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# 2026 ISSUE 1



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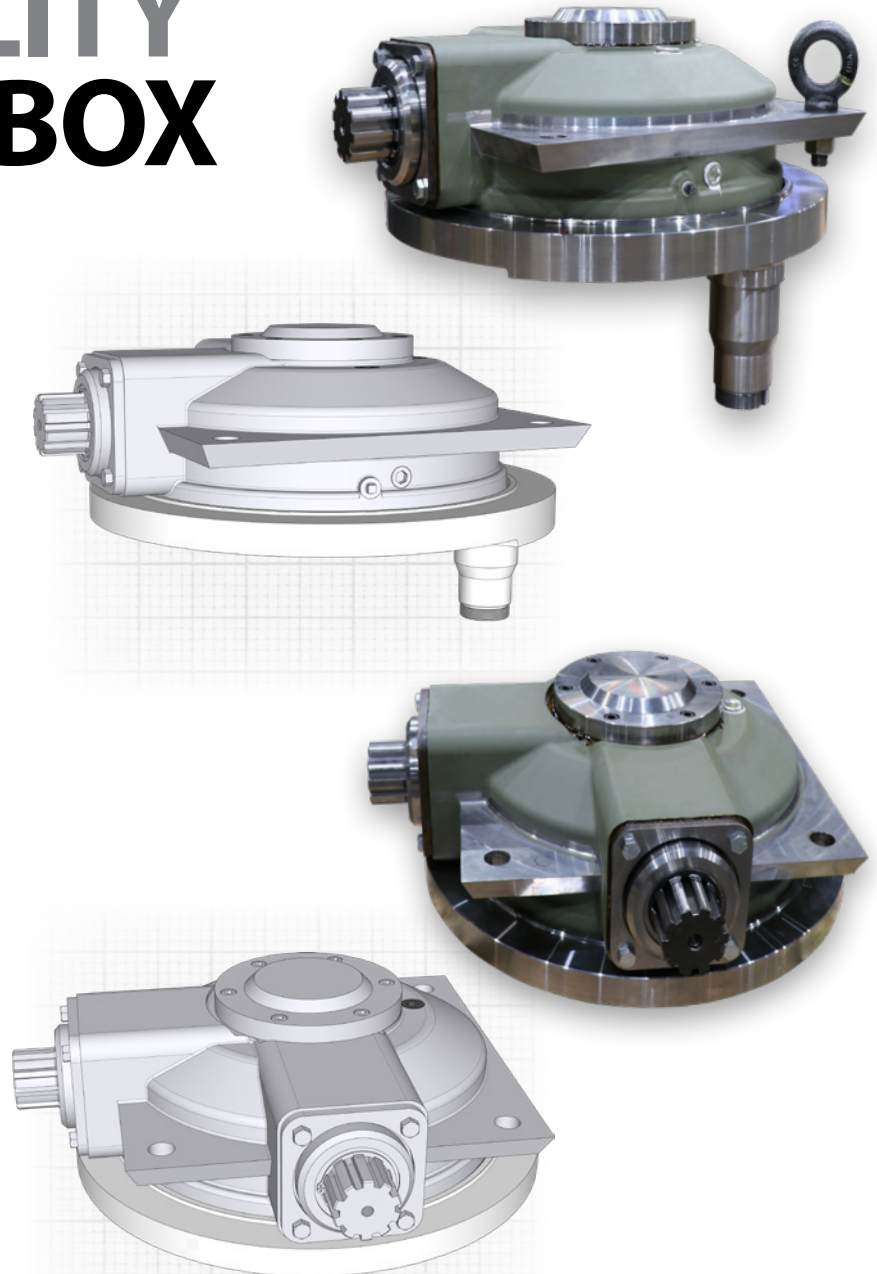
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## THE Potash™ PRODUCER

DEL COMMUNICATIONS INC.  
www.delcommunications.com

President & CEO: DAVID LANGSTAFF

Project Lead & Sales: MIC PATERSON  
mic@delcommunications.com

Managing Editor: SHAYNA WIWIERSKI  
shayna@delcommunications.com

Creative Director / Design: KATHLEEN CABLE

Contributing Writers:  
FARHAD ABASOV | PHILLIP CHOI | CLYDE DELETSU  
STEVE HALABURA | ANDREA HANSEN  
CHRISTOPHER JOHNSON | JOSHUA MAYFIELD  
LESLEY MCGILP | RAMAN PARANJPE  
KAVEH SADEGHKHAH

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## MESSAGE FROM THE EDITOR

# SHAYNA WIWIERSKI

**A**s the potash sector continues to navigate a complex and interconnected global landscape, one theme is becoming increasingly clear: success in today's market is no longer defined solely by production or price, but by adaptability. From shifting trade flows to evolving cost structures, the industry is operating in an environment where precision and strategic decision-making matter more than ever.

In 2026, the potash market is characterized by a heightened sensitivity to delivered economics. Buyers are looking beyond benchmark prices, instead focusing on the full picture – freight rates, logistics, and geopolitical influences that ultimately shape the cost of nutrients reaching the farm gate. With supply still largely concentrated in a handful of key producing regions, and demand anchored by major importers such as Brazil, China, and India, the balance between availability and affordability remains delicate.

At the same time, the broader agricultural landscape continues to place new demands on the sector. Farmers are being asked to do more with less, producing higher yields on limited arable land while navigating environmental pressures and market uncertainty. This reality reinforces the critical role potash plays in supporting global food systems, as well as the importance of innovation, investment, and collaboration across the value chain.

In this issue of *The Potash Producer*, we explore these themes through a series of timely features and industry insights. We take a closer look at evolving global market

dynamics, including how freight considerations and delivered pricing are reshaping buyer behaviour in key regions. We also highlight the progress of the Banio Potash Project in Gabon, where Millennial Potash is advancing a promising new development within the West African Coastal Basin, an example of how emerging projects could contribute to future supply diversification.

In addition, we feature Nutrien, whose integrated global network continues to support farmers around the world. As one of the industry's leading producers, Nutrien's approach underscores the importance of scale, innovation, and strong partnerships in addressing the growing demand for food. With global grain and oilseed production increasing significantly over the past two decades, the need for reliable and efficient nutrient supply has never been more apparent.

Together, these stories reflect an industry that is both resilient and evolving; one that is responding to today's challenges while positioning itself for the future.

*The Potash Producer* is published three times a year and delivered directly to inboxes, keeping you informed on the latest developments shaping the industry. Our annual print publication, *PotashWorks*, is released at the beginning of each year. To learn more, visit [potashworks.com](http://potashworks.com).

Enjoy this issue!

***Shayna Wiwierski***

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# MESSAGE FROM THE PREMIER OF SASKATCHEWAN

## The Honourable Scott Moe



Saskatchewan is proud to be the global leader in potash production and home to many world-class potash mining companies. This industry continues to be a core pillar of our province's economic strength and community prosperity. For decades, potash has been one of our greatest natural assets, and it remains vital to a thriving, resilient Saskatchewan today.

Potash supports tens of thousands of direct and indirect jobs across the province, providing rewarding careers in engineering, trade, environmental science, technology, and innovation. These opportunities help keep families in Saskatchewan, attract new talent to our province, and foster community growth. The industry's dedication to safety, training, and career development ensures that Saskatchewan residents continue to benefit from some of the best employers worldwide.

The economic impact of potash goes well beyond the mine sites. Strong and stable potash production supports local businesses, promotes infrastructure growth, and enhances municipal services. Many rural communities thrive through partnerships with potash companies that invest in recreation facilities, community programs, education projects, and local charities. These collaborations help ensure that communities across Saskatchewan remain exceptional places to live and raise families.

Saskatchewan potash also plays a vital role on the world stage. As a key ingredient in global food production, our potash helps farmers increase crop yields, support soil health, and feed a growing population. Saskatchewan makes meaningful contributions to global food security, something that is a source of great pride for our province.

The Government of Saskatchewan is committed to maintaining a competitive, stable environment that supports responsible potash development. We continue to work with industry partners to advance investment, innovation, strengthen sustainability practices, and ensure that our resources are developed for the benefit of current and future generations.

To the potash producers, workers, suppliers, and communities who make this industry strong, thank you. Your work is essential to Saskatchewan's continued success and to supporting a world that depends on safe, reliable, and sustainable food production.

Together, we are building a strong, prosperous Saskatchewan.

**Scott Moe**

Premier ●

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# MESSAGE FROM THE SASKATCHEWAN MINISTER OF ENERGY AND RESOURCES

## The Honourable Chris Beaudry



Saskatchewan's potash industry remains one of the province's greatest economic strengths, representing a long-term success story built on collaboration, innovation, and responsible resource development.

As global demand for sustainable food production grows, potash plays a vital role in supporting agricultural yields and enhancing food security worldwide. Saskatchewan is proud to be the world's largest potash producer and to be home to the people, expertise, and companies responsible for this output.

Our potash industry is a key driver of the economy. Thanks to steady and reliable production, nearly matching

the record level set in 2024, and improving market conditions, our potash industry partners were able to increase the value of sales by 18 per cent last year to \$9.3 billion.

These world-class companies continue to make significant investments that are creating quality jobs, economic opportunities, and improving Saskatchewan's high quality of life. Since 2005, Saskatchewan potash producers have committed over \$40 billion of investment into the sector to build new mines and increase production capacity at existing operations, paving the way for continued growth in potash production.

Saskatchewan's potash companies

are strong corporate citizens, demonstrating their commitment to communities through supporting local businesses and contributing to community initiatives that enhance residents' well-being. The Government of Saskatchewan values these partnerships with municipalities, Indigenous communities, educational institutions and training providers, all of which are essential for building a resilient, prosperous future for the people of the province.

As we look ahead, the province's potash sector is well-positioned to meet increasing global demand. With ongoing investment in innovation, sustainability, and new production capacity, Saskatchewan is prepared to supply the world with responsibly produced potash for many decades to come.

We extend our appreciation to everyone working in the potash industry, from engineers and geologists to operators, contractors, and community partners. Your expertise, dedication and forward-thinking leadership help make Saskatchewan a global resource powerhouse and a province of opportunity.

