ALBERTA OIL SANDS INDUSTRY QUARTERLY UPDATE SUMMER 2010 Reporting on the period: Mar. 6, 2010 to Jun. 7, 2010 Government of Alberta

All about the oil sands

Background of an important global resource



TABLE OF CONTENTS

All about the oil sands Background of an important global resource

Mapping the oil sands

Government update

NEWS: What's new in the oil sands Key updates from summer 2010

Project listings Updated status of oil sands projects in Alberta

Glossary of oil sands terms

Alberta has the second-largest deposit of oil in the world—only Saudi Arabia can claim a larger stockpile of crude. But 170 billion of Alberta's 179 billion barrels of oil have the special quality of being bitumen, a resource that has been developed for decades but is only now coming into the forefront of the global energy industry, as conventional supplies—so-called "easy" oil continue to be depleted. The figure of 170 billion barrels represents what is considered economically recoverable with today's technology, but with new technologies, this reserve estimate could be increased to as much as 315 billion barrels.

There are three major bitumen (or oil sands) deposits in Alberta. The largest is the Athabasca deposit, located in the province's northeast in the Regional Municipality of Wood Buffalo. The main population centre of the Athabasca deposit is the City of Fort McMurray. The second-largest oil sands deposit is referred to as Cold Lake, just south of Athabasca, with the main population centre the City of Cold Lake. The smallest oil sands deposit is known as Peace River, which is located in northwest central Alberta. A fourth deposit called Wabasca links to the Athabasca and is generally lumped in with that area.

The existence of bitumen in Alberta has been known for a long time. The first mention of it in Canadian history was in 1719, when a Cree named Wapasu brought a sample of the "gum" to a Hudson's Bay trading post. First Nations in what is now the Wood Buffalo area had traditionally used the bitumen, which seeps from outcrops along the Athabasca River, to waterproof their canoes.

Today bitumen is produced as an energy source by two means—mining and in situ. The majority of oil sands production is done by surface mining, but this will likely change in the future, as 80 per cent of Alberta's bitumen deposits are too deep underground to economically employ this technology.

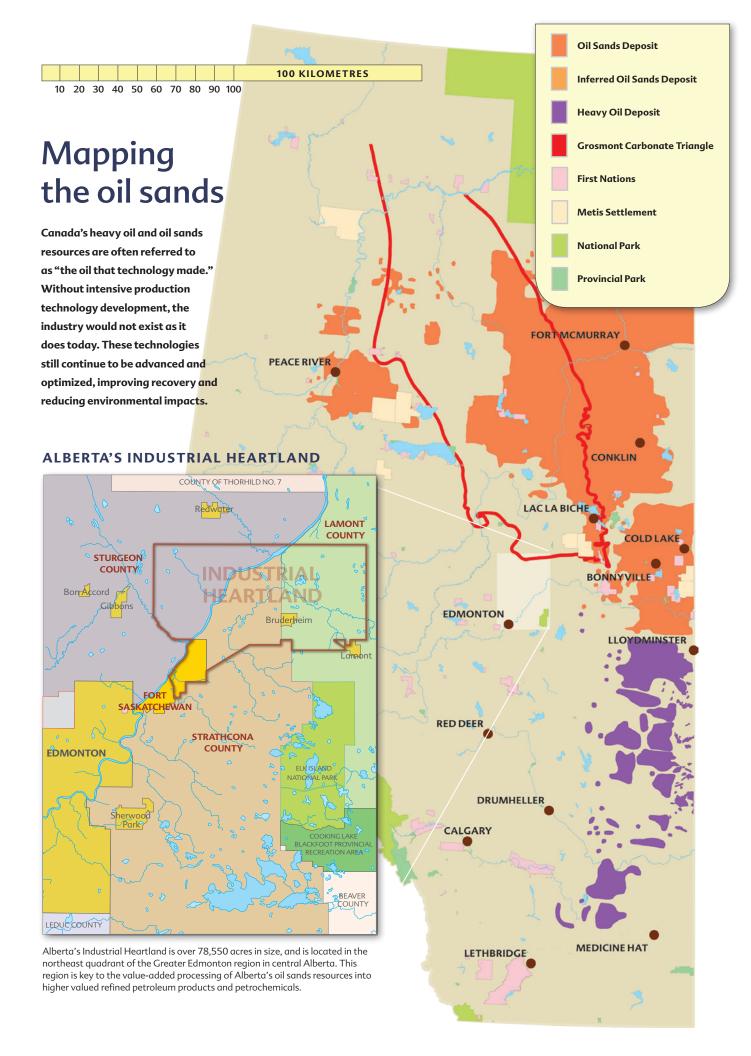
Right now there are essentially two commercial methods of in situ (Latin for "in place," essentially meaning wells are used rather than trucks and shovels). In cyclic steam stimulation (CSS), high-pressure steam is injected into directional wells drilled from pads for a period of time, then the steam is left to soak in the reservoir for a period, melting the bitumen, and then the same wells are switched into production mode, bringing the bitumen to the surface.

In steam assisted gravity drainage (SAGD), parallel horizontal well pairs are drilled from well pads at the surface. One is drilled near the top of the target reservoir, while the other is drilled near its bottom. Steam is injected into the top well, a steam chamber forms, and via gravity, the melted bitumen flows into the lower well and is pumped to the surface using artificial lift.

Both SAGD and CSS are used in the Cold Lake and Peace River deposits, while SAGD is the in situ technology of choice in the Athabasca deposit. The choice is based on a number of things including geology. The technologies combined currently produce just over one million barrels per day.

Research is underway on a number of other production technologies designed to optimize production and minimize water and energy use, including vapour extraction (VAPEX), and a form of in situ combustion known as toe to heel air injection (THAI).

Bitumen that has not been processed, or "upgraded," can be used directly as asphalt. It must be diluted to travel by pipeline. Adding value, some producers upgrade their product into synthetic crude oil (SCO), which is a refinery feedstock. At these refineries it can be transformed into transportation fuels and other products. ■



Government update



ALBERTA COMPETITIVENESS INITIATIVE

A new council of MLAs and industry leaders is working to ensure Alberta is one of the most attractive places to invest and do business as part of the Alberta Competitiveness Act.

This work is led by the Alberta Competitiveness Council, which is co-chaired by Premier Ed Stelmach and the Alberta Economic Development Authority's Bob Brawn, with Finance and Enterprise Minister Ted Morton as an alternate co-chair.

The council will look at ways to improve the overall economic position of the province and build on work already underway by government and industry. It will also look at the various factors that impact the province's economic growth, such as regulation and fiscal policy, the availability of skilled workers, transportation and infrastructure, and productivity and innovation. In addition to reviewing the province's overall economic competitiveness, the council will review four specific sectors this year: agriculture (grains and oil seeds), financial services, manufacturing, and petrochemicals.

The council is expected to release an interim report by the end of 2010. The report will outline the state of current initiatives, and include a framework for benchmarking and assessing Alberta's overall ability to compete. A second, more detailed report will be issued in 2011, with benchmarks and specific recommendations for improvement.

The council will work closely with industry to identify key areas for competitiveness improvement over the next several months. Albertans are invited to share their ideas through the Alberta government's new web portal: www.finance.alberta.ca/competitiveness.

NEW BITUMEN REFINERY PROJECT

Negotiations are underway to build a new bitumen refinery in Alberta's Industrial Heartland, as part of the government's bitumen royalty-in-kind initiative. The 150,000-barrel-per-day refinery proposed by

North West Upgrading, to be built in three stages, will also include the application of technologies such as gasification and an integrated carbon capture and storage capability to reduce ${\rm CO}_2$ emissions.

Processing of the bitumen will go beyond upgrading to synthetic crude oil, to include higher value products such as diesel fuel. Once completed, North West Upgrading would process 75,000 barrels per day of royalty-in-kind bitumen on behalf of the province.

