

ORE

\$43 BILLION

You're standing on it.

REAL WEALTH

**OUR "HAVE PROVINCE"
HAS MORE THAN MOST
OF US REALIZE.**

**LEARNING TO
HANDLE DEMAND**

**WANTED: 18,000 SKILLED
WORKERS. CAN WE
GROW OUR OWN?**

POTASH: WORTH THE FIGHT

**ON PACE TO HIT 7 BILLION THIS YEAR,
THE WORLD POPULATION DOESN'T
JUST WANT POTASH. IT NEEDS IT.**



Community growth through uranium mining



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WELCOME!

A MESSAGE FROM SMA EXECUTIVE DIRECTOR – PAM SCHWANN

Welcome to the first edition of *ORE*, the official publication of the Saskatchewan Mining Association (SMA). *ORE* is a magazine about the people, projects and issues related to the Saskatchewan mining industry.

Now in its 45th year, SMA is an industry-funded organization consisting of members of the major producing mining and exploration companies operating in Saskatchewan. We are “the Voice of the Saskatchewan Mining Industry.”

ORE brings you the

story *behind* the mining and exploration stories that appear in the daily press – and some insider stories as well. *ORE* will keep you informed on the projects, the people and the issues affecting our industry. This information comes straight from the source: our Editorial Committee is selected from our member companies.

ORE has been created not just for the benefit of industry. The growth of both mining and exploration in Saskatchewan is such that practically every business, organization and member of the public will in some shape or form be affected by this growth. As we are seeing first-hand, a vibrant, successful

mining industry translates into a more vibrant and more successful Saskatchewan. This is reflected in the Mission Statement of SMA, “Providing a foundation for growth through a safe, responsible mining industry.”

In 2008, 1 in 16 working Saskatchewanians were employed directly, indirectly or through related employment by the Saskatchewan mining industry; this ratio is increasing. Whether you are part of the mining industry or just interested in what the Saskatchewan mineral industry is doing, I trust you will find *ORE* informative and engaging.



A MESSAGE FROM SMA PRESIDENT – KELVIN DERESKI

The Saskatchewan mining industry has certainly been in the spotlight this past year. It seemed that every day there was at least one story in local, provincial or national media about the Saskatchewan mining industry. Whether the stories focussed on potential takeovers, expansion and greenfield mining investment, potash, uranium, gold, clean coal, promising mineral exploration results, royalties, environmental legislation, or Saskatchewan’s leading economic growth, the Saskatchewan mineral industry was the media darling. There was an unquenchable thirst for information on our industry. The stories underscored the

importance of Saskatchewan as a significant player in the Canadian and global mining scene, and of our world-class potash and uranium mines that are integral to providing Saskatchewan and the global population with a better quality of life.

As we head into the second decade of the 21st century, Saskatchewan is clearly realizing its potential. While people in the industry have long understood that Saskatchewan was the place to be if you were looking for world-class deposits, the general population across Canada is now coming to this realization. As Premier Brad Wall recently noted, Saskatchewan is no longer the place to be from; it is the place to be.

As President of SMA, I am excited to be writing this column in the inaugural edition of *ORE*. I consider it to be a very significant milestone for the Saskatchewan mineral industry, its service sectors and the vibrant communities that support our industry. As we like to say, “Mining is Great for Saskatchewan” – to which we can add “and the World.”

To our member companies and the important industries that service our operations, I encourage you to put your full support behind *ORE*. As the official publication of SMA, *ORE* is the primary communication vehicle that will enable SMA to profile industry issues for the benefit of our industry. This is your magazine – embrace it, enhance it and enjoy it.

PREMIER’S MESSAGE

On behalf of the Government of Saskatchewan, it is my pleasure to welcome readers to the inaugural issue of *ORE*.

Saskatchewan is blessed with one of the most diverse array of natural resources in Canada and indeed, the world. The mining industry commands a large role in Canada’s economic theatre and Saskatchewan has taken centre stage. We have 53 per cent of the world’s potash resources and the globe’s highest-grade uranium deposits. For potash, more than \$12.2 billion worth of expansions to existing mines have been announced, with these projects scheduled for completion by 2020. Saskatchewan also produces an impressive array of minerals including gold, coal, salt, silica sand, clays and sodium sulphate.

We are expanding exploration and developing our geological potential for diamonds, rare earth metals, brines and platinum group metals. Saskatchewan has one of the world’s largest kimberlite fields, with some kimberlites exceeding a surface area of 200 hectares; two advanced stage projects are underway. Exploration, which leads to new finds and is considered as a key research and development component of the mining industry, has reached record levels of investment in recent years. Mineral exploration spending intentions in 2010 were estimated at approximately \$355 million.

Mining is Saskatchewan’s third largest industry after oil and natural gas, and agriculture; and, contributes over \$3 billion annually in wages, goods and services, taxes and fees. It supports

more than 30,500 direct and indirect jobs, and in jobs induced by the mining sector. This includes some 2,000 direct jobs in northern Saskatchewan. In 2008, Saskatchewan’s value of mineral production was the highest in Canada, with sales amounting to \$9.7 billion. After a down year in 2009, our mineral sales show every sign of resuming a record pace in 2010.

Our government values the excellent working relationship we have with the Saskatchewan Mining Association. We are sure you will find *ORE* a valuable information tool for your organization.

Brad Wall
Premier



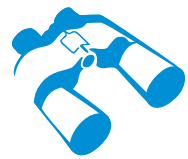
IN SASKATCHEWAN, OPPORTUNITY RUNS DEEP.

Saskatchewan has emerged as a global leader in mining. With over \$15 billion in expansion projects planned in potash alone, the sector will experience unprecedented growth in the next decade.

The provincial government’s economic development agency, Enterprise Saskatchewan, is working in partnership with the mining sector to encourage investment, develop the supply and services sector needed to support growth, and help address labour-force demands.

For more information on investment opportunities, visit enterprisesaskatchewan.ca

WHAT TO WATCH FOR



This regular section of *ORE* highlights trends, developments and initiatives to note in the coming months.

CLEAN COAL IN SASKATCHEWAN

SaskPower's investment in upgrading the Boundary Dam Power Plant is laying the groundwork for greener energy in Saskatchewan. The decision also signals that Saskatchewan coal will continue to be the dominant low-cost, reliable contributor to the province's energy portfolio in the future. Work will begin on the plant in 2011, with construction slated for 2012.

THE DEBATE OVER A NATIONAL SECURITIES REGULATOR

Saskatchewan has joined with Alberta, Manitoba and Quebec in formally registering its opposition to the formation of a National Securities Regulator. What would a National Securities Regulator mean for Saskatchewan's exploration and mining industry?

WE'RE NUMBER ONE! (?)

Saskatchewan is among the top exploration and mineral producing jurisdictions in Canada. How high can we go?

2011 SASKATCHEWAN LABOUR MARKET SURVEY RESULTS

The 2008 Saskatchewan Mining Labour Market Survey has been updated, and customized to include specifically the economic outlooks for potash and uranium. The final report, scheduled for this spring, will include two, five and ten year forecasts of the mining industry's hiring requirements and labour market availability by occupation. The Survey is a joint initiative of the Mining Industry Human Resources Council and the Saskatchewan Mining Association.

