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Fact Sheet

Mining... GREAT for Saskatchewan

MINERAL PRODUCTION

- Saskatchewan is a significant player in the Canadian and global mining scene. In 2009, it continued to be the world's largest producer and exporter of potash, and one of the world's leaders in uranium production.
- Canada supplies about one third of the world's potash. Most of this production comes from Saskatchewan with a small portion coming from a PotashCorp mine in New Brunswick.
- Saskatchewan is Canada's only producer of uranium accounting for 20% of world production in 2009, a decrease from 28% in 2005.
- The global recession of 2008/09 affected Saskatchewan's and Canada's mineral production in 2009. The total value of minerals produced in Canada dropped to \$32.2 billion, a 31.5% decrease from \$47.0 billion in 2008.
- Saskatchewan mineral production was also affected by the recession. In 2009, Saskatchewan mineral production was valued at \$5 billion, down from the record \$9.7 billion achieved in 2008.
- The primary reduction was related to the amount and value of potash production. In 2009, potash prices fell steadily from near US\$900/t to \$400/t. Many potash mines reduced production in 2009; the quantity produced declined from 10.4 Mt to 4.3 Mt while the value dropped from \$8 billion to \$3.4 billion. In spite of the temporary closures, the potash industry in Saskatchewan continued to make multi-billion dollar investments in their expansion operations.
- Potash was Canada's second leading mineral by value of output in 2009 at \$3.4 billion.
- Uranium metal production was a bright spot in 2009, with an increase in its production value, up from \$954 million to \$1.39 billion on the strength of increased volumes (which rose from 8.7 million kg to 10.1 million kg) and higher prices.
- Mining companies operating in Saskatchewan produced 15.6 % of Canada's total mineral output in 2009.
- In 2008 Saskatchewan was Canada's #1 mineral producing jurisdiction with mineral production valued at a record \$9.7 billion.
- Saskatchewan has the largest high grade reserves in the world for both potash and uranium.
- Saskatchewan coal, burned in thermal plants at Estevan and Coronach, accounts for about 60% the province's base load capacity electrical power generation.
- Saskatchewan has over 25 operating mines.
- Saskatchewan mines produce potash, uranium, coal, gold, salt, meta-kaolin, silica sand, sodium sulphate, clay and bentonite.
- In addition to potash, uranium and coal, Saskatchewan has a wealth of developing mineral resources including diamonds, gold, platinum & palladium, rare earth elements, copper, zinc, nickel, sodium and potassium sulphates and mineralized brines.
- The provincial mining industry is recognized as one of the most technologically advanced in the world.



Fact sheet

MINING AND SASKATCHEWAN'S ECONOMY

- Mining is a major contributor to Saskatchewan's economy, directly contributing almost \$2 billion in revenue to the provincial government in 2008. These revenues support government programs and services such as health care, education and infrastructure development.
- Overall in 2008, mining (direct, indirect, and induced) accounted for \$7.7 billion in GDP or 12% of the total provincial economy.
- Direct, indirect and induced mining employment accounted for 30,500 jobs or 6% of total employment, almost 1 in every 16 jobs with a payroll of \$1.5 billion.
- From 2008 – 2028,
 - » The Saskatchewan mineral industry will invest over \$43 billion in expansions and new mines. This translates to new investments of \$6 M a day.
 - » Mining employment (direct, indirect and induced) will see its contribution rise to 17% of total employment or almost 1 in 5 jobs.
 - » Mining will generate over 286,000 person years of direct employment in construction in operational activity.
 - » Mining will contribute an additional \$9.5 billion per year to provincial GDP.
 - » Mining will generate a further \$28 billion in provincial revenues or \$1.4 billion per year, for a total of over \$50 billion.

MINERAL EXPLORATION

- Exploration, considered the R & D (Research and Development) component of our industry, is the key to sustainability in the mining industry, ensuring that new resources are identified to replace those that have been mined out.
- The mining industry supports government investment in geoscience to ensure that new investment capital is attracted to the province.
- Exploration expenditures in 2010 are projected to be \$293 million, similar to 2009 levels.
- In 2010 and 2009 exploration for industrial minerals, including potash and coal, has overtaken both uranium and diamonds to become the focus of mineral exploration in Saskatchewan.
- In the past 3 years, over \$1 billion has been invested in mineral exploration in Saskatchewan, primarily for uranium and potash.
- Exploration expenditures in 2008 were a record \$474 million, well above the historical 10 year average of around \$30 million.
- The exploration cycle from the time of initial discovery until all the regulatory permits are in place and the property goes into production has increased to 15 to 20 years.

