

Alford East Copper Gold Project

AusIMM Technical Lunch, Adelaide
21 October 2021
Nicole Galloway Warland, *Managing Director*

• AIM/ASX: THR • OTCQB: THORF

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The information in this report that relates to exploration results and exploration targets is based on information compiled by Nicole Galloway Warland, who holds a BSc in applied geology (Hons) and who is a Member of The Australian Institute of Geoscientists. Ms Galloway Warland is an employee of Thor Mining PLC. She has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Nicole Galloway Warland consents to the inclusion in the report of the matters based on her formation in the form and context in which it appears.

ESG Environment



Environment

World is transitioning to low carbon economy

Low emission goals

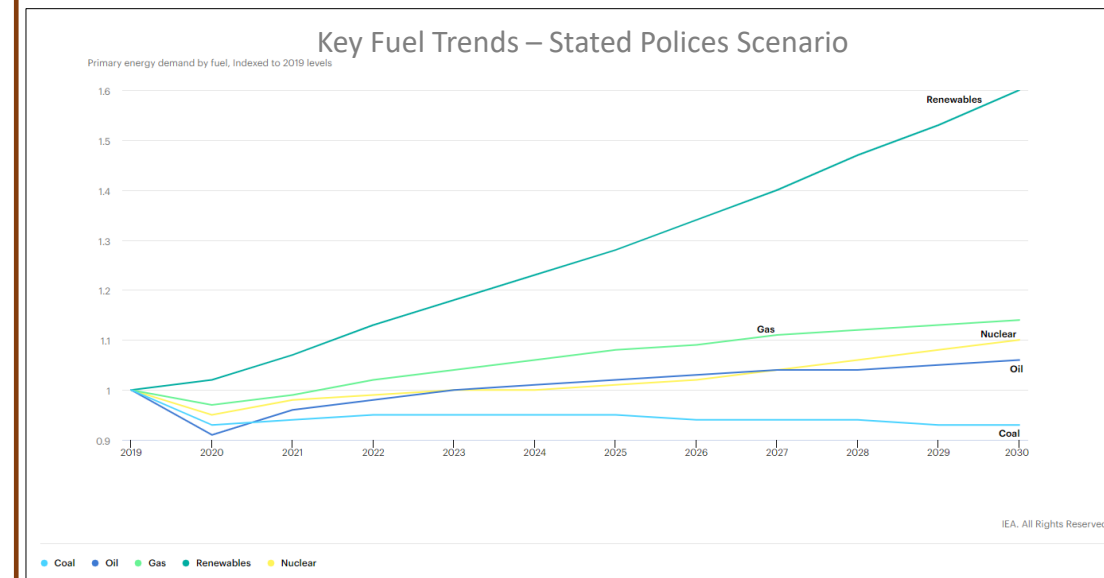
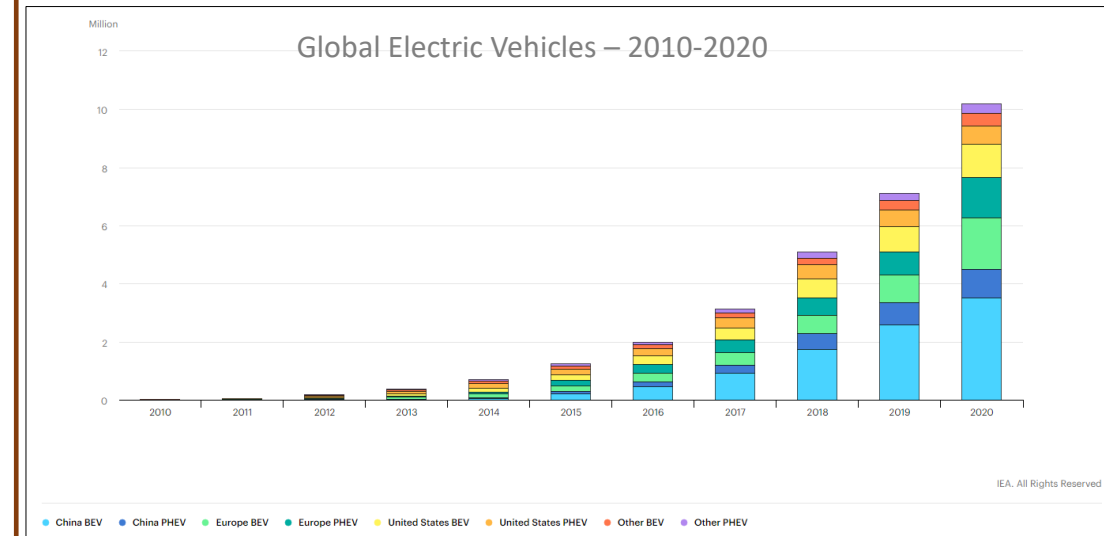
Copper

Global Demand growing

- Electronics
- Electric vehicles
- Renewable energy

Thor Mining

Aiming to be a trusted global leader for sustainably mined copper-gold



International Energy Agency 2020

Copper in SA

Projects

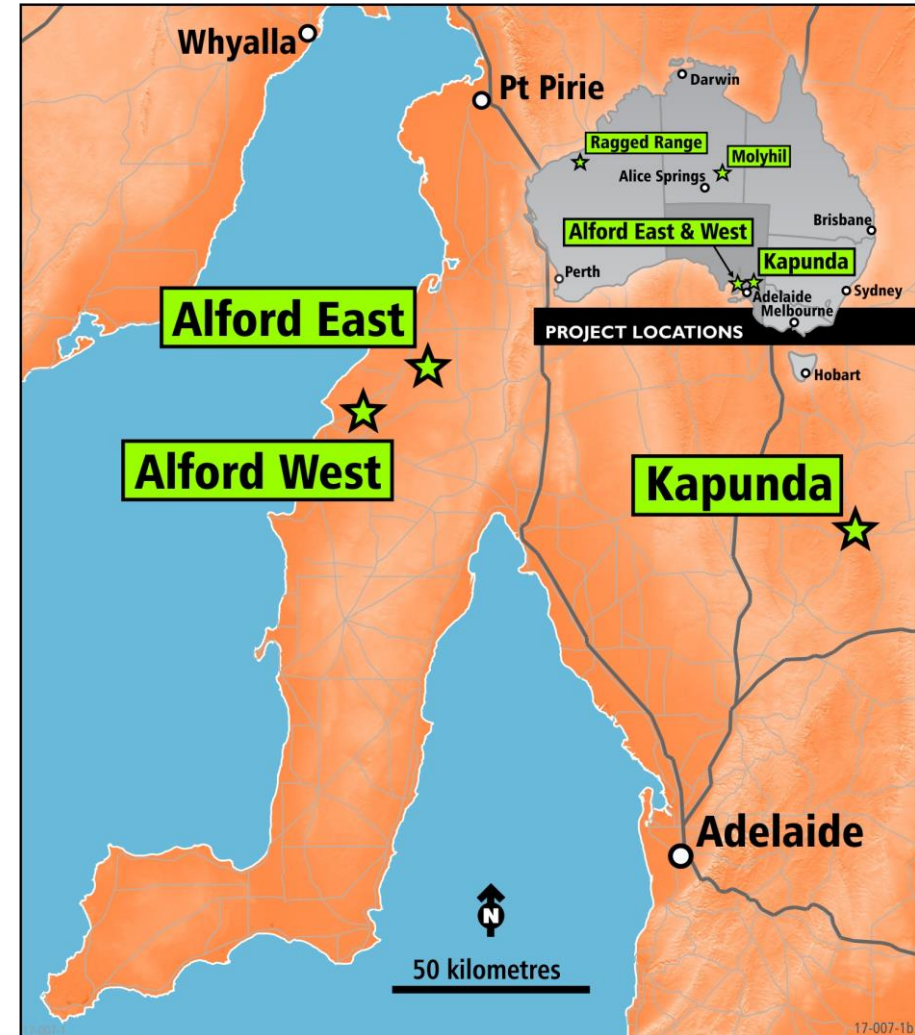
- **Alford East** – JV Farm-in earning 80% direct interest
- EnviroCopper Limited (ECL) – Thor hold 30% Equity Interest
 - **Kapunda** – ECL earning a 75% interest
 - **Alford West** – ECL earning a 75% interest

Geology

- Substantial near surface oxidised copper mineralisation, transitioning at depth to readily leachable chalcocite then primary chalcopyrite
- Leachable gold also present

Objective

- Low-Cost production of copper –gold using low impact In-situ Recovery techniques
- Protect Environment with economic opportunities created.



In-Situ Recovery Copper-Gold

- ESG – Favourable alternative to Traditional mining
- Low cost / low environmental impact metal production
- A chemical process rather than a high-cost mining operation (No large pit / no crushing or grinding / no waste dumps etc)
- ECL - Substantial Australian government & research body funding grant to fund technical feasibility \$2.85M
- THR - \$0.3M funding through SA government Accelerated Discovery Initiative
- ISR techniques have been utilised commercially in South Australia for >15 years – We have the expertise locally

ISR – ISCR Copper Projects (Arizona, USA)

- Florence Project, Taseko Mines
- Van Dyke Project, Copper Fox Metals
- Gunnison Project, Excelsior Mining Corp