NEW DEVELOPMENTS

Expect further news about the BHP Jansen Project (potash) and Shore Gold's joint Star-Orion diamond project.

BUILDING THE CASE FOR A MINING CENTRE

As a world-leading mineral producing jurisdiction, Saskatchewan is well-positioned to also be a leader in mineral education, training, research and innovation. A proposed mineral research and training centre at the U of S would be, "a provincial centre where post-secondary institutions will be able to work and collaborate with government, industry and the community." Development of a business case is already underway and is expected to be completed in early 2011.

M&A (MERGERS & ACQUISITIONS)

2010 saw the world watching as BHP Billiton launched an unsuccessful \$39 billion takeover of PotashCorp. On the heels of this decision K + S Aktiengesellschaft of Germany, a long-time producer of potash, successfully completed a friendly \$434 million acquisition of Potash One. In January 2011, zinc-copper producer HudBay Minerals Inc. proposed the acquisition of Norsemont Mining Inc. With favourable potash, uranium, gold and copper markets ahead, will there be more mergers and acquisitions involving Saskatchewan exploration and mining companies in 2011?

GOLD!

This will be the first year of production for Golden Band's Jolu Mill.



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Investing in the Athabasca

Athabasca Basin Development Limited Partnership is the investment arm owned by the 7 Athabasca communities. The limited partnership was formed in 2002 and currently is focused on providing construction and operational services to the mining and exploration sector and government.

New Opportunities

The Athabasca Basin Development Limited Partnership is continually open to new opportunities, and will consider a variety of projects, ventures or partnerships.

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2011 SMA CALENDAR OF EVENTS

APRIL

- **Physical Asset Management Workshop****
April 12 (Saskatoon)
- **Saskatchewan Mining Supply Chain Forum***
April 13 (Saskatoon)

MAY/JUNE

- **Saskatchewan Mining Week***
May 29 - June 4
- **Emergency Response/Mine Rescue Skills Competition***
June 4 (Saskatoon)

JULY/AUGUST

- **SMA Rock'n the Classroom GeoVenture (Teachers' Tour)*** dates tbc

OCTOBER

- **2nd Edition of ORE*** The Official Publication of the Saskatchewan Mining Association

NOVEMBER

- **CIM MEMO (Maintenance Engineering/ Mine Operators' Conference 2011)****
November 6 - 9 (Saskatoon)
- **Mining Day on the Hill****
November 21 (Ottawa)
- **Ministry of Energy & Resources Open House****
November 28 - 30 (Saskatoon)

*SMA hosted events

**SMA affiliated events

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REAL WEALTH

WHY SASKATCHEWAN IS RICHER THAN WE REALIZE – WAY RICHER.

Neil McMillan, President and CEO of Claude Resources, will gladly argue that Saskatchewan has more real wealth than anywhere else in North America – and more than almost anywhere else in the world. We asked him to explain.

ORE: When you speak on the subject, you are quick to point out the difference between money and real wealth.

McMillan: Absolutely. Money isn't wealth. It is used to measure wealth. Real wealth is the production of excess goods and services that are in demand. In Saskatchewan, with only about a million people, we have immense excess goods, with a potential that we cannot yet even imagine. I'm talking here primarily about oil and gas, minerals, and food production. Those resources are in demand, and there are far more of these resources than we in Saskatchewan will ever need. Therefore, we have real wealth.

ORE: But other places have more money than we do.

McMillan: Right. That's because a country can always print more money. Right now the USA is printing it by the billions to

keep their economy going. The U.S. thinks of wealth as just money, which they can manipulate so easily. Currently 70 per cent of all of the economic activity in the U.S. is the spending of money. It's domestic consumption. If you ask, "Where does the money come from?" their answer is, "You just spend the money." It's not like that here – and that's why the U.S. is in serious trouble. They don't make anything like they used to, in a fashion that supports the lifestyle they have enjoyed in the past.

Think of it this way: You can print more money, but you can't make more potash, or coal, or uranium.

ORE: You define real wealth as having excess goods and services that are in demand, but you also distinguish between selling excess services and excess resources.

McMillan: Places like India have the population to provide a lot of excess services such as call centres, accounting, engineering and so on. The problem with services is that you can't store them. If you take a thousand tonnes of potash out of the ground this week and you can't or don't want to sell it right away, you still have a thousand tonnes of potash. You can't make and store a thousand extra hours of call-centre or blueprint drafting services.

Peter Gummer *[ed. Note – a former mining executive in Saskatchewan]* said, "Try to go through your day without touching something that was not the result of mining." You can't do it. Basic production is the first tier of wealth creation. Manufacturing is the second tier. There are more people who support basic wealth creation than there are actually in basic wealth creation. But without basic wealth creation, you're out of luck. Japan is a good example of that. They amassed a huge amount of money through quality workmanship, but you still can't build cars or electronic games without metals, energy, rare earth minerals and the other resources abundant in Saskatchewan.

I'm talking here primarily about oil and gas, minerals, and food production. Those resources are in demand, and there are far more of these resources than we in Saskatchewan will ever need. Therefore, we have real wealth.

ORE: In addition to real wealth, you also refer to our resources as being a real competitive advantage for Saskatchewan's long-term economic development.



McMillan: A real competitive advantage is something that is very hard or impossible for your competitors to duplicate. If you manufactured cars, another country can also manufacture cars. In theory, somebody could buy your automotive plant and move the whole thing elsewhere, as we've seen. Or else someone could say, "You don't want us to make televisions in your back yard? Fine, we'll make them over here." However, if you want the world's richest uranium ore, or some of the best coal anywhere, you've got to come to Saskatchewan. You might be able to make great pasta anywhere in the world, but Saskatchewan has 80 per cent of Canada's arable farmland; the best wheat to make that pasta is here. The advantage of real wealth in Saskatchewan is also a real competitive advantage.

ORE: That makes you very confident that Saskatchewan's current prosperity is here to stay.

McMillan: Without question. They're going through terrible economic challenges elsewhere in the world, but here everything's relatively comfortable. It's because the wealth that's supporting the economy here is pretty secure. For example, with uranium they'll continue to generate what in fact is excess energy for the next 100 years. In the north, the McArthur and Cigar properties have more energy in the ground than all of the conventional oil and gas reserves in western Canada combined. On top of that, our wealth is diversified. Mining is huge, as is farming, but of course so is oil and gas. Then on top of that is forestry and our 100,000 fresh-water lakes.

The benefits permeate all aspects of our society. Real wealth will give us the advantage in recruitment of the best doctors, teachers, researchers to our province, and enable us to fully support arts and culture, along with sports and recreational

programs. It's all related.

ORE: So to conclude, is there a down side?

McMillan: Our main problems won't be economic in the future. They will be social. The people now in Saskatchewan will be able to afford to continue to live the way we do now; not too many people in other places have that in their future. They are going to want what we have, and we are going to have to address that demand.

Aside from that, our major challenge is to properly manage our resources. We've made some major advances over the past decade, on both the government and industry sides. The Saskatchewan Mining Association has been key in that regard.

