



Heavy Rare Earth (HREE) in the Northern Territory

IAN BAMBOROUGH, Managing Director
TUC Resources Investor Update
June 2012

Contents

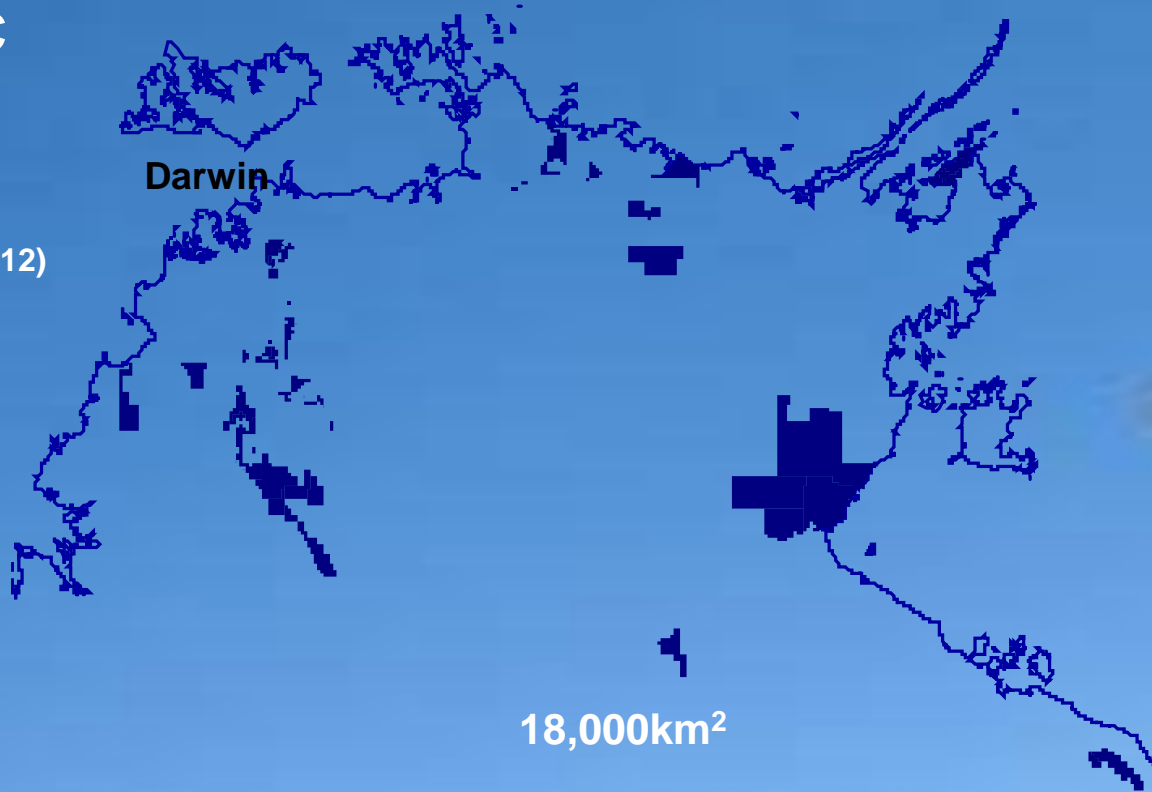


- **The Company – A Brief Introduction**
- **Value Proposition – HREE Market**
- **Stromberg Deposit – Potential Market Impact**
- **Large HREE Exploration Upside**
- **Margin Drivers; Mining / Processing Costs and Price**
- **Time to Market – TUC/Stromberg Advantages**
- **Strategy – Activities – Goals 2012**
- **A Reason to Invest**

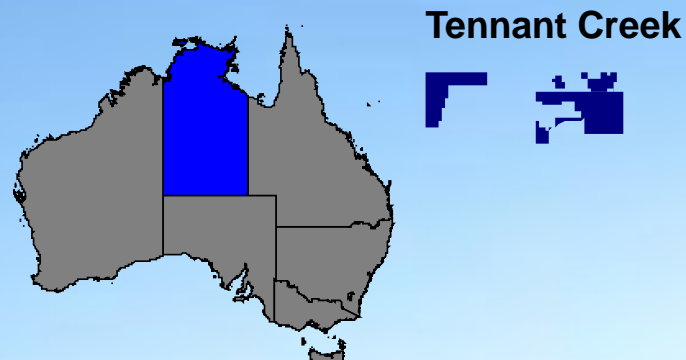
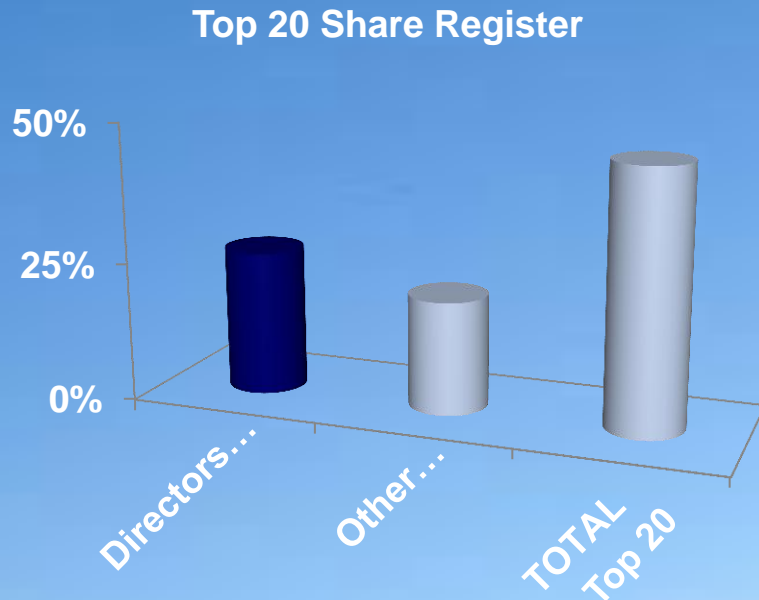
The Company

