



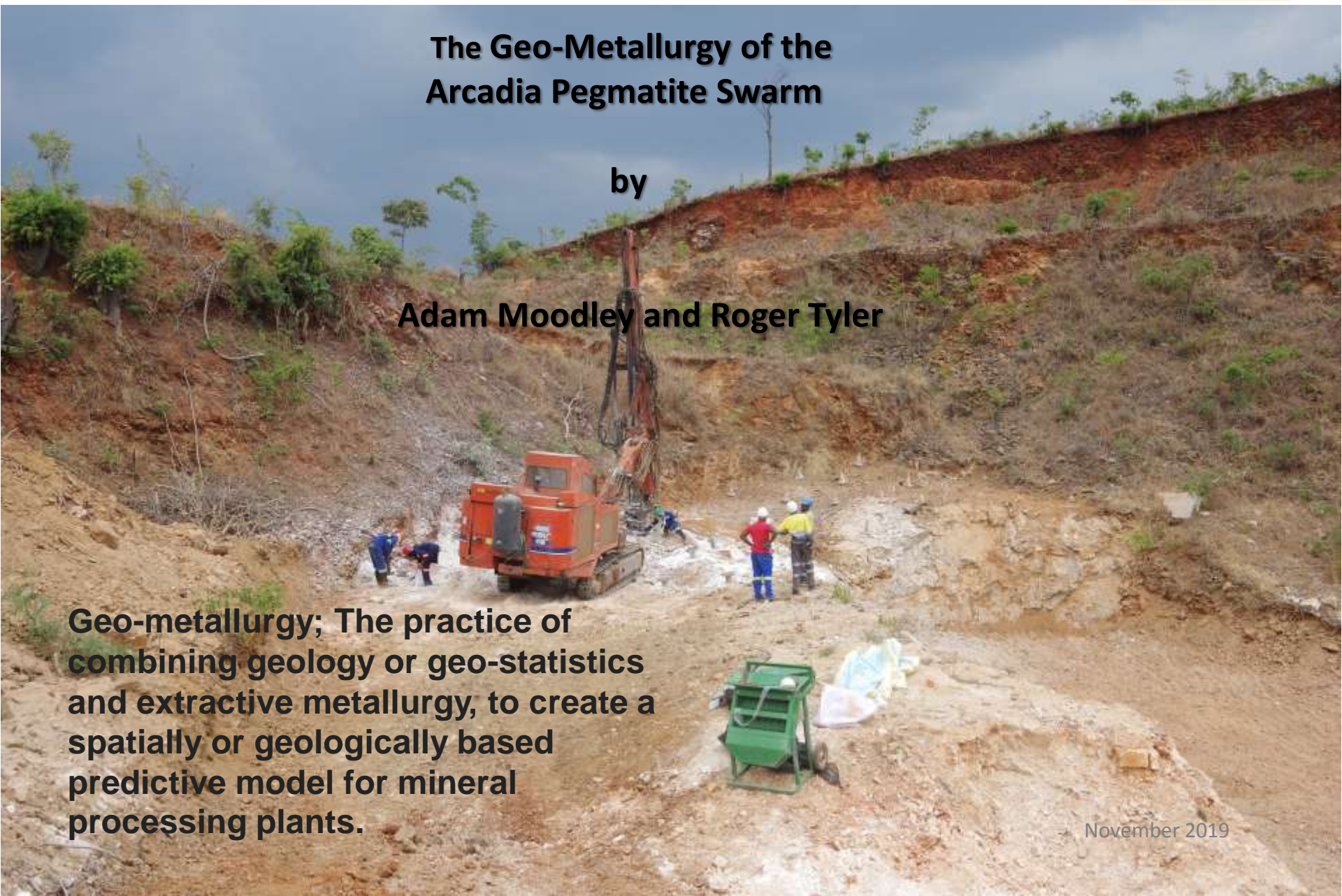
The Geo-Metallurgy of the Arcadia Pegmatite Swarm

by

Adam Moodley and Roger Tyler

Geo-metallurgy; The practice of combining geology or geo-statistics and extractive metallurgy, to create a spatially or geologically based predictive model for mineral processing plants.