CAREERS

- Saskatchewan's mining industry creates direct and indirect employment for approximately 30,500 people.
- The Saskatchewan Mining Industry will require an additional 18,000 workers in the next 10 years. This includes 4000 tradespeople and over 500 engineers.
- The average weekly salary of an employee in the mining industry is almost twice that of the average weekly salary of employees in other sectors.
- There are over 120 different occupations in the mining industry.
- Saskatchewan's mining sector is a leading industry employer of aboriginal people. In 2009, the northern mine sites averaged 1548 employees from northern Saskatchewan; 1368 of these employees were of aboriginal ancestry.
- One of the fastest growing career areas in the mining industry is information technology. 85% of the mining work force presently uses advanced technology.

SAFETY

- Saskatchewan's mining industry has a strong commitment to safety and consequently is one of the safest industries in the province. For the past 17 years the industry has averaged about one lost time accident (LTA) for every 200,000 hours worked [this would be equivalent to an individual working for 100 years before he has a LTA].
- The Saskatchewan mining industry is a safe industry – WCB statistics illustrate that the mining sector has a lower lost time frequency rating than either the health or government worker sectors.
- The time loss claims for workers in open pit mining is 0.50%; underground hard rock is 1.36% and underground soft rock is 1.62% compared to 3.44% for all industry classes and 6.12% for Health Authorities, Hospitals and Care Homes.
- There are over 130 Safety professionals employed by the mining companies in Saskatchewan and an additional 1000 emergency responders trained at the mine sites.
- Cameco's McArthur River mine was awarded the National John T. Ryan Trophy for the metal mine category with the best safety record in 2009, with 1 reportable incident in over 750,000 hours worked.

ENVIRONMENT

- Environmental stewardship and sustainability are important to the mining industry.
- Environmental practitioners are an important part of the workforce at all mine sites. The Saskatchewan mining industry directly employs dozens of dedicated environmental professionals at mine sites throughout the province.
- The Saskatchewan mining industry invests considerable human resources and millions of dollars every year in environmental stewardship activities, including the monitoring of environment stations at sites, prevention and mitigation of environmental impacts, and in decommissioning and reclamation efforts.
- The industry actively participates in research, development and implementation of new technologies to improve combustion efficiency, reduce greenhouse gas emissions, increase resource conservation and further reduce environmental impact.
- Mining and exploration are temporary uses of the land. Saskatchewan's mining industry has a very small footprint utilizing only 0.1% of available land in the province (less than the size of the city of Saskatoon).
- All new mining projects are required to incorporate reclamation and decommissioning plans as part of the Environmental Impact Assessment Statement that is submitted to Saskatchewan Environment when applying for a Mine Operating License. Financial surety for decommissioning and reclamation costs is required from industry as part of the Mine Operating License.
- Leading edge technology not only contributes to the cost efficiency and productivity of mines but also to their safety. Advanced technology is also applied by mines in areas of environmental responsibility.

CONCLUSION:

The future for the mining sector is very bright and our industry will continue to be a foundation for Saskatchewan's growth.

May 2010



Q & A

Mining... GREAT for Saskatchewan

WHAT IS THE ECONOMIC IMPACT OF MINING IN SASKATCHEWAN?

Mining is GREAT for Saskatchewan. It is the province's third largest industry and a significant contributor to the provincial economy spending over \$3 billion annually on wages, goods and services, and generating over \$2 billion annually to the provincial government revenue through royalties and taxes. Mining has been identified as one of the key growth sectors for the Saskatchewan economy.

In 2008, mining (direct, indirect, and induced) accounted for \$7.7 billion in GDP or 12% of the total provincial economy.

From 2008 – 2028, the Saskatchewan mineral industry will invest over \$43 billion in expansions and new mines. This translates to new investments of \$6 M a day. During this period, mining will generate a further \$28 billion in provincial revenues or \$1.4 billion per year, for a total of over \$50 billion and mining will contribute and additional \$9.5 billion per year to provincial GDP.

HOW MANY JOBS DOES SASKATCHEWAN'S MINING INDUSTRY CREATE?

The mining industry creates direct and indirect employment for about 30,500 people in the province which translates into 6% of total employment or almost 1 in every 16 jobs. A large percentage of these people live and work in rural or northern Saskatchewan. The average weekly salary of an employee in the mining industry is almost twice that of the average weekly salary of Saskatchewan residents.

From 2008 – 2028 mining employment (direct, indirect and induced) will see its contribution rise to 17% of total employment or almost 1 in 5 jobs. Mining will generate over 286,000 person years of direct employment in construction in operational activity.

HOW DOES SASKATCHEWAN MINING COMPARE TO THAT IN OTHER PROVINCES?

Saskatchewan is a leading mineral producer in Canada. In 2008, Saskatchewan was Canada's leading

mineral producing jurisdiction with production valued at over \$9.7 billion. In 2009 Saskatchewan mineral production was valued at \$5 billion, accounting for 15.6% of Canada's mineral output. With strong potash and uranium production in the first quarter of 2010, Saskatchewan should increase its proportion of Canada's mineral output.

HOW DOES SASKATCHEWAN MINING RANK INTERNATIONALLY?