Company Position; ASX TUC

- 124.4M Shares at A\$0.14
Market Cap. A\$17.4M (20 June 2012)
- Funds +\$2.9M (31 March 2012)
- +1200 Shareholders



10 Developing Projects
across the NT



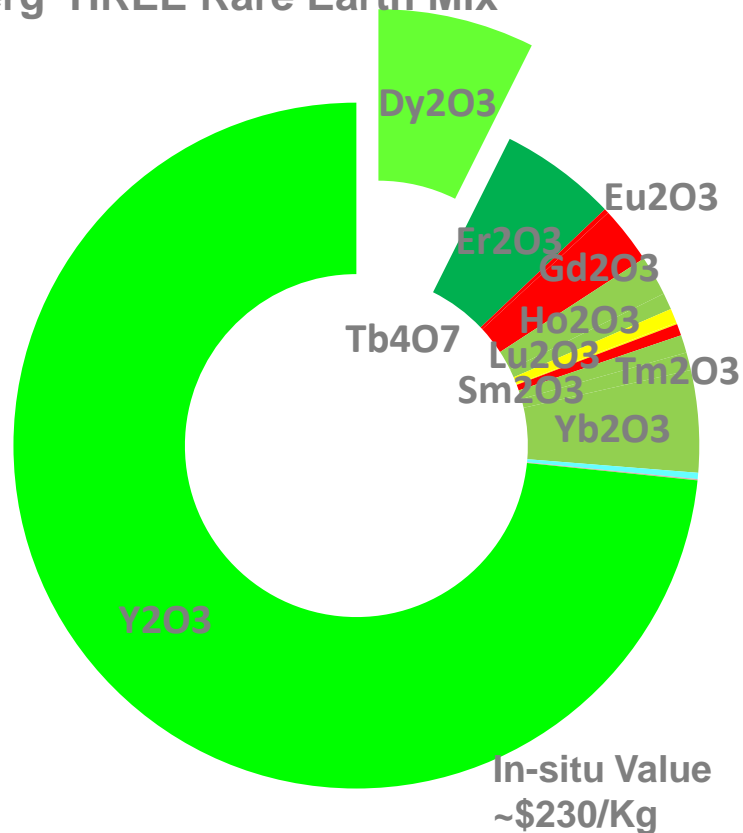
HREE Market

Product - Light vs. Heavy Rare Earths

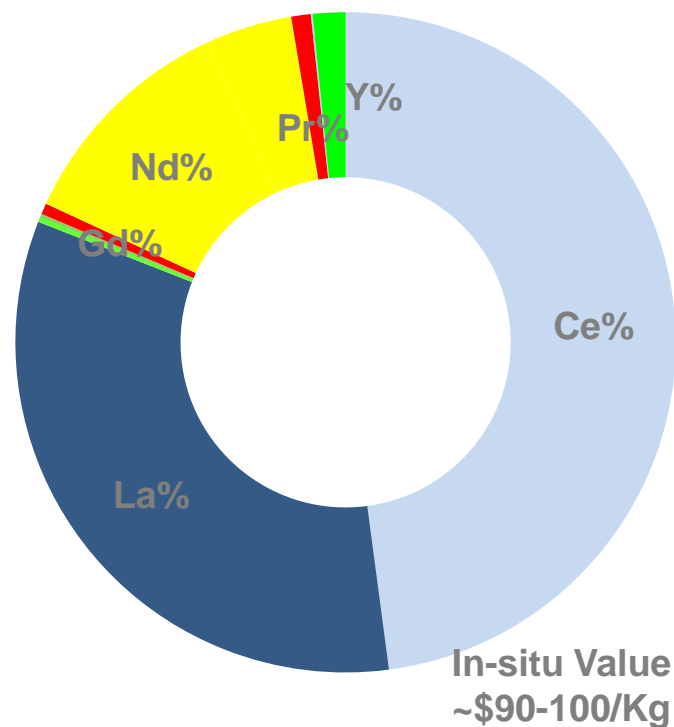


- 85% HREE/TREE (Distribution)