As the old saying goes, "It's not what you've got. It's what you do with it." If we get it right, Saskatchewan will have a standard of living that will be second to none, for generations to come. ■

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www.en.wikipedia.org/wiki/Wealth

<http://bit.ly/SaskToLead>

www.quickmba.com/strategy/competitive-advantage/

<http://bit.ly/statcanwealth>

POTASH: WORTH THE FIGHT

“Rising standards of living and development in China, one of the world’s largest consumers of fertilizer, and India are putting increasing pressure on farmers to produce more crops from a declining amount of agricultural land. Their most effective solution for increasing yields is commercial fertilizers from Potash and other fertilizer makers.”

New York Times
August 18, 2010

“BHP’s bid to buy PotashCorp has put the global spotlight on Saskatchewan’s business potential.”

Maclean’s
September 9, 2010

Potash is essentially potassium, and without it we would starve. It is mined as a potassium-rich salt which is refined into potassium chloride (KCl). It is then easily spread on fields as fertilizer to enrich the soil. Crops are stronger, in part through improved water retention. The end result is improved yields, lower losses due to disease, and improved transportability.

Salt comes from the sea. In Saskatchewan’s case, it was a series of ancient oceans that appeared and disappeared in tropical conditions. The last major ocean on the prairies was some 300 million years ago. Huge, shallow and warm,

It was the \$39 billion bid heard around the world. BHP Billiton’s attempted takeover of PotashCorp in 2010 sparked intense reaction from politicians, business leaders, industry organizations and international governments. It was the first time millions throughout the world had ever heard of Saskatchewan, or even thought of potash. There’s good reason to pay attention from here on.

each continental inundation left a legacy of salty potash that became buried over several millions more years. Today, Saskatchewan is uncovering this treasure. The three producing companies in the province (PotashCorp, Mosaic and Agrium) turn out one-third of the world’s annual production, making Saskatchewan the largest potash producer in the world.

As the world’s population grows, so does the importance of potash. After all, there is only so much of it. The law of supply and demand is a major force, along with several other global economic factors. Potash commodity prices skyrocketed from \$150 US to

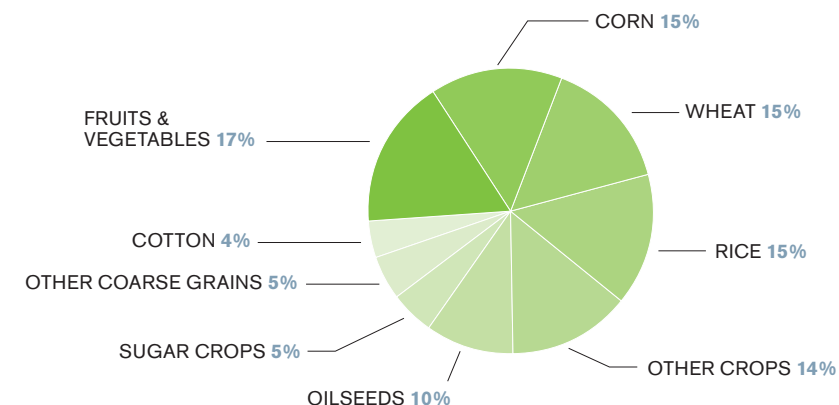
\$1,000 US a tonne by 2008, then fell just as dramatically in 2009. Market prices will be pressured by both the buyers and sellers as vital demand coincides with finite supply.

The single most important factor is a world population that is fast-approaching seven billion. Feeding an ever-increasing population with an ever-decreasing amount of land is a high priority, especially in China, India, Latin America and other Asian markets. China’s population has increased by more than 87 million since 2000; during that same period their annual potash use increased from 3.36 million tonnes to 5.8 million tonnes.



Fruits and vegetables are highly nutrient-intensive crops which take the largest portion of the world’s potash.

POTASH DEMAND – THE FOOD CONNECTION



Source: Fertecon



All of Saskatchewan's mines are at least 40 years old. With rising global demand, the time is right for expansions and new development.

Mosaic Potash Esterhazy K1

Adding to the pressure is the increased prosperity of emerging economic giants such as China. The more money you have, the more food choices you want and can afford. Diets in emerging countries are becoming more varied and shifting toward more meat. It takes roughly seven kilos of grain to produce one kilo of beef. According to PotashCorp (2010 Market Analysis Report), annual global meat production is expected to increase from 280 million tonnes to 480 million tonnes over the next 40 years.

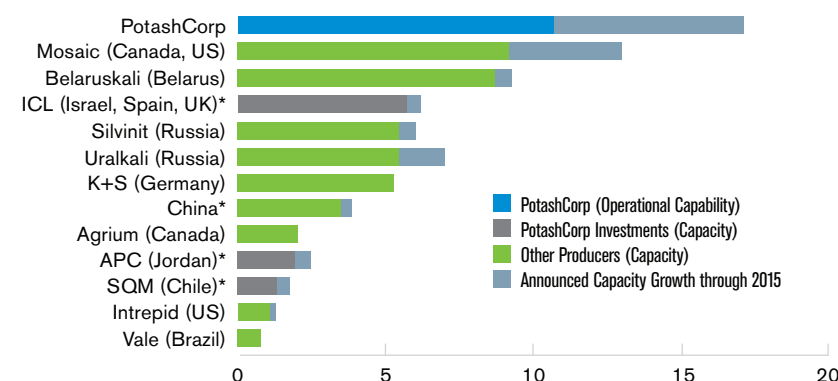
The pressures are also mounting in developed countries. The USA is a major importer of Saskatchewan's potash. Along with human food and animal forage, a new factor – ethanol fuel production – is an added challenge for their agricultural sector.

On one hand, record or near-record worldwide production is required every year to meet rising demand. On the other hand, farmland is shrinking. Bloomberg predicts that food production may have to rise by 70 per cent over the next 20 years just to keep up with population growth. The only solution

cont'd p.14

GLOBAL POTASH PRODUCTION BY COMPANY

Million Tonnes KCl – 2009 to 2015



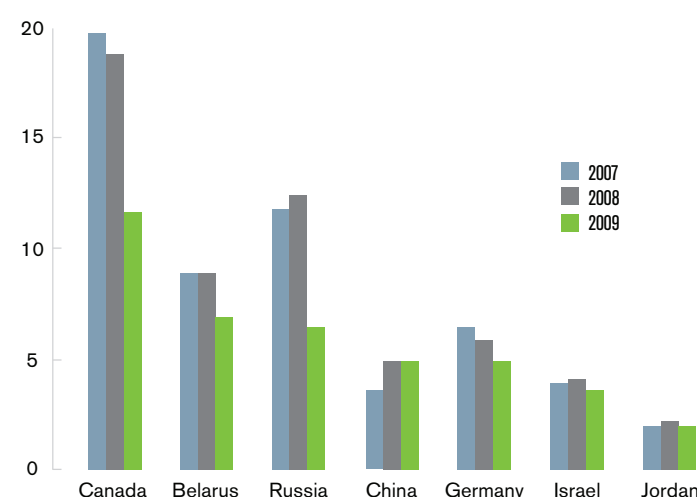
*PotashCorp investments: ICL (14%), APC (28%), SQM (32%) and Sinofert (22%)

Note: PotashCorp based on operational capacity (what they could physically produce) while competitor capacity is stated nameplate, which may exceed operational capability.