The Government of Saskatchewan is proud of an industry that is the cornerstone of the provincial economy, and will continue to support its growth, competitiveness, and contributions to our province's prosperity. ●

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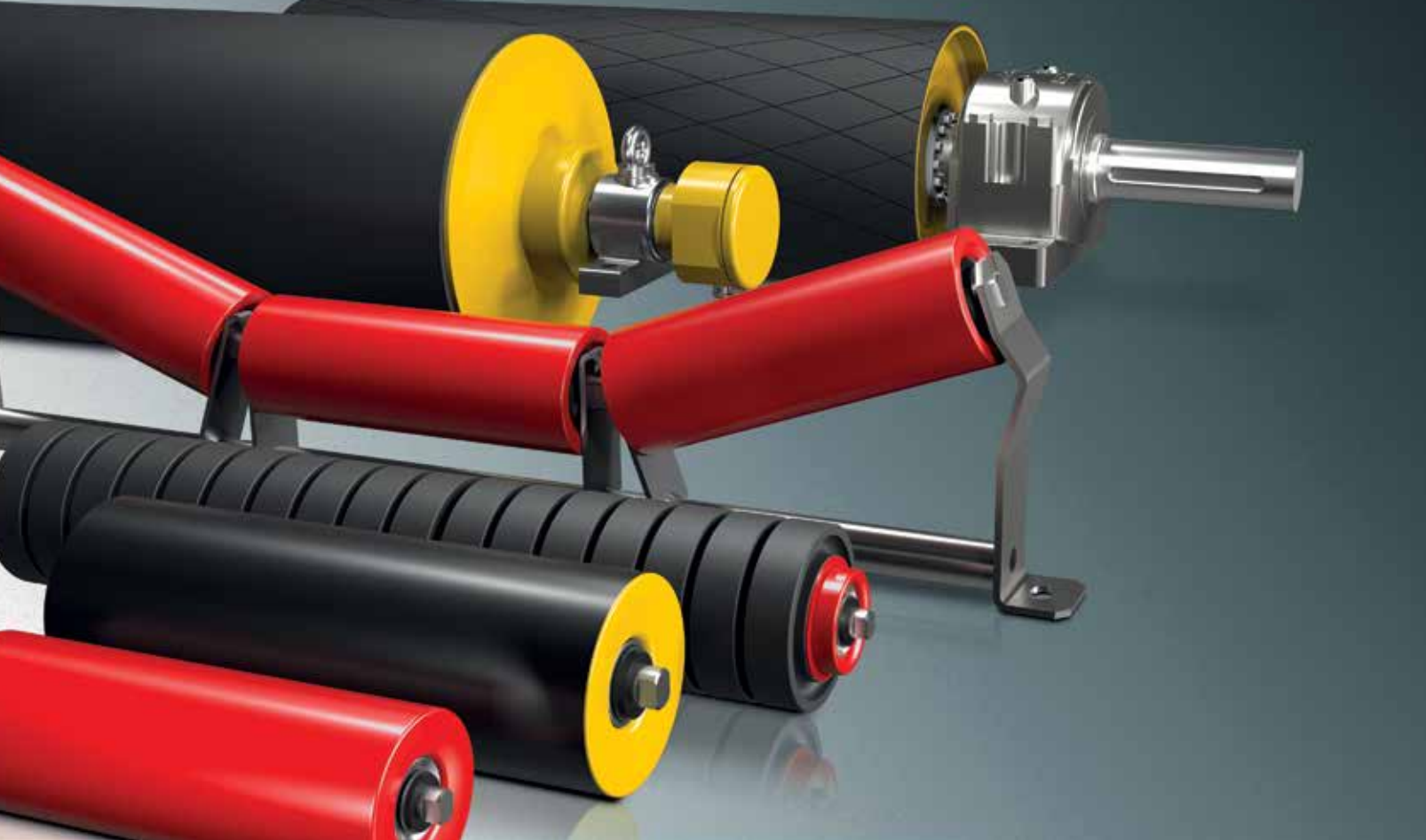
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# MESSAGE FROM THE MINISTER OF ENERGY AND NATURAL RESOURCES

## The Honourable Tim Hodgson



For more than half a century, Canada's potash sector has helped power global food security and agricultural productivity. Today, at a moment of growing geopolitical uncertainty, that role is more critical than ever. With some of the world's largest potash reserves, new projects under construction, and a consistent record of responsibly produced supply, Canada is uniquely positioned to strengthen allied supply chains, expand into new markets, and drive economic resilience and food security at home and abroad.

### STRENGTHENING GLOBAL AGRICULTURE WITH CANADIAN POTASH

Canada is the world's largest producer and exporter of potash, with 2025 production estimated at 24.8 million tonnes – roughly one-third of global output. Of that, 94 per cent was exported, generating C\$9 billion in value. Canadian potash supports farmers across North America, Asia, Europe, and Latin America, including key markets such as the United States, Brazil, China, the European Union,

India, Malaysia, Bangladesh, and Thailand.

In an increasingly fragmented global environment, countries are diversifying their sources of critical inputs, like potash, and Canada is stepping up. As geopolitical tensions put pressure on key shipping chokepoints, including the Strait of Hormuz, supply from some regions face heightened risk. Canadian exports, by contrast, move through secure, reliable North American and Pacific corridors, positioning Canada as a stable, low-risk supplier.

**As agricultural economies grow, customers depend on stable, predictable supply. Canada has what the world wants and we are delivering.**

As agricultural economies grow, customers depend on stable, predictable supply. Canada has what the world wants and we are delivering. Our potash is produced to the highest standards, backed by Canada's reputation for reliability. For producers and investors, this means access to growing demand anchored in trust and stability. We are not just participating in global markets; we are helping to stabilize them.

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## **INFRASTRUCTURE AND INVESTMENT KEEP CANADA COMPETITIVE**

Canada's advantage is reinforced by modern infrastructure, including efficient rail networks, world-class ports, and reliable trade corridors. Expanding this infrastructure is essential to reaching new and diversified markets.

The Government of Canada is investing to ensure resources reach global markets quickly and reliably, with a focus on enabling nation-building projects and competing at global speed.

Saskatchewan continues to be central to this success. The Fraser Institute has consistently ranked Saskatchewan among the world's top jurisdictions for mining investment, frequently placing in the global top three for its high mineral potential and stable, attractive policy environment. This strong investment climate—and the multi-billion-dollar private-sector projects it enables—reflects deep confidence in Canada's long-term potential.

These investments create good jobs, support Indigenous and local communities, strengthen regional economies, and expand export capacity. They send a clear signal: Canada is open for business and ready to grow.

## **A CLEAR PATH FORWARD**

As global food demand grows and countries diversify supply chains, Canada's leadership will only become more important. This is a pivotal moment and we intend to lead.

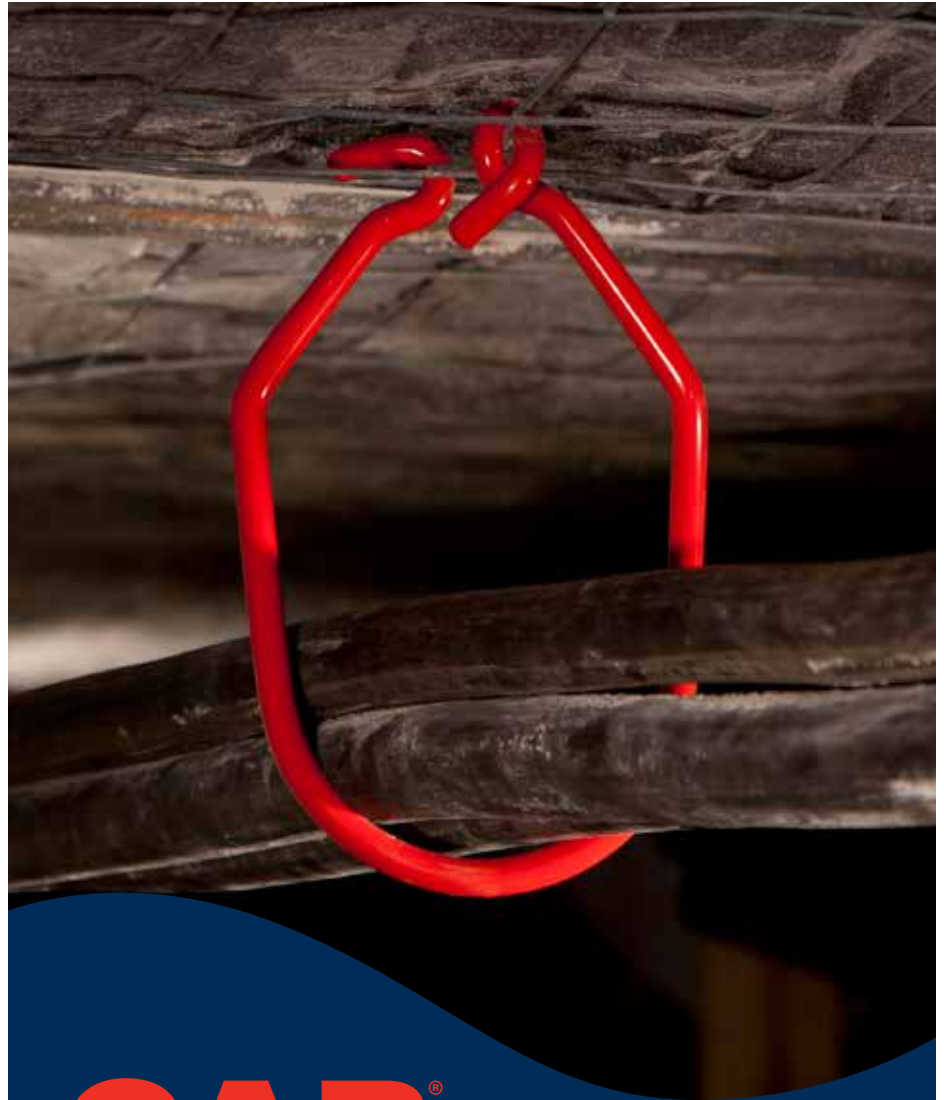
We will continue working with

producers, provinces and territories, Indigenous partners, labour groups, and international allies to ensure reliable access to high-standard potash. At the same time, we will deepen relationships with key partners and open new markets to strengthen Canada's global position.

To the workers, innovators, engineers,

and community partners who make this sector strong: thank you. Your expertise is the backbone of Canada's global leadership.

Canada will remain a secure, reliable, and sustainable supplier of potash – ready to lead, ready to compete, and ready to deliver for our partners and for Canadians. ●



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## VALUE(S)

**By Steve Halabura P.Geo., CEO, Buffalo Potash Corp.**

**F**or those who know me, you will agree with me that I tend to avoid matters of politics or religion, these being somewhat private and personal matters. However, devoted readers of “Nuff said” may have reason to disagree, as you will have heard me

say this before – “the potash apple does not fall from the political tree”. This is especially true here in Canada’s potash heartland – Saskatchewan – and recently, a matter of discussion at the federal level.