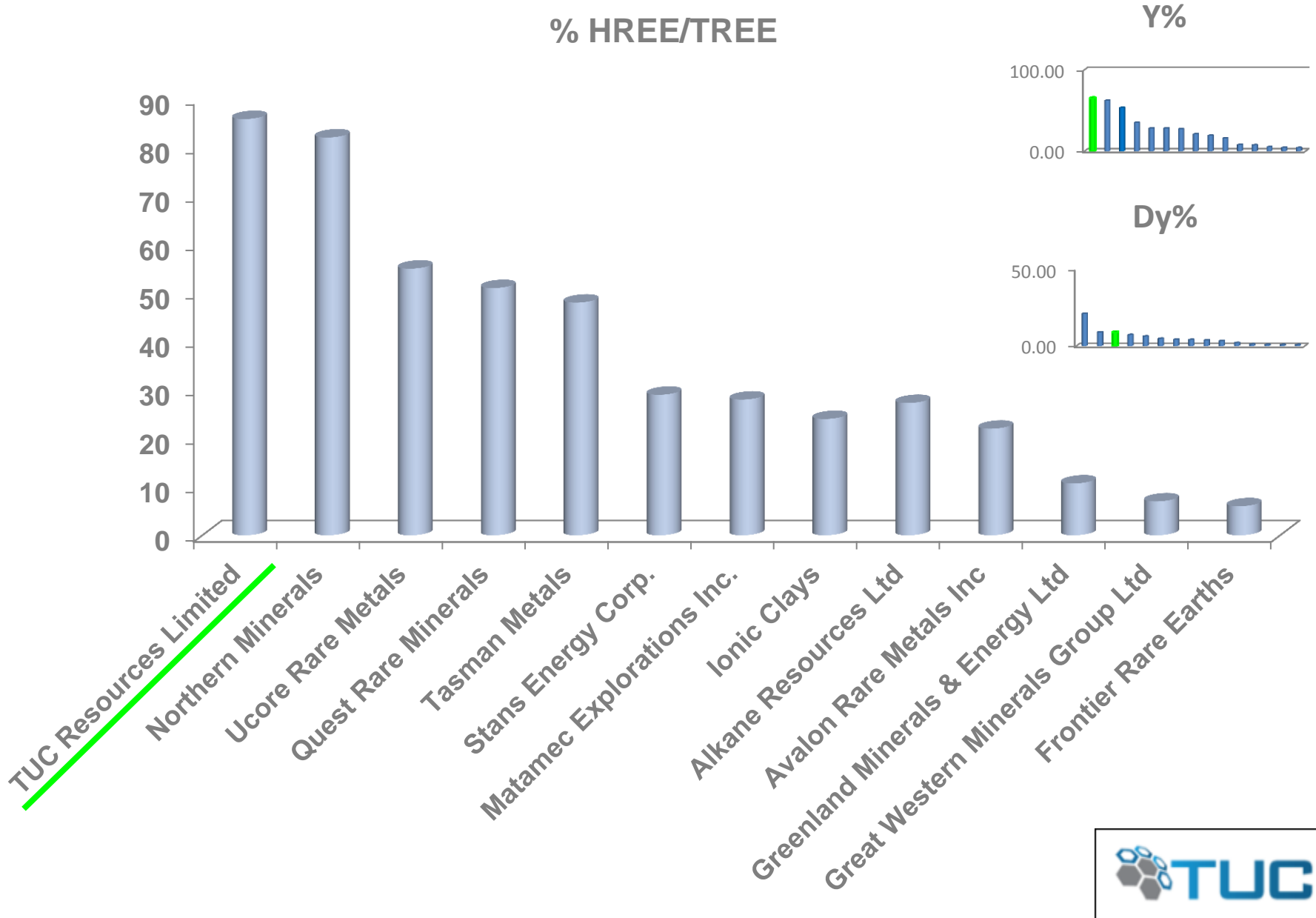
Stromberg HREE Rare Earth Mix



Typical Light REE Mix Similar to Mt Weld - Lynas



TUC's Stromberg holds a #1 Position in terms of HREE Distribution



HREE's are used in the growing Clean Efficient Energy Markets

Dysprosium in High Temperature High Efficiency
Fixed Magnets in Electric Motors and
Power Generation