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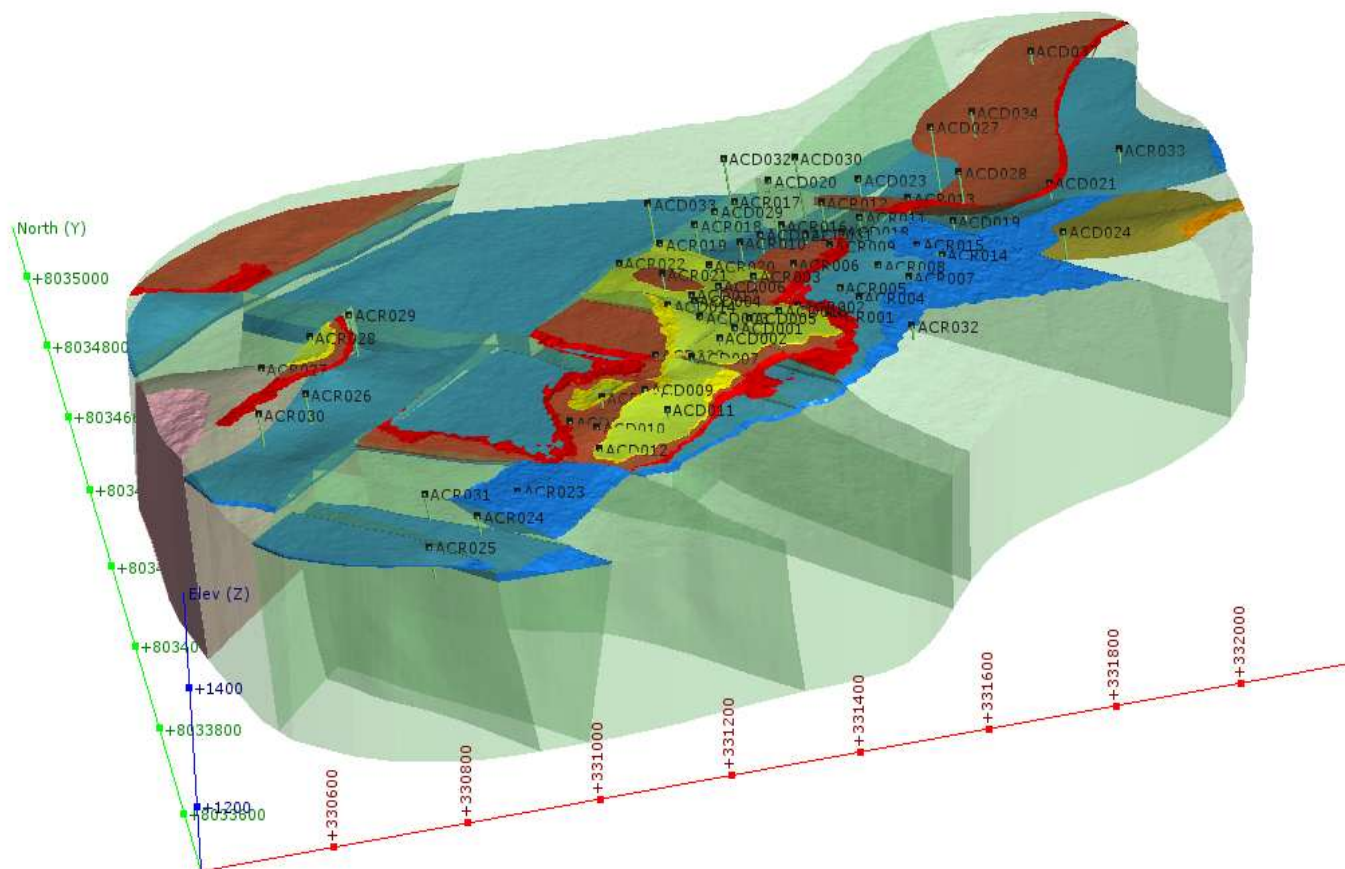