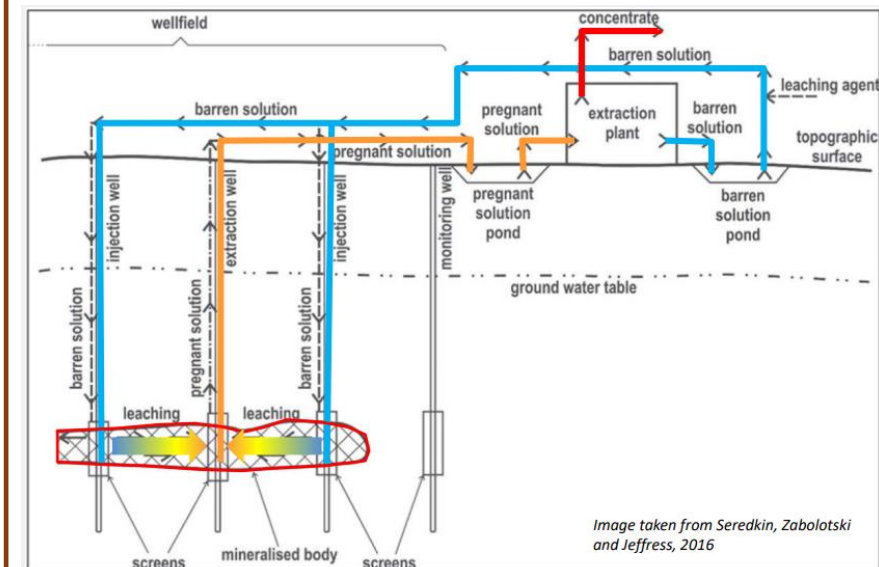
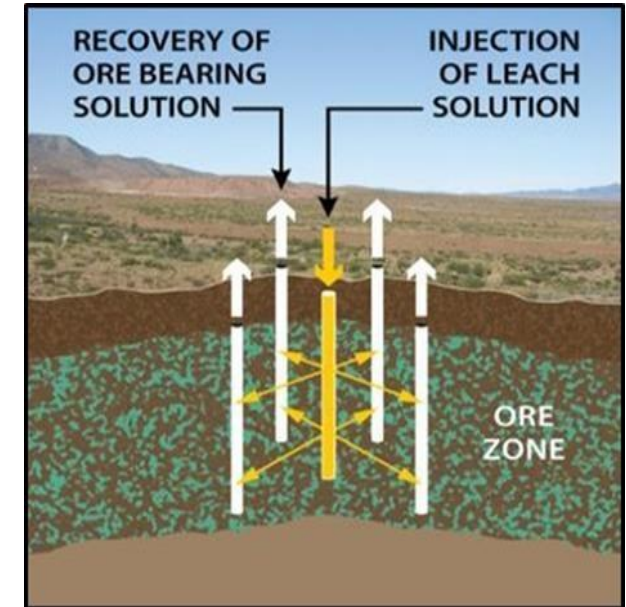
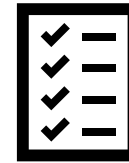


Image taken from Seredkin, Zabolotski and Jeffress, 2016

ESG - Social License

The Alford-East Copper-Gold Project is investigating/assessing the geological, environmental, social and economic impacts of In-Situ Recovery (ISR) at Alford East, to unlock the significant mineral value of this oxide copper-gold mineral resource for SA.



Project Level

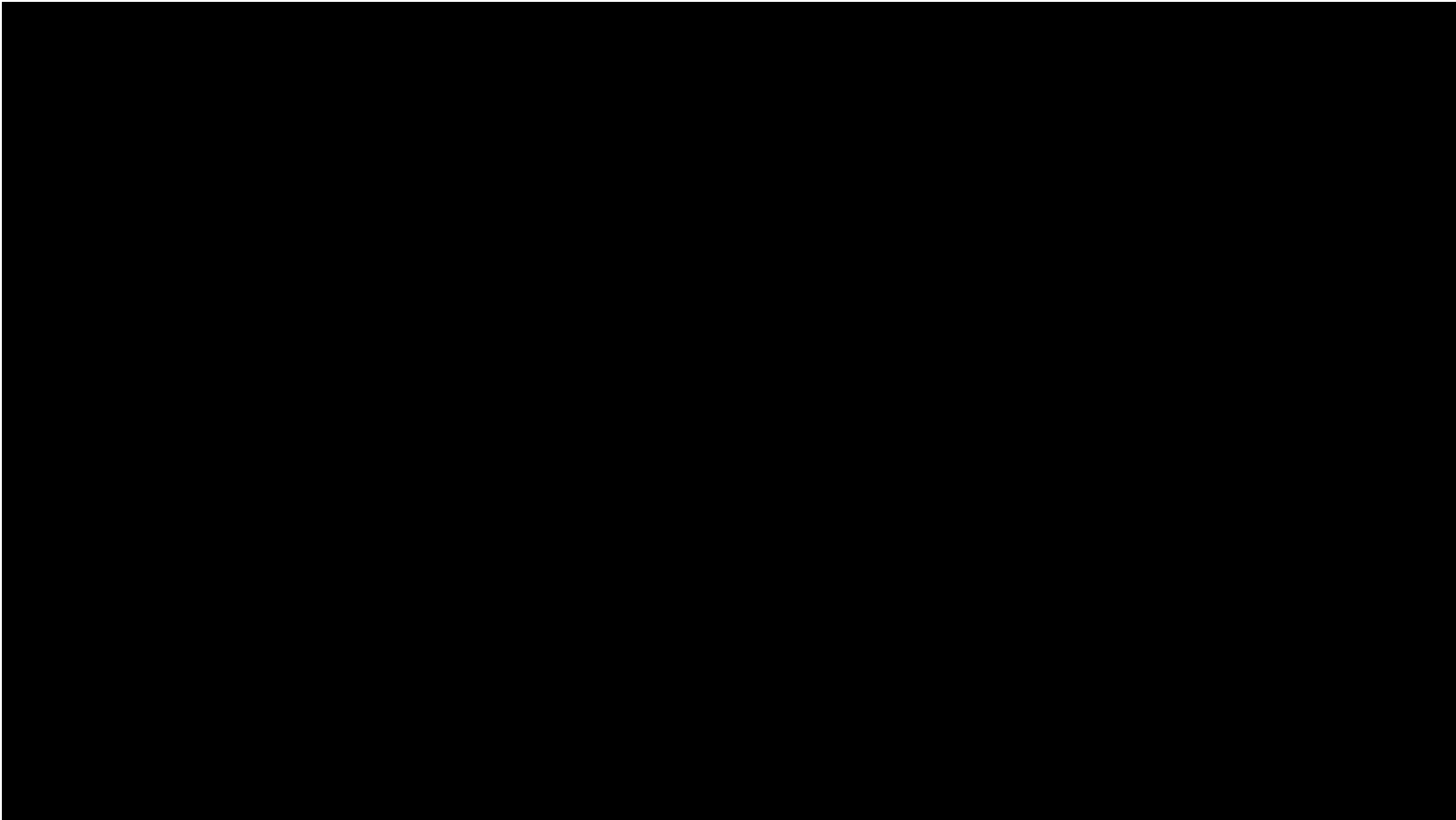
- Landholders
- Community
- Local Employment
- Council – Barunga West & Copper Coast

Corporate Level

- Employees
- Shareholders



ISR Video



Thor Mining

Diverse Portfolio

Copper – Australia (Three Projects)

- Technical Feasibility Stage
- Direct & Indirect Interest –Alford East, Alford West & Kapunda
- Resource Extension Potential

Gold - Australia

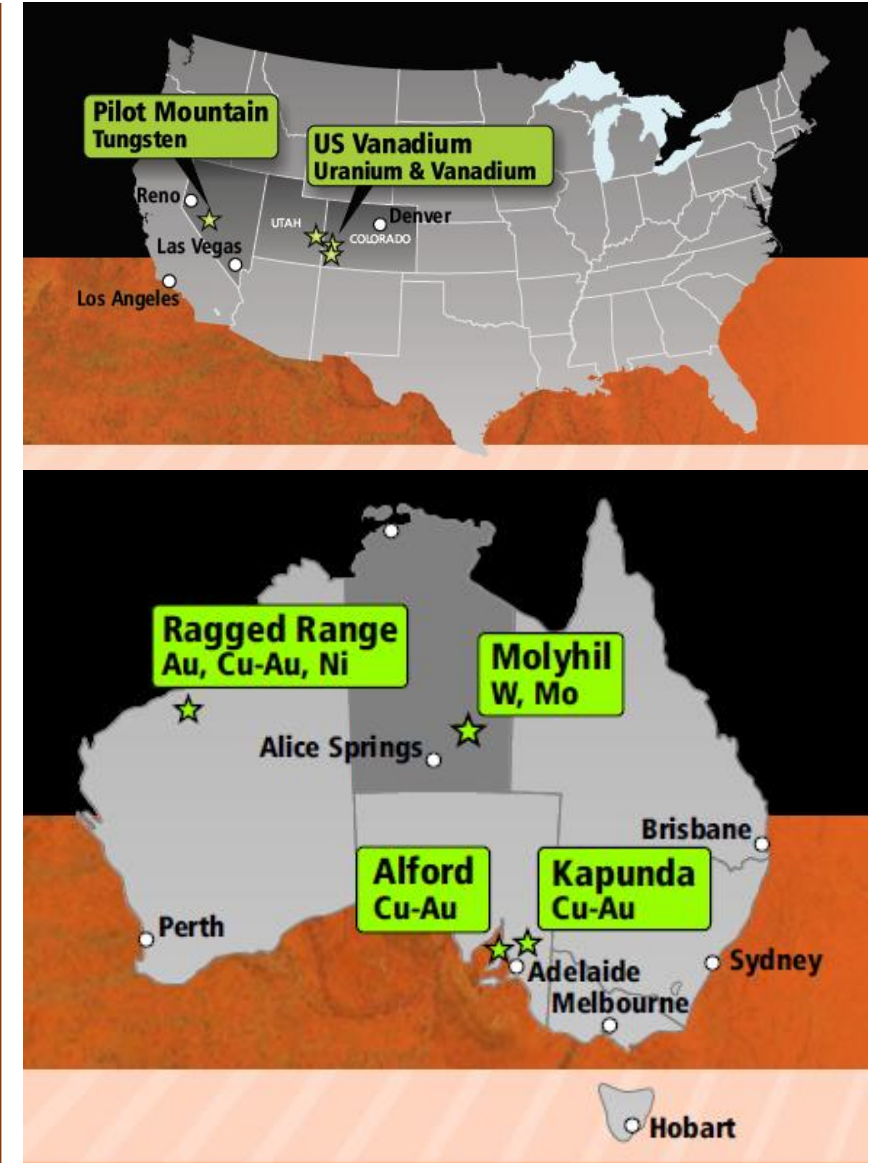
- Greenfields Exploration, Pilbara WA

Uranium and Vanadium - USA

- Brownfields Exploration

Tungsten (Australia & USA)