Politics and potash? Even more so now,

when at the global, geopolitical level, fertilizers are grabbing almost as much attention as oil. Potash and fertilizers in general as political as oil? Given the recent developments in the Middle East, especially the Strait of Hormuz, maybe so!

Before I delve into the specifics of what my experience tells me may develop over the next 12 to 24 months, I want to set a stage by looking upon the situation that is developing in Canada.

A month ago, during one of his diplomatic and economic journeys across the globe, Canadian Prime Minister Mark Carney visited Australia, where he was warmly welcomed by his Australian counterpart, Anthony Albanese.

For those of you who are not Canadian or are lazy and lump him together with our recently departed Justin Trudeau, Prime Minister Mark Carney is an interesting fellow. An economist by training, Carney served in the public sector as a bureaucrat in

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the Department of Finance and the governor of two central banks (Canada and England), as well as part of the private sector as vice-chair of one of Canada’s largest investment firms – Brookfield Asset Management.

While most of us spent the COVID-19 lockdown year binging on streaming dramas (think *The Last of Us* x10), Carney wrote a book called *Value(s)*, setting forth his far-ranging worldview of where global finance has been and where it may be going.

Given this background, when Carney opines on a subject, I tend to listen.

Here is what he told the Australians: given that the post-war “global architecture is breaking down from consecutive crises”, it is time for middle powers, what used to be called the “non-aligned” nations, to form new, strategic partnerships.

It sounded like what he told the assembly at Davos in January, where he declared the old, rules-based order dead, to be replaced by something not yet fully formed. The secret to surviving in this new world, according to Carney, is not to double down on “sovereign autonomy” but rather form new partnerships especially where such partnerships demonstrate global strength, such as defence, security, and (here it gets interesting) as suppliers of “trusted democratic mineral reserves”.

Carney pointed out that Canada and Australia produce one-third of the world’s uranium and lithium, and more than 40 per cent of its iron ore, but what was left unsaid is that Canada provides 34 per cent of the world’s potash.

Prescient thinking. Looking at the situation today, the war between Iran, America, and Israel has further

demonstrated the impact that such conflicts have upon today’s economy, especially the fragility of global supply chains.

Which brings us to the Strait of Hormuz. Closure of the strait sent global energy trade into turmoil, with consequences yet to be fully understood. The closure also impacts fertilizers, particularly nitrogen and phosphate-based products like urea and DAP.

Just a point of clarification – I have read, in recent weeks, those who tie the closure of the strait to possible upheavals in potash pricing. I do not believe this is correct, as very little potash is produced in the countries bordering the Persian Gulf, so there is little export impact.

However, there is an impact upon current suppliers of potash, probably



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not in the aspect of pricing, but certainly in the aspect of security of supply. This also includes collusion between Saskatchewan's main competitors, Russia and Belarus. I asked my colleague, Joshua Mayfield, growth minerals analyst for Hallgarten & Co., if this is reasonable or me simply being paranoid. Here is Mayfield's view:

"Russia and Belarus production seems to be co-ordinated. The combined production of the two states surpassed Canadian output in 2024 and 2025, an effort that started after Russia invaded Ukraine and faced sanctions." (Joshua Mayfield, pers.comm.)

Sounds sinister, but keep in mind how this coordinated potash product makes its way to K-hungry buyers in Asia. Potash supply makes its way to India and Asia by means of the Suez Canal and then via the Red Sea via the Bab-el-

Mandeb, a 20-mile chokepoint between Yemen (the Arabian Peninsula) and Djibouti/Eritrea (the Horn of Africa). Houthi rebels have fired missiles at shipping for some time, and during the recent Iran conflagration, missile and drone strikes increased.

Hmm... Belarusian and Russian potash making its way to market via another geopolitical chokepoint? Yup, sounds secure to me...

Let's play out a scenario: you are a "mid-level" distributor or processor (which I define as a purchaser within the 100,000- to 300,000-tonne annual range) located in a "middle power" nation that needs potash (MOP or soluble "white" grade product), and for the sake of meeting your customer's expectations, require firm, dependable delivery with relative constancy of quality and also stable price. You could

source your supply from a producer that ships its product through a supply chokepoint, thereby introducing risk, or you could pivot to a more stable supplier, like Canada. This is especially more palatable if your nation has struck a "middle power" trade deal with Canada.

If other mid-level buyers are thinking the same way and decide to pivot to a Canadian supplier, an interesting situation may arise whereby value (meaning security of supply) is deemed more important than price. Does this lead to a situation where there is an increase in demand for Saskatchewan potash, even in the face of a rising price point?

This may be a moot point if there was significant idled capacity in Saskatchewan, but I don't think this is the case. If so, then the question is,

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“can Saskatchewan producers make more product in the short-term, if indeed there is a security-driven rise in demand for Saskatchewan-sourced potash?” Another very interesting question, as one could respond by pointing to the impending production from BHP’s Jansen mine. Yet here too there is a concern regarding Jansen’s ability to supply a near-term solution. In a press release by BHP dated January 20, 2026, the company admitted that Jansen Stage 1 will increase to US\$8.4 billion, the first production schedule has slid to mid-CY2027.

I asked Mayfield as to his view on the near-term future of new potash product sourced from Saskatchewan, and here it is:

“Jansen represented a company-wide shift into what BHP told investors were ‘future facing commodities with attractive long-term fundamentals’. The two other commodities included in this category were copper and nickel. The shift came as BHP divested from its oil and gas assets and tried to broaden its portfolio beyond coal and iron ore. Canberra increased royalties on coal in

Australia in an attempt to pressure the miner to reduce production,” he says.

If you want to dig a bit deeper on this issue, check out the following article from *The Globe and Mail*, April 3, 2026: <https://www.theglobeandmail.com/business/economy/article-bhps-new-potash-mine-is-a-test-case-for-canada-in-how-to-build-big/>.

In July 2025, the estimate was US\$7.0 billion to US\$7.4 billion, up from a previous estimate of US\$5.7 billion when the project was approved in August 2021. BHP blames the cost and schedule overruns to “inflationary and real cost escalation pressures, design development, and scope changes and lower productivity outcomes”.

It seems to me that an immediate solution to ramping up “safe and secure” potash supply from Saskatchewan still may be out of reach.

How reasonable is the possibility of a buy-side pivot from price to value? On this point, I return to Carney and his book, *Value(s)*, where he plainly states in the preface how a revolution in economics during the

Industrial Revolution, “led to the view, widespread today, that *the price of everything is the value of everything*” (italics mine). Carney believes this is erroneous thinking, and that the world is entering into a new phase of trade wherein value, once again, achieves dominance over price. I assume that during his trade missions to greater Asia, Carney made this point clear.

Am I arguing for a separate “safe and secure Saskatchewan spot” potash price? As an old-school classical liberal (as I believe Carney is), I am not one for mechanisms that impede the market in its role of determining the price of a commodity. However, I do agree that the calculus used to determine price must change to allow for the pricing of what has been, up to this point, intangible, that being security of supply.

Nevertheless, I like the ring to the name, “safe and secure Saskatchewan spot”. Maybe there will be a solution to the conflict currently engulfing the Middle East, but remembering being a kid watching an inebriated uncle crush a hornet’s nest with his bare hands, it’s tough to control the havoc caused by an irrational act.

Furthermore, there isn’t much I can do to solve anything on the “macro” side; however, as the co-founder and CEO of a “potash junior”, maybe it is hard-core “hammer down” time, just like it was 20 years ago, in 2005.

Why am I so bullish? Let’s let Mayfield present the final view:

“The future facing commodities strategy is all about megatrends. Feeding the world is a megatrend. Modernization is a megatrend. I just think potash fits.”

Thank you, Joshua!

*‘Nuff said!*

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# FACT CHECK — 20 January 2026

BHP has completed a detailed review of cost and schedule estimates for Stage 1 of the Jansen potash project (Jansen Stage 1) and confirms that the total investment<sup>1</sup> estimate for Jansen Stage 1 will increase to US\$8.4 billion (including contingencies) and the first production schedule has reverted to the original schedule of mid CY2027.

In July 2025, BHP confirmed that it expected to update the market on the timing and capital expenditure estimate for Jansen Stage 1 in H2 FY2026. The investment cost estimate has been updated from the previously estimated range of US\$7.0 billion to US\$7.4 billion (including contingencies) announced in July 2025 and the US\$5.7 billion initial estimate of the investment cost for Jansen Stage 1 when the project was approved in August 2021. As announced in July 2025, these cost increases have been driven by inflationary and real cost escalation pressures, design development and scope changes and lower productivity outcomes.

The majority of the cost increase since the estimated range announced in July 2025 is from construction hours and quantities of materials that were not included in previous execution cost estimates. These construction costs were identified following the comprehensive review of Jansen Stage 1 budget and schedule.

BHP has implemented a response plan to address cost and schedule risks for Jansen Stage 1 which has

improved productivity, strengthened project management and enhanced oversight of execution contracts. This plan is expected to support sustained efficiency gains in the delivery of Jansen Stage 1 and improved capital intensity in subsequent phases of the Jansen Project.

Jansen Stage 1 continues to progress and is 75 per cent complete. BHP continues to expect Jansen Stage 1 to deliver approximately 4.15 million tonnes per annum (Mtpa) of production. At consensus prices, Jansen Stage 1 has an updated internal rate of return of 7.9 per cent to 9.1 per cent and an updated expected payback period of 11 to 15 years from first production<sup>2</sup>. Underlying EBITDA margins for Jansen Stage 1 remain strong at approximately 63 per cent to 64 per cent due to its low-cost position<sup>3</sup>.

### ***BHP President Americas, Brandon Craig said:***

“Jansen is an important pillar in BHP’s long-term growth strategy and is a long-life, low-cost expandable asset that is expected to generate benefits for shareholders for decades. Once operational, Jansen will establish BHP as a leading player in the global potash industry. We remain positive about the progress at Jansen and in potash as a future facing commodity with strong long-term demand fundamentals driven by population growth, better diets, rising living standards, and the need for more productive and sustainable use of arable land.”

BHP is continuing to advance construction of Jansen Stage 2 and will implement the project execution improvements identified in the review of the investment cost and schedule estimates for Jansen Stage 1. BHP expects to update the market on the investment expenditure estimate for Jansen Stage 2 in Q4 FY2026.

Longer term, Jansen has the potential for two additional expansions to reach an ultimate production capacity of 16 to 17 Mtpa (subject to studies and approvals).

