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# MESSAGE FROM THE RESOURCE CONNECTOR NORTH

**T**he pandemic has affected all of you and it has also caused Resource Connector North to change the way in which it operates. While we have been meeting exclusively through online media, we have still managed to achieve several important accomplishments.

Resource Connector North has engaged social media to connect with more of our members more often. We enhanced our website ([www.resourceconnector.ca](http://www.resourceconnector.ca)) and new members can now register online (<https://www.resourceconnector.ca/membership/become-a-member>). We increased our LinkedIn presence with a webpage (<https://www.linkedin.com/company/resource-connector-north/>) to promote RCN's activities and broadcast resource projects to our followers on LinkedIn, Facebook, Twitter, and engaged Brandcamp Consulting to enhance RCN's digital reach.

The Board created a new bursary at the University of Northern B.C. for engineering students and the recipient was Gavin Nanninga. This year's recipient from The Northern Lights College was Bradley Boring, and we have yet to be advised as to who were the recipients are from Coast Mountain College and College of New Caledonia.

At the November 2021 AGM, Resource Connector North Board welcomes a new Executive Greg Hanks, Chair; Pat McGuire, Vice Chair, and Jacques Fournier, Treasurer/Secretary. The Executive is supported by Directors Cameron Braun, Fraser Deacon, Sydney Hall, and Sidney Roy. Regrettably, Leonard Legault left the Board to pursue personal pursuits. If you would like to join our Board, please get in touch at [admin@resourceconnector.ca](mailto:admin@resourceconnector.ca).

We are working with DEL Communications to develop our *2022 RCN Membership Directory and Magazine*. You can check out past issues of the here: <https://www.resourceconnector.ca/resources/magazine>

Finally, we have so far postponed our in-person networking events due to COVID-19 and we plan to host in-person resource-based events in 2022.

We wish you the best for the rest of 2022 and look forward to connecting with you.

*Greg Hanks* ★

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## MISSION STATEMENT:

*To promote economic growth in the natural resource sector for the benefit of all British Columbians.*

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**T**he RCN's bursary and scholarship program was established to help encourage future generations who have chosen to pursue careers in the resource sector. This year represents another opportunity where the RCN has provided bursaries to students at the University of Northern British Columbia (UNBC), Coast Mountain College, College of New Caledonia, and Northern Lights College who are enrolled in trades programs with an emphasis on the resource industry. We are proud to support our many recipients and celebrate their success.

One of this year's recipients, Bradley Boring, was already in the workforce when he decided to further his education at Northern Lights College, attending the Fort St. John campus. "I was ready to make a career change from mechanics, and I found power engineering to be both interesting as well as a beneficial, rewarding career for my family and I," says Boring. His goal upon graduation was to secure a job in the oil and gas sector. Now, recently graduated earning his

Fourth-Class Power Engineering Certificate, Boring is now working full-time for Petronas.

Boring says the bursary helped him to achieve his goals by allowing him the freedom to focus on his studies. "The bursary really helped alleviate some financial stress until I was able to start working."

Gavin Nanninga, a civil engineering student at the University of Northern British Columbia, was also awarded an RCN bursary. Nanninga, who is just beginning his studies, was drawn to the program out of an interest in mathematics and a fascination surrounding how things are put together.

He had spent three of his most recent summers working in the construction industry. Growing up in Telkwa, which is halfway between Prince George and Rupert, Nanninga enjoys all aspects of year-round outdoor activities including fishing, camping, hiking, and snowboarding. He also loves playing sports, particularly volleyball and basketball, and had the opportunity to coach a local junior



*Bradley Boring, RCN bursary recipient.*

boys volleyball team. His involvement goes beyond the playing field as well.

"I have volunteered my time by repairing a community member's roof, assisted in two renovations of old homes, and I volunteer in our soup kitchen," he says. After he graduates, Nanninga says he hopes to remain in northern B.C. to continue contributing to the growth and wellbeing of his community.

A third bursary was awarded to Jackson Parish, a student at the College of New Caledonia.

In 2022, the RCN will be awarding five bursaries to eligible students. For more information, visit the University of Northern B.C. at [unbc.ca](http://unbc.ca), Coast Mountain College at [coastmountaincollege.ca](http://coastmountaincollege.ca), the College of New Caledonia at [cnc.bc.ca](http://cnc.bc.ca), or Northern Lights College at [nlc.bc.ca](http://nlc.bc.ca).

Congratulations to all bursary recipients. ★

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# MESSAGE FROM THE **HONOURABLE JOHN HORGAN** PREMIER OF BRITISH COLUMBIA



**A** year has passed since the last issue of *Resource Connector North*, and it has certainly been a challenging one. While we continue to grapple with a global pandemic, vaccines offer hope for a more normal way of life and a strong recovery for our province.

Throughout the pandemic, we have been working to keep job sites open, while ensuring the health and safety of workers and local communities. The results are clear: more people are working today in B.C. than before the pandemic.

We have also faced a year of extreme weather unlike any other, from record-setting droughts, heat waves and forest fires, to floods and mudslides. Emergency measures were brought in to stabilize our supply chains, conserve fuel, and keep roads clear for essential workers.

While we will continue to feel the effects of these catastrophic losses for some time, I have no doubt we will recover what has been lost. We will build back B.C.'s damaged infrastructure stronger than before.

My confidence is based on the resiliency of British Columbians and our strong economic fundamentals.

We are strategically located as a gateway to the Asia-Pacific region and a major port to the rest of North America. Our backyard is filled with an abundance of natural resources, such as timber and minerals, and we have the clean energy and technology to bring these goods to market safely and responsibly.

By harnessing these strengths, we will build an inclusive, sustainable, and innovative economy that works for everyone in all regions of the province.

We are committed to responsible resource development that puts people, communities, and a cleaner future first. B.C. is already recognized as a global leader in the growing Environmental, Social, and Governance (ESG) movement, but we can, and must, do more.

Global demand for low-carbon goods and services will only continue to grow. In some cases, ESG-certified goods will garner a premium. We are committed to working with industry to ensure B.C. firms are positioned to take advantage of these opportunities.

Recent steps to modernize forest care in B.C. will ensure that local communities, First Nations, and smaller companies have more opportunity in the forest sector.

Consultations with Indigenous leaders, the Climate Solutions Council, and people from across B.C. have helped shape our new CleanBC Roadmap to 2030. As part of our plan, we will work with the oil and gas sector to develop an industrial climate framework that includes specific oil and gas sectoral targets for reducing emissions – making B.C. the first jurisdiction in Canada to do so.

If there is one certainty coming out of this year, it is that we are at our best when we work together. I look forward to continuing our work to build a more sustainable future, grounded by strong communities with good, family-supporting jobs. ★

# MESSAGE FROM THE **HONOURABLE BRUCE RALSTON** MINISTER OF ENERGY, MINES, AND LOW CARBON INNOVATION



**T**here is no question that 2021 brought with it many challenges for British Columbians, from the ongoing global pandemic to forest fires and more recent flooding. Through it all, our government has remained committed to ensuring people and communities have the supports they need to build back better.