Source: Fertecon, British Sulfur, IFA, PotashCorp

GLOBAL POTASH PRODUCTION BY COUNTRY

Thousand Tonnes KCl



Source: U.S. Geological Survey; The Conference Board of Canada.

“Potash prices and values have followed a turbulent path in recent years and, while prices will presumably increase over the longer term (driven by changing diets and agricultural practices in China and India), these countries will strive to keep prices in check. New supply from BHP Billiton and Vale could also serve to dampen prices.... Negotiated potash prices for 2009–2010 are US \$550 per tonne in China and US \$750 in Korea and Japan—lower than the \$1,000 levels seen in 2007–2008, but four to five times higher than prices of five years earlier. Saskatchewan remains a world-leading potash region, a position that will likely be reinforced through the emergence of BHP Billiton as a major player in the province.”

Mining Association of Canada, Facts + Figures 2010, p. 18

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The La Ronge Gold Project is in Production!

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- Golden Band is proud to be working closely with, and employing, northern people and businesses in ongoing and mutually-beneficial relationships

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goldenbandresources.com

Exploring and Developing Canada's Diamond Resources

Shore Gold Inc. has announced a positive Pre-Feasibility Study for the Star-Orion South Diamond Project located in the Fort à la Corne (FALC) region in central Saskatchewan. Anticipated diamond production of 35 million carats with a 20-year mine life strongly supports the prospect of a world class diamond mine in Saskatchewan. Close proximity to paved highways, railroads, electrical power supply and a skilled labour force contribute to the robust economics of this large-scale diamond project. The FALC diamond district consists of some 70 kimberlites that form the largest diamondiferous kimberlite field in the world.

www.shoregold.com

is sustainable higher plant yields per acre, and that requires potash. It is not just land either; potash helps plants retain water, which is also becoming increasingly precious throughout the world.

Saskatchewan's prominence on the world commodities scene is not going to diminish. Potash is used in 160 countries, but only 12 countries have production of any significance. While there are numerous producers of nitrogen and phosphate,

there are currently a very limited number of potash producers – a strategic advantage which is emphasized by the Conference Board of Canada.

No wonder, then, that so much attention has been paid to Saskatchewan and its potash potential. No doubt, either, that the world will be paying even more attention to potash in the coming years. Much is at stake, not the least of which is a hungry world demanding to be fed. ■

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www.canpotex.com

www.mosaicco.com

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www.un.org/issues/food/taskforce/docs.shtml

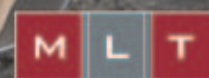
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and to helping the world grow the food it needs.**

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\$43 BILLION

You're standing on it.

It's shifting our national focus from central Canada to Saskatchewan, and attracting global interest. It bodes well for the coming decades in our province and our mining industry. It's \$43 billion – the cumulative projected investment in new mines and expansions in Saskatchewan over the next 20 years. There are challenges but they are manageable and welcome.

To better define the growing mining sector, SMA members were surveyed to determine projected and confirmed capital investments over the next 20 years, as well as the approximate value of mine output resulting from new investments, the number of jobs that would be created, and issues related to these expansions. The study concentrated on the exploration and extraction of many different resources including coal, diamonds, gold, potash and uranium.

"When we say mining is great for Saskatchewan, this report shows why," says Pam Schwann, SMA Executive Director. "The well-being of our province is supported in many significant ways by the mining industry, and that will continue in the years ahead." Schwann points to the analysis of 2008 which showed that the industry directly contributed

\$2 billion to provincial revenue to support government programs and services; this amounted to 20 per cent of the Government's total budgeted revenues.

Approximately 18,000 additional workers will be needed in the mining industry in the next ten years. (See *Learning to handle demand*, p. 22.) As Schwann points out, "These are quality, long-term jobs, with about 120 different career options. This will be a real boon to communities that previously lacked employment opportunities, especially in rural and northern Saskatchewan. In 2009, mine employees living in northern Saskatchewan earned over \$75 million. The jobs are full-time and pay well. The 2009 average weekly salary for a Canadian mine worker was 29 per cent higher than for a construction worker and 58 per cent higher

than for a forestry worker."

Amid this good news is the sobering reality that you have to go to the resources; they can't come to you. To create mines, you need roads, power grids, air services, rail lines, water systems, communications and other infrastructure. As with any economic development strategy, government investment plays a key role in helping to develop the infrastructure that in turn attracts investment. This is especially important to the future vitality of rural and northern communities.

Two key challenges to growth of the mining sector were identified as availability of power infrastructure and road infrastructure. In terms of road infrastructure, this means improving major transportation arteries - such as Highway 16 (Yellowhead) particularly

Cameco's Cigar Lake Mine – Operators are drilling holes for installation of the freeze pipes. Once the ground is frozen, the sinking of Shaft 2 will resume.

between Saskatoon and Lanigan, and northern Highways 102 and 905 – to accommodate increased industrial and commuter traffic.

In terms of power infrastructure, secure, dependable baseload power is fundamental for the industry to operate and thrive. At Key Lake's operation alone, it is estimated that the loss of operational capacity due to power outages has cost the equivalent of roughly \$55 million in uranium production. This also translates into a correlating loss in royalties paid to the Province of Saskatchewan and a loss of revenue to SaskPower.

As Kelvin Dereski, president of SMA and general manager of Mosaic Potash Esterhazy notes, "Companies making multi-billion dollar investments

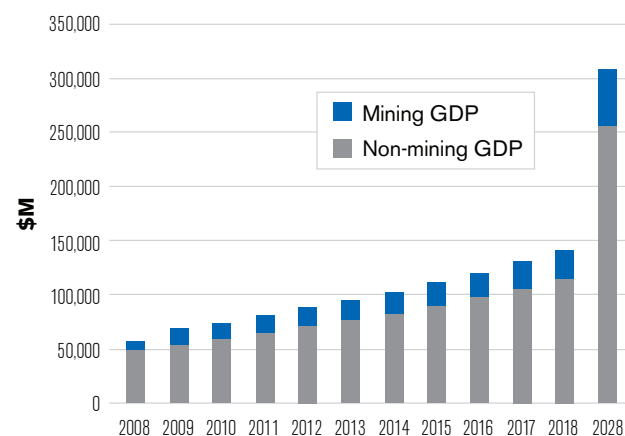
in the province, as our companies are doing, need to have the confidence that the required baseload power generation, transmission and distribution infrastructure will be in place to support their investments and operations. Consequently, the issue of a stable and secure power generation, transmission and distribution system is fundamental for the growth of our industry, and the growth of Saskatchewan."

SaskPower's 2009 Annual Report indicates that in the next 20 years SaskPower will need to rebuild, replace or acquire 4100 MW to meet increasing load growth and revitalize the province's aging power infrastructure. As the province's current total capacity is around 3,800 MW, the magnitude of this challenge is staggering. To address this challenge, SaskPower has recently announced a phased action plan spanning from 2010

THE GDP

The annual GDP (Gross Domestic Product) is the total market value of what is produced or manufactured in Saskatchewan each year. Agriculture, forestry and locally manufactured products, for example, all contribute to the province's GDP. Mining and its related service industries are expected to contribute an average of \$9.5 billion per year to the provincial GDP, which would represent 17 to 20 per cent of total GDP.

