort McMurray AB T9H 2J7
Phone: (780) 743-4055

RODA DEACO
3230 97 St NW
Edmonton AB T6N 1K4
Phone: (780) 465-4429
www.rodadeaco.com

Safe-Net Safety Service
7-901 10 St
Cold Lake AB
Phone: (780) 639-4156
www.safe-net.ca

SafeTech Consulting Group Ltd
12126 90 St NW
Edmonton AB T5B 3Z3
Phone: (877) 455-4480
www.safetech.ca

Safety BOSS Inc
Bay 1-2501 Alyth Rd SE
Calgary AB T2G 1P7
Phone: (403) 261-5075
www.safetyboss.com

Safety Builders Consulting Corp
2 Briarwood Way
Stony Plain AB T7Z 2R4
Phone: (780) 963-5933
www.safetybuilders.com

Safety Buzz
4401 52 Ave
Bonnyville AB T9N 1B1
Phone: (780) 573-0311
www.safety-buzz.com

Safety Direct Ltd
100-2210 Premier Way
Sherwood Park AB T8H 2L3
Phone: (780) 464-7139
www.safetydirect.ca

Safety First
218-307 Athabasca Ave
Fort McMurray AB T9J 1G9
Phone: (780) 799-1416

Safety Link
PO Box 1016
Grimshaw AB T0H 1W0
Phone: (780) 332-2339

Schram Crane & Rigging Ltd
165 Garnet Cres
Wetaskiwin AB T9A 2S3
Phone: (780) 352-3199
www.schramcrane.ab.ca

Sign Language
Bay 2-6206 50 Ave
Lloydminster AB T9V 2C9
Phone: (780) 875-7446
www.h2oil.ca

SimplexGrinnell
PO Box 4950
Fort McMurray AB T9H 3G2
Phone: (780) 790-1525
www.simplexgrinnell.com

Slave Lake Ambulance Service
309 6 St NE SS 2
Slave Lake AB T0G 2A2
Phone: (780) 849-4977

Slave Safety Supply Ltd
207 Caribou Trl
Slave Lake AB T0G 2A0
Phone: (780) 849-4214

STARS (Alberta Shock Trauma Air Rescue Service Foundation)
1441 Aviation Park NE
Calgary AB T2E 8M7
Phone: (403) 516-3574
www.stars.ca

Sum Canada Enterprises Ltd
Fort McMurray AB
Phone: (780) 715-0815

Superior Safety Ltd
6025 50 Ave
Bonnyville AB T9N 2L3
Phone: (780) 826-6031
www.superior-safety.ca

Target Safety Services
5109 63 St
Lloydminster AB T9V 2E7
Phone: (780) 870-5350
www.targetsafety.ca

Total Safety
4030 78 Ave
Edmonton AB T6B 3M8
Phone: (780) 461-0738
www.totalsafety.com

United Safety Ltd
125 East Lake Rd
Airdrie AB T4A 2G1
Phone: (403) 912-3690
www.UnitedSafety.net

Wapose Medical Services Inc
PO Box 5414
Fort McMurray AB T9H 3G4
Phone: (780) 714-6654
www.waposeems.ca

Your Safety & Workwear Store & Westlock Dry Cleaners
10115A 104 Ave
Westlock AB T7P 1K6
Phone: (780) 349-3919
www.safetyandworkwear.ca

Service Companies - Integrated Services

ATCO Ltd
1400-909 11 Ave SW
Calgary AB T2R 1N6
Phone: (403) 292-7438
Fax: (403) 292-7643
www.atco.com

Baker Hughes Canada Company
1000-401 9 Ave SW
Calgary AB T2P 3C5
Phone: (403) 537-3400
www.bakerhughes.com

CEDA International
2200-250 5 St SW
Calgary AB T2P 0R4
Phone: (403) 476-5600
www.cedagroup.com

ClearStream Energy Holdings
2112 Premier Way
Sherwood Park AB T8H 2G4
Phone: (780) 410-9835
www.clearstreamenergy.ca

Davis LLP
1201-10060 Jasper Ave NW
Edmonton AB T5J 4E5
Phone: (780) 426-5330
www.davis.ca

Ensign Drilling Partnership
1000-400 5 Ave SW
Calgary AB T2P 0L6
Phone: (403) 262-1361
www.ensignenergy.com

Ferus Inc
916-401 9 Ave SW
Calgary AB T2P 3C5
Phone: (403) 517-8777
www.ferus.ca

FourQuest Energy
8835 53 Ave NW
Edmonton AB T6E 5E9
Phone: (780) 485-0690
www.fourquest.com

Genoil Inc
1430-717 7 Ave SW
Calgary AB T2P 0Z3
Phone: (403) 750-3450
www.genoil.ca

Gibson Energy
1700-440 2 Ave SW
Calgary AB T2P 5E9
Phone: (403) 206-4000
www.gibsons.com

Halliburton
1600-645 7 Ave SW
Calgary AB T2P 4G8
Phone: (403) 231-9300
www.halliburton.com

Hydrodig
PO Box 215
Bentley AB T0C 0J0
Phone: (403) 748-2110
www.hydrodig.com

Integrated Production Services
1900-840 7 Ave SW
Calgary AB T2P 3G2
Phone: (403) 266-0908
www.ipsadvantage.ca

Jacobs Canada Inc
100-205 Quarry Park Blvd SE
Calgary AB T2C 3E7
Phone: (403) 258-6411
www.jacobs.com

Kudu Industries Inc
1200-717 7 Ave SW
Calgary AB T2P 0Z3
Phone: (403) 279-5838
www.kudupump.com

Marquis Alliance Energy Group Inc
1800-800 6 Ave SW
Calgary AB T2P 3G3
Phone: (403) 264-1588
www.marquisalliance.com

McDaniel & Associates Consultants Ltd
2200-255 5 Ave SW
Calgary AB T2P 3G6
Phone: (403) 262-5506
www.mcdan.com

McElhanney Land Surveys Ltd.
450-999 8 St SW
Calgary AB T2R 1J5
Phone: (403) 245-4711
www.mcelhanney.com/mlsl

Mikisew Group of Companies
8335 Roper Rd NW
Edmonton AB T6E 6W2
Phone: (780) 490-0255
www.mikisewgroup.com

Powell Canada Inc
6005 72A Ave NW
Edmonton AB T6B 2J1
Phone: (780) 465-7038
www.powellind.ca

Pro Energy
9-7459 Edgar Industrial Bend
Red Deer AB
Phone: (403) 347-7353
www.proenergy.ca

Proper Cat Construction Ltd
PO Box 1521 Stn Main
Lloydminster AB S9V 1K5
Phone: (780) 875-1865

Pryatel's Ditching
PO Box 122
Lamont AB T0B 2R0
Phone: (780) 895-2072

Roevin Engineering Recruitment
900-10060 Jasper Ave
Edmonton AB T5J 3R8
Phone: (780) 420-6232
www.roevin.ca

Sanjel Corporation
200-505 2 St SW
Calgary AB T2P 1N8
Phone: (403) 269-1420
www.sanjel.com

Schlumberger Canada Limited
PO Box 6836 Stn D
Calgary AB T2P 2E9
Phone: (403) 509-4000
www.slb.com

Strad Energy Services-Matting
1200-440 2 Ave SW
Calgary AB T2P 5E9
Phone: (403) 232-6900
www.stradenergy.com

Sulzer Turbo Services Canada Ltd
5218 68 Ave NW
Edmonton AB T6B 2X7
Phone: (780) 577-9200
www.sulzerts.com

Superior Concrete Construction (1984) Ltd
PO Box 8427 Stn Main
Cold Lake AB T9M 1N2
Phone: (780) 639-2849

Telus
411 1 St SE
Calgary AB T2G 4Y5
Phone: (403) 530-4185
www.telus.com/energysector

Tervita
500-140 10 Ave SE
Calgary AB T2G 0R1
Phone: (403) 233-7565
www.tervita.com

Titanium Corporation Inc
1001-360 Bay St
Toronto ON M5H 2V6
Phone: (416) 955-0715
www.titaniumcorporation.com

Total Energy
2 Hardscrabble Rd
North Salem NY 10560
Phone: (914) 276-0490
www.totalenergy.com

Trican Well Service
2900-645 7 Ave SW
Calgary AB T2P 4G8
Phone: (403) 266-0202
www.trican.ca

Tridon Communications
10017 Queen St
Fort McMurray AB T9H 4Y9
Phone: (780) 791-1002
www.tridon.com

Tristar Resource Management Ltd
800-815 8 Ave SW
Calgary AB T2P 3P2
Phone: (403) 262-8595
www.tstar.ca

URS Flint
700-300 5 Ave SW
Calgary AB T2P 3C4
Phone: (403) 218-7100
www.ursflint.com

Vertex Resource Group Ltd
121-2055 Premier Way
Sherwood Park AB T8H 0G2
Phone: (780) 464-3295
www.vertex.ca