The project was selected following a comprehensive review of proposals submitted to the Government of Alberta as a result of a request for proposals that was issued in July 2009 and closed in January 2010.

REGULATORY SYSTEM REVIEW

A broad range of stakeholders will have input into a comprehensive review of Alberta's oil and gas regulatory system to ensure that it is effective and supports a competitive economy. The review by the Regulatory Enhancement Task Force includes engagement of industry, landowner, municipal, and environmental groups. The meetings are an opportunity for stakeholders to provide input to the development of recommendations to improve the oil and gas regulatory system. Written submissions will also be accepted through an online tool, available at www.energy.alberta.ca/Initiatives/RegulatoryEnhancement.asp.

A progress report will be delivered to government by the task force in June. This will include progress on implementation of near-term regulatory enhancements; changes to support deployment of innovative, new technologies; and the process for comprehensive review of the regulatory system, with specific milestones and measurable objectives. A final task force report will be delivered to government by December 31.

CLEAN ENERGY RESEARCH

A \$25-million provincial investment in a University of Calgary—anchored, nation-wide research network

will bring together more than 100 experts to advance clean energy development in Canada.

The funding of Carbon Management Canada helps establish national research teams that will develop technology and insights to reduce carbon emissions in Canada's fossil fuel energy sector—including the coal, natural gas, conventional oil, and oil sands sectors.

The funding is a result of Alberta's share of the Canada ecoTrust program, which allows provinces to choose projects that would have the most impact on clean air and climate change mitigation objectives.

Carbon Management Canada will be based at the University of Calgary. It will focus and mobilize at least 100 energy, environmental, and social science researchers from 21 Canadian universities. Research teams will work with partners in industry, government, non-government organizations, and major carbon management networks around the world.

SUPPORT FOR CLEAN ENERGY PRODUCTION

In order to promote more clean energy production in the province, the Alberta government is expanding and extending an incentive program for producers of bioenergy products.

Funding under the Bioenergy Producer Credit
Program is extended for five years until 2016. The
program will help Alberta meet its climate change
targets by reducing emissions while also providing
value-added opportunities and long-term stability
to Alberta's agriculture and forestry industries.
The program provides incentives to develop a wide
variety of bioenergy products including fuels, power,
and heat, which will support the Renewable Fuels
Standard to be implemented in April 2011.

GREENHOUSE GAS REDUCTIONS

Alberta's greenhouse gas reduction program—which applies to all emitters over 100,000 tonnes—continues to support a global clean energy future with 2009 emissions reductions being the equivalent of removing 1.4 million cars off the road

and a clean technology innovation fund growing to \$187 million.

The 2009 results saw industrial emissions reduced by seven million tonnes from business-as-usual (emissions that would have otherwise existed in the absence of provincial regulations), and saw an additional \$62.9 million invested in the technology fund that will soon support projects aimed at more renewable forms of energy and cleaner energy development. Companies also purchased 3.8 million tonnes of offset credits from Alberta projects that were able to reduce emissions.

NEW WEST PARTNERSHIP TRADE MISSION TO ASIA

Premier Stelmach, along with his counterparts from both Saskatchewan and British Columbia were in Shanghai, Beijing, and Tokyo from May 14–22 to lead a joint trade mission to China and Japan, promoting trade and commercial opportunities between western Canada and Asia. Building on the partnership formed on April 30, the premiers promoted western Canada's clean technology, natural resources, and competitive investment climate to Asian business leaders and government officials.

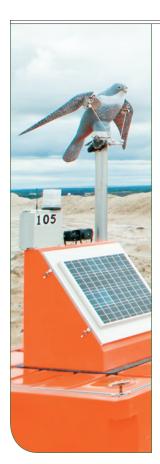
PREMIER STELMACH VISIT TO U.S.

Premier Ed Stelmach's meetings with U.S. Senators in the first week of May have helped communicate the vital role Alberta's oil sands play in American energy security and job creation. During this visit, Premier Stelmach promoted the province's commitment to making even more progress on greenhouse gas reductions and discussed the province's leadership on advancing technologies like carbon capture and storage. Finally, the premier also used his opening address at the Energy Security Forum to reinforce that the oil sands contribute to job creation and economic growth in the United States.



What's new in the oil sands

Key updates from summer 2010



III Penn West Energy Trust has entered into an agreement with a wholly owned subsidiary of the China Investment Corporation (CIC) to form a joint venture that will develop the trust's bitumen assets located in the Peace River area of northern Alberta with an \$817-million investment by the Chinese corporation.

Headquartered in Beijing, CIC was founded in September 2007, as a wholly state-owned company incorporated in accordance with China's company law. Its mission is to make long-term investments that maximize risk-adjusted financial returns for the benefit of its shareholders.

III Canadian Natural Resources says it produced 86,995 barrels per day of synthetic crude oil at its Horizon oil sands mine during the first quarter of 2010. March production averaged 103,850 barrels per day, the highest this year.

The company said it continues to target stable production levels with annual production guidance for 2010 remaining at 90,000 to 105,000 barrels per day.

As for the next expansion phases at Horizon, Raymond James notes that Canadian Natural is determined to proceed.

"The company [is] adamant that it will expand Horizon," analysts wrote in a research note following Canadian Natural's May investor open house. "Work is progressing on the various tranches that make up the Phases 2/3 expansion, including engineering and procurement and updated cost estimates.... The company did indicate that prior to sanctioning, it requires cost certainty and economics that can compete for capital within the portfolio."

III The University of Calgary's Schulich School of Engineering is launching a new heavy oil research program designed to map the characteristics of the viscous resource in order to improve production. Much of the work will look at solvent processes, techniques that industry is growing increasingly interested in to help reduce water and energy use. But the industry work is early stages, and support is needed to maintain the momentum of solvents.

"If they have a lot of failures, that could kill [interest in] it. That's what we're trying to avoid," says program lead Harvey Yarranton, who holds the Natural Sciences and Engineering Research Council of Canada (NSERC) industrial research chair in heavy oil properties and processing.

His work, which is supported by partners Schlumberger and Shell Canada, has in place \$2.6 million in funding over the next five years.

struggling to meet output targets. First-quarter volumes dropped 10 per cent to 575,795 barrels per day, down from 639,600 barrels per day in the first three months of 2009 as miners were beset with various problems, including fires. The main reason for the drop this year was a big decline in Suncor Energy's output.

In situ production is moving closer to volumes of synthetic crude (mostly from mining) as commercial-scheme bitumen output has topped 500,000 barrels per day so far this year with February in situ production over 543,000 barrels per day.

III A long-awaited deal is on the table for ConocoPhillips' nine per cent stake in the Syncrude mining joint venture. The Houston-based company has entered into definitive agreements with subsidiaries of Sinopec to sell its minority ownership of Canada's largest oil production operation for \$4.65 billion.

The transaction is anticipated to close in the third quarter of 2010 once Canadian and Chinese government approvals are obtained.

ConocoPhillips has the fourth-largest interest in Syncrude after the 36.74 per cent held by Canadian Oil Sands Trust, Imperial Oil Resources (25 per cent), and Suncor Energy (12 per cent). Nexen has a 7.2 per cent interest, while Mocal Energy and Murphy Oil Company each have five per cent.

Sinopec is also a 50 per cent owner of the proposed Northern Lights oil sands mining project along with Total E&P Canada.

**Mathabasca Oil Sands Corp. (AOSC) is now a publicly traded company, reporting the closing of its initial public offering of 75 million common shares at a price of \$18 per share for gross proceeds of \$1.35 billion.

With a number of different oil sands plans in various stages of development, AOSC also just closed a \$1.9-billion transaction that makes it a joint-venture owner with PetroChina in its Dover and MacKay River projects.