In the bigger picture, this also means a fundamental and profound shift toward Saskatchewan and the West as the economic powerhouse of Canada.



Source: SMA Infrastructure Needs Study 2010



Every dollar spent directly on mining creates a positive impact on every sector of Saskatchewan's economy, including retail.

to 2033 which includes record capital investments. The ability of SaskPower to reinvest its profits towards infrastructure renewal is a welcome and necessary strategy to ensure the province's infrastructure can support the economic growth of the province, including the growth of the mining sector.

Even with the challenges, the \$43 billion prediction is attainable. Firstly, it is not based on just one resource, but rather a wealth of resources, each with its own market fluctuations. Secondly, companies and their investors will remain positive about Saskatchewan for good reason, despite concerns by some observers that the November 2010

ruling on the attempted buyout of PotashCorp has sent a negative message to the rest of the world. Another

reason is that mining is long-term, where patience is key and planning and development is framed in

When you're looking for elephants, you go to their best habitat. When companies are looking for resources like potash and uranium, they go to places that already have a proven geological advantage – and one of those places is Saskatchewan.



WHAT DOES \$43 BILLION LOOK LIKE?

Given that a billion is a thousand million (\$1,000,000,000), \$43 billion could:



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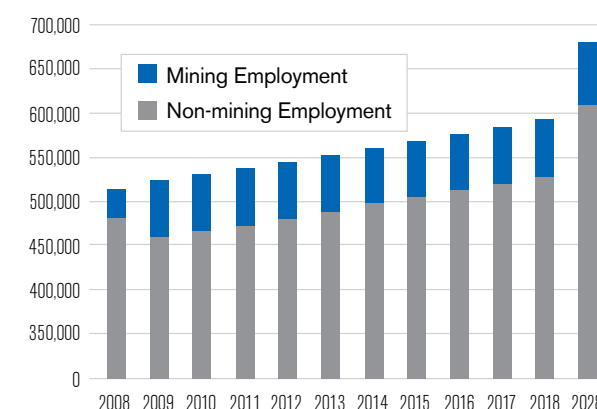


Cover the province's entire budget for health (at \$4.2 billion) for the next 10 years.



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SASKATCHEWAN MINING AND NON-MINING EMPLOYMENT



Source: SMA Infrastructure Needs Study 2010

years and decades. In the mining world, 20 years is just around the corner.

The prediction is something to be celebrated, wherever you live in Saskatchewan. Just as our resources are diversified, so are their locations. Be it coal in the southeast corner, potash in the central region, or uranium, gold, diamonds and base metals in the north – the benefits of these and other minerals could be realized more than ever before. ■

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Saskatchewan Ministry of Energy and Resources



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LEARNING TO HANDLE DEMAND

Saskatchewan's mining industry will need 18,000 new workers in the next 10 years. Where are they?

How do you fill 18,000 vacancies with skilled and professional workers? SMA is working with the Saskatchewan Government, Saskatchewan's educational institutions and other organizations to address this challenge. The answers are more complex than most people realize.

The mining industry is composed of over 120 different occupations

representing a varied level of educational requirements (see pie chart).

Apprenticeship and trades training, as well as university programs such as engineering and geosciences are key to preparing the next generation for careers in the mining industry. While workers without high school education have comprised a significant part of the workforce in the past,

present-day hiring at most mine sites requires grade 12 or equivalent, partly in response to technological advances, reporting requirements and safety issues.

For the Saskatchewan mining industry, the greatest need for new workers in the next decade will be the trades.

In order to meet the demand for the 4,150 new workers in the trades that the *MiHR-SMA Labour Market Study* indicates the mining industry will need in the next decade, the mining industry will have to hire journeypersons and train apprentices in significant numbers.

The Saskatchewan Apprenticeship and Trade Certification Commission (SATCC) is the organization responsible for apprenticeship training and trade certification in the province. The training itself is contracted out to SIAST, the Regional Colleges, SIIT and GDI. As of June 2010, there were 9,136 apprentices registered with SATCC in the 47 designated trades in the province, with roughly half of these registered in 11 trades that are in demand by the mining industry. However, only 188 of these

registered apprentices were directly employed by mining companies. While this compares favourably to the only 130 registered with SATCC in 2008, meeting the forecast need will be a huge challenge that will require cooperation from all stakeholders, particularly since many of the trades that are in demand for mining are also in demand by other sectors, such as construction and petroleum, both inside and outside the province.

The mining industry's ability to attract journeypersons from other industries – because of higher compensation packages and greater job security relative to smaller firms – has historically resulted in a relatively low number of apprentices within the sector. That is starting to change. A greater number of long-time employees are now reaching retirement age. In Saskatchewan that change, coupled with expansions in the industry, has resulted in a significant decrease in the average age of apprentices to 27 years of age. Another trend working in mining's favour is the marked interest in the trades. "The number of apprentices in Saskatchewan, across all trades, has nearly doubled

TABLE 1: ADDITIONAL EMPLOYEES, BY OCCUPATION, REQUIRED BY THE MINING INDUSTRY

OCCUPATION	2017
Tradespeople including Apprentices (All categories)	4150
Mine Labourers	2016
Miners (Non-automated)	1632
Supervisors, Officers, Foreman, Coordinators	1546
Heavy Machinery Operator	1451
Process/Plant Operator	1419
Administrative Services	779
General Management	615
Engineers (All categories)	545
Support Services	436
Technologist	363
Instrumentation	270
Laboratory	243
Geologist	218
Truck Driver	211
Accountant	168
Environmental Officer	166
Human Resources	138
Project Managers	129
Draftsman	70
Driller	68
Surveyor	64
Blaster	48
Finance	48
Geophysicist	27
Chemist	27
Other	1206

Source: MiHR-SMA 2008 Labour Market Study

since 2005," says Rick Ewen, director of the Saskatchewan Apprenticeship & Trade Certification Commission. "The trades are no longer seen as a second choice, but rather a very good, well-paying career with opportunities for advancement."

As many HR specialists in the mining industry lament, that huge sucking noise to the west of us (i.e., oil sands development) poses a substantial challenge in attracting both skilled and professional employees. To maintain a competitive, productive workforce, greater

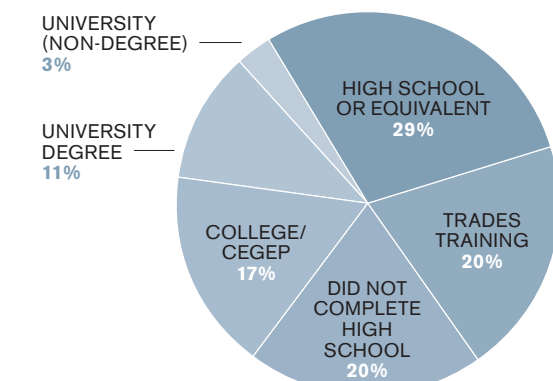
efforts and innovative, flexible scheduling will be needed to retain existing experienced workers and attract youth, women, Aboriginal peoples and new Canadians who have traditionally been underrepresented in the mining workforce. Tables 1 and 2 break out the key trades and technology skills required by the mining sector.