### ***Footnotes***

1. Investment expenditure includes: project capital expenditure, project operating expenditure, cost to construct right-of-use assets (i.e. Westshore port terminal and 3rd party rail line) and related contingencies.
2. Price assumptions reflect a range of Argus and CRU prices. Jansen Stage 1 internal rate of return range is post-tax, nominal and reflects Argus and CRU prices (Average 2029–2039: US\$349/t Argus and US\$256/t CRU, FOB Vancouver, Real 1 Jan 2026). The internal rate of return is the expected internal rate of return based on Jansen Stage 1’s cashflows across approximately 90-year mine life.
3. Jansen Stage 1 EBITDA margin reflects a range of Argus and CRU prices across approximately 90-year mine life. ●

**“Jansen is an important pillar in BHP’s long-term growth strategy and is a long-life, low-cost expandable asset that is expected to generate benefits for shareholders for decades. Once operational, Jansen will establish BHP as a leading player in the global potash industry.”**

# NUTRIEN: EVOLVING TO MEET GLOBAL POTASH DEMAND



*As the world's largest potash producer and the third-largest nitrogen producer, Nutrien brings scale and decades of expertise across the full range of crop inputs – from crop protection products to customized seeds, from biostimulants to digital services.*

**A**griculture operates in a world of constant demand. As the global population grows and pressure on arable land increases, farmers are being asked to produce more food, consistently and sustainably. That is the challenge the industry is meeting through innovation, resilience, and strong partnerships across the agriculture value chain.

Supporting higher yields requires more than a single solution. Nutrien operates an integrated global network of production, distribution, and ag retail facilities designed to serve farmers where and when they need it. As the world's largest potash producer and the third-largest nitrogen producer, Nutrien brings scale and decades of expertise across the full range of crop inputs – from crop protection products to customized seeds, from biostimulants to digital

services. These support productivity and global food security – reaching over 50 countries and more than 1,800 retail locations.

“Nutrien plays a critical role in feeding a growing global population through deep relationships with farmers and leading assets across the agriculture value chain,” says Ken Seitz, CEO at Nutrien. “As farmers face challenges amid an evolving market, our focus remains on efficiently supplying the products and services they need to improve crop yields and support more resilient food systems.”

Over the past several decades, farmers have demonstrated their resilience by answering the call for larger crops. Since 2000, global grain and oilseed production has increased by more than 50 per cent, from 2.1 billion tonnes in 2000 to an estimated 3.5 billion tonnes in 2025.

Advances in seed technology and

production systems are contributing to higher crop yields but also heighten the need to replenish the crop nutrients drawn from the soil with each harvest. Larger crops draw more nutrients from the soil and increase demand across the supply chain, including producer inventories.

Agriculture is facing a future where farmers will need more fertilizer. Higher yields depend on a balanced supply of essential nutrients – potash, nitrogen, and phosphate – supported by reliable production and distribution systems. As demand continues to rise, one nutrient in particular has taken on increased significance from a global supply and production perspective.

## THE WORLD NEEDS MORE POTASH

Global potash demand has grown in each of the past three years – from 61 million tonnes in 2022 to 74.5 million tonnes in 2025. The upward consumption trend is expected

*From its six large-scale operations in Saskatchewan, the company has boosted potash production from 13 million tonnes in 2022 to 14 million tonnes in 2025.*

to continue in 2026, with current estimates suggesting the world will consume between 74 to 77 million tonnes of potash this year.

In simple terms, the world needs more potash and Nutrien is well positioned to deliver an unmatched ability to increase production at its existing operations. From its six large-scale operations in Saskatchewan, the company has boosted production from 13 million tonnes in 2022 to 14 million tonnes in 2025.

Significantly, Nutrien remains the most likely source of additional future production. Its operations draw from massive ore bodies and hold reserves



that can serve the world’s farmers for generations to come. While greenfield production takes significant time and investment to bring online, Nutrien can increase production from existing facilities to meet rising demand today and in the future.

“Having six mines gives us a strong line of sight on where the next tonne will come from and at what cost,” says Seitz. “As we plan our volume trajectory – not just for this year and next, but over the medium term – we know when additional tonnes can be



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Through its sophisticated distribution network, and retail locations, Nutrien can move growing volumes of potash from Saskatchewan to agricultural regions where it is needed most.

brought on. With 15 million tonnes of capability this year, we're well positioned to grow alongside the market."

Increasing potash production volumes is only one of Nutrien's advantages in meeting the needs of farmers all over the world. Through its sophisticated distribution network, and retail locations, Nutrien can move growing volumes of potash from Saskatchewan to agricultural regions where it is needed most.

### FEEDING THE FUTURE: MODERN MINING FOR A GROWING WORLD


Recognizing the undeniable trends in global agriculture, Nutrien has built its long-term strategy around three fundamental principles: focus on core activities (like potash production), enhance safety and efficiency through operational excellence, and prioritize investments that sustain safe and reliable operations.

As an example, the company has

made significant investments in new autonomous mining technologies at its potash facilities. These technologies contribute to safer mining by removing underground workers from higher-risk areas, and enhance efficiency by optimizing the way ore bodies are mined.

In 2025, almost half of Nutrien's potash ore was mined using autonomous technologies, which is more than double the amount from two years ago. The result is a safer work environment and increased output for global markets.

By demonstrating its own relentless pursuit of improvement, Nutrien is joining farmers in the quest to improve global food security. And just as there is a farmer behind every crop, Nutrien is committed to standing behind every farmer. ●

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# BANIO POTASH: ADVANCING A FEASIBILITY STUDY FOR A POTENTIAL NEW ATLANTIC SUPPLIER

By Farhad Abasov, Chairman, Millennial Potash

MILLENNIAL  
POTASH



*The Banio Potash Project is located in the West African Coastal Basin, an evaporite basin running from the Congo Republic northwards into southern Gabon, and covers an area of some 1,238 square kilometres on its margin.*

*Following the latest Mineral Resource Estimate update, Banio has 648 million tonnes of measured resources with 15.7 per cent KCl, 1.804 billion tonnes of indicated resources with 15.6 per cent KCl, making a total of 2.45 billion tonnes of measured and indicated resources.*

In February 2026, Brazil's granular MOP market was trading between US\$365 and US\$395 per tonne CFR, as buyers evaluated delivered cost into Mato Grosso, one of Brazil's largest agricultural producing regions, ahead of second-crop corn applications. At those levels, even modest movements in ocean freight had a meaningful impact on netback calculations.

Meanwhile, India had settled annual contracts at mid-US\$340s per tonne while U.S. midwest spring tender programs were making between \$380 and \$420 per short ton FOB, dependent on timing and inventory positions.

This, in essence, is the potash market in 2026 – price-sensitive, freight-conscious, and dominated by delivered economics, rather than focusing on price volatility.

Global supply remains concentrated in Canada, Russia, and Belarus. Brazil continues to import approximately 12 to 13 million tonnes annually. China and India remain structurally import dependent. Buyers are no longer simply securing tonnes. They are managing exposure to freight, geopolitics, and cost curve resilience.

It is within this setting that the Banio Potash Project in Gabon advances to full feasibility. The project is located in the West African Coastal Basin, an evaporite basin running from the Congo Republic northwards into southern Gabon and covers an area of some 1,238 square kilometres on its margin.

Drilling at the North Target has confirmed multiple evaporite cycles hosting carnallite and sylvinite mineralization suitable for large-scale solution mining.

*Banio's evaporite profile provides the scale required for sustained production from thick flat lying potash seams.*

Following the latest mineral resource estimate update, Banio has 648 million tonnes of measured resources with 15.7 per cent KCl, 1.804 billion tonnes of indicated resources with 15.6 per cent KCl, making a total of 2.45 billion tonnes of measured and indicated resources. There are also 3.56 billion tonnes of resources classified as inferred.

These figures are derived from drilling across only a small portion of the total license area, and mineralization remains open laterally to the north and south of the current drilling area.

Thickness and continuity are the decisive factors in solution mining economics. Recent drilling has confirmed cumulative carnallite intervals exceeding 100 metres in several holes supporting cavern design and long-term extraction planning.

In solution mining, geometry drives economics. Banio's evaporite profile provides the scale required for sustained production from thick flat lying potash seams.

Millennial Potash began its AACE Class 3 Definitive Feasibility Study in January 2026 and has retained the



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Map showing approximate locations of basins.

services of ERCOSPLAN, a global specialist company with extensive potash engineering experience in both solution and conventional mining environments.

The DFS will evaluate a base-case 800,000 tonne per year MOP operation while examining higher production scenarios and associated technical trade-offs, including dissolution behaviour, hydrogeology, creep characteristics, and evaporation parameters. The study is advancing in parallel with the Environmental and Social Impact Assessment in preparation for a Mining License application.

The earlier Preliminary Economic Assessment outlined life-of-mine operating costs of approximately US\$61 per tonne and initial capital expenditure of US\$480 million for an 800,000 tonne per year development scenario. While the definitive feasibility study will refine these parameters, the project's cost structure positions Banio toward the lower end of the global cost curve. In a pricing environment where Brazil CFR trades around US\$380 per tonne, cost discipline is the primary safeguard against cyclical compression.

Infrastructure progress has materially reduced development risk.

Banio benefits from direct Atlantic access. Development planning includes a brine pipeline from the wellfield to a coastal processing facility near the port town of Mayumba. Port facilities are progressing in phases, with the construction of the quay being completed and extended to ensure accommodation of ocean-going vessels. Within the power sector, thermal plants fired by natural gas are already operational and progressing towards the 50 MW mark, complete with the construction of a natural gas pipeline. Reliable power supply is critical in the operation of thermal evaporators in the solution mining process, and the availability of natural gas feeds improves the outlook for operations.

The cost of the freight to Brazil is estimated at around \$22 per tonne. The cost of the freight acts as a factor of competitiveness for a country's import of more than 12 million tonnes per year. The reduced distance of the sailing routes decreases the sensitivity of the routes to the volatility of fuel prices and the availability of vessels. The economics of the delivered product, and not the cost of the mine site, are what build long-term positions in the Atlantic Basin.

Global potash trade in 2026 will likely still lie in its usual stable range of between 70 to 75m tonnes. Factors such as nutrient depletion in agricultural land, further enhancement in crop yields, as well as potash crop

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requirements itself, will still be major demand drivers. Looking at it from a consumption perspective, too many sources of potash are located in geopolitically sensitive regions, and diversification is therefore becoming critical.

In such an environment, buyers are increasingly assessing projects based on factors such as cost curves' resilience, freight's efficiency, jurisdiction's stability, and supplies' reliability.

Significantly, participation of development finance from the U.S. International Development Finance Corporation, which has committed up to US\$3 million in non-dilutive funding for the advancement of the feasibility of the project at Banio, is noteworthy. Millennial Potash is the only mining exploration company within Gabon to be supported by DFC project-level funding, a factor that speaks well for the policy emphasis placed on fertilizers within food security paradigms.

