

connect

Volume 26, 2019

What's Next?

Adapting in an
Ever-Changing World

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Teck

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We're sharing Teck's stories on social media. Visit us online to find these and more.

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 Teck Resources Limited

Explained: Teck's breakthrough in water treatment using saturated rock fills. Watch a video about how it's done on YouTube.



@TeckResources tweeted: Learn how our operations in Chile are helping shed light on the world's most elusive cat. #Caturday



Teck was proud to be named as one of the 50 Best Corporate Citizens in Canada for the 13th consecutive year. Learn more on **Teck's LinkedIn page**.



On Facebook: Meet Brian Bisset, a miner with an eye on the sky. Brian pioneered the use of drones at our Elkview Operations for long-range mine planning.

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Thank You

Catherine Adair, Community Relations Leader, Trail Operations; William Albornoz, Heavy Equipment Operator, Quebrada Blanca; Barbara Brice, Senior Human Resources Generalist, Pend Oreille Mine; Kimberley Christensen, Analyst, Technology and Innovation, Vancouver office; Solange Dussaubat, Superintendent, Water Resources, QB2, Santiago office; Rodrigo Ferreira, Communications Specialist, Social Responsibility, Quebrada Blanca; Keith Klimchuk, Senior Environmental Specialist, Trail Operations; Chris Lane, Senior Geologist Supervisor, Line Creek Operations; Keith Mayhew, Manager, Technology and Innovation, Vancouver office; Eli Mitchell, Surface Crew, Red Dog Operations; Lawrence Watkins, Vice President, Health and Safety, Vancouver office; Verna Westlake, Community Investment Coordinator, Public Relations, Red Dog; Victoria Sterritt, Manager, RACE21™, Vancouver office



On the Cover

Copper wire like that shown on the cover is used in electrical equipment and devices because of its high conductivity. From a large skyscraper to the stove in your kitchen, copper wiring is needed to transmit electricity that powers our day-to-day lives.



Adapting in an Ever-Changing World

Teck’s proud history began more than 100 years ago and since then there have been moments of transformative change that have propelled us forward.

Each change strengthened our company and helped shape the Teck we are today. We are now embarking on a new phase of growth and transformation, one that will define our company for years to come. The theme for this issue of *Connect* is transformation and “What’s Next?” for Teck, and in it you will learn more about how our company continues to transform and adapt in an ever-changing world.

Because continuing to evolve is essential to our continued success. As we all know, some years have been more difficult than others. It’s simply the nature of working in a cyclical industry and in an environment where commodity markets can, and do, change quickly. Many of the factors at play are beyond our control—ongoing trade disputes and the effect these are having on prices chief among them. Which makes it critically important that we stay focused on the factors we can control, those being safety, sustainability, productivity and innovation. And controlling costs.

“Controlling the controllable” was a term introduced at Teck a few years ago, and it’s as applicable today as it was then. It’s a guiding principle that helps ensure we can successfully navigate challenges we may face while also remaining positioned to grow and transform our company.

One of our most significant transformations taking place is within our copper business through the development of the world-class Quebrada Blanca deposit.

Once completed, QB2 will be a top 20 global copper producer, with the potential to increase to top five or better as we further leverage the vast orebody. This will not only grow our copper business, it will rebalance our portfolio in a way that will fundamentally change Teck. And, in doing so, will change how people view us. We’ll no longer be a steelmaking coal and zinc company with a modest copper business. We’ll be a major global copper player.

And, QB2 itself will be unlike any other operation. Because we’re not just building a mine—we’re building the mine of the future. From safety to sustainability to productivity, with QB2 we’re rethinking what mining can be. An update on construction progress, including a key milestone recently achieved and an animated flyover of the port-to-mine operation, can be found on page 9.

Staying with copper, in “Connecting the Dots” on page 10, we look at the global trend of decarbonization, what this could mean for copper demand, and how Teck fits in to the story.

We can’t talk about transformation at Teck without talking about Innovation and Technology and how, across our company, our people are bringing forward some truly incredible and innovative ideas that have the potential

“Continuing to evolve is essential to our continued success.”

to transform how we work. In “Ingenuity, Innovation and the Ideas at Work Fund” on page 13, we take a look at just two of the dozens of submissions that have been made to this \$25 million fund and how these Ideas at Work are being put into action.

Innovation and Technology are also the driving force behind RACE21™, our innovation-driven efficiency program. RACE21™ is about taking a company-wide approach to renewing technology infrastructure, looking at opportunities for automation and robotics, connecting data systems to enable the broad application of advanced analytics and artificial intelligence, and empowering our employees. The program aims to make real progress between now and 2021, with a target of generating an initial \$150 million in annualized EBIDTA improvements by the 2019. In RACE21™ on page 16, we take a quick look at the ‘how and why’ analytics, automation and digital tools are fundamental to the transformation underway across the mining industry.

QB2. Ideas at Work. RACE21™. And so much more. There’s tremendous energy and momentum sweeping across our company—it’s an exciting time to be one of the nearly 11,000 talented women and men at Teck right now. Because together, we’re building a company that is Canadian based, but truly global in scale and vision. A company that is trusted by our communities, our people and our shareholders. A company that leads the way in

safe, responsible resource development and sets goals that drive us even further. A company that is always striving to improve, to find new, better and more cost effective ways to do our work. A company that can rise to any challenge and be ready for what’s next. ■