Weatherford Canada Partnership
1200-333 5 Ave SW
Calgary AB T2P 3B6
Phone: (403) 693-7500
www.weatherford.com

Specialty Services

A & J Oilfield Services Ltd
PO Box 190
Elk Point AB T0A 1A0
Phone: (780) 724-2647

Acuren Group Inc
230 MacDonald Cres
Fort McMurray AB T9H 4B4
Phone: (780) 790-1776
www.acuren.com

Advanced Pressure Testing Ltd
4708 38 St
Lloydminster SK S9V 0B1
Phone: (780) 871-4729

Aggressive Steaming Ltd
PO Box 375
Falher AB T0H 1M0
Phone: (780) 837-0962

Alberta North Steamers
PO Box 1127
Manning AB T0H 2M0
Phone: (780) 836-5542

Alcatel-Lucent
341-2116 27 Ave NE
Calgary AB T2E 7A6
Phone: (403) 461-8032
www.alcatel-lucent.com

ALS Environmental
2559 29 St NE
Calgary AB T1Y 7B5
Phone: (403) 291-9897
www.alsglobal.com

AltaLink
2611 3 Ave SE
Calgary AB T2A 7W7
Phone: (403) 267-3400
www.altalink.ca

Altus Geomatics Limited Partnership
17327 106A Ave NW
Edmonton AB T5S 1M7
Phone: (780) 481-3399
www.altusgeomatics.com

APL Advanced Paramedic Limited
PO Box 7320
Peace River AB T8S 1S9
Phone: (780) 624-4911
www.advancedparamedic.com

Apollo-Clad Laser Cladding Ltd
7609 39 St
Leduc AB T9E 0B3
Phone: (780) 980-5231
www.apollomachine.com

Asset Performance Canada
1050-444 5 Ave SW
Calgary AB T2P 2T8
Phone: (403) 457-2737
www.ap-canada.ca

ATCO Energy Solutions Ltd (AESL)
200-919 11 Ave SW
Calgary AB T2R 1P3
Phone:
www.atcoenergysolutions.com

ATCO Group
500-909 11 Ave SW
Calgary AB T2R 1N6
Phone: (403) 292-7550
www.atco.com

Atco I-Tek
500-10035 105 St
Edmonton AB T5J 1C8
Phone: (780) 420-7875
www.atcoitek.com

Attack Energy Services Ltd
PO Box 2674
High Prairie AB T0G 1E0
Phone: (780) 523-3302

Attack Hydrovac
PO Box 1166
Manning AB T0H 2M0
Phone: (780) 836-3609

AVEVA Canada
2600-144 4 Ave SW
Calgary AB T2P 3N4
Phone: (403) 269-2099
www.aveva.com

AVG Consulting Services
276 Cochrane Cres
Fort McMurray AB T9K 1J4
Phone: (780) 791-0920

Badger Daylighting Inc
230B MacDonald Cres
Fort McMurray AB T9H 4B4
Phone: (780) 743-9031
www.badgerinc.com

Bakos (N.D.T.) Inspection (1989) Ltd
PO Box 1832
Lac La Biche AB T0A 2C0
Phone: (780) 623-1119

Boss Pressure Services
PO Box 923
Slave Lake AB T0G 2A0
Phone: (780) 849-8868

Brother's Specialized Coating Systems Ltd
6150 76 Ave NW
Edmonton AB T6B 0A6
Phone: (780) 440-2855
www.brotherscoating.com

Bruin Instruments Corp
9001 20 St NW
Edmonton AB T6P 1K8
Phone: (780) 430-1777
www.bruinpumps.com

Cancen Oil Processors Inc
PO Box 234
New Sarepta AB T0B 3M0
Phone: (780) 941-2272
www.cancenoil.com

Canwell Enviro-Industries Ltd
950-633 6 Ave SW
Calgary AB T2P 2Y5
Phone: (403) 290-1331
www.canwell.com

Carreau Oilfield Specialties
2907 Parsons Rd NW
Edmonton AB T6N 1A3
Phone: (780) 436-7730
www.carreauoilfield.com

CCS Landfill Services
24 Flr-530 8 Ave SW
Calgary AB T2P 3S8
Phone: (403) 233-7565

CCS Midstream Services
1800-140 10 Ave SE
Calgary AB T2G 0R1
Phone: (403) 263-6248
www.ccsmidstreamservices.com

Celerant Consulting Canada Ltd
1000-888 3 St SW
Calgary AB T2P 5C5
Phone: (403) 540-8506
www.celerantconsulting.com

CG Hylton & Associates Inc
103-138 18 Ave SE
Calgary AB T2G 5P9
Phone: (403) 264-5288
www.hylton.ca

CGGVeritas
2400-715 5 Ave SW
Calgary AB T2P 5A2
Phone: (403) 205-6000
www.cggveritas.com

Challenger Geomatics Ltd
200-9945 50 St NW
Edmonton AB T6A 0L4
Phone: (780) 424-5511
www.challengergeomatics.com

Clean Harbors
15715 121A Ave NW
Edmonton AB T5V 1B1
Phone: (780) 451-6969
www.cleanharbors.com

Contava Inc
1-3030 Sunridge Way NE
Calgary AB T1Y 7G4
Phone: (403) 255-2655
www.contava.com

CP Rail
500-401 9 Ave SW
Calgary AB T2P 4Z4
Phone: (403) 319-6639
www.cpr.ca

Daniel's Drafting & Consulting Ltd
PO Box 173
Mundare AB T0B 3H0
Phone: (780) 764-0984
www.danielsdrafting.com

Das Disposals Ltd
4302 47 St
Vegreville AB T9C 1C3
Phone: (780) 632-2966
www.dasdisposals.com

Design Group Staffing Inc
10012 Jasper Ave NW
Edmonton AB T5J 1R2
Phone: (780) 428-1505
www.dgstaff.com

deSIGNS by Tam Ltd & Computer Service
4938 O'Brien Dr
High Prairie AB T0G 1E0
Phone: (780) 523-2272
www.designsbytam.com

Diggen Bury Trenching Ltd
PO Box 1292
Athabasca AB T9S 2B2
Phone: (780) 675-2794

Dynalife DX Diagnostic Laboratory Service
200-10150 102 St NW
Edmonton AB T5J 5E2
Phone: (780) 451-3702
www.dkml.com

Dynasoft Communications Inc
4-4602 50 Ave
Lloydminster AB T9V 0W3
Phone: (780) 808-8731
www.dynasoft2000.com

E & L Mobile Steaming Ltd
GD
Marie-Reine AB T8S 1V8
Phone: (780) 322-2118

E.I. du Pont Canada Company
PO Box 5000
Kingston ON K7L 5A5
Phone: (613) 548-5290
www2.dupont.com

Emerald Associates Inc
B8, 140-2526 Battleford Ave SW
Calgary AB T3E 7J4
Phone: (403) 686-7100
www.emerald-associates.com

Empire Iron Works Ltd
21104 107 Ave NW
Edmonton AB T5S 1X2
Phone: (780) 447-4650
www.empireiron.com

Environmental Refuelling Systems Inc
208-10464 Mayfield Rd NW
Edmonton AB T5P 4P4
Phone: (780) 444-4104
www.envirofuel.ca

EPCOR Alberta
1210-401 9 Ave SW
Calgary AB T2P 3C5
Phone: (403) 717-4600
www.epcor.ca

ES Denbina Petroleum Consulting Services
136 Parkland Hill SE
Calgary AB T2J 4K6
Phone: (403) 278-9284
www.members.shaw.ca/denbina/index.htm

Fugro Canada
610-600 6 Ave SW
Calgary AB T2P 0S5
Phone: (403) 444-7979
www.fugro-jason.com

Gaffney, Cline & Associates
1000-401 9 Ave SW
Calgary AB T2P 3C5
Phone: (403) 537-3400
www.public.bakerhughes.com/gca/

Garda Security Group Inc
1390 Barre St
Montreal QC H3C1N4
Phone: (877) 809-1484

geoLOGIC Systems Ltd
900-703 6 Ave SW
Calgary AB T2P 0T9
Phone: (403) 262-1992
www.geologic.com

G4S Secure Solutions (Canada) Ltd
600-150 Ferrad Dr
Toronto ON M3C 3E5
Phone: (647) 678-5111
www.g4s.ca

Global Thermoelectric
9-3700 78 Ave SE
Calgary AB T2C 2L8
Phone: (403) 236-5556
www.globalte.com

Guardian
950 78 Ave NW
Edmonton AB T6B 1L7
Phone: (780) 440-1440
www.guardianoil.com

Hardbanding Solutions
5500 W 164 St
Cleveland OH 44142
Phone: (216) 265-9000
www.hardbandingsolutions.com

Heavy Equipment Repair Ltd
PO Box 2343
Slave Lake AB T0G 2A0
Phone: (780) 849-3768
www.heavyequipmentrepair.ca

