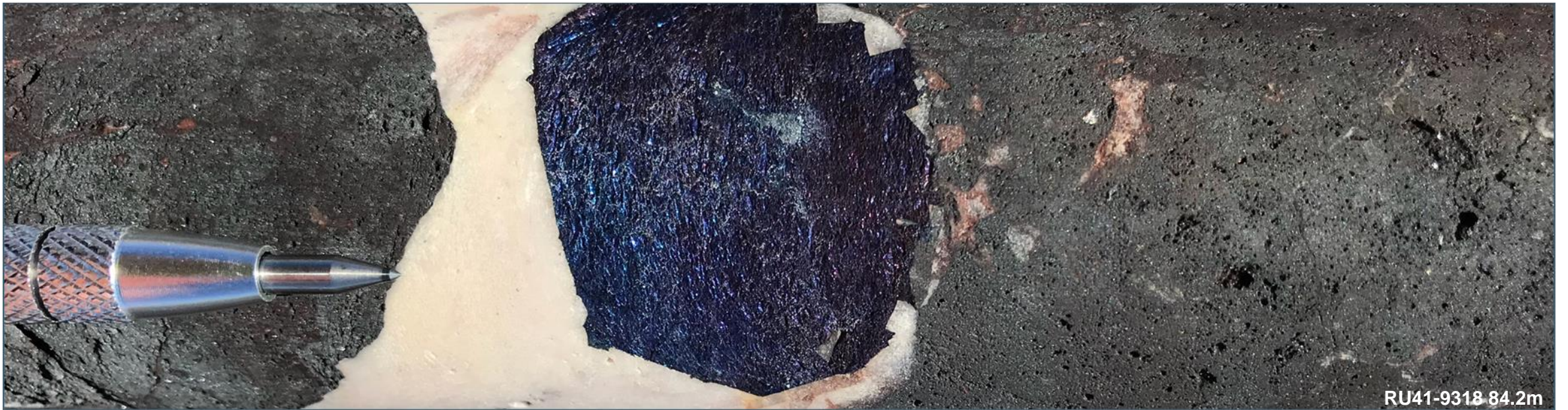


BHP

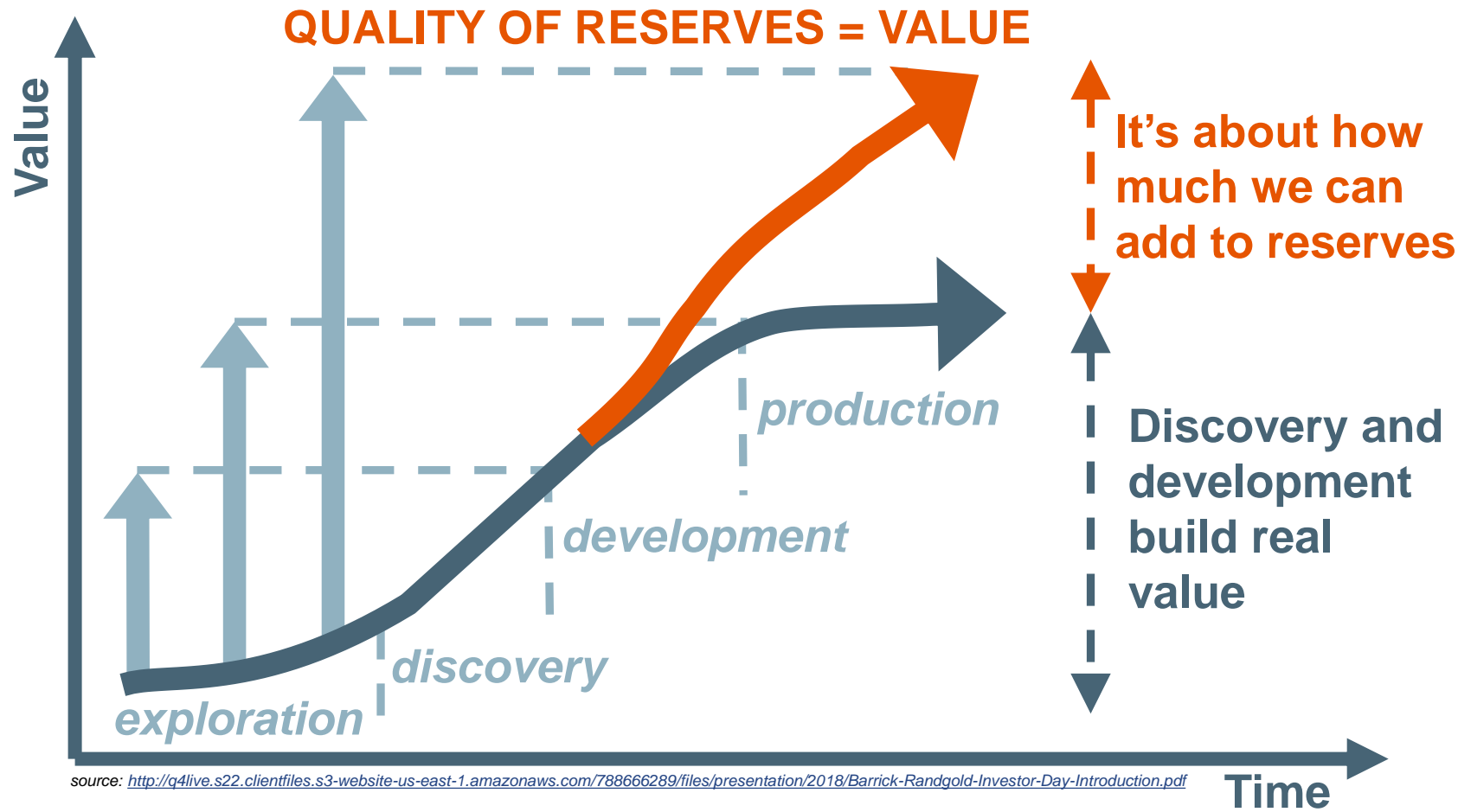
Life as an Economic Geologist — *‘Experiences, triumphs and challenges’*

