B.C.
MINING Review
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Protecting mining assets: The multifaceted benefits of specialty coatings

Electrification transforms the mining landscape in Canada

Eagle Plains: The little company with big optionality

Safety beyond the mine: Understanding employer responsibilities on resource roads

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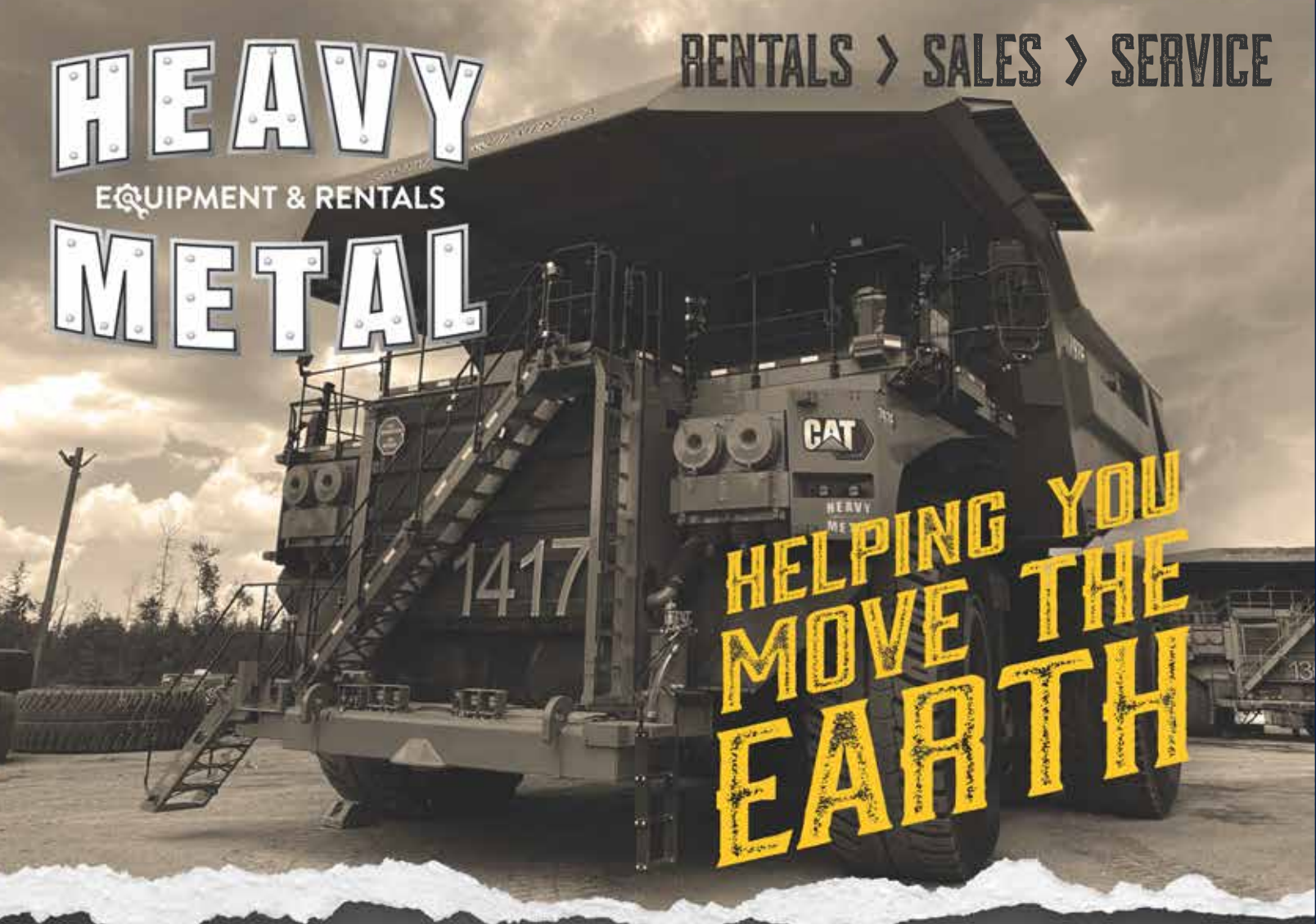
EQUIPMENT & RENTALS

RENTALS › SALES › SERVICE



FLEET PROFILE

40 Ton F&L Combo	40/45 Ton ADT	777D/F/G	785B/C	789C/D	793C/D/F - 830E	797E/F	
D6T LGP	D8T LGP	D9T	D10T	D11T			
938	950	966M/744K	844K/980K/M	988H/K - WA900	992/922G		
20-47 Ton HEX	65-90 Ton HEX	120-200 Ton HEX	EX2600	EX3600	EX5500/ EX5600/PC5500	PC7000	PC8000
16M	24M - 24						
Tandem	40 Ton ADT	777D	793D				

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MESSAGE FROM THE HONOURABLE

Jagrup Brar

MINISTER OF MINING AND CRITICAL MINERALS

As the newly appointed Minister of Mining and Critical Minerals, I am honoured to have this opportunity to stand up for the economic and social importance of the mining and mineral exploration sector in British Columbia.

B.C.'s mining and mineral exploration industry is crucial to our clean, thriving future. Overseeing this sector on behalf of the provincial government means working with industry and listening to the people of British Columbia to bring about more jobs, further reconciliation, assist with the clean energy shift, and develop revenue sources that fund the essential infrastructure and services that people rely on. In addition to this, my goal is to develop trust for our global partners who seek to trade with and invest in our province.

B.C.'s mining and mineral exploration industry provides more than 35,000 good family-supporting jobs for people in communities across the province. Mining production value is forecast to be up 57% from 2018, and over the past five years, exploration spending has totaled $2.8 billion with mining production at over $60 billion.

We are committed to building on our success. The agenda ahead is ambitious but, through collaboration with the industry and First Nations, we can not only meet but exceed our goals. Over the past several years, B.C. has made significant progress on exploration-permitting timelines, including a 52% reduction in the backlog of permits since Spring 2022. We have also reduced the major project review timelines by over 35%. An excellent example of this progress is the Cariboo Gold mine, which received its permit in just 13 months and became the first fully approved mine under the new Environment Assessment Act.

As well, Artemis Gold's Blackwater gold and silver mine near Vanderhoof will begin operations soon. The estimated capital investment for Blackwater is $645,000,000 and will provide more than 450 jobs when operational. The mine's owner obtained its operating permit within a year, from final application to green light.

We are also strengthening our focus on the critical minerals sector. In January 2024, the ministry released Phase 1 of the B.C. Critical Minerals Strategy to build on the strong and responsible mining fundamentals we have put in place to unlock new critical minerals opportunities. The Strategy outlines how we will support critical mineral development, improve sector competitiveness, build stronger partnerships with First Nations, and attract new investment, while driving sustainable economic growth in the province.

Speaking of opportunities, there are 17 critical minerals projects identified by the Mining Association of British Columbia that have the potential to help B.C. realize our critical minerals

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Though this is challenging work, we are confident that, together, we can address the court ruling while also maintaining a vibrant mineral exploration and mining sector that advances reconciliation and contributes to economic prosperity for everyone in British Columbians.

potential. If successful, these projects will represent a projected impact of more than $35 billion in capital investment and more than 10,000 new jobs across the province. In addition, there are also active developments and proposals for processing, manufacturing and recycling facilities that will have a downstream effect from these critical mineral projects creating more job opportunities for all peoples of British Columbia. This is a generational opportunity to develop B.C.'s economy responsibly and we are going for it.

British Columbia is already a global leader in growing and regulating a safe and environmentally responsible mining sector with a firm commitment to environmental, social and governance principles, and strong and collaborative partnerships with Indigenous communities.

To maintain this status, we must modernize B.C.'s mineral tenure system and address the 2023 Court decision in Gitxaala v. British Columbia (Chief Gold Commissioner) by ensuring consultation occurs in the claim staking process. Though this is challenging work, we are confident that, together, we can address the court ruling while also maintaining a vibrant mineral exploration and mining sector that advances reconciliation and contributes to economic prosperity for everyone in British Columbians.

The future looks bright, and we're working to make B.C.'s mining and mineral exploration sector even stronger. The resources under our feet aren't just minerals, they're the essential building blocks for our schools, roads, bridges, and other critical infrastructure. They enable the services that all British Columbians rely on. I am looking forward to seeing what we can achieve together. ✪

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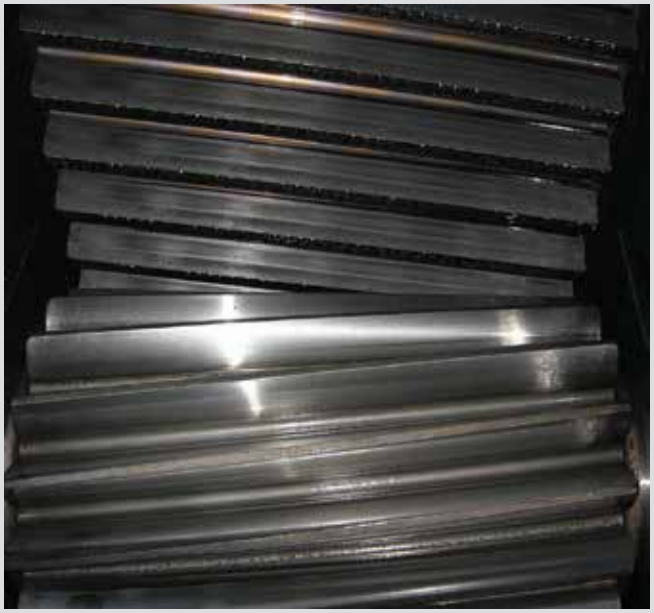

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Point requirements for mineral exploration (cost and benefit)

By John Rankin, B.Sc., Eagle Mapping Inc. *jrankin@eaglemapping.com*

In the realm of mineral exploration, utilizing LiDAR stands out as the most effective surface visualization method, especially in densely vegetated areas. Through its active light source, LiDAR, short for Light Detection and Ranging, provides precise measurements down to a few centimeters. By calculating the time taken for a light pulse to bounce off an object and return to the sensor along a known vector, LiDAR accurately determines the position of the reflected point in three-dimensional space.