Arcadia Lithium Project Location

- 35km East of Harare
- 1050Ha Mining Lease
- Excellent access to infrastructure, including roads, rail, power and skilled labour
- <20km gravel road to sealed highway & railhead to Beira, 450km away
- Mining and Environmental Approvals in place
- National Project and Special Economic Zone Status
- Abundant groundwater available
- Surface rights secured by Prospect and being developed for agriculture



Exploration Drilling and Resource Classification Complete



**301 holes drilled
totalling >25,000 m
completed**

**>5,000 Assays & 3,200
XRDs**

**>13,000 Soil
Geochemical
samples**

**Ground magnetics to
aid structural
interpretation.**

**Regional geochemical
exploration programme
continues**

November 2019



Li, Cs, Be, Ta, Nb



LCT Degeometite



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Ore Minerals



Petalite - Lithium Aluminium Phyllosilicate $\text{LiAlSi}_4\text{O}_{10}$
(Contains around 4.8% Li_2O)



Eucryptite – 11.8% Li_2O



100mm



Spodumene -

Lepidolite – Lithium Mica $\text{KLi}_2\text{Al}(\text{AlSi})_3\text{O}_{10}(\text{F},\text{OH})_2$,
(Contains around 7% Li_2O)
Fine to medium-grained, >1mm - >5mm



Lithium Aluminium Silicate P-T conditions and Arcadia Pegmatites paragenetic sequence



Paragenetic sequence for the Arcadia pegmatite

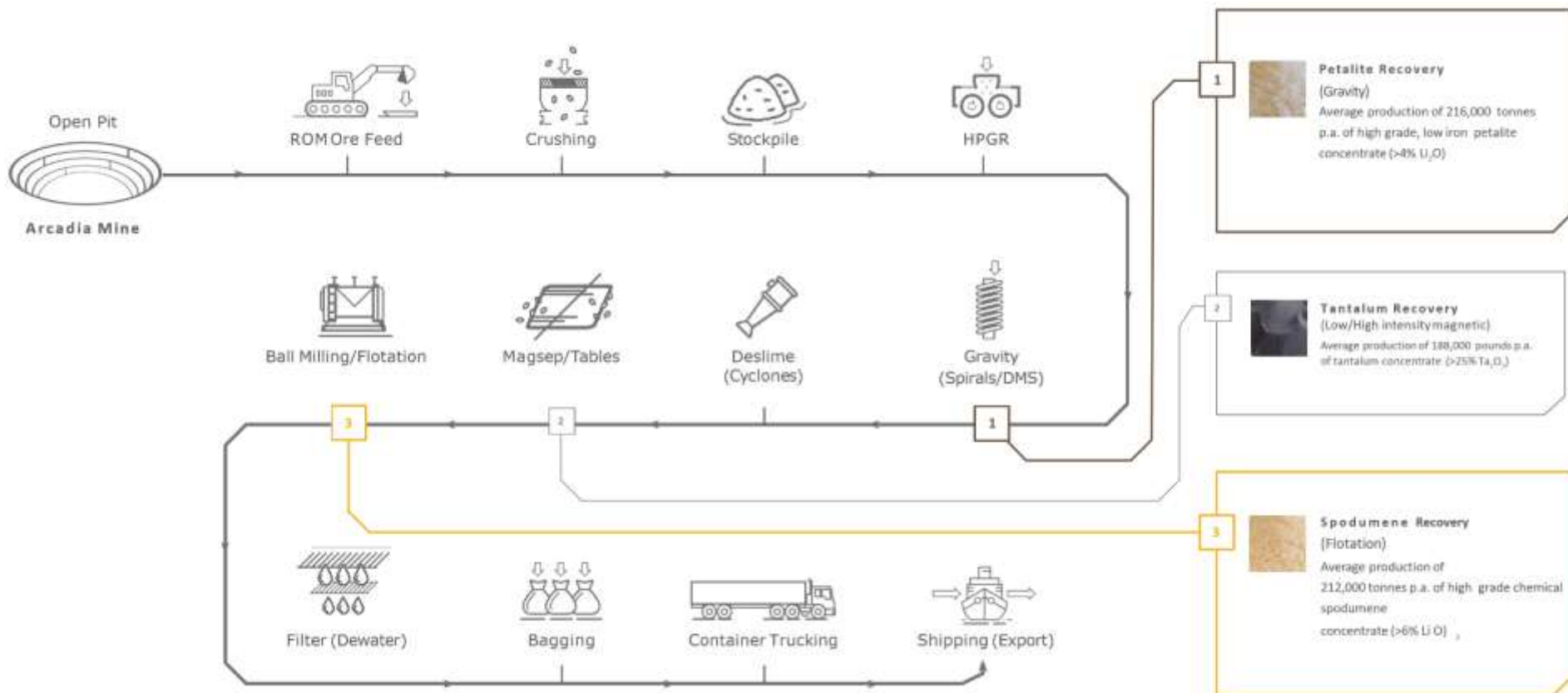
Mineral	Early (primary magmatic crystallisation)	Intermediate (veins and alteration)	Late (alteration)
Quartz			
Microcline			
Petalite			
Spodumene			
Eucryptite			
Lepidolite			
Hectorite			