- Feasibility Study Stage, Molyhil & Pilot Mountain (US)



Alford East Copper-Gold – Thor earning 80%

Location

- Approx. 150km north-west of Adelaide, South Australia
- Adjacent Envirocopper Ltd Alford West Project

Geology

- Substantial near surface oxidised copper mineralisation, transitioning at depth to readily leachable chalcocite then primary chalcopyrite
- Leachable gold also present

History

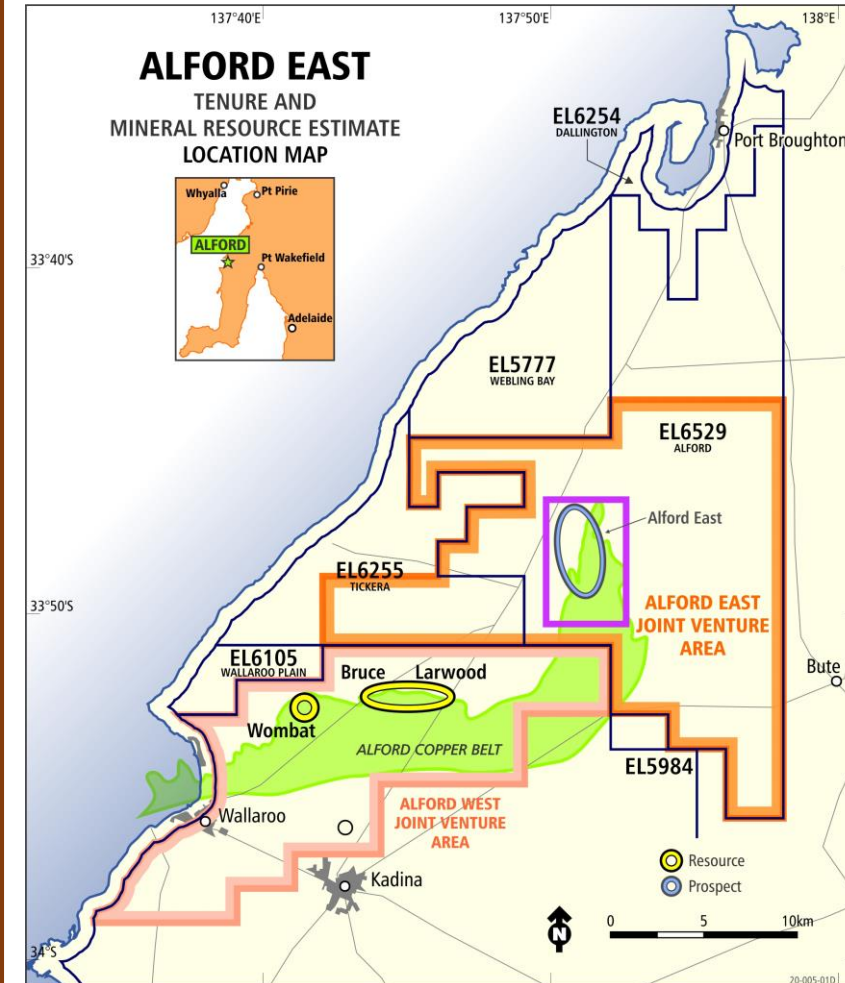
- Substantial drilling history chasing IOCG targets unveiling oxide mineralisation over several decades
- Multiple intersections of probable ISR amenable mineralization*

Infrastructure

- Located adjacent to mains electricity & sealed highways. Nearby towns should provide workforce on daily commute basis

Inferred mineral resource estimation

- 177,000t of contained copper and 71,500oz of contained gold



* (ASX:THR 23 November 2020)

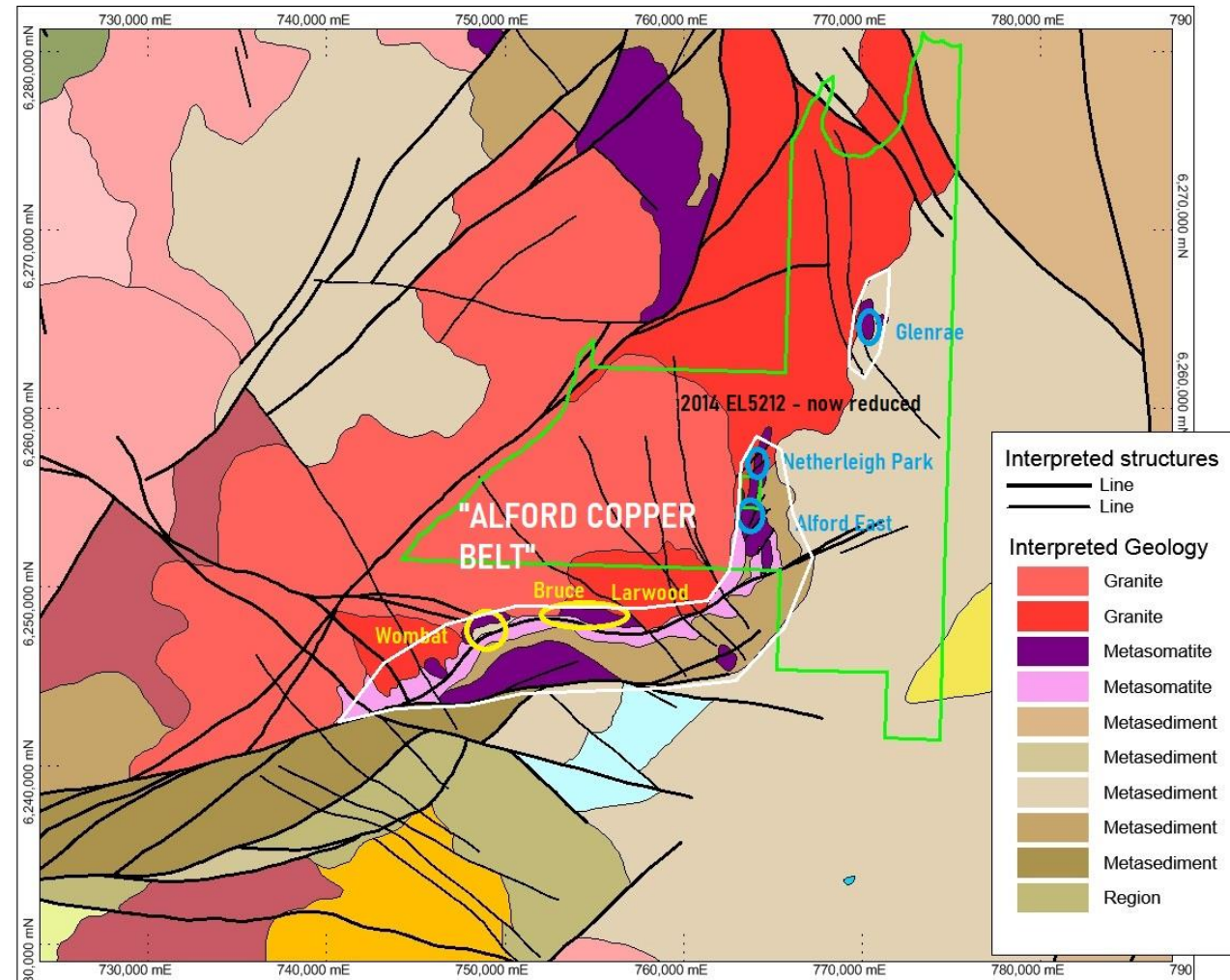
Geology

Location

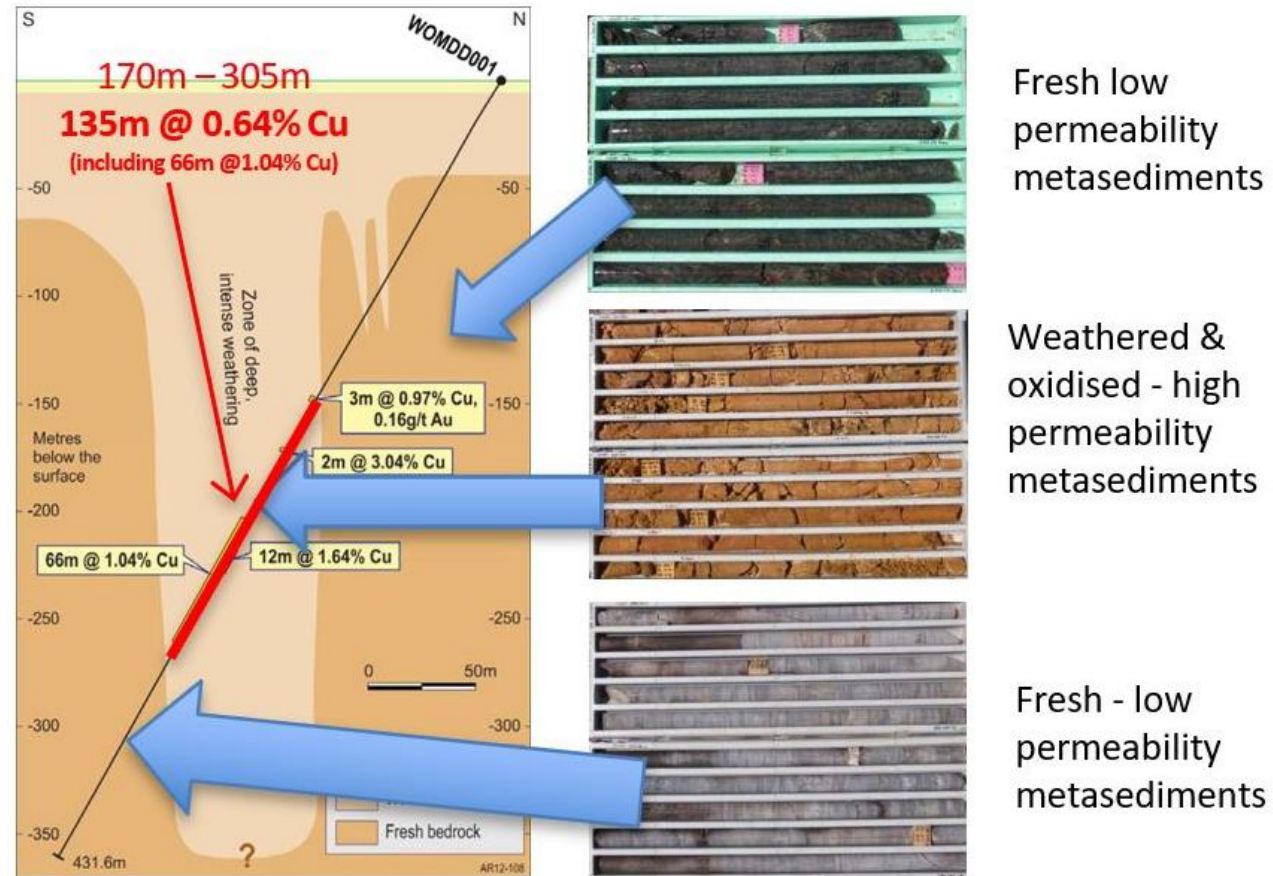
- Gawler Craton
- Metamorphosed Palaeoproterozoic Wallaroo Group sediments and volcanics intruded by Tickera granitoids, syntectonically emplaced during Hiltaba event
- Cambrian and Tertiary cover <10m in depth
- Substantial near surface oxidised copper mineralisation, transitioning to readily leachable chalcocite, then primary chalcopyrite
- Alford Copper belt is a semi-coherent zone of oxide copper- gold mineralization within a structurally controlled trough of highly kaolinized, oxidised metasomatite, adjacent to the Tickera Granite-**origins unknown**