Furthermore, each laser pulse emitted by LiDAR can yield a single return on solid surfaces like beaches or parking lots. Conversely, when encountering obstructive elements such as trees, buildings, or power lines, multiple returns are generated. Today's advanced LiDAR systems have the capacity to capture millions of points per second, facilitating efficient and precise coverage of extensive areas.

The effectiveness of LiDAR data in mineral exploration hinges on point density and uniform distribution. A minimum of 4 to 6 evenly dispersed points is required to initiate the visualization of a feature. Simpler attributes necessitate fewer points for identification, whereas more intricate features demand a greater number of points. Inadequate point coverage can lead to misinterpretations, potentially mistaking a complex object for a simpler one, like misidentifying a car as a large boulder.

While LiDAR technology offers the ability to collect an unlimited number of points per square meter, the balance between point density and cost is crucial for effective project management. Increasing pulse density may initially seem beneficial, but the cost-effectiveness can fall rapidly due to diminishing returns and the difficulty that comes with managing a large data set.

On hard surfaces or bare earth each additional pulse gains a ground point offering a good benefit to cost at lower

In forested areas, more pulses over the canopy do not necessarily translate to more usable ground points, as most additional points end up in the canopy.

point densities. Going from 4 points with a resolution of 0.5m to 8 points increases your point density 100% for an increased ground resolution of 0.353m or a ~ 29% increase in resolution. As seen, a doubling of points is required each time to increase ground resolution by ~ 29%. This rapidly increases the cost of a survey and balloons file size making it more difficult to process, manage, and distribute.

In forested areas, more pulses over the canopy do not necessarily translate to more usable ground points, as most additional points end up in the canopy. The laser pulses tend to penetrate the same canopy holes, registering points on the ground where they already exist. These points usually have poor distribution and contribute little to the ground surface which is of the highest importance in mineral exploration. By increasing flight lines with varying overlaps new angles can be achieved to find more openings in the canopy, but it increases costs quickly often making this collection impractical.

In ideal conditions resolution under canopy almost never exceeds 0.5m or 4 points/m². At a 0.5m resolution objects under canopy, on a forest floor free of debris, would begin to appear once they were larger than roughly 2m. If significant forest debris were present, it makes features equal in size to the debris difficult to identify.

Mineral Explorationists focus on identifying various geological elements such as glacial features, ancient hydrology, outcrops, pegmatites, faulting, folding, and overburden. There is also great interest in discovering historical workings (pits, piles, trenches, tailings, trails, roads) as well as locations for drill collars, routes for accessibility, and active hydrology. These features are relatively large and to achieve their visualization even under canopy 6 to 8 pulses/m is often the sweet spot with 10 pulses/m being on the high end of point collection and sufficient in almost every mineral exploration project. ✪

Sling-Choker Manufacturing 50 years of expertise

Sling-Choker sets itself apart with exceptional customer service, a wide range of expertise in various product lines, and an understanding that continued success requires investment in its employees.

Each branch also focuses on products and services to serve their markets, from products for the cellular tower market, fall arrest repairs and servicing, safety and workplace training, and overhead crane installation and servicing.

In the early 1970s, while Paul Villgren was working as an industrial technical sales representative specializing in mining supplies and equipment, he noticed a significant gap in the market while he was working in northern Ontario, where very few companies were focused on selling wire rope, chain, and rigging supplies and services. Motivated by this opportunity, Villgren founded Sling-Choker Manufacturing Ltd. in 1975 in Sudbury, Ont., a key mining area. Initially, Sling-Choker produced wire rope slings for the mining and construction industries, and chokers for the forestry sector. Soon, the company expanded to also manufacture nylon and chain slings.

Sling-Choker quickly gained a reputation as a comprehensive source for rigging supplies and solutions, and recognizing the need for more specialized industrial products, the inventory was expanded to include products for the mining and construction industries. As the company continued to grow, the rising demand from out-of-town customers necessitated additional locations. This growth has expanded the company to 14 manufacturing locations across Canada, with a product catalogue now exceeding over 320 pages. Today, Sling-Choker has strategically placed branches in Ontario, Québec, and Manitoba. Each branch boasts manufacturing capabilities and a dedicated sales team, allowing them to develop specialized product lines and expertise tailored to the local market needs while leveraging the group's collective knowledge.

Sling-Choker primarily offers lifting, rigging, and inspection services as a traditional rigging shop. Each branch also focuses on products and services to serve their markets, from products for the cellular tower market, fall arrest repairs and servicing, safety and workplace training, and overhead crane installation and servicing. To better serve its customers, Sling-Choker has formed strategic partnerships with reputable industry brands like Bridon-Bekaert, Crosby, Columbus McKinnon, Apex Tools, Kito, Vulcan, Polydeck,

Sling-Choker has strategically placed branches in Ontario, Québec, and Manitoba. Each branch boasts manufacturing capabilities and a dedicated sales team.

Selene Plastic Bags, Rezplast, and more. These partnerships, along with the ability to produce custom slings, ensure Sling-Choker can meet any project's needs.

"Crane rope designs have become more sophisticated, incorporating multi-strand, compacted, and plastic components, replacing the simpler 6x25 or 6x36 constructions," explains Kane Butcher, general manager at Sling-Choker (Hamilton) Ltd. "We work with our manufacturers to match the right rope to the right application, demonstrating that operational cost savings can often be more economical than upfront costs."

Despite the rise in online sales of rigging products, Sling-Choker sets itself apart with exceptional customer service, a wide range of expertise in various product lines, and an understanding that continued success requires investment in its employees.

Butcher emphasizes the importance of recognizing every team member's value in contributing to Sling-Choker's success.

"By working as a team, we can provide outstanding quality and service, and we greatly appreciate the positive feedback from our customers," says Butcher.

Reflecting on nearly five decades of service, Butcher nostalgically recalls the early days of the company.

"Back then, companies had ample staff, allowing for strong customer relationships and loyalty. Today, with minimal staff and an influx of inconsistent imported products, multitasking is the norm," he says. "While we offer global products, we select them based on quality and suitability."

Sling-Choker holds the distinction of being the longest-serving member of the Web Sling and Tie Down Association (WSTDA) for 45 years. The company values its membership, appreciating WSTDA's role in setting industry standards.

"The WSTDA brings together resources from all stakeholders to develop the standards we rely on as an industry," says Butcher. "By adhering to these standards for raw materials, threads, and finished products, we ensure market safety."

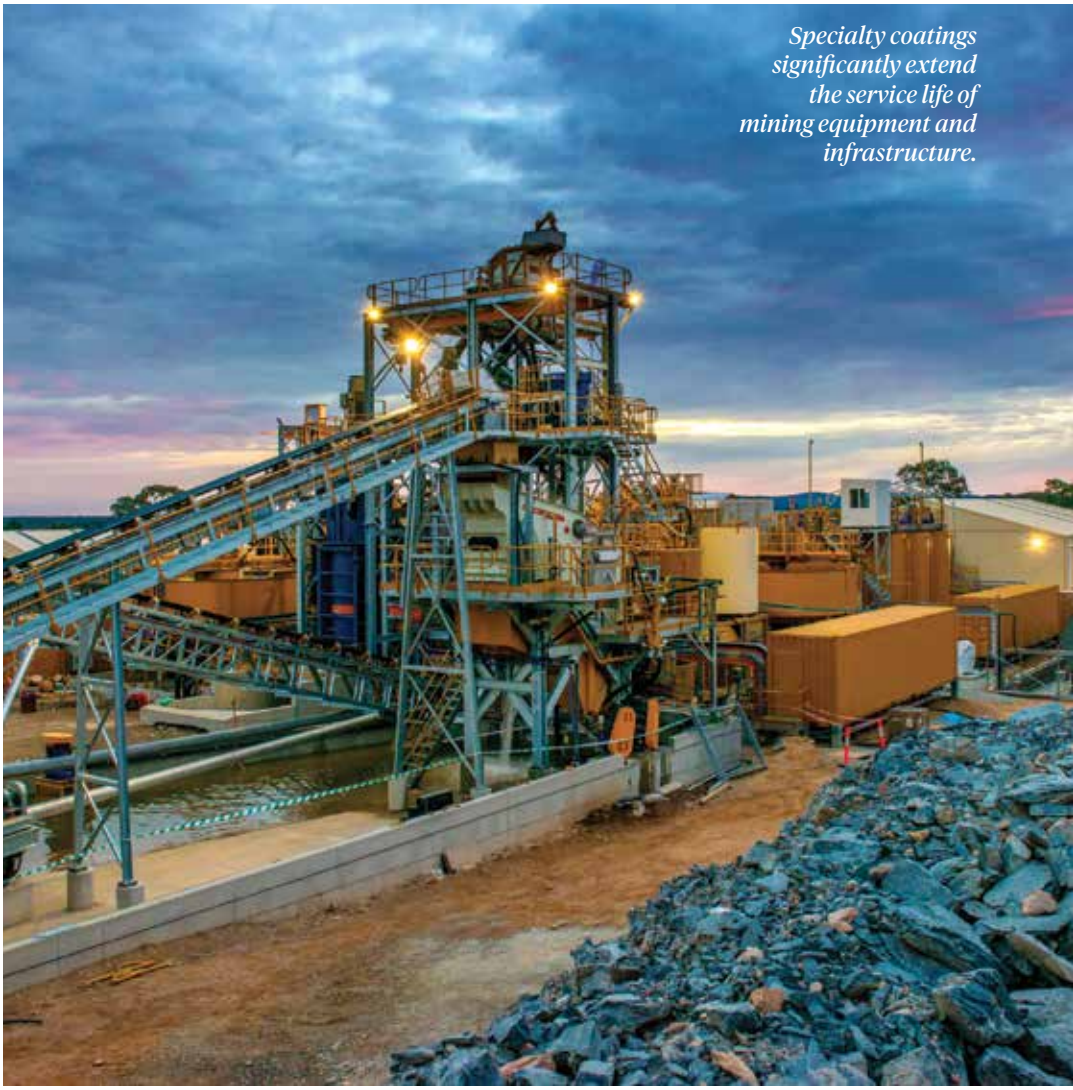
Looking ahead as Sling-Choker celebrates their 50th anniversary in 2025, they plan to continue their growth and adapt to evolving market conditions while sharing its quality and expertise with customers. ✪