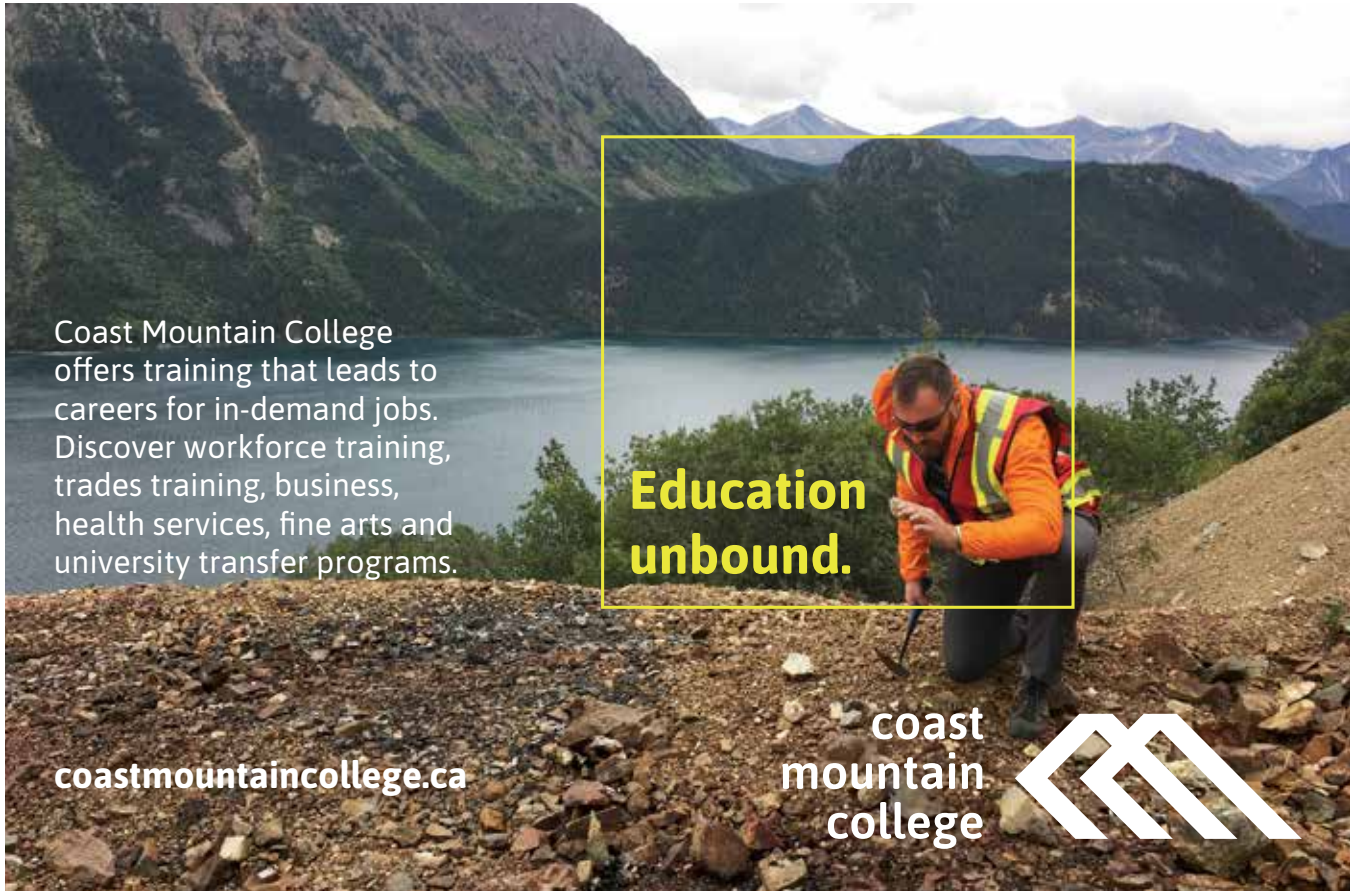
A large part of our economic recovery is linked to the strength of our province's natural resource sector. B.C. has a well-deserved reputation as a global leader in the growing Environmental, Social, and Governance (ESG) movement and our government is committed to building on this progress.

Here in B.C., we produce several of the minerals critical to delivering a low-carbon future. We are Canada's largest producer of copper, essential for electrification, and Canada's only producer of molybdenum. Moreover, we have the potential to produce nickel, cobalt, and other rare earth elements important for batteries, magnets, and the photovoltaic technology necessary to generate clean energy from expanded wind and solar projects. In the year ahead, I look forward to continued work with industry, First Nations, and local communities to grow our contribution to the world's critical minerals supply and ensure we all benefit from our province's resources, while safeguarding our environment.

Our government is also taking steps to ensure our decades-old oil and gas royalty system is modernized, aligned with our climate goals, and provides a fair return to British Columbians. For the first time in nearly 30 years, the public has had an opportunity to provide feedback on what a new royalty system should look like. This work will be completed this spring, putting us in a position to eliminate outdated fossil fuel subsidies and aligning the royalty system with our ambitious CleanBC climate action plan.

Our government continues to take steps to advance reconciliation and provide a clear path forward for future resource development in B.C. We're currently working to address cumulative impacts with the Blueberry River First Nation and other Treaty 8 First Nations. This work is long overdue and will help promote investor confidence and future partnerships between the province, local First Nations, and industry. Our government is committed to ensuring our natural resource sectors remain responsible and sustainable for decades to come.

In partnership with industry, I look forward to continued innovation aimed at creating new opportunities for workers, strengthening communities, and ensuring our resource sector is ready and able to meet global demands in the transition to a low-carbon future. ★



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# UNBC ENGINEERING PROGRAMS BUILDING A LEGACY OF SUSTAINABLE SOLUTIONS



**T**he University of Northern British Columbia's School of Engineering is training the next generation of professionals to discover resilient, sustainable, adaptable, and innovative solutions to the challenges faced in the north and beyond.

With small classes, experiential learning opportunities, design courses beginning in first year and co-op work terms, UNBC's engineering programs deliver world-class engineering education and are a great fit for students seeking a career in civil or environmental engineering, both in high demand in Canada. Two graduate programs, one focused on modern wood construction and design and the other a research-based degree, are ideal for those looking to advance their education.

"What differentiates UNBC's undergraduate engineering programs

from others is the small class sizes that allow a lot of team-based learning," says Maik Gehloff, a senior lab instructor for UNBC's School of Engineering. "UNBC also has close connections to the local engineering community with a lot of potential for community-based design projects throughout the curriculum."

At the undergraduate level, UNBC offers a Bachelor of Applied Science in Civil Engineering and a Bachelor of Applied Science in Environmental Engineering at its Prince George campus. An additional Bachelor of Applied Science in Environmental Engineering offered jointly with the University of British Columbia provides students in that program with the option to study in Prince George and Vancouver.

At the graduate level, UNBC launched a Master of Applied Science program earlier this year. The new

research-based degree focuses on advancing the science of engineering, while focusing on challenges and needs specific to northern environments. The hands-on Master of Engineering in Integrated Wood Design focuses on up-to-date structural design, seismic design, and design of mixed structures, as well as building physics, energy efficiency, and sustainability.

UNBC's School of Engineering boasts state-of-the-art learning spaces at its Prince George campus as well as the Wood Innovation Research Laboratory (WIRL) and Wood Innovation Design Centre (WIDC) located in downtown Prince George. Both WIRL and WIDC are recognized the world over for innovative design, use of renewable resources, and reduction of carbon emissions.

Students can learn from and

collaborate with researchers who are working on cutting-edge engineering projects ranging from improvement of oil spill clean-up processes, safe and efficient shale gas and geothermal energy extraction, design of decentralized wastewater treatment facilities, design of resilient infrastructure, and production of renewable fuels.

Ranked as Canada's top small university by Maclean's magazine, UNBC is also Canada's Green University. Sustainability permeates everything UNBC does, from teaching and research in its engineering programs to its day-to-day campus operations.

Engineering students at UNBC are surrounded by case studies in sustainability that become the backbone of their degree.

"Our buildings are used for real-

Both Wood Innovation Research Library and Wood Innovation Design Centre are recognized the world over for innovative design, use of renewable resources, and reduction of carbon emissions.

world case studies and for 'what-if' design projects that look at ways to improve sustainability measures at UNBC and in our communities," says Gehloff.

In 2009, UNBC launched its award-winning Energy Initiative, intending to demonstrate excellence in energy efficiency. The innovation led to the construction of an on-campus wood-pellet plant and a bioenergy plant which both utilize energy-efficient methods to heat buildings and reduce the carbon footprint of UNBC's Prince George campus. The legacy of these buildings extends to the classroom where engineering students examine, test, and design renewable bio-energy solutions.

"In the School of Engineering, we use UNBC bioenergy data from the bioenergy plant for case studies—both the heating system and the LEED Platinum building," says Gehloff. "We have had several environmental engineering capstone design projects based on UNBC facilities that have looked at composting, rainwater harvesting, solid waste, cooling, and several projects based around the bioenergy system. There have been graduate and undergraduate students working on projects using bioenergy ash as a fertilizer."

