2007 Alberta Mineral Exploration Highlights and Industrial Minerals Production Update

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Alberta Geological Survey

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(www.ags.gov.ab.ca)

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Mineral Assessment files can be viewed or purchased from the Alberta Geological Survey (www.ags.gov.ab.ca/publications)

Mineral exploration activity in Alberta in 2007 has been focused mainly on the search for diamonds and uranium. To date, numerous kimberlite pipes have been discovered in the province, and the elevated price of uranium has increased exploration activity in the Athabasca basin and southern Alberta. Exploration activity has also been active for magnetite, iron and other base metals. Several companies are bringing their properties to advanced stages of development. Industrial minerals production continues to be strong in Alberta, in particular, commodities related to domestic growth, such as aggregate, cement, lime and coal.

This report is intended to provide a general overview of the main focus of exploration activity in Alberta, as well as a brief overview of industrial mineral production trends. It is not intended as an exhaustive discussion of all industry activity, and not all companies involved in exploration or production activity are discussed in this report. Much of the information provided is taken directly from company websites. No endorsement of companies discussed herein is implied or intended.

Diamonds

Buffalo Head Hills Kimberlite Field

The Buffalo Head Hills kimberlite field consists of 38 kimberlitic occurrences discovered between 1997 and 2003 by Ashton Mining of Canada Inc. In June 2007, Diamondex Resources Ltd. and Shore Gold Inc., with Diamondex appointed Operator, announced the acquisition of the interest of Ashton Mining of Canada Inc. (now Stornoway Diamond Corporation) in the Buffalo Hills Project located in north central Alberta for a total consideration of $17.5 Million.

Diamondex recently announced they had reached an agreement with the Loon River First Nation to explore for diamonds on Loon River First Nation Reserve Lands. There has been no mention as to what Diamondex intends to do with a recent February 2007 bulk samples from the K6, K14 and K91 kimberlites completed by Ashton/Stornoway. Kimberlite K14 initially yielded 12 cpht from a 479 t bulk sample and K91 yielded 13 cpht from a 36 t sample.

Grizzly Diamonds Ltd., who currently holds diamond properties in the Buffalo Head Hills, Birch Mountains and Pelican Mountain areas of Alberta totalling over three million acres, ground checked priority anomalies identified from an airborne geophysical survey and identified two high priority drill targets on its Buffalo Head Hills Grand Cub Aidan Property.

Finally, Great Western Diamond Corp. acquired the Utikuma West and Peerless Lake properties in which they collected 134 and 90 till samples, respectively. They base their interest in the area on the proximity to the diamondiferous Buffalo Head Hills field, government kimberlite-indicator mineral surveys that reported G9 garnet, eclogitic garnet and olivine on the property and the presence of drillable geophysical targets with signatures similar to that shown by previously drilled kimberlites in the main part of the Buffalo Head Hills field.

Birch Mountains Kimberlite Field

In northeastern Alberta, the Birch Mountain Kimberlite Field consists of nine kimberlites discovered by Kennecott Canada Exploration Inc. and New Blue Ribbon Resources Inc. between 1998 and 2002. During January and February, 2007, Grizzly Diamonds Ltd. collected a 10.2 tonne mini-bulk sample from the Legend Kimberlite (Birch Mountains field) via thirteen drillholes. During May 2007, the sample was processed at the DeBeers Canada Dense Media Separation plant facility in Grande Prairie, Alberta. In total three diamonds were recovered from 168.35 kg of drillcore, including a colourless, included, twinned octahedron (2.1 mm x1.58 mm x1.46 mm). These results correlate with historic results reported by Kennecott Canada.

Other Activity

In the Calling Lake-Pelican Mountains area of northeast-central Alberta, Grizzly Diamonds Ltd. and partner Stornoway Diamond Corporation have completed anomaly ground checks on the Call of the Wild Diamond Property. Of the 47 priority magnetic targets selected for follow-up exploration from airborne magnetic data, 19 remain priority for ground geophysical surveying and sampling. In addition, Great Western Diamond Corp. collected 158 till samples on its LaBiche and Calling Card properties located 10 km northeast and 40 km northwest of Calling Lake, respectively.