Saskatchewan is a prominent player in the global mining picture contributing to Canada being the world's largest producer of both potash and second largest producer of uranium. Canada produces about one-third of the world's potash supply with most of that production originating in SK. Saskatchewan is also Canada's only uranium producer accounting for 20% of world production. With extensive reserves of both these commodities Saskatchewan will continue to dominate world markets for many years to come.

WHAT IS THE VALUE OF MINERAL SALES IN SASKATCHEWAN?

The total value of mineral sales from Saskatchewan in 2009 was \$5 billion; down from the record high of \$9.7 billion established in 2008, but above previous years. Other mineral sales include coal, gold, salt, silica sand and sodium sulphate.

WHAT IS THE FUTURE OF MINING IN SASKATCHEWAN?

Mining has a bright future in the province. Not only will we continue to dominate world potash and uranium markets for many years to come but Saskatchewan also has tremendous untapped mineral resource potential - for example the diamond fields east of Prince Albert that has the potential to add another world class mining camp to our stable of resources. There is also potential for additional gold and base metal production and for new commodities such as rare earth elements, and other minerals recovered from brines.



WHAT IS THE ROLE OF MINERAL EXPLORATION IN SASKATCHEWAN MINING?

Exploration is the key to sustainability of the mining industry – it is often referred to as the research and development of the industry as exploration finds new deposits to replace those that are being mined. Given the long lead times between an initial discovery and mining (10 – 20 years on average) it is critical to maintain active exploration programs in the province. In the past 3 years, over \$1 billion has been invested in mineral exploration in Saskatchewan. Exploration expenditures in 2009 were \$293 million, down from the record of \$474 million spent in 2008, but - ten times the increase of the level of expenditure seen in 2003! Exploration Expenditures in 2010 are expected to be similar to 2009 levels. In 2010 exploration for industrial minerals, including potash and coal, will continue to be the primary exploration target, however uranium and gold sectors are signaling improved financing potential.

HOW MUCH SASKATCHEWAN LAND IS USED FOR MINING?

Despite its significant economic impact, in total mining only occupies 0.1% of the total landmass of the province, an area smaller than the city of Saskatoon.

HAS MINING BECOME ENVIRONMENTALLY SENSITIVE AND RESPONSIBLE?

Environmental stewardship is important to the mining industry and environmental practitioners are an important part of the workforce at all mine sites. Each year, the Saskatchewan mining industry devotes considerable resources and millions of dollars to reduce its environmental footprint, including activities such as site monitoring, prevention and mitigation of environmental impacts, decommissioning and reclamation and ongoing research efforts. Mining companies must now have an approved reclamation plan and financial assurance in place before they are given a license to operate.

IS MINING A SAFE INDUSTRY?

Mining is one of the safest industries in the province, and for the past 17 years, has averaged less than one Lost Time Accident (LTA) for every 200,000 hours worked.

Another indicator so the Saskatchewan mining's premier safety record is that mining has some of the lowest Workers' Compensation Board assessment rates in the province – lower than workers in the health or government sectors

- a result of continuing efforts to reduce accidents through improved training and safe workplace practices.

Safety training at Saskatchewan mine sites is continuous with new workers having an extensive safety training orientation of between 32 and 40 hours supplemented by ongoing safety training. There are over 130 designated safety professionals working at the mine sites.

HOW DOES MINING AFFECT EACH OF US IN SASKATCHEWAN?

Mining provides an economic foundation for all of Saskatchewan residents – northern, rural and urban. Mining companies in Saskatchewan directly contributed almost \$2 billion in revenue to the provincial government in 2008. These revenues support government programs and services such as health care, education and infrastructure development. The importance of these revenues to Saskatchewan's economy was underscored when 2009 revenue contributions to government by industry were decreased, which necessitated reductions in government programming.

Globally, the mining companies in Saskatchewan are feeding and fueling the world. Potash is used as a fertilizer to improve crop quality and quantity to feed the world's growing population on a decreasing area of arable land, and uranium is providing a source of non-GHG emitting energy to countries all over the world. Closer to home, coal mined from southern Saskatchewan provides almost 60% of the base power load for Saskatchewan's electrical energy. Virtually everything around us from computers, jewelry, cars, windows, cellphones, wall board, cosmetics, medical treatments, vitamins, toothpaste all contain components of minerals. We have a saying in the industry, "if it can't be grown it was probably mined". And as noted above, many of the fertilizers that help things grow are mined right here in Saskatchewan. The benefits and products from mining surround us every day.