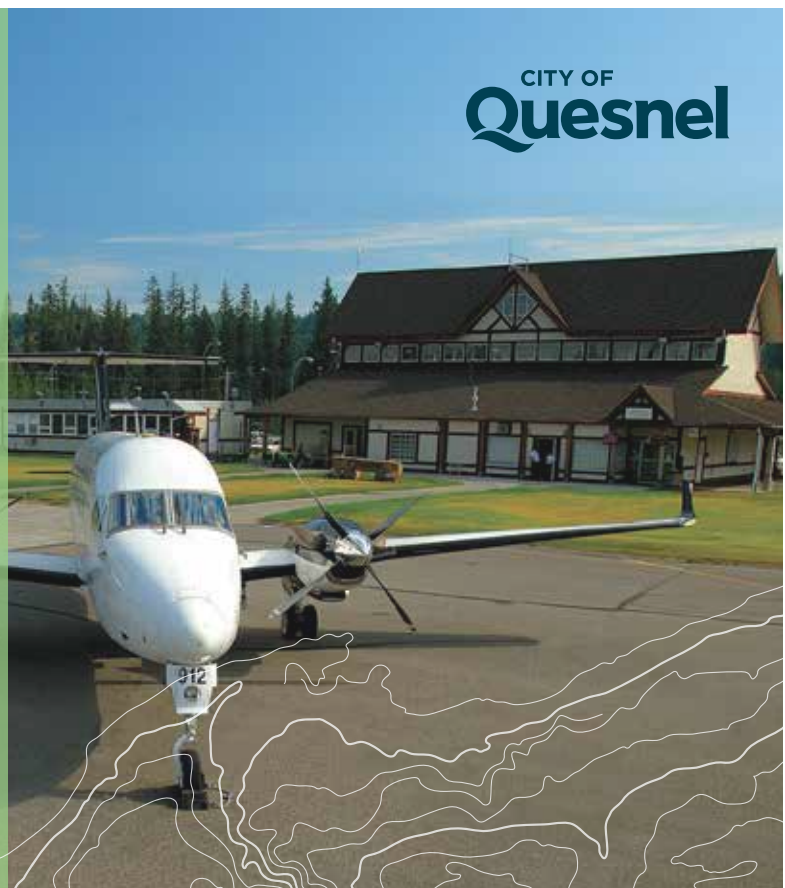
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# MINING IN NORTHERN B.C.

## *A roundup of notable activity*

In June 2021, PWC reported that Canada's mining sector performed fairly well during the COVID-19 pandemic, with initial uncertainty giving way to "a recovery for commodity prices that has delivered significant gains to investors throughout much of 2020 and into 2021."

The report also states, "This agility put many Canadian miners in a good position to benefit as prices of commodities like gold, copper and iron ore began to rise last year and have generally remained strong in 2021".

B.C.'s northern mining community was on the receiving end of many of these industry wins. Some of the more significant occurrences are as follows.

### **AT A GLANCE**

Surge Copper is advancing the Ootsa and Berg projects in B.C. with large Cu-Au-Mo-Ag deposits surrounding a mine and mill complex.

The company owns a 100 per cent interest in the Ootsa Property, an advanced stage exploration project containing the East Seel, West Seel, and Ox porphyry deposits located adjacent to the open pit Huckleberry Copper Mine owned by Imperial Metals. The Ootsa Property contains pit constrained NI 43-101 compliant resources of copper,

gold, molybdenum, and silver in the Measured and Indicated categories.

The company is also earning into a 70 per cent interest in the Berg Property from Centerra Gold. Berg is a large, advanced-stage exploration project located 28 kilometres northwest of the Ootsa deposits. Berg contains pit constrained 43-101 compliant resources of copper, molybdenum, and silver in the Measured and Indicated categories.

Also making news in 2021 are the results from the Consolidated Woodjam Copper Corp. drilling program at the Woodjam copper gold porphyry project near the town of Horsefly, approximately 50 kilometres northeast of the community of Williams Lake. Woodjam is located within the prolific Quesnel Terrane.

The company has completed a 3913.63 m, nine-hole drill program. Six holes completed in the Deerhorn Zone are in the lab and results are pending. Already released results include one hole in the Southeast Zone and two in the Megaton Target. Hole SE21-89 was collared in the higher grade copper-gold central portion of the Southeast Zone to reduce drill hole spacing for better definition and continuity.

Two holes tested the Megaton IP target, approximately 2.0



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B.C.'s northern mining community was on the receiving end of many of these industry wins.

kilometres along strike, north easterly, from the Southeast Zone. These northwest directed holes, MT21-07 and 08, were located approximately 350 metres apart along the southeast side of the IP anomaly. Both holes intersected copper mineralization associated with quartz stock work similar to the style of mineralization at the southeast zone. Alteration and the style of mineralization suggests that these holes are into a peripheral zone of the occurrence and are comparable to holes just outside the main body of the southeast zone.

The Megaton IP target suggests that the southeast zone mineralizing system continues for two to four kilometres to the northeast and further drilling will be needed to adequately explore the Megaton Target area.

Centerra Gold reports solid performance at its Mount Milligan mine, located approximately 155 kilometres northwest of Prince George. The mine produced 161,855 ounces of gold and 82.8 million pounds of copper in 2020.

Its 2021 exploration plan focused on 40,000 metres of drilling to test the mineralization below the 2020 ultimate pit in the MBX and 66 zones at a cost of \$9MM. Centerra continued work on its continuous improvement projects at Mount Milligan in 2021, including secondary crusher improvements and the installation of staged floatation reactors, which is expected to improve metal recoveries in future years.

The company also operates the Kemess mine, located in north central B.C. The mine is a low-cost brownfield development asset that is host to the feasibility-stage



*Consolidated Woodjam Copper Corp.*

Kemess Underground deposit and preliminary economic assessment level Kemess East projects. Plans are to establish a fly-in, fly-out camp, permitted open pit tailings storage facility, and a metallurgical facility.

In September 2021, Artemis Gold Inc. filed the “Blackwater Gold Project NI 43-101 Technical Report on Updated Feasibility Study”. Highlights from the updated feasibility study include higher initial throughput (phase 1 throughput has been expanded 9 per cent to 6 million tonnes per annum), streamlined phase 2 and 3 expansions, accelerated phase 2 and phase 3 expansions (phase 2 expansion to 9Mtpa in year five and up to 12Mtpa in year 6), phase 3 expansion to 15Mtpa in year 10 and up to 20Mtpa in year 11. The update also includes an ESG commitment in stage 1 development phase, as well as a reduction from three to two mineral processing trains to attain phase 3 throughput of 20Mtpa.

Osisko Development Corp., through its 100-per-cent-owned subsidiary Barkerville Gold Mines Ltd., is closer to constructing and operating its Cariboo Gold project, an underground gold mine and associated infrastructure, located in the historic Cariboo Mining District near the City of Quesnel.

Timelines going forward see production at the mine begin in 2023. The feasibility study is tracking for H1 2022 and permits are expected in 2022. This flagship asset is expected to be capable of producing over 200 koz per annum.

The updated mineral resource estimate for the Cariboo Gold Project includes 3.2 million ounces of gold (21.4 million tonnes grading 4.6 g/t Au) in the Measured and Indicated resource category, and 2.7 million ounces of gold (21.6 million tonnes grading 3.9 g/t Au) in the Inferred resource category. ★



*Blackwater/Artemis Gold.*



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# CANFOR ANNOUNCES GREEN LIGHT FOR INNOVATIVE BIOMASS PROJECT

By Melanie Franner



Canfor Corporation made headlines in the resource industry by announcing its “bold ambition to become a leader in sustainability”. This ambition took the form of a comprehensive sustainability strategy that includes an investment decision to support the construction of the first phase of Arbios Biotech’s biomass to low-carbon biofuel plant in Prince George.

“Today, we begin an ambitious sustainability journey that will change how we work and the impact we have on our communities and the planet,” says Don Kayne, President and CEO, Canfor. “We imagine a future as sustainable as our forests, and this is an opportunity as much as it is our responsibility. Sustainable solutions are in demand around the world. Customers consider

environmental and social impact a priority when making buying decisions, and employees want to work for a company that’s protecting and nurturing their environment and communities. Together we will frame the future.”