Gabon has positioned mining as a diversification priority. Its Atlantic coastline and improving infrastructure base provide support for the development of export-oriented mineral projects, while the Mining Code 2019 has set fiscal and regulatory structures that are clear for investment with long-term perspectives.

No new potash project advances lightly. Geological continuity, disciplined engineering, infrastructure readiness and cost structure determine survivability during downturns.

Global potash supply has for a long time been dominated by only a few jurisdictions, and that structure has worked out to be efficient but concentrated.

Banio introduces an additional Atlantic supply node. It combines basin-scale evaporite geology, solution mining economics, freight advantage into Brazil and North America, and advancing feasibility work supported by infrastructure development.

In a 2026 market defined by disciplined procurement and tighter risk management, only projects that can compete on delivered cost across price cycles will move forward.

Banio is being engineered to compete on that basis.

*Farhad Abasov is the chairman of Millennial Potash, the company advancing the Banio Potash Project in Gabon in West Central Africa. Abasov is a veteran mining executive who has built and sold multiple resource companies including potash and lithium companies. ●*



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# WAR IN THE MIDDLE EAST HAS A DRAMATIC EFFECT ON FOOD AND FERTILIZERS

By Joshua Mayfield



## FERTILIZER SHIPMENTS FROM THE STRAIT OF HORMUZ

Dry bulk shipments through the Strait of Hormuz trapped over 90 per cent of dry bulkers in transit at the beginning of the war in Iran. This includes global seaborne fertilizer shipments, of which 16 to 18 per cent of the world's fertilizer shipments come from the Persian Gulf region. The commodities at play during this war have strong links to nitrogen fertilizers and ammonia. This comes from the Gulf region's production of LNG, sulphur, and urea.

The issues pertaining to dry bulk

shipping are just as important to food as it is to fertilizers. The Middle East region imports a substantial amount of the world's grains and other agricultural commodities. The Persian Gulf region's imports of grains and oilseeds were completely stopped because of the attacks by the U.S., Israel, and Iran since February 28.

Saudi Arabia is also a key supplier of ammonia and phosphate fertilizers, so phosphate prices will likely stay higher for the rest of the year, even if tensions in the Middle East subside. While most of the attention is given to Qatar and UAE, since both countries have important LNG facilities for the

fertilizer industry, gas curtailment issues related to Saudi Arabia, Oman, and Kuwait exacerbate the problem for nitrogen fertilizers. At the initial point of the attacks in the Strait of Hormuz, the Profercy World Nitrogen Index indicated that nitrogen fertilizer prices rose by 29.56 points from February 26 to March 9, 2026. The Egyptian prices were the highest in the beginning, with a premium of approximately USD \$170 per ton priced into Egyptian Granular Urea free-on-board (fob) spot prices. Urea prices continued to rise for global markets, eventually hitting USD \$684 per ton in the U.S. fertilizer market on March 20.



## THE PERSIAN GULF'S ROLE IN THE GLOBAL FERTILIZER MARKET

Iran supplies the global market with the world's fourth largest source of urea fertilizers needed to produce food. For example, data compiled by fertilizer trading platform Aquifert reveals that Iran is a significant fertilizer trading partner with Turkey, having supplied approximately 344,000 metric tons of urea fertilizers in January 2026. Due to Turkey's reliance on urea imports, the government eliminated customs duties on urea fertilizer imports. It also was reported by the Turkish Statistical Institute that Turkey imported 2.5 million tons of urea for the full year of 2025. Those figures are reinforced by the Gulf region's influence on fertilizer exports, which were provided by the International Fertilizer Association (IFA): 3.7 million tons of ammonia exports by origin in 2024; 18.5 million tons of urea exports by origin in 2024; and 5.3 million tons of MAP and DAP exports by origin in 2024.

All the data points about food and fertilizers shouldn't be overlooked during a time of extreme oil and gas price volatility. Higher gas prices certainly hit fertilizer producer margins, but so do high oil prices. While some countries have their own oil reserves, others have their own strategic stockpiles, but no country in the world can stockpile enough food in time for this war to end. China still has fertilizer export restrictions firmly in place. Other countries have sanctioned Russia, which is the world's largest producer of wheat. As for potash, the Strait of Hormuz disruptions haven't influenced supply and demand, but there's also volatility

in global wheat prices. Higher wheat prices will generally lead to higher potash prices. This will be a key factor to watch during the ongoing war in Iran.

Meanwhile, Brazil and India are immediately faced with all the worst-

case scenarios revolving around this war in Iran and the Strait of Hormuz closure. Brazil exports grains to Gulf countries, and India relies on fertilizer imports from Iran, but also from the other Gulf countries. China will rush into the arms of Moscow in hopes to secure and stockpile



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more wheat, grains, and potash, even paying premiums, if necessary. Russia could seize the advantage during this Strait of Hormuz crisis by supplying food and fertilizers at a premium to the global market, and this will be another key point in the potash price movements.

## THE GEOPOLITICAL RISK FOR FERTILIZER MARKETS

Fertilizers are having a moment again due to the Strait of Hormuz.

The agreement between Russia and Ukraine to allow shipping of food and fertilizers from the Black Sea is also

still in focus. Both Russia and Ukraine have been trading in the global market, irrespective of the fact that commercial vessels are still at risk of coming under attack at the Odessa port.

Under the backdrop of the Strait of Hormuz and Black Sea tensions, China still has fertilizer export restrictions firmly in place. China's fertilizer restrictions do not affect potash prices, but the cumulative effect of all three events, including China's own program to stockpile the country's strategic potash reserves, have made potash prices more vulnerable to geopolitical trends.

The disruptions from the Strait of Hormuz to global fertilizer supplies, especially nitrogen and phosphate fertilizers, reveal that the global market trend has entered a new era: fertilizers are no longer the subject of traditional agricultural elements, such as agronomy, weather, and planting, but are strategic commodities shaped by government policies, maritime trade routes, and stockpiling behaviour as a result of critical minerals. Although there are several forces driving global fertilizer supply and demand, the geopolitical risk factors during this war in Iran must be considered at the same time.

President Trump is to meet with his counterparts in Beijing this year, and who knows what will transpire from that meeting. The geopolitical risk is a disaster for global food security, unless there's some major changes in the geopolitical risk spectrum that are helpful to food and fertilizers in the near term. A peace deal between Russia and Ukraine would have a positive effect on food and fertilizer prices. ●



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# DEEP LEARNING MEETS GROUND PENETRATING RADAR

## *A new era for potash mining safety*

By Raman Paranjape, Kaveh Sadeghikhah, Phillip Choi,  
Faculty of Engineering and Applied Science, University of Regina, Regina, Canada



University  
of Regina

In the underground potash mines of Saskatchewan, safety depends on what cannot be seen. Hundreds of metres below the surface, mining machines carve through ancient evaporite deposits, leaving behind rooms supported by a relatively thin salt beam. The integrity of this salt roof is critical—too thin, and the risk of collapse rises sharply. For over a decade, ground penetrating radar (GPR) has served as a vital tool in helping operators “see” into the salt above them. Now, a new generation of deep learning techniques is poised to significantly enhance the accuracy and reliability of this process.

GPR systems operate by transmitting electromagnetic waves into the salt structure and recording reflections from subsurface interfaces. In potash mining, one of the most important reflectors is the “414 clay seam”, a thin geological layer that serves as a key marker for salt beam thickness. Maintaining a safe distance from this seam is essential. However, the subsurface is rarely simple. Irregular features known as “stray clays” can distort radar signals, making interpretation difficult and sometimes misleading.

A typical GPR deployment in a potash mine is illustrated below:

In this configuration, the radar

antenna is mounted on a borer machine and directed upward toward the mine roof. As the machine advances, it continuously scans the geology above, providing real-time feedback to the operator. This setup enables early detection of hazardous conditions such as thinning salt beams or structural anomalies.

Traditionally, mining operations have relied on automated signal processing algorithms to interpret GPR data in real time. One currently used method is the Clustered Ratio Derivative (CRD) algorithm, which combines statistical signal processing with clustering techniques to identify key reflections in the radar. While effective under controlled conditions, CRD can struggle in the presence of noise, complex geology, or anomalous features like stray clays. These

limitations have motivated researchers to explore more adaptive, data-driven approaches.

At the heart of this innovation is a shift in perspective: instead of treating GPR signals purely as time-series data, they can be interpreted as images. A single GPR trace—known as an A-scan—records signal amplitude over time at one location. When multiple A-scans are collected along a mining path and arranged side by side, they form a two-dimensional image known as a B-scan. In these images, geological features appear as distinct patterns, often resembling curved reflections.

This realization opens the door to applying computer vision techniques, particularly Convolutional Neural Networks (CNNs), which have revolutionized fields such as

Figure 1: GPR antenna mounted on a mining borer scanning the mine roof for structural assessment.

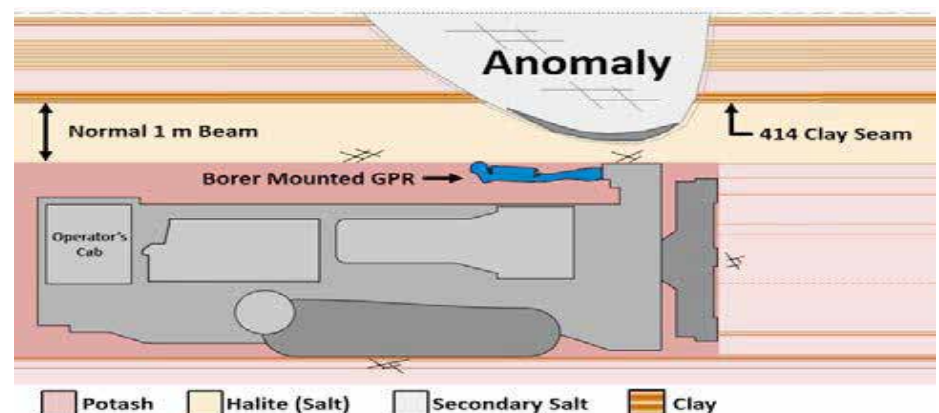
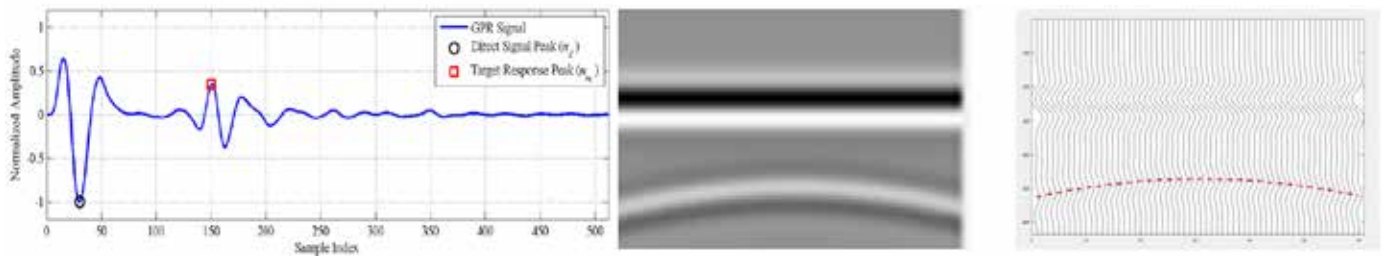


Figure 2: A-scan (left) and B-scan (right as image and wiggle plot) representations of GPR data used for subsurface interpretation.



autonomous driving and medical imaging. CNNs are designed to automatically learn spatial patterns in images, making them well-suited for identifying the subtle features embedded in GPR data.