Protecting mining assets

The multifaceted benefits of specialty coatings

Provided by Park Derochie

In the mining industry, equipment and infrastructure face harsh conditions – extreme temperatures, abrasive materials, and corrosive chemicals. These factors degrade steel and concrete assets, leading to costly repairs, downtime, and safety hazards. Applying specialty coatings designed for corrosion protection is one of the most effective strategies to combat these challenges.



Specialty coatings significantly extend the service life of mining equipment and infrastructure.

BEYOND THE BARRIER: HOW COATINGS PROTECT

While protective coatings act as a barrier between assets and corrosive elements, their capabilities extend beyond this basic function. Specialty coatings employ multiple mechanisms to safeguard mining assets:

1. Cathodic protection (sacrificial coatings):

- ***Galvanic action:*** Coatings with anodic metals like zinc or aluminum corrode preferentially, protecting the underlying steel through galvanic corrosion. This sacrificial method effectively prevents rust and prolongs the life of steel structures common in mining equipment.

2. Corrosion inhibitive pigments:

- ***Chemical inhibition:*** Coatings with inhibitive pigments release ions that slow down corrosion. These pigments react with the metal surface to form a passive layer, reducing reactivity and enhancing long-term protection.

3. Electrochemical neutralization:

- ***pH stabilization:*** Certain coatings neutralize acidic or alkaline environments by buffering pH levels at the metal surface, reducing corrosion rates in fluctuating conditions.

4. Chemical resistance:

- ***Barrier to chemicals:*** Specialty coatings resist specific chemicals, solvents, or gases that could degrade the substrate. In mining operations where equipment is exposed to harsh substances like sulfuric acid or saline water, chemically resistant coatings prevent damage.

5. UV protection:

- ***Ultraviolet light resistance:*** UV-resistant coatings absorb or reflect harmful rays, preventing degradation of both the coating and the substrate. This protection is crucial for assets exposed to sunlight.

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6. Thermal protection:

- ***Heat resistance:*** High-temperature coatings shield assets from thermal degradation, oxidation, or stress caused by temperature fluctuations. Equipment near furnaces or involved in high-temperature processes benefits from these coatings.

7. Hydrophobic properties:

- ***Water repellency:*** Hydrophobic coatings repel water, reducing moisture contact with the substrate – a key factor since water facilitates corrosion. These coatings are essential for assets in humid or wet environments.

8. Self-healing capabilities:

- ***Automatic repair:*** Advanced coatings can heal minor scratches or damages through microcapsules filled with healing agents that release upon damage. This innovation reduces maintenance needs and prevents minor issues from escalating.

9. Abrasion and impact resistance:

- ***Mechanical protection:*** Coatings enhance surface hardness and impact resistance, safeguarding against physical wear that could expose the substrate to corrosive elements – vital for equipment handling abrasive materials.

10. Insulative properties:

- ***Electrical insulation:*** Some coatings provide electrical insulation, preventing galvanic corrosion between dissimilar metals in electrical contact within a corrosive environment. This protects electrical components and reduces overall corrosion.

EXTENDING ASSET LIFESPAN AND ENHANCING SAFETY

By leveraging these advanced mechanisms, specialty coatings significantly extend the service life of mining equipment and infrastructure. This longevity yields a higher return on investment and enhances safety by maintaining structural integrity. Corroded equipment poses safety risks and potential regulatory violations; coatings help mitigate these issues, ensuring compliance with industry standards.

IMPROVING OPERATIONAL EFFICIENCY AND SUSTAINABILITY

Unplanned downtime due to equipment failure drains productivity and profitability. Protective coatings reduce unexpected breakdowns, allowing for proactive maintenance and better resource allocation. By reducing the need for frequent repairs and replacements, coatings contribute to environmental sustainability, minimizing waste and energy consumption associated with manufacturing new components. This aligns with green initiatives and corporate social responsibility efforts.

In an industry where asset performance is critical, investing in specialty coatings is a strategic decision offering multifaceted benefits. From advanced corrosion protection to enhancing safety and efficiency, these coatings play a vital role in mining operations' success. As challenges evolve, embracing the full spectrum of protective capabilities ensures mining companies remain resilient, efficient, and forward-thinking in a competitive landscape.


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Reduce maintenance with polyurethane pipes

For mining operations, special attention to piping is needed to keep and maintain operations flowing. It's not uncommon for metal pipes to leak or break due to significant wear and damage over time, and maintenance managers already anticipate that their metal pipes would need replacing sooner rather than later.

Metal pipes naturally have very low abrasion and chemical resistances meaning that they are prone to scratching and rust build-up. When metal pipes are carrying minerals like sand and gravel, these deposits continuously hit and break apart the pipes. Loud noises are often generated when these minerals hit the pipes, causing safety risks for workers and managers.

POLYURETHANE PIPES – A SOLUTION FOR ABRASIVE AND CORROSIVE ISSUES

Polyurethane pipes have properties that make them superior alternatives to metal pipes in a variety of applications and environments. When polyurethane experiences impact, the energy gets distributed evenly across the part rather than absorbed in one specific area like metal. This enables polyurethane to outlast metal in applications where high impact is experienced in one specific area.

Another strength of polyurethane is its very high abrasion resistance because of its lower coefficient of friction compared to metal. This enables it for materials to glide through the pipe, drastically reducing abrasion. Another advantage is that polyurethane doesn't rust, preventing one of the major reasons pipes break.

REPLACING METAL PIPING

Ten years ago, we had a customer who came to us about their metal pipes and how they were breaking in only 18 months due to a combination of abrasion and corrosion issues. The customer is a mine that was extracting very abrasive minerals and using the pipes to carry them through their processing facility. The short wear life of their metal pipes was causing issues since they had to shut down their entire facility whenever our customer had to replace them. Combined with the cost of the replacement pipes, the overall downtime costs were too big to endure. They required a more long-term and cost-effective solution.

We investigated intensively to capture what piping material would be best for our customer; we asked our customer what minerals they were extracting and the current capacity of their piping network. We then manufactured a custom-designed polyurethane pipe for a trial run to see if it would outperform their old metal pipes. Sure enough, they were impressed that our pipe lasted longer than 18 months and ordered an entire batch.

WE CAN HELP

Redwood Plastics and Rubber has been supplying custom plastic and elastomer solutions for the mining industry for over 50 years. Our in-house manufacturing and design teams are ready and able to manufacture products, like polyurethane pipes, that reduce wear, abrasion, corrosion, or impact issues within your facility.