■ Connacher Oil and Gas has completed construction of its second steam assisted gravity drainage (SAGD) project at Great Divide in northeastern Alberta.

Algar has a design steam generation capacity of 30,000 barrels per day, which at its long-term target peak operating steam to oil ratio of 3:1, is anticipated to facilitate production of 10,000 barrels per day of bitumen over a project life of more than 25 years.

Major civil work at Algar, including construction of the plant site, access road, and well pads, was completed in February 2009. Project field construction and fabrication commenced on July 7, 2009. Drilling of the 17 SAGD well pairs at Algar and concurrent construction of the steam generation facility and oil processing plant were completed in 273 working days, less than the company's target of 275 working days.

Capital expenses are still being accumulated and won't be final until after commissioning of the project. Connacher anticipates the total construction costs of Algar will be under its announced \$375-million budget.

III Sunshine Oilsands has submitted a regulatory application to develop a commercial SAGD project at its West Ells location. When completed, the facility is expected to operate at an average capacity of 10,000 barrels per day over a design life of 30 years.

"This submission is a material event for our company and forms part of our objectives to achieve 180,000 barrels per day of in situ bitumen production from our lands as we see them today," co-CEO Doug Brown said in a news release. "We have worked with regulators to ensure our submission speaks to today's key issues, and with a competent response to their concerns, we believe this 10,000-barrel-per-day application can be resolved in 2011."

■ Canadian Phoenix Resources' controlled subsidiary Serrano Energy has closed the sale of its 20 per cent working interest in the proposed Blackrod SAGD project for \$21 million with an effective date of Jan. 1, 2010.

Existing 80 per cent owner BlackPearl Resources is taking the remaining stake, funding the acquisition from working capital. The company plans to start construction on the 600-barrel-per-day initial pilot later this year.

III Nexen, Japan Canada Oil Sands, and the joint venture of ConocoPhillips Canada and Total E&P Canada are joining with the Regional Municipality of Wood Buffalo

in a campaign designed to boost safety on highways that have been called the most dangerous in Alberta.

The Coalition for a Safer 63 & 881 will "target tunnel-vision driving," a problem that has been linked to hundreds of vehicle-related injuries and dozens of fatalities along oil sands Highways 63 and 881. Basically, the group says tunnel vision is "a mindset that says, 'It's time to get moving to my destination now and nothing will stop me." The campaign will be comprised of print advertising, posters, billboards, and the website www.safer63and881.com.

■ Southern Pacific Resource Corp. reports that after a successful winter drilling program and further technical evaluation of its oil sands lands in McKay, Alberta, the estimate of the gross probable recoverable bitumen reserves has increased by 149 per cent to 168.1 million barrels. This equates to a net present value before tax of \$368 million (discounted at 10 per cent).

Additionally, 116.7 million barrels of recoverable bitumen have been assigned to the gross best estimate (P50) contingent resources category. These numbers come from report by GLI Petroleum Consultants, effective March 15, 2010, incorporating the past winter's 21 new core holes drilled in the McKay area, plus all of the technical data and studies collected and analyzed over the past three winters.

- Enbridge has filed the application for its proposed Northern Gateway pipeline, a \$4.5-billion project that would see a 1,200-kilometre, 525,000-barrel-per-day line carry oil sands crude to the Kitimat area on British Columbia's north Pacific Coast, while a parallel line will carry ultra-light crudes back to the oil sands region for blending. The crude landing at Kitimat would then be loaded onto tankers for export overseas. Enbridge foresees that construction could begin in 2013, but the project is facing opposition in British Columbia.
- Excelsior Energy has completed an updated independent evaluation of bitumen resources on its Hangingstone property near Fort McMurray, Alberta. The company has drilled a total of 55 wells on the Hangingstone property, where it has a 75 per cent working interest in 39 contiguous sections of oil sands rights.

"The valuation for the best-case contingent resources using a 10 per cent discount is \$332 million to Excelsior's working interest share, a 60 per cent increase from the July 1, 2010 evaluation, and \$708 million for the >





high-estimate contingent resources," said company president David Winter in a news release.

Excelsior has also entered into a binding letter agreement with Frank Giustra, Peninsula Merchant Syndications, and Jeff Scott to arrange for subscriptions of up to 41.67 million units of Excelsior at a price of \$0.36 per unit for aggregate gross proceeds of up to \$15 million. Proceeds from the unit financing and the common share financing are intended to be used for further delineation of the corporation's property in the Hangingstone area of Alberta and for general corporate purposes.

III Oklahoma City—based Devon Energy plans to spend US\$650 million in a joint venture to develop BP's Alberta oil sands leases at Kirby, adjacent to Devon's successful Jackfish in situ project.

In order to facilitate the joint venture, it will acquire 50 per cent of BP's interest in the leases. Devon, which will operate the project, will pay BP US\$500 million at closing and commit to fund an additional US\$150 million of capital costs on BP's behalf over the next three years. Devon and BP have also agreed to negotiate a longterm heavy-crude sales agreement for Devon's share of Kirby production. "Given our extensive knowledge of the area and our view of the potential of the Kirby lease, it is an asset we have been interested in for some time, so we view this as an exciting opportunity," said Dave Hager, Devon's executive vice-president of exploration and production, in a conference call. "While much work remains to be done to fully delineate the Kirby lease, we believe this will prove to have greater resource potential than Jackfish." Devon believes that ultimately there may be recoverable resources of up to 1.5 billion barrels of oil. Hager says the company envisions the Kirby leases will be developed through a multi-phased development plan similar to the Jackfish SAGD development. Devon is looking at moving the first phase of a Kirby project forward within the next year.

III Privately held Value Creation Inc. (VCI) has entered into a partnership with BP Canada that will be the majority partner and the operator for the Terre de Grace in situ project on VCI leases in the Athabasca region of northeastern Alberta.

BP and VCI also are in discussions to enter into a separate cooperation agreement for further development and testing of Value Creation's proprietary primary upgrading technology, the accelerated decontamination process that removes asphaltenes, creating a decontaminated oil, a clean medium density oil that would require little diluent.

VCI already has regulatory approval for a 10,000-barrelper-day project on a 741-hectare site on the Terre de Grace lease. is creating its first-ever research chair, with help from a \$1.5-million investment by Ledcor Industrial. The funding will be matched by \$3 million from NAIT. The position, applied research chair in oil sands environmental sustainability, will focus on applying green chemistry and engineering principles in oil sands production.

"If we are to truly make practices in the oil sands sustainable, we need to make changes now," says Don Breen, president of Ledcor. "It is Ledcor's expectation that the applied research chair at NAIT and the work that they conduct will help identify practices and processes that are of material benefit to the industry and can be applied to enhance and improve our operations in the oil sands."

The chair will be designed to develop "real-world solutions" that can be integrated with new and existing operations.

Early-stage junior Grizzly Oil Sands, under the leadership of former Devon Energy heavy oil manager John Pearce, has filed the regulatory application for the first phase of its proposed Algar Lake SAGD project.

Along with 25 per cent partner Gulfport Energy, Grizzly is seeking approval to construct and operate the project, which is expected to average 10,000 barrels per day over the next 30 years. It will have two plant phases, each producing 5,000 barrels per day.

Each phase is estimated to carry an initial gross capital cost of approximately US\$120 million. In order to maintain consistent production, an additional pad will be required for each phase every five years at an estimated gross cost of US\$35 million per pad.

Grizzly expects receipt of approvals from the regulators within 12 to 18 months. Upon approval, it anticipates first production within approximately 18 months.