Hydra-Tech International Corp
6060 86 Ave SE
Calgary AB T2C 4L7
Phone: (403) 720-7740
www.hydra-tech.net

Ian Murray & Company Ltd
150-344 12 Ave SW
Calgary AB T2R 0H2
Phone: (403) 269-9266
www.imcprojects.ca

IKM Testing (Canada) Ltd
40 St Anne's Cres
Paradise NL A1L 1K1
Phone: (709) 782-5051
www.ikm.no

Immerse Communications Inc
8-105 Village Hts SW
Calgary AB T3H 2L2
Phone: (403) 319-0331

Intergraph Canada Ltd
1120 68 Ave NE
Calgary AB T2E 8S5
Phone: (403) 569-5512
www.intergraph.com

Iracore International
3516 13 Ave E
Hibbing MN 55746
Phone: (218) 263-8831
www.irproducts.com

IRED Thermal Group Ltd
16650 111 Ave
Edmonton AB T5M 2S5
Phone: (780) 761-1388

K. Ridge Mobile Hot Wash Ltd
PO Box 609
Athabasca AB T9S 2A5
Phone: (780) 675-2919

Kema Enterprizes
PO Box 769
Redwater AB T0A 2W0
Phone: (780) 736-2232

L & L Steam Service
PO Box 569
Viking AB T0B 4N0
Phone: (780) 336-2330

Lac La Biche Regional Community Development Corp
10106 102 Ave
Lac La Biche AB T0A 2C0
Phone: (780) 623-2662
www.laclabicheregion.com

Lloyd's Steam Cleaning Ltd
PO Box 6961 Stn Main
Bonnyville AB T9N 2H4
Phone: (780) 826-5503

LoCo Power Tongs Ltd
PO Box 1401
High Prairie AB T0G 1E0
Phone: (780) 523-2475

Mannville Enterprises
5120 51 St
Mannville AB
Phone: (780) 763-3991

Merichem Company
5455 Old Spanish Trl
Houston TX 77023
Phone: (713) 428-5233
www.gtp-merichem.com

MMD Mineral Sizing (Canada) Inc
22511 112 Ave NW
Edmonton AB T5S 2M4
Phone: (780) 451-5100
www.mmdsizers.com

Mobile Augers & Research Ltd
5603 54 St NW
Edmonton AB T6B 3G8
Phone: (780) 436-3960
www.mobileaugers.com

Mobile Industrial Health Services
205-10126 97 Ave
Grande Prairie AB T8V 7X6
Phone: (780) 830-0533
www.mobilehealth.ca

Norcan Fluid Power
3053 Faithfull Ave
Saskatoon SK S7K 8B3
Phone: (306) 384-9100
www.norcanfluidpower.com

Normcan
2400-530 8 Ave SW
Calgary AB T2P 3S8
Phone: (403) 231-8513

Norspec Filtration Ltd
4704 91 Ave NW
Edmonton AB T6B 2L1
Phone: (780) 468-9296
www.norspec.com

Northern Lights Steam & Clean
PO Box 316
Red Earth Creek AB T0G 1X0
Phone: (780) 649-2272

Northern Transportation Company Limited
1209-10104 103 Ave
Edmonton AB T5J 0H8
Phone: (780) 441-3932
www.ntcl.com

OilCareers.Com
302-1333 8 St SW
Calgary AB T2R 1M6
Phone: (403) 209-3551
www.oilcareers.com

Oilsands Shovel Products
168 Grayling Cres
Fort McMurray AB T9J 1K9
Phone: (780) 791-6777
www.oilsandsshovelproducts.ca

OTS Ltd
PO Box 1794 Stn A
Sydney NS B1P 6W4
Phone: (902) 564-5189
www.otsl.ca

Owen Oil Tools
5409-39139 Hwy 2A
Red Deer County AB T4S 2B3
Phone: (403) 340-1017
www.corelab.com/pe/owen

Patriot Solar Group
1007 Industrial Ave
Albion MI 49224
Phone: (517) 629-9292
www.PatriotSolarGroup.com

Penetrators Canada Inc
8002 Edgar Industrial Ave
Red Deer AB T4P 3S2
Phone: (403) 346-7474
www.maxperf.ca

Penlynn Contracting
PO Box 1645
Grimshaw AB T0H 1W0
Phone: (780) 332-2048

Precision Giant Systems Inc
7217 Girard Rd NW
Edmonton AB T6B 2C5
Phone: (780) 463-0026
www.precisionscale.com

Quorum Business Solutions Inc
210-101 6 St SW
Calgary AB T2P 5K7
Phone: (403) 806-2550
www.qbsol.com

Rang Hydraulics Ltd
5104 62 St
Lloydminster AB T9V 2E4
Phone: (780) 875-7657
www.ranghydraulics.ca

Ranger Inspection Ltd
13-3716 56 Ave SE
Calgary AB T2C 2B5
Phone: (403) 252-4487
www.rangerinspection.com

Regent Energy Group Ltd
1600-734 7 Ave SW
Calgary AB T2P 3P8
Phone: (403) 269-8088
www.regentenergygroup.com

Richard Oilfield Services Ltd
PO Box 507
Plamondon AB T0A 2T0
Phone: (780) 798-3288

Roch-On Steaming
Falher AB
Phone: (780) 837-0045

Roplast GmbH
Am Seitenkanal 8 49811
Lingen
Phone: 49 5919136150

Saint-Gobain Abrasives Canada Inc
3 Beach Rd
Hamilton ON
Phone: (905) 547-2551
www.carborundumabrasives.com

Sensornet Ltd
700-1816 Crowchild Trl NW
Calgary AB T2M 3Y7
Phone: (403) 313-8304
www.sensornet.co.uk

Shaw Business
400-2421 37 Ave NE
Calgary AB T2E 6Y7
Phone: (888) 606-2307
www.shaw.ca/sbs

SIF Superior Industrial Frictions Ltd
11570 154 St NW
Edmonton AB T5M 3N8
Phone: (780) 451-6894
www.sifbrake.com

Silvertip Inspection Services Ltd
PO Box 6264
Bonnyville AB T9N 2G8
Phone: (780) 826-1596

Singletouch
300-110 8 Ave SW
Calgary AB T2P 1B3
Phone: (403) 648-3930
www.singletouch.com

SITECH Western Canada Solutions Ltd
10627 172 St NW
Edmonton AB T5S 1P1
Phone: (855) 974-8324

Specialty Products Research & Supply (SPRS)
9763 60 Ave NW
Edmonton AB T6E 0C4
Phone: (780) 436-1010
www.sprs.ca

Strategy West Inc
PO Box 76037
Calgary AB T2Y 2Z9
Phone: (403) 256-9220
www.strategywest.com

Swift Technical Canada Inc
3850-205 5 Ave SW
Calgary AB T2P 2V7
Phone: (403) 532-9260
www.swiftwwr.com/canada

TANDBERG Canada Inc
204-855 8 Ave SW
Calgary AB T2P 3P1
Phone: (403) 777-3705
www.tandberg.ca

Team Industrial Services
701 9 St SW SS 4
Slave Lake AB T0G 2A4
Phone: (780) 805-6384

Team Snubbing Services Inc
Site 4 Box 35 RR 2
Rocky Mountain House AB T4T 2A2
Phone: (403) 844-2728
www.teamsnubbing.com

Tervita
Bonnyville AB
Phone: (780) 812-2033
www.ccsmidstreamservices.com

Thunder Bay Port Authority
100 Main St
Thunder Bay ON P7B 6R9
Phone: (807) 345-6400
www.portofthunderbay.ca

TISI Canada Inc
8525 18 St NW
Edmonton AB T6P 1K4
Phone: (780) 467-8070
www.teaminc.com

Unified Sourcing Canada Inc
204-2304 Ellwood Dr
Edmonton AB T6X 0A9
Phone: (780) 235-8988
www.unifiedsourcing.ca

Veolia Water Solutions & Technologies
23563 W Main St
Plainfield IL 60544
Phone: (815) 609-2054
www.veoliawaterst.com

Viewpoint Medical Assessment Services Inc
1-9250 Macleod Trl SE
Calgary AB T2J 0P5
Phone: (403) 253-4272
www.viewpointmedical.ca

X-Act Technologies Ltd
56-4216 54 Ave SE
Calgary AB T2C 2E3
Phone: (403) 291-9175
www.xact.ca

Young EnergyServe Inc
234125 Wrangler Rd SE
Rocky View AB T1X 0K2
Phone: (403) 517-2100
www.youngenergy.ca

Zybertech
206-3112 11 St NE
Calgary AB T2E 7J1
Phone: (403) 202-7291
www.zybertech.com

Supplies - Rentals & Sales

Acklands-Grainger Inc
200-284 MacDonald Cres
Fort McMurray AB T9H 4B6
Phone: (780) 743-3344
www.acklandsgrainger.com