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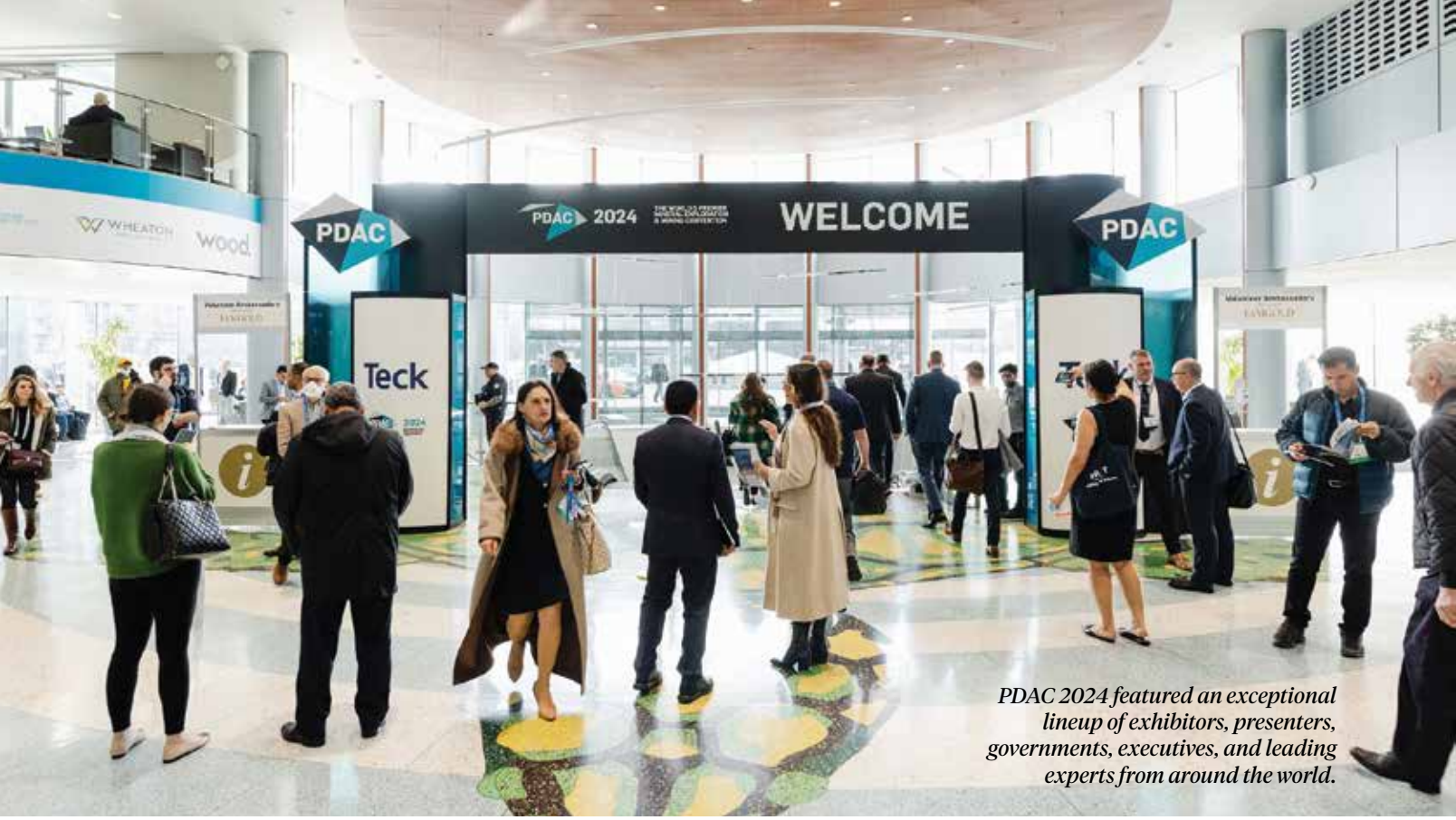
We investigated intensively to capture what piping material would be best for our customer; we asked our customer what minerals they were extracting and the current capacity of their piping network. We then manufactured a custom-designed polyurethane pipe for a trial run to see if it would outperform their old metal pipes. Sure enough, they were impressed that our pipe lasted longer than 18 months and ordered an entire batch.



PDAC 2024 featured an exceptional lineup of exhibitors, presenters, governments, executives, and leading experts from around the world.

Memorable moments, events, and experiences from the world's premier mineral exploration and mining convention in Toronto, Canada

From March 3 to 6, 2024, attendees from across the globe came to the Metro Toronto Convention Centre (MTCC) for best-in-class professional programming, exhibits, networking, events, and more at PDAC's annual award-winning show.

Spread across both the North and South Buildings of the MTCC, as well as special events held in the Fairmont Royal York Hotel, PDAC 2024 featured an exceptional lineup of exhibitors, presenters, governments, executives, and leading experts from around the world.

Arriving from 138 countries, the 2024 convention welcomed a wide range of attendees from the industry including investors, miners, geoscientists, community leaders, and students.

"It's undeniable – this is the largest convention and gathering of mining and exploration companies in the world," said Valerie Pascale, founder of Modern Core, a consultancy.

Raymond Goldie, PDAC president, added that the PDAC 2024 carried forward the convention's 92-year legacy, serving as the premier venue for unveiling new trends, technological innovations, and industry discussions.

HIGHLIGHTS:

- Hosting more than 1,100 exhibitors, the convention continued to serve as the premier venue for unveiling new trends, technological innovations, and industry discussions.
- Extensive programming featuring topics that focused on capital markets, Indigenous relations, sustainability, industry trends, and technical research, plus student and early career development.
- A new Investment Hub on the Investors Exchange floor was created to host the popular Corporate

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1,100+ exhibitors ■ Delegates from **130+** countries
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Hosting more than 1,100 exhibitors, the convention continued to serve as the premier venue for unveiling new trends, technological innovations, and industry discussions.

Presentation Forum for Investors and Investment Leaders Forum programs, giving attendees enhanced investment opportunities.

- Keynote presenters included Rio Tinto's Jakob Stausholm, The World Bank's Michael Stanley, Caterpillar Inc.'s Denise Johnson, and Wojtek Wodzicki from the Lundin Group Vicuña Exploration Team.
- The convention provided a venue for dialogue between industry and government. PDAC's leadership seized the opportunity to underscore the important role public policy has in supporting the competitiveness of Canada's mineral sector.
- Five of the industry's top performers were honoured at the prestigious PDAC 2024 Awards Gala & Nite Cap, held at Toronto's Fairmont Royal York Hotel.

KEY STATS:

- 26,926 attendees
- 138 countries represented
- 33.3 per cent international attendees.

Outside of Canada, the largest number of attendees came from the United States, Australia, the United Kingdom, Brazil, Peru, Chile, Argentina, Mexico, Mongolia, Germany, Turkey, and Kazakhstan.

- 693 presenters
- 10 short courses
- 167 sessions
- 1,105 total exhibitors
- 73 government exhibitors
- 366 accredited media
- 35 sponsors
- 1,115 student attendees
- 492 investors exchange booths
- 1,054 trade show booths
- 40 core shack exhibitors
- 20 prospector's tent exhibitors

THE LEISHMAN EXPERIENCE 2: THE SECOND-ANNUAL DR. DONALD M. LEISHMAN CONVENTION EXPERIENCE

With the success of the inaugural experience in 2023, the Leishman family and PDAC were honoured to provide another five students all-expense paid trips to Toronto to attend the World's Premier Mineral Exploration and Mining Convention.

The five students selected for this rare opportunity at PDAC 2024 were Christina Matchett, University of Victoria; Hayley Newell, Acadia University; Tatiana Pillajo, Laurentian University; Kaylee Tymo, University of Regina, and Sepideh Vafaei, Institut national de la recherche scientifique (INRS).

All coming from geology, environmental geoscience, and earth sciences programs, the selected students had their flights, meals, and accommodations covered at a nearby downtown hotel. With just a short walk to the MTCC, this lucky quintet received complimentary All-Access passes to PDAC 2024, as well as exclusive access to programs and invitation-only events during the four-day convention.

"Attending the PDAC Convention 2024 was a unique and rewarding experience for me," said Tatiana Pillajo, student from Laurentian University. "I gained important feedback about projects and how the mining industry is working to be innovative and sustainable."

Their passes included events such as the President's Reception, S-IMEW Alumni Reception, and the Awards

The convention provided a venue for dialogue between industry and government.

Gala & Nite Cap, where they made new connections with industry leaders, government representatives, fellow students, and mentors.

"The convention was so much larger than I could have imagined, but this community is so incredible and I'm so glad to be a part of it," said Hayley Newell, student at Acadian University. "The experience and connections I made at my first PDAC Convention are invaluable and would not have been possible without the Leishman family."

Echoing this sentiment, Christina Matchett said she was "thankful for the Leishman family's generosity in providing me the opportunity to attend the 2024 PDAC Convention. Attending the technical sessions and seminars increased my awareness of recent developments and trends in the mineral exploration industry."

The Leishman Experience also provided the students with access to PDAC's board of directors, association professionals, and even government representatives, who offered advice and guidance for their future careers.

"The most beneficial part of this experience for me was attending the Awards Gala, where I met top company executives and learned about industry achievements and innovations," Matchett added. "I will encourage other students to apply for next year's Leishman's Experience to expand their network and benefit from the Student and Early Career Program."

Dr. Leishman was a family physician with a passion for geology and mining. As an enthusiastic participant at many PDAC Conventions, he made countless friends within the mineral exploration and development industry and left a legacy of generosity as a mentor for students. In his honour, the Leishman family created this unique opportunity for students to experience the convention held each year in Toronto to make connections, expand their networks, and access other mentorship opportunities to help advance their careers in the industry.

To learn more about the experience and the application process for PDAC 2025, visit pdac.ca/dr-donald-m-leishman-convention-experience.

Thank you to everyone who participated in PDAC 2024, including our volunteers, presenters, sponsors, exhibitors, and attendees.

The annual PDAC 2025 Convention – The World's Premier Mineral Exploration & Mining Convention – will take place from March 2 to 5, 2025 in Toronto, Canada. The award-winning PDAC Convention is widely considered the "Super Bowl" of the mineral exploration and mining community and is the leading event for people, companies, and organizations connected to mineral exploration.

The convention brings together up to 30,000 attendees from over 135-plus countries for its educational programming, networking events, business opportunities, and fun.

Since it began in 1932, the convention has grown in size, stature, and influence. Today, it is the event of choice for the world's mineral industry hosting more than 1,100 exhibitors and 700 presenters.

For more information, please visit www.pdac.ca/convention.

Portions of this story originally ran in the summer 2024 issue of CORE magazine. ✪

The talent crisis: A critical risk to critical minerals

Canada possesses significant amounts of the critical minerals needed for the transition to a green economy. The nation can be a world leader in supplying these critical minerals, but the opportunity cannot be seized without attracting more workers into the sector.

Workforce skills shortages are one of the biggest risks when it comes to supplying the world with critical minerals and metals. A robust supply of skilled exploration and mining workers is needed to support expansion, avoid ongoing labour shortages, and ensure the minerals and metals sector's sustainability and competitiveness.

Yet, Canada's mining talent pipeline is shrinking. Long-term forces undermine the labour supply's ability to respond to periods of growth – such as rising retirements, a widening worker age gap, and continued underperformance in attracting underrepresented groups.