In the Peace River-Buffalo Head Hills area, Star Uranium Corp. reported microprobe results from 29 till and stream sediment samples are dominated by kimberlitic olivine grains of similar geochemistry to those associated with the Buffalo Head Hills kimberlite bodies located 70 km to the northeast. Microprobe analysis also confirms the presence of numerous G9 and rare G10 garnet. They report that the indicator-mineral anomalies appear to define a geographically restricted area of at least two populations and are directly down ice of a cluster of geophysical targets; future drilling is anticipated on the anomaly clusters and other priority targets.

Roy Eccles of the Alberta Geological Survey examining kimberlite occurrences in northern Alberta.

Uranium

Southern Alberta

Whiskey Gap Property: International Ranger Corp. reported results of a water sampling program and drilling program. A total of 26 samples from water wells were collected and assayed for radon, uranium and sulfate. Based on the location of radon anomalies (up to 5000 picocuries/l or 185 BQ/L), two drilling programs were planned and carried out. A total of 40 drillholes were drilled in four target areas, to a maximum depth of 150m. The strongest radioactivity (up to 640 API units), and the best uranium mineralization was encountered during diamond drilling program on Thomson Ranch. Here a one-foot sample returned 132 ppm uranium. Uranium anomalies were associated with anomalous values in copper, arsenic, molybdenum and selenium. Based on the drilling results, the company plans to continue drilling in neighbouring areas in September 2007.

Alberta Sun Project: Firestone Ventures and Black Hawk Exploration report a 2,384 line kilometre electromagnetic and magnetic airborne survey over four priority areas near Fort McLeod. TerraNotes Ltd. of Edmonton is carrying out initial analysis of the survey to be followed by modeling of the dataset, which should delineate high-priority areas for drilling.

Drilling on Whiskey Gap property, Southern Alberta
http://www.internationalranger.com/Whiskey%20Gap%20Uranium%20Drilling%20Report.pdf

Northeastern Alberta

Rea Uranium Project: Red Dragon Resources drilled 1,903 metres in eight relatively shallow high priority targets in 2007. The project covers 446,330 acres and surrounds AREVA's Maybelle River uranium deposit.

Alberta Project: CanAlaska Uranium Ltd. completed a preliminary seismic survey of their Alberta Project area (80 km x 20 km). The survey crews have also completed detailed shallow single-channel seismic surveys in the broad area surrounding the uranium mineralization at Stewart Island, and identified a series of major structural breaks and offsets in this area. Deep seismic survey data are now being collected to finalize winter drill targets. Data from two MEGATEM EM airborne surveys show multiple geophysical features which appear anomalous to surrounding datasets.

Bonny Fault Uranium Property: North American Gem Inc. will investigate zones of historic, high grade surface uranium mineralization as well as 41 of the highest priority airborne radiometric uranium targets. To date 276 linear and point-source uranium anomalies have been identified on the Terraquest airborne geophysical block. Many of these uranium anomalies are coincident with either foliation-parallel or major cross-cutting structures. Approximately 15 per cent have been categorized as very high priority targets, characterized by the highest uranium responses coincident with apparent structural controls. These targets will include 10 targets which are located on or near the Bonny Fault or sub-parallel faults, which may have been conduits for uranium-bearing fluids from the now eroded Athabasca sandstones which once overlay the area.

Athabasca South Shore Property: Fission Energy Corp. reports that several correlations of magnetic and electromagnetic data were found along with several basement hosted conductors identified throughout the property. Several potential kimberlite targets were also identified from the GEOTEM survey. Follow-up ground work over targets identified from the airborne surveys was completed during the first few months of 2007. Previous historic exploration includes drillholes which encountered significant mineralization; measured uranium was 108 ppm U_3O_8 over a short interval. Several other holes encountered 20-40 ppm U_3O_8 over short intervals as well.

Iron

In April, 2007, General Properties Ltd. completed the acquisition of Clear Hills Iron Ltd. and their 213,206 hectares of land on 32 metallic and industrial mineral permits in the Clear Hills area of northwestern Alberta. The company conducted a limited drilling and sampling program on the North Rambling Creek Prospect. Results include 15 feet of core, grading 28.74% Fe_2O_3 and 26.8 feet grading 32.8% Fe_2O_3. Reconnaissance surface sampling yielded samples that assayed at 44.5% and 46.8 % Fe_2O_3. The total iron reserves within the Clear Hills are estimated at over 1 billion tons grading at 32 to 35% iron.