## A GREEN PARTNERSHIP

Arbios Biotech is a joint venture between Canfor and Licella Holdings Ltd. The new plant will use the latter’s pioneering Cat-HTR hydrothermal liquefaction (HTL) technology to convert forestry residues and wastes into high-value renewable biocrude, which can be further refined to produce low-carbon transportation fuels.

“Phase 1 will be a single processing line designed and built to convert sawmill residues into high-value renewable bio-oil,” says Alan Nicholl,

President and CEO of Arbios Biotech. “We have recently moved from a feasibility, planning, and design stage of the project, and are now in the preparation stage. Construction is being planned so that we can start producing in the first half of 2023.”

According to Nicholl, the single processing line will allow for the commission of the HTL technology and will demonstrate its commercial viability. Subsequent lines are anticipated to occur at a later date.

“The first processing line will be built to process 25,000 dry tonnes of wood residue a year, producing 50,000 barrels of sustainable bio-oil per year, a direct substitute for fossil crude,” says Nicholl. “The subsequent trains would be similarly sized.”

The new biofuel plant will be located in a small corner of Canfor Pulp’s

Arbios Biotech's biomass project will support the decarbonization of transportation fuels in Canada. As such, according to the company, it is receiving strong support from both federal and provincial governments.

existing Intercontinental Pulp Mill site in Prince George. It is expected to take up approximately five per cent of the existing footprint of the site, but it will operate independently from the pulp mill.

Arbios Biotech's biomass project will support the decarbonization of transportation fuels in Canada. As such, according to the company, it is receiving strong support from both federal and provincial governments.

"The combination of landfill avoidance and the production of low carbon and renewable transportation fuels will contribute positively to achieving British Columbia's greenhouse gas emission reduction targets," says Nicholl.

### **BUILDING RELATIONSHIPS**

The Arbios Biotech project will also provide increased economic activity for the region. The company anticipates an opportunity for approximately 25 initial operations jobs, and the building of subsequent processing lines may generate a potential of up to 150 direct jobs.

Pivotal to the project is the relationship that Arbios Biotech is building with the Lheidli T'enneh First Nation. Arbios Biotech has introduced the project to the



Nation's Administration and its representatives, and they are already working together at this early stage.

"We are working closely with the Lheidli T'enneh First Nation on participation opportunities and a voluntary environmental due diligence process to ensure the Nation's values and our environment is protected," says Nicholl.

### **BUILDING BETTER**

The new Arbios Biotech biomass project ticks many different boxes – including leading-edge green technology, sustainability, economic growth, and First Nation partnerships. As such, the project appears to be a boon for the region and for the people who call Prince George home. ★

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*Rendering of the Site C dam, generating station, and spillways.*

# CLEAN, RELIABLE, AND AFFORDABLE ELECTRICITY FOR B.C.

**BC** Hydro's Site C Clean Energy Project will be the third dam and hydroelectric generating station on the Peace River in northeast B.C. It will provide 1,100 megawatts (MW) of capacity, and produce about 5,100 gigawatt hours (GWh) of electricity each year — enough energy to power the equivalent of approximately 450,000 homes per year in B.C.

As the third project on one river system, Site C will gain significant efficiencies by taking advantage of water already stored in the Williston Reservoir. This means that Site C will generate approximately 35 per cent of the energy produced at W.A.C. Bennett Dam, with only five per cent of the reservoir area.

In December 2014, the Site C Project received approval from the provincial government, and construction started in summer 2015. The first generators are currently scheduled to be online in 2024 and the project is presently expected to be completed in 2025. Once built, Site C will be a source of clean, reliable, and affordable electricity in B.C. for more than 100 years.

The project design for the Site C Clean Energy Project includes the following key components:

- Access roads in the vicinity of the site and a temporary construction access bridge across the Peace River at the dam site.
- Construction of two temporary cofferdams across the main river

channel to allow for construction of the earthfill dam.

- Worker accommodation at the dam site, with other workers being housed off site and in the region.
- The realignment of six segments of Highway 29 over a total distance of 30 kilometres.
- Shoreline protection at Hudson's Hope.
- Two new 500 kilovolt AC transmission lines that will connect the Site C facilities to the existing Peace Canyon Substation, along an existing right-of-way.
- An 800-metre roller-compacted-concrete buttress to enhance seismic protection.
- An earthfill dam, approximately 1,050 metres long and 60 metres high above the riverbed.

- A generating station with six 183-MW generating units.
- An 83-kilometre-long reservoir that will be, on average, two to three times the width of the current river.

Some of the key project milestones that have been completed to date include:

- Two diversion tunnels approximately ten metres in diameter and 750 metres in length;
- The diversion of the Peace River in early October 2020;
- Completion of both the upstream and downstream cofferdams;
- The energization of the first transmission line and the Site C substation;
- A five-kilometre-long conveyor belt to move earthfill dam materials to the dam site;
- The first two turbine runners arrived in British Columbia in December 2020 and were transported to site in January 2021, while the remaining four turbine runners arrived in Prince Rupert in November 2021;
- The spillways, powerhouse, and dam and core roller-compacted concrete (RCC) buttresses have all been completed, with more than 1.7 million cubic metres of RCC placed; and
- The first Highway 29 realignment section, Farrell Creek east, was substantially completed and opened to traffic in the fall of 2021.

For more information on B.C. Hydro's Site C Project, visit [www.sitecproject.com](http://www.sitecproject.com). ★



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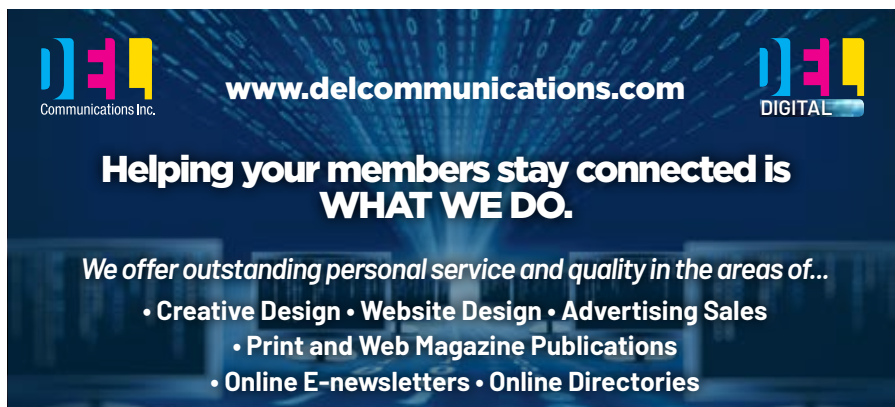
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# WHAT SHINES UNDERNEATH

## *A robust and aggressive copper exploration in B.C.*

**N**orthWest Copper is a Vancouver-based copper-gold explorer and developer advancing high-grade projects located in British Columbia. NorthWest's flagship, high-grade project is comprised of the Stardust and Kwanika deposits. Kwanika has a high-grade core and scale; Stardust is one of the highest-grade copper deposits in B.C. Rounding out their project portfolio are a new copper-gold porphyry system at East Niv and Lorraine, a large system with multiple zones of high-grade copper-gold mineralization. NorthWest is working toward a conceptual development scenario for Kwanika/Stardust which could combine multiple mining centres from each deposit to feed a central processing facility.

### **KWANIKA-STARDUST 2021 DRILLING**

In April 2021, NorthWest preceded summer exploration and development activities by delivering favourable metallurgy for Stardust, followed by an updated and expanded high-grade Stardust resource in May 2021.

The 2021 drilling at Kwanika totalled more than 8,500 metres and explored

targets that would help to better define and expand the high-grade aspects of the deposit and form the basis for an updated resource estimate and future economic study.

In early September, the company announced the first round of drill results at Kwanika, which provided consistently high-grade intercepts, starting just 25 to 36 metres downhole. These results expanded the near-surface footprint of potential open pit mineralization and once again confirmed Kwanika as a unique high-grade porphyry copper-gold deposit. Highlights included 230.95m at 0.99% CuEq including 94.6m at 1.62% CuEq; 187m at 0.81% CuEq including 73.0m at 1.22% CuEq; 196m at 0.65% CuEq including 52.5m at 1.47% CuEq; 154.5m at 0.93% CuEq including 53m at 1.66% CuEq; and 137.5m at 0.91% CuEq including 71m at 1.34% CuEq.