Jesse Clark (Senior Mine Geologist) | Olympic Dam

14 March 2019 – AusIMM GSA Joint Student BBQ



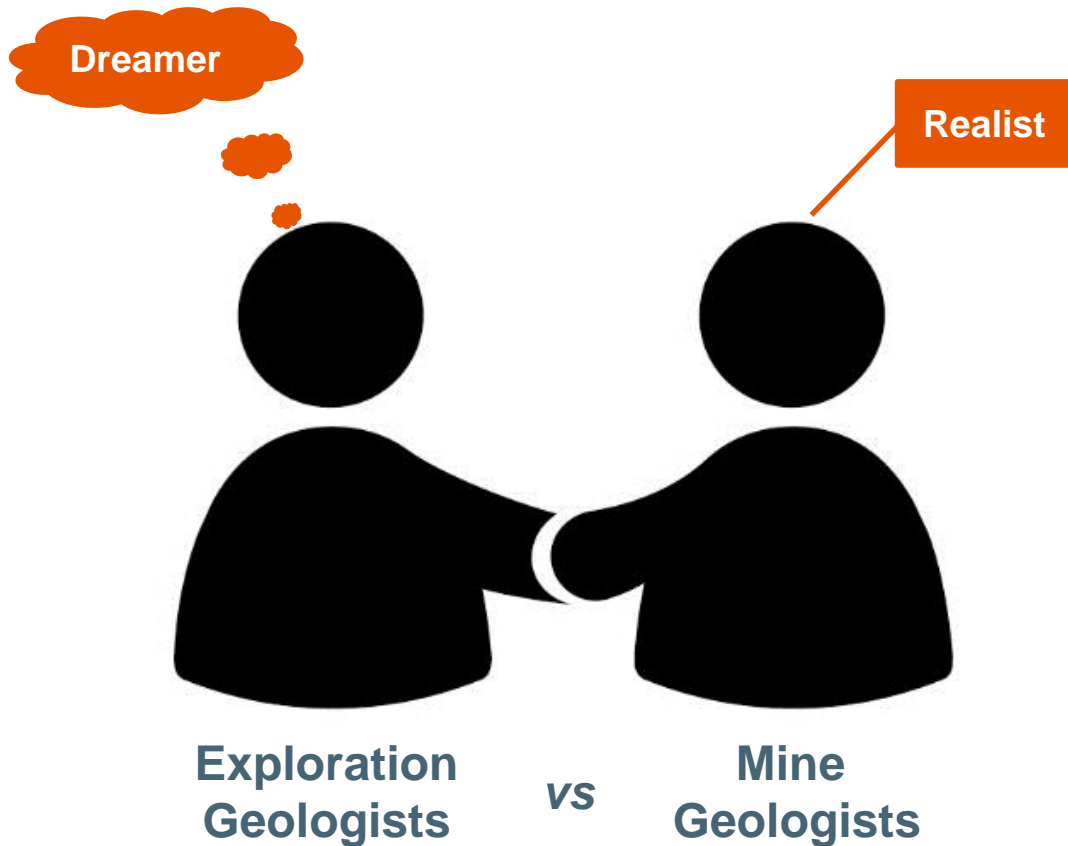
Geology value cycle



“Geoscience underpins the value of our business and geoscientists engage in solutions to enable our future growth”

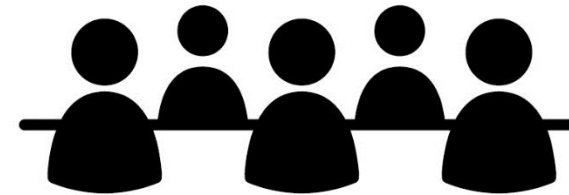
Laura Tyler, Chief Geoscientist and Asset President, Olympic Dam, BHP

Traditional views on industry geoscientists are evolving



Today, we see highly diverse geoscience streams

Millennials and technology are disrupting the industry



Economic



Geologists



- Mine Geologist
- Resource Geologist
- Data Geologist
- Exploration Geologist
- Project & Studies
- Geometallurgist
- Drill Planning & Scheduling
- Modelling Geologist
- Structural Geologist
- Geotechnical Engineer
- Geophysicist
- Geochemist
- Geostatistician
- Hydrogeologist
- Environmental Geoscientist
- Machine Learning & AI
- Standardisation
- Automation
- Big DATA

What do we do as Mine Geologists?

“The Mine Geologist is the custodian of the orebody. The role is to maximise the profitability of the Resource and seek opportunities to improve the profitability through the application of geologic knowledge”

McKinstry, 1948 (Mining Geology)

Our role:

1. “...Optimise and delineate ore types and waste within mining areas
2. Understand the mine plan (short, medium and long-term) and communicate the geologic uncertainties or risks to the plan
3. Create or maintain the geologic/resource model