- III in situ developer Osum Oil Sands has been assigned proved-plus-probable reserves of 320 million barrels in an engineering evaluation by GLJ Petroleum Consultants. Instrumental in the reserves booking was the fact that the company has submitted to regulators a commercial application for its proposed 35,000-barrel-per-day Taiga project in the Cold Lake region of Alberta. Taiga leases have been fully delineated to commercial project approval requirements. Says Osum chief executive officer and chairman Richard Todd, "This proved-plus-probable reserves designation is reflective of the de-risking of Osum's high-quality Taiga project at Cold Lake."
- A public hearing to discuss Total E&P Canada's planned upgrader was held in June by the Energy Resources Conservation Board. The company is seeking authorization to construct in Strathcona County a 295,000-barrel-per-day upgrader in three phases. It is expected that at full capacity, the Total Upgrader will process and convert 295,000 barrels per day of bitumen into light, sweet synthetic crude oil. ■



Project listings

Updated status of oil sands projects in Alberta

As of June 1, 2010.

TECHNOLOGY LEGEND

COGD Combustion overhead gravity drainage

CSS Cyclic steam stimulation

ET-DSP Electro-thermal dynamic stripping process N-SOLV Heated solvent vapour extraction

SAGD Steam assisted gravity drainage THAI Toe to heel air injection

COMPANY	CURRENT PROJECT	CAPACITY (bbl/d)	START- UP	REGULATORY STATUS	DEVELOPMENT PROGRESS	TECHNOLOGY
ATHABASCA	REGION — IN :	SITU				
ALBERTA OILSANDS						
<u></u>	Pilot	4,500	2011	Application	Alberta Oilsands has received its first reserves assessment for the Clearwater	SAGD
Clearwater West	Commercial Project	15,000	TBD	Announced	West project area. Ryder Scott has assigned 2P reserves of 16.3 million and 3P reserves of 67.6 million barrels.	SAGD
ATHABASCA OIL SANI	os					
	Phase 1	35,000	2014	Announced		SAGD
MacKay River	Phase 2	40,000	2017	Application		SAGD
	Phase 3	40,000	2019	Application	AOSC has completed its 2010 winter program, including drilling 52 wells and shooting 21 square kilometres of 3-D seismic in its 40 per cent owned Dover area.	SAGD
	Phase 4	35,000	2012	Application	ing 21 square kilometres of 3-D seismic in its 40 per cent owned bover area.	SAGD
Dover	Phase 1	TBD	2015	Announced		SAGD
BLACKPEARL RESOUR	CES					
Blackrod	Pilot	600	TBD	Application	BlackPearl says it plans to build the SAGD pilot at Blackrod later this year or early next. Construction of a 31-kilometre all-weather road to proposed site is complete, along with water source well, disposal well, and two observation wells. Engineering ongoing.	SAGD
CANADIAN NATURAL	RESOURCES					
Birch Mountain East	Phase 1	60,000	2016	Announced		ТВА
Gregoire Lake 1	Phase 1	60,000	2018	Announced		ТВА
Grouse	Phase 1	60,000	2014	Announced		ТВА
Kirby	Phase 1	45,000	2012	Application	Canadian Natural is proceeding with detailed engineering and design, and plans to sanction and scope in late 2010.	SAGD
Leismer	Phase 1	30,000	2018	Announced	saliction and scope in late 2010.	ТВА
CENOVUS ENERGY						
	Phase A	35,000	TBD	Application		SAGD
Borealis	Phase B	32,500	TBD	Announced	Approximately 200 delineation wells have been drilled in the greater Borealis area as	SAGD
	Phase C	32,500	TBD	Announced	of Dec. 2009. Cenovus continues to evaluate the region in support of the project.	SAGD
	Phase 1A	10,000	2002	Operating		SAGD
	Phase 1B	8,800	2008	Operating		SAGD
	Phase 1C	40,000	2011	Construction		SAGD
Christina Lake	Phase 1D	40,000	2013	Approved	Approvals for E, F, and G are expected in 2011, and a wedge-well pilot has been	SAGD
	Phase 1E	40,000	TBD	Application	launched at Christina Lake.	SAGD
	Phase 1F	40,000	TBD	Application		SAGD
	Phase 1G	40,000	TBD	Application		SAGD
	Phase A	40,000	TBD	Announced		SAGD
Narrows Lake	Phase B	80,000	TBD	Announced	Cenovus plans to submit the application for Narrows Lake by the end of Q2.	SAGD
	Phase 1A	24,000	2001	Operating		SAGD
	Debottlenecking	6,000	2003	Operating	The Feeter Creek avainst hee peligrad and if from the control to the control of t	SAGD
	Phase 1C — Stage 1	10,000	2005	Operating	The Foster Creek project has achieved payout for royalty purposes, the result of cumulative project revenue exceeding cumulative project allowable costs. Cenovus	SAGD
	Phase 1C — Stage 2	20,000	2007	Operating	says achieving payout is a reflection of strong operational performance and a superior resource. Approvals of phases F, G, and H are expected later this year. 12 per cent of	SAGD
Foster Creek	Phase 1D	30,000	2009	Operating	production now comes from wedge wells.	SAGD
	Phase 1E	30,000	2009	Operating		SAGD
	Phase 1F	30,000	2016	Application	Phases F, G, and H continue to move through the regulatory process.	SAGD
	Phase 1G	30,000	2017	Application		SAGD
	Phase 1H	30,000	TBD	Application		SAGD
CHEVRON CANADA						
Ells River		100,000	TBD	Announced	Chevron has decided to place Ells River on hold. The company does not believe the project will provide the necessary returns in the foreseeable future to compete for capital investment relative to others in its global portfolio.	ТВА