Petalite: low to moderate temperature and generally lower pressure

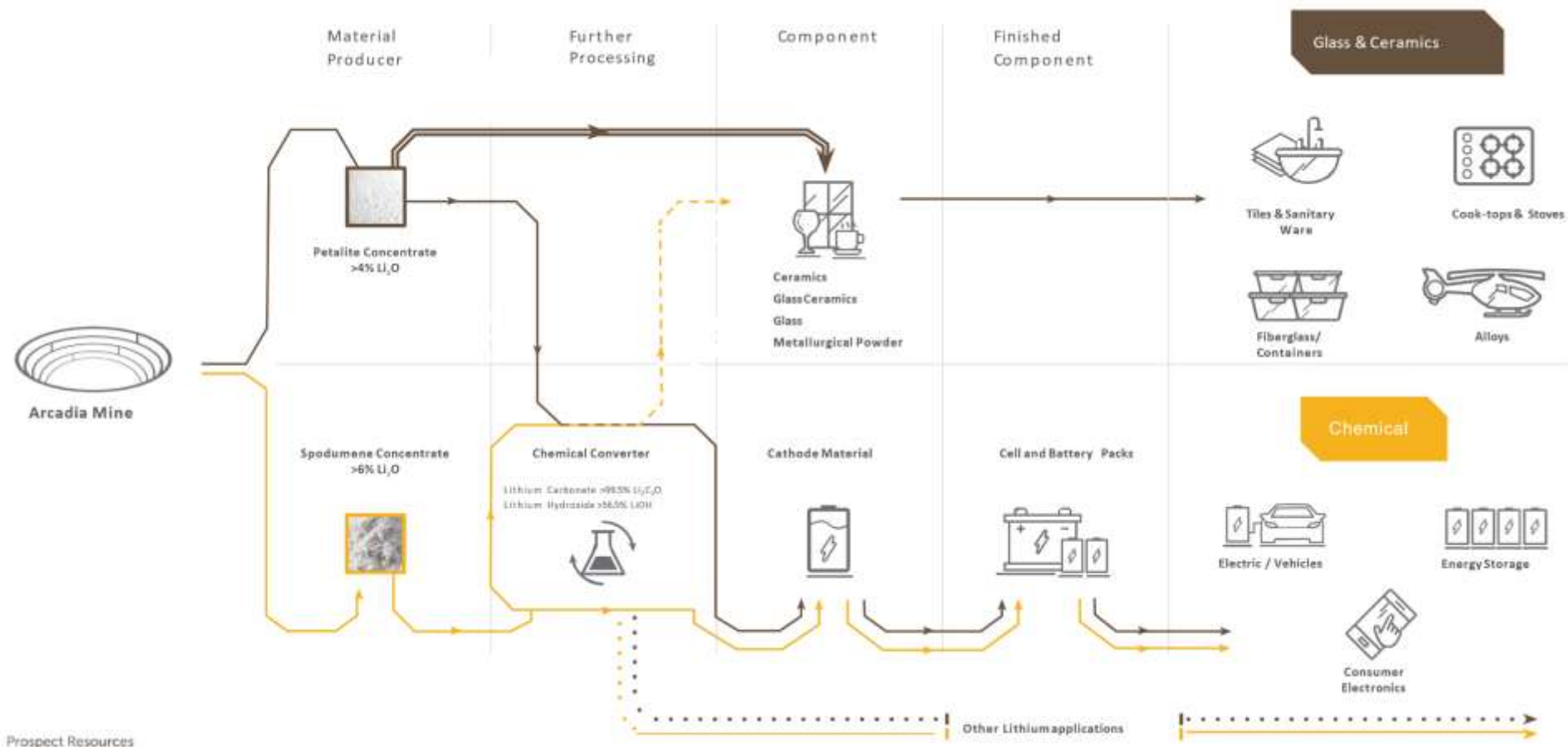
Spodumene: low to moderate temperature and generally higher pressure