History

- Substantial drilling history since the early 1990's chasing IOCG style primary mineralisation targets, unveiling oxide mineralisation over several decades.
- Oxide mineralisation essentially ignored
- Thor & ECL first companies to solely focus on the oxide-copper-gold mineralisation



Alford West Deeply Weathered Trough



Source: <http://saemc.com.au/archive/2017/17drown.pdf>

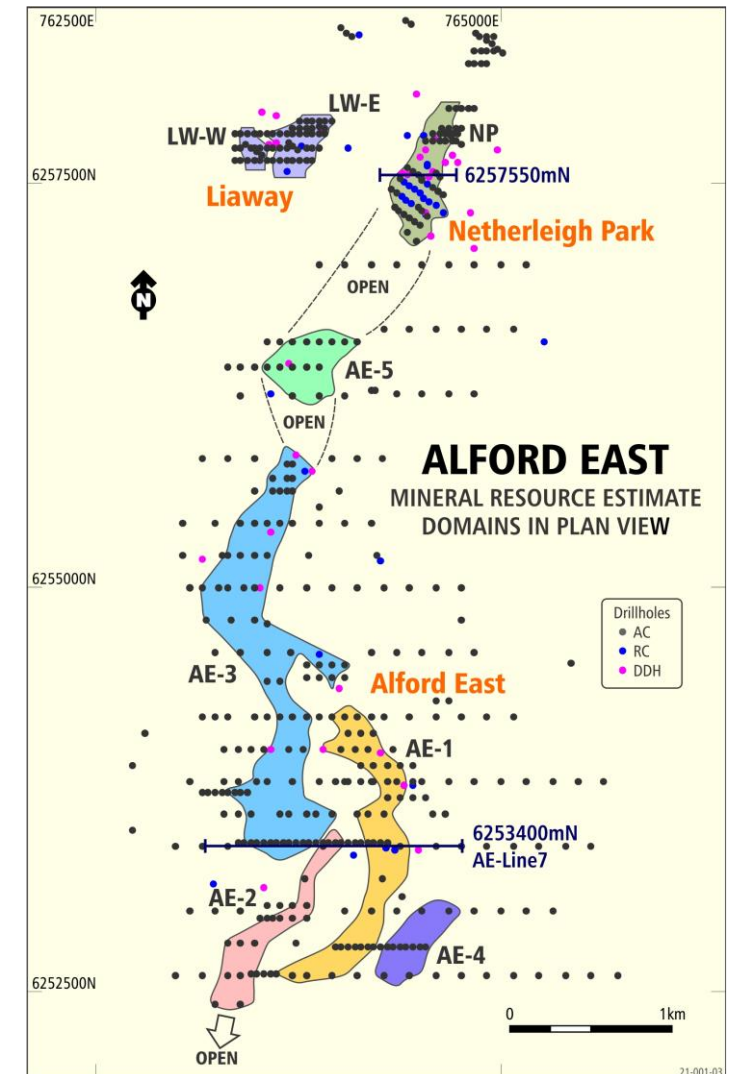
- Coherent zone of potentially ISR amenable copper and gold mineralisation in deeply weathered metasediments
- Initial modelling of the historic drillhole data shows deeper depressions and troughs within the weathering profile generally host greater accumulations of oxidized copper and gold mineralisation

Significant Contained Copper with Growth Potential

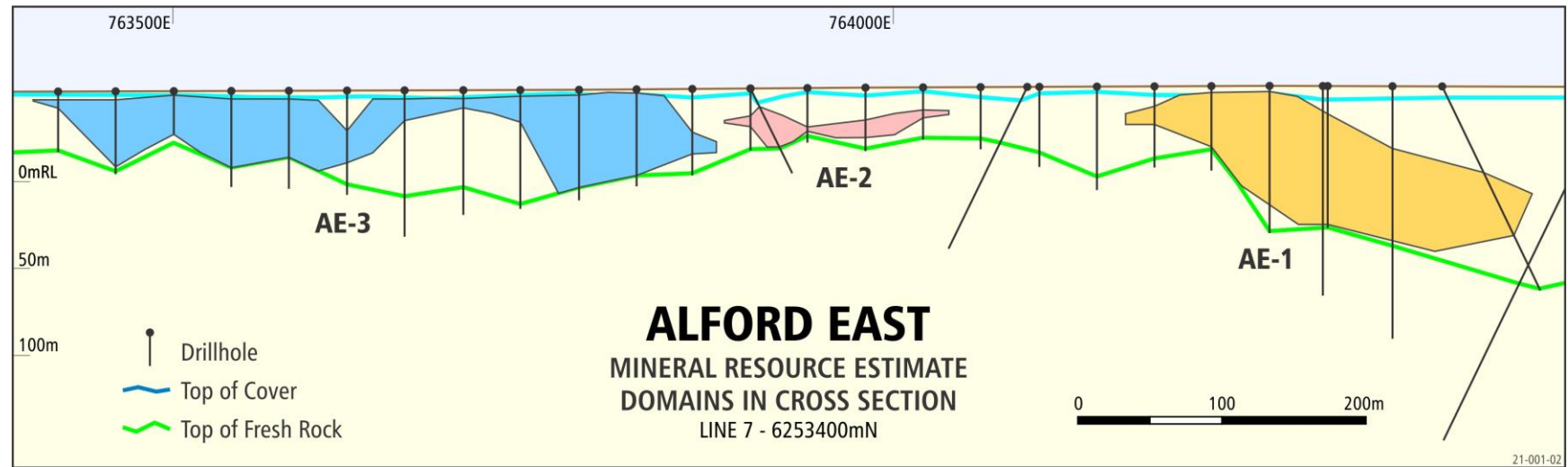
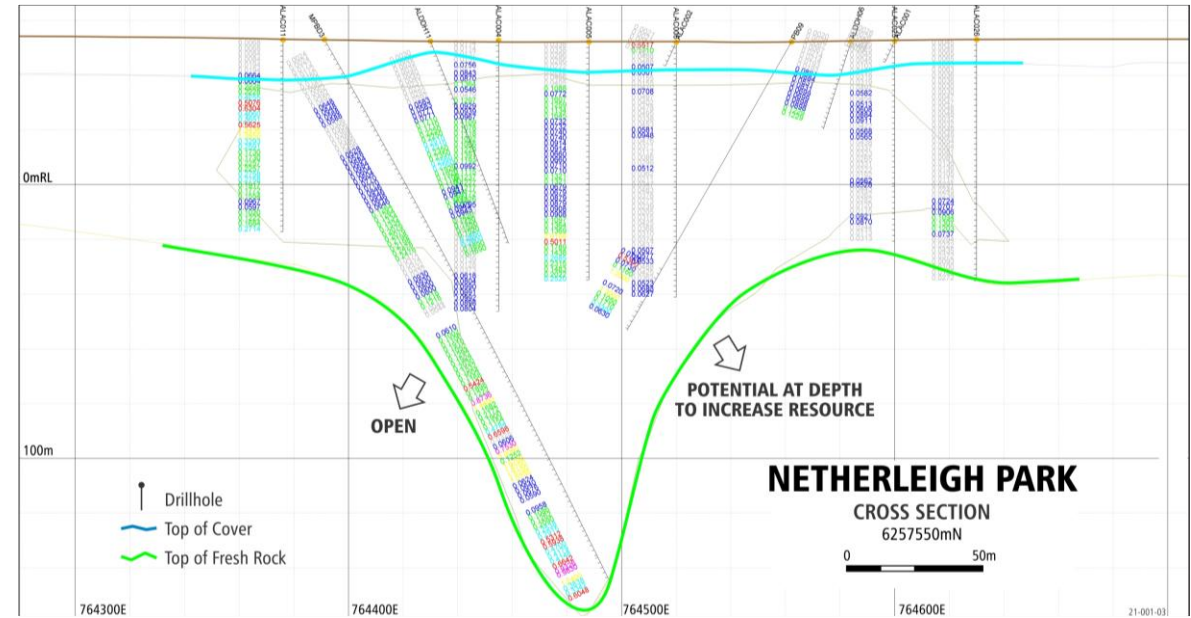
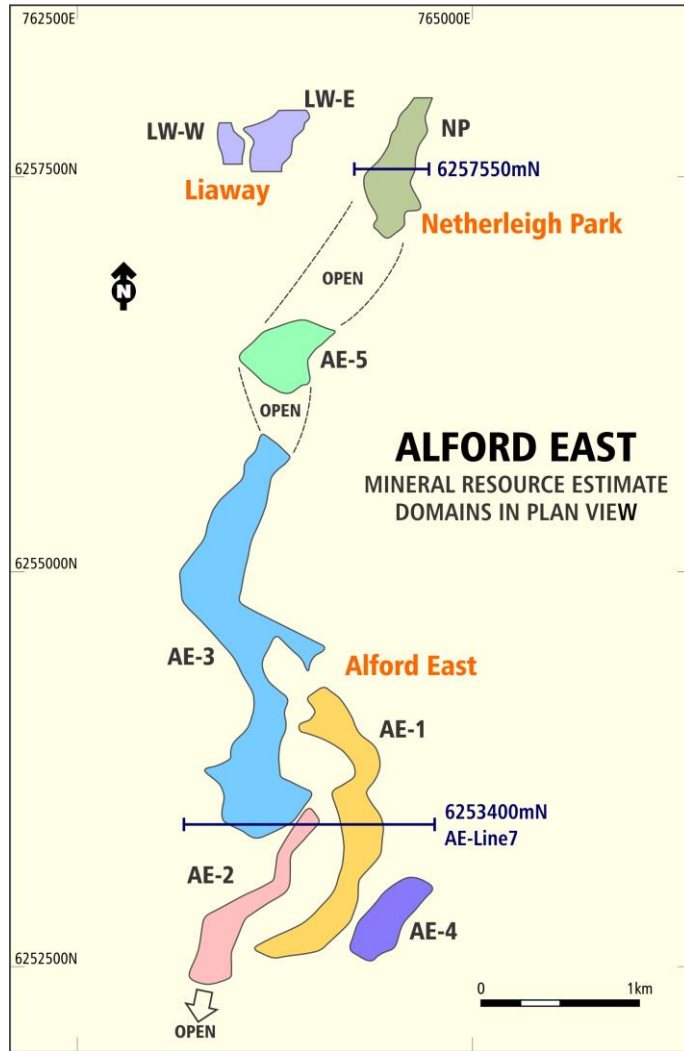
- Inferred Mineral Resource Estimated based solely on historic drilling (1982-2015)
- Significant Growth Potential – along strike and at depth