Magnetite

In southwestern Alberta, Micrex Development Corp. continues the development of its Burmis Magnetite project. Currently, an application is being prepared for a 20,000 ton per year operation, over the first two years, followed by 40,000 tons per year for the remainder of the mine life, which is expected to be ten years. The ore contains 30 to 60% magnetite. Additional hydrothermal-sourced titanium and zirconium minerals may be present in economic quantities as well. The permitting process for the Burmis quarry is ongoing, including discussions with the local communities. Exploration continues in the areas surrounding the Burmis property for other hydrothermal occurrences.

Lead and Zinc

Star Uranium Corp. has reached an agreement with Ivany Mining Inc., whereby Ivany Mining will earn 100% interest in Star Uranium's Zama Lake property, in northwest Alberta. This agreement is in response to Star Uranium's aim of becoming a pure uranium company. The Zama Lake property was initially developed as a kimberlite prospect. However, bulk till sampling by the AGS (Special Report 96) and the GSC (Open File 5692) revealed anomalous concentrations of sphalerite and galena grains within the coarse sand fraction. The concentration of sphalerite grains is the highest ever detected in an exploration till sample (>1000 grains in a 20 kg sample) and the mineral grain size, and compaction and composition of the till suggest that the source may be within the 93,242 hectare property. The discovery indicates the potential for Mississippi-Valley Type lead-zinc mineralization, similar to the world-class Pine Point deposit, located 330 km northeast in the Northwest Territories, which was mined by Cominco between 1964 and 1998 and is still an area of active exploration.

The diamond rights to the Zama Lake property will be retained by Star Uranium and included with the company's other diamond properties in a proposed new company, Star Diamond Corp.

Titanium and Zirconium

Titanium Corporation is continuing its development of recovery of titanium and zirconium minerals from oil sands operations in the Fort McMurray area of northeast Alberta. The oil sands may contain the largest deposit of titanium and zirconium minerals in the world. Titanium Corp is currently operating a pilot research facility and is currently testing on site with portable processing facilities. Titanium Corp is also developing technologies to recover a portion of hydrocarbons from oil sands tailings.

Processing heavy minerals from oil sands tailings, northern Alberta

http://www.titaniumcorporation.com/s/Projects.asp

Alberta Industrial Minerals Production Update

All numbers are from Natural Resources Canada commodity review reports. 2006 numbers are confirmed, whereas in some cases, 2007 numbers are still preliminary. Commodity production quantity and value is presented in Table 1.

Mineral Aggregate
Alberta is the second largest producing province in Canada, behind Ontario.
In 2006, sand and gravel saw an increase in the tonnage produced, up +5% to 48.4Mt, as well an increase in dollar value to $370.0M, up +20% from 2005. Mineral aggregate demand in Alberta is expected to increase due to the demands of construction and infrastructure activity.

Elemental Sulphur
All information on Alberta's Elemental Sulphur can be found in EUB's (reformed as the ERCB as of Jan. 2008) Statistical Series ST98-2007: Alberta's Energy Reserves 2006 and Supply/Demand Outlook and are current to the end of 2006. The following is condensed from said report.

Crude bitumen in oil sands deposits contains significant amounts of sulphur. As a result of current upgrading operations in which bitumen is converted to synthetic crude oil (SCO). During 2006, $1.8*10^6$ t of elemental sulphur was produced from the six active projects: Suncor, Syncrude, Albian Sands, Shell Jackpine, CNRL Horizon, and Petro-Canada/UTS Energy/Tech Cominco Fort Hills.

Sulphur production in Alberta is through the processing of sour natural gas, the refining of crude oil, and the upgrading of bitumen (oil sands) into synthetic crude oil (SCO). In 2006, Alberta produced $6.6*10^6$ t of sulphur, of which $5.1*10^6$ t was derived from sour gas, $1.4*10^6$ t from upgrading of bitumen to SCO and just 11 thousand (10^3) t from oil refining. While sulphur production from sour gas is expected to decrease from $5.2*10^6$ t in 2006 to $4.1*10^6$ t, or some 20 per cent, sulphur recovery in the bitumen upgrading industry is expected to increase to $4.1*10^6$ t from $1.4*10^6$ t by the end of the forecast period. The ERCB estimates the remaining established reserves of elemental sulphur in the province as of December 31, 2006, to be 158.6 million tonnes, an increase of 78 per cent since 2005.