DEMAND IS UNDERPINNED
BY WORLD GOVERNMENT
INITIATIVES....
Eg. Carbon Tax

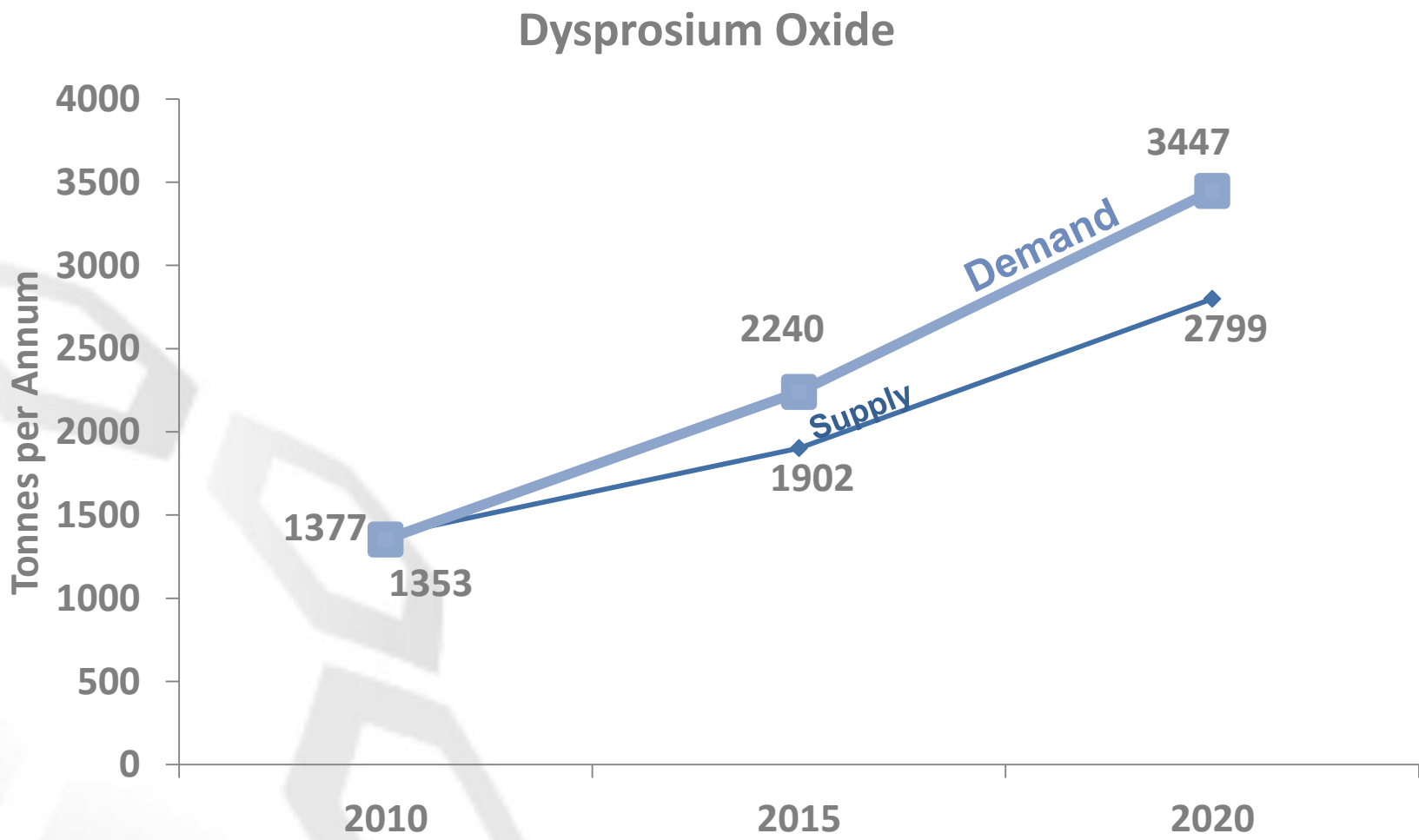


Yttrium and Erbium in
Low Energy Lighting;
Lighting Phosphors



Europium for Red Colouring in Video Screens

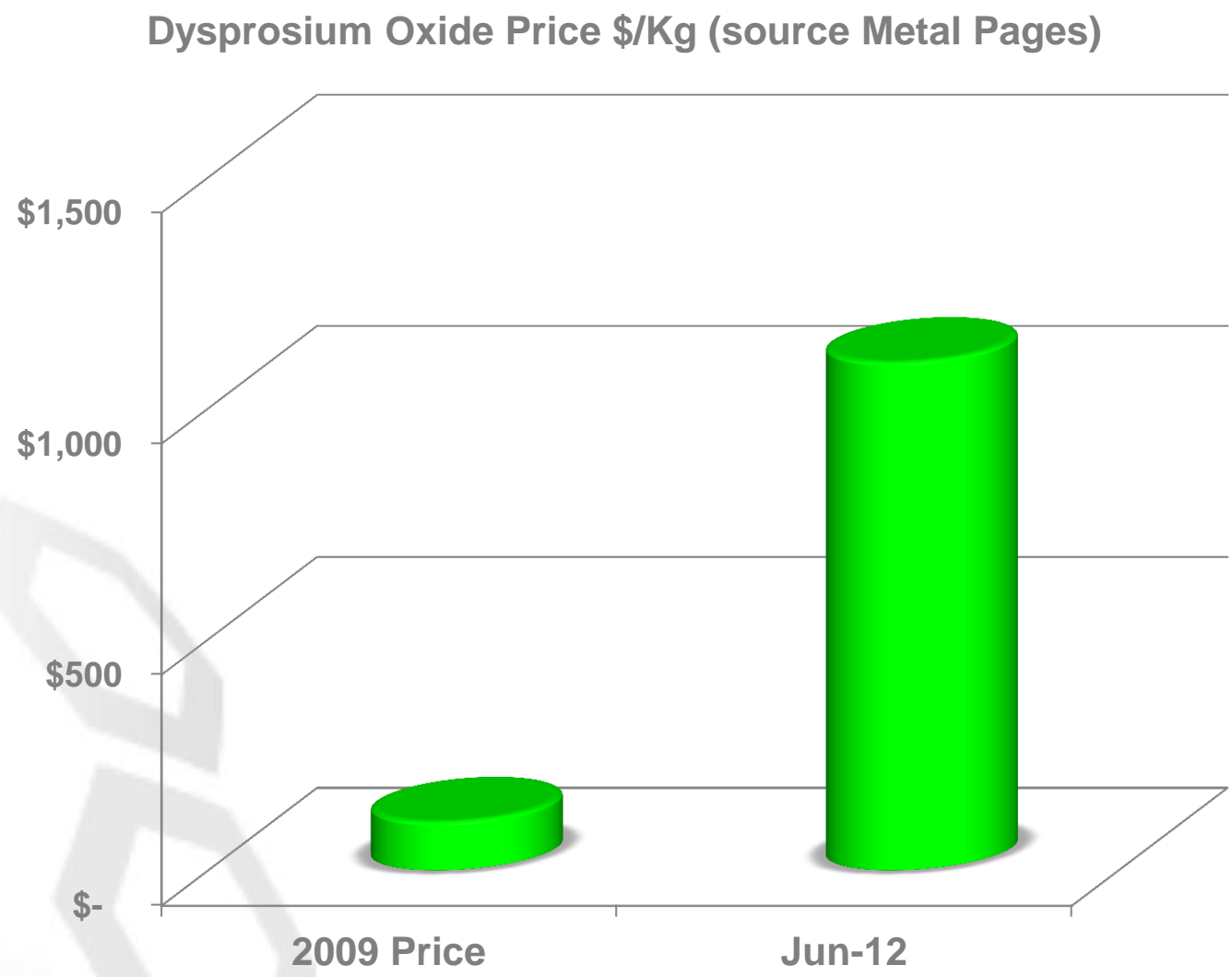
Demand Supply Gap Forecast to Grow



Source: IMCOA – Öko-Institut; Jan 2012



HREE Prices Forecast to Remain Elevated



Source: - CREME IMCOA after Prstn 2012.04 Freiberg Inn Symp



Darwin-Gateway to the Worlds Largest REE Processing/Manufacturing Markets