A second round of high-grade assays from Kwanika were released in late September, drilled north of previously released results. These continued to expand the near-surface footprint of mineralization, with high-grade starting at the bedrock surface. Results included 202.2m

at 0.74% CuEq including 45.8m at 1.57% CuEq; 38.5m at 0.85% CuEq; and 63.5m at 0.77% CuEq.

On October 27, the company announced drillhole K-21-217, which returned the highest-grade Cu-Au interval ever intersected at Kwanika. Expanding the high-grade portion of the deposit, and introducing a new style of mineralization, the drill intercept returned a staggering interval of 9.40 metres of 33.60% CuEq comprising 29.85% copper, 4.34 g/t gold and 70.5 g/t silver, situated in a broader interval of 235.45 metres of 2.92% CuEq comprising 2.00% copper, 1.21 g/t gold and 5.3 g/t silver containing 153.25 metres of 4.13% CuEq comprising 2.84% copper, 1.69 g/t gold and 7.5 g/t silver.

The drill hole was a game changer for Kwanika establishing a brand new and incredibly exciting target type.

On November 16, the company announced another five drill holes extending the high-grade portion of Kwanika, reinforcing both the high-grade nature and continuity of this deposit. Highlights were 416.50 metres of 0.87% CuEq including 100.50m of 1.91% CuEq; 250.60



metres of 1.36% CuEq including 71.90m of 2.64% CuEq; and 366.00 metres of 0.61% CuEq including 106.10m of 1.27% CuEq.

### **EAST NIV - NEW CU-AU PORPHYRY DISCOVERY**

A first-ever drill campaign at NorthWest's 100-per-cent owned East Niv property, resulted in an exciting new Cu-Au porphyry discovery. Highlights from the first four holes include 81.60 metres of 0.56% CuEq including 42.90 metres of 0.78% CuEq starting at 14.10 metres and including 14.80 metres of 1.02% CuEq starting at 15.20 metres. Another drillhole returned 72.30 metres of 0.25% CuEq starting at 7.65 metres including 16.05 metres of 0.32 % CuEq starting at 50.80 metres.

This new copper-gold system is located in the heart of B.C. porphyry country, on a project that has been worked up from prospecting, mapping, geophysics, and geochemistry to drilling and discovery. All four holes are mineralized starting from surface and have intersected different parts of the system. East Niv is a very large property, located close to infrastructure and only 40 kilometres from the Kemess project.

NorthWest is bringing forth one of

the largest and highest-grade projects in B.C. with Kwanika-Stardust. And with a discovery now in hand at East Niv, the company is developing three separate copper-gold porphyry systems simultaneously, ranging from early stage to advanced. The company locked in a \$20M bought deal financing in December, which will ensure a robust and aggressive exploration campaign ahead for 2022. ★

This new copper-gold system is located in the heart of B.C. porphyry country, on a project that has been worked up from prospecting, mapping, geophysics, and geochemistry to drilling and discovery.

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# SLOW AND STEADY CIF CELEBRATES 30 YEARS



By Melanie Franner



**E**ven with decades of experience as a certified carpenter, work was hard to find in the early 1990s. So, Jack Fomenoff took a chance and co-founded a small construction company CIF Construction Ltd. with four employees. Fast forward to 2021. Fomenoff, now the sole owner of CIF, has a team of over 140 employees along with a solid reputation that complements its 30-year history in the industry.

## BREAKING GROUND

“It takes about a decade before you make any money. I probably went broke twice in those first few years,” says Fomenoff. “Starting a company is not an easy thing, but the situation improved once I made the decision to specialize in heavy construction.”

Based in Prince George, CIF now services all of western Canada. The company caters to several different industries, including mining, oil and gas, forestry, pulp and paper, bioenergy, wind energy, commercial, and municipal. The focus has changed over the years, moving as the markets ebb and flow.

“We were heavily involved in the forestry industry up until about 15 to 20 years ago,” says Fomenoff. “But then

we saw it shrinking and decided to re-focus. Right now, mining represents the largest portion of our revenue.”

CIF’s portfolio of work is just as varied as the industries it serves: civil, surveying, scaffolding, concrete, formworks, cellular concrete, utilities, and earthworks.

One of the company’s biggest differences – and competitive advantage – is its fleet of equipment. “As we started getting bigger, we began to invest in our own equipment,” says Fomenoff. “We bought what we needed to do the job.” CIF’s crews are also trained in multiple areas of expertise. The team is also treated well which Fomenoff believes helps account for the 20+ years of loyalty from some of his long-term staff. “We have millions of dollars invested in our equipment and our employees,” he says. “That enables us to go where the demand is and to be versatile enough to handle the job.”

## EXPERIENCE MATTERS

CIF’s history in the mining industry means that the company has had plenty of opportunities to work with First Nations communities. Fomenoff says that CIF has several First Nation agreements in place, and each one different and yet the same.

“Some of the agreements focus on training, while others can be more revenue-based,” he says. “The relationships are getting more comfortable and more sophisticated as time goes on.”

Among the more notable mining projects in CIF’s history are the Brucejack, Red Chris, and Teck mines. Some proved especially challenging. “The logistics of travelling kilometres over the glacier made Brucejack an

interesting project, as did the four or five feet of snow that we could get overnight,” recalls Fomenoff. “Plus, the laydown area was so small to work in.”

The company worked seven days a week, 24 hours a day for about 14 months to complete the foundations, supply concrete, and lay the underground scaffolding.

## PASSING THE TORCH

Although Fomenoff considers the company’s 30th anniversary to be “just one more year”, he is also looking ahead to the future.

“I was wishing I was retired eight years ago,” he jokes, adding that he now hopes to accomplish that goal in the next year or two. “I am not going to walk away 100 per cent. It will be a slow transition.”

This transition will be made easier by the fact that Fomenoff’s son has since joined the company, having acquired about 10 years of industry experience as a civil engineer before joining his father two years ago.

“I’m trying to get my guys convinced that they’re the ones running the company now,” says Fomenoff, who admits that talks are underway to help make retirement a reality. “My employees are the ones who’ve made this successful over the years, so I tip my hat to them.”

And whether or not his retirement is imminent, Fomenoff says that CIF is well positioned for the future. “COVID was quite bad and we lost a lot of work,” he concludes. “But we had a good year and we’re back to pre-pandemic levels. We’ve already got some projects lined up for next year, and we’ll continue to chase down others.” ★

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- Conduct emergency exercises
- Oversee infrastructure management ★

The image shows a promotional graphic for OCTANT Aviation. At the top center is the OCTANT logo, which consists of a stylized white 'A' shape above the word 'OCTANT' in a bold, sans-serif font. Below this, the tagline 'EXPERTS IN AVIATION SOLUTIONS' is written in a smaller font. The background is a dark, atmospheric photograph of a landscape with a body of water and a plane flying in the sky. Below the logo, there are four circular icons arranged in a 2x2 grid, each with a corresponding service label underneath. The top-left icon shows an airport terminal and is labeled 'AIRPORT OPERATIONS'. The top-right icon shows a magnifying glass over a dollar sign and is labeled 'AIR SERVICE MANAGEMENT'. The bottom-left icon shows a runway and is labeled 'RUNWAY & AIRPORT CONSTRUCTION'. The bottom-right icon shows a graph and is labeled 'AIR CARRIER SAFETY AUDIT'. At the bottom of the graphic, the contact information 'OCTANTAVIATION.CA | INFO@OCTANTAVIATION.CA | (450) 678-4884' is displayed. Below the contact information are three social media icons for Facebook, Twitter, and LinkedIn.



# ECONOMIC IMPACT AND JOB GROWTH

By Prince Rupert Port Authority

**S**ustainable development is vital to creating employment and economic opportunities for the entire province and the country.