In the proposed approach, small groups of consecutive A-scans are treated as image patches and fed into a CNN. Rather than relying on handcrafted features or thresholds, the network learns directly from labeled data, identifying patterns associated with the 414 clay seam and with stray clay anomalies. Importantly, we have developed two separate CNN models: one optimized for detecting the relatively consistent clay seam, and another more complex network tailored to the irregular and variable nature of stray clays.

Each network consists of multiple layers that progressively extract higher-level features from the input data. Convolutional layers apply small filters to detect local patterns, while

pooling layers reduce dimensionality and improve computational efficiency. Techniques such as dropout and batch normalization are incorporated to improve generalization and stabilize training. The final output of the network is a set of probabilities indicating the likely position of a geological feature within the signal.

The structure of a typical CNN used in this work is illustrated below:

Training these models requires high-quality labeled data, which in this case was obtained from real mining operations. The networks were trained to identify the precise location of reflection peaks corresponding to geological interfaces, with performance evaluated under strict error tolerances. Two scenarios were considered: one allowing a  $\pm 1$  per cent deviation from the true location, and a more lenient  $\pm 2$  per cent threshold.

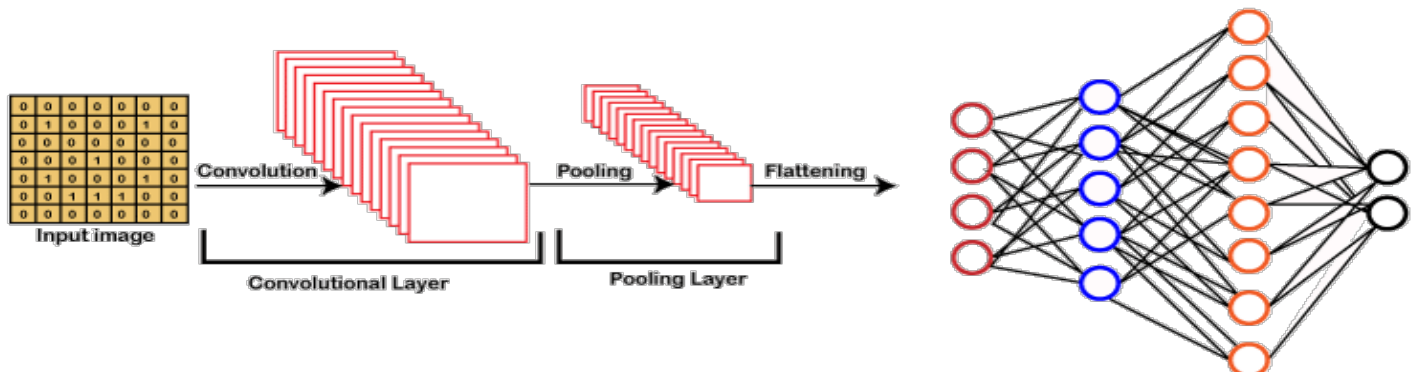
The results are compelling. For detection of the 414 clay seam, the CNN achieved an accuracy of over

95 per cent under the  $\pm 2$  per cent tolerance, with extremely high recall—meaning that it rarely misses the seam when it is present. Detection of stray clays, which is inherently more challenging, also showed strong performance, with accuracies exceeding 85 per cent and 90 per cent for two different types of anomalies. These figures represent a significant improvement over traditional methods, particularly in complex geological conditions.

Equally important is the model's ability to generalize. Despite being trained on a moderate-sized dataset, the CNNs exhibited minimal overfitting, suggesting that they can adapt to new data without significant loss of performance. Visual comparisons between predicted and actual feature locations show near-perfect alignment, reinforcing confidence in the approach.

From an operational standpoint, the implications are substantial. Improved detection accuracy translates directly

Figure 3: Convolutional Neural Network (CNN) architecture and convolution operation used to extract features from GPR data.



into better decision-making at the mining face. Operators can be alerted earlier to hazardous conditions, such as thinning salt beams or the presence of disruptive clay pockets. This not only enhances safety but can also improve productivity by reducing unnecessary stoppages or overly conservative operating limits.

Another key advantage of deep learning-based methods is their flexibility. Unlike traditional algorithms, which often require careful tuning of parameters for each new environment, CNNs can learn directly from data. As more GPR data is collected across different mines and geological settings, these models can be retrained or fine-tuned to maintain high performance. This adaptability is particularly valuable in an industry where geological variability is the norm rather than the exception.

Looking ahead, several avenues for further development remain. One important direction is the extension of these methods to fully three-dimensional data, which could provide even richer information about subsurface structures. Another is the exploration of unsupervised or semi-supervised learning techniques, which could reduce the reliance on labeled data—a significant bottleneck in many applications. Integration with real-time systems on mining equipment is also a critical step toward full deployment.

The convergence of GPR technology and deep learning represents a powerful example of how digital innovation is transforming traditional industries. By enhancing the ability to interpret complex subsurface data, these methods offer a pathway to safer, more efficient mining operations. In

an environment where uncertainty can have serious consequences, the ability to see more clearly beneath the surface is not just an advantage—it is a necessity.

As the mining sector continues to embrace advanced sensing and analytics, the work presented here highlights the potential for intelligent systems to augment human expertise. The rock above may remain hidden from view, but with tools like deep learning-enhanced GPR, its behaviour is becoming increasingly predictable and manageable.

*This article is a summary of work presented at the 21st International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON), Kon Khaen, Thailand, 2024. ●*

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# CANPOTEX HELPS EMPLOYEES GROW INTO THEIR NEXT ROLE

By Saskatchewan's Top Employers



*Derek Gross, senior vice-president, finance and strategy, left, and Jillian Willick, senior manager, export documentation and credit, at Canpotex.*

**A**lthough she would be taking her career into uncharted territory, Jillian Willick says she had a good feeling about going to work for Canpotex Limited.

"I saw it as a place to grow and make an impact globally."

Like most people from Saskatchewan, Willick knew about the potash marketing and exporting company and its contribution to global food security. Growing up on a farm in the south of the province, she'd even seen Canpotex railcars rolling by, part of the company's extensive transport system for shipping the essential

agricultural nutrient overseas.

Willick later moved west to attend university in Edmonton and after earning a degree in engineering went to work on the business side of the Alberta oil and gas industry. In 2018, she and her husband decided to return to Saskatchewan to be closer to their two families and settled in Saskatoon, the midway point between them.

It's also home to Canpotex's global head office, where Willick started as manager, sales and operations planning. She took on increasingly complex roles and in 2022 became senior manager, export

documentation and credit.

Like others in the finance and strategy group, Willick and her team are not directly involved in the sales and delivery of potash. Instead, their work encompasses activities that contribute to the smooth execution of Canpotex's business. This includes essential functions such as export documentation, credit analysis, risk management, and more.

"My manager saw I was eager to learn and so she made sure I had the training and mentoring I needed," Willick says. "That's something Canpotex does really well: they provide you with opportunities that broaden your skills and experience and allow you to grow into different responsibilities."

Derek Gross, senior vice-president, finance and strategy, says Canpotex's unique business context makes working there both exciting and fulfilling.

"We're a relatively small company



*Jillian Willick, senior manager, export documentation and credit, at Canpotex.*

with a massive global reach,” says Gross. “With approximately 170 employees around the world, we export over 14 million tonnes of Canadian potash to more than 40 countries each year. Our people have the opportunity to wear multiple hats and connect with a variety of business partners and cultures as we operate an increasingly complex global business.”

Founded in 1972, Canpotex is Saskatchewan’s largest overseas exporter. And while it has a history of successfully overcoming challenges, Gross says the company cannot afford to rest on its laurels.

To that end, Canpotex has developed a robust strategic plan, as well as annual operating plans and budgeting processes, to support both daily operations and effective decision-making across the organization, Gross says.

**“Our people have the opportunity to wear multiple hats and connect with a variety of business partners and cultures as we operate an increasingly complex global business.”**

*– Derek Gross, senior vice-president, finance and strategy*

“We try to anticipate the changes that are coming our way, but we know that in any given year we’re going to have to adjust our game plan,” he says. “I think the last five years have really demonstrated this agility and built confidence that we know how to pivot if necessary.”

Willick’s contribution to this resilience includes the strategic insights she offers senior leaders. That’s thanks, in part, to the key relationships she maintains with Export Development Canada, insurance providers, industry groups, and other parties with relevant information and viewpoints.

She also pays annual visits to São

Paulo, the financial capital of Brazil where Canpotex opened an office in 2018. As well as connecting with staff, Willick meets with key buyers in Brazil, Canpotex’s largest market. As a key fertilizer ingredient that improves Brazil’s potassium-deficient soil, Canpotex’s potash has contributed to larger crop yields there.

For Willick, Canpotex truly is a place to grow and have an impact.

“It’s been better than I could ever have planned,” she says.

*This story was produced by Mediacorp in partnership with Postmedia, on behalf of Canpotex Limited. ●*

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# DEMOday 2026: ACCELERATING INNOVATION ACROSS SASKATCHEWAN'S MINING SECTOR



By Clyde Deletsu and Lesley McGilp, International Minerals Innovation Institute (IMII)

## DRIVING TECHNOLOGY FORWARD IN THE MINERALS INDUSTRY

As Saskatchewan's potash and broader minerals sector continue to evolve, the demand for safer, more reliable, and more sustainable mining technologies grows stronger each year. Meeting these demands requires new ideas, new partnerships, and a clear pathway for getting innovations out of the workshop and into the field.