To meet the projected demand for trades for not just the mining sector, but also the expanding oil and gas and construction sectors, additional "outside of the box" thinking will be required. By working with the Saskatchewan Mining Association and its member companies, there have been some innovative changes to how training is being delivered to make it more accessible and to

help apprentices be more successful in achieving journeyperson status, including on-line course delivery. For instance, to address the need for more industrial mechanics at their operations, Mosaic Potash Esterhazy and Parklands College collaborated in a pilot program that offered the first two years of this course closer to home at Parklands College.

One of the best-known and most successful industry-education partnerships in Canada is the Multi-Party Training Plan (MPTP) in northern Saskatchewan. The MPTP has invested roughly \$50 million in training since it started in 1993, with successful outcomes such as its two-year mine

CANADIAN MINING WORKFORCE EDUCATIONAL ATTAINMENT



Source: MiHR-SMA 2008 Labour Market Study

TABLE 2: ADDITIONAL TRADES PEOPLE AND TECHNOLOGISTS REQUIRED BY THE MINING SECTOR (includes apprentices)

OCCUPATION	2017
Millwright	1060
Electrician	810
Heavy Equipment Mechanic	761
Mechanic	536
Electrician Welder	515
Pipefitter	70
Steam Engineer	145
Machinist	66

Source: MiHR-SMA 2008 Labour Market Study

technologist program. The steering committee is chaired by industry, which in the past has alternated between representatives of AREVA and Cameco.

Administrative support and delivery is the responsibility of Northlands College. Bill McLaughlin, president of Northlands says that in the past 17 years the program has involved a large percentage of young people in the region – an estimated 4,500 to 5,000 students from a total northern population base of 39,000. The MPTP is the principal reason why almost all of the entry level positions at the northern mine sites are filled by residents of northern Saskatchewan. The Plan has attracted industry interest from as far away as Australia and New Zealand.

At SIAST, Arnold Boldt, dean of technology programs, points to the mining technology program now being developed as another way that SIAST is responding to the labour market needs of the mining industry specifically. The program could attract students from across Canada, which increases the chances of them staying on to work in Saskatchewan when they graduate. Furthermore, it will encourage Saskatchewan graduates to stay here, a “grow your own” trend which has increased significantly from a decade ago. The observation that students trained and educated in Saskatchewan’s post-secondary institutions are more likely to make their careers in Saskatchewan is echoed by Ernie Barber, dean of engineering at the University of Saskatchewan (U of S), who noted that, “You have to train them here if you want them to work here.”

TABLE 3: ADDITIONAL ENGINEERS REQUIRED BY THE MINING INDUSTRY

OCCUPATION	2017
Mine Engineer	187
Chemical Engineer	145
Mechanical Engineer	120
Electrical Engineer	73
Civil Engineer	20
TOTAL ENGINEERS	545

Source: MiHR – SMA 2008 Labour Market Study

Saskatchewan’s universities are also responding. At the U of S, additional mining-specific courses are being offered to the geological engineering program. Such was the case with the development of a third year *Introduction to Mining and Mineral Processing Engineering* course that was offered at the College of Engineering in January 2010 and taught by sessional lecturers from the mining industry. The appetite of the engineering students to learn more about the mining industry was evident as the

initial class was filled within 10 minutes. The course was re-offered this past September, and over 60 students have now graduated from this course in the past year. “The addition of this class alone better prepares students for quality careers in the Saskatchewan mining industry”, said Pam Schwann, executive director of the SMA. “We fully support the College of Engineering’s plan to provide additional mining-specific courses.” As Saskatchewan is now consistently one of the top mineral producing

jurisdictions in Canada, and will be for the foreseeable future, the “grow your own strategy” makes good sense.

Recognizing that students are considering career paths at earlier stages in the education system, SMA and other earth science related organizations have also been working to promote the delivery of earth sciences information in the K-12 system. An exciting new development is the Ministry of Education’s proposed introduction of Earth Science 20 and 30 as new high school science courses. These courses will help raise awareness of the mineral industry among Saskatchewan students as they consider and plan their future careers.

Ironically, the aging demographics may also have a bright side. More and more baby boomers will end up working longer

because they do not have the amount of money required for retirement, and because they are much healthier at their age than any other generation before them. The mining industry recognizes that mature workers play an essential role in transferring knowledge and skills to younger industry workers. Although we tend to look at young people as the next generation of mine workers, some of the job vacancies may be filled by individuals from the boomer generation who have decided to change their careers.

It will also be interesting to see what role technology

plays in meeting future labour market needs of the mining industry. Robotics are already being used in the mining industry, particularly where there are safety concerns. Will robots be playing more roles in the mines of the future? On the training side, will “virtual mines” be created in classrooms so students will be able to apprentice without having to secure a job?

Regardless of the trends, mining will offer excellent employment opportunities, and not just in the trades, engineering or geology. Mining employs professionals across virtually every

INNOVATIVE CAREER TRAINING IN THE K-12 SYSTEM

The Saskatchewan Youth Apprenticeship Program (SYAP) was started in 2004 by SATCC as a two-year pilot program at selected Saskatchewan high schools with the purpose of raising awareness of careers in the skilled trades to Saskatchewan youth and connecting high school programs with skilled trades training. In 2010, the SYA Program was expanded to 242 high schools, with an emphasis on First Nations high schools. The program reached 4,464 high school students registered as Saskatchewan youth apprentices and a total of 1,138 graduates of SYAP received a Certificate of Completion. Forty scholarships, valued at \$1,000 each, were awarded in June 2010 to selected, eligible high school graduates who had completed the Saskatchewan Youth Apprenticeship Program.

FUTURE PATHS

The Saskatchewan Mining Association has partnered with the Saskatoon Industry Education Council (SIEC) to produce a *Career Mining Tree* that illustrates the level of education required for the 120 occupations for the mining industry. This is available on-line at www.futurepaths.ca/labourmarkets/mining/opportunities.php



The average weekly salary (\$1,350) of a Canadian mine worker in 2009 was 58 per cent higher than in forestry; 47 per cent higher than manufacturing; 30 per cent higher than finance; and 29 per cent higher than construction.

discipline, such as in health, human resources, business and finance. “Mining can be very attractive for graduates, especially as they get older, get married and are looking for long-term stability,” says Dennis Johnson, dean of industrial training at SIAST.

“More needs to be done to inform potential recruits of the wide range of trades and professions that are required, and about the opportunities and benefits of working in the mining industry.” ■

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THE NEW SILK ROAD

The term “Silk Road” was first used in the 19th Century to describe the trade routes to the lucrative Chinese markets. Canada has added to those routes through diligent development of trade relations for our mining and exploration companies.

Gary Delaney, Chief Geologist with the Saskatchewan Ministry of Energy and Resources, works with Enterprise Saskatchewan and the Intergovernmental Affairs area of the provincial government’s Executive Council to promote our province’s potential to Asian investors and state agencies. A core strategy is participation in trade missions, primarily to China, Korea and Japan. These missions include mining and exploration companies working in Saskatchewan. As recently as January, Energy and Resources Minister Bill Boyd led a 12-day investment mission profiling investment opportunities in Saskatchewan’s resource sector at meetings in Shanghai, Beijing and Tokyo. Approximately \$200 million has already been invested in resources (including minerals, oil and gas) by Asian companies who are new to the province.

