



Managing Innovation for Sustainable Change

Keith Mayhew, Manager Technology and Innovation, November 20th, 2018





1 Producer of **steelmaking coal** in North America

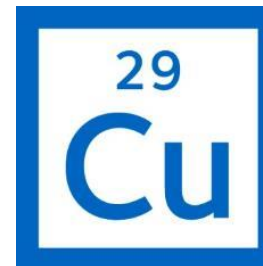
2 Seaborne exporter of **steelmaking coal** globally



#3 **zinc** miner in the world



Implementing a comprehensive **sustainability** strategy



Top ten **copper** miner in the Americas

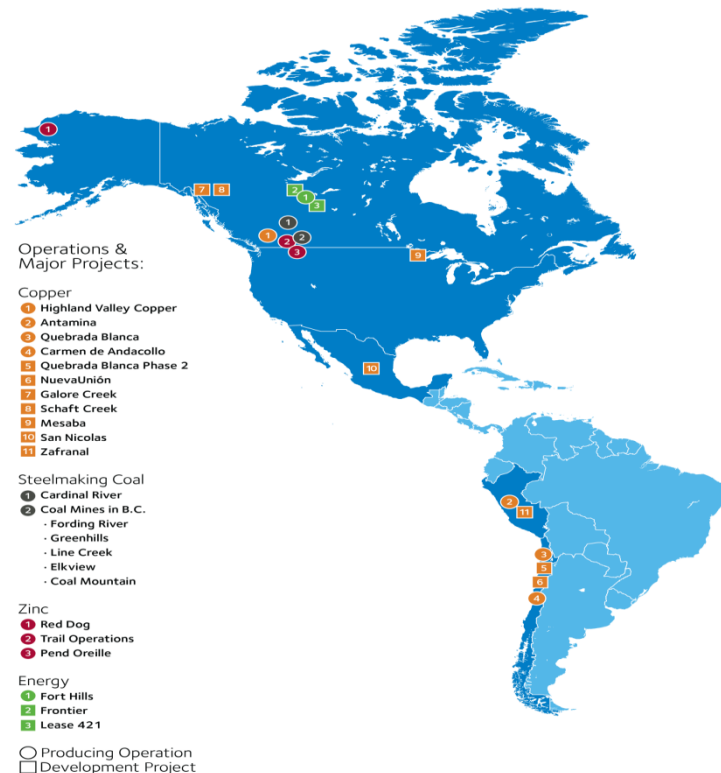


Building an **energy** business



Safety is a core value

- Diversified resource company, committed to responsible mining and mineral development
- Major business units focused on steelmaking coal, zinc, copper and energy
- Own or have an interest in 12 mines, one large metallurgical complex, an oil sands mining and processing operation and several major development projects in the Americas
- Over 100 years of experience



Strong sustainability performance enabled by a strategy built around developing opportunities and managing risks.

Implementing a sustainability strategy with short-term, five-year goals and long-term goals stretching out to 2030.

Goals cover the six areas of focus representing the most significant sustainability issues and opportunities facing our company:



Community



Water



Our People



Biodiversity



Energy and Climate
Change



Air

Teck & Innovation – The Future is Today

Adjusting to the Evolving Global Landscape

Innovation Presents Key Opportunities

Teck

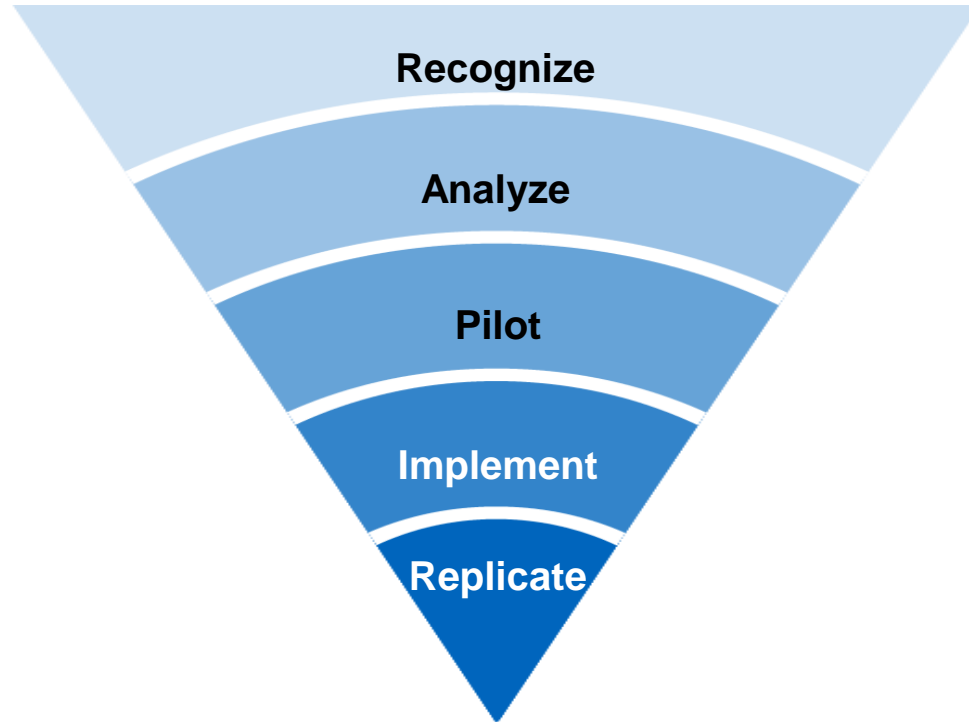
Key challenges include:

GHG, productivity, increasing regulatory compliance demands, rapidly changing sector technologies, new/emergent social demands



Disciplined Approach

From Scanning to Implementation



Broad scan

Discipline in analysis


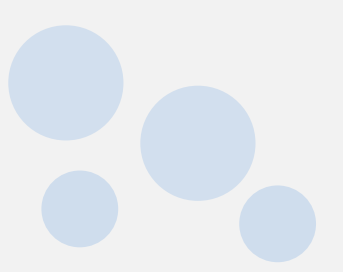

Speed in decision making

... and execution

Full extraction of value

Building the Innovation Culture

Facilitating Across the Business

Grassroots	BIG Ideas	Transformational
		
<ul style="list-style-type: none">• Significant site site based innovation	<ul style="list-style-type: none">• Growing: AHS, Ore Sorting, Remote Dozer, etc.	<ul style="list-style-type: none">• Limited activity

CULTURE OF INNOVATION

 **DRIVE SCALE, PACE VIA “THEMES”** 

Teck's Innovation Themes

Support our Vision and Values

Teck

Eco-efficient Mining

Low Carbon Economy

Future of Work

Business Intelligence
& Advanced Analytics

Ore Body Knowledge

Metals

Cu: 0.7
Mo: 0.002
Au: 0.004
Ag: 0.29

Minerals

Chalcocite
Pyrite
Chalcopyrite
Bornite
Montmorillonite
Muscovite

Texture Structure

Vein
Grain Size
RQD
PLT

Copper
29
Cu
63.546

Molybdenum
42
Mo
95.95

Silver
47
Ag
107.868

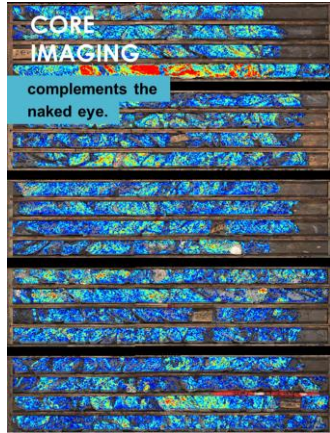


Improving Ore Body Knowledge

Building Momentum from Model to Mill & Ideas to Implementation

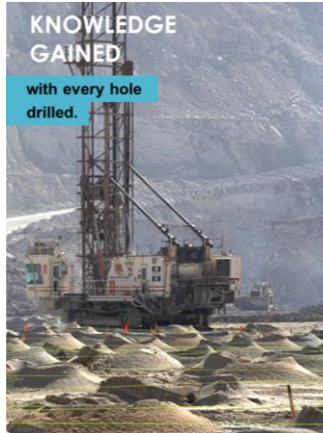
Teck

Implemented



Improved geology models

Analysing



Refining the block value

Implemented



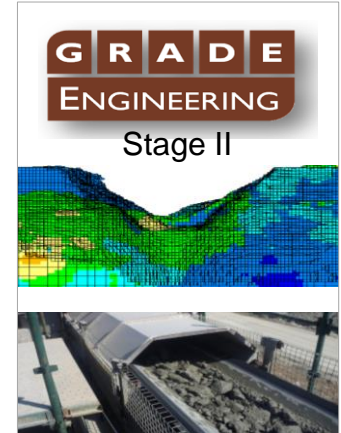
Maintaining blast control

Implemented



Decisions at the shovel scale

Piloting



Value based decisions

Innovation at Teck – Ideas at Work™

Culture of Innovation

Telling our Story and Engaging Employees

- We're building on our culture of innovation
- We have unleashed a great deal of energy in a short time



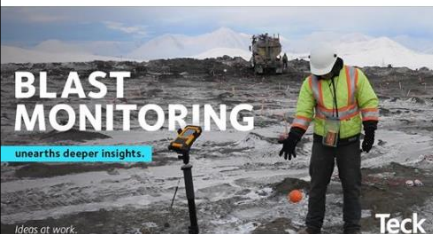
Culture of Innovation

"Ideas At Work": Telling our Story

Teck

Teck Teck
April 30 at 11:45am · 🌐

Did you know? Ore can shift during blasting but these high-tech sensor balls help us track it to maximize productivity and minimize waste.



BLAST MONITORING
unearths deeper insights.


Ideas at work.

TECK.COM
Tracking the Blast
At our mines, dozens of state-of-the-art, high-tech...

Learn More

Teck Teck
April 20 · 🌐

Machine Learning Maintenance - using computer algorithms to predict the unpredictable.