Don Lindsay
President and CEO

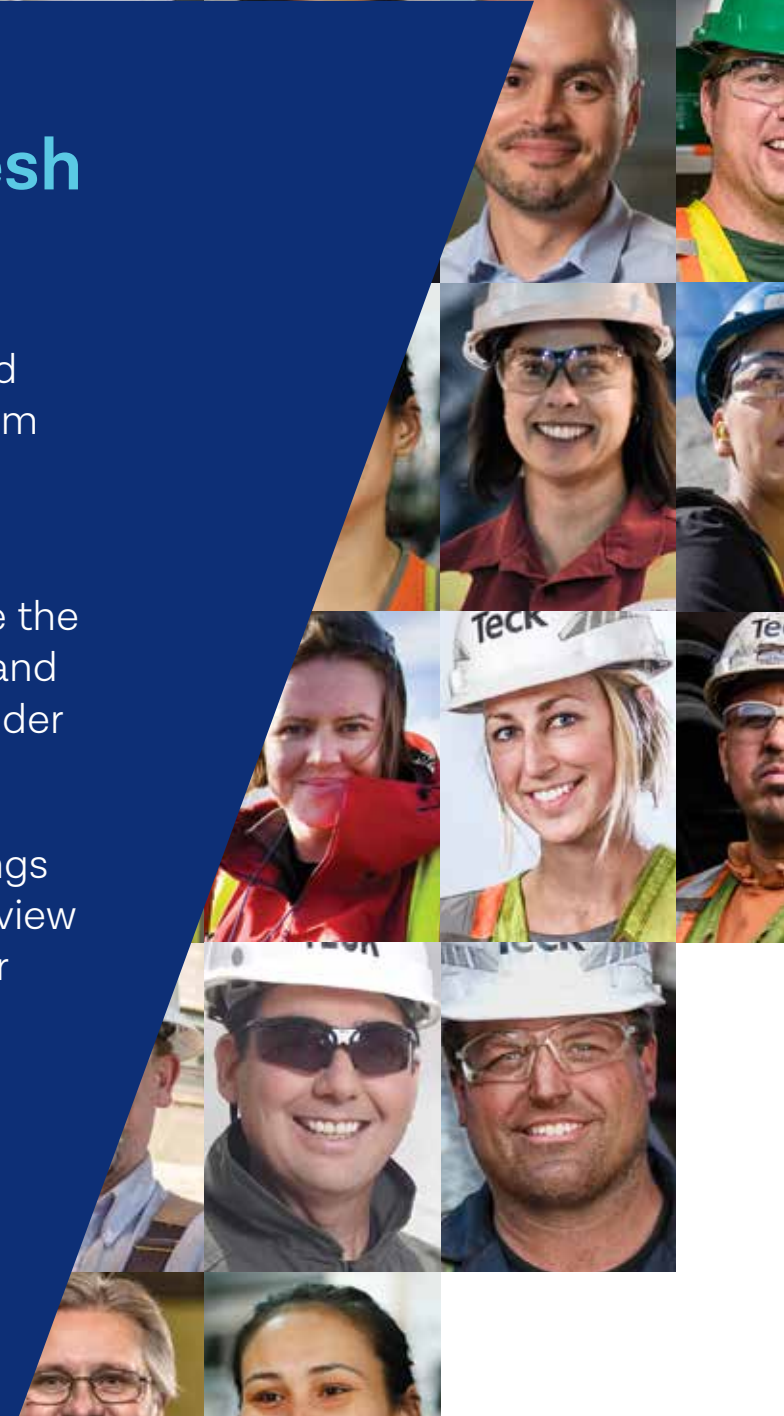


Always Evolving: A Fresh New Look for Teck

Teck's brand has recently been refreshed to reflect the new energy and momentum happening across our company.

To explore our fresh new look, access branded resources and learn how to use the updated brand in your work, visit the Brand Centre on [connect.teck](https://connect.teck.com), found either under Quick Links or under Resources.

'Always Evolving' is a new video that brings to life the evolution of our company. To view and share, visit Teck's Facebook page or YouTube channel.





Teck

QB2: Project Update



At an elevation of 4,400 metres in the Tarapacá Region of northern Chile, an active workforce of more than 3,100 people are working across six major construction areas to build QB2, Teck's mine of the future.



First ore processing and copper production at QB2 is targeted for the fourth quarter of 2021, with numerous project milestones to be achieved between now and then. One recently achieved milestone was completing the initial phase of mass earthworks by the Teck mine fleet. Another was the the first concrete pour for SAG Mill #1.

First Mass Concrete Pour

The first mass concrete pour was a major milestone achieved on May 20, 2019. Executed by our sub-contractor Viay y Vives, overseen by Bechtel and led by Teck's Area Manager, Carlos Opazo and the QB2 construction team, approximately 1,300 m3 of concrete was poured for the foundation at the concentrator area over a period of 36 continuous hours.

Despite challenging weather conditions, the pour was completed safely and efficiently thanks in part to the use of state-of-the-art technology. This included video cameras installed around the foundation and an electronic monitoring system that provided real-time data and thermal readings to the team during the pour. Together, these technologies will provide insights that will improve future pours.

Other QB2 construction activities currently underway include the mass earthworks at the balance of the concentrator, pipeline, tailings and port areas. Construction of the camps is well underway with over 3,000 beds currently available, and work at the port and pipeline areas is also expected to begin in the coming months.

Road Safety Management Plan

The vast distances and rugged terrain between Iquique and the project areas at QB2 pose a unique safety risk when planning for the transportation of our workforce across the various sites.

With this in mind, the QB2 Health and Safety and Security teams have developed a Road Safety Management Plan, outlining standards and expectations for vehicle safety. The plan integrates real-time tracking of the vehicle fleet through GPS monitoring and distraction avoidance alarms. This will help ensure everyone goes home safe and healthy every day. ■

QB2 Bird's-Eye View

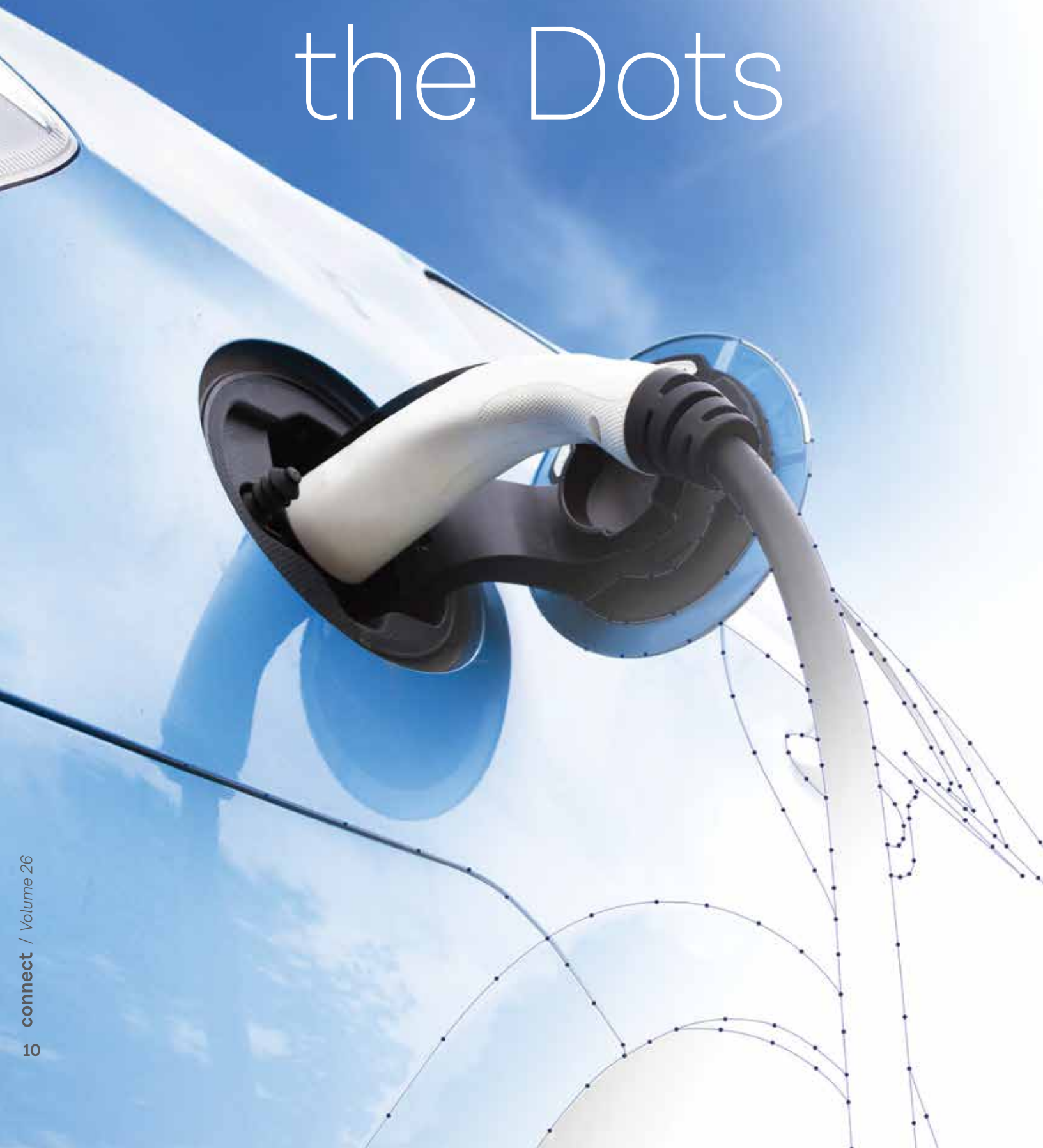
A new animated flyover takes viewers from port facilities on the coast of Chile along the 165 kilometres of pipeline to the mine area located at an elevation of 4,400 metres above sea level.