May 2010

C

C a r e e r s

Mining... GREAT for Saskatchewan



- Great pay, safe working environment, interesting and challenging work in a variety of occupations, travel and adventure – all these can be yours with a career in the mining industry.
- Mining is one of the fastest growing industries in Saskatchewan. The direct and indirect workforce in Saskatchewan will grow by 42% in the next 10 years; and 18,000 new employees will be needed in the Saskatchewan mining industry to meet replacement needs as well as fill new positions.
- High demand occupations in the Saskatchewan mining industry include tradespeople, (millwrights, electricians, heavy equipment mechanics, mechanics, welders, pipefitters, steam engineers) miners, supervisors, heavy equipment operators, plant/mill operators, administrative services, engineers, technologists (environmental, instrumentation, laboratory) and geologists.
- In Canada an estimated 80,000 people will be needed within the next ten years –with over 120 occupations to choose from.
- Saskatchewan's mining sector provides direct and indirect employment for approximately 30,500 people and is the main private sector employer in northern Saskatchewan.
- The average weekly salary of an employee in the mining industry is almost twice that of the average weekly salary of Saskatchewan employees in other sectors.
- The Saskatchewan mining industry spends over \$3 billion annually on wages, goods and services.
- The Saskatchewan mining industry is a great employer offering job and career opportunities in a wide range of areas from exploration through production and processing to administration and marketing. All mining companies offer extensive training to their employees.
- Saskatchewan mining is a technological leader with 85% of the work force using advanced technology.

CAREERS IN EXPLORATION

Career opportunities in the exploration area, considered the R&D of the mining cycle would include:

- Geologists
- Geophysicalists
- General Field Workers
- Geological Technicians
- Assayers
- Engineers
- Prospectors
- Pilots
- Drillers

Exploration activity also generates other career opportunities such as expediting services for food and supplies as well as office staff.

CAREERS IN MINING

Developing the mines, producing and marketing the minerals requires many skilled and professional individuals in a variety of occupations.

ENGINEERS

- Mining
- Chemical
- Electrical
- Environmental
- Geological
- Mechanical
- Metallurgical
- Civil



Careers

www.saskmining.ca

TRADES PEOPLE

- Millwrights
- Electricians
- Heavy Equipment Mechanics
- Mechanics
- Welders
- Pipefitters
- Steam Engineers
- Machinists

TECHNICIANS

- IT Technicians
- Environment Technicians
- Instrument Technicians
- Lab Technicians
- Metallurgical Technicians
- Radiation Technicians
- Draftspersons/GIS Technicians

OPERATORS

- Draglines
- Drillers
- Heavy Equipment
- Helpers
- Labourers
- Mill Operators
- Miners
- Shovels
- Truck Drivers

HEALTH AND SAFETY SPECIALISTS

Safety is a core value of the Saskatchewan mining industry. The mining industry is proud of its outstanding safety and health achievements. It has a lower lost time accident rate than the provincial average, lower than a number of occupations including government workers and the health sector. There are over 130 dedicated Safety professionals at Saskatchewan mine sites. Saskatchewan mines have often won National Safety Award winners, including this year when Cameco's McArthur River Mine won the National John T. Ryan Award for metal mines. A safe industry is a productive industry. Careers in safety include:

- Safety Officers including supervisors, trainers and coordinators
- OHS Nurses/EMT
- Radiation Officers

ENVIRONMENTAL SPECIALISTS

Environmental stewardship is important to the mining industry. Environmental practioners are an important part of the workforce at all mine sites. Each year, the Saskatchewan mining industry devotes considerable resources and millions of dollars to reduce its environmental footprint, including activities such as site monitoring, prevention and mitigation of environmental impacts, decommissioning and reclamation and ongoing research efforts.

- Environmental Technicians
- Biologists/Ecologists
- Environmental Engineers

MARKETING SPECIALISTS

In 2009, Saskatchewan's mining industry produced \$5B of product requiring a variety of marketing and sales specialists.

- Accountants
- Investor Relations
- Financial Analysts

ADMINISTRATION SPECIALISTS

Running a mine is a task requiring more than engineers, technicians and operators. Someone has to purchase supplies, pay bills, do the hiring and attend to numerous essential duties. Careers in mine administration include:

- Human Resources
- Purchasing Agents
- Administrative Assistants
- Lawyers
- Security Guards
- Public Affairs
- Warehouse Personnel

INTERESTED IN KNOWING MORE?

www.saskmining.ca

www.acareerinmining.ca

www.mihr.ca

Information on specific courses is available from SIAST, Community Colleges, and Universities.

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E

Environment

Mining... GREAT for Saskatchewan

- Environmental stewardship and sustainability are important to the mining industry. Environmental practitioners are an important part of the workforce at all mine sites. The Saskatchewan mining industry directly employs dozens of dedicated environmental professionals at operations throughout the province.
- The Saskatchewan mining industry invests considerable human resources and millions of dollars every year in environmental stewardship activities, including the monitoring of environment stations at sites, prevention and mitigation of environmental impacts, and in decommissioning and reclamation efforts and ongoing research efforts.
- Mining is a temporary use of the land that only uses 0.1% of available land in the province (less than the size of Saskatoon).