Port of Prince Rupert employers, industries, and labour organizations have launched the Port of Prince Rupert Gateway Council (Gateway Council) and released an economic impact study that revealed strong employment benefits associated to the movement of trade through the Prince Rupert Gateway that helped offset the impacts of the COVID-19 pandemic.

The Prince Rupert Gateway supports the movement of goods through the Port of Prince Rupert to and from domestic and international markets. Over the last decade, this movement of goods has increased by over 100 per cent to a record 32.4 million tonnes of cargo in 2020, thanks to the vast contributions of Gateway partners.

The study was based on surveys of businesses directly involved in the transportation of goods through Northern BC, including rail, trucking, logistics, port terminals, marine services, and government agencies.

The Gateway Council will work together to identify and advocate for Gateway supply chain improvements to ensure sustainable growth of the gateway that benefits Port partners, their employees, local and Indigenous communities, and all Canadians who rely on the free-flowing movement of trade.

Gateway Council members include the Prince Rupert Port Authority, CN, Ridley Terminals Inc., Prince Rupert Grain, DP World Canada, Pinnacle Renewable Energy, AltaGas Ltd., Pembina Pipeline, Ray-Mont Logistics, Quickload Logistics, Coast 2000 Terminals, Gat Leedm Logistics, Vopak Canada, and the International Longshore & Warehouse Union.

The economic impact study released by the Gateway Council analyzed the 32.4 million tonnes shipped in 2020 through the Port of Prince Rupert and its trade corridor, and quantified economic and employment benefits for northern B.C. The study was based on surveys of businesses directly involved in the transportation of goods through northern B.C., including rail, trucking, logistics, port terminals, marine services, and government agencies.

The study found that growing cargo volumes moving through the Prince Rupert Gateway continued to translate into significant economic benefits for communities

## 2020 Economic Impact Study highlights include (% change vs. 2018 levels):

- 32.4 million tonnes of cargo was valued at \$60 billion in 2020;
- Total economic output from port industry activity increased 7% to \$1.4 billion;
- Direct full-time employment in gateway businesses increased 3% to 3700 jobs;
- Total job growth, including indirect and induced employment, increased 9% to 7800 jobs;
- Total wages from direct employment in gateway businesses increased 17% to \$360 million;
- Average annual wage in gateway businesses increased 14% to \$95,000 per full-time worker.

throughout the northern B.C. corridor. While the impacts of the COVID-19 pandemic in 2020 dampened outcomes associated with some lines of trade, strong performance in other sectors played a key role in providing economic and employment stability in the Gateway and the northern B.C. region as a whole. The Gateway continued to demonstrate its resiliency, efficiency, and reliability as a key strategic trade corridor for Canada and an economic engine for local communities.

“This study continues to emphasize that the Port of Prince Rupert isn’t just a Prince Rupert story—it’s an industry that’s growing in communities throughout northern B.C. and serves a vital link to market for Canada’s farmers and our agricultural industry,” says Jason Fletcher, President, Prince Rupert Grain. “The region continues to prove itself to be a global player and is reaping the benefits of that with strong employment and wage growth.”

The economic impacts of the COVID-19 pandemic were particularly acute in tourism-related businesses tied to cruise and ferry visitors, but also impacted container volumes and related employment numbers. Growth in cargoes and terminals related to coal, wood pellets and propane were important counterweights and highlighted the value of cargo diversification moving through the Port.

“Growth and diversification in the port industry continues to be economically beneficial for northern B.C.,” says Charles Raymond, President and CEO, Ray-Mont Logistics. “We are committed to ensuring that trade is also delivered safely and sustainably so that everyone can appreciate the benefits of gateway growth.”



Gateway activity also supported over \$147 million in taxation revenue for all levels of government through associated stipends, personal tax, corporate tax, and property tax revenues. The federal and B.C. governments are the largest recipient of tax revenue, but local governments increased revenues by 22 per cent to \$12 million from port properties.

“The Prince Rupert Port Authority is delighted to see the long-term, successful partnership amongst key Gateway contributors formalized through the formation of the Gateway Council,” says Shaun Stevenson, President and CEO of Prince Rupert Port Authority. “Collectively, the shared vision of a prosperous and vibrant northern B.C. economy built on a competitive international trade corridor is becoming a reality that is only further strengthened through collaborative effort.”

Learn more about the Prince Rupert Gateway Council Economic Impact Study at [www.rupertport.com/economic-impact/](http://www.rupertport.com/economic-impact/). ★

# TO ACQUIRE AND ADVANCE PROJECTS

*Stuhini Exploration moves ahead with B.C. projects*



*Stuhini Exploration team in Atlin preparing for another day in the field.*

**S**tuhini Exploration is a publicly listed mineral exploration company with a portfolio of projects in western Canada. Its flagship asset is the 28,683-hectare Ruby Creek Project located 14 kilometres east of Atlin in northern British Columbia, whereby the Company has an option to earn 100 per cent of the Project subject to a one per cent royalty.

The road-accessible land package is located in the heart of the Atlin Gold Camp and the tenures are prospective for both base and precious metals. The Project is also

host to the advanced Ruby Creek Molybdenum project, also known as the Adanac Molybdenum deposit whereby the former operator Adanac Molybdenum Corporation advanced the historical molybdenum asset through final feasibility and into mine construction. Their construction efforts were derailed as a result of the 2008 financial crisis. Stuhini was able to obtain an attractive option on the Project in late 2019 when molybdenum prices were still depressed. Over the past 18 months, the price of molybdenum has risen from under US\$8/lb to where it presently sits at just under US\$19/lb.

“What’s intriguing about molybdenum is that in addition to traditional demand from the steel and lubricant industry, there is notable new demand developing from the emerging green economy as the world transitions away from fossil fuels.”

The last resource update completed on the Project was conducted by Golder and Associates in 2009 which stated that the historical deposit had 407.9 million lbs measured and indicated Mo plus 53.7 million lbs inferred. The historic resource was established using 338 drill holes with a combined length of approximately 69,200 metres and 21,651 assay samples. A qualified professional has not yet performed sufficient work to classify the historical estimate as a current mineral resource.

Stuhini has hired Mine Development Associates (MDA) out of Nevada to update the resource from historic to current. It is anticipated that no drilling will be necessary to update the resource. The molybdenum deposit is also potentially amenable to expansion both at depth and to the southwest as historic drill hole AD-417, which was the furthest step-out hole from the proposed pit bottomed out in mineralization as the last 45 metres of the 400-metre hole assayed at a very impressive 0.23 per cent molybdenum.

During the 2020 exploration program, Stuhini reported the discovery of multiple high-grade silver surface showings with grab-sample assays running as high as 14,179 grams per tonne from a new discovery that is being referred to as Silver Surprise. The Company also investigated the gold mineralization with grades from grab samples assaying up to 121 g/t Au. The Company has now identified two different types of gold mineralization within the tenures: high-grade orogenic vein hosted gold mineralization and intrusion hosted gold as two of the condemnation drill holes by Adanac Molybdenum encountered significant intercepts with anomalous gold (e.g. AD-393: 73.2 metres averaging 0.21 g/t Au and 0.28 g/t Ag).

“After obtaining the Ruby Creek Project in 2019, we were sitting on the asset while we explored the gold and silver potential of the property,” says Dave O’Brien, Stuhini President and CEO. “With the recent notable rise in the price of molybdenum, we are now aggressively advancing the asset. What’s intriguing about molybdenum is that in addition to traditional demand from the steel and lubricant



*Molybdenum rosettes on vein surface. Sample was taken from underground workings excavated for metallurgical bulk sample extractions by past operator.*

industry, there is notable new demand developing from the emerging green economy as the world transitions away from fossil fuels.”

Stuhini also has three other projects at various stages: the 4,243-hectare Que Project in the Yukon, the 5,094-hectare Big Ledge Zinc Project near Revelstoke, B.C., and the 7 MEL’s that comprise the 47,509-hectare South Thompson Nickle Claims in Manitoba.

Stuhini’s objective is twofold: to acquire and advance projects either by staking or when attractively priced. Secondly, to continue with the advancement of the Ruby Creek Molybdenum Project.