Here's what you'll see:

- New port facilities on Chile's coast near Punta Patache, where future product will be loaded for shipment to customers around the world.
- The desalination plant, also located in the port area, will be the first large-scale use of seawater in place of fresh water in the Tarapacá Region.
- Major infrastructure installations that will connect the mine area to the port facilities, with over 165 kilometres of pipelines to transport fresh water to the mine and concentrate back to the port. A 220 kV transmission line will run adjacent to the pipelines and supply power to the pump stations and mine area.
- The mine area, where Teck's largest processing facility will be located. Here copper ore will be processed at a new concentrator plant with an initial production capacity of 143,000 tonnes per day and a tailings management facility with a starter dam 120 metres high.

Visit [teck.com/connect](https://www.teck.com/connect) to watch the video

Connecting the Dots



Decarbonization, Mining and the Shift to a “Copper Economy”

Hardly a day goes by without headlines on climate change and the growing electrification of our economy. India has set a plan to make clean energy account for 40% of power needs by 2030, China is adopting electric vehicles three times as fast as the U.S., and British Columbia has set a goal of phasing out gas-powered cars by 2040. While some proposals to reduce emissions might be described as aspirational, it's clear that the global trend is towards a lower-carbon economy.

The move from a high carbon economy to a low carbon economy is effectively a shift to a “copper economy” because of the important role this metal plays in clean technologies. With our focus on growing our copper production, Teck is uniquely poised to capitalize on the trend toward decarbonization while demonstrating leadership in the global fight against climate change.

Why copper?

The Paris Agreement set a long-term goal of limiting the increase in global average temperatures to below 2 °C above pre-industrial levels. The world will need more copper to achieve meaningful reductions in GHG emissions, which is key to limiting the global temperature increase. According to recent research by Bernstein, for every tonne of copper mined and embedded in the global economy, carbon dioxide emissions are reduced by an average of 500 tonnes per year. In addition to the normal demand for copper, Bernstein's research estimates that copper production will need to increase by an additional 3% to 6% per year to provide the copper necessary to meet the targets outlined in the Paris Agreement. That is between 11 to 70 million tonnes of incremental copper production by 2030. The lower bound is based on a scenario where high prices incentivise innovations that use less copper, and the upper bound reflects a rapid electric vehicle ramp-up scenario. To put this in perspective, even under the conservative scenario of 11 million tonnes, the world would need to build the equivalent of about three QB2s every year for the next 11 years.

“With the upcoming development of QB2, Teck is poised to provide the copper the world needs to achieve meaningful reductions in GHG emissions.”



But why copper? Copper has unique material properties that make it critical for green technologies, and essential to global decarbonization efforts:

- **Conductivity:** Copper has the highest conductivity of any industrial metal, perfect for electrical generation and transmission, as well as heat exchange applications
- **Flexibility:** Copper can be formed, stretched and heated without breaking, making it ideal for forming into intricate wiring in cars, smartphones and more
- **Recyclability:** Copper can be recycled over and over again without loss of performance

As a result, renewable energy systems can require up to 10 times more copper compared to traditional energy systems. A zero-emission electric vehicle needs up to four times as much copper as an internal combustion vehicle. More copper will be needed to increase the efficiency of existing electrical components, particularly electric motors and components used to transmit electricity.

Uplift in copper prices

The decarbonization of the global economy will have a material impact on the economics of copper mining. The price of copper will need to rise to a level that will bring significant new investments in copper production. Bernstein estimates that copper prices will need to be between US \$8,300 per tonne and US \$11,100 per tonne, compared to an average of \$6,112 per tonne in the second quarter of 2019, to achieve the investment in new supply required to meet the Paris Agreement targets. While the extent to which the targets will be met is

uncertain, clearly, these scenarios present a strong upside for copper and copper-exposed companies, as even partial fulfilment of the Paris Agreement targets would require a substantial price uplift.

Where does Teck fit in?

With the development of QB2, Teck is poised to play a leadership role in seeing the world transition toward a green economy, while capitalizing on the trend toward decarbonization. With copper-equivalent production capacity of 316,000 tonnes per year during its first five years, QB2 will be a top 20 copper mine initially, with the potential to increase to a top five or better. QB2 will transform Teck into a major copper player, making the company well-positioned to benefit from the price uplifts we can expect from decarbonization while providing the copper necessary to reduce global emissions. ■

Whether it's for electric vehicles or to make buildings more efficient, the low-carbon economy of the future will be fueled by copper.



Ingenuity, Innovation and the Ideas at Work Fund

How this \$25 million fund is tapping into our greatest source of ideas: our people.

Have you ever had a great idea but didn't know who to talk to about it, how to fund it, or if it would even work? Most of us have. And so that great idea—something that could have been truly transformational—never goes any further.

It's this very common experience that led President and CEO Don Lindsay to create Teck's Ideas at Work Fund, a \$25 million fund to help bring to life

breakthrough ideas and innovations in safety, environmental performance, productivity and cost savings.

We know our best ideas come from our people and since the fund was announced last November, dozens of submissions from employees across Teck have been received. Here, we look at two ideas that are being brought to life thanks to the Ideas at Work Fund.