ENVIRONMENTAL PLANNING & THE MINING CYCLE

- Environmental stewardship is a part of mine planning from conception to production through to reclamation. Mining companies incorporate reclamation and decommissioning plans as part of the initial Environmental Impact Assessment Statement that is submitted to Saskatchewan Environment. These plans go through a thorough public review process before a Mine Operating License is granted.
- As part of their license to operate, all mines are required to provide financial assurance to government so ensure that there is money in place to ensure that the footprint of the mine area is reclaimed. These plans are reviewed annually.
- All mines have extensive tree planting programs for shelterbelts and wildlife habitat.
- Buffer lands around potash operations are managed for sustainable agriculture and/ or wildlife habitat.
- The waste product of potash production is

predominantly common salt which is contained in managed storage areas. A portion of the salt is used for highway de-icing, as well as for agricultural and industrial purposes.

- All potash mines have zero discharge to streams or lakes. Surplus brine is discharged into deep strata already containing brine 1300 to 1900 m underground.
- Saskatchewan's coal mines undergo continuous reclamation. The objective is to reclaim annually an area equivalent to that which is disturbed. Mined areas are reclaimed to productive farmland 2 – 3 years after production. Prior to mining, cover soil is salvaged and then directly replaced on recontoured lands.
- Revegetation to minimize wind and water erosion occurs (as soon as practical) following coversoil replacement. Reclaimed lands are revegetated to a permanent agronomic forage or native species cover that enhances biodiversity, provides better wildlife habitat and adds organic matter that promotes carbon sequestration.
- Mined lands are reclaimed to an acceptable predetermined, sustainable multi-land use so that the land can be returned to a productive state as soon as possible. Reclaimed land could be returned to cereal or forage crop, pasture, natural forest, wildlife habitat, recreation and commercial land uses.
- Water management plans utilized by coal mining operations minimize the impact on surface and ground water resources.



REGULATION

- The mining industry is strongly regulated at both the federal and provincial levels. Applicable legislation includes the Canadian Environmental Protection Act, The Fisheries Act, The Navigable Waters Act, The Metal Mining Efficient Regulations, The Species at Risk Act, The Environmental Management and Protection Act, The Spill Control Regulations, The Clean Air Regulations, The Mineral Industry Environmental Protection Regulations, The Hazardous Materials regulations, The Halocarbon Control Regulations and others.
- The Saskatchewan uranium industry is one of the most closely regulated industries in the world. It consistently meets or exceeds all standards set by federal and provincial governments.
- Uranium tailings treatment includes the containment of solids and the treatment of water.
- Industry and governments, through a sub committee of the Canadian Mines Ministers, is looking at ways to address the cleanup of orphaned mine sites. The Gunnar and Lorado Mines in northern Saskatchewan are currently in the process of remediation and reclamation.
- On the exploration front, Canada continues to show world leadership through the Prospectors and Developers Association environmental excellence in explorative initiative (E3). E3 is an unparalleled online resource of data and environmental management practices designed to promote and ensure that the highest levels of environmental stewardship are practiced on mineral exploration projects worldwide. The SMA was one of the supporting organizations of this initiative.
- The SMA is also a founding participant of the Saskatchewan Mineral Exploration Government Advisory Committee (SMEGAC), an industry-government working group that has developed Best Management Practices for mineral exploration. In May 2008 the work of this group is being recognized for an award of environmental excellence by the Association

of Professional Engineers and Geoscientists of Saskatchewan. (<http://www.saskmining.ca/news/News/Main/Best+Management+Practices/news.html>)

- In July 2009, Cameco Corporation's former Contact Lake gold mine had the distinction of being the first decommissioned and reclaimed mine site to be entered in the Saskatchewan government's Institutional Control Registry. This industry-funded registry will manage all approved decommissioned and reclaimed mine and mill sites in perpetuity.
- AREVA's Cluff Lake minesite continues in the decommissioning phase, which started in 2004. Over 800,000 trees have been planted, along with establishment of a grass cover. Environmental monitoring of the site continues during decommissioning with regular air, water, plant and soils samples to ensure the environment is protected and the site will remain safe for traditional land uses.

RESEARCH & EDUCATION

- The industry actively participates in research, development and implementation of new technologies to improve combustion efficiency, reduce greenhouse gas emissions, increase resource conservation and further reduce environmental impact.
- In recognition of the importance of environmental management to our industry the SMA annually sponsors environmental engineering scholarships at the two Saskatchewan universities.