Inferred Mineral Resource Estimate for the Alford East Project – 22 nd January 2021 – 0.05% Cu cut-off (oxide material only) (ASX Jan 27 2021)					
Prospect	Tonnes (Mt)	Cu %	Au g/t	Contained Cu (t)	Contained Au (oz)
Alford East	85.3	0.12	0.021	104,000	57,000
Netherleigh Park	31.3	0.19	0.008	61,000	8,000
Liaway	40.3	0.18	0.011	73,000	14,500
Total	125.6	0.14	0.018	177,000	71,500

- Thor Mining PLC to acquire 80% interest in the Alford East Project
- All figures are rounded to reflect appropriate levels of confidence. Apparent differences may occur due to rounding.
- The Company is not aware of any information or data which would materially affect this previously announced resource estimate, and all assumptions and technical parameters relevant to the estimate remain unchanged.

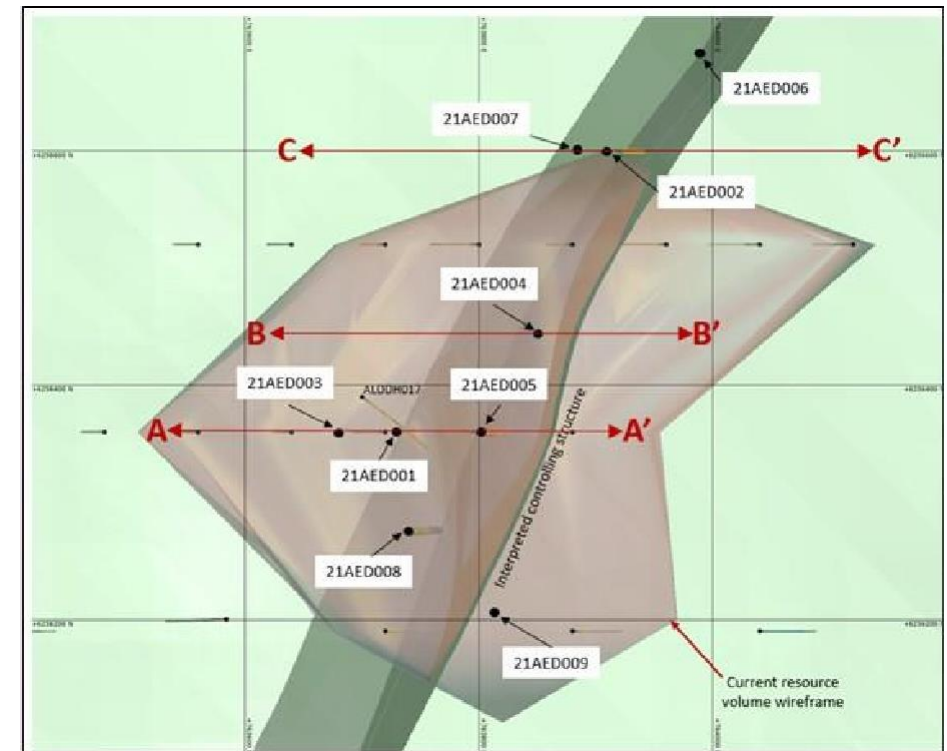
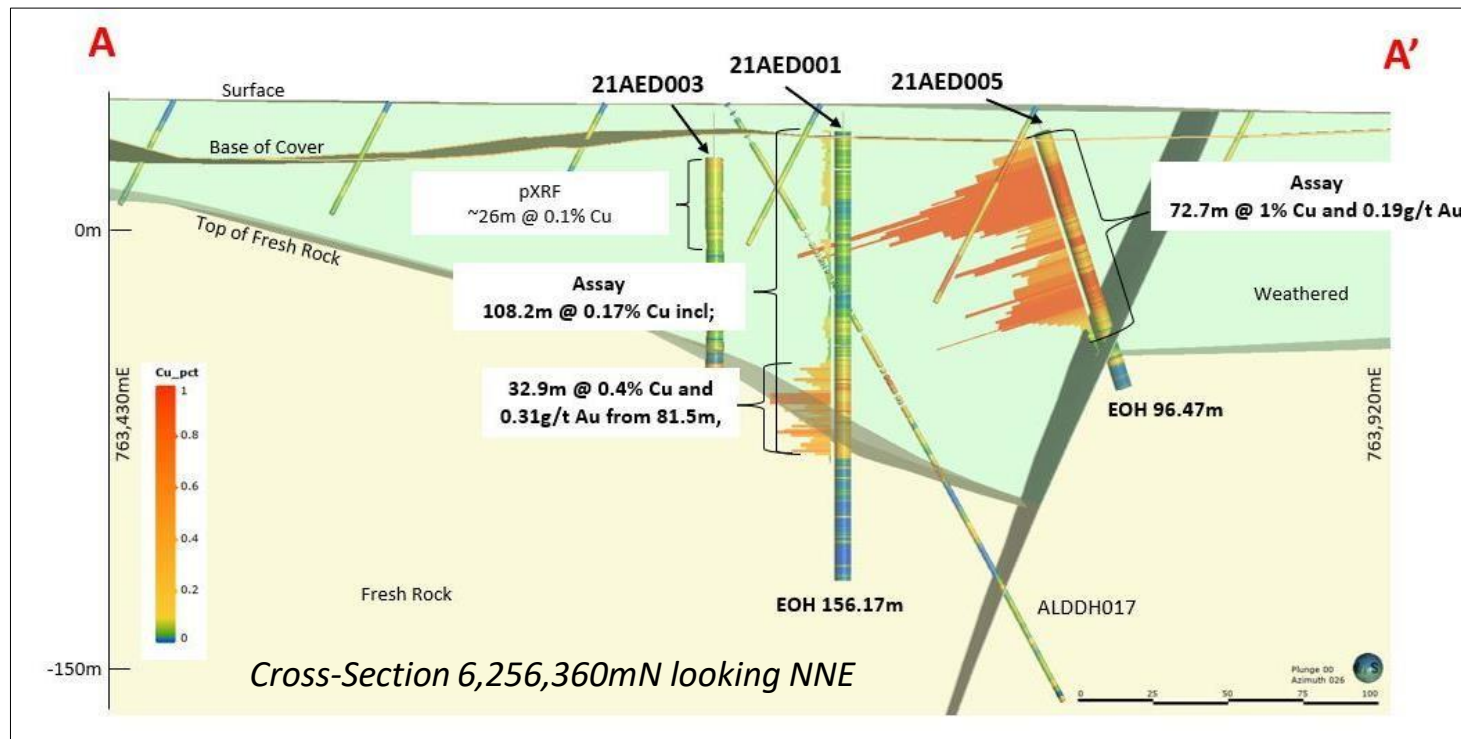


MRE Growth Potential



Broad High-Grade Results

- BROAD HIGH-GRADE COPPER-GOLD RESULTS – IDEAL FOR ISR
- **Diamond drilling Phase 1 Completed** (ASX:THR 31 August 2021)
 - 21AED005: **72.7m @ 1.0 % Cu and 0.19g/t Au from 6.3m**, including **18.2m @ 2.0% Cu and 0.34g/t Au**
 - 21AED001: **32.9m @ 0.4% Cu and 0.31g/t Au from 81.5m** (ASX:THR 31 August 2021)