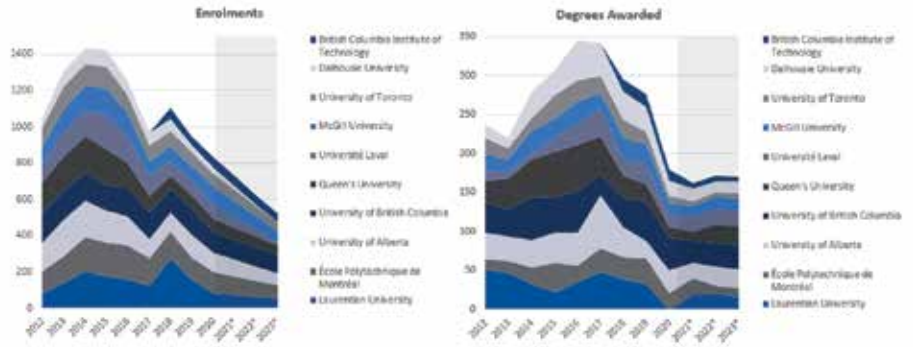
Post-secondary enrolment in geoscience- and mining-related programs is also dwindling. While undergraduate enrolment across all engineering programs is increasing, mining engineering enrolment decreased by 50 per cent from 2012 to 2023 – the largest decline of any engineering discipline. Geological engineering enrolment was down nearly 40 per cent, and other mining-related programs are experiencing similar declines – highlighting a bottleneck for attracting new talent.

Mining has also historically struggled to diversify its workforce. For instance,

Widening Age Gap: Share of Workforce by Age Category, mining, quarrying & oil and gas extraction

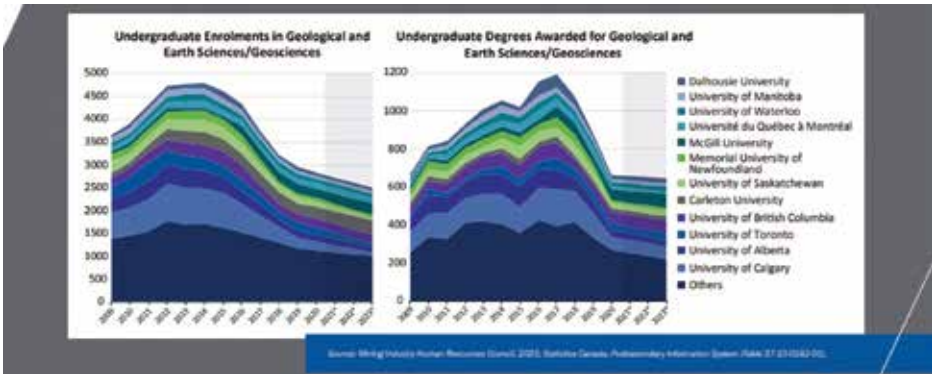
Source: Mining Industry Human Resources Council; Statistics Canada, Labour Force Survey, 2023.

Undergraduate Enrolments and Degrees Awarded in Mining or Mineral Engineering (2012 to 2023)



**Forecast from 2021 onwards assumes present trends continue. Source: MiHR; Engineers Canada, Canadian Engineers for Tomorrow: Trends in Engineering Enrolment and Degrees Awarded Report; Canadian Mining Schools Committee (CMSC), Survey of Canadian Mining Engineering Schools, 2023.*

Post-Secondary Enrolment (Bachelor's and Below) and Graduates by Institution, Geosciences (2009 to 2023)



the latest trends on representation in the workforce show that, relative to other industries, mining continues to underperform with women and newcomers. Women make up just under half of the Canadian labour force but only represent 14 per cent of the mining industry – and while 30 per cent of the overall workforce is made up of immigrants, they only represent eight per cent in mining.

These stagnant and shrinking supplies of talent come at a time when demand for critical minerals is increasing along with the industry's demand for skilled personnel. The industry has grown significantly since 2020, with employment having gone up by about 40 per cent, and approximately 50 per cent of the sector's workforce required some form of post-secondary education in 2020. That number is now closer to 75 per cent.

Higher job vacancy rates are also being experienced and labour market pressures may get more intense. Solutions require an all-hands-on-deck mentality. No organization or company can do this alone. Companies of all sizes and academia are needed to collaborate to grow and sustain a healthier talent supply.

A sustained, unified voice is needed to reach the next generation of minerals and metals workers. Addressing the challenge starts with communicating the sector's importance and the breadth of careers it offers to Canadian youth, immigrants, and other underrepresented groups who are unaware of, or look negatively on mining careers. They need to be inspired to create the change required to increase post-secondary educational enrolment and diverse sources of labour.

As the national organization that provides labour market information and leads collaboration across Canada's mining sector to identify opportunities and develop solutions, the Mining Industry Human Resources Council (MiHR) is working towards operationalizing a pan-Canadian coalition of industry stakeholders to coordinate efforts through its Mining Needs You (www.miningneedsyou.ca) brand to address the sector's talent crisis. Mining Needs You was launched in 2021 to showcase to youth and other key audiences what modern mining looks like, its use of innovative technologies, and industry's commitment to environmental sustainability and equity, diversity and inclusion (EDI).

By prioritizing EDI initiatives, Canada's mining industry has also been taking important steps to create inclusive workplaces where everyone feels valued, respected, and empowered to succeed. To help drive systemic change, members of the Mining Association of Canada (MAC), who account for most of Canada's base and precious metals production, adopted a Towards Sustainable Mining (TSM) Protocol on Equitable, Diverse and Inclusive Workplaces. Globally recognized, TSM drives mining companies' performance in managing key environmental and social risks, including biodiversity conservation, water stewardship, Indigenous and community relations, and more.

The TSM EDI Protocol requires MAC member companies to develop and implement corporate EDI strategies, processes to foster welcoming workplace cultures, and approaches to EDI objective setting at mine sites. To assess performance and measure progress, the Protocol outlines criteria associated with three indicators: 1) corporate-level leadership and strategy, 2) facility-level advancement of EDI, and 3) facility-level monitoring, performance and reporting.

Mining companies can leverage three key tools to establish workplaces in line with the protocol and its criteria: MiHR's EDI Toolkit for Mining Companies, its diversity eLearning, and ENSEMBLE: The Mining Diversity Network.

MiHR's EDI Toolkit helps companies develop and implement corporate EDI strategies. Organized by TSM performance indicators, it helps mining organizations streamline their efforts and move from ideation to implementation, evaluation, and reporting. Visit mihr.ca/inclusion-diversity/mining-edi-supports to learn more.

MiHR's diversity eLearning modules provide professional development and micro credentials for Canada's mining industry. Taken by thousands of learners by registering at mihr.ca/cmsds/elearning, they focus on intercultural awareness; Indigenous awareness; gender equity in mining; and bias, systemic discrimination, and anti-racism.

ENSEMBLE: The Mining Diversity Network enables its members to network and collaborate in identifying and addressing barriers to full and equitable participation in the workplace. ENSEMBLE also includes resources to assist individuals and organizations along their journey towards inclusion in mining. Individuals can sign up at mihr-ensemble.com.

Despite the challenges, long-term efforts will yield material progress. To help Canada transition to a green economy, the minerals and metals sector needs to come together to communicate its importance and inspire key audiences to consider exploration and mining education and careers. ✪

Impact engineering for a sustainable mining industry

NORDA STELO
COLLECTIVE INGENUITY

In today's rapidly evolving global landscape, industries face increasingly complex challenges. Navigating this uncertainty requires not only expertise but also a commitment to innovation and sustainability. Since 1963, Norda Stelo has established itself as a trusted and proactive partner who is at the forefront of delivering smart, sustainable solutions that power industries across the globe.

Headquartered in Canada, Norda Stelo also has offices in the USA and New Caledonia. Our projects are carried out in over 50 countries, spanning a wide range of industries including transportation infrastructures like roads, ports, and railways, as well as diverse industries such as mining and metals, manufacturing and processing, and energy.

What sets Norda Stelo apart is its unique blend of cutting-edge technology, deep industry knowledge, and a firm commitment to making a positive impact on both the environment and local communities. In 2022, Norda Stelo became the first major B-Corp Certified engineering firm in Canada. This certification is awarded to companies that meet the highest standards of social and environmental

performance, accountability, and transparency.

Norda Stelo recently expanded its capabilities by joining forces with two key industry players: CWA Engineers, a leader in material handling and capital project execution, and InnovExplo, renowned for its expertise in geology and mining engineering. This expansion enhances our ability to deliver an integrated suite of services across critical industries such as precious metals, industrial minerals, as well as ports and terminals. With these strategic acquisitions, we are now positioned to become the global leader in smart "site-to-port" operations, offering clients a comprehensive range of services that span the entire value chain.

What's more, Norda Stelo's strategic vision is built around providing integrated solutions across the entire project lifecycle. This approach ensures that every stage of a project, from exploration and resource extraction to transportation and distribution, is seamlessly managed to optimize efficiency and minimize environmental impact. It also provides clients with greater transparency, allowing for better project management and decision-making.

In concert with industries' transition toward greater digital maturity, Norda Stelo has developed Stelar, an AI-enabled platform based on engineering expertise. Stelar provides insight into asset health conditions, thereby allowing for improved risk management and preventative maintenance. This technology facilitates asset management decisions, including planned maintenance, capital upgrades, and equipment replacement considerations, and is pivotal to the improvement of operational efficiency, addressing workforce shortages, unplanned downtime while prolonging the useful life of assets, which is proven to have a positive impact on their ecological footprint.

Norda Stelo's approach to sustainability, technology, and industry expertise positions it as the partner of choice for companies seeking innovative, efficient, and environmentally responsible solutions. With an eye toward the future, we are committed to delivering projects with a sustainable impact, empowering industries to thrive while minimizing their environmental footprint. We remain steadfast in our mission to build a better world — one project at a time.