COMPANY	CURRENT PROJECT	CAPACITY (bbl/d)	START- UP	REGULATORY STATUS	DEVELOPMENT PROGRESS	TECHNOLOGY
CONNACHER OIL AND	GAS					
	Pod 1	10,000	2007	Operating	Connacher has filed an environmental impact assessment application to the	SAGD
Great Divide	Pod 2 (Algar)	10,000	2010	Operating	ERCB and Alberta Environment for its proposed 24,000 bbl/d expansion. It	SAGD
	Expansion	24,000	2013	Disclosed	hopes to commence construction in 2012.	SAGD
CONOCOPHILLIPS CAN	NADA					
	Phase 1	27,000	2007	Operating	According to the ERCB, production averaged 14,638 barrels per day in 2009.	SAGD
Surmont	Phase 2	83,000	2014 - 2016	Under construction	ConocoPhillips and 50/50 joint venture partner Total have sanctioned	SAGD
	Pilot	1,200	1997	Operating	Surmont Phase 2.	SAGD
DEVON CANADA						
	Phase 1	35,000	2007	Operating		SAGD
Jackfish	Phase 2	35,000	2011	Under	Devon reports Jackfish 2 construction is now over 75 per cent complete.	SAGD
	Phase 3	35,000	TBD	Construction Announced	Jackfish 3 regulatory application to be filed in Q3-2010.	SAGD
Kirby	Phase 1	TBD	2015	Announced	Delineation drilling expected to begin in the second half of 2010.	
ENERPLUS RESOURCES						
	Phase 1	10,000	TBD	Application	Enerplus says while it sees value in the project and it continues to move	SAGD
Kirby	Phase 2	25,000	TBD	Announced	through regulatory process, minimal spending will occur in 2010. Enerplus	SAGD
E-T ENERGY		,			anticipates approval in 2010.	
	Pilot	1,000	2007	Operating		
Poplar Creek		10,000	2011	Application	Expanded field test of ET-DSP electric production technology continues.	ET-DSP
EXCELSIOR ENERGY						
					Excelsior expects to hear whether it will receive funding from the Alberta	
Hangingstone	Phase 1	1,000	2011	Application	government's Innovative Energy Technology Program and from the Climate Change and Emissions Management Corporation by mid-year.	COGD
GRIZZLY OIL SANDS					Change and Emissions Management Corporation by mid-year.	
Algar Lake		10,000	TBD	Application	Application filed March 2010.	SAGD
HUSKY ENERGY						
McMullen	Pilot	755	TBD	Application	Husky is currently working on a cold-production project at McMullen.	SAGD
					Husky says FEED for the first phase of Sunrise is complete and tenders	
Sunrise	Phase 1	60,000	2014	Approved	for major engineering and construction contracts have been issued. Work continues on securing optimum transportation solutions for the movement of diluent to site and movement of diluted bitumen to the refinery. Sanction expected this year.	SAGD
	Phases 2-3	140,000	TBD	Approved		SAGD
IVANHOE ENERGY						
Tamarack	SAGD with HTL upgrading	20,000	2014	Announced	Winter drilling program (28 wells) complete. Application to be filed mid-2010.	SAGD
JAPAN CANADA OIL SA						
	Pilot	10,000	1999	Operating		SAGD
Hangingstone	Phase 1	35,000	TBD	Application	Application filed April 29, 2010.	SAGD
KOREA NATIONAL OIL	CORPORATION					
	Phase 1	10,000	2012	Approved	Phase 1 approved January 2010. Reports are that KNOC is looking to pick up	SAGD
BlackGold	Phase 2	20,000	TBD	Application	more oilsands assets.	SAGD
LARICINA ENERGY						
	SAGD pilot	5,000	2012	Application	1,800 bbl/d project approved. Application to expand to 5,000 bbl/d and	SAGD
Germain					include cyclic-solvent SAGD underway.	
	Phase 1 Carbonate SAGD	10,000	TBD	Announced Under		SAGD
Saleski	demonstration	1,800	2010	construction	Construction anticipated to be complete in Q4-2010.	SAGD
	Phase 1	10,000	TBD	Announced		SAGD
MEG ENERGY						
	Phase 1	3,000	2008	Operating		SAGD
	Phase 2	22,000	2009	Operating	Production volumes ramping up.	SAGD
Christina Lake	Phase 2B	35,000	TBD	Approved		SAGD
	Phase 3A	75,000	TBD	Application		SAGD
		75,000	TBD	Application		SAGD
	Phase 3B					
NEXEN	Phase 3B					
NEXEN	Phase 3B Phase 1	72,000	2007	Operating	Nexen says it is "steadily climbing the growth curve" at Long Lake as it	SAGD
			2007 TBD	Operating Announced	Nexen says it is "steadily climbing the growth curve" at Long Lake as it increases steam volumes post-turnaround, production of which has been limited, constraining production. Nexen says production levels have risen	SAGD SAGD
NEXEN Long Lake	Phase 1	72,000			increases steam volumes post-turnaround, production of which has been	

COMPANY	CURRENT PROJECT	CAPACITY (bbl/d)	START- UP	REGULATORY STATUS	DEVELOPMENT PROGRESS	TECHNOLOGY
Long Lake South	Phase 1	70,000	TBD	Approved		SAGD
Long Luke 30util	Phase 2	70,000	TBD	Approved		SAGD
N-SOLV						
	Pilot plant	2,000	TBD	Announced		N-SOLV
PARAMOUNT RESOURCE						
Hoole	Commercial project	TBD	TBD	Announced	Application to be filed in 2011.	SAGD
PATCH INTERNATIONAL					All of Patch assets have been successfully sold to a yet-unnamed working	
Ells River		10,000	TBD	Announced	interest partner for \$6 million.	SAGD
PETROBANK ENERGY A	ND RESOURCES					
Whitesands	Pilot	1,800	2006	Operating	Petrobank says it will recomplete its Whitesands wells with a permanent pump configuration based on experience with THAI at Kerrobert, Saskatchewan. This is expected to give more stable production than gas lift alone.	THAI
	Expansion	1,800	TBD	Approved	Expansion on hold in favour of capitalizing on existing infrastructure.	THAI
May River	Phase 1	10,000	2012	Application	Engineering, procurement, and construction management has been awarded for wellsites, pipelines, and central processing facility. Ordering of long lead	THAI
	Subsequent Phases	90,000	TBD	Disclosed	items will commence during Q2. Start up could occur in mid-2012.	THAI
SOUTHERN PACIFIC RES	OURCE					
STP-McKay		12,000	2012	Application	Southern Pacific has closed a \$100-million bought deal equity financing and appointed Suncor veteran Ron Clarke as COO.	SAGD
STATOIL CANADA						
Kai Kos Dehseh-Leismer	Demonstration	10,000	2010	Under construction	Statoil says it is implementing a technology plan that will allow it to reduce oilsands carbon emissions more than 40 per cent by 2025.	SAGD
	Commercial	10,000	TBD	Application		SAGD
Leismer	Expansion	20,000	TBD	Application		SAGD
Corner		40,000	TBD	Application		SAGD
Thornbury		40,000	TBD	Application		SAGD
Corner	Expansion	40,000	TBD	Application		SAGD
Hangingstone		20,000	TBD	Application		SAGD
Thornbury	Expansion	20,000	TBD	Application		SAGD
Northwest Leismer		20,000	TBD	Application		SAGD
South Leismer		20,000	TBD	Application		SAGD
SUNCOR ENERGY	Phase 1	40,000	TBD	Announced		SAGD
Chard	Phase 1	33,000	2004	Announced Operating		SAGD
	Phase 2	35,000	2006	Operating		SAGD
	Cogeneration and	25,000	2007	Operating		SAGD
	Expansion			Under	Firebag Phase 3 expected to be complete in the second quarter of 2011,	
Firebag	Phase 3	68,000	2011	construction Under	followed by an 18-month ramp-up.	SAGD
	Phase 4	68,000	2012	construction		SAGD
	Phase 5	68,000	TBD	Approved	Suncor has received regulatory approval for stages 4 through 6 of its Firebag project.	SAGD
	Phase 6	68,000	TBD	Approved		SAGD
Lewis	Phase 1	40,000	TBD	Application		SAGD
FGMI2	Phase 2	40,000	TBD	Application		SAGD
M 1/ 5:	Phase 1	33,000	2002	Operating		SAGD
MacKay River	Phase 2	40,000	TBD	Approved	Suncor will not be providing any further updates on next projects to move forward until late 2010.	SAGD
Magday Corel	Phase 1	40,000	TBD	Approved		SAGD
Meadow Creek	Phase 2	40,000	TBD	Approved		SAGD
SUNSHINE OILSANDS						
Harper pilot	Production mobility test	<1,000	TBD	Approved	Project is expected to commence construction in 2010.	SAGD
Legend Lake	Phase 1	10,000	TBD	Announced		SAGD
Legena Eure	Phase 2 (two stages)	40,000	TBD	Announced		SAGD
	Phase 1	10,000	TBD	Application	John Kowal, co-CEO of Sunshine Oilsands, will be presenting at TD	SAGD
West Ells	Phase 2 (two stages)	40,000	TBD	Announced	Newcrest's 8th Annual Unconventional Oil & Gas Forum in Calgary on Thursday, July 15, 2010.	SAGD
	Phase 3	30,000	TBD	Announced	a.3aay, july 13, 2010.	SAGD
	Phase 1	10,000	TBD	Announced		SAGD
Thickwood	Phase 2 (two stages)	40,000	TBD	Announced		SAGD
	Phase 3	25,000	TBD	Announced		SAGD