AFD Petroleum Ltd
1444 78 Ave NW
Edmonton AB T6P 1L7
Phone: (800) 438-5930
www.albertafuel.com

Air Liquide Canada Inc
10020 56 Ave NW
Edmonton AB T6E 5Z2
Phone: (780) 438-5600
www.airliquide.ca

A-1 Fencing
PO Box 3157
Wainwright AB T9W 1T1
Phone: (780) 842-3082

Apex Advanced Solutions Inc
18110 102 Ave NW
Edmonton AB T5S 1S7
Phone: (780) 462-8271
www.apex-advanced.com

Apex Distribution Inc
905 3 St NW
Slave Lake AB T0G 2A0
Phone: (780) 849-6111

ARW Truck Equipment Ltd
8019 54 St SE
Calgary AB T2C 4R7
Phone: (403) 243-6111
www.arwtruck.com

B W Rig Supply
609 21 Ave
Nisku AB T9E 7X9
Phone: (780) 955-8686
www.hyduke.com

Balon Corporation
6210 48 St SE
Calgary AB T2C 4P7
Phone: (403) 203-0777
www.balon.com

Baron Oilfield Supply
PO Box 66
High Prairie AB T0G 1E0
Phone: (780) 523-4000
www.baronoilfield.ca

Benoit Rentals Ltd
PO Box 51
Chauvin AB T0B 0V0
Phone: (780) 858-2212
www.benoitrentals.com

B.G.E. Service & Supply Ltd
5711 103A St NW
Edmonton AB T6H 2J6
Phone: (780) 436-6960
www.thefiltershop.com

BIW Connector Systems
Suite D-161 Liberton Dr
St Albert AB T8N 6A7
Phone: (780) 460-3993
www.ittcannon.com

Black Cat Blades Ltd
5604 59 St NW
Edmonton AB T6B 3C3
Phone: (780) 465-6666
www.blackcatblades.com

Bobcat of Fort McMurray
270 MacKay Cres
Fort McMurray AB T9H 5C6
Phone: (780) 714-9200
www.bobcat.com

B.W. Rentals
PO Box 1228
High Prairie AB T0G 1E0
Phone: (780) 523-3051

Cameron Valves & Measurement
1300-311 6 Ave SW
Calgary AB T2P 3H2
Phone: (403) 398-9930
www.c-a-m.com

Camex Equipment Sales & Rentals Inc
1511 Sparrow Dr
Nisku AB T9E 8H9
Phone: (780) 955-2770
www.camex.com

CARBER Testing Alberta Inc
Bay 31-380 MacKenzie Blvd
Fort McMurray AB T9H 4C4
Phone: (780) 743-2496
www.carbertesting.com

Cat Rental Store
9520 51 Ave NW
Edmonton AB T6E 5A6
Phone: (780) 989-1300
www.catrents.ca

CE Franklin Ltd
1800-635 8 Ave SW
Calgary AB T2P 3M3
Phone: (403) 531-5600
www.cefranklin.com

Classic Oilfield Service Ltd
5222 65 St
Lloydminster AB T9V 2T3
Phone: (780) 875-3276
www.classoil.com

Cold Weather Technologies
5508 59 Ave
Lloydminster AB
Phone: (780) 875-2530
www.coldweathertech.com

Commercial Solutions Inc
2714 5 St
Nisku AB T9E 0H1
Phone: (780) 955-7494
www.csinet.ca

Communications Cold Lake Inc
5605 55 St
Cold Lake AB T9M 1R6
Phone: (780) 594-0000
www.cclnetworks.com

Communications Group
7434 50 Ave
Red Deer AB T4P 1X7
Phone: (403) 347-0777
www.commgroup.net

Continental Chain & Rigging Ltd
7011 Girard Rd NW
Edmonton AB T6B 2C4
Phone: (780) 437-2701
www.continentalchain.com

Crest-Way Fencing
8-2933 67 Ave
Lloydminster AB T9V 3H6
Phone: (780) 875-5448

Deran Oilfield Services Ltd
PO Box 307
Lac La Biche AB T0A 2C0
Phone: (780) 623-2193

Dicks Boiler Ltd
PO Box 474
Blairmore AB T0K 0E0
Phone: (403) 562-7600

Douglas Coatings Ltd
150 MacKay Cres
Fort McMurray AB T9H 4W8
Phone: (780) 743-1810
www.douglascoatings.ca

Drillex Oilfield Services Ltd
PO Box 49
Streamstown AB T0B 4G0
Phone: (780) 808-9500

Duraguard Fence Ltd (Fort McMurray)
10624 214 St
Edmonton AB T5S 2A5
Phone: (780) 447-5465
www.duraguardfence.com

Edmonton Valve & Fitting Inc
4503 93 St NW
Edmonton AB T6E 5S9
Phone: (780) 437-0640
www.swagelok.com/edmonton

Enerpac
N86 W12500 Westbrook Crossing
Menomonee Falls WI 53051
Phone: (262) 293-1600
www.enerpac.com

Espar Heater Systems
6099A Vipond Dr
Mississauga ON L5T 2B2
Phone: (905) 670-0960

Exhaust Masters
5905 44 St
Lloydminster AB T9V 1V6
Phone: (780) 875-8851
www.exhaustmasters.ca

Fabco Plastics Western Ltd
12938 148 St
Edmonton AB T5L 2H8
Phone: (780) 451-0238
www.fabcoplastics.com

Flowserve (FCD)
9044 18 St NW
Edmonton AB T6P 1K6
Phone: (780) 449-4850
www.flowserve.com

Fluid Clarification Inc (FCI)
Bay 131-3953 112 Ave SE
Calgary AB T2C 0J4
Phone: (403) 236-0666
www.fluidclarification.com

Gladiator Equipment Inc
6603 44 St
Leduc AB T9E 7E5
Phone: (780) 980-7555

Goodall Rubber Co of Canada Ltd
9748 12 Ave SW
Edmonton AB T6X 0J5
Phone: (780) 437-1260
www.goodall-canada.com

Gosselin Pipe & Steel Ltd
PO Box 3083
Wainwright AB T9W 1S9
Phone: (780) 842-5705
www.gosselinpipe.com

Hazloc Heaters
1-666 Goddard Ave NE
Calgary AB T2K 5X3
Phone: (403) 730-2488
www.HazlocHeaters.com

Hertz Equipment Rental
6110 86 St NW
Edmonton AB T6E 5K2
Phone: (780) 435-3711
www.hertzequip.com

Hose Solutions Inc
9419 E San Salvador Dr Ste 104
Scottsdale AZ 85258
Phone: (480) 607-1507
www.allhoses.com

Hydro Engineering Inc
865 W 2600 S
Salt Lake City UT 84119
Phone: (801) 972-3265
www.hydroblaster.com

HYTORC Sales & Service
45 Corriveau Ave
St Albert AB T8N 5A3
Phone: (780) 459-5004
www.hytorcwest.ca

Inland Industrial Supply Ltd
Bay 4D-380 MacKenzie Blvd
Fort McMurray AB T9H 4C4
Phone: (780) 742-2430
www.inlandindustrial.ca

In-Situ Machining Solutions Ltd
4-51309 Hwy 60
Spruce Grove AB T7Y 1C4
Phone: (780) 913-5075
www.insitumachining.com

International Cooling Tower Inc
3310 93 St NW
Edmonton AB T6N 1C7
Phone: (780) 469-4900
www.ictower.com

ITM Instruments Inc
101-10505 48 St SE
Calgary AB T2C 2B7
Phone: (403) 272-9332
www.itm.com

J C Inspections & Associates Ltd
5202 63 St
Lloydminster AB
Phone: (780) 875-5711

Jet-Lube Of Canada Ltd
3820 97 St NW
Edmonton AB T6E 5S8
Phone: (780) 463-7441
www.jetlubecanada.com

Karborah Contracting Services Ltd
124 Aspenhill Dr
Fort McMurray AB T9J 1E1
Phone: (780) 791-3056

Keddco Mfg Ltd
3911 76 Ave
Edmonton AB T6B 2S8
Phone: (780) 438-4944
www.keddco.com

Kelro Pump & Mechanical Ltd
1 Kam's Industrial Park
Lloydminster AB
Phone: (780) 875-7252
www.kelro.com

Kenwood Electronics Canada Inc
6070 Kestrel Rd
Mississauga ON L5T 1S8
Phone: (905) 670-7211
www.kenwood.ca

Ketek Rentals
270 MacLennan Cres
Fort McMurray AB T9H 4G1
Phone: (780) 714-5059
www.ketek.ca

Klassen Specialty Hydraulics Inc
PO Box 7
Rosedale BC V0X 1X0
Phone: (604) 794-7755
www.klassenhydraulics.com

Kramer Ltd
PO Box 707 Stn Main
Regina SK S4P 3A8
Phone: (306) 545-3311
www.kramer.ca