Demand for sulphur within the province in 2006 was about 220,103 t, similar to that in 2005. It was used in production of phosphate fertilizer and kraft pulp and in other chemical operations. Some 97 per cent of the sulphur marketed by Alberta producers was shipped outside the province, primarily to United States and China. Increased global demand for sulphur resulted in a major price change, from US$16/t in 2001 to US$50/t in 2006 (FOB Vancouver).

Sulphur stockpiles in Alberta

Peat
Peat production rates saw very little change in 2006. Production was down by -5% or 7500(t) to 159 kt and the value increased by +0.07% to $28.1M.

Salt
Salt saw a drop in production by -1.6% to 1116.3kt but an increase in value by +15% to $21.4M. Production in Alberta is mainly from extracts of salt brines for the manufacturing of chlor-alkali as well as solution mining of sodium chlorate from the extensive, very pure Upper Lotsberg salt deposit in the Fort Saskatchewan area. ERCO Worldwide produces on average129 t/day brines, and Nexen Chemicals Canada Limited Partnership, produces on average 100 t/day brines to produce sodium chlorate (salt brine) from their Bruderheim facilities.

The Canadian Salt Company Limited produces 400 t/day brines for coarse and fine salt (evaporated salt) from the Lindbergh. Dow Chemical Canada Inc. produces 3500 t/day brines from the Fort Saskatchewan facility, to produce caustic soda and chlorine and chlor-alkali (salt brine).

Silica and Quartz
Quartz saw an increase in 2006 production by +2.2% to 402kt and an increase in value by 11% to $18.5M.

Sil Industrial Minerals Inc.of Edmonton produces silica sand from local sand dunes in the Bruderheim area and operates a silica processing facility near Edmonton. The silica is sold mainly for the manufacture of fiberglass, insulating materials and as sandblasting material. Cementec Industries Inc. of Calgary produces silica flour, silica fume and sandblasting sand for use in the oil and gas and construction industries.

Stone
Stone, considered to be the combination of limestone, shale and sandstone, saw a dramatic production increase in 2006 by +62% to 969kt and an increase in value by +38% to $9.3M. This is primarily due to Birch Mountain Resources Ltd. production of crushed stone in the Fort McMurray area.

Lime
Lime saw very little change in production and value from 2005. Production statistics remain confidential due to competition issues and limited number of producers. Lime plants are planned for the Ft McMurray area.

Birch Mountain Resources Ltd. is developing plans to construct a 200 000-t/y quicklime plant to be commissioned in 2009 near Fort McMurray, Alberta. Graymont Western Canada In.c has a plant in Exshaw with a calcining capacity of 180 000 (t/y) from a rotary kiln.

Uses of domestic lime, quick and hydrated include: steel-making, water and sewage treatment, water purification, gas scrubbing, metal concentration, pulp and paper mills, chemicals, road and soil stabilization, mason and finishing lime.

Cement
Cement continues to lead the way in terms production value for Alberta. This is largely due to the housing and building starts which can affects the amount of concrete usage, production and price. In Alberta, housing starts were up significantly by 19.8%; this resulted in an associated increase in the production value. Production statistics remain confidential.

Lafarge Canada Inc.'s Exshaw plant operates a dry kiln and a dry/precalciner kiln, and Lehigh Inland Cement Ltd.'s Edmonton plant operates a dry/precalciner kiln.

Clay Products
Production of clay and clay products remained steady for 2006. Production statistics remain confidential. Plainsman Clay Limited mines clay specifically for pottery (i.e., Helmer kaolin) from sites in Manitoba, Saskatchewan, Alberta, Montana, and Idaho for plastic stoneware and processes the mined clay at Medicine Hat, Alberta. I-XL Industries Ltd. of Medicine Hat produces brick, block and flue liners.