Enter DEMOday: a flagship innovation platform developed by the International Minerals Innovation

Institute (IMII) in association with the Saskatchewan Industrial and Mining Suppliers Association (SIMSA). Since the initial event in 2018 to present, DEMOday has connected solution providers—ranging from start ups and inventors to established supply chain companies—with IMII member companies which include some of the province's largest mineral producers.

What began as an experiment in collaborative problem solving has grown into one of Saskatchewan's most influential mining innovation events.

## A PURPOSE-BUILT PATHWAY FOR INNOVATION

DEMOday exists to address real operational challenges faced by Saskatchewan's mining industry. The event gives innovators the opportunity to pitch technologies with the potential to improve safety, sustainability, productivity, reliability, or operational efficiency.

Technologies presented at DEMOday may include early stage concepts or mock ups, software tools or simulations, equipment prototypes, and full pre commercial or field ready systems.

But all must demonstrate clear industry value. This could include reducing downtime, improving worker safety, enhancing predictive maintenance, or lowering a mine's environmental footprint.

For companies selected to present, DEMOday creates opportunities for collaboration with major mining operators including field trials and technology validation, potential funding support, accelerated commercialization and long-term supplier relationships within the Saskatchewan mining ecosystem.

"Being a part of DEMOday was an awesome experience," said Rockford



Engineering Works, IDEATE 2025 presenter. “You don’t get many opportunities to stand in front of industry leaders and showcase your skills.”

### DEMODOY PAST INNOVATION AWARD WINNERS

Since inception in 2018, IMII has received a total of 122 applications and facilitated 49 pitches for DEMOday. Below is a summary of the past winners, a number of which have gone on to be trialed through IMII member-funded projects or directly adopted by the Saskatchewan mining sector.

### 2026: NEW STRATEGIC THEMES, NEW OPPORTUNITIES

The list of prior DEMOday award winners provides a window into the innovation areas industry is interested in pursuing, though these interests shift over time for a variety of reasons. Each year IMII publishes information on industry’s needs to help solution providers identify innovations to pitch to industry when they submit their DEMOday applications. The 2026 DEMOday program aligns with IMII’s renewed innovation strategy, focused on three strategic drivers — safety, reliability, and sustainability — across four major mining domains: Underground Mining, Milling & Processing Technology, Exploration Technology, and Big Project Efficiency.

### IMPORTANT DATES FOR DEMODOY 2026

- Launch: April 16, 2026 at the Saskatchewan Mining Supply Chain Forum
- DEMOday Application Deadline: May 29, 2026



Rockford receiving an Impactful Innovation award at DEMOday 2025.

#### Prior Year DEMOday Innovation Award Winners

Year	Company	Award Category	Description
2018	Prairie Machine & Parts Mfg. (PMP)	Innovation	PMP’s Hardrock Gopher prototype – electric mine vehicle
2019	Continental Mine & Industrial Supply Ltd.	Best New Technology Product	DC-54-UG Underground Dust Collection
2020	Ionic Mechatronics	Innovation	SafeBox automated energy isolation system
2022	2S Water	Innovation	Aquavalid Sensor for real-time metal detection in water
2023	Extract Energy	Innovation	Heat engine to harvest low-grade industrial heat
2024	Polycontrols Technologies Inc.	Innovation	Cold spray hybrid additive manufacturing technology
2024	Metaspectral	Most Actionable Innovation	ORES hyperspectral ore evaluation system
2025	Vital Design Solutions Inc.	Breakthrough Innovation	VDS Polymer Exchanger for Exhaust Heat Recovery
2025	Renix Inc.	Impact Innovation	RenixUIX™, Steady-State Ion Exchange Platform for Critical Metals Recovery and Fit-for-Use Water
2025	Rockford Engineering Works	Impact Innovation	Live Conveyor Roller Replacement technology

The list of prior DEMOday award winners provides a window into the innovation areas industry is interested in pursuing, though these interests shift over time for a variety of reasons. Each year IMII publishes information on industry's needs to help solution providers identify innovations to pitch to industry when they submit their DEMOday applications.

- Successful Applicants Notified: Early July 2026
- DEMOday Event: September 10, 2026

In their DEMOday application submissions, applicants are asked to provide clear descriptions of their technology, its readiness level, and how it aligns with IMII's stated priorities.

### LOOKING AHEAD

DEMOday 2026 continues IMII's commitment to strengthening Saskatchewan's mining innovation ecosystem—bringing together the boldest thinkers and the most pressing operational needs of the province's mineral producers.

For innovators, it is a unique opportunity to gain visibility for their ideas and technology tailored

to address real world challenges, and secure industry support.

For mining companies, it is a strategic platform to identify new technologies that can transform the way the industry operates.

As Saskatchewan's mining sector positions itself for the future, DEMOday will remain a critical catalyst for the innovations that shape it. ●

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# HAYER & BOECKER NIAGARA'S SCARABAEUS PELLETIZING DISC REDUCES CO<sub>2</sub> EMISSIONS

*Have & Boecker Niagara offers the Scarabaeus pelletizing disc to enhance productivity and profits for mining operations.*

**H**aver & Boecker Niagara offers the Scarabaeus pelletizing disc to enhance the productivity and profits of mining operations. The cutting-edge processing technology allows operations to sustainably produce iron ore pellets by reducing CO<sub>2</sub> emissions while providing heightened efficiency with a 97 per cent production rate of pure iron. The Scarabaeus technology effortlessly pelletizes fine materials to improve their storage and transportation properties, while increasing their market value. The machine seamlessly fits into an operation by offering adjustable inclination, speed, and side wall height to best fit applicational requirements. The processing technology is ideal for a variety of applications, from processing different types of ore and fertilizer to salt and fines.

“We strive to innovatively find and meet the needs of our customers by offering a full-service of customizable

mineral processing solutions,” said Jan Lampke, Haver & Boecker Niagara head of sales and projects. “The Scarabaeus pelletizing disc is exactly that. The mining industry is up against several challenges, especially in terms of sustainability, which is why our engineers strategically designed the technology to improve and address these issues while minimizing the environmental impact.”

The Scarabaeus pelletizing disc is available in a variety of sizes ranging from 3.2 feet to 24.6 feet (1,000 mm to 7,500 mm). It features a unique design that optimizes speed and movement to produce high-quality pellet materials. The machine applies a rotating movement combined with water as a liquid-binding agent on the surface of the disc. The selected material enters the surface of the disc and is pulled along the uppermost side to eventually collect in pellet form in a material bed. The Scarabaeus 7500 generates a particle distribution of 10-14 mm, at up to 150 tph. The compact



*Effective classification helps ensure that material entering granulation, blending, or packaging stages behaves predictably, reducing disruptions that can propagate through the plant and into distribution networks.*

pellet size aids in the direct reduction process which helps to improve sustainability by reducing CO<sub>2</sub> emissions. To ensure an optimum operating system, the parameters of the disc can be automatically adjusted during operation by changing the speed, inclination, mass flow rate, and rim height. This feature also helps to minimize recirculation of over or undersized pellets.

“We saw a need for a more energy-efficient technology and the rising concern of high-operational costs, so we engineered a solution,” Lampke said.

The Scarabaeus 7500 pelletizing disc serves as a critical part

of PROcheck, Haver & Boecker Niagara’s comprehensive service process is dedicated to keeping customers’ operations running to the best of their ability. PROcheck applies Haver & Boecker Niagara’s extensive knowledge in diagnostics, processing equipment, engineered screen media, original parts, rebuilds and upgrades, services, plants and process engineering to inspect customers’ screening processes in order to recommend best practices for processing proficiency. An evaluation can be completed quickly, and, if necessary, even while equipment is operating.

For more information, visit [www.haverniagara.com](http://www.haverniagara.com).

## **ABOUT HAVER & BOECKER NIAGARA**

*Haver & Boecker Niagara is a leading provider in screening, pelletizing, and mineral processing plants and systems. The company’s mission is to deliver the best of these technologies to customers in the mining, minerals, aggregates, cement, building products, fertilizer, and salt and recycling industries. With deep roots and years of experience in these industries, Haver & Boecker Niagara uses its innovative and shared technologies to effectively meet the needs of customers around the world. ●*

*Haver & Boecker’s broader group structure encompasses technologies for packing, palletizing, storage, ship-loading and material flow, allowing fertilizer producers to address downstream requirements within the same technical framework used for upstream processing.*



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# WHEN INFLOW STOPS BEING THEORETICAL

## *Three things potash operators need to know*

By Christopher Johnson, Geological Engineer



*Too often, mine inflow isn't adequately considered a threat and therefore risk isn't fully realized or understood.*

**Y**ou don't notice mine inflow when it's still theoretical or a discussed risk. You notice it when something underground stops behaving the way it should. A drill hole flows more than predicted. Pressures don't reconcile. Water appears in an active panel or begins trickling out of old workings. At that point, the question is no longer whether inflow is a risk, but how exposed the operation is and how quickly that exposure is changing.

This scenario isn't unusual in Saskatchewan potash mining or around the world. In fact, experience across Saskatchewan and New Brunswick shows that mine inflow is not even a rare scenario. Every underground potash mine in these potash basins has encountered mine water in some form. More than half of Canadian potash mines have required mitigation, and several were ultimately lost because of it.

Too often, mine inflow isn't adequately considered a threat and therefore risk isn't fully realized or understood. Understanding the risk begins at exploration but further continues through development and production.

Over the past two decades, my work has focused on evaporite mine inflows, including investigation, modeling, and mitigation across more than a dozen underground mines in North and South America. As part of RESPEC, our teams have been involved in more than 25 inflow cases globally. One lesson is consistent. Inflow is difficult to

predict, and very often no two cases behave the same. However, operations that manage it effectively tend to focus on three key considerations.

### WHERE IS THE WATER?

The first consideration is understanding where groundwater is prevalent and how close it is to current and future workings. Major aquifers, dissolution features, and geologic structures like faults and collapses may be identified early, but their relevance can change as mining advances.

### HOW BIG CAN INFLOW AND POTENTIAL FOR IT TO BE CATASTROPHIC?

The presence of groundwater alone does not define risk. Deliverability or how large the inflow can become does. A relatively thin, highly permeable feature can result in larger inflow rates than a larger but poorly connected system. In potash, water chemistry also

matters. Under-saturated water will dissolve salt as it moves, increasing permeability and flow over time.

As dissolution progresses and connectivity improves, a source that once appeared limited can become increasingly aggressive. Even with testing and modeling, uncertainty remains. The objective is not perfect prediction but understanding the range of possible outcomes and recognizing when conditions are shifting.