The Trail Operations team behind real-time road dust monitoring: Keith Klimchuk, Senior Environmental Specialist; John Morassut, Operation Superintendent, Property Services; and Steven Martin, Group Leader of Applications and Information, Digital Systems.



Idea at Work: Real-Time Road Dust Monitoring at Trail Operations

Funding: \$100,000

Key Potential Benefits: Improved Air Quality, Reduction in Water Use

The fugitive dust team at Trail Operations is known for having big ideas. In fact, the team has developed many projects that have improved air quality in the community by reducing dust that escapes from roadways, buildings and stockpiles.

Their most recent big idea uses technology to reinvent dust management on roadways and is being championed by cross-functional team members Keith Klimchuk, Senior Environmental Specialist; John Morassut, Operation Superintendent, Property Services; and Steven Martin, Group Leader of Applications and Information, Digital Systems.

Challenge:

Historically, road dust at Trail Operations has been managed by hours of cleaning and washing roadways in and around the operation. Reducing fugitive dust is key to further reducing ambient lead levels in the community, and, in recent years, Trail Operations has been achieving record improvements in ambient air quality. Lead in community ambient air has been reduced by 47% since 2016, and the 2018 annual average for lead in ambient air at the Butler Park monitoring station was 0.13 µg/m³, the lowest-ever recorded annual average.

Idea:

To further build on this progress, in July 2018 real-time road dust monitoring was implemented to better identify dust “hot spots”—sections of road where current controls could be improved and where cleaning and washing should be prioritized.

At the time, there was no commercially available instrument available, so the Trail Operations team developed one. Keith, Steven and John, along with metals tradesperson Dave Olson, created a road dust-monitoring tool that attaches to a truck’s trailer hitch and measures wheel-generated dust around site in real time. Then, by merging data from independent dust monitoring and GPS measurement tools, a road dust map for the site is created.

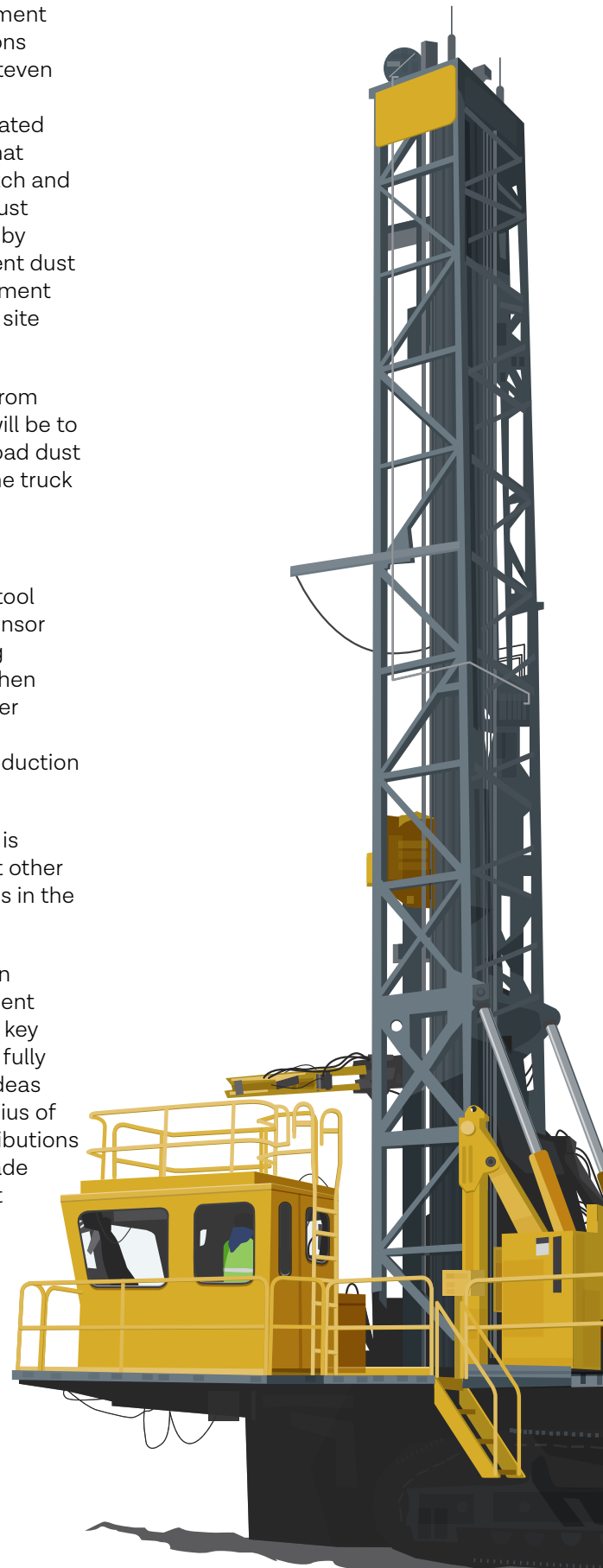
With the addition of funding from Ideas at Work, the next step will be to automate this tool so that a road dust map will be produced while the truck is being driven.

What’s Next:

The team plans to add smart tool functionality, incorporating sensor data for cleaning and washing with the road dust data, and then to use data analytics for further optimization. As a result, an additional benefit may be a reduction in water use at site.

This next phase of the project is also being assessed for use at other sites, including coal operations in the Elk Valley.

“In 2018, collaboration between Environment, Material Movement and Teck Digital Systems was key to transforming an idea into a fully functional tool,” says Keith. “Ideas at Work has expanded our radius of collaboration to include contributions from all areas of Teck, and made it possible to apply this tool at other sites.”



Idea at Work: Seismic While Drilling at Line Creek Operations

Funding: \$13,000

Key Potential Benefit: Improved Accuracy in Mapping and Extracting Coal

Understanding exactly what's underground is invaluable to those working above it. Finding a better way to capture this info is what's driving Chris Lane, Senior Geologist Supervisor at Line Creek Operations (LCO), and Victoria Sterritt, Manager, RACE21™ Technology Delivery, to champion the idea of mounting seismic sensors on drill masts.

Challenge:

Coal operations currently use "measure while drilling" (MWD) information from drill operating parameters (e.g., pull down, rotational speed) to provide geologists, drill and blast engineers, and process control specialists with an indication of rock type and hardness. Due to subtle hardness differences, MWD data can prove challenging when distinguishing between coal and shale.

Idea:

Supported by LCO's Geology and Technology and Innovation groups, Chris and Victoria are working collaboratively with a third-party company, DataCloud, to test the ability of seismic sensors to provide superior rock type identification, including coal identification. DataCloud has developed an early stage technology called RHINO to provide "seismic while drilling" (SWD) information from blastholes.