Lafarge Canada Inc
1200-10655 Southport Rd SW
Calgary AB T2W 4Y1
Phone: (403) 271-9110
www.lafargecorp.com

Lamons
4111 53 Ave NW
Edmonton AB T6B 3R5
Phone: (780) 461-5557
www.lamons.com

Lampson Canada Ltd
PO Box 510
Beiseker AB T0M 0G0
Phone: (403) 947-2222

LaPrairie Crane
PO Box 23038
Fort McMurray AB T9H 4N6
Phone: (780) 714-5438
www.laprairiegroup.com

Len's Repair Shop
PO Box 6115
Westlock AB T7P 2P7
Phone: (780) 349-2899

Lloydminster Nut & Bolt
5113 63 St
Lloydminster AB T9V 2E7
Phone: (780) 875-4155

Lonetech
5310 57 Ave
Grimshaw AB
Phone: (780) 332-4767

Lube-Power Inc
50146 Utica Dr
Shelby Township MI 48315
Phone: (586) 247-6500

Max Fuel Distributors Ltd
PO Box 327
Whitecourt AB T7S 1N5
Phone: (780) 778-2346

McCann Equipment Ltd
4120 97 St NW
Edmonton AB T6E 5Y6
Phone: (780) 414-1808
www.torquetools.com

Meltric Corporation
4640 Ironwood Dr
Franklin WI 53132
Phone: (414) 817-6160
www.meltric.com

Meridian
3780 98 St NW
Edmonton AB T6E 6B4
Phone: (780) 468-7161
www.meridianvalve.ca

Midway Distributors Ltd
5402 44 St
Lloydminster AB T9V 0B4
Phone: (780) 875-5551

Milwaukee Electric Tool (Canada) Ltd
755 Progress Ave
Scarborough ON M1H 2W7
Phone: (416) 439-4181
www.milwaukeetool.com

Moffatt Supply Ltd
PO Box 5477
Fort McMurray AB T9H 3G5
Phone: (780) 715-9387
www.moffattsupply.com

MRC Canada ULC
2500-144 4 Ave SW
Calgary AB T2P 3N4
Phone: (403) 233-7166
www.mrcglobal.com

Mutual Propane Ltd
PO Box 2006
Lac La Biche AB T0A 2C0
Phone: (780) 623-2363
www.mutualpropane.ab.ca

National Oilwell Varco
1100-540 5 Ave SW
Calgary AB T2P 0M2
Phone: (403) 294-4500
www.nov.com

Neptune Automated Wheel Wash Systems
174 Cornerstone Crt
Hot Springs National Park AR 71913
Phone: (501) 525-8484

New Concept Manufacturing Ltd
PO Box 32
Vimy AB T0G 2J0
Phone: (780) 961-3835

Northeastern Energy Services
PO Box 2310
Lac La Biche AB T0A 2C0
Phone: (780) 689-7098

Northwell Rentals (Lloydminster) Inc
6401 63 Ave
Lloydminster AB T9V 2S9
Phone: (780) 875-6604

Oil Boss Rentals Inc
PO Box 219
Rocky Mountain House AB T4T 1A2
Phone: (403) 844-3031
www.oilbossrentals.com

Olympus NDT
48 Woerd Ave
Waltham MA 02453
Phone: (781) 419-3518
www.olympus-ims.com

Pall (Canada) Ltd
6-3450 Ridgeway Dr
Mississauga ON L5L 0A2
Phone: (905) 542-0330
www.pall.com

Panther Technologies Inc
PO Box 7793
Bonnyville AB T9N 2J1
Phone: (780) 871-2784

Pason Systems Corp
6130 3 St SE
Calgary AB T2H 1K4
Phone: (403) 301-3400
www.pason.com

PECOFacet Canada
1351 Hastings Cres SE
Calgary AB T2G 4C8
Phone: (403) 717-2891

Phoenix Fence Inc
12816 156 St NW
Edmonton AB T5V 1E9
Phone: (780) 447-1919
www.phoenixfence.ca

Platinum Grover Int. Inc
750-333 11 Ave SW
Calgary AB T2R 1L9
Phone: (403) 264-6688
www.platinumgrover.com

Platinum Pumpjack Services Corp
750-333 11 Ave SW
Calgary AB T2R 1L9

Phone: (403) 264-6688
www.platinumenergycanada.com

Polar Pipe and Fittings
2305 84 Ave NW
Edmonton AB T6P 1K1
Phone: (780) 410-4848
www.polarpipe.ca

Precision Bolting Ltd
3880 74 Ave NW
Edmonton AB T6B 2P7
Phone: (780) 466-9869
www.precisionbolting.com

Process Combustion Systems (2000) Inc
13-1515 Highfield Cres SE
Calgary AB T2G 5M4
Phone: (403) 250-1075
www.processcombustion.com

PROMORE
2100-125 9 Ave SE
Calgary AB T2G 0P6
Phone: (403) 571-1669
www.promore.com

REDCO Equipment Sales Ltd
8168 46 St NW
Edmonton AB T6B 2M8
Phone: (780) 462-8148
www.redcovalves.com

Relay Distributing
6005 50 Ave
Lloydminster SK S9V 2A4
Phone: (306) 825-4322
www.relaydistributing.ca

Rentco Equipment Ltd
7913 100 Ave
Peace River AB T8S 1M5
Phone: (780) 624-4646
www.rentcoequipment.com

RIDGID Professional Tools
400 Clark St
Elyria OH 44035-6108
Phone: (440) 329-4469
www.ridgid.com

Sabre Communications Inc
PO Box 541
Lloydminster SK S9V 0N7
Phone: (306) 825-8500
www.sabrecom.ca

Score TransCanada Ltd
5135 67 Ave
Edmonton AB T6B 2R8
Phone: (780) 455-5273
www.score-group.com

Sil Industrial Minerals
8635 Stadium Rd NW
Edmonton AB T6S 1G3
Phone: (780) 467-2627
www.sil.ab.ca

Silverwood Toyota Import Specialists
5103 25 St
Lloydminster AB T9V 3G2
Phone: (780) 808-8801
www.silverwoodtoyota.com

661254 Alberta Ltd
PO Box 6231 Stn Main
Fort McMurray AB T9H 4W1
Phone: (780) 743-5968

SPX Valves & Controls
3424 78 Ave NW
Edmonton AB T6B 2X9
Phone: (780) 465-3110
www.dezurik.com

Stewart Sales & Rentals
24 Nipewon Rd
Lac La Biche AB
Phone: (780) 623-3243
www.stewartsalesandrentals.ca

TenarisPrudential
400-530 8 Ave SW
Calgary AB T2P 3W8
Phone: (403) 767-0100
www.tenaris.com

Topco Oilsite Products Ltd
7-3401 19 St NE
Calgary AB T2E 6S8
Phone: (403) 219-0255
www.topcooilsite.com

Total Oilfield Rentals LP
PO Box 129
Red Earth Creek AB T0G 1X0
Phone: (780) 649-2202
www.totaloilfield.ca

Trailer Canada Inc
PO Box 130
St Paul AB T0A 3A0
Phone: (780) 645-6998
www.trailercanada.com

Unified Alloys
8835 50 Ave NW
Edmonton AB T6E 5H4
Phone: (780) 468-5656
www.unifiedalloys.com

United Rentals of Canada
140 Taiganova Cres
Fort McMurray AB T9K 0T4
Phone: (780) 743-9555
www.unitedrentals.com

Van Leeuwen Pipe & Tube (Canada)
2875 64 Ave NW
Edmonton AB T6P 1R1
Phone: (780) 469-7410

Vermilion Ready-Mix Concrete
4807 47 Ave
Vermilion AB T9X 1J4
Phone: (780) 853-4818

Voith Turbo Inc
1-171 Ambassador Dr
Mississauga ON L5T 2J1
Phone: (905) 670-3122

Wajax Industrial Components
1403 5 St
Nisku AB T9E 8C7
Phone: (780) 955-2155
www.wajaxindustrial.com

Waskatenau Motors
PO Box 91
Waskatenau AB T0A 3P0
Phone: (780) 358-2287

Westlund
5-6206 50 Ave
Lloydminster AB T9V 2C9
Phone: (780) 875-5455
www.westlund.ca

Westlund
4103 84 Ave NW
Edmonton AB T6B 2Z3
Phone: (780) 463-7473
www.westlund.ca

Wetland Equipment Co Ltd
118 W Main St
Thibodaux LA 70301
Phone: (985) 447-0354
www.wetlandequipmentco.com

Wilter Auto & Industrial Supply
5609 55 St
Cold Lake AB T9M 1R6
Phone: (780) 594-4666

XL Resources Ltd
5211 65 St
Lloydminster AB T9V 2E8
Phone: (780) 875-6100

Xylem Inc
300 Labrosse Ave
Pointe-Claire QC H9R 4V5
Phone: (514) 866-5505
www.ittwww.ca