Table 1 – Production statistics, Industrial Minerals

Mineral Production of Alberta

Commodity	2005		2006		2007 Preliminary	
	Quantity	$	Quantity	$	Quantity	$
Sand and gravel (t)	45 975 308	295 346 248	48 429 967	370 011 862	50 248 368	405 796 591
Sulphur elemental (t)	6 731 093	215 757 008	6 765 764	122 811 059	6 606 388	161 995 567
Peat (t)	167 514	27 914 464	158 996	28 129 908	184 275	33 617 169
Salt (t)	1 132 816	18 041 359	1 116 375	21 416 536	282 889	19 579 448
Quartz (t)	393 847	16 356 880	402 462	18 473 016	481 690	17 043 256
Cement (t)	x	x	x	x	x	x
Clay (t)	x	x	x	x	x	x
Lime (t)	x	x	x	x	x	x
Limestone (t)	x	x	x	x	x	x
Sandstone (t)	x	x	x	x	x	x
Shale (t)	x	x	x	x	x	x

x denotes confidential data

Coal
Coal production remains strong in Alberta. Subbituminous coal is mined from the Plains region, and is used primarily as a feedstock for mine-mouth power generation plants. Thermal bituminous coal is mined in the Coal Valley area of Alberta for domestic and export markets. Metallurgical coal is mined in the Foothills for export. Table 2 provides a summary of coal production in Alberta (Source – various ERCB statistical reports).

Table 2: Alberta Coal Production Statistics

Alberta Producing Mines	Production (raw tonnes of coal)		
	End 2005 Total	End 2006 Total	End 2007 Total
Subbituminous Thermal (surface mines)			
Genesee (Epcor Generation)	5,406,002	5,557,606	5,137,572
Vesta (Luscar)	1,870,593	1,471,321	1,236,663
Paintearth	1,218,466	1,554,433	1,685,194
Highvale (Transalta Utilities)	12,570,482	12,462,181	12,680,185
Whitewood (Transalta Utilities)	1,173,659	1,349,738	1,265,691
Sheerness (Luscar)	3,675,166	3,590,185	3,959,504
Dodds	85,668	113,413	101,845
Burtonsville Island (Keephills Aggregate)	33,609	19,296	15,684
Total Subbituminous Surface Thermal Coal	**26,033,645**	**26,118,173**	**26,082,338**
Bituminous Thermal (surface mines)			
Coal Valley (Luscar)	4,444,348	5,945,525	7,162,640
Total Bituminous Surface Thermal Coal	**4,444,348**	**5,945,525**	**7,162,640**
Bituminous Metallurgical (surface & underground)			
Cardinal River (Cheviot, surface)	2,447,094	2,735,733	2,559,334
Grande Cache Corp. (surface)	785,992	856,774	354,351
Grande Cache Corp. (underground)	589,023	1,008,970	890,694
Total Bituminous Metallurgical Coal	**3,822,109**	**4,601,477**	**3,804,379**
TOTAL ALBERTA COAL PRODUCTION	**34,300,102**	**36,665,175**	**37,049,357**

Metallurgical coal being mined from Cardinal River (Cheviot) in the Alberta Foothills.

Sources of Information, Mineral Staking and Assessment Statistics

Additional information about the geology and mineral resources of Alberta can be found on the Alberta Geological Survey's website at www.ags.gov.ab.ca. Information about mineral dispositions within Alberta can be found on the Alberta Department of Energy website at www.energy.gov.ab.ca. Table 3 shows the mineral claims staked and assessment work filed within Alberta during 2007 and the five preceding years.

Table 3: Mineral Claims Staked and Assessment Work Filed annually (end December) from 2002 to 2007 in Alberta.

ACTIVITY		2002	2003	2004	2005	2006	2007
Claims Staked (Permits Applied For)							
Number of applications		522	322	533	577	482	445
Millions of Hectares		4.1 M ha	2.9 M ha	4.7 M ha	5.1 M ha	3.4 M ha	3.9 M ha
Permits in Good Standing							
Number of agreements		1,409	1,276	866	1,124	1,275	1,513
Active hectares		11.2 M ha	10.2 M ha	6.3 M ha	8.2 M ha	9.6 M ha	11.4 M ha
Mineral Assessment Filed							
Number of reports		14	10	24	10	34	29
Number of Permits Represented		203	44	184	40	291	397
Hectares Represented		1.4 M ha	0.2 M ha	1.2 M ha	0.2 M ha	1.8 M ha	2.8 M ha
Expenditures Filed		$11.8 M	$0.6 M	$0.9 M	$0.7 M	$6.5 M	$7.6 M