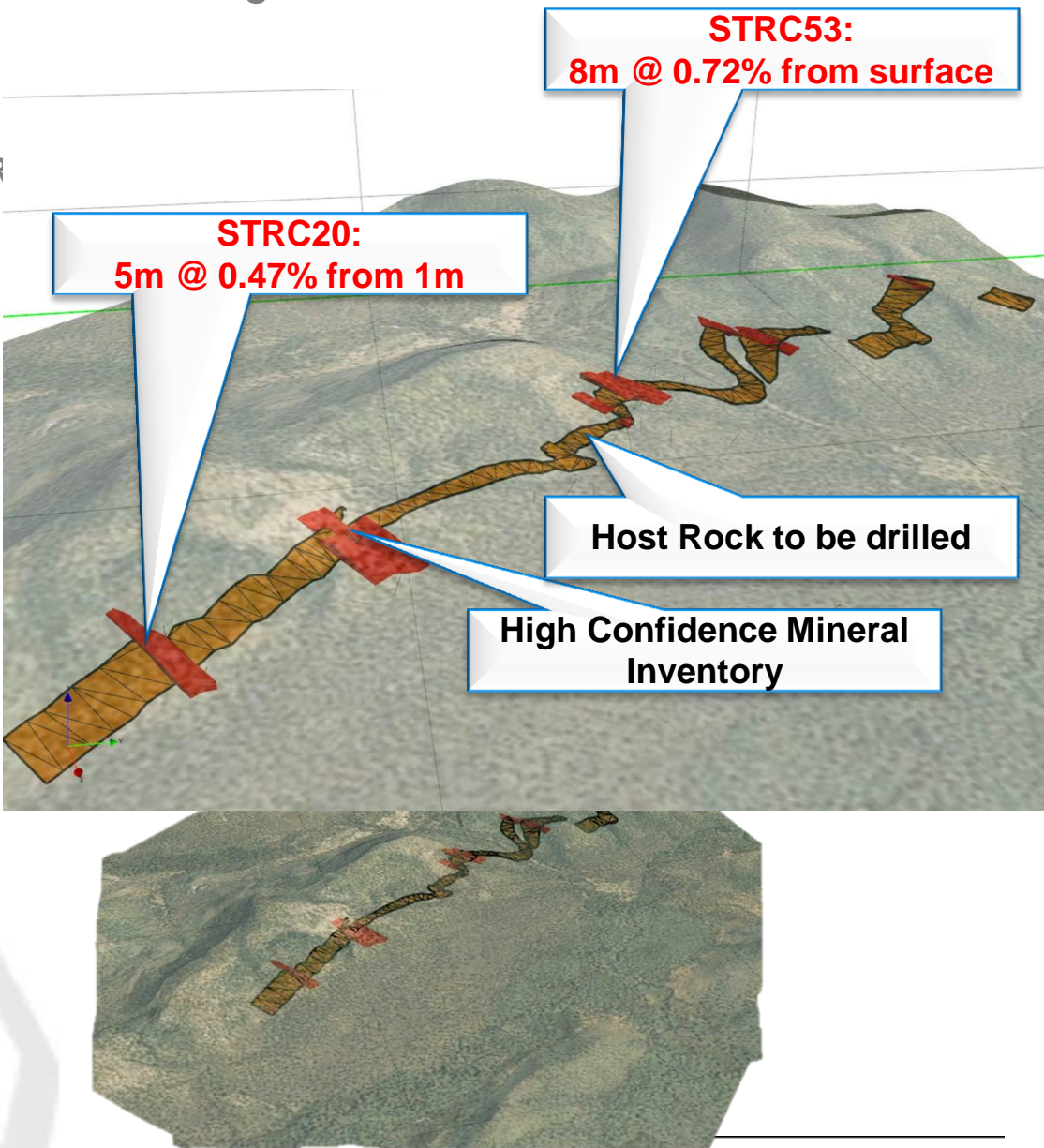


Stromberg HREE Prospect; Potential Market Impact

Clear Resource Potential from Exploration Drilling

- 2.3km Strike Length
- Six Robust Drilling Cross Sections
- 3.5m average thickness >0.1% TREO
- 0.45% TREO all intersections >0.2%/TR
- Dysprosium Oxide 7.2%/TREO
- Terbium Oxide 1%/TREO
- Yttrium Oxide 72%/TREO
- Only 2ppm Thorium per 1% TREO



Stromberg
Potential Impact
Initial 1.5Mt Exploration Case



- ✓ **Correct HREE Market Space**
- ✓ **Potential for Strong Market Impact+.....**