Development of relationships that eventually lead to a deal can take years. Experience has shown that, when it

comes to doing business, “If you plan to come to China just once, don’t bother coming at all,” says Delaney. “You probably have to meet two, three or even four times before you begin to see any progress at all.” The Chinese also like continuity – seeing the same people each time. What’s more, there are several ‘levels of connectivity’ that need to be established. Gary Delaney’s principal role is to answer the many technical questions from the Chinese, who will involve their own engineers and geologists in their decision-making.

If you have the secure resources that the Asian markets want, the investment of time and effort can be well worth it, according to Michael Gunning, president and CEO of Hathor Exploration. He says Hathor is a good example of a company that can benefit from these government-organized missions. In 2008, Hathor became the first junior mining exploration company to discover a major uranium deposit in the Athabasca Basin.

China is ramping up its nuclear energy program, which currently accounts for only two per cent of their energy production; its reactors need fuel for the next 30 to 40 years. “Unlike what drives the equity markets in Toronto or New York or Vancouver – namely, near-term increases in share price – the Chinese invest to secure long-term access to resources. That is exactly what the significant resource potential of the Athabasca Basin and Hathor’s Roughrider Project can provide.” With the Asians, investment decisions on this scale, in terms of both time and money, do not happen overnight. “This is where trade missions can be a major benefit to private companies,” says Gunning.

Government agencies have the resources and methods to develop and sustain relationships, and in turn this lends credibility to the companies that accompany government officials on missions and in events such as the Mining Forum in Beijing.

Furthermore, the opportunity to meet with many companies at once, in one venue, is much more likely to attract interest and attendance. Just as importantly, the amount of organizing and logistics required would be very taxing if not impossible for most companies who decided to do it on their own, and would in most cases yield far poorer results.

Both Gunning and Delaney emphasize that patience, preparation and persistence are essential if you want to attract Asian investment. It is a whole different way of doing business – including business dinners where you are expected to drink large glasses of red wine like they were shooters and where, as Gunning will tell you, a steady diet of Peking Duck can tax even the hardest of canuck constitutions.

Despite the obstacles, there is no question the rewards are worth it. “Asia wants what we have,” says Delaney. “They are a major emerging market with a rapidly expanding middle class that needs more energy, manufacturing materials and food.” (See *Potash: Worth the fight* on p. 10.) The new Silk Road is now a two-way thoroughfare leading right to Saskatchewan, bringing major investment that augurs well for the long term. ■

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Saskatchewan mining has some of the lowest Workers' Compensation Board assessment rates – lower than in the health or government sectors – but we still have work to do as we strive for an injury-free workplace.

A small footprint: Saskatchewan's mining industry utilizes only 0.1 per cent of the province's available land. Furthermore, the use is temporary. When the mining is completed, the land is reclaimed to a productive state.

Widespread adoption of "green" technologies such as the future automobile will depend upon the discovery and development of minerals, many of which are found in Saskatchewan.

Tapping Future Resources with SIAST



With industry-ready graduates, SIAST's programs can provide you with the human resources needed to grow your business operations. According to an MiHR Council* report, the Saskatchewan mining industry will need 33% more people in 40 fields over the next six years. SIAST's programs can meet the demand for specialized training in a number of resource-based programs. Here is a sampling:

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Geographic Information Systems for Resource Management – certificate

Civil Engineering Technology – diploma

Environmental Engineering Technology – diploma

Underground Mining Core – certificate

Electronic Systems Engineering Technology – diploma

Water and Wastewater Technician – certificate

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OUR CEOs: BEYOND THE BIO

GERALD W. GRANDEY CEO, CAMECO CORPORATION

In each edition of *ORE*, we go beyond the official CEO bios to give our readers insight into the leaders of Saskatchewan's mineral mining and exploration companies. Our inaugural edition features Gerald (Jerry) Grandey, CEO of Cameco Corporation, one of the world's leading uranium producers and among the *Financial Post's* Top 10 Companies to Work For in 2010.

You might think a liberal activist student from southern California in the 1960s would have nothing in common with the current CEO of a Saskatchewan-based global giant in uranium production. In this case, they are the same person.

through high school and into college were pure mathematics, physics and geology – a world of facts, not idealism or social issues. But this was California, the crucible of the campus protest, Flower Power and the Hippie Revolution. Jerry

was 19 when the first U.S. troops were sent to Vietnam. In college, he became caught up in the new and unprecedented wave of youthful social activism which, he will tell you, included his participation in anti-nuclear demonstrations.

His dissatisfaction with aspects of his country, however, did not diminish his commitment to it. He volunteered for duty in Vietnam, as a second lieutenant in the U.S. Army Corps of Engineers. He's not sure why – perhaps because

Jerry Grandey has fond recollections of growing up in Long Beach, California and in the Napa Valley near San Francisco (at a time when Napa Valley had two small vineyards and a population of only 2,000). On the California coast, the two big high school sports were football and swimming. Jerry chose swimming, thanks in part to his mother and her determination years earlier. She had sent young Jerry back to the Long Beach YMCA five times before he managed to pass the basic swimming course. His love of swimming has never diminished; he's in the pool doing laps at least four or five times a week, despite his heavy schedule at Cameco.

Jerry's academic interests



Cameco CEO Jerry Grandey listens to Credenda Virtual High School student Jessica Constant who explains how she gets access to quality math and science instruction through Credenda. Cameco has invested \$2 million in Prince Albert-based Credenda in an effort to help students from far-flung communities in northern Saskatchewan get the type of quality math and science instruction that will allow them to do well in post-secondary training opportunities.

he volunteered rather than being drafted – the Army sent him instead to the Korean de-militarized zone (DMZ), a narrow strip of no-man's land between North and South Korea. With most of the senior officers in either Vietnam or recuperating back in the States, Jerry was soon placed in a position of authority and was expected to know what was going on. He quickly learned enduring lessons in leadership and how to handle the stress of responsibility. The Corps had been ordered to remove some 157,000 M14 land mines in the DMZ – virtually all of these had to be removed by hand.

Grandey returned home with the desire to move away from science and into the social forum. He chose law and earned his degree from Northwestern University in Illinois. He then joined a law

firm in one of his favorite states, Colorado. With his background in geophysics and resource development, he began to specialize in mining and environmental issues. There was no shortage of work. The federal government had passed a law in 1972 requiring all federally-regulated projects to file an Environmental Impact Statement (EIS), which soon evolved into massive and complex documents. Jerry's in-depth work on EIS for a variety of energy sources (including coal, oil and nuclear) gave him a comprehensive understanding of the risks, and the benefits, of all of them. He came to the conclusion that, of all energy sources, "nuclear stacked up pretty well." Today, his firm belief in the benefits of nuclear energy to society and to developing countries throughout the world

underpins his drive to keep Cameco at the forefront of uranium development.

Jerry Grandey's favorite saying is, "Maintain flexibility." In other words, without being indecisive, be open-minded and keep your options open. His ability to maintain flexibility has led to numerous accomplishments, one of his proudest being Cameco's key role in facilitating the 1993 U.S.-Russian agreement to recycle Russian warheads for peaceful uses. So far, approximately 15,000 nuclear weapons have been dismantled and recycled through Cameco and its partners. It's something Jerry Grandey the college protestor would have demanded; something Gerald W. Grandey the CEO has been able to achieve. ■



UNITED WAY OF SASKATOON & AREA THANKS SMA MEMBERS

In January the United Way of Saskatoon and Area announced a record-breaking total of \$5.7M raised in their community campaign. Over \$2.1M came from Cameco, PotashCorp, Agrium and Mosaic and their employees. Each of these companies ran stellar employee campaigns with each company providing a 100 per cent match of their employees' donations to United Way.