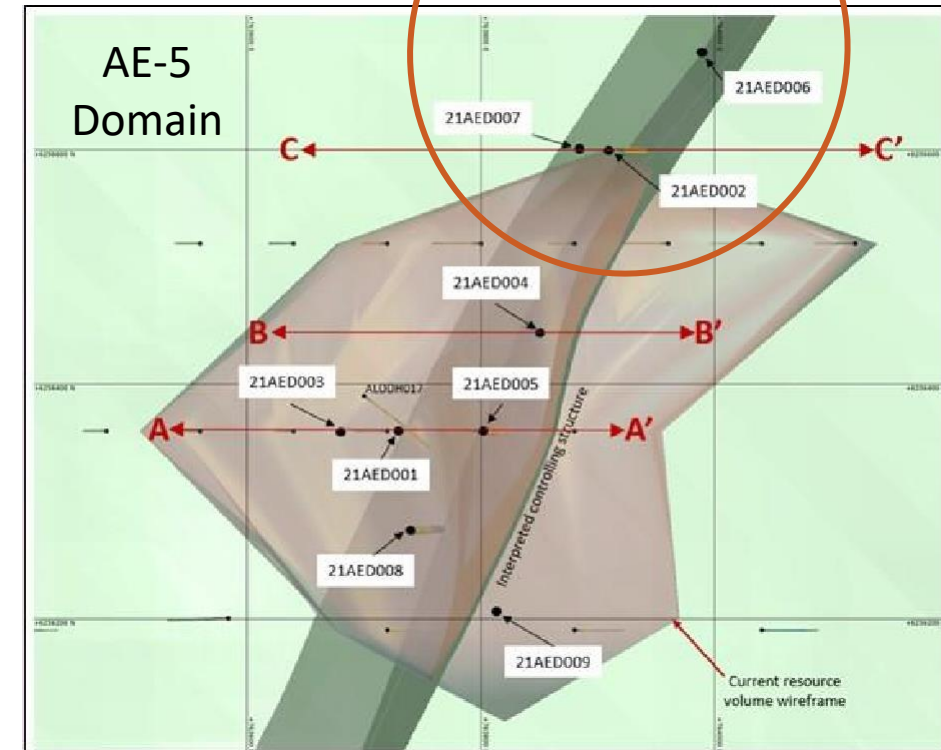
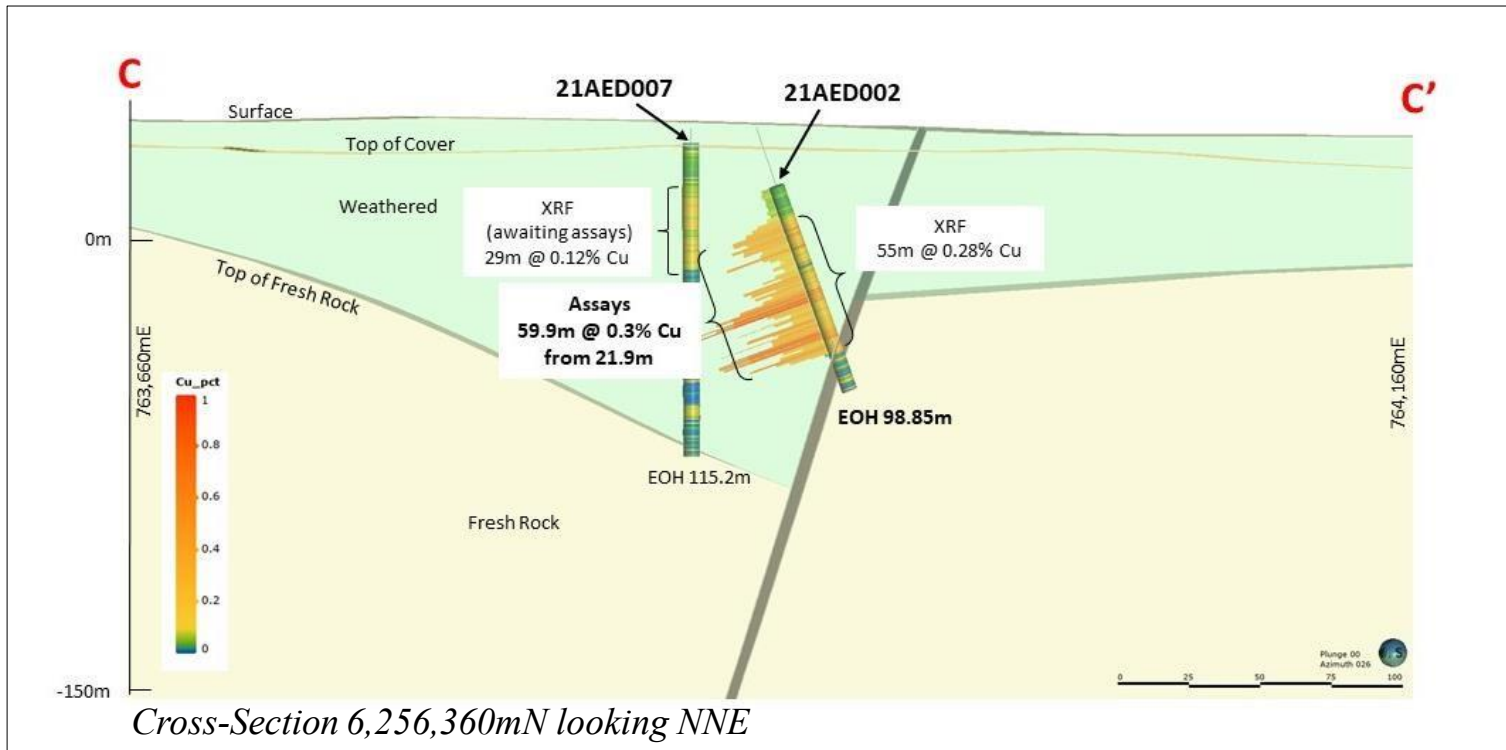


MRE Growth Potential

21AED002: 59.9m @ 0.3% Cu from 21.9m (ASX:THR 31 August 2021)

Further drilling Scheduled Early 2022

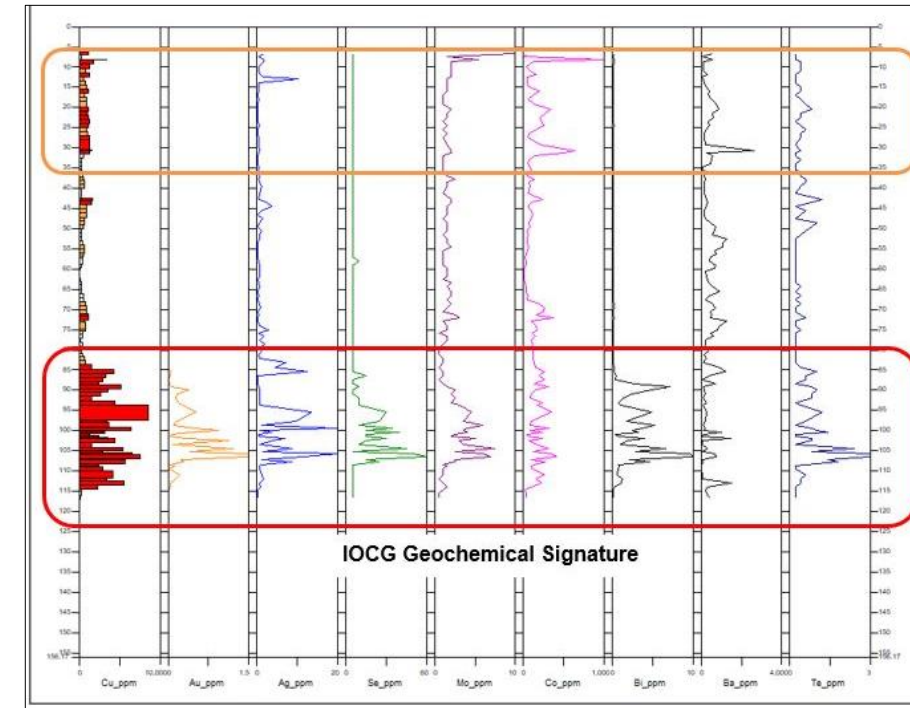
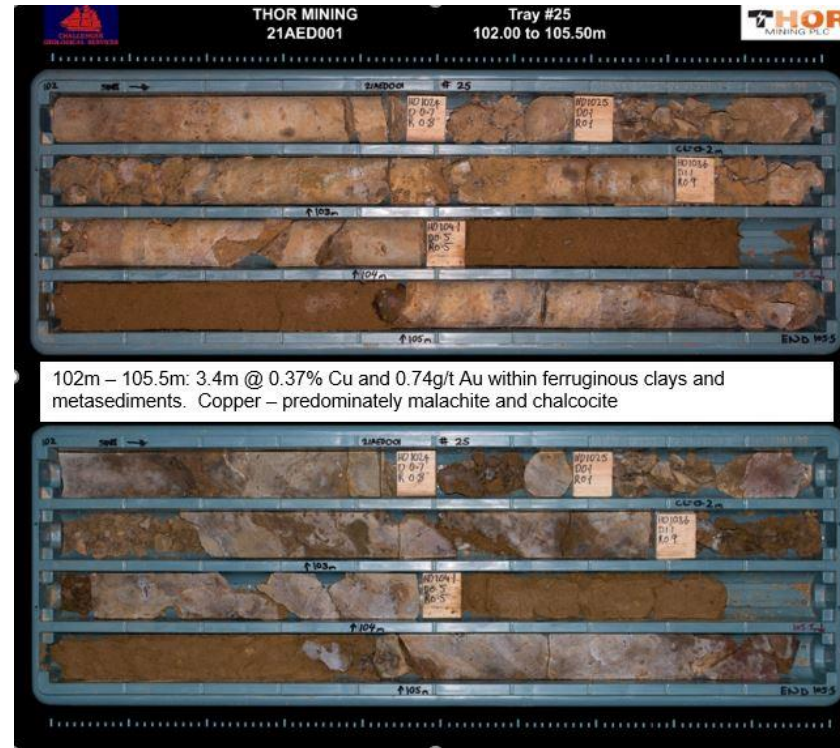
Mineralisation extends to the north beyond MRE AE-5 Domain envelope