Large HREE Exploration Upside

Control of a New HREE District

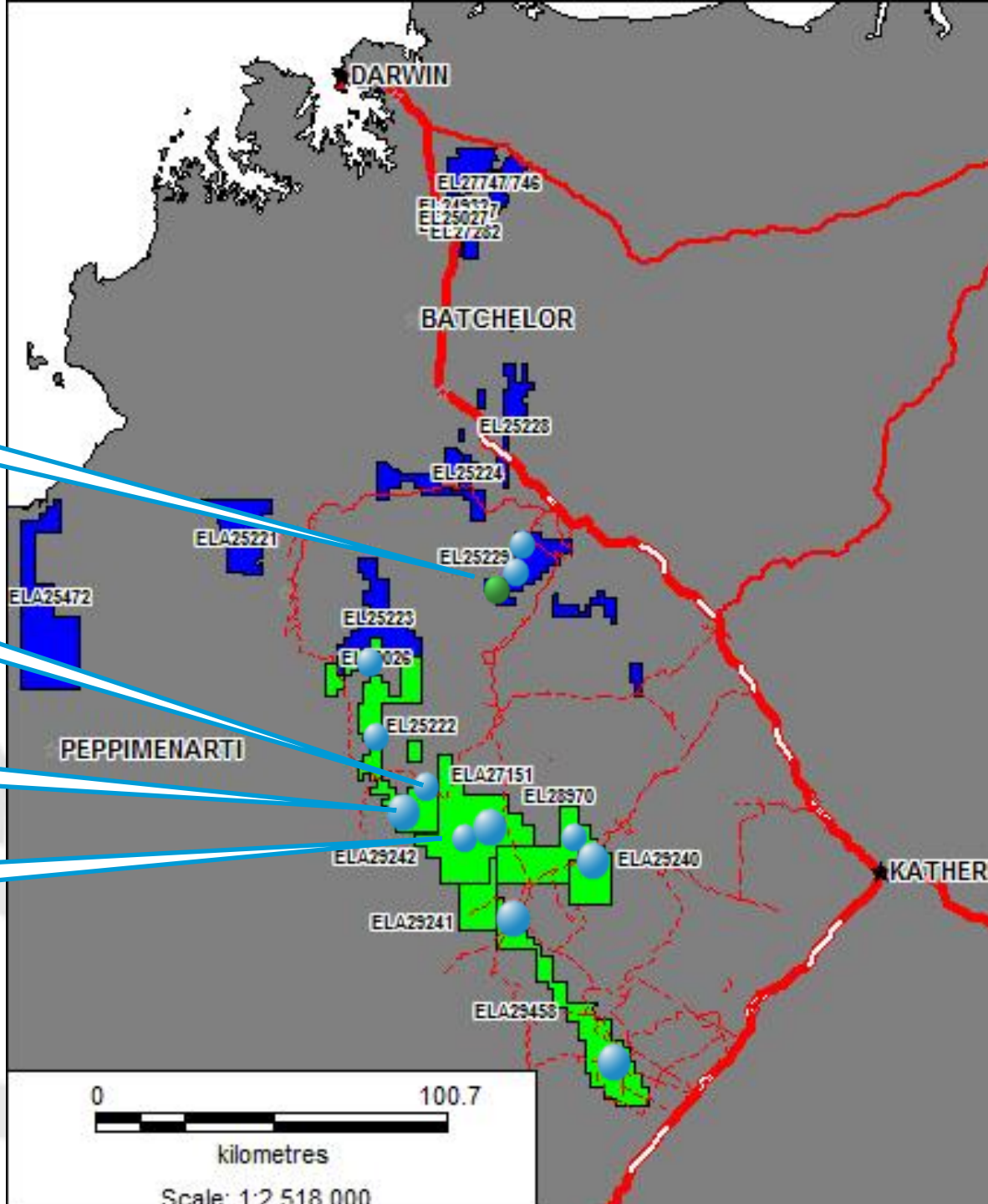
-  = HREE Prospects
-  = LREE Prospect

Quantum LREE
Discovery

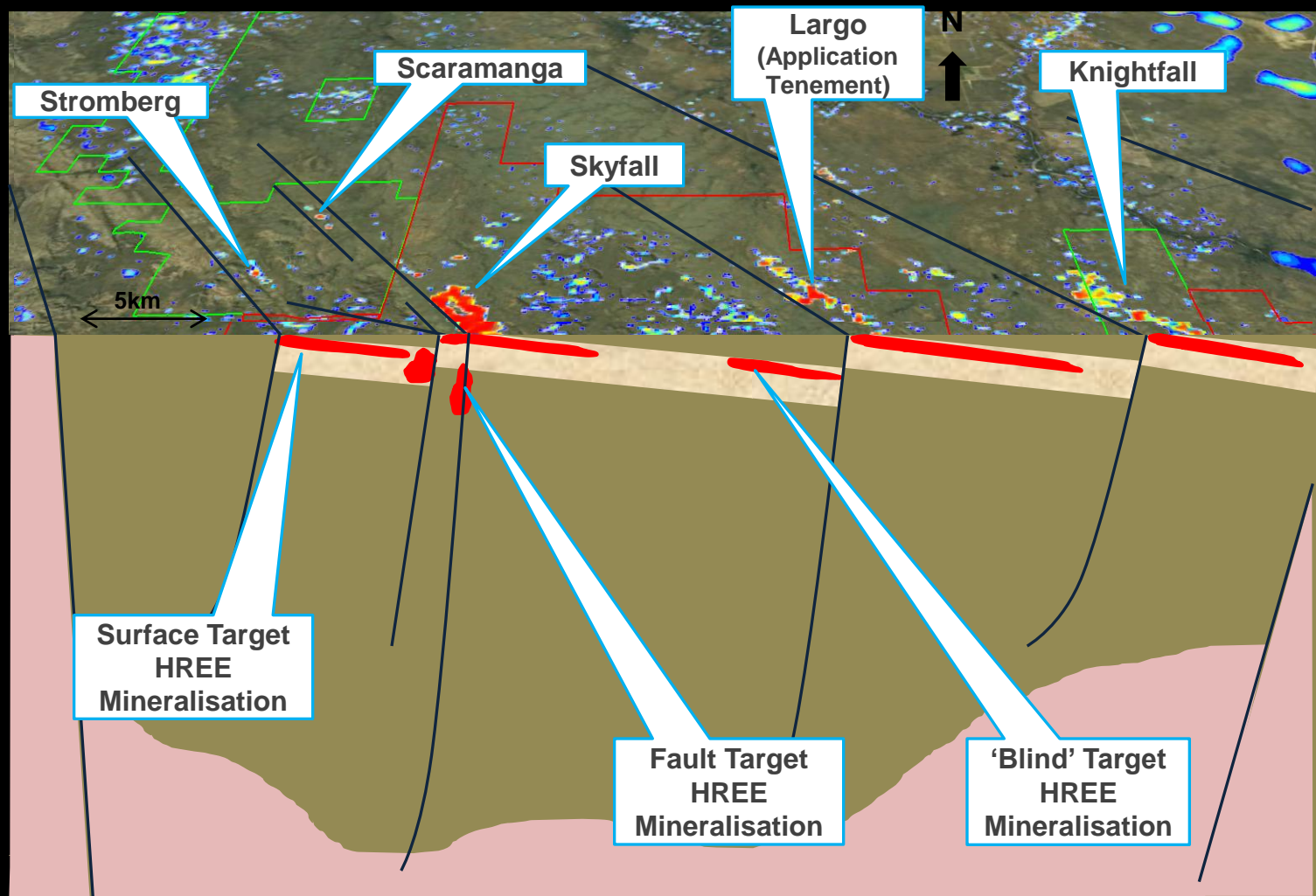
Scaramanga
HREE Prospect

Stromberg
HREE Discovery

Skyfall

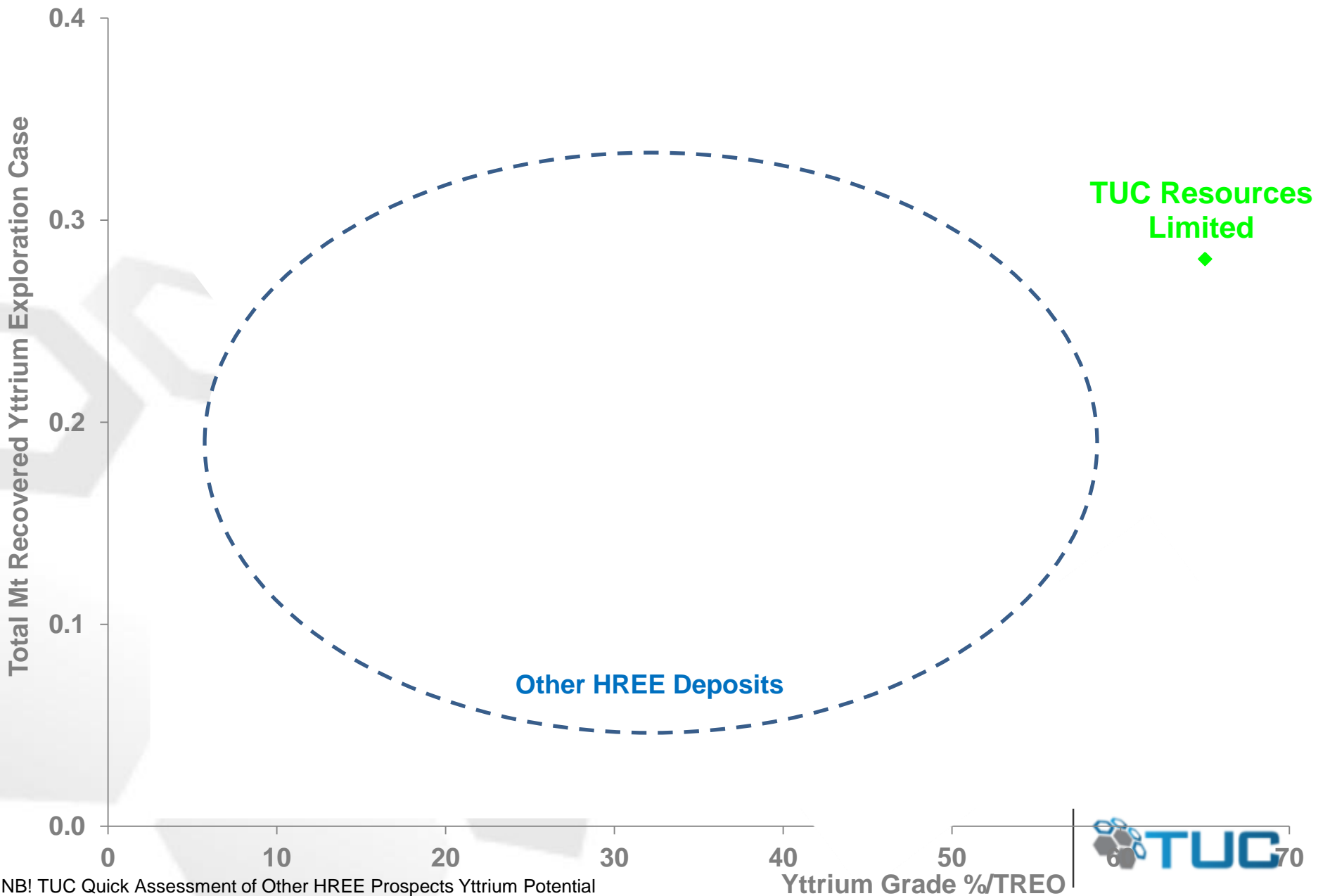


Large Exploration Potential - Rocks , Faults and Mineralised Systems Repeat