SAGD SAGD SAGD SAGD SAGD SAGD SAGD SAGD
SAGD SAGD SAGD SAGD SAGD SAGD SAGD Mining Mining Mining Mining Mining Mining
SAGD SAGD SAGD SAGD SAGD Mining Mining Mining Mining Mining Mining
SAGD SAGD SAGD Mining Mining Mining Mining Mining Mining Mining
SAGD SAGD SAGD Mining Mining Mining Mining Mining Mining Mining
SAGD SAGD Mining Mining Mining Mining Mining Mining Mining
SAGD SAGD Mining Mining Mining Mining Mining Mining Mining
Mining Mining Mining Mining Mining Mining Mining
Mining Mining Mining Mining Mining Mining Mining
Mining Mining Mining Mining Mining
Mining Mining Mining Mining Mining
Mining Mining Mining Mining Mining
Mining Mining Mining Mining
Mining Mining Mining
Mining Mining
Mining Mining
Mining
Mining
Mining
Mining
Mining
Mining
Mining
Mining
Mining
Mining
Mining
Mining
B.Alinsin
Mining
Mining
Mining Mining
Mining Mining Mining
Mining Mining
uuy

COMPANY	CURRENT PROJECT	CAPACITY (bbl/d)	START- UP	REGULATORY STATUS	DEVELOPMENT PROGRESS	TECHNOLOGY
UTS/TECK RESOURCE	S					
	Phase 1	100,000	TBD	Disclosed	UTS expects to be in a position to file its application for the integrated	Mining
Frontier	Phase 2	60,000	TBD	Disclosed	Frontier/Equinox project (where Equinox is a satellite to Frontier) in early	Mining
	Equinox Satellite	50,000	TBD	Disclosed	2011. Approval expected in 2014 followed by full-scale development.	Mining
COLD LAKE	REGION – IN SI	TU				
BR OIL SANDS (SHELL	1					
	Phase 1	10,000	2008	Operating	Production averaged 2,281 in February 2010.	SAGD
Orion	Phase 2	10,000	TBD	Approved	Shell is reportedly slowing its oilsands investments in favour of less costly	SAGD
CANADIANNATURAL		10,000		Арріотей	conventional resources.	JAGD
CANADIAN NATURAI	Wolf Lake	13,000	1985	Ou suretine		CSS
	Wolf Lake SAGD	5,500	TBD	Operating Application		SAGD
	Primrose South	45,000	1985	Operating		CSS
	Primrose North	30,000	2006	Operating		CSS
Primrose/Wolf Lake	Tilliose Worth	50,000	2000	Operating	After initial steaming at Primrose East, the company discovered oil seepage	<u> </u>
	Primrose East (Burnt Lake)	32,000	2009	Operating	at surface on one of the new multiwell pads. Canadian Natural continues to work with regulators and has commenced surveillance steaming with average production targeted for 16,000 to 20,000 bbl/d in 2010, with a slow return to normal steaming operations by late 2010 or early 2011	css
	CSS Follow-up Process	25,000	2018	Application		CSS
HUSKY ENERGY						
Caribou	Demonstration Project	10,000	TBD	Approved		SAGD
Tucker	Phase 1	30,000	2006	Operating	Husky says that three additional well pairs were drilled in Q1. The wells are being equipped for tie-in and steaming will begin in Q3 with first production expected by year end.	SAGD
IMPERIAL OIL						
	Phases 1-10: Leming, Maskwa, Mahihkan	110,000	1985	Operating		css
Cold Lake	Phases 11-13: Mahkeses	30,000	2003	Operating	Imperial reports that production has returned to normal levels.	CSS
	Phases 14-16: Nabiye,	30,000	TBD	Approved		CSS
VOCUEVRI OR ITION	Mahihkan North	50,000		7.4410100		
KOCH EXPLORATION	Pilot	1 200	TBD	A P .:		SAGD
Gemini	FIIOL	1,200	IBD	Application		SAGD
	SAGD Project	10,000	TBD	Application		SAGD
OSUM OIL SANDS						
Taiga	SAGD/CSS Project	25,000- 35,000	2014	Application	Osum says it has been assigned proved-plus-probable-reserves totalling 320 million barrels in this year's independent engineering evaluation by GLI.	SAGD
PENGROWTH ENERGY	Y TRUST	,				
Lindbergh	SAGD Pilot	2,500	2012	Application	Approval anticipated in 2010. Pengrowth will spend \$15 million on project in 2010.	SAGD
PEACE RIVEI	R REGION — IN	SITU				
ANDORA ENERGY (PA	AN ORIENT)					
Sawn Lake	SAGD Demonstration	700	TBD	Approved	Working on procurement of long-lead items.	SAGD
NORTH PEACE ENERG	Υ					
	CSS Pilot	1,000	2008	Operating	North Peace says second CSS cycle on one of its wells is underway, and the	CSS
Red Earth	Expansion	3,000	TBD	Announced	steam to oil ratio is performing 45 per cent better than during first cycle.	CSS
	·				North Peace has initiated a process to explore strategic alternatives to enhance shareholder value. Could include a sale or merger.	
SUELL CANADA	Commercial Project	10,000	TBD	Announced	and a suit of mergers	CSS
SHELL CANADA	Cadattallalia	12 501	1006	Oncorti		CSS
Carmon Creek	Cadotte Lake	12,501	1986	Operating	N. J. C. Cl. II. 2000 Cl. II.	CSS
edimon creek	Phases 1 and 2	80,000	TBD	Application	New application filed January 2010. Shell expects construction of first 40,000-barrel-per-day plant to commence in 2011, with a second 40,000-barrel facility three years following.	css
NORTHWEST	SASKATCHEWA	N - IN	SITU			
OILSANDS QUEST						
	Reservoir Test	600	2008	Operating	Oilsands Quest says testing shows Axe Lake could be developed using "typical" SAGD.	
Axe Lake	SAGD Test	TBD	TBD	Application	Oilsands Quest has filed environmental applications for both projects with	
	Commercial SAGD	30,000	TBD	Application	the Saskatchewan government and plans to file the application for the commercial project with Saskatchewan Ministry of Energy and Resources following a successful SAGD test.	