May 2010

EX

Exploration

Mining... GREAT for Saskatchewan

EXPLORATION PROCESS

- Exploration is the key to sustainability in the mining industry – it is often referred to as the “R & D” (Research & Development) of the industry. New resources are required to replace ore that is mined out.
- It takes between 10 and 20 years to bring an exploration discovery into production.
- Because mineral components are found in almost all consumer goods, mining will continue to be a dominant industrial sector in our global economy as emerging economies such as China requires more metals to support their growth.
- Exploration has evolved into a highly sophisticated, multi disciplinary science using principles of geology, physics, chemistry, and even biology to probe deep beneath the earth’s surface.
- Exploration is the high risk end of the industry as it involves investing large sums of capital for which there is no guaranteed return.
- Less than 2% of mineral showings or initial discoveries will actually evolve into mines.
- In Saskatchewan most of the mineral rights are owned by the province and companies or individuals obtain the rights to explore by staking a claim or acquiring a permit or a lease.
- The first stages of exploration are low impact, involve making observations about the rocks or soils on the land surface (geological mapping), and taking samples for various types of chemical analyses. Computer-processed images of the land surface taken from satellites are also used to evaluate structures that may identify areas of mineralization.
- Later stages may consist of measuring the physical, magnetic, or electrical properties of the rocks using high-tech instruments located on the ground or in an aircraft flying over the land surface. Extensive

computer processing and scientific interpretation are used to interpret what lies beneath the surface.

- If enough evidence is found to indicate mineralization, drilling equipment is used to obtain rock samples from below the surface. In circumstances where the minerals are not buried deeply, shallow pits or trenches may be excavated, again, to obtain additional samples.
- Mineral exploration provides employment, particularly for aboriginal residents of northern Saskatchewan and the northern service sector. The MinExplo Expo is an SMA initiative to increase the participation of northern businesses and individuals in the exploration industry.

EXPLORATION EXPENDITURES

- In 2010 exploration expenditures in Canada are expected to increase to \$2.2B, an increase of 24% over 2009 levels.
- 21 of Canada’s Top 100 Exploration and Development Appraisal Projects (by \$) are in Saskatchewan; 10 are potash-related; 9 are uranium-related.
- In 2010, statistics from Natural Resources Canada indicate Saskatchewan exploration expenditures are anticipated to be around \$293 M including \$102 M for uranium; \$12.5 for diamonds; \$7.9 for precious metals; \$0.1M for base metals and \$171M for industrial minerals – primarily potash. This does not include development expenditures of over \$240M that have also been announced for BHP’s Jansen Potash project.
- In 2009, all Canadian mining jurisdictions experienced exploration and deposit appraisal/expenditure decreases in terms of total spending per province/territory. The three leading jurisdictions for exploration



expenditures were Ontario, Quebec, and Saskatchewan which accounted for 64% of total spending of \$1.7 Billion.

- 2009 exploration expenditures in Saskatchewan were \$293 Million including \$124M for uranium, \$13.8 M for diamonds; \$2.6 M for gold, \$1.7 M for base metals and \$151M for industrial minerals – primarily potash with some coal.
- 2008 exploration expenditures were a record \$474 Million in 2008 including \$204.4 M for uranium, \$73.2 M for diamonds, \$8.9M for gold, \$6.8 M for base metals, and industrial minerals including potash, clays, coal and rare earth elements totaling \$181.7 million.

MINERAL COMMODITIES

- In Canada, 2010 exploration expenditures are primarily focused on precious metals, followed by “other” (predominantly potash), base metals and uranium.
- The Saskatchewan commodity basket of potash and uranium is distinct from the national trend.
- In Saskatchewan, 2010 exploration expenditures for industrial minerals, including potash and coal, will continue to be predominant over historical favorites uranium and diamonds. There is some strengthening of both the uranium and gold sectors.
- In the past 3 years, over \$1 Billion has been invested in mineral exploration and development in Saskatchewan.
- Potash exploration continues, fueled by growth in the fertilizer industry that is responding to increased consumer demand in emerging economies in China, Brazil and India.
- Saskatchewan has significant untapped mineral resource potential, not only for the commodities that we are well known – potash and uranium – but also for a variety of other minerals including diamonds, gold, platinum and palladium, rare earth elements, copper, zinc, nickel and mineralized brines.
- The bulk of the mineral exploration activity currently takes place in north and central Saskatchewan. Potash exploration is occurring in a NW – SE oriented 200 km wide band stretching across the province from the Saskatoon – Rocanville; coal exploration is occurring

in regions adjacent to the traditional coal mining areas in southern Saskatchewan as well as a newer play in the area around the town of Hudson Bay; diamond exploration is currently being focused on an area east and northeast of Prince Albert; gold exploration is primarily north-east of LaRonge, base metal activity is west and southwest of Creighton and uranium exploration activity is in the Athabasca region.