Get to know more about Norda Stelo at norda.com.

Get to know more about Stelar at stelar.ai. ✪

On the green road

Electrification transforms the mining landscape in Canada

By Isabelle Leblanc, Vice-President, Mining and Metals, BBA

When it comes to reducing carbon emissions, the mining industry has two roles to play. First, it needs to meet and supply the growing demand for minerals that are essential to decarbonization. Second, it needs to make profound changes to reinvent an industry that has been established for over 100 years and reduce its own greenhouse gas emissions.

Driven by social and economic imperatives, the mining industry in Canada is undergoing significant changes, prompting various stakeholders to speed up their shift toward cleaner energy.

With many Canadian mines planning their renewable energy transition, the focus is turning toward transport, which accounts for most of the sector's greenhouse gas (GHG) emissions. Electrifying transport operations can make it possible to fight climate change and meet GHG reduction targets while improving worker health and safety with cleaner air and reduced noise.

Electrification can also lower operating costs over the long term and reduce dependence on fossil fuels, future-proofing operations. Since digitalization and electrification also tend to go hand in hand, production forecasting accuracy can also increase while the mine improves its ESG report and supports social acceptance.

For example, implementing a trolley-assist system (TAS) can have a substantial impact on fuel consumption and corresponding greenhouse gas emissions. Implementing a TAS on a haul ramp segment can lead to a significant reduction in GHG emissions when compared to using diesel-powered haul trucks. It can also reduce operating costs by tapping into hydroelectric power instead of diesel, and by improving truck-cycle time, enabling mines to be more efficient.

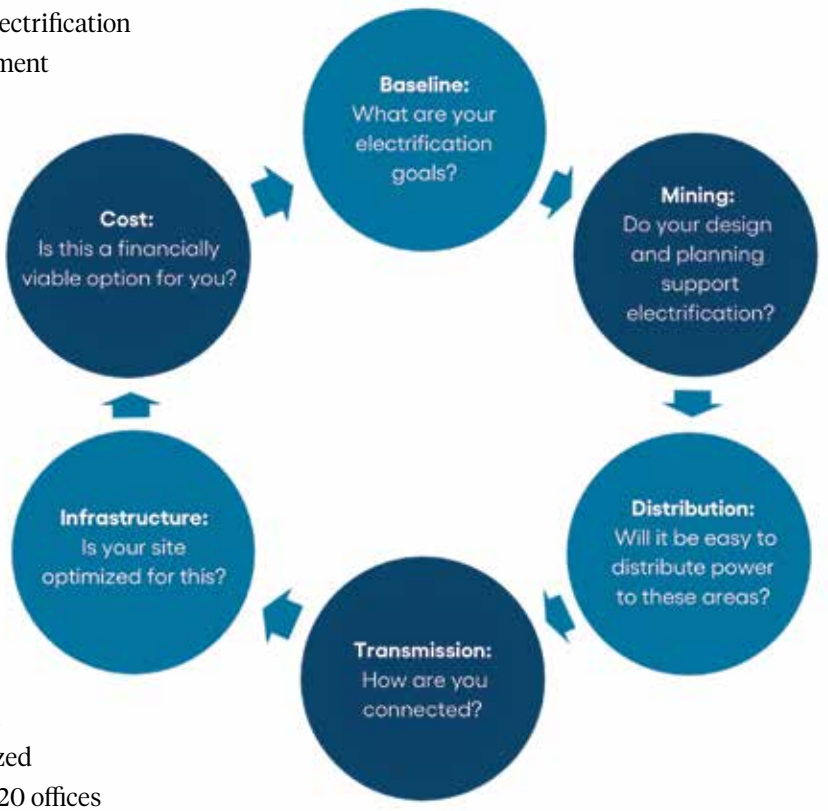
There may also be public funding opportunities in your area to assist with feasibility studies and the actual electrification process.

However, this transition is neither quick nor easy; electrifying transport requires a great deal of planning. This can mean adapting facilities, supporting employees in adopting new work methods, and investing substantial funds upfront.

Making an informed decision requires a detailed assessment that reflects several factors. Some factors that must be considered include the remaining mine

life, the brownfield limitations, and the impact of electrification on mining activities, as well as any tax and government incentives.

There are also other options to consider if electrifying transport is not feasible. Using a conveyor or train, tapping into alternative fuels, and even optimizing routes to reduce vehicle distances can all be viable options. Many promising technologies are also currently under development that should enable more mines to one day electrify their transport.



ABOUT BBA

BBA has been providing a wide range of consulting engineering services for over 40 years. Today, its engineering, environmental, and commissioning experts team up to quickly and accurately pinpoint the needs of industrial and institutional clients. The firm's expertise is recognized in the energy and natural resources industry. With 20 offices in Canada and internationally (USA and Chile), offering clients local support and field presence, BBA provides some of the industry's most innovative, sustainable, and reliable engineering solutions. ✪

Eagle Plains: The little company with big optionality

There's a new kid on the block in B.C., a new kid with a mature parent, mature by the average life expectancy of a publicly traded mineral explorer, that is. The new kid is Eagle Royalties Ltd., and the parent is Eagle Plains Resources, the 30-year-old mineral exploration veteran that operates as a project generator in Western Canada. Both companies are located in Cranbrook, B.C.

There's a term in the project generator realm called "deal-flow" which refers to making business arrangements with other companies. These arrangements include partner companies funding exploration in return for an option to earn an interest in the project. This interest can become very valuable if a discovery is made, and the project generating company gets exploration carried out on its property free of financial obligations. Another example of "deal-flow" is the sale of mineral claims from one company to another which happens for a variety of reasons. Often the selling company retains a royalty to maintain exposure to the potential of discovery and eventual mine production. The beauty of a royalty is that the holder is not responsible for any exploration, development, or production costs, they've sold their claims and are simply along for the ride.

Economic mineral discoveries are far and few between, normally these option agreements or royalties don't amount to a hill of beans. But there is a reason why they exist, they have the potential to be extremely valuable. Having risk-free exposure to the massive upside potential of mineral discovery is referred to as "optionality".

As a result of being around for 30 years generating mineral exploration projects and immersed in deal-flow, Eagle Plains Resources (TSX-V:EPL) had amassed dozens of royalties. In May 2022, Banyan Gold Corp. announced a gold discovery in the central Yukon at their AurMac Property. An Eagle Plains royalty happened to be located over a significant portion of this discovery. Since then, this gold deposit has grown to seven million ounces representing one of the largest gold discoveries in North America.

In May 2023, Eagle Plains conducted its fourth corporate spin-out. This included the AurMac/McQuesten royalty asset along with dozens of other royalties to form the new kid on the block, Eagle Royalties Ltd. (CSE:ER). Eagle Plains' strategy of conducting spinouts of assets like this is to reward its shareholders with a new corporate share specifically endowed with a potentially lucrative asset and, at the same time, making this new corporation readily available for acquisition

Eagle Plains' strategy of conducting spinouts of assets like this is to reward its shareholders with a new corporate share specifically endowed with a potentially lucrative asset and, at the same time, making this new corporation readily available for acquisition by a bigger fish in the industry.

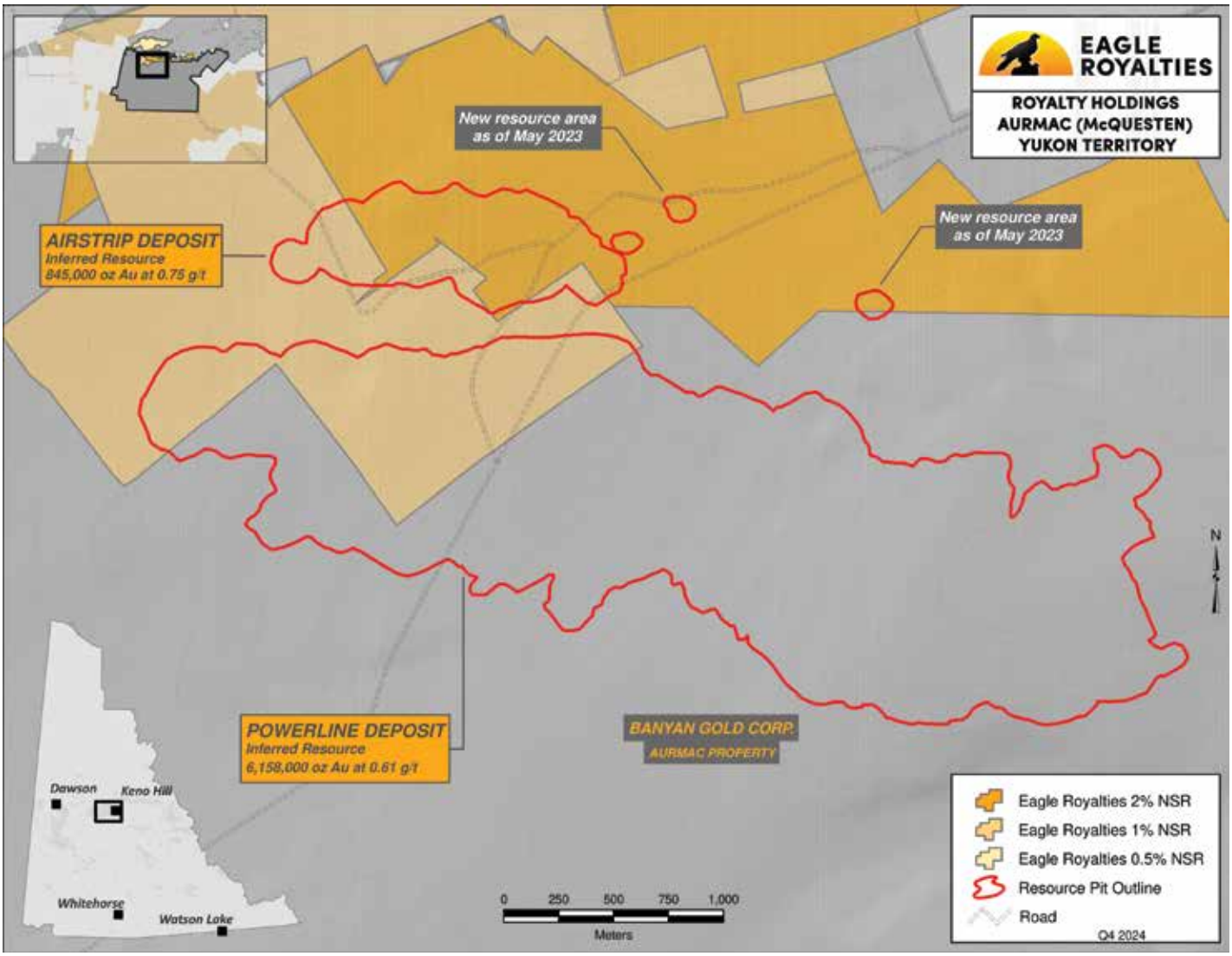
by a bigger fish in the industry. These types of acquisitions generally garner a significant premium to the share price and create liquidity events for shareholders.