SWD data may be able to distinguish coal seams in blasthole data more reliably, enabling more accurate mapping and extraction of coal, and reducing over-drilling into economic coal seams.

What's Next:

A proof-of-concept trial was completed in April, and the initial results are promising, says Chris. "We're excited about the potential for seismic sensors mounted on drill masts to improve rock type identification across our operations. The Ideas at Work Fund has made it possible for us to test the viability of this employee idea and, based on the initial results, we think this concept could have a promising future." ■

Have an Idea?

If you have an idea for consideration for the Ideas at Work Fund, discuss it with your supervisor, or submit it through the Ideas at Work process in place at your site of office. Eligible ideas will be shared with General Managers and corporate department Vice Presidents, who can then help take them forward for further consideration.

An Ideas at Work Fund form is also available on [connect.teck](#) to provide guidance on things to consider when bringing an idea forward. Completing this form is a helpful way to prepare for discussions around your idea, but not required as part of the submission process.

For further assistance with developing idea submissions, the Technology and Innovation group is also available to help by contacting Keith Mayhew, Manager, Technology and Innovation or Daniel Parker, Superintendent, Mine Operations, Fording River Operations.





RACE21™

Building on our long history of innovation and early adoption to ensure a strong future for our company.



Renew

Modernize Teck's technology foundation



Automate

Accelerate and scale autonomy program



Connect

Develop digital platform for sensing and analytics



Empower

Design future operating model to empower our employees

RACE21™ is Teck's innovation-driven efficiency program. It's about taking a company-wide approach to renewing our technology infrastructure, looking at opportunities for automation and robotics, connecting our data systems to enable broad application of advanced analytics and artificial intelligence, and empowering our employees, with a focus on making real progress between now and 2021. Successfully advancing initiatives like RACE21™ will be critical to our continued success as a business, by driving a step change in our performance and helping us remain competitive in a rapidly changing landscape.

Transforming Teck Through RACE21™

The successful mining company of the future will be built on a fully integrated digital platform. The Technology and Innovation team is working to build this platform for Teck, one that will increase safety and performance in real time, unlock knowledge about the resource base, improve planning for optimal resource extraction, and fully connect material and equipment flows.

“We’re not simply looking to automate what we do today. We’re completely transforming how we do things.”

Andrew Milner,
Senior Vice President, Technology and Innovation

RACE21™



Transformation Fundamentals

Analytics, automation and digital tools are fundamental to the transformation underway across the mining industry, and implementation of these will be critical to achieving RACE21™ goals: unlocking significant economic value and building lasting competitive advantages for Teck.

Here's How

Analytics will provide our employees with actionable insights to drive productivity improvements across our value chain and to understand the condition of our equipment, as well as extend lifespan and predict failure. This information will provide actionable insights to drive productivity improvements across our value chain.

Automation will make mobile fleets far more efficient by increasing utilization while reducing variability. The result will be improved safety, reduced energy consumption and equipment wear and tear, as well as greater flexibility to change mine designs. Additionally, many manual management processes, like production and maintenance planning, procurement and reporting, will become faster and more accurate at lower costs.

Connectivity will provide a digital platform to link unit operations to upstream and downstream activities, which will identify significant opportunities for improvement. For example, the platform will integrate

geoscience, mine plan, and mobile equipment schedules to intelligently target the highest-value ore. Likewise, by harnessing real-time production and maintenance information, we can optimize downstream logistics to efficiently deliver products to port and our customers.

What's Next?

In early June, Teck established a RACE21™ Value Delivery team. Led by Ryan Sword, Director, RACE21™ Value Delivery, and with a commitment to demonstrate Teck's ability to develop and implement analytics solutions that create measurable value, the team's immediate priority is to work in partnership with operations to drive value from a number of initiatives already underway. These initiatives span advanced analytics for drill and blast, haul cycle, processing optimization and maintenance.

Planning for execution of these initiatives in 2020 and beyond is underway, and additional initiatives will soon kick off in close partnership with operations. ■

“Successfully advancing initiatives like RACE21™ will be critical to our continued success as a business, by driving a step change in our performance and helping us remain competitive in a rapidly changing landscape.”

Don Lindsay,
President and CEO

PEOPLE & PLACES

Keith Klimchuk

Senior Environmental Specialist
Trail Operations

When did you start at the company, and at which site/office?

I started as a chemistry co-op student in 1988 at Trail Fertilizer Operations (TFO). The TFO Manager at the time was Peter Hemmes. He took an interest in my academics and co-op work terms and offered co-op placements at different locations throughout Trail Operations to support my program. I took him up on the offer and completed four work terms at Trail.

What other sites/offices have you worked at?

I work at Trail Operations but I have conducted project work at other sites, including pond coal recovery test work at Fording River and Elkview operations.

Could you provide a brief description of what you do in your role?

I am a Senior Environmental Specialist at Trail Operations and the Air Lead. My role involves managing the three air permits at Trail that include specific monitoring requirements for air emissions at site and in the receiving environment. It also includes project work, support for operations and other reporting.

What is your favourite part about your job?

Collaboration at site and across Teck sites. Bringing together a variety of skills, knowledge and experiences

contributes to great ideas and ultimately better outcomes for project work and for advancing opportunities.

What is your most memorable moment working at Teck to date?

Being part of a team that developed a business to treat end-of-life electronics at Trail. Electronics that were no longer being used were separated into material streams at a primary processing facility, with select material streams sent to Trail. We were the first downstream processor to recycle end-of-life electronics in Western Canada, and our work catalyzed recycling electronics in Canada and the rest of North America. This work earned us an Excellence Award for Innovation as a team in 2008.

What is your favourite activity outside of work, and why?

Fitness. I roll out of bed and into my gym. I started weightlifting when I was 12 to benefit my competitiveness in sports including hockey, swimming and tennis. I learned through trial and error. My boys started early as well. We share this passion for fitness and sports, and participate individually and as a group at times.



Keith (left) and son Quinn, at the top of Dove Hill in Castlegar, B.C.

Solange Dussaubat

Superintendent, Water Resources, QB2
Santiago office

When did you start at the company, and at which site/office?

I started at Teck in 2015 at the Santiago office as Water Leader for the Environmental Impact Assessment for QB2.

Could you provide a brief description of what you do in your role?

Currently, I support all aspects of water management related to Quebrada Blanca (QB) and the construction of QB2, as well as with the environmental and permitting team working on the project, and for other projects in the region, such as NuevaUnión and Zafranal.

What is your favourite part about your job?

I really enjoy the opportunities I have within my work to interact with different teams and departments at Teck. I like that with that, new things are happening every day, which bring both new goals and new challenges—and it means that I never get bored!

What is your most memorable moment working at Teck to date?