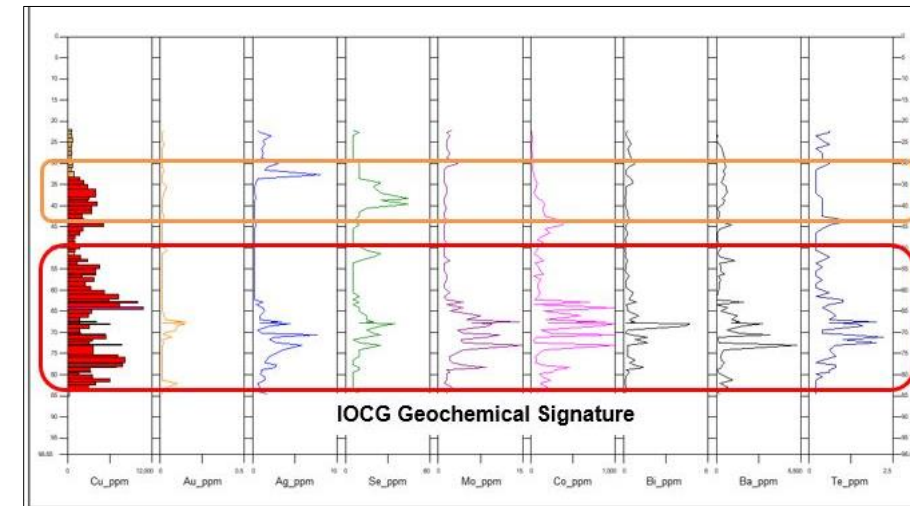
Oxide Zone - Saprolite

Oxide weathered zone –saprolite

- Upper Zone (supergene)
- Lower zone (oxide IOCG Primary –with gold)
- Copper: predominately malachite and chalcocite with minor atacamite and native copper, transitioning into chalcopyrite

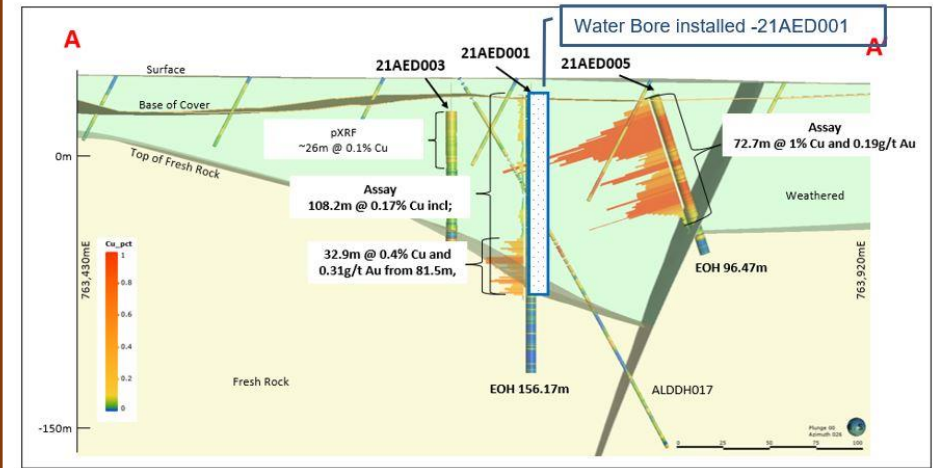


Log for 21AED001
Log for 21AED002



Hydrogeology- Aquifer Pump Test

- 21AED001 = Water Bore (AE-5 Domain)
- The copper mineralisation at the test site is saturated
- The water table elevation is approximately 38m AHD. At the test site this equates to a depth to water of 12 m below ground surface.
- Salinity (TDS) of ~20,000 mg/L.
- Groundwater quality at the site is saline - precludes agricultural or potable use.
- pH - 8.1 Alkaline
- The rock hosting the copper mineralisation and is moderately permeable
- Yield under pumping of 0.6 L/s.
- The aquifer transmissivity is approximately 2 to 3 m²/day and the concomitant bulk hydraulic conductivity is approximately 0.14 m/day.
- In an ISR setting, wells with 18 m long screens can be expected to yield around 0.5 L/s
- Encouraging early results for potential ISR.



(ASX:THR 19 October 2021)

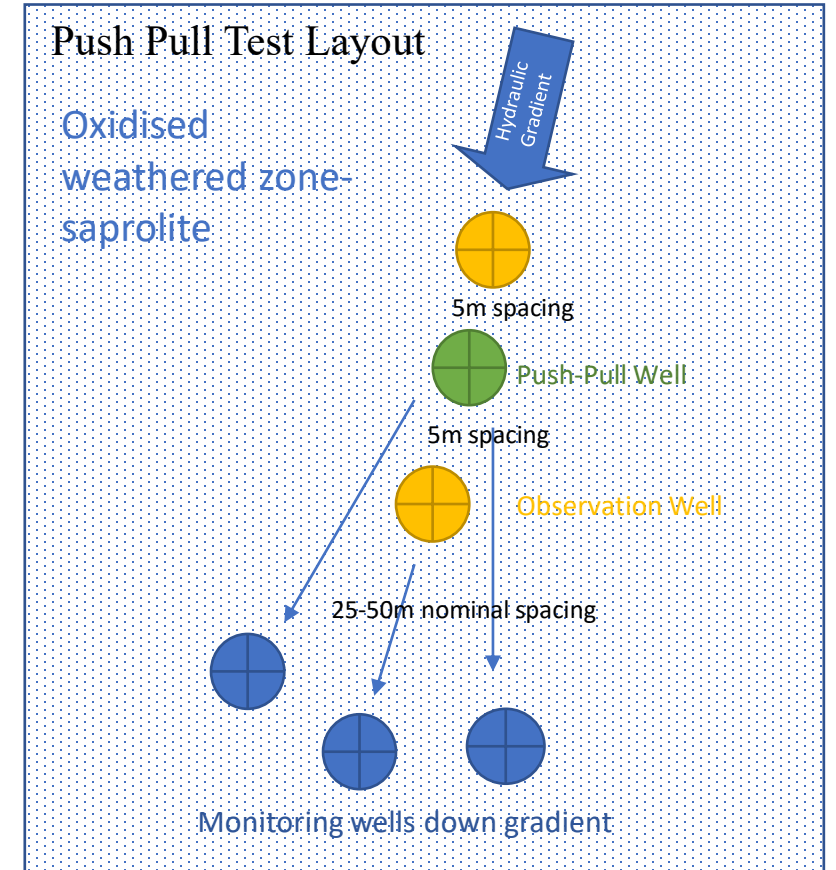
Hydrogeology- Lixiviant Trial

Stage 1: Baseline Data

- Aquifer Seasonal Pumping tests = water levels and quality. 3 monthly
- More information required on hydraulic gradients and groundwater flow paths.

Stage 2: Lixiviant Trial - Push pull Test

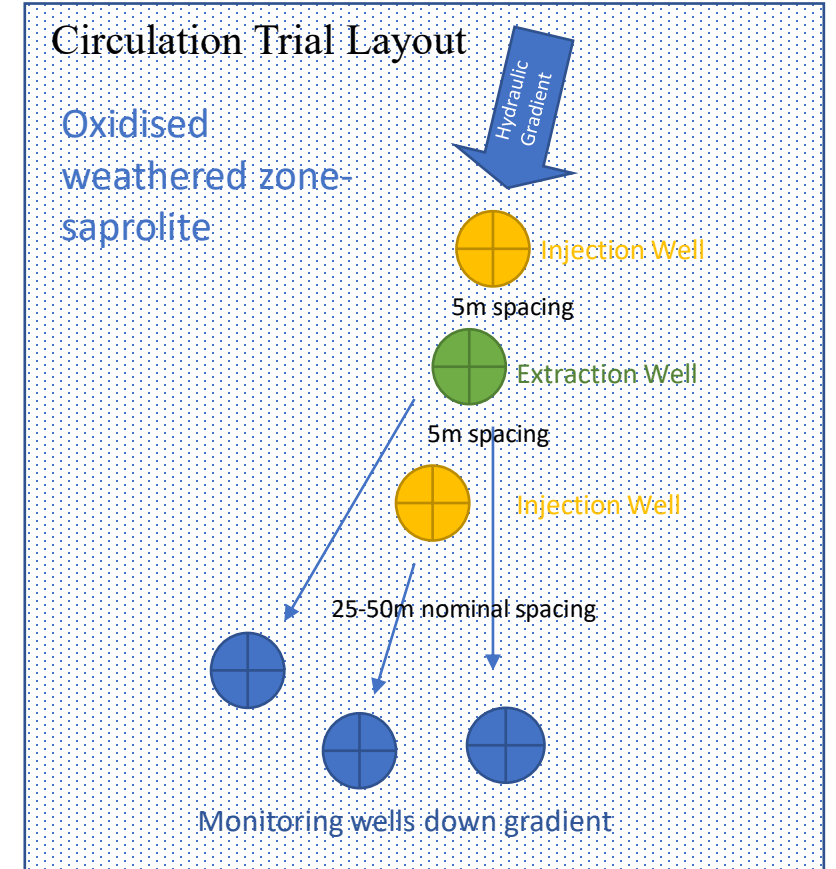
- Install Well Array
- Well Connectivity Tracer Test - NaBr - demonstrates connectivity between tracer test and observation and monitoring wells
- Lixiviant Injection and Extraction
- Rehabilitation