### HOW DOES IT GET IN?

The third consideration is how water enters the mine. Geological structures, stress-driven fracturing, and legacy drill holes can all provide pathways. Changes in stress or progressive fracturing can link natural and man-made features, creating a pathway into the mine. While exact locations are difficult to predict, understanding the

possible mechanisms and their limits is critical.

### PLANNING BEFORE IT SHOWS UP

Prepared operations focus not only on understanding inflow, but on response. If water enters the mine, decisions must be made quickly. Where is it captured? How is it pumped? Where does it go?

Early catchment is critical. Allowing water to move through workings can increase damage and inflow rates. Mitigation measures such as grouting may be required, and contingency planning determines how effective the response will be.

Mine water can almost be considered inevitable in underground potash mining. The difference is whether it is encountered as drips, inflow that naturally stops, or inflow escalates into a situation that requires mitigation and has catastrophic risks lurking. ●

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# IN A SLOWER ECONOMY, PRODUCTIVITY MATTERS MORE THAN EVER



By Andrea Hansen, President, Sutton Benefits & Pension Inc.

Canadian businesses are facing continued pressure in 2026. Trade tensions, tariffs, and shifting supply chains continue to drive costs higher, while economic growth is expected to slow. Canada's GDP is projected to grow by just one per cent in 2026.

The BDC's economic outlook for 2026 is cautious. Businesses are expected to continue grappling with labour shortages, particularly outside major urban centres.

"Caught between cost pressures and a slowing economy,

businesses will have no choice but to increase productivity to maintain profitability," says Pierre Cl  roux, vice-president, research and chief economist with BDC.

When growth slows and labour is scarce, productivity becomes one of the few levers businesses can still control.

Productivity isn't just about working harder; it's about removing the barriers that prevent employees from performing at their best. Many of those barriers are health related.

When employers invest in the right benefits, they can improve day-to-day performance, reduce injury-related downtime, and retain experienced employees.

## IMPROVING FOCUS AND DAILY PERFORMANCE

Absences are a clear negative signal, but productivity challenges can also show up as presenteeism: employees working while distracted by pain, fatigue, or untreated health issues. The result is slower work, more errors, and reduced focus.

Some of these performance barriers are hidden or hard to identify. Stress, burnout, and untreated mental health conditions can be invisible and can affect concentration and decision-making. When employees have access to counselling and mental health resources, they're better able to stay engaged and productive.

Financial stress can also affect employee wellbeing and performance. The 2025 Benefits Canada Healthcare Survey found plan members with poor financial health were significantly more likely to report poor mental health. Financial wellbeing programs can help address this challenge. In fact, about 77 per cent of plan sponsors already offer at least one registered workplace savings program to support employees' long-term financial security.

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## REDUCING INJURIES AND RECOVERY TIME

Chronic pain and musculoskeletal problems are widespread. In settings with repetitive motions or heavy lifting, these can escalate into serious injuries, leading to extended absences, safety risks, and lost output. The Canadian Physiotherapy Association estimates that musculoskeletal disorders drive nearly a third of Canadian workplace injuries, costing billions in lost productivity and WCB claims.

Early intervention is a clear winner, however. Research cited by the Canadian Physiotherapy Association suggests that early physiotherapy can return up to three dollars in health care and productivity savings for every one dollar invested. A Workers' Compensation Board of Manitoba analysis found that early physiotherapy reduced claim durations by roughly two per cent.

Comprehensive paramedical coverage (like physiotherapy, chiropractic, massage, and mental-health counselling) reduces absenteeism, presenteeism, injury risk, and turnover in a tight labour market. By proactively supporting employee health, employers see stronger safety records, fewer claims, higher engagement, and sustained productivity.

## RETAINING EXPERIENCED EMPLOYEES

Retention is also a productivity issue. When experienced employees leave, companies lose institutional knowledge and spend months recruiting and training replacements.

Employees are now expecting strong benefits plans as well. According to the 2025 Benefits Canada Healthcare Survey, four-in-five plan members say it would be unacceptable for their employer to reduce benefits, and a similar share expect their employer to support their health and wellbeing beyond simply offering a basic benefits plan.

Many employers already see benefits as a competitive strategy. According to the same Benefits Canada survey, employers are more likely to add or improve coverage than reduce it, with plan competitiveness and the health of plan members ranking among their top priorities.

Strategic benefits aren't just a cost of doing business; they're a practical way to support employee health, reduce lost productivity, and strengthen your organization for the long term. The right benefits strategy helps your organization stay resilient, productive, and competitive, no matter what the economic cycle brings. ●



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# PDAC 2026 REFLECTS GROWING GLOBAL MOMENTUM FOR MINERAL EXPLORATION AND DEVELOPMENT

**T**he Prospectors & Developers Association of Canada (PDAC) Convention brought together the global mineral exploration and mining community the first week of March, continuing a 94-year tradition of connecting industry, governments, investors, Indigenous communities, and students.

PDAC 2026 welcomed 32,155 participants from around the world, the highest participation in the event's history.

"There was a clear sense of energy throughout the convention," said PDAC president Karen Rees. "Strong

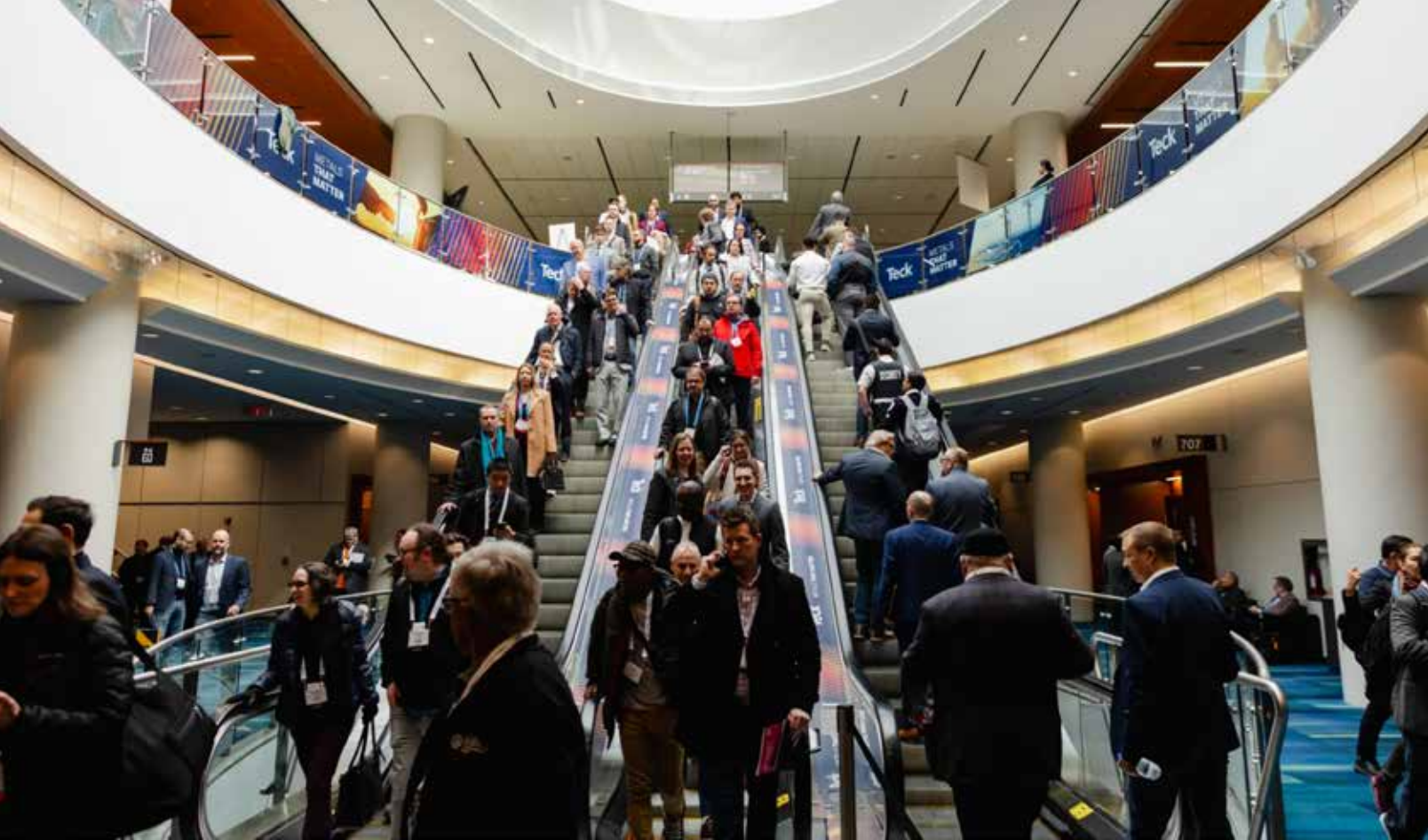
commodity markets are contributing to optimism across the sector. At the same time, governments and the public are recognizing more clearly how essential minerals are to economic growth, electrification, defence, and modern technologies."

The convention also set a record with more than 1,300 exhibitors, delivering the largest trade show footprint in PDAC's history and filling the Metro Toronto Convention Centre across both the North and South buildings. Over four days, PDAC 2026 facilitated networking, investment discussions, and deal-making. The convention's programming featured hundreds of expert presenters examining the

key opportunities and challenges shaping mineral exploration, project development, and financing.

PDAC 2026 also welcomed participation from governments around the world, alongside Canadian policymakers and leaders from municipal, provincial, and federal levels. Their presence reflects the growing global focus on mineral supply, investment, and the policies needed to support responsible development.

"Government policy choices play a critical role in supporting the mineral sector and ensuring Canada remains a global leader in mineral exploration



and development,” Rees said.

“Proven, made-in-Canada exploration tax credits and greater regulatory predictability are essential to maintaining Canada’s competitiveness and investor confidence.”

While the convention is an important moment for the association, PDAC advocates throughout the year on behalf of its members and the broader sector.

“In a more complex global environment, a strong mineral sector is fundamental to Canada’s economic prosperity, supply-chain security and sovereignty,” Rees said.

PDAC thanks its volunteers, speakers, sponsors, exhibitors, and participants for contributing to a successful convention and looks forward to welcoming the global mineral exploration and mining community back to Toronto for PDAC 2027, March 7–10, 2027.

## ABOUT PDAC

The Prospectors & Developers Association of Canada (PDAC) is the leading voice of the mineral exploration and development community, an industry that employs more than 724,000, and contributed

\$156 billion to Canada’s GDP in 2024 (Natural Resources Canada, February 2025). Representing more than 8,200 members worldwide, PDAC works to support a competitive, responsible, and sustainable mineral sector. Visit [pdac.ca](https://pdac.ca) for more information. ●





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