In addition to financial resources, the employees of these leaders in the mining industry volunteered their time in leadership roles on the United Way Board of Directors, the Community Campaign Cabinet and the Community Investment Volunteer Panels.

Of special note, David Waugh, general manager of Mosaic Potash in Colonsay chaired the 2010 United Way Community Campaign. David led a team of dedicated volunteers raising that amazing amount of \$5.7M an increase of 16 per cent over the amount raised in 2009.

"The investment of time and money from the Saskatchewan Mining Association's members is incredible and is critical to our successful United Way campaign", says Sheri Benson, Executive Director of United Way of Saskatoon & Area. "It is strengthening our communities and creating lasting change."



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TAGGING ALONG

JESSICA THERIAULT DIRECTOR OF ENVIRONMENT MOSAIC POTASH



It's just 6:00 on a dark snowy Monday morning as Jessica heads out to Mosaic's K1 potash mining site at Esterhazy, one of the four Saskatchewan sites and two U.S. sites in which she oversees the environmental program in her role as the director of environment. Most of her meetings start between 7:00 and 8:00 a.m., and typically a site meeting begins with a tour of the tailings management area (where the mine's residual materials – or "tailings" – are deposited and contained). Following the tour, she will participate in a conference call with all of Mosaic's environmental specialists at the sites, to help provide guidance and ensure consistency with all of the environmental programs and projects – and regulatory

reporting – from the sites.

After a quick lunch, Jessica has two more meetings. The first is a conference call with the Ministry of Environment to discuss a site project. The second meeting takes her back on the road, to chair an SMA Environmental Committee meeting. "During the course of the week, I can have a lot of meetings, at both the site and corporate levels, and with different organizations and government agencies," says Jessica. "My job is both challenging and rewarding. The challenge is that the environmental areas within the mining industry are multifaceted, and environmental decisions are made on every level for numerous projects. The biggest reward for me personally is working with great people including

co-workers, consultants and contractors."

Currently, one of her biggest challenges is finding experienced environmental practitioners. Every aspect of mining today has some environmental aspect to it, she points out, which is why she encourages young people to consider a career in environmental engineering. "In high school I enjoyed the math and science subjects, so engineering was an obvious choice." She enrolled in engineering at the University of Regina, and from there gravitated toward environmental engineering. Jessica says the work is full of diversity that takes you both indoors and outdoors. "Coordinating the numerous projects in a fast-paced industry is never boring!"

In addition to being able to work with great people,

Jessica appreciates the sense of accomplishment that can come from her role. "Managing a project from conception to completion is very gratifying," notes Jessica, adding that, "There is one quality you definitely have to have to be successful: You have to be organized."

Her day today will take her past the usual quitting time, and tomorrow there will be a number of reports to work on and more meetings to attend. Even though the paperwork and travel can be heavy at times, Jessica is proud of what she and her colleagues do to protect the environment and ensure Mosaic's outstanding record of regulatory compliance. Sometimes, too, there is the added bonus of driving home in the daylight, in time for supper. ■



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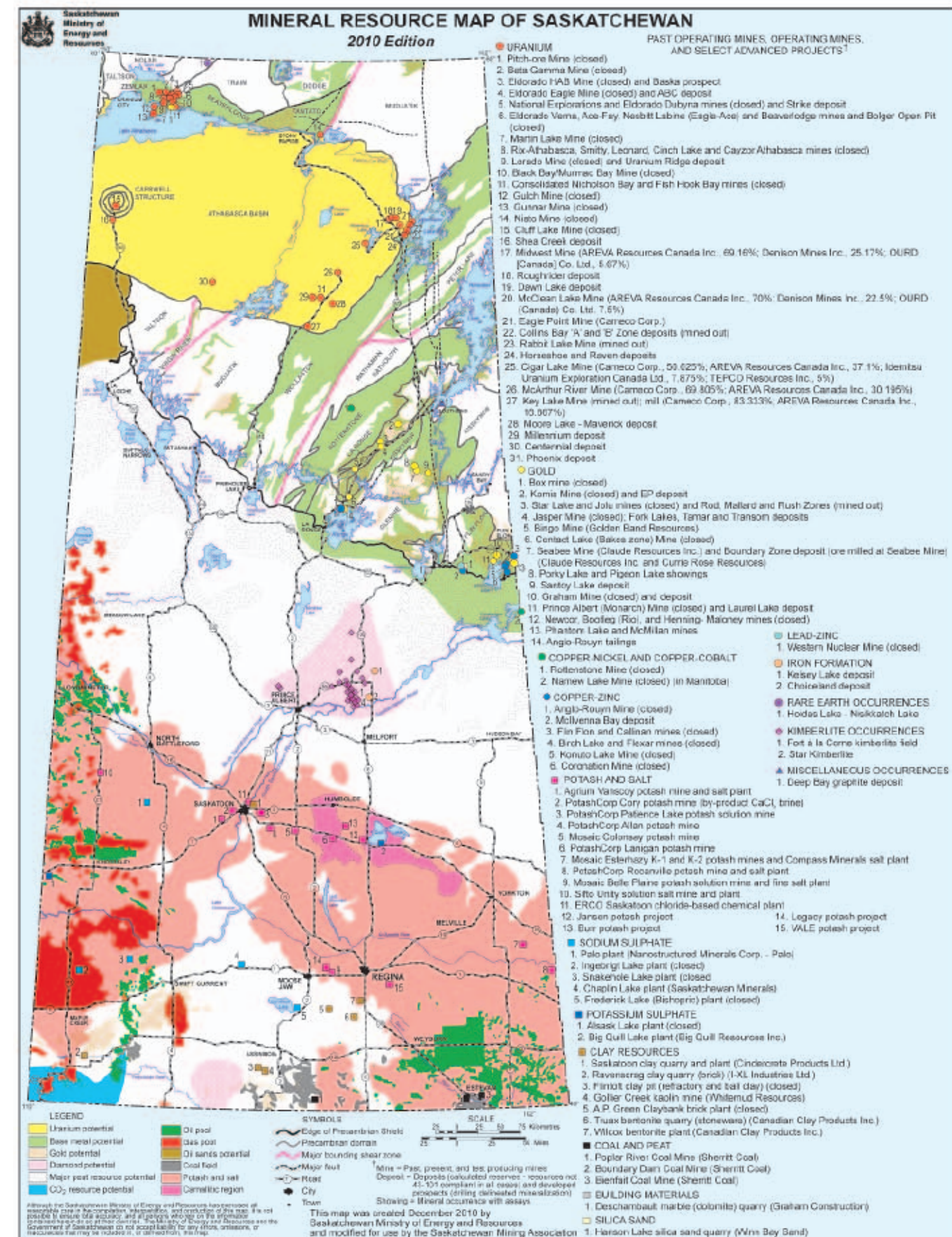
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