Stuhini has exhibited impressive financial discipline since its IPO in May of 2019 as the Company has a tight share structure with 24.2 million shares outstanding with no warrants outstanding. The three largest shareholders, Company co-founder Barry Hanslit, Eric Sprott, and Company President and CEO Dave O’Brien, collectively own about 34 per cent of the shares. Another 35 per cent is held by other insiders as well as high-net-worth investors who, in most cases, were pre-IPO shareholders. ★



# RARE METAL DEPOSITS IN NORTHERN BRITISH COLUMBIA



## DEFENSE METALS CORPORATION

**R**are earth elements (REE) are key components in many electronic devices that we use in our daily lives including smart phones, flat screen televisions, computer hard drives, and monitors. REEs are also necessary components in industrial applications such as wind energy, aircrafts, automotive, and defence technologies.

The manufacturing of permanent magnets represents the single largest and most important end use for REEs, accounting for 38 per cent of total forecasted demand. Permanent magnets are an essential component of modern electronics mentioned above, but REEs are also widely used in high-technology and “green” products because of their luminescent and catalytic properties.

Canada has some of the largest known reserves and resources (measured and indicated) of rare earths in the world, estimated at over 15 million tonnes of rare earth oxides. (Source: Government of Canada)

This fall, Defense Metals Corp. (“Defense Metals”), a mineral exploration company headquartered in Vancouver, B.C., announced completion of a 29-hole 5,350 metre resource expansion and delineation diamond drill program at its Wicheeda REE Project.

Three weeks later, Defense Metals announced the results of a positive preliminary economic assessment (PEA) and updated mineral resource estimate for the Wicheeda Project. The PEA demonstrates strong financial metrics with a pre-tax net

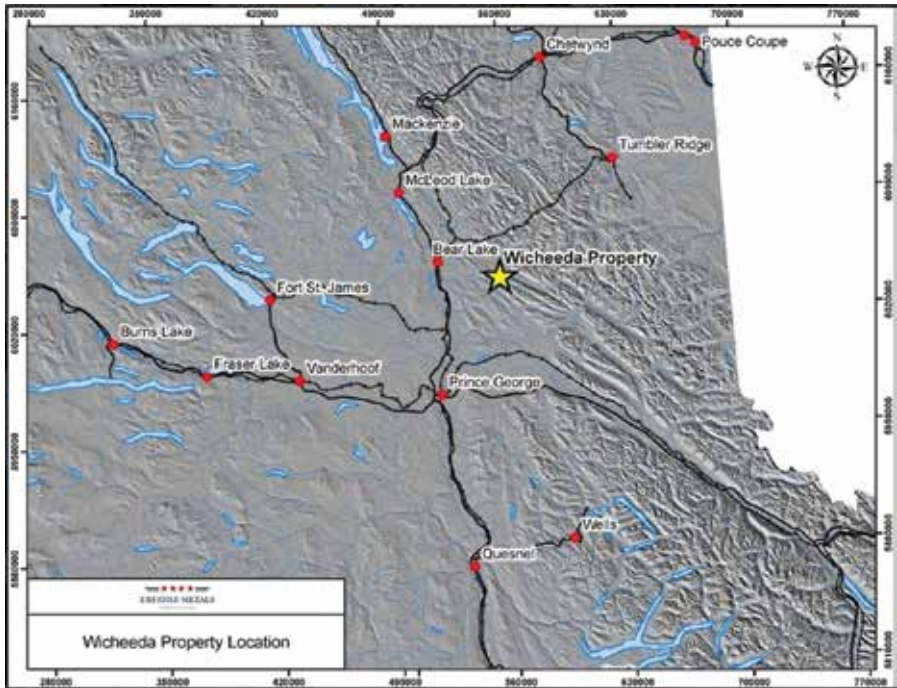
present value (NPV) of \$765 million, and after-tax NPV of \$512 million, at 8 per cent discount rate. The pre-tax internal rate of return (IRR) is 20 per cent, and the after-tax IRR is 16 per cent.

The PEA contemplates a 1.8 Mtpa (million tonnes per year) mill throughput open pit mining operation with 1.75:1 (waste:mill feed) strip ratio over a 16 year mine life, yielding annual rare earth oxide (REO) production averaging 25,423 tonnes at average revenues of \$397 million per year. The study demonstrates five-year payback of \$461 million in initial capital expenditures (CAPEX) that includes a 20 to 25 per cent contingency for major items, and \$137 million per year operating cost (OPEX) average.

The updated Wicheeda mineral resource estimate comprises a 5 million tonne indicated mineral resource, averaging 2.95 per cent TREO and a 29.5 million tonne inferred mineral resource, averaging 1.83 per cent TREO, reported at a cut-off grade of 0.5 per cent TREO.

The road accessible Wicheeda REE property, located approximately

The increase in the demand for magnets can be credited to their rising application in electric and hybrid cars. Governments around the world are making steady efforts to reduce emissions produced by cars operating on fossil fuels.



80 kilometres northeast of Prince George, consists of six mineral claims covering an area of 2,008 hectares. Geologically, the property is situated in the Foreland Belt and within the Rocky Mountain Trench, a major continental geologic feature. The Foreland Belt contains part of a large alkaline igneous province, stretching from the Canadian Cordillera to the southwestern United States, which includes several carbonatite and alkaline intrusive complexes including the Wicheeda REE Deposit.

Defense Metals is focused on the acquisition of mineral deposits containing metals and elements commonly used in the electric power market, military, national security, and the production of green energy technologies, such as high strength alloys and rare earth magnets.

The increase in the demand for magnets can be credited to their rising application in electric and hybrid cars. Governments around the world are making steady efforts

to reduce emissions produced by cars operating on fossil fuels. This has urged the demand for electric vehicles and metals used to manufacture them. This trend is significantly contributing to rare earth metals industry growth. According to Global Market Insights, Inc., a global market research and consulting service provider, rare earth metals market size is poised to surpass USD \$19.8 billion by 2026. ★

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# WE NEED MINING. MINING NEEDS YOU.

By Alex Parsons, Mining  
Industry Human Resources Council



**T**o build a safer, greener, and more connected world, we need mining. And mining needs you.

The Mining Industry Human Resources Council (MiHR) launched the National Youth Mining Career Awareness Strategy 2021-2026: Transformation, Innovation and Diversity following a two-year study on the context, challenges, and solutions for attracting youth to the industry. The National Strategy includes engaging with youth, building career awareness among young job seekers, and producing high-quality research to assist with evidence-based program development.

“With growth in the sector, looming retirements and an already tight labour market, the industry will be challenged to attract and develop an anticipated need of over 100,000 new workers over the next decade,” says MiHR’s Executive Director Ryan Montpellier. “Significant effort is required to raise awareness of mining careers amongst youth and other under-represented groups to secure the labour supply required to meet industry demand given forecasted labour shortages. In support of the federal government’s Canadian Minerals and Metals Plan

(CMMP), the National Strategy aims to attract and develop highly qualified personnel to the mining industry.”

To realize its goals, the National Strategy operates based on five key directions – requiring collaboration among industry stakeholders:

### **1. Increasing Youth Engagement -**

Engage youth and key stakeholders in the conception and implementation of mining career awareness initiatives.

### **2. Transforming Perceptions -**

Transform youth perceptions of the mining sector and mining sector careers.

### **3. Reaching Younger Students -**

Integrate mining sector and mining career awareness into public education curricula and classrooms at the elementary, intermediate, and secondary levels.

**4. Building Alliances Between Industry and Education -** Foster innovative industry and post-secondary education partnerships to attract and prepare youth for careers in the mining sector.

**5. Promoting Diversity in the Workforce -** Diversify the mining workforce

by engaging with youth from underrepresented groups.

Stemming from the National Strategy, MiHR recently launched a new career awareness campaign: We Need Mining, Mining Needs You. Prominent on [www.MiningNeedsYou.ca](http://www.MiningNeedsYou.ca) and MiHR’s social media platforms, the campaign features several useful resources and tools highlighting mining as an innovative, challenging, and rewarding career choice.