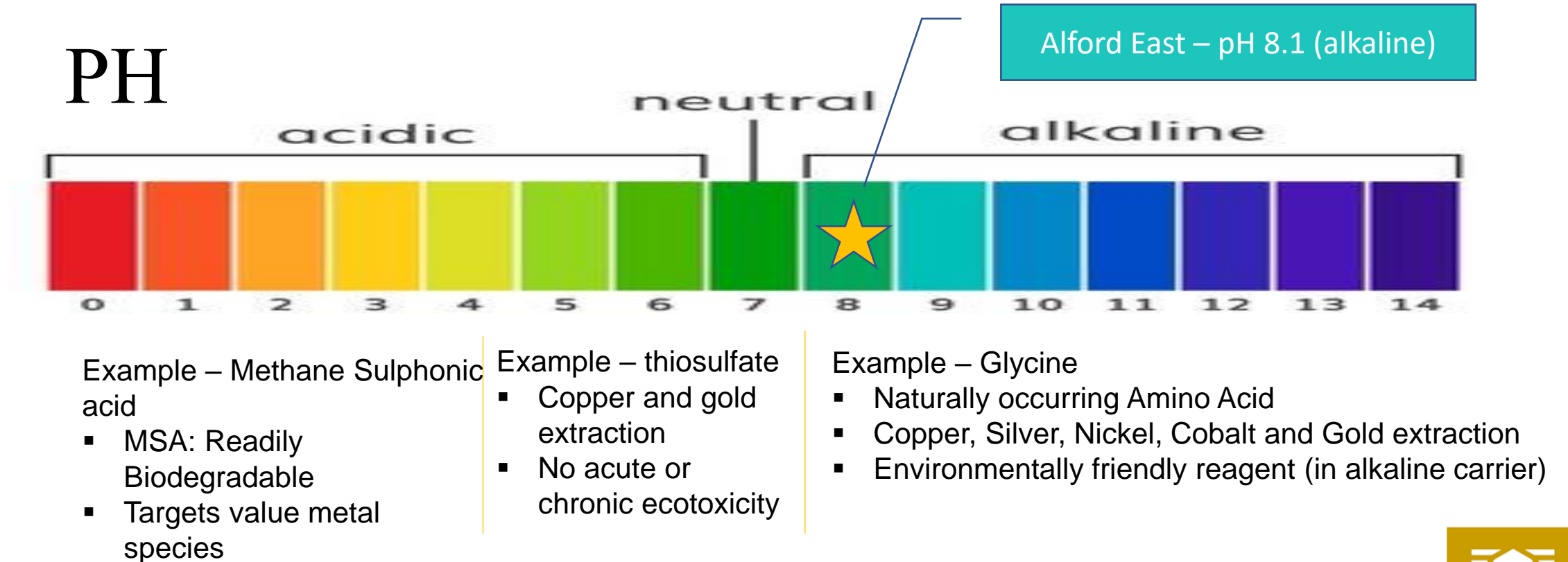
Hydrogeology- Lixiviant Circulation

Stage 2b: Lixiviant Trial – Circulation Test

- Install Well Array
- Lixiviant Circulation
 - Construct flow control system (well house)
 - Test lixiviant grades and copper-gold recovery under in-situ conditions
 - Copper concentration in lixiviant and reagent consumption is monitored
- Rehabilitation - restore ground water to baseline conditions



Lixiviant – Choice lixiviant to suit ground water conditions

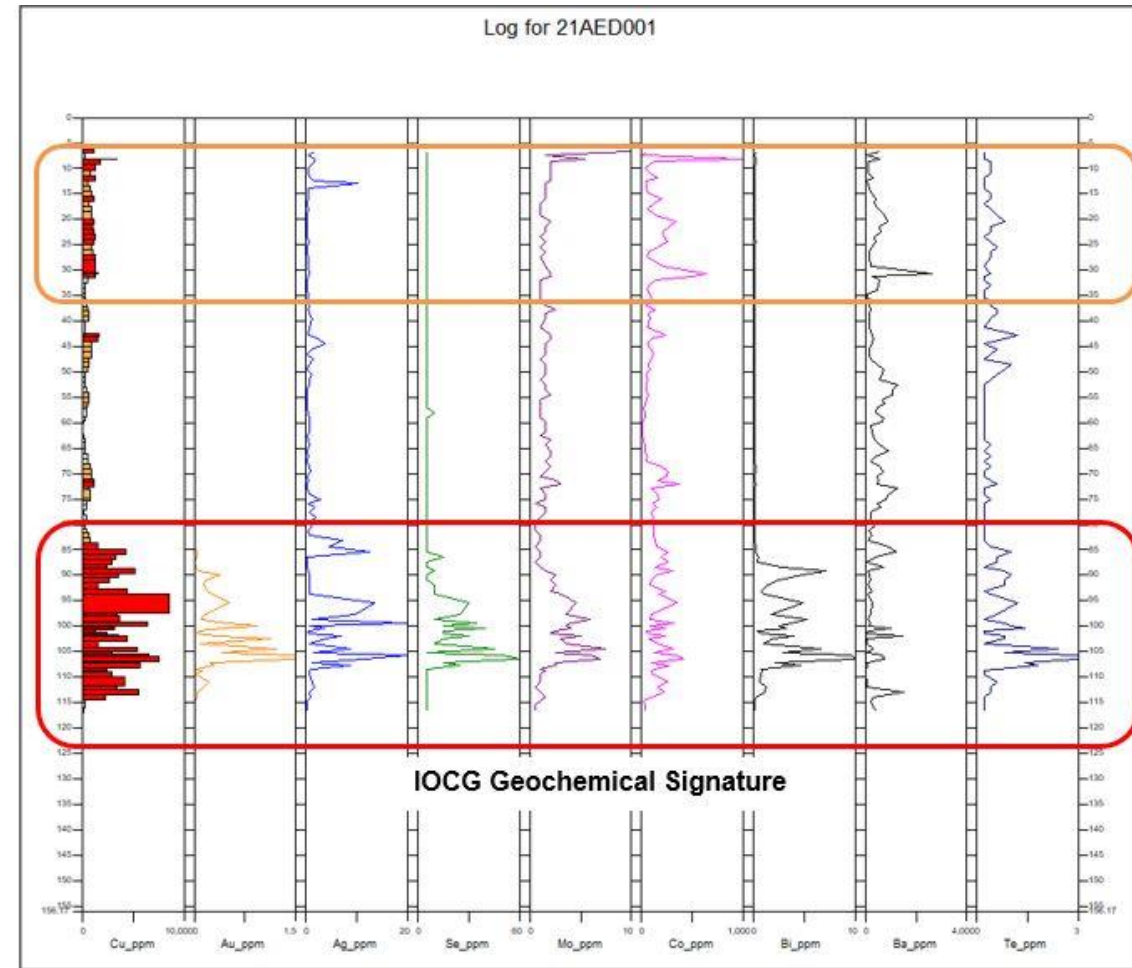


Cleaner, safer lixiviants than toxic chemicals such as cyanide or Sulfuric Acid



Hydrometallurgy

- Lixiviant trials -21AED001
- 3 trials underway
 - Upper Zone (supergene)
 - Lower zone (oxide IOCG Primary –with gold)
- And blended (Upper & Lower)

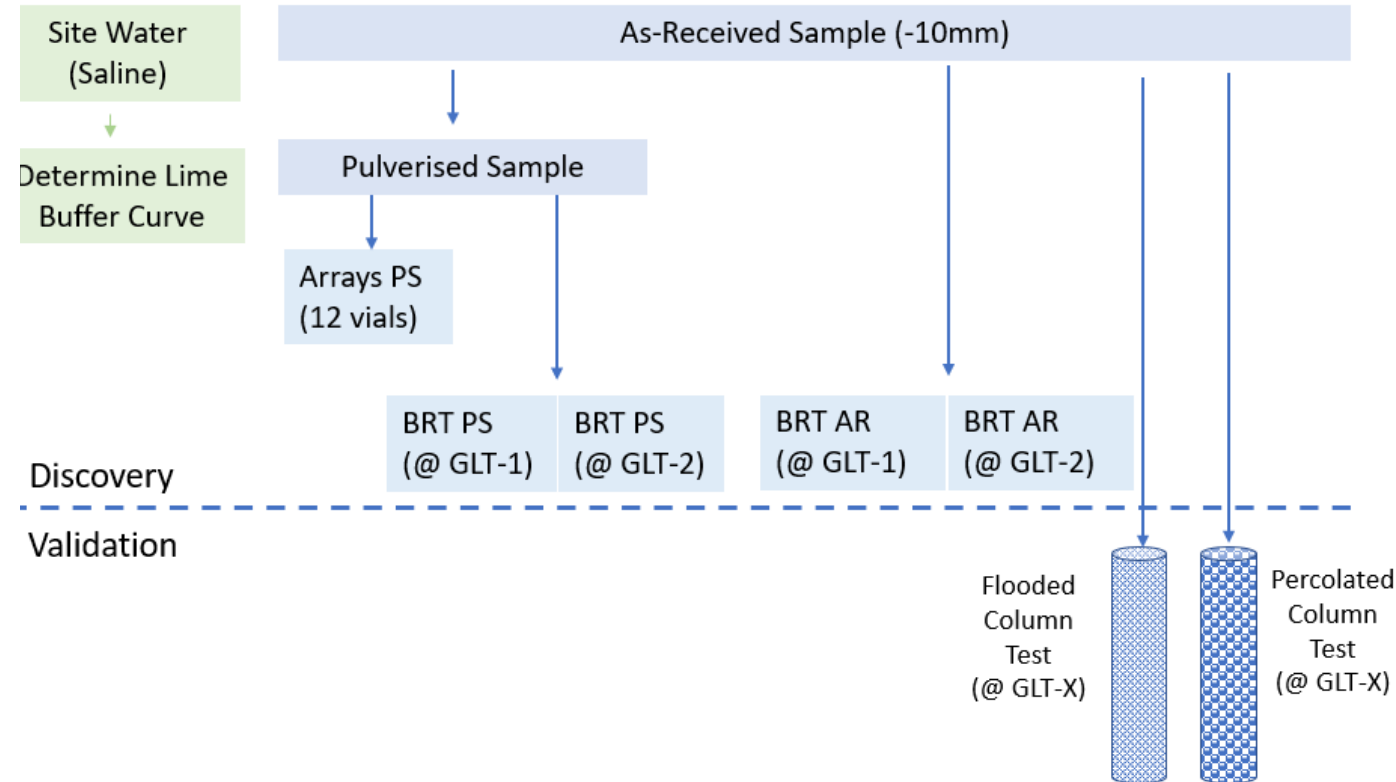


Upper Zone: 25.3m @ 0.11% Cu from 6.2m

Lower Zone: 32.9m @ 0.4% Cu and 0.31g/t Au from 81.5 m

Glycine Trials –GlyLeach™

- Glycine: simple amino acid
- Environment: non toxic
- Selective: solubilise Cu, Ni, Co, Zn (Au) whilst Fe, Mn silicates and carbonates remain in solid phase
- PH: Alkaline leaching conditions
- Low consumption: non volatile
- Recycle: not chemically consumed in overall process.



Clear Pathway to Development & Production

Proof of concept



- Resource drilling & geological Modelling
- Aquifer pumping tests
- Lixiviant Tests

Timeline subject to DEM approvals

For further
information

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