Trucking

Affinity Oilfield Services Ltd
PO Box 4883
Bonnyville AB T9N 0H3
Phone: (780) 640-1727
www.affinityoilfield.com

Aim Transport
PO Box 1440 Stn Main
Lloydminster SK S9V 1K4
Phone: (306) 825-9336
www.baytex.ab.ca

Allan Trucking
PO Box 1655
St Paul AB T0A 3A0
Phone: (780) 635-2191

Allvac Oilfield Services Ltd
PO Box 7993
Bonnyville AB T9N 2J3
Phone: (780) 826-5151

Andre's Water Delivery Ltd
9113 93 St
Lac La Biche AB T0A 2C0
Phone: (780) 623-4027

Attack Oilfield Services Inc
PO Box 1166
Manning AB T0H 2M0
Phone: (780) 836-3609
www.attackoilfield.com

AV Transportation Inc
5-380 MacKenzie Blvd
Fort McMurray AB T9H 4C4
Phone: (780) 790-0630

Axani Bros Trucking
1205 5 Ave
Cold Lake AB T9M 1A8
Phone: (780) 812-5362

B B Expediting Hot Shot Service
144 McMillan Rd
Fort McMurray AB T9H 5L4
Phone: (780) 743-6100

B & R Eckel's Transport Ltd
5520 50 Ave
Bonnyville AB T9N 2K8
Phone: (780) 826-3889
www.breckels.com

Baron Transport
901 St NW SS 1
Slave Lake AB T0G 2A1
Phone: (780) 849-4360

Barracuda Oilfield Service
PO Box 26
High Prairie AB T0G 1E0
Phone: (780) 523-7119

Barry's Tank Truck Service
PO Box 303
Glendon AB T0A 1P0
Phone: (780) 635-2674

Barry's Transport Ltd
PO Box 493
Boyle AB T0A 0M0
Phone: (780) 689-3994

Beniuk's Water Hauling Ltd
PO Box 1394
Lac La Biche AB T0A 2C0
Phone: (780) 623-2236

Blair's Oilfield Hauling
3409 47 Ave
Lloydminster SK
Phone: (306) 387-6865

Blue Ray Trucking Ltd
PO Box 7267
Bonnyville AB T9N 2H6
Phone: (780) 815-7012
www.blueraytrucking.com

BOS Oilfield Service Ltd
PO Box 176
Glendon AB T0A 1P0
Phone: (780) 635-4459

Brydon Trucking & Picker Service Ltd
PO Box 658
Viking AB T0B 4N0
Phone: (780) 336-2034

Bry-Tan Trucking Ltd
PO Box 655 Stn Main
Lloydminster SK S9V 0Y7
Phone: (780) 875-9250
www.bry-tantrucking.ca

Bush Baby Trucking Ltd
PO Box 2454
Slave Lake AB T0G 2A0
Phone: (780) 849-5565

Calmont Truck Rentals & Leasing
14610 Yellowhead Trl NW
Edmonton AB T5L 3C5
Phone: (780) 454-0491
www.calmont.ca

Caribou Trail Truck Parts
PO Box 827
Slave Lake AB T0G 2A0
Phone: (780) 849-2449

Cen-Alta Oilfield Trucking Ltd
PO Box 359
Legal AB T0G 1L0
Phone: (780) 961-4148
www.cen-altaoilfieldtrucking.com

CF Oilfield Services
503 12 Ave
Nisku AB T9E 7N8
Phone: (780) 955-9592
www.canadianfreightways.com

CF Reclamation Water Services
PO Box 613
Boyle AB T0A 0M0
Phone: (780) 689-3902

C.H. Robinson Project Logistics
102-6715 8 St NE
Calgary AB T2E 7H7
Phone: (403) 295-1505
www.chrprojectlogistics.com

Chem-Tech Transportation Service (1994)
4807 37 St
Lloydminster SK S9V 0A7
Phone: (780) 871-4040

Chief Hauling Contractors Inc
140 MacLennan Cres
Fort McMurray AB T9H 4E8
Phone: (780) 791-7808
www.chiefhauling.com

Cold Lake Ford
PO Box 1888 Stn Main
Cold Lake AB T9M 1P4
Phone: (780) 594-3000
www.coldlakeford.com

Continental Cartage Inc
320 MacDonald Cres
Fort McMurray AB T9H 4B6
Phone: (780) 788-0321
www.continentalcartage.com

D & E Water-Vac Ltd
4005 63A Ave
Lloydminster AB T9V 2X8
Phone: (780) 872-7733

D G R Tank Truck & Steamer
PO Box 73
Calmar AB T0C 0V0
Phone: (780) 649-2230

D Janzen Picker & Tractors
PO Box 916
Slave Lake AB T0G 2A0
Phone: (780) 849-4315

D W Hot Shot Service
PO Box 885
Lloydminster SK S9V 1C3
Phone: (306) 821-2383

Delorme Enterprises Ltd
PO Box 1089
High Prairie AB T0G 1E0
Phone: (780) 523-3278

Dennis Roth Trucking Ltd
413 Main St S SS 3
Slave Lake AB T0G 2A3
Phone: (780) 849-0715

Desran Holdings Ltd
PO Box 102
Perryvale AB T0G 1T0
Phone: (780) 698-2137
www.desranholdings.com

Dessert Storm Vacuum Truck & Water Hauling
198 Weiss Dr
Fort McMurray AB T9H 4K7
Phone: (780) 715-1885

DFI
3403 74 Ave NW
Edmonton AB T6B 3B8
Phone: (780) 466-5237
www.dfi.ca

Diamond B Transport
PO Box 1602
Lloydminster SK S9V 1K5
Phone: (780) 808-9123
www.diamondbtransport.com

Diamond D Oilfield Hauling Ltd
RR 1
Boyle AB T0A 0M0
Phone: (780) 525-3380

Docktor Freight Solutions Corp
750-333 11 Ave SW
Calgary AB T2R 1L9
Phone: (403) 266-4131
www.dfscorp.com

Docktor Oilfield Transport Corp
6225 54 Ave
Drayton Valley AB T7A 1S8
Phone: (780) 514-7898
www.docktortransport.com

Dot-Lyn Sales & Service Ltd
5701 Mackenzie Rd
Grimshaw AB T0H 1W0
Phone: (780) 332-4230

DRIVING FORCE
9503 34 Ave NW
Edmonton AB T6E 5W8
Phone: (780) 483-9559
www.drivingforce.ca

DT Planetaries Inc
11550 154 St NW
Edmonton AB T5M 3N8
Phone: (780) 454-9922
www.dthubs.com

Duniece Bros Trucking Ltd
PO Box 2280
Athabasca AB T9S 2B8
Phone: (780) 525-2262

Dymen Holdings Ltd
PO Box 305
Lac La Biche AB T0A 2C0
Phone: (780) 623-3541

E & N Trucking Ltd
RR 2
Boyle AB T0A 0M0
Phone: (780) 525-2646

Edmonton Trailer Sales & Leasing Ltd
26420 Twp Rd 531A
Acheson AB T7X 5A3
Phone: (780) 962-8195
www.edmontontrailer.com

EJR Trucking Inc
PO Box 1920
Lac La Biche AB T0A 2C0
Phone: (780) 623-3082
www.ejrtrucking.ca

Elkow Enterprises
PO Box 244
Two Hills AB T0B 4K0
Phone: (780) 208-1792

Enzie Trucking Ltd
3706 53 Ave
Lloydminster AB T9V 1T5
Phone: (780) 875-5420

Eric Auger & Sons Contracting
PO Box 360
Wabasca AB T0G 2K0
Phone: (780) 891-3751
www.ericaugerandsons.ca

Fat Cat Trucking Ltd
PO Box 406
Nampa AB T0H 2R0
Phone: (780) 322-3928

Feather River Transport Ltd
1045 15 Ave
Wainwright AB T9W 1J8
Phone: (780) 842-2645

Formula Powell LP
PO Box 1707
Lloydminster SK S9V 1M6
Phone: (780) 875-7960
www.hlpowell.com

Four Star Pressure Services Ltd
PO Box 92
Kinsella AB T0B 2N0
Phone: (780) 336-1048

Frontier Peterbilt Sales Ltd
5201 40 Ave
Lloydminster SK S9V 2B7
Phone: (306) 825-3553
www.frontierpeterbilt.com

Full Motion Expediting Ltd
PO Box 6077
Fort McMurray AB T9H 4W1
Phone: (780) 713-5588

G Force Diesel Service Ltd
PO Box 1040
Lloydminster SK S9V 1E9
Phone: (306) 825-2875
www.gforcediesel.com

G Force Oilfield Services Inc
3902 41 Ave
Bonnyville AB T9N 1V4
Phone: (780) 812-0930
www.gforceoilfield.com