At present, Eagle Royalties is exposed to significant "optionality" in the form of over 35 royalties on mineral exploration projects in western North America. These projects include the search for commodities such as gold, copper, silver, zinc, rare earth metals, graphite, molybdenum, lithium among others.

For more information about Eagle Royalties, visit their website at www.eagleroyalties.com.

Follow this link to view an explanatory video of the AurMac/McQuesten Royalty https://www.youtube.com/watch?v=4XaqVwo-bZA

For more information about the parent company visit www.eagleplains.com or visit Eagle Plains YouTube Channel https://www.youtube.com/@eagleplainsresources ✪



Innovating underground: Acres' role in new Afton's C-zone dewatering installation

At Acres, our commitment to quality and innovation is at the core of everything we do. As a multi-disciplined contracting firm with a strong industrial team, we deliver an extensive array of services across various sectors of construction. Among these services is underground mining construction, where our team excels in complex and technically challenging projects.

A key example of this expertise is our involvement in the C-Zone Dewatering Installation Project at New Gold's New Afton Mine, located just 10 km from Kamloops, B.C. This major project, which began in the spring of 2024 and slated for a winter 2025 completion, is a crucial infrastructure development to support the expansion of New Afton's mining operations. Acres has been tasked with the construction of a dewatering system for the C-Zone block cave, ensuring the safe and efficient extraction of ore from this extension.

With the C-Zone Dewatering Installation, Acres is responsible for delivering a high-efficiency dewatering system specifically designed to manage water flow in the newly developed C-Zone area. Key components of the system include:

- Two 36-metre steel bolted conical tanks designed to provide optimal water collection and storage, making the dewatering process more manageable.
- Two transfer station tanks that facilitate the smooth transfer of water through the various stages of dewatering.
- Eight high-performance pumps, each powered by 250 horsepower motors with variable frequency drives (VFDs), ensuring efficient water removal and providing the flexibility needed for the dewatering process.

- Tie-in to the existing PS-1 dewatering station, allowing for seamless integration with the existing infrastructure and enhancing the overall system's efficiency.

This sophisticated dewatering system is key for the C-Zone block cave expansion, preventing water accumulation that could disrupt mining activities. It also reduces the risk of flooding and ensures the long-term safety and productivity of the operation.

To date, our team has successfully completed the installation of the conical and transfer station tanks and has shifted gears to the final concrete and mechanical installations for the main dewatering tanks.

The C-Zone Dewatering Installation Project is just one of many New Gold projects our team has had the privilege of working on, and we're proud to play a role in supporting the mine's continued growth and operational efficiency. ✪

The Hydro Screw Press: Revolutionizing water management in the mining industry

Permanent municipal installation.

Much of the current focus in mining includes addressing the increasing adoption of battery powered vehicles, support for mental wellness, motivating young people to enter the mining industry, and ongoing efforts to protect the environment by lowering water usage.

To support the mining industry's efforts to reduce overall water consumption, Hydrotech Mining is introducing the Hydro Screw Press. Able to effectively process dirty mine drainage, water, and slurry solutions, the Hydro Screw Press produces clear fluid filtrate ready for re-use as industrial process water and stackable solids ready for handling.

Using little energy and requiring little supervision, the Hydro Screw Press slowly rotates a large "screw" inside a screen pressing material against the outer screen allowing fluid to be passed through while keeping solids in. Solids make their way along the length of the screen past the sealing lip and are squeezed out the end of the assembly. Standard operation allows for production of clear filtrate and the production of (up to 85%) solids on a continual basis. An optional incline conveyor can be utilized to stack the dry "cake" into a stockpile suitable for scooping and hauling with standard mine haul trucks and loaders.

Familiar challenges of muddy sludge sliding out of haul trucks on ramps will be become yesterday's stories of how hard it was "back in the day" before Screw Press technology was brought in. Now with active real-time processing of dewatering sump dirty water flows, stackable solids will remain in trucks and clean water filtrate will be directed to clear water pumps. Typical problems like premature failure of centrifugal pressure pumps will begin disappearing as maintenance savings are recognized.

Dry cake ready for the mill.

Clear fluid Filtrate for re-use.

Further benefits will lower overall cost of ownership as dry stacking cake can now be routed through the mill for processing and valuable minerals historically lost in sump sludge disposal will become recoverable, greatly reducing overall cost of ownership.

Clean water filtrate can be repurposed for industrial uses in the mine including drilling, shotcrete, dust suppression or mill processes, reducing overall water requirements and improving environmental results.

Screw Press technology successfully used in the municipal Industry for some time will be of tremendous benefit to miners as it transitions into better pumping results and improved environmental outcomes. ✪

Advanced exploration at Eaglehead: Unlocking copper's potential in British Columbia

Eaglehead is a prominent exploration-stage polymetallic porphyry copper project situated 50 kilometers east of Dease Lake in British Columbia, within Tahltan territory. The project spans 15,713 hectares (157.1 km²) and hosts a "mineralized corridor" measuring 8 km by 3 km. This corridor features four open-ended porphyry copper deposits, two extensive zones of mineralization, and 173 additional copper showings, representing a robust exploration target.

OWNERSHIP AND PROPERTY DETAILS

In April 2021, Copper Fox, through its subsidiary Northern Fox Copper Inc., secured a 100% working interest in Eaglehead for CA$1.2 million. A $200,000 payment was made at the time of signing, with the remaining $1 million divided into three annual installments. The deal includes a 0.5% net smelter return (NSR) royalty, half of which can be repurchased for $1 million before the second anniversary of commercial production. Other mineral tenures on the property are subject to varying NSR royalties, ranging from 50% to 75%, which can be acquired for $1 to $2 million.

2023 MINERAL RESOURCE ESTIMATE

In October 2023, Copper Fox released an updated Mineral Resource Estimate (MRE) based on 120 of 126 completed drill holes. The report, filed on SEDAR, defined pit-constrained resources using copper, molybdenum, gold, and silver prices of $3.50/lb, $20/lb, $1,750/oz, and $10/oz, respectively. Metal recoveries achieved were 89.9% for copper, 71.1% for molybdenum, 78.6% for gold, and 78.1% for silver, showcasing the project's metallurgical viability.

EXPLORATION FRAMEWORK

The project employs a Plutonic sub-type porphyry copper (Cu-Mo-Au-Ag) model to guide exploration. This model is instrumental in delineating resources in the Bornite and East zones while also assessing the potential of the Camp and Pass zones. The Eaglehead mineralized corridor lies along the southern margin of the Eaglehead intrusive, near the regional Thibert fault system, which likely influenced mineralization placement.

GEOLOGICAL INSIGHTS

The Eaglehead pluton is a multi-phase calc-alkalic Early Jurassic intrusive, ranging from hornblende quartz diorite to granodiorite. Geochemical analyses and age dating suggest that its hydrous, oxidized magma source has contributed to its porphyry potential. Age dating in 2021 determined the emplacement of the copper-molybdenum mineralization occurred roughly 500,000 to 700,000 years after the intrusion of the Eaglehead pluton.

MINERALIZATION AND ALTERATION

The project boasts complex copper mineralization, primarily hosted in biotite granodiorite, with lesser contributions from hornblende quartz diorite and quartz porphyry. Mineralization includes chalcopyrite, bornite, and primary chalcocite, occurring within veins, stockworks, and fractures. Several stages of copper introduction are evident, ranging from early-stage chalcopyrite veins to later-stage chalcopyrite-bornite-molybdenite veins.

Alteration is characterized by a potassic core transitioning outward to propylitic alteration zones, with overprinting by phyllic and sericite-chlorite alteration styles. Metal associations vary across the corridor, with copper-molybdenum-gold-silver mineralization in the East zone transitioning to primarily copper in the Camp zone.

RESOURCE POTENTIAL AND FUTURE STEPS

The mineralized corridor demonstrates a strong spatial relationship with magnetic vector inversion anomalies and a 6 km-long positive chargeability anomaly. These features suggest potential extensions of mineralization between the current zones and at depth. Exploration continues to focus on defining the lateral and vertical limits of the system, guided by the evolving geological model.

With its robust mineralization, proven metallurgical recoveries, and strategic location, Eaglehead stands as a promising asset in Copper Fox's portfolio. Ongoing exploration and technical evaluations are poised to unlock its full potential, further contributing to the regional economy and global copper supply.