OUR MACHINE LEARNING
solves problems before they occur.


Ideas at work.

TECK.COM
Machine Learning for Maintenance
A vehicle breakdown is always a hassle -- and usually en...

Learn More

Teck Teck
March 29 · 🌐

Did you know a shovel could be smart?




SMART SHOVELS
help us dig far more intelligently.

Ideas at work.

TECK.COM
Building a Smarter Shovel
Most people think of a shovel as a pretty basic tool - you use it to move st...

Teck Teck
May 16 at 2:28pm · 🌐

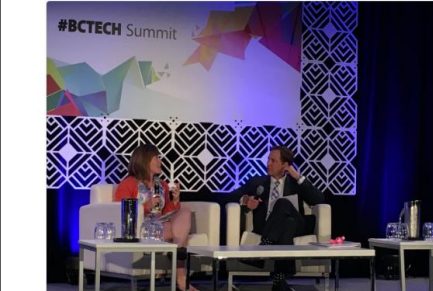
Better, faster, stronger - we're implementing exciting technologies to modernize mining. Stop by to learn more #BCTECHSummit



432 Views

Teck Teck Resources @TeckResources · May 16


"When we think about the value of new innovation and technology, there are really three factors: productivity/safety, growth and sustainability" - Victoria Sterritt, Lead, Innovation and Technology at Teck with Bryan Cox, president and CEO at @MA_BC. #BCTECHSummit



4 24

Teck Teck
May 8 at 12:10pm · 🌐

Smart shovels are helping us maximize productivity, reduce cost and improve environmental performance. Check out the interactive display at booth 545. #CIMBC18 <http://bit.ly/2K4KWN0>



999 Views

Like Comment Share

Teck Teck
May 10 at 9:43am · 🌐

Meet Teck's Digital Mining Innovation Lead and the winner of the CIM-Bedford Canadian Young Mining Leaders Award.



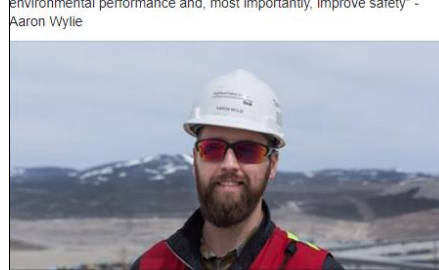
Meet the Innovator: Mohammad Babaei
It started with rocks. Growing up, Mohammad Babaei was fascinated with geology. His favorite toy was a hammer, which he used to test the hardness of rocks. Mohammad's hobby turned into a passion that led him to hold a PhD degree in...

TECK.COM

Learn More

Teck Teck
Yesterday at 3:04pm · 🌐

"Implementing these kind of new technologies at HVC has major potential to extend the life of the mine, sustain existing jobs, improve environmental performance and, most importantly, improve safety" - Aaron Wylie



Father, Mountaineer, Change Maker: Meet Aaron Wylie
"If you're not growing, you're dying" says Aaron Wylie, Superintendent, Transformational Technology at Teck's Highland Valley Copper Operations...

Culture of Innovation

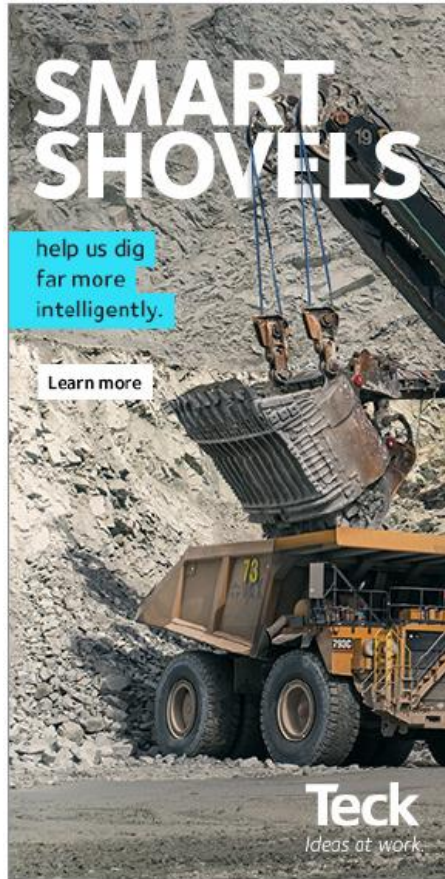
The “Future of Work” is Evolving Rapidly

- Our demographics are changing fast
- New generation of young engineering talent with new skills
- We know we need to excel at attracting, engaging and retaining those key innovators with outsize influence



Culture of Innovation: “Ideas At Work”

Teck



SMART SHOVELS

help us dig far more intelligently.

[Learn more](#)

Teck
Ideas at work.



OUR PEOPLE

are our greatest resource.

[Learn more](#)

Teck
Ideas at work.



NUESTRA GENTE

es nuestro mejor recurso.

[Aprende más](#)

Teck
Ideas en acción.



NUESTROS DATOS

están impulsando la productividad del camión.

[Aprende más](#)

Teck
Ideas en acción.