The two most memorable moments during my time at Teck were receiving the Environmental Permit for QB, and then QB2. We'd worked very hard and waited a long time for both, so it was a very exciting result.

What is your favourite activity outside of work, and why?

I love going to Algarrobo Beach. I find it relaxing, getting outside and enjoying the beautiful landscape and nature, and it allows me to rest and return to work re-energized.



PEOPLE & PLACES

Huatacondo, Chile

William Albornoz

Heavy Equipment Operator

Quebrada Blanca Operations

What is the point of pride for people in the area?

We're a very close community, and we're very proud of our people and the events we have together, like religious celebrations. In Huatacondo there are just a few families, but we're always working to help each other out and support one another.

Is there anything in particular the area is famous for?

There is a lot of remarkable history here, such as petroglyphs, which are human and animal-like figures that early people carved in the rock, the petrified waterfalls formed by water with high mineral content, and even dinosaur footprints, which are 140 to 150 million years old.

What is the best-kept secret in the area?

There is an ancient lost city located just a few kilometres from Huatacondo. It's a prehistoric village that has been dated back to the year 960 BC. You can still see remains of houses, canals and other structures and artifacts.

What is your favourite restaurant in the community?

There are no restaurants, but there are local people who cook for tourists. I recommend my mother's house, Nelly González—she often hosts guests who are staying in the region. The typical dish served at this type of dinner in Huatacondo is roasted pork.

What is a typical weekend there, and is there anything else you would like to tell people about your community?

On the weekends, people like to play soccer and spend time together. Huatacondo is generally a happy place and we're always inviting people to our town. People who visit for the first time say that local people are very friendly and warm with tourists.



Noatak, Alaska

Eli Mitchell

Surface Operator VI

Red Dog Operations

What is the area's point of pride?

The Noatak River, and the abundance of Native subsistence food we gather from the river and land all year round, including fish, caribou, moose, grizzly bear, berries, waterfowl, roots, sourdock, and medicinal plants. In the winter, we also harvest fur for warm parkas from wolves, wolverine, otters and muskrats.

Is there anything the area is famous for?

Nature's beauty—trees, canyons and crystal clear water in the fall. Rafters come from all over the world to float more than 150 miles from upriver down to our community. They have unending stories after experiencing our backyard playground.

What is the area's best-kept secret?

I would say our best-kept secret is the scenic views all along the river and all the untouched prehistoric sites and valuables in the area.

What is your favourite restaurant in the community?

We don't have a restaurant in our community, but we do enjoy indulging in all the subsistence food that we set on our tables: fish, caribou, moose, bear, whale muktuk, beluga maktak, seal oil with all the trimmings, salmonberries, blueberries, blackberries, raspberries, cranberries, and Eskimo ice cream, topped off with tundra tea.

What is a typical weekend like there?

For the ones who have a job, the weekend is their only chance to go out and harvest for the long winter, so that's when it's very busy all along the river in the spring, summer and fall. Some families who don't have transportation will help and follow others to harvest and divide the catch.



Above: Eli and wife Vicky.

SITES & SCENES

1 Technical Services, Trail, recently celebrated reaching one million hours worked, Lost-Time Injury Free. Congratulations to the team on this significant achievement and for all their work in support of everyone going home safe and healthy every day.

2 Red Dog Operations had a surprise guest visit at site this past April. Maizee the dog was found wandering on the Port Road 50 miles away from her home in Noatak. She was rescued by a NANA/Lynden haul truck driver, then spent the day sleeping on a blanket by a heater, eating roast beef, and visiting workers in the mill and mine. Her owners were notified, and she was reunited with her family in Noatak (learn more about the community of Noatak in “People and Places”). Thanks for the visit, Maizee!

3 On June 3–6, Vancouver hosted the Women Deliver 2019 Conference, the world’s largest gathering on gender equality and the health, rights and well-being of girls and women. More than 8,000 world leaders, influencers, advocates, academics, activists and journalists came together at the event in an effort to accelerate progress for girls and women everywhere. Teck was a proud partner of the conference’s Culture Night, together with UN Women and the Forum for Women Entrepreneurs.

The outdoor Culture Night celebration saw local attendees and conference delegates enjoy an evening of food, art, Indigenous culture, speakers and musical performances. The event included a marketplace highlighting products and services of female entrepreneurs, as well as a large paint-by-numbers mural to be gifted to the Centre of Excellence for the Empowerment of Indigenous Women in Chile.

Since 2016, Teck has partnered with UN Women to empower Indigenous women in Chile. To learn more about global citizenship at Teck, visit teck.com/responsibility.

4 Rocking out in the classroom: Sam McGeorge, Chief Geologist at Pend Oreille Mine (POM), took sample bags to local school Selkirk Elementary for some hands-on learning. Each student in the Grade 3 class was asked to bring in a rock to learn about geology and rock composition. Sam then brought them back to POM where the team got to work, processing and analyzing each rock.

In the end, each student received their sample bag back with their cut rock, assay sample, geology report, timeline, rock cycle and assay report, and had an opportunity to discuss their rock results with a POM geologists. Pictured here is Jasmine McCauley, Maintenance Superintendent, POM, with her 3rd grade daughter, Harlow.



Teck2040: Evolution of Our Sustainability Strategy

Stopping to rescue injured wildlife. Sourcing from a local or Indigenous business. Choosing equipment that uses less energy and reduces costs. People across our company make decisions every day to help advance sustainability and over the years, sustainability has become a core value and part of our DNA.

Our sustainability strategy was officially established in 2010 when we created short-term goals for 2015 and long-term goals for 2030 in six focus areas: Biodiversity and Ecosystems, Energy, Community, Water, Materials Stewardship and Our People.

By 2015, we achieved all 28 of our short-term goals in all six focus areas. At the same time, we updated our strategy by setting new short-term goals for 2020, revising our long-term 2030 goals and vision statements, integrating Air into the strategy and emphasizing climate change as part of our focus on energy.

Our work in sustainability has set us apart from our peers in several ways. Our mining operations, for example, have some of the lowest carbon emissions worldwide. We've reduced our energy consumption and in turn, our costs. We've helped preserve large tracts of critical wildlife habitat in B.C. and Alberta. And our commitment to reducing freshwater consumption has helped us pioneer a large-scale desalinization plant at our QB2 project.

Even with these ambitious efforts, priorities for investors, governments and communities are dynamic and evolving. Companies are being evaluated when it comes to sustainability. As we approach 2020, we recognize the need to re-envision our sustainability goals and strategy. To respond to increasing expectations from inside and outside the company, we want to ensure our strategy is ambitious enough to help Teck to remain a leader, reduce long-term costs associated with major risks, and build shareholder value. We also want to demonstrate to others—both within and outside our industry—what is possible. To set this new strategy, we have launched a project that we call Teck2040.