Garry's Trucking
PO Box 63
Eaglesham AB T0H 1H0
Phone: (780) 837-5220

Gator Ventures Inc
PO Box 131
Plamondon AB T0A 2T0
Phone: (780) 798-2332

Gear Centre The
215 MacDonald Cres
Fort McMurray AB T9H 4B5
Phone: (780) 714-3570
www.gearcentre.com

Golosky Trucking & Contracting LP
355 McKenzie Blvd
Fort McMurray AB T9H 5E2
Phone: (780) 743-2171
www.goloskytrucking.ca

Gordy's Oilfield Servicing Ltd
PO Box 95
Marwayne AB T0B 2X0
Phone: (780) 875-9802

Gray's Water Hauling Ltd
PO Box 127
Marsden SK S0M 1P0
Phone: (306) 826-5751

Green Valley Mechanical
PO Box 6305
Peace River AB T8S 1S2
Phone: (780) 624-2448

Grimshaw Trucking LP
PO Box 960
Edmonton AB T5J 2L8
Phone: (780) 414-2850
www.grimshaw-trucking.com

H & E Oilfield Services Ltd
2202 1 Ave
Wainwright AB T9W 1L7
Phone: (780) 842-6444

Hammer Equipment Sales Ltd
145 MacDonald Cres
Fort McMurray AB T9H 4B3
Phone: (780) 743-1968
www.hiwayservice.com

Heavy Crude Hauling LP
6601 62 St
Lloydminster AB T9V 3A9
Phone: (780) 875-5358
www.heavycrudehauling.com

Hidden Lake Oilfield Services Ltd
PO Box 360
Ardmore AB T0A 0B0
Phone: (780) 826-4481

Hoffman's Tank Truck Service Ltd
PO Box 67
Elk Point AB T0A 1A0
Phone: (780) 724-4117
www.hoffmansoilfield.com

Inter-Rail Transport Ltd
8621 18 St NW
Edmonton AB T6P 1K4
Phone: (780) 464-7046
www.inter-railtransport.com

Intra Plains Transport Ltd
5905 47 St
Lloydminster AB T9V 2G4
Phone: (780) 875-9205

J. Loewen Mechanical
PO Box 932
Slave Lake AB T0G 2A0
Phone: (780) 849-6416

Jay Reid Trucking Ltd
PO Box 7849
Bonnyville AB T9N 2J2
Phone: (780) 826-8602

Jaymar Hauling (88) Ltd
PO Box 1038
Slave Lake AB T0G 2A0
Phone: (780) 849-3466

Jules Bastien Trucking Ltd
PO Box 259
Guy AB T0H 1Y0
Phone: (780) 925-2168

Kamieniecki Gary Contracting Ltd
PO Box 338
Manning AB T0H 2M0
Phone: (780) 836-3630

Lac La Biche Transport Ltd
PO Box 36
Lac La Biche AB T0A 2C0
Phone: (780) 623-4711
www.laclabichetransport.com

Larson Management Inc
PO Box 21
Tulliby Lake AB T0A 3K0
Phone: (780) 875-9693

Leading Edge Hot Shot & Picker Service
PO Box 809
Manning AB T0H 2M0
Phone: (780) 836-2445
www.leadedge.ca

Lebid Ron Trucking
PO Box 756
Athabasca AB T9S 2A6
Phone: (780) 675-4754

Ledcor Industrial Maintenance Ltd
9910 39 Ave NW
Edmonton AB T6E 5H8
Phone: (780) 463-2140
www.ledcor.com

Lorette Truck Service Ltd
PO Box 766
Grimshaw AB T0H 1W0
Phone: (780) 332-4039

Mach 1 Diesel Repair Ltd
5107 65 St
Lloydminster AB T9V 2E8
Phone: (780) 875-3306

Manitoulin Transport
400 MacAlpine Cres
Fort McMurray AB T9H 4B1
Phone: (780) 791-1478
www.manitoulintransport.com

Matco Transportation Systems
18151 107 Ave NW
Edmonton AB T5S 1K4
Phone: (780) 484-8800
www.matco.ca

MBT Enterprises
PO Box 6214
Peace River AB T8S 1S2
Phone: (780) 618-9730

McBride Trucking
PO Box 239
Edgerton AB T0B 1K0
Phone: (780) 755-3790

McCoy's Trucking Ltd
PO Box 5821
Westlock AB T7P 2P6
Phone: (780) 348-5451

McMurray Serv-U Expediting Ltd
2-350 MacAlpine Cres
Fort McMurray AB T9H 4A8
Phone: (780) 791-3530
www.mcmurrayservu.com

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7110 Bulyea Ave
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Michael S Witryk Oilfield Transport Ltd
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www.nbf-biz.com/muldoontransport

Mosan Communications Ltd
PO Box 3342
Wainwright AB T9W 1T3
Phone: (780) 842-0220

Mud 'n Dust Trucking
PO Box 654
Wabasca AB T0G 2K0
Phone: (780) 891-0303

Night Hawk Trucking
5905 47 St
Lloydminster AB T9V 2G4
Phone: (780) 875-4955
www.nighthawktrucklines.com

Nitro Heavy Hauling Ltd
PO Box 11632 Stn Main
Lloydminster AB T9V 3B8
Phone: (780) 875-6832
www.nitroheavyhauling.com

North Max Light Oilfield Hauling & Rentals
PO Box 546
Manning AB T0H 2M0
Phone: (780) 836-5225

Northern Plains Moving & Transport Ltd
140 MacKay Cres
Fort McMurray AB T9H 4W8
Phone: (780) 790-1336

Northwest Transport Ltd
400 MacAlpine Cres
Fort McMurray AB T9H 4B1
Phone: (780) 791-1478

Nor-Trail Oilfield Ltd
PO Box 147
Slave Lake AB T0G 2A0
Phone: (780) 849-5230

Orion's Way Hot Shot Service
PO Box 536
Manning AB T0H 2M0
Phone: (780) 836-5545

Over-D Trucking
PO Box 1024
Falher AB T0H 1M0
Phone: (780) 837-8254

Peace River Towing & Glass
4-9710 94 St
Peace River AB T8S 1J2
Phone: (780) 624-7777

Peace Truck & Trailer Ltd
9103 75 St
Peace River AB T8S 1T2
Phone: (780) 624-8655

Pebbles Trucking Ltd
PO Box 271
Blackfoot AB T0B 0L0
Phone: (780) 875-8460

Performance Truck Service
5201 62 St
Lloydminster AB T9V 2E3
Phone: (780) 875-9218

Pioneer Truck Lines Ltd
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Edmonton AB T6B 3A7
Phone: (780) 467-8880
www.pioneertrucklines.com

Prax Enterprises
PO Box 1274
Slave Lake AB T0G 2A0
Phone: (780) 849-2938

Q-Line Trucking Ltd
Box 110B RR 4
Corman Industrial Park
Saskatoon SK S7K 3J7
Phone: (306) 651-3540
www.qlinetrucking.com

Q-Tek Tankers Ltd
PO Box 306
Viking AB T0B 4N0
Phone: (780) 336-2696
www.q-tek.ca

Quality Asphalt Ltd
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Slave Lake AB
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Quantum Winch
PO Box 6977
Bonnyville AB T9N 2H4
Phone: (780) 826-3272

R & D Enterprises
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Fort McMurray AB T9H 4W1
Phone: (780) 743-2042

R M J B Trucking Ltd
2909 55 Ave
Lloydminster AB T9V 1N6
Phone: (780) 875-6875

R & M Vacuum And Tank Service
PO Box 994
Falher AB T0H 1M0
Phone: (780) 837-0996

Rainbow Transport (1974) Ltd
17508 116 Ave NW
Edmonton AB T5S 2T9
Phone: (780) 452-5275
www.rainbowtransport.com

Red Planet Trucking Ltd
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Red Earth Creek AB T0G 1X0
Phone: (780) 649-3401
www.redplanettrucking.com

Reimer Express Lines Ltd
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Calgary AB T2C 4M2
Phone: (403) 279-6866

Rene's Vacuum Service Inc
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Legal AB T0G 1L0
Phone: (780) 961-3064

Renigade Trucking
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Bonnyville AB T9N 2H6
Phone: (780) 826-2811

Rick's Oilfield Hauling
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Redwater AB T0A 2W0
Phone: (780) 942-2025
www.ricksoilfield.ca

Ridgid Oilfield Services Ltd
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Lloydminster SK S9V 0Y1
Phone: (780) 875-7939

Ridley & Son's Hauling Ltd
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Chauvin AB T0B 0V0
Phone: (780) 858-2584

RJ Hoffman Holdings Ltd
PO Box 12069
Lloydminster AB T9V 3C3
Phone: (780) 871-0723
www.rjhoffman.com

Roadrunner Water Hauling Ltd
PO Box 356
Innisfree AB T0B 2G0
Phone: (780) 592-2271