COMPANY	CURRENT PROJECT	CAPACITY (bbl/d)	START- UP	REGULATORY STATUS	DEVELOPMENT PROGRESS	TECHNOLOGY
ATHABASCA F	REGION — UPG	RADING				
CANADIAN NATURAL R	ESOURCES					
	Phase 1	135,000	2008	Operating	Annual production guidance for 2010 is 90,000 to 105,000 barrels per day as Canadian Natural moves closer to sustainable production.	Upgrader
Horizon	Tranche 2 & 3	135,000	TBD	Approved	Canadian Natural hopes to sanction Tranche 2 by the end of 2010. Tranches 3 and 4 continue to be re-profiled based on learnings from Phase 1.	Upgrader
	Tranche 4	145,000	TBD	Announced		Upgrader
NEXEN						
	Phase 1	72,000	2008	Operating		Upgrader
	Phase 2	72,000	TBD	Approved	Nexen says since its turnaround in Q4, the upgrader has experienced 90 per	Upgrader
	Phase 3	72,000	TBD	Announced	cent uptime, compared to 50 per cent before and is producing high-quality	Upgrader
Long Lake	Phase 4	72,000	TBD	Announced	premium synthetic crude (PSCTM). The company says the gasification process is working, creating a low-cost fuel source which reduces its need to	Upgrader
	Phase 5	72,000	TBD	Announced	purchase natural gas for operations.	Upgrader
	Phase 6	72,000	TBD	Announced		Upgrader
SUNCOR ENERGY						
	Base U1 and U2	281,000	1967	Operating	Suncor says both of its upgraders are now back up and running after	Upgrader
Suncor — original operations	Millennium Vacuum Unit	43,000	2005	Operating	maintenance relating to two fires, one in December and the other in	Upgrader
орегинопа	Millennium Coker Unit	116,000	2008	Operating	February.	Upgrader
Voyageur	Phase 1	156,000	TBD	Suspended	Capital plans and sequencing for the next stages of Suncor's growth to be announced in Q4-2010.	Upgrader
, •	Phase 2	78,000	TBD	Approved		Upgrader
SYNCRUDE						
	Stages 1 and 2	290,700	1978	Operating	Project partner Nexen says production was lower in Q1 than the previous	Upgrader
Mildred Lake	Stage 3 Expansion	116,300	2006	Operating	quarter as a turnaround of the LC finer originally planned for Q2 was advanced to January. The turnaround was completed in mid March. Nexen	Upgrader
	Stage 3 Debottleneck	46,500	TBD	Announced	says a coker turnaround is scheduled at Syncrude in Q3. Sinopec plans to buy	Upgrader
	Stage 4 Expansion	139,500	TBD	Announced	ConocoPhillips's 9.03 per cent share of Syncrude for \$4.65 billion.	Upgrader
VALUE CREATION	DI 1	2.000	TDD			
VALUE CREATION Terre de Grace Upgrader	Phase 1	2,000	TBD	Application	BP will become majority partner in Terre de Grace project for \$900 million.	Upgrader
Terre de Grace Upgrader	Phase 2	10,000	TBD	Application		Upgrader Upgrader
Terre de Grace Upgrader		10,000	TBD	Application		
Terre de Grace Upgrader	Phase 2 HEARTLAND R	10,000 EGION —	TBD UPGR	Application		Upgrader
Terre de Grace Upgrader INDUSTRIAL ATHABASCA OIL SAND	Phase 2 HEARTLAND R	10,000	TBD	Application A D I N G Operating	\$900 million. Project partner Marathon Oil reports Expansion 1 is on track and anticipated	
Terre de Grace Upgrader	Phase 2 HEARTLAND R	10,000 EGION —	TBD UPGR	Application A D I N G	\$900 million.	Upgrader
Terre de Grace Upgrader INDUSTRIAL ATHABASCA OIL SAND	Phase 2 HEARTLAND R S PROJECT	10,000 E G I O N —	TBD UPGR 2003	Application A D I N G Operating Under	\$900 million. Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader	Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1	Phase 2 HEARTLAND R S PROJECT Expansion	10,000 E G I O N — 155,000 90,000	TBD UPGR 2003 2010	Application A D I N G Operating Under construction	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011.	Upgrader Upgrader Upgrader
Terre de Grace Upgrader INDUSTRIAL ATHABASCA OIL SAND	Phase 2 HEARTLAND R S PROJECT Expansion Phase 1	10,000 E G I O N — 155,000 90,000 100,000	TBD U P G R 2003 2010 TBD	Application A D I N G Operating Under construction Application	\$900 million. Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader	Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1	Phase 2 HEARTLAND R S PROJECT Expansion Phase 1 Phase 2	10,000 EGION — 155,000 90,000 100,000	TBD U P G R 2003 2010 TBD TBD	Application A D I N G Operating Under construction Application Application	Sp00 million. Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to	Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1	Phase 2 HEARTLAND R S PROJECT Expansion Phase 1 Phase 2 Phase 3	10,000 EGION — 155,000 90,000 100,000 100,000	TBD U P G R 2003 2010 TBD TBD TBD	Application A D I N G Operating Under construction Application Application Application	Sp00 million. Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to	Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2	Phase 2 HEARTLAND R S PROJECT Expansion Phase 1 Phase 2 Phase 3	10,000 EGION — 155,000 90,000 100,000 100,000	TBD U P G R 2003 2010 TBD TBD TBD	Application A D I N G Operating Under construction Application Application Application	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010.	Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2	Phase 2 HEARTLAND R S PROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4	10,000 E G I O N — 155,000 90,000 100,000 100,000 100,000	UPGR 2003 2010 TBD TBD TBD TBD TBD	Application A D I N G Operating Under construction Application Application Application Application	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de	Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4	10,000 E G I O N — 155,000 90,000 100,000 100,000 100,000 54,400	UPGR 2003 2010 TBD TBD TBD TBD TBD	Application A D I N G Operating Under construction Application Application Application Application Application	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900	Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 1 Phase 2 Phase 3	10,000 E G I O N — 155,000 90,000 100,000 100,000 100,000 54,400 54,400	UPGR 2003 2010 TBD TBD TBD TBD TBD TBD TBD	Application A D I N G Operating Under construction Application Application Application Application Application Application Approved Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de	Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader INDUSTRIAL ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 1 Phase 2 Phase 3	10,000 E G I O N — 155,000 90,000 100,000 100,000 100,000 54,400 54,400	UPGR 2003 2010 TBD TBD TBD TBD TBD TBD TBD	Application A D I N G Operating Under construction Application Application Application Application Application Application Approved Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project.	Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader INDUSTRIAL ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader	Phase 2 HEARTLAND R S PROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 1 Phase 2 Phase 3 Phase 1 Phase 2 Phase 3 ING	10,000 EGION — 155,000 90,000 100,000 100,000 100,000 54,400 54,400 54,400	TBD UPGR 2003 2010 TBD TBD TBD TBD TBD TBD TBD TBD TBD	Application A D I N G Operating Under construction Application Application Application Application Application Application Approved Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de	Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD	Phase 2 HEARTLAND R S PROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 1 Phase 2 Phase 3 Phase 1	10,000 E G I O N — 155,000 90,000 100,000 100,000 100,000 54,400 54,400 54,400 50,000	TBD UPGR 2003 2010 TBD TBD TBD TBD TBD TBD TBD TB	Application A D I N G Operating Under construction Application Application Application Application Application Approved Approved Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2	10,000 E G I O N — 155,000 90,000 100,000 100,000 100,000 54,400 54,400 50,000 50,000	TBD U P G R 2003 2010 TBD TBD TBD TBD TBD TBD TBD TB	Application A D I N G Operating Under construction Application Application Application Application Approved Approved Approved Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2	10,000 E G I O N — 155,000 90,000 100,000 100,000 100,000 54,400 54,400 50,000 50,000	TBD U P G R 2003 2010 TBD TBD TBD TBD TBD TBD TBD TB	Application A D I N G Operating Under construction Application Application Application Application Approved Approved Approved Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3	10,000 E G I O N — 155,000 90,000 100,000 100,000 54,400 54,400 54,400 50,000 50,000	TBD U P G R 2003 2010 TBD	Application A D I N G Operating Under construction Application Application Application Application Approved Approved Approved Approved Approved Approved Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative.	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3	10,000 E GION — 155,000 90,000 100,000 100,000 54,400 54,400 50,000 50,000 105,000	TBD U P G R 2003 2010 TBD	Application A D I N G Operating Under construction Application Application Application Application Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY Fort Hills Upgrader STATOIL CANADA	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3	10,000 E GION — 155,000 90,000 100,000 100,000 54,400 54,400 50,000 50,000 105,000	TBD U P G R 2003 2010 TBD	Application A D I N G Operating Under construction Application Application Application Application Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be announced in Q4-2010.	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY Fort Hills Upgrader STATOIL CANADA	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3	10,000 E G I O N — 155,000 90,000 100,000 100,000 54,400 54,400 54,400 50,000 50,000 105,000 105,000 105,000	TBD UPGR 2003 2010 TBD	Application A D I N G Operating Under construction Application Application Application Application Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY Fort Hills Upgrader STATOIL CANADA Upgrader	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3	10,000 E G I O N — 155,000 90,000 100,000 100,000 54,400 54,400 54,400 50,000 50,000 165,000 175,000	TBD U P G R 2003 2010 TBD TBD TBD TBD TBD TBD TBD TB	Application A D I N G Operating Under construction Application Application Application Application Approved	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be announced in Q4-2010.	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY Fort Hills Upgrader STATOIL CANADA Upgrader TOTAL E&P CANADA Northern Lights	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3	10,000 E GION — 155,000 90,000 100,000 100,000 54,400 54,400 54,400 50,000 50,000 175,000 175,000 175,000 56,600	TBD U P G R 2003 2010 TBD TBD TBD TBD TBD TBD TBD TB	Application A D I N G Operating Under construction Application Application Application Application Approved Withdrawn	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be announced in Q4-2010.	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY Fort Hills Upgrader STATOIL CANADA Upgrader TOTAL E&P CANADA Northern Lights	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3	10,000 E GION — 155,000 90,000 100,000 100,000 100,000 54,400 54,400 54,400 50,000 50,000 175,000 175,000 175,000 56,600 56,600	TBD UPGR 2003 2010 TBD	Application A D I N G Operating Under construction Application Application Application Application Approved Approved Approved Approved Approved Approved Approved Withdrawn Withdrawn	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be announced in Q4-2010.	Upgrader
Terre de Grace Upgrader I N D U S T R I A L ATHABASCA OIL SAND Scotford Upgrader 1 Scotford Upgrader 2 BA ENERGY Heartland Upgrader NORTH WEST UPGRAD Upgrader SUNCOR ENERGY Fort Hills Upgrader STATOIL CANADA Upgrader	Phase 2 HEARTLAND R SPROJECT Expansion Phase 1 Phase 2 Phase 3 Phase 4 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 ING Phase 1 Phase 2 Phase 3 Phase 1 Phase 2 Phase 3	10,000 E GION — 155,000 90,000 100,000 100,000 54,400 54,400 54,400 50,000 50,000 175,000 175,000 175,000 56,600	TBD U P G R 2003 2010 TBD TBD TBD TBD TBD TBD TBD TB	Application A D I N G Operating Under construction Application Application Application Application Approved Withdrawn	Project partner Marathon Oil reports Expansion 1 is on track and anticipated to begin mining operations in the second half of 2010, and upgrader operations in late 2010 or early 2011. Alberta's Industrial Heartland Association says hearing for all phases to occur sometime in 2010. BA owner company Value Creation has received a cash injection of \$900 million with the agreement for BP to become majority partner in Terre de Grace project. The Alberta government reports that negotiations are underway with NWU to build the upgrader as part of its bitumen royalty in-kind initiative. Capital plans and sequencing for the next stages of Suncor's growth to be announced in Q4-2010.	Upgrader