Teck2040 seeks to build upon our existing success and establish new goals that are further integrated throughout the business. Through Teck2040, we'll leverage the knowledge and expertise that exists throughout the company to further embed sustainability as a value and ultimately ensure Teck's long-term success. This is about the sustainability of our business in terms of environmental performance, social acceptance and financial wellbeing. Teck2040 underpins our ability to create value for shareholders and society. Progress in Teck2040 is underway, and we're working towards launching the new goals in March 2020.

Teck2040 is guided by and responds to a wide range of trends, including the following:



1. Urbanization and the Global Middle Class

By 2050, the number of people living in cities around the world will grow by 2.5 billion, with the vast majority of urban growth occurring in India, China and Africa. Many of these urbanites will form part of a new global middle class of more than six billion people, whose spending power will shift global demand and put further strain on finite resources.

Right now, the average person in India uses less than half a kilogram of copper per person per year, while in Canada, the average is closer to 5 kilograms. As India's middle class grows, so will demand for copper, steel and other essentials.



2. Societal Expectations

The rise of social media has allowed for information to be seen and shared almost instantaneously, greatly increasing the power of citizen- and consumer-driven movements around the world. Governments and industry are increasingly being held to higher environmental and ethical standards, and are responding to changing expectations. Many companies are looking for ways to reduce their environmental footprint requiring more low-carbon products, thereby driving demand for production of copper by 7%, nickel by 108% and lithium by an enormous 965% by 2050.



3. Technological Transformation

Technological advancements will continue to alter the way in which we live and interact with the world around us. Disruptive technologies, such as Uber and Airbnb, and advancements in 5G and blockchain technology, are unlocking greater efficiencies in all aspects of business and home life. Autonomous vehicles and further growth in artificial intelligence and machine learning are sure to bring benefits to other areas of life.



4. Environmental Thresholds and Climate Change

As the effects of climate change continue to manifest, taking action to reduce emissions will remain a priority. Even with aggressive action, societies and the environment may feel the negative impacts of a changing climate. By 2050, rising sea levels, water shortages and weather events will contribute to up to 140 million climate migrants moving beyond their borders. Climate change and other issues such as the global plastics and waste crisis require cooperation between governments, industry and society, in order to rethink the way we live. ■

Innovation in Health and Safety

How simple, smart changes are making two Teck operations safer and healthier places to work.

Innovation doesn't have to involve big, new or expensive technologies. In fact, the best innovation is sometimes the result of simply finding a better way to work.

This was certainly the case at Line Creek Operations and Highland Valley Copper, where cross-functional teams worked to implement simple, smart changes that make their work safer and healthier.

Reducing Dust Exposure

Many jobs in the mining industry encounter the hazard of dust or particulate exposure. The dust particles that are most concerning are extremely small and cannot be seen with the naked eye. Consider the average width of a human hair—50 to 70 microns—compared to respirable particles that are about 2.5 microns. When inhaled, longer-term exposure to these particles can pose a risk of occupational disease.

Single-Lift Stockpiles at Highland Valley Copper

The project team at Highland Valley Copper found an innovative solution to reducing exposure to dust generated by handling material called stemming, which is put inside of a blast hole to help prevent gases from escaping. This activity produced large amounts of fine dust, creating an exposure hazard for equipment operators and blasters.

By taking a closer look, the team realized that stemming material was being pulverized when loaders were driving onto multi-layer stockpiles. After a careful and collaborative review, a simple solution was identified: if they limited stockpiles to a single lift, the amount of fine dust generated would be significantly reduced and, as a result, the risk of exposure would drop dramatically.

This is an example of prevention through a change in operational practice.

“Nothing is more important than the health and safety of our people. Congratulations to the teams at Line Creek Operations and Highland Valley Copper. Innovations like these will help us achieve our vision of everyone going home safe and healthy every day.”

Lawrence Watkins,
Vice President, Health and Safety

Pipe Assembly Facility Redesign at Line Creek Operations

The project team at Line Creek Operations found an innovative solution to reducing exposure to dust generated by cutting hydraulic hoses, an activity that creates potentially harmful particulates.

To do so, they worked with the Health and Safety team to design a new pipe assembly facility, complete with exposure reduction controls and exhaust ventilation that interlocks with the saw. The latter prevents the saw from running without ventilation, and effectiveness testing, also built in, ensures the system continues to function well.

This is an example of prevention through design. ■



Celebrating our Mine Rescue Champions

Once again, Teck's mine rescue teams came out on top at this year's mine rescue competitions in both Alberta and B.C.

Teck has a long tradition of participating in—and, at times, dominating—provincial mine rescue competitions. Each year, these events bring together teams from across sites and provinces, providing an important opportunity to share industry best practices, test emergency response and rescue skills, and showcase Teck's safety leadership. While the competitions are extremely challenging, both physically and mentally, the hard work starts well in advance as teams spend countless hours planning, studying and practising.

This year, that hard work paid off with big wins for our mine rescue teams from Fording River, Highland Valley Copper, Line Creek and Cardinal River operations:

- Fording River had its biggest win in more than a decade after taking home the Three-Person and Six-Person titles, as well as the Best Practical bench trophy at the Annual East Kootenay Zone Mine Rescue and First Aid competition in Fernie, B.C. on May 11.
- Highland Valley Copper took home three trophies for Best First Aid by Surface Team, Best Team Rope Task and the Levitt-Safety Fire Trophy in Williams Lake, B.C. on May 30 and June 1.
- The Line Creek Badgers won five trophies, including Three-Person Miners First Aid, Best Extrication by a Surface Team, Best Surface, Highest Non Aggregate Points, and Overall Surface Mine Rescue at the Provincial Mine Rescue & First Aid Competition in Williams Lake, B.C. on June 1.
- To celebrate its 50th anniversary, Cardinal River hosted this year's Provincial Surface Mine Rescue Competition in Spruce Grove, Alberta on June 15. Cardinal River finished first in Smoke & Search, Best Captain, and Rope & Recover, third in Best Surface Written, and placed third in Overall Surface Mine Rescue.

Congratulations to all participants for representing Teck and for your commitment to ensuring everyone goes home safe and healthy every day. ■



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We put together a diverse group of men and women and combined some of our stronger members from all our crew teams. It was the greatest win for the site.

Amanda Cunliffe
Six-Person Head Coach
Fording River Operations



Teams from Highland Valley Copper (1), Line Creek (2), Cardinal River (3), and Fording River (4) pictured here are prepared to tackle any incident. Through tireless practice and training, our teams know the importance of strong mine rescue programs. This year's overwhelming wins are a testament to Teck's preparedness and exemplary safety culture.

Mining for Miracles: The Legacy Continues

In 2019, representatives from across the industry once again participated in Mining for Miracles signature fundraising initiatives and events, including Pie Throw, Diamond Draw, Online Auction and the Hooked on Miracles Fishing Tournament, all in support of BC Children's Hospital.