4. Ensure the mill is receiving not just ore but the right kind of ore (keep feeding the beast!)
5. Guide the business on options for orebody expansion programs
6. Reconcile your production data to understand plan performance...”

Erik Rudd, 2016 (Fame and Glory of a Mine Geologist)

Mine Geologists are at the forefront of the Mining Value Chain



Entering industry

Personal reflections and advice:

- Graduates offer fresh perspectives, question everything
- Remember, our role as Economic Geologists is to add value to the business. *Rule of thumb: aim to create 10x your salary in value each year*
- Understand the Value Chain and where you fit in
- Know your customers/stakeholders, collaboration is king
- Be a responsible scientist, continually develop your technical skills and beyond — create your own opportunities.
- Work towards skills not roles
- Each geoscience stream plays an important role, understand what that role is...and collaborate
- Utilise student rates at conferences, field trips etc.
 - the geologist who sees the most rocks, wins!

“Go for the Jugular”

Sig Muessig

“Don’t be trapped by dogma – which is living with the results of other people’s thinking”

Steve Jobs

“Metal has no value until it is a saleable product”

Bill Johnson and Peter Munro

“A lot of geologists know a lot about geology, but not how to make a profit”

Dave Lowell

“Good, better, best. Never let it rest. Until your good is better and your better is best”

Tim Duncan

BHP