Eucryptite: low temperature and low pressure

Simplified version of the Arcadia Process Flow



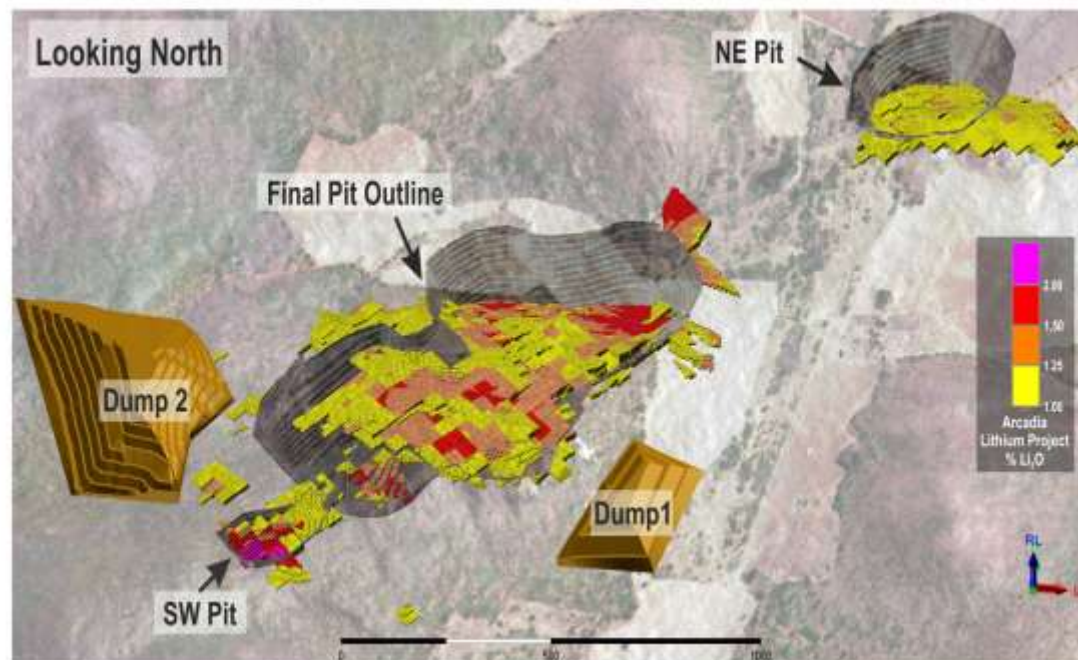
Arcadia and the current Lithium Supply Chain



Arcadia Lithium - DFS Summary



Ore Reserve	26.9Mt @ 1.31% Li ₂ O & 120ppm Ta ₂ O ₅
Life of Mine	12 years
Strip Ratio	3.0:1 (including pre-strip)
LOM Revenue	US\$2.93 billion
LOM EBITDA	US\$109 million p.a.
Lom Operating Cost	US\$278/t
NPV	US\$533 million
Capital Cost	US\$163 million
Payback Period	~2.5 years
Internal Rate of Return	45%



- **Arcadia set to annually produce:**

- 212,000t low Fe spodumene concentrate (6% Li₂O)
- 216,000t low Fe petalite concentrate (4.1% Li₂O)
- 188,000 lb contained tantalite in concentrate (>25% Ta₂O₅)



Questions



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