Ro-Bar Trucking Ltd
PO Box 39
Widewater AB T0G 2M0
Phone: (780) 369-2191

Robwel Constructors Inc
PO Box 20007
Conklin AB T0P 1H0
Phone: (780) 559-2966
www.robwel.ca

Rock'n T Trucking
PO Box 59
Nampa AB T0H 2R0
Phone: (780) 618-2124

Ron's Vacuum Service Ltd
PO Box 2930
Wainwright AB T9W 1S8
Phone: (780) 842-2390

Rosenau Transport Ltd
5805 98 St NW
Edmonton AB T6E 3L4
Phone: (780) 431-2877
www.rosenau.org

Sandpiper Truck Services Ltd
PO Box 10453
Lloydminster SK T9V 3A6
Phone: (780) 875-2850
www.sandpipertruck.com

Shale Industrial Ltd
260B MacKay Cres
Fort McMurray AB T9H 5C6
Phone: (780) 791-4619

Shamrock Heavy Hauling
PO Box 687
Wabasca AB T0G 2K0
Phone: (780) 891-0456

Silverman Oilfield Services Ltd
PO Box 145
Neilburg SK S0M 2C0
Phone: (306) 823-4722

SLH Picker Service & Pile Driving
1701 8 St NE
Slave Lake AB T0G 2A2
Phone: (780) 849-5275

Smoky Lake Tank Service
PO Box 372
Smoky Lake AB T0A 3C0
Phone: (780) 656-4055

Southview Trucking Ltd
4801 40 St
Vermilion AB T9X 1H6
Phone: (780) 853-2734

Spectra Oilfield Services
PO Box 10684
Lloydminster AB T9V 3A7
Phone: (780) 871-3309

Stanchuck Trucking (1997) Ltd
6007 52 Ave
Lloydminster AB T9V 2S7
Phone: (780) 875-7665

Stan's Trucking
PO Box 1550
Slave Lake AB T0G 2A0
Phone: (780) 849-5307

Steel View Oil Pressure Services Ltd
PO Box 265
Chauvin AB T0B 0V0
Phone: (780) 858-2213
www.stlview.ca

Stephane's Mobile Repair Ltd
PO Box 1889
Lac La Biche AB T0A 2C0
Phone: (780) 623-7100
www.stephanesmobilerepair.com

SVS Inc
PO Box 2342
Lac La Biche AB T0A 2C0
Phone: (780) 623-3102

Sydia Bros Ent Ltd
5202 59 Ave
Lloydminster AB T0B 0L0
Phone: (780) 875-5377

Tank'd H2O Trucking
PO Box 73
Fort Kent AB T0A 1H0
Phone: (780) 812-0061
www.tankdh2otrucking.com

Tee-Jay Water Hauling Ltd
PO Box 7398
Bonnyville AB T9N 2H7
Phone: (780) 826-7571

Triple K Oilfield Services Inc
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Red Earth Creek AB T0G 1X0
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www.triplekoilfield.ca

Triple Random Inc
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Nisku AB T9E 7N7
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www.triplerandom.com

Twin M Trucking Ltd
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2101 50 Ave
Lloydminster SK S9V 1Z7
Phone: (306) 825-8866
www.lloydchev.com

Ultra-Vac Ltd
RR 1
Edgerton AB T0B 1K0
Phone: (780) 755-2372

Unrau's Trucking Ltd
5905 47 St
Lloydminster AB T9V 2G4
Phone: (780) 875-5622

Wakaluk Trucking & Gravel Sales
PO Box 795
Falher AB T0H 1M0
Phone: (780) 359-2330

Wally's Pilot Service
33-5201 42 St
Lloydminster AB T9V 1M8
Phone: (780) 808-6295

Wellside Services
PO Box 1346
Grimshaw AB T0H 1W0
Phone: (780) 332-2512

Wellsite Industrial (1985) Ltd
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Viking AB T0B 4N0
Phone: (780) 336-3459

Whillans Mechanical
PO Box 623
Manning AB T0H 2M0
Phone: (780) 836-2011

White Thunder Trucking Ltd
PO Box 86
Perryvale AB T0G 1T0
Phone: (780) 698-2461

Wildcat Vacuum Services Ltd
PO Box 1827 Stn Main
Lloydminster SK S9V 1N4
Phone: (780) 875-0464

WJT Wes Johnson Trucking Ltd
PO Box 1019
Manning AB T0H 2M0
Phone: (780) 836-2405

W-K Trucking Inc
PO Box 117
Mundare AB T0B 3H0
Phone: (780) 632-5555
www.wktrucking.com

Wounded's Picker Service Inc
PO Box 2113
Lloydminster SK S9V 1R6
Phone: (780) 871-4697

X-Cel Energy Services Ltd
PO Box 1170
High Prairie AB T0G 1E0
Phone: (780) 523-4412

Xtreme Air Ltd
PO Box 1476
St Paul AB T0A 3A0
Phone: (780) 645-5979
www.xtremeair.ca

Zacharko Trucking
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Bruderheim AB T0B 0S0
Phone: (780) 796-2341

Well Service

Alberta Insulation Supply & Services Ltd
PO Box 900
Peace River AB T8S 1T4
Phone: (780) 624-2996

Billey Insulation Ltd
PO Box 173
Smoky Lake AB T0A 3C0
Phone: (780) 656-2126

Cadieux Oilfield Services
PO Box 599
Lac La Biche AB T0A 2C0
Phone: (780) 623-3443
www.cadieuxoilfield.com

Career Well Servicing Ltd
3117 51 Ave
Lloydminster AB T9V 1H9
Phone: (780) 875-3088

Concord Well Servicing
PO Box 1528
Valleyview AB T0H 3N0
Phone: (780) 524-2113
www.concordwell.com

D & D Insulating
217 Greenbriar Bay
Fort McMurray AB T9H 3Y5
Phone: (780) 791-2613

Datalog Technology Inc
10707 50 St SE
Calgary AB T2C 3E5
Phone: (403) 243-2024
www.datalogtechnology.com

Enerpro Insulation Ltd
24511 34 St
Edmonton AB T5Y 6B4
Phone: (780) 478-4959
www.enerproinsulation.com

EPS Flushby Systems
PO Box 3283
Wainwright AB T9W 1T2
Phone: (780) 806-0000

Frog Lake Oilfield Services LP
5109 47 St
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Cold Lake AB T9M 1P4
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MADDON Oilfield Services
52518 Hwy 857 N
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Phone: (780) 632-9910
www.maddon.ca

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PO Box 1137
Manning AB T0H 2M0
Phone: (780) 836-2979

O K Industries
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Lac La Biche AB T0A 2C0
Phone: (780) 623-2675

Park Derochie
11850 28 St NE
Edmonton AB T6S 1G6
Phone: (780) 478-4688
www.ParkDerochie.com

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PO Box 39
Kehewin AB T0A 1C0
Phone: (780) 826-6392

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430-736 8 Ave SW
Calgary AB T2P 1H4
Phone: (403) 444-5545
www.polycore.ca

Precision Well Servicing
6002 53 Ave
Lloydminster AB T9V 2T2
Phone: (780) 875-5333
www.precisiondrilling.com

Pro Insul Limited
14212 128 Ave NW
Edmonton AB T5L 3H5
Phone: (780) 452-4724
www.proinsul.com

R R C Insulation Services Ltd
RR 1
Gibbons AB T0A 1N0
Phone: (780) 921-4060

Raider Well Servicing Ltd
6306 53 Ave
Lloydminster AB T9V 2E2
Phone: (780) 875-7373

REPPSCO Services Ltd
2130 121 Ave NE
Edmonton AB T6S 1B1
Phone: (780) 791-4333
www.reppscoservices.com

Rockwell Servicing
1000-400 5 Ave SW
Calgary AB T2P 0L6
Phone: (403) 265-6361
www.ensignenergy.com

Royal Well Servicing Ltd
5214 62 St
Lloydminster AB T9V 2E4
Phone: (780) 808-2333

Spears Well Servicing Ltd
5211 65 St
Lloydminster AB T9V 2E8
Phone: (780) 875-6100

Thermal Insulation Association of Alberta
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Calgary AB T2P 3G9
Phone: (780) 457-9890
www.tiaa.cc

Twilight Urethanes Ltd
PO Box 1862 Stn Main
Lloydminster SK S9V 1N4
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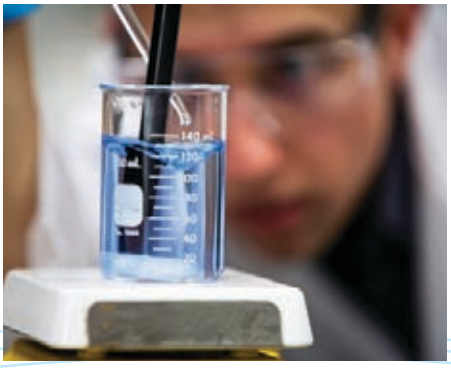
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