Every year, the B.C. mining community comes together to help improve the quality of healthcare for children in the province. From helping provide new hope to kids with rare diseases to giving more children access to the power of personalized medicine, Mining for Miracles is helping to keep BC Children's Hospital at the forefront of excellence in pediatric care.

Teck is a founding member of Mining for Miracles and a long-time supporter of the campaign. The partnership between BC Children's Hospital Foundation and Mining for Miracles is a leading example of how industry, institutions and social-profit organizations can work together to provide world-class healthcare.

"For the past 30 years, Teck's employees and volunteers from across the mining industry have raised more than \$30 million for BC Children's Hospital," said Karla Mills, Vice President, Project Development, and co-chair, Mining for Miracles. "We are proud to continue that legacy this year, and have raised \$2 million in 2019 to support the development of the new Gut4Health Program."

The new Gut4Health program will further microbiome research and the development of new therapies, with the goal of making BC Children's the first children's hospital in Canada to use gut bacteria to predict, prevent and treat infections and chronic inflammation in kids.

For more information about Mining for Miracles, visit miningformiracles.ca.





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1 and 3: Thank you to everyone who joined in to support Mining for Miracles at the Pie Throw on May 23, which raised a total of \$1,290,326.

2: Five-alarm success: Trail Operations' firefighters were on fire with their annual Mining for Miracles Boot Drive held on May 15, raising \$11,105.20.

4: Mining for Miracles presented a cheque for \$2 million at BC Children's Hospital Miracle Weekend on June 2.

5: Elk Valley operations hosted 'Pie Smoosh' events to raise funds for their respective General Managers participating in the annual Pie Throw in Vancouver. At the first event, pictured here, at Elkview Operations, D Crew raised \$8,331.

Creating a Diversity Network in Chile

How a women's support network in Chile is helping increase gender diversity at Teck and across the industry.

In Chile, women make up just 8.3% of workers in the mining industry. At 14%, Teck's workforce in Chile exceeds the industry average. However, knowing the importance of inclusion and diversity, we doubled down on a cultural change with a gender perspective to better support and attract women into our workforce.

"In an industry that has traditionally maintained a male-dominated workforce, we recognized that a cultural shift that better supported a female workforce would have tremendous benefits," says Chris Dechert, Vice President, South America. "By being more inclusive and diverse, we're able to come up with better perspectives and more innovative approaches to our work, and attract a broader pool of candidates."

Women in Teck

Chris worked with Diversity Development Consulting to review Chile's operations, projects and corporate office processes to identify obstacles related to diversity and inclusion. The result was a recognition that women—not only at Teck in Chile but across all Teck operations—wanted a women's support network. Thus, Women in Teck (WIT) was born.

Led by Amparo Cornejo, Vice President, Sustainability and Corporate Affairs, Chile, WIT's goal is to provide a support network for the different labour and industry challenges, offer information on job opportunities and participate in industry events for women.

"Women in Teck has been tremendously successful in centralizing efforts that support women in our company and providing them with information and opportunities they otherwise would have missed out on," said Amparo. "There's still lots of work ahead of us, but we have a strong foundation now to help support gender diversity not only at Teck, but across the industry."

Learn more about inclusion and diversity at Teck at teck.com/responsibility

“Women in Teck has been tremendously successful in centralizing efforts that support women in our company and providing them with information and opportunities.”

Amparo Cornejo, Vice President
Sustainability and Corporate Affairs, Chile

Celebrating Diversity

In 2018, WIT organized a day of reflection for International Women’s Day across Chile operations, bringing in Chile’s first female Aerospace Engineer, Karin Saavedra, to talk about technology and innovation on Mining Day, and establishing a working relationship with the Women and Mining Working Group of the Chilean Ministry of Mining and the Chilean Ministry of Women and Gender Equity. For this work in support of our commitment to gender equality, Teck in Chile was acknowledged by the PROhumana Foundation.

WIT continues to work on the programming of activities in 2019, with a mission to further enhance gender diversity in the company. ■



How Cyber Secure Are You?

We all have a role to play in keeping our personal information and Teck's systems safe. Here are five tips to improve your cyber security at home, at work and on the go.

1 **Toughen up your passwords:**

Avoid using common words and common substitutions and instead use passwords that are long, and include a variation of lower case and upper case letters, numbers and symbols. Tools like password managers, such as LastPass, can also be used to manage multiple complicated passwords.

2 **Review your account's privacy**

setting: Social media platforms collect a lot of personal information including current location, contact information, employment status and history, and personal interests. Review your privacy settings on your social media accounts and make sure you are aware of what you are sharing. Consider changing your accounts from public to private to keep your information more secure.

3 **Check your permissions:** Many smart devices will have access to your location, cameras and microphones, even when they are not being used. Carefully review what personal information is being collected from your device and why it's needed. Consider setting up different permissions for different users, with separate restricted accounts for children.

4 **Use multi-factor authentication:**

In today's world of phishing and malicious attacks to gather your credentials, using a single username and password to access your information online can be perilous. Multi-factor authentication (MFA) involves using a second method of account authentication, such as: something you know (such as a password), something you have (such as a smartphone), and something you are (such as your fingerprint).

Check to see if your financial institutions, online accounts and applications offer MFA. Apple and Google both offer MFA options for accessing your online accounts.

5 **See if you have been 'pwned':**

<https://haveibeenpwned.com/> is a free service that aggregates data breaches and helps people establish if they have been impacted by malicious activity on the internet. The site works by comparing your email address to databases of known security breaches. If a match is found, it gives information on what parts of your identity and data may have been exposed. ■



```
mirror_mod.use_x = False
mirror_mod.use_y = True
mirror_mod.use_z = False
elif operation == "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

mirror_ob.select = 1
modifier_ob.select = 1
obj.active = True
obj.select = True

print("please select exactly t")

OPERATOR CLASSES
```

0 10 1 0
10
0 10 1 0

0 10 1
0 10 1

0 10



Recognizing International Day of the World's Indigenous Peoples

On August 9, the world will mark International Day of the World's Indigenous Peoples, a day recognized by the United Nations General Assembly as an opportunity to promote and protect the rights of the world's Indigenous populations.

Established in recognition of the first meeting of the United Nations Working Group on Indigenous Populations in Geneva in 1982, the day also aims to strengthen international cooperation for addressing issues faced by Indigenous Peoples in areas such as human rights, the environment, development, education, health, the economy and social development.

This is also an opportunity for Teck to reaffirm our commitment to working in partnership with Indigenous communities where we operate in our shared commitment to responsible resource development.

Please take a moment to review our Indigenous Peoples Policy on August 9, and join us in recognizing International Day of the World's Indigenous Peoples.

Teck