The website showcases some of the green technology, medical tools and entertainment devices that depend on minerals and metals. It explores the reality of modern mining and how its use of innovation, approach to environmental sustainability, enhanced safety measures and diversity in the workforce make the industry an increasingly dynamic sector. There is also a general knowledge quiz providing insight into the common misconceptions about mining and an interactive job pathway tool allows users to discover different entry-level occupations divided by category and see where these careers may lead. A suite of career profiles that provide in-depth information about common mining positions are linked to the pathway and can also be viewed separately.

Canada's mining industry needs to attract more workers to fill growing and vacant occupations. Younger students approaching or graduating from post-secondary school are prime candidates, as their tech-savviness, ambition, and variety of skills and qualifications fit well into the mining sector. Many young workers also have skills in other industries that are highly transferrable to mining. With over 120 occupations available, there is a place in mining for everyone.

According to MiHR's Mining Year in Review: National Outlook 2021 report, there is an anticipated drought in mining-related engineering. Mining, geological, and material and metallurgical engineering are the three most relevant post-secondary engineering programs to the mining industry, yet they experienced the lowest undergraduate enrolment among all engineering programs and enrolment in mining related engineering programs contracted by over 25 per cent in Canada from 2015 to 2019. Additionally, it shows youth are less likely to choose mining as a career – the minerals and metals sector ranked as the least desired sector in a 2020 survey of 3,000 Canadians aged 15-30. Along with increased career awareness, the mining sector is also in dire need of young workers.

To help remedy this, MiHR's Gearing Up wage subsidy program has helped over 1,200 Canadian post-secondary students gain mining experience since 2018. Funded in part by the Government of Canada's Student Work Placement Program, Gearing Up offers a wage subsidy up to \$7500 to employers who create work placements.

Since the inception of the Gearing Up

program, there has been a total of 499 post-secondary work placements in B.C. as part of the program, including 47 students in northern B.C. In 2021 alone, 189 work placements have taken place in B.C.

MiHR also relaunched its Green Jobs program in summer 2021 in support of the National Strategy. Another wage subsidy program – funded by the Government of Canada's Science and Technology Internship Program – Green Jobs enables mining companies to hire job-ready youth who gain work experience in the sector through paid placements or training opportunities that focus on clean technology and innovation. Participating employers are compensated 80 per cent of each intern's compensation to a maximum of \$25,000 for job-ready youth and \$32,000 for youth furthest from employment (Indigenous youth, youth in northern regions, rural and remote communities, and youth with disabilities). There have been four Green Job placements in B.C. this year, and the program's current objective is to provide 25 placements by March 31, 2022.

MiHR is also developing a career ambassador program to help connect industry speakers with classrooms and youth community groups across the country as well as mining career curriculum that can be used by teachers to help dispel myths and portray the modern mining industry.

"By choosing a career in mining, youth can help Canada become the world's leading mining nation – setting a global example for environmental sustainability, social responsibility, and technological innovation," said Montpellier. "Through implementation of the new National Strategy, youth in Canada will become more aware that mining is essential to our way of life today and to the world we want to create tomorrow; Gearing Up and Green Jobs helps them find their way in from the ground up."

Industry stakeholders are urged to collaborate on National Strategy objectives and take advantage of the wage subsidy programs. Together, we will build an inclusive, skilled, and sustainable Canadian mining workforce that anticipates and adapts to volatility and innovation. ★



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# BITCOIN ENTERS B.C.'S NORTHERN COMMUNITIES

**M**ining for bitcoin is a significant power guzzler. Because it has the potential to release significant amounts of greenhouse gases, large data mining companies are under pressure to utilize clean power to run their operations.

Bitcoin is a global decentralized digital currency that can be sent between users over peer-to-peer bitcoin networks without the need for intermediaries such as banks, governments, or administrators. Mining for bitcoin involves high-powered computers that are used to secure the bitcoin network, and miners are compensated based on the amount of power that they direct to the network.

Iris Energy, a sustainable Bitcoin mining company headquartered in

Australia, is expanding its business model to northern B.C. with its first mining data facility located in Canal Flats. Built on the site of a shuttered lumber mill, now called the Columbia Lake Technology Centre, it opened with a six-megawatt data centre and is working toward expanding to 30 megawatts by fusing to hydroelectric power sourced from BC Hydro.

The company builds and operates specialized data centres and focusses on creating infrastructure in regions where it can access abundant or under-utilized renewable energy to power its operations. Industrial sites with existing access to clean hydroelectric power can make for perfect data center locations.

Iris Energy is already repeating the approach they took with the Canal Flats' specialized data centre design

in other communities in northern B.C., including Mackenzie and Prince George, allowing miners to run at optimized hashrates, increase revenue earning opportunities, and extend expected miner life.


Construction is underway at the company's 50-megawatt site in Mackenzie. Upon completion, the specialized data centre will add approximately 15 full-time local jobs at the facility. Construction is set to commence at the company's 85-megawatt site in Prince George, where approximately 20 full-time local jobs will be created once it's operational in 2023.

The company is actively engaging with local First Nations, surrounding communities, and local businesses to ensure there is widespread benefit from their presence in the region.

The company builds and operates specialized data centres and focusses on creating infrastructure in regions where it can access abundant or under-utilized renewable energy to power its operations.

Iris Energy believes it is vital that bitcoin be mined and utilized in an environmentally and socially responsible manner. The company plans to expand its operations to other B.C. communities in the future, increasing its overall capacity in the province to a total of 180 megawatts over the next 18 months. On November 19, 2021, Iris Energy successfully completed a \$232 million IPO and is listed on the Nasdaq Global Select Market (NASDAQ: IREN).

For more information about Iris Energy, visit [www.irisenergy.co](http://www.irisenergy.co). ★



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# COASTAL GASLINK HITS MAJOR MILESTONE IN 2021

*Coastal GasLink successfully and safely completed fabrication and delivery of pipeline assemblies to storage facilities.*



In 2021, Coastal GasLink celebrated our most exciting milestone to date; reaching 50 per cent overall completion of the project. Our busy summer and fall construction seasons saw Coastal GasLink continuously hitting milestones, including the completion of the Murray River and Sukunka River horizontal directional drilling (HDD) trenchless water crossing as well as the Burnt River and Salmon River direct pipe installations (DPI) — bringing the project total to seven of nine trenchless crossings now completed.

We also celebrated the completion of the Kitimat Meter Station with zero safety or environmental incidents. Our crews completed the access road to the top of Icy Pass — the highest elevation point on the project route. To cap off a very successful summer construction season, on July 20 we marked the safe completion of the road to the top of

Cable Crane Hill, establishing this critical access for construction nine days ahead of schedule.

From supporting essential services to wildlife protection, in 2021 we provided over \$1.6 million to communities through our community giving program Build Strong, in addition to employee and prime contractor donations. Over \$225,000 was donated through our Empower employee and workforce giving program. This includes the project’s first Legacy of Giving Campaign with the United Way of Northern B.C.

Our community giving included supporting the purchase of a spray park for Chetwynd and District Recreational Centre and helping Nikanese Wah Tzee Stewardship Society’s caribou population recovery program. For first responders, we funded the purchase of new fire equipment for the Bear Lake and Salmon Valley Volunteer Fire

Departments and the Village of Fraser Lake. We look forward to continuing to support our local communities into 2022.

On December 3, we celebrated our most recent milestone — the fabrication and delivery of all the pipeline assemblies to our storage facilities. In total we shipped thirty-one 48-inch block valves along with associated assembly piping, 259 3D elbows, and 87 test heads and caps. This equated to over 100,000 factored weld-inches completed, or over 250 truckloads of material assembled. This milestone couldn’t be done without the commitment of our workforce. Over the course of this year, our workforce dedicated over 144,000 hours to the fabrication and delivery of our pipeline assemblies. To top it off, the entire fabrication scope was completed with zero lost time incidents.

For more information about construction activities including an interactive map, visit [CoastalGasLink.com](http://CoastalGasLink.com). ★



A person wearing a dark jacket and a large backpack is walking away from the camera through a snowy, mountainous landscape. The scene is dimly lit, with a blueish tint, suggesting a winter or high-altitude environment. The person is carrying a long pole or stick in their right hand. In the background, another person is visible, sitting or resting on the snow. The overall atmosphere is one of quiet exploration and adventure.

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