Glossary of oil sands terms

API

An American Petroleum Institute measure of typical light crude is from 35 to 40. Bitumen is 7.5 to 8.5. liquid gravity. Water is 10 degrees API, and a

Barrel

The traditional measurement for crude oil volumes. One barrel equals 42 US 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

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.

Density

The heaviness of crude oil, indicating the proportion of large, carbon-rich molecules, generally measured in kilograms per cubic metre (kg/m³) or degrees on the American Petroleum Înstitute (API) gravity scale; in western Canada, oil up to 900 kg/m³ 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.

A process, unique to the oil sands industry, which separates the bitumen from the oils and 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).

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 byproducts.

Greenhouse gases

Gases commonly believed to be connected to climate change and global warming. CO2 is the most common, but greenhouse gases also include other light hydrocarbons (such as methane) and nitrous oxide.

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.

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 CO₂) downhole, which then 'pushes" the oil towards the recovery well.

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.

A water-soaked layer of decaying plant material, one to three metres thick, found on top of the overburden.

Oil Sands

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.

A layer of sand, gravel, and shale between the surface and the underlying oilsand. Must be removed before oil sands 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.

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.

The Crown's share of production or revenue. About three quarters of Canadian crude oil is produced from lands, including the oil sands, 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.

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 byproduct 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 the water can be reused in extraction. The settling basin also acts as a thickener, preparing mature fine tails 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 oils and 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 oil sands 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)

Vapour extraction (VAPEX)

VAPEX is a non-thermal recovery method that involves injecting a gaseous hydrocarbon solvent into the reservoir where it dissolves into the sludge-like oil, which becomes less viscous (or more fluid) before draining into a lower horizontal well and being extracted.

The ability of a liquid to flow. The lower the viscosity, the more easily the liquid will flow.

CONTACTS

Oil Sands Producers

- Alberta Oilsands
- **Albian Sands Energy**
- **Andora Energy**
- **Athabasca Oil Sands**
- **Baytex Energy**
- **Canadian Natural Resources**
- **Chevron Canada**
- Connacher Oil and Gas
- ConocoPhillips Canada
- **Devon Canada**
- EnCana
- **Enerplus Resources Fund**
- E-T Energy
- **Excelsior Energy**
- **Husky Energy**
- Imperial Oil
- Ivanhoe Energy
- Japan Canada Oil Sands
- Korea National Oil Corporation
- Laricina Energy
- **Marathon Oil**
- **MEG Energy**
- Nexen
- **North Peace Energy**
- **North West Upgrading**
- N-Solv
- Occidental Petroleum Corporation www.oxy.com
- Oilsands Quest
- **Opti Canada**
- **OSUM Oil Sands**
- **Pan Orient Energy**
- **Patch International**
- **Pengrowth Energy Trust**
- Petro-Canada
- **Petrobank Energy and Resources**
- Shell Canada
- **Southern Pacific Resource**

www.ahoilsands.ca www.albiansands.ca www.andoraenergy.com www.aosc.com

www.baytex.ab.ca www.cnrl.com

www.chevron.ca www.connacheroil.com

www.conocophillips.ca www.dvn.com

www.encana.com

www.enerplus.com

www.e-tenergy.com

www.excelsiorenergy.com

www.huskyenergy.ca www.imperialoil.ca

www.ivanhoe-energy.com

www.jacos.com

www.knoc.co.kr

www.laricinaenergy.com

www.marathon.com

www.megenergy.com

www.nexeninc.com www.northpec.com

www.northwestupgrading.com

www.n-solv.com

www.oilsandsquest.com

www.opticanada.com

www.osumcorp.com

www.panorient.ca

www.patchenergy.com www.pengrowth.com

www.petro-canada.com

www.petrobank.com

www.shell.ca

www.shpacific.com

Statoil Canada

- **Suncor Energy**
- **Sunshine Oilsands**
- Syncrude
- **Talisman Energy**
- **Teck Cominco**
- Total E&P Canada
- **UTS Energy**
- Value Creation Group

www.statoil.com

www.suncor.com

www.sunshineoilsands.com

www.syncrude.ca

www.talisman-energy.com

www.teckcominco.com

www.total-ep-canada.com

www.uts.ca

www.vctek.com

Associations/Organizations

- Alberta Building Trades Council
- **Alberta Chamber of Resources**
- **Alberta Chambers of Commerce**
- **Alberta Energy**
- Alberta Energy Research Institute
- **Alberta Environment**
- **Alberta Finance and Enterprise**
- Alberta Research Council
- Alberta's Industrial
- Heartland Association
- **Canadian Association of Geophysical Contractors**
- **Canadian Association of**
- Petroleum Producers
- **Canadian Heavy Oil Assocation**
- Canadian Oil Sands Network for **Research and Development**
- **Energy Resources Conservation**
- **Lakeland Industry and Community** Association
- **Natural Resources Conservation Board**
- Oil Sands Developers Group
- **Petroleum Technology Alliance** Canada

www.albertabuildingtrades.com

www.acr-alberta.com

www.abchamber.ca

www.energy.gov.ab.ca

www.aeri.ab.ca

www.environment.alberta.ca

www.finance.gov.ab.ca www.arc.ab.ca

www.industrialheartland.com

www.cagc.ca

www.capp.ca

www.choa.ab.ca

www.conrad.ab.ca

www.erch.ca

www.lica.ca

www.nrcb.gov.ab.ca www.oilsandsdevelopers.ca

www.ptac.org

For more information, visit us at

albertacanada.com