Exploration Potential Sets TUC in its own space – Yttrium Grade is King

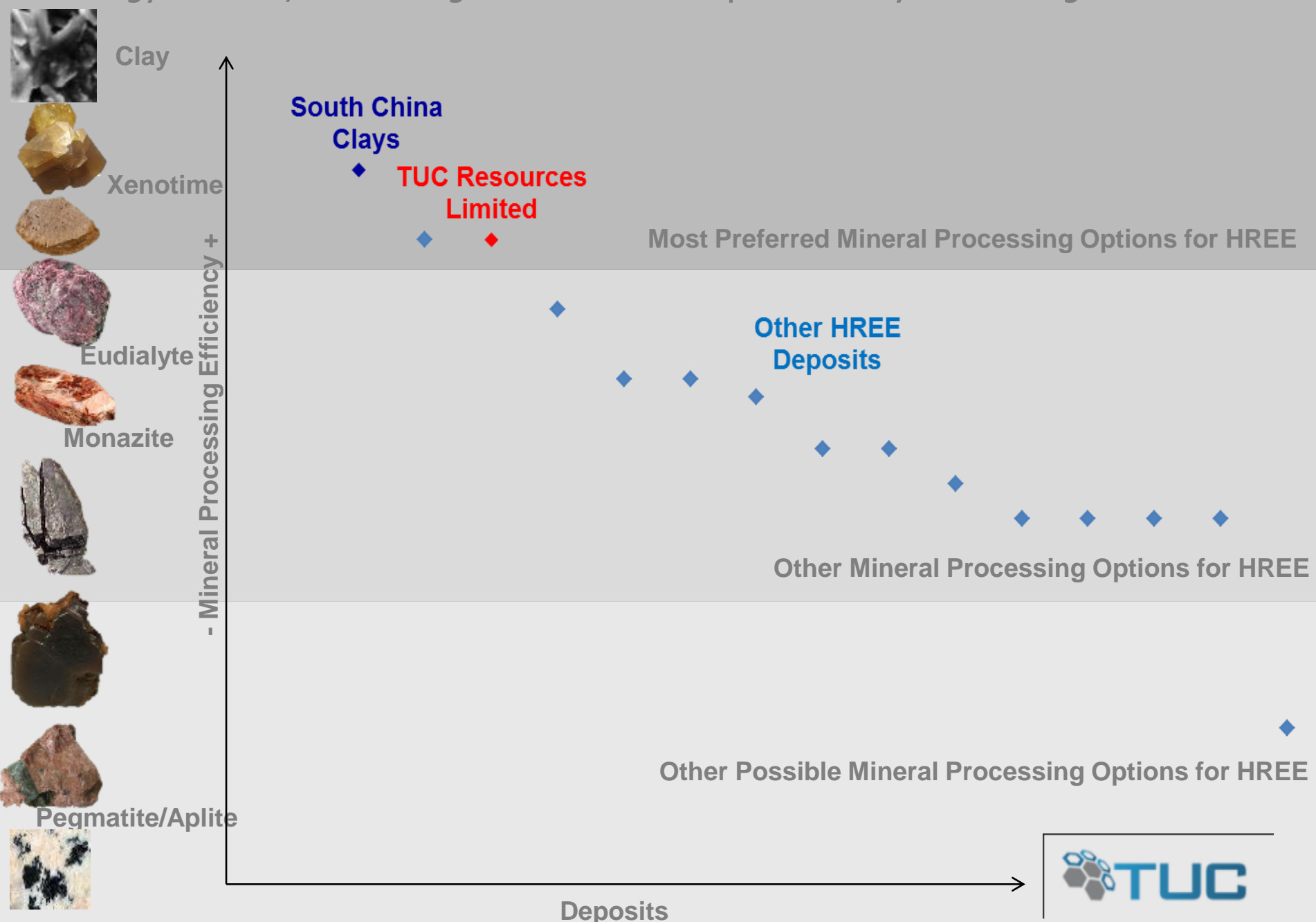
Yttrium Upside Target Exploration Case



- ✓ **Correct HREE Market Space**
- ✓ **Potential for Strong Market Impact**
- ✓ **Large HREE Exploration Upside +.....**

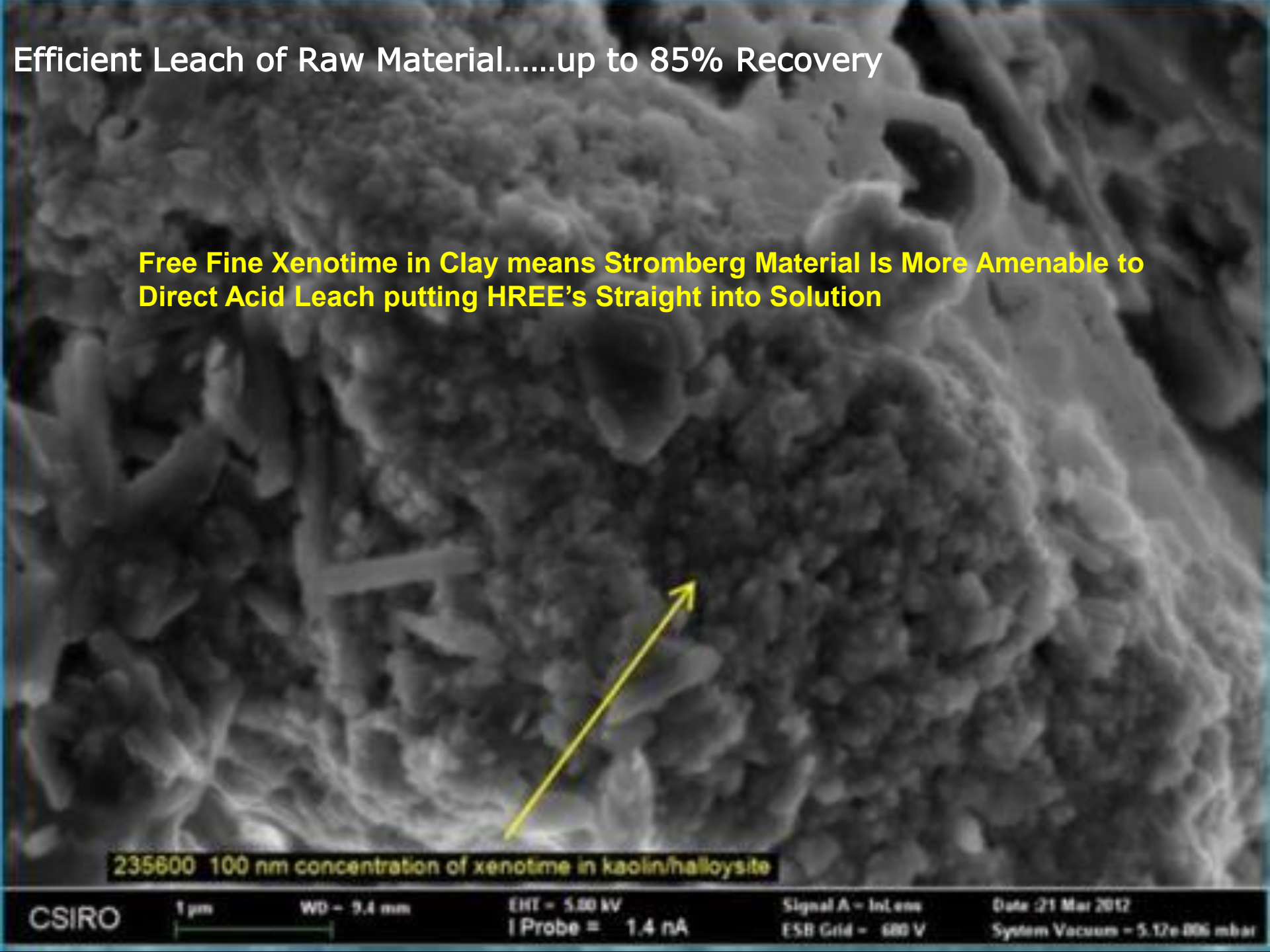
Cost Advantages Mineral Processing

Mineralogy Matters; Stromberg – A Xenotime Deposit in Clay – A Strong Combination



Efficient Leach of Raw Material.....up to 85% Recovery

Free Fine Xenotime in Clay means Stromberg Material Is More Amenable to Direct Acid Leach putting HREE's Straight into Solution



235600 100 nm concentration of xenotime in kaolin/halloysite

CSIRO

1 μ m