REGULATION

- The Exploration industry is primarily regulated by the Ministry of Environment and Ministry of Energy and Resources. The Ministry of Environment requires permits for all surface activities related to mineral exploration projects including, but not limited to, the development of trails and roads; camp permits, drilling, line-cutting, and shore alteration (such as docks) .
- The SMA Exploration Committee has worked with government regulators to develop 14 Best Management Practices for Mineral Exploration Activities to assist government and industry in the application and approval process for activities on land administered by Saskatchewan Environment. This guide provides information to assist in the planning, initiation and completion of a mineral exploration program in a fashion that will help minimize environmental impacts and meet relevant legislative requirements. <http://www.saskmining.ca/news/News/Main/Best+Management+Practices/news.html>
- The SMA Exploration Committee has developed a Best Practice on Engagement with First Nation and Métis Communities. It is intended as a practical guide on how to promote and sustain effective working relations with first Nations and Métis communities for companies conducting mineral exploration programs in Saskatchewan.
- The Exploration Safety Sub-Committee successfully hosted their second Exploration Safety Workshop in May 2010, with over 70 participants from a dozen companies in attendance.

May 2010

S

S a f e t y

Mining... GREAT for Saskatchewan

SAFETY CULTURE AND RECORD

- Safety is first and foremost for all members of the Association and member companies invest their time and effort in developing and maintaining a positive safety culture at all their operations.
- Mining is one of the safest industries in the province, averaging less than one Lost Time Accident (LTA) for every 200,000 hours or 100 years worked, for the past 17 years. Our industry is continuously striving to improve upon its safety record.
- Saskatchewan mining has some of the lowest Workers' Compensation Board assessment rates in the province – lower than workers in the health or government sectors; a result of continuing efforts to reduce accidents through improved training and safe workplace practices.
- Saskatchewan mines have been frequent winners of the National J.T. Ryan Safety Awards sponsored by the Canadian Institute of Mining Metallurgy and Petroleum. This year, Cameco's McArthur River Mine was the National winner of the Metal Mine category with 1 reportable incident in over 750,000 hours worked. Cameco's Cigar Lake Mine was awarded a Special Award Certificate for their Safety performance in 2009. Areva's McLean Lake milling operation attained a perfect safety record in 2009, with no reportable injuries in over 616,000 hours worked. In 2006 the Mosaic Esterhazy K1 Mine won the National Award in the Select Mine category.
- In 2009, the McArthur River Mine achieved record safe production, which by no coincidence, also marked the overall record production from McArthur River. Safety improves productivity.

- The time loss claims for workers in open pit mining is 0.50%; underground hard rock is 1.36% and underground soft rock is 1.62% compared to 3.44% for all industry classes and 6.12% for Health Authorities, Hospitals and Care Homes.
- Saskatchewan's mining industry is a strong supporter of the Saskatchewan Safety Council's "SAFE SASKATCHEWAN" initiative, and the SMA works with other like-minded Safety Organizations to promote the culture of safety at the workplace, and at home.

REGULATORY ENVIRONMENT

- The Mine Safety Unit, Occupational Health and Safety Branch of the Ministry of Advanced Education, Employment and Labour, inspects all mines in the province on a regular basis. The mining industry is the only industry that has a dedicated government safety unit.
- Saskatchewan mine supervisors are required to hold Department of Labour certification of their knowledge of the Occupational Health and Safety Act and Regulations, certification in First Aid, and certification in Supervisory Duties in an Emergency. No other industry in Saskatchewan has these safety requirements.
- Active Occupational Health and Safety Committees are an important part of Saskatchewan mines' efforts to reduce accidents in the workplace.



WORKPLACE TRAINING

- New workers have between 32 and 40 hours of initial safety orientation training which is followed by mentoring time with trainers until they achieve a level of proficiency in their work area.
- Safety training at Saskatchewan mine sites is continuous with workers initially having an extensive safety training orientation that is reinforced by ongoing safety programs. All crews have regular safety briefings to ensure that safety is the first criteria considered before any task is undertaken.

SMA SAFETY FRAMEWORK

- Saskatchewan mining companies have over 130 safety professionals at the mine sites, and upwards of 1000 trained emergency response people.
- SMA Safety Committee is comprised of dedicated Safety Professionals from all mine site operations. They meet monthly to share information pertaining to their sites to enhance health and safety at mining operations.
- A recent initiative of the Safety Committee is the organization of the Industrial Safety Supervisor Course – a 3 day course dedicated to improving safety and the management of safety, for supervisors at the mine sites.

EXPLORATION SAFETY

- SMA Exploration companies are also proactive about ensuring safety in their work environment.
- The Exploration Safety Sub-Committee held their 2nd annual Exploration Safety Workshop in May 2010, with over 70 participants from a dozen companies attending.

SUMMARY

The Saskatchewan mining industry is a safe, strongly regulated industry, where employees are well compensated for their work. The Saskatchewan mining industry believes one accident is too many and our companies continually strive toward the elimination of all injuries.