DIAMOND DRILLING

Selected mineralized intervals (at 0.10% Cu cut-off) from the East, Bornite, Pass and Camp zones are listed below.

Zone	DDH	TD (m)	Dip	From (m)	To (m)	Interval (m)	Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)
East	86	453.20	-65	114.91	453.24	338.33	0.329	0.03	0.076	1.23
				398.37	453.24	54.87	0.709	0.032	0.086	2.06
Bornite	116	318.40	-55	111.00	75.00	64.00	0.278	tr	0.083	1.08
				140.00	251.00	111.00	0.483	0.02	0.276	1.4
Pass	125	609.00	-70	470.00	609.00	139.00	0.18	0.013	0.09	0.76
Camp	29	262.10	-80	152.40	185.90	33.50	0.43	n/a	n/a	n/a
				210.30	243.80	33.50	0.49	n/a	n/a	n/a

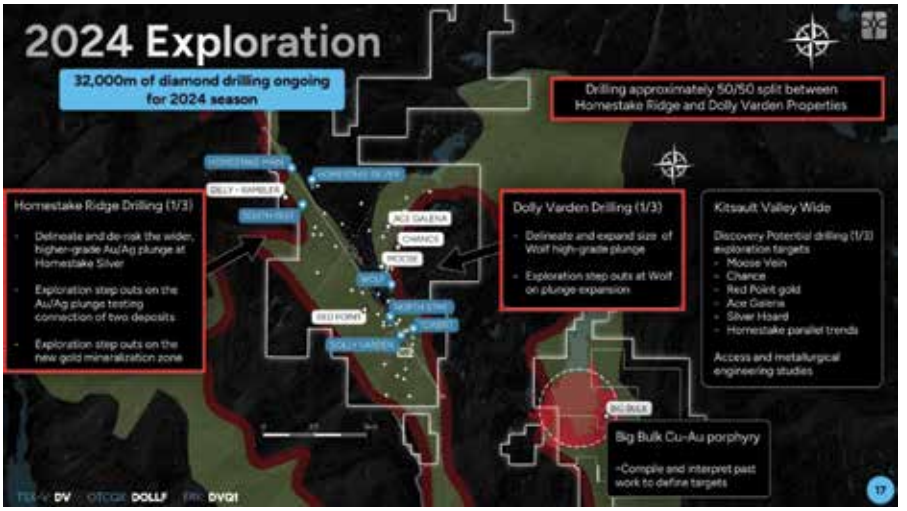
Dolly Varden Silver: The reign of Shawn KhunKhun

By Diana Zoppa

Dolly Varden Silver (TSXV:DV) (OTC:DOLLF) (FSE: DVQ1) is advancing its 100% held Kitsault Valley Project, located in the Golden Triangle of British Columbia, Canada. The 163-square-kilometre project hosts high-grade silver and gold resources. Five kilometres to the east, the consolidated Big Bulk project is prospective for porphyry and skarn-style copper and gold mineralization.

Shawn Khunkhun was appointed CEO of DV Silver on February 18, 2020, during a period of depressed metal prices.

The five key responsibilities of a CEO are: Organizational Strategy, Team Building, Capital Allocation, Establishing Corporate Culture, and Communicating Effectively with Stakeholders.



In the junior markets, it is rare to find a CEO who excels at all five things. Commonly, #5 (Stakeholder Communication) is a glaring weakness. Khunkhun is good at all five parts of his job, including communicating with the investment community.

Since Khunkhun's appointment, Dolly Varden's precious metal inventory has increased 300% through acquisition. The 150,00 metres of exploration drilling done after 2019 will be added in on the next property wide mineral resource estimate.

With 69 drill holes completed for a total of 31,726 metres, the 2024 Kitsault Valley Project drill program is finished for the 2024 season.

"The identification of a gold-rich, wide and high-grade area within the Homestake Silver Deposit is highly encouraging," stated Khunkhun, "Our geological team has discovered overlapping mineralizing phases of silver and gold rich veins and breccias; the deposit remains open for expansion."

A breakthrough discovery at the Wolf Deposit was catalyzed by the youngest DV Silver geologist, Amanda Bennett, who cut her teeth at Hudbay Minerals and White Gold.

Dolly Varden released the first results from Bennett's Wolf program, hitting 1,532 g/t Ag over 1.22 metres (2021); 584 g/t Ag over 19.85 metres (2022); 1,499 g/t Ag over 15.94 metres (2023); 654 g/t silver over 21.48 metres (2024).

Note: above intervals shown are core length. Estimated true widths vary depending on intersection angles and range from 60% to 70% of core lengths.

This season, 41 holes totaling 15,5467 metres were drilled at the Dolly Varden area and 28 holes totaling 16,181 metres were drilled at Homestake Ridge.

The November 2024 results confirmed that Homestake Silver contains a substantial zone of exceptional precious metal grades, typified by multiple phases of silver and gold mineralization, over wide, continuous intervals that are potentially amendable to bulk underground mining methods.

The gold component now makes up half of Dolly Varden's precious metals valuation.

"We are in a bull market for gold," stated Khunkhun. "It's hitting record highs in all currencies. Historically, silver outperforms gold in precious metal bull markets. By the end of 2025 - 12 months from now – it is projected that industry will consume all of mined silver."

In November 2023, Dolly Varden Silver announced that it has closed a deal where Hecla Canada invested $10 million in DV Silver raising its stake in DV Silver from 10.6% to 15.7%.

Hecla Mining has a market cap of USD $3.65 billion and trades on the New York Stock Exchange (NYSE). Its Q3, 2024 revenues were $245.1 million, 45% from silver and 32% from gold.

"Hecla has demonstrated it is a sticky shareholder," confirmed Khunkhun.

"They're looking to expand their North American silver portfolio."

For the whole of the 20th century, the average gold-silver ratio was 47:1, In recent decades, the ratio has ranged between 50:1 and 70:1.

With gold trading at USD $2,650/ ounce, and silver trading at USD $31/ ounce, the current gold-silver ratio is 85, suggesting it may be a good time in to invest in silver equities. Aggressive developers like Dolly Varden Silver should be on your watch list.

Rob van Egmond, P.Geo., Vice-President Exploration for Dolly Varden Silver, the "Qualified Person" as defined by NI43-101 has reviewed, validated, and approved the scientific and technical information contained in this article. ✪

Safety beyond the mine: Understanding employer responsibilities on resource roads

By Alexandra Skinner

Driving is an integral part of daily operations in the mining industry.

Whether traveling to remote work sites or navigating resource roads, employers have a responsibility to protect workers from motor-vehicle-related hazards before travel begins — as motor vehicle incidents remain a significant and preventable hazard in the sector.

THE UNIQUE CHALLENGES OF RESOURCE ROADS

Unlike public highways, resource roads are not built or maintained to public roadway standards. These roads — often gravel and unmaintained — require specialized driving skills to navigate safely, particularly when encountering wildlife, limited visibility, or adverse weather conditions.

"It's essential for employers to assess resource roads to ensure they are safe for workers," says Budd Phillips, manager of prevention services at WorkSafeBC. "Since DriveBC does not provide road condition updates for these roads, employers must take extra steps to evaluate and plan for them."

Since 2019, WorkSafeBC has accepted 77 claims for injuries related to motor vehicle accidents in the mining sector.

EMPLOYER RESPONSIBILITIES

Employers are responsible for the health and safety of their employees, and this includes when they drive or ride in a vehicle for any work-related reason.

"Having a driver's license doesn't necessarily mean someone is prepared to drive on a resource road," says Phillips. "In addition to completing risk assessments, employers need to train workers to ensure they understand and are prepared for these unique driving environments."

Employers should regularly assess the risks associated with driving on resources roads, and adopt road safety best practices, including:

- Developing a road safety plan: This includes identifying and addressing driving-related risks, and incorporating policies, procedures, and best practices to reduce risks. For example, workers should utilize two-way radios to communicate with other vehicles to know when and where to clear.
- Conducting regular risk assessments: Risk assessments identify workplace hazards and evaluate the potential risks. This process should involve workers that actively navigate the roads and can help implement measures to mitigate or eliminate risks.
- Ensuring proper vehicle maintenance: Employers must conduct routine inspections, promptly address reported issues, and ensure vehicles are safe and fit for purpose. This includes ensuring worker-owned vehicles are properly maintained as well.
- Ensuring worker preparedness: Employers must verify that workers are trained, understand road safety policies, and are supervised appropriately. For example, during the winter months drivers need to be aware of avalanche risks and have the proper response equipment on hand, like beacons and shovels.

Phillips cautions that whenever you are on a resource road you should drive "like you could meet somebody on any corner who doesn't have a radio and doesn't know you're there."

UNDERSTANDING JURISDICTIONAL BOUNDARIES

For the mining sector in British Columbia, understanding jurisdictional boundaries is essential to fulfilling these responsibilities. While the Mines Act governs activities directly related to mining operations, WorkSafeBC oversees occupational health and safety in areas that fall outside the Act's scope. These include resource roads beyond mine boundaries, worker accommodations, and timber operations unrelated to mining.

Phillips explains that employers must report any health and safety incidents on resource roads to WorkSafeBC.

He highlights the need for collaboration across sectors: "Ensuring safe road use at the interface between mining and non-mining operations is critical to worker safety."

Safe driving on resource roads is essential for protecting workers and ensuring operations run smoothly. By prioritizing proper training, regular risk assessments, and adherence to communication protocols, both employers and workers can navigate these challenging roads safely.

RESOURCES:

Resource roads - Province of British Columbia

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