May 2010

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Historical Mining... GREAT for Saskatchewan

- 1850** • The first record of coal seams in the Souris Valley southern Saskatchewan was reported in 1857 by the Palliser Expedition.
- Placer gold in the North Saskatchewan River was documented by the Palliser expedition in 1858.
- 1880** • In 1880, the first commercial coal mine was opened near Roche Percee. Coal was sent to Winnipeg by barges on the Assiniboine and Souris Rivers.
- Commercial clay production began in 1886 in the Estevan, Bruno and Claybank areas.
- 1900** • The Bienfait Coal Mine started production in 1905.
- 1910** • In 1915 a copper-zinc deposit was discovered north and east of Amisk Lake, which led to the development of the Flin Flon mine which started production in 1931.
- The first significant gold discovery was made in 1916 in the Amisk Lake area which became the Prince Albert (Monarch) Mine.
- 1917 potash exploration activity was reported in the Weyburn area.
- 1920** • The first char plant to upgrade lignite for briquettes was built in 1921.
- In 1923 the Rottenstone deposit at the south-west end of Reindeer Lake yielded nickel, copper, platinum and palladium as well as some silver and gold.
- 1930** • The first successful large scale strip coal mine went into operation in 1930.
- In 1934 a gold discovery on the north shore of Lake Athabasca started a gold rush and establishment of the town of Goldfields (became the Box Mine).
- In 1935 Uranium was discovered north of Goldfields and Uranium City became a major uranium mining camp from 1953 until 1982 when the mines closed.
- 1940** • Potash was discovered near Radville in core from an oil and gas well in 1942.
- In 1948, the lifting of the ban on private staking of uranium triggered one of the largest staking rushes in Canadian history.
- Diamonds were reported to have been found in 1948 in an area between Prince Albert and Flin Flon, by prospector Johnny Johnson.
- 1950** • The first attempt to mine potash using the solution method was done in 1951 near Unity.
- The last underground coal mine closed in Saskatchewan in 1955.
- The first underground potash mine was opened at Patience Lake near Saskatoon in 1958 (but it experienced serious water inflow problems). It was closed because of flooding in 1985 and reopened as a solution mine in 1989.
- 1960** • In 1961, Max Pollack claimed to have recovered 2 diamonds from gravel just west of Prince Albert.
- The first commercial potash production at Esterhazy was established in 1962.



- A successful solution potash mine opened at Belle Plaine in 1964. Other mines soon opened: Saskatoon (1968), Allan (1968), Lanigan (1968), Vanscoy (1969), Colonsay (1969) and Rocanville (1970).
- In 1967, the Western Nuclear Mine, lead-zinc-silver, on the Hanson Lake Road was opened but closed two year later.
- 1970**
 - A government incentive program to encourage exploration led to the discovery of the the Rabbit Lake uranium deposit in 1968 at Wollaston Lake. The mine opened in 1975 and mining is continuing in this region.
 - Subsequent discoveries at Cluff Lake in 1969, Key Lake 1975, Midwest Lake 1978 led to the establishment of the Athabasca Basin as the world's largest and richest uranium mining camp.
- 1980**
 - Rich uranium deposits were discovered at Cigar Lake in 1981.
 - Production of uranium at the Key Lake Mine started in 1983. This was the world's largest high-grade uranium deposit at that time.
 - In 1987, Starlake, the first of several small gold mines in the LaRonge belt, was brought into production.
 - Kimberlites containing diamonds were found in the Sturgeon Lake area in 1988, the ensuing staking rush led to the discovery of numerous kimberlite intrusions in the Fort a la Corne region.
 - McArthur River the world's largest and richest uranium mine was discovered in 1988.
- 1990**
 - Production of gold started at the Seabee Mine in 1991, this mine is still in production and is currently the province's largest gold producer.
 - 1996 exploration for Rare Earth Elements started in the Hoidas Lake area NE of Uranium City.
 - Production started at the Konuto Lake Mine for copper and zinc in 1998.
 - Production at the McArthur River Mine started in 1999, with the ore being processed at the Key Lake Mill.
- 2000**
 - A test shaft was sunk on the Star Kimberlite in 2003 to facilitate collection of a bulk sample to help evaluate the deposit. In 2007, a test shaft was sunk on the neighboring Orion South kimberlite.
 - In 2005, approval was received for final construction of the Cigar Lake Mine.
 - In 2008, the Gollier Creek kaolin deposit started production.
 - Between 2007 and 2009, the Saskatchewan potash industry announced over \$8 Billion in expansions and debottlenecking projects at their existing operations in the province.
 - From 2005 through 2008, over \$1 Billion was invested in mineral exploration in Saskatchewan, with the majority of expenditures directed to discovering additional uranium deposits.
 - In 2008, Saskatchewan remained the world's leading producer of potash and uranium.
 - In 2008, Saskatchewan was Canada's leading mineral producing jurisdiction, with mineral production valued at over \$9.7 Billion.
 - In May 2009, the SMA Safety Committee hosted the 41st Annual Emergency Response/Mine Rescue Skills Competition, featuring 16 competing teams, and over 100 direct competitors.
 - In 2009, the first potash shaft in almost 40 years was sunk at the PotashCorp Rocanville operation, symbolizing the expansion of the potash industry in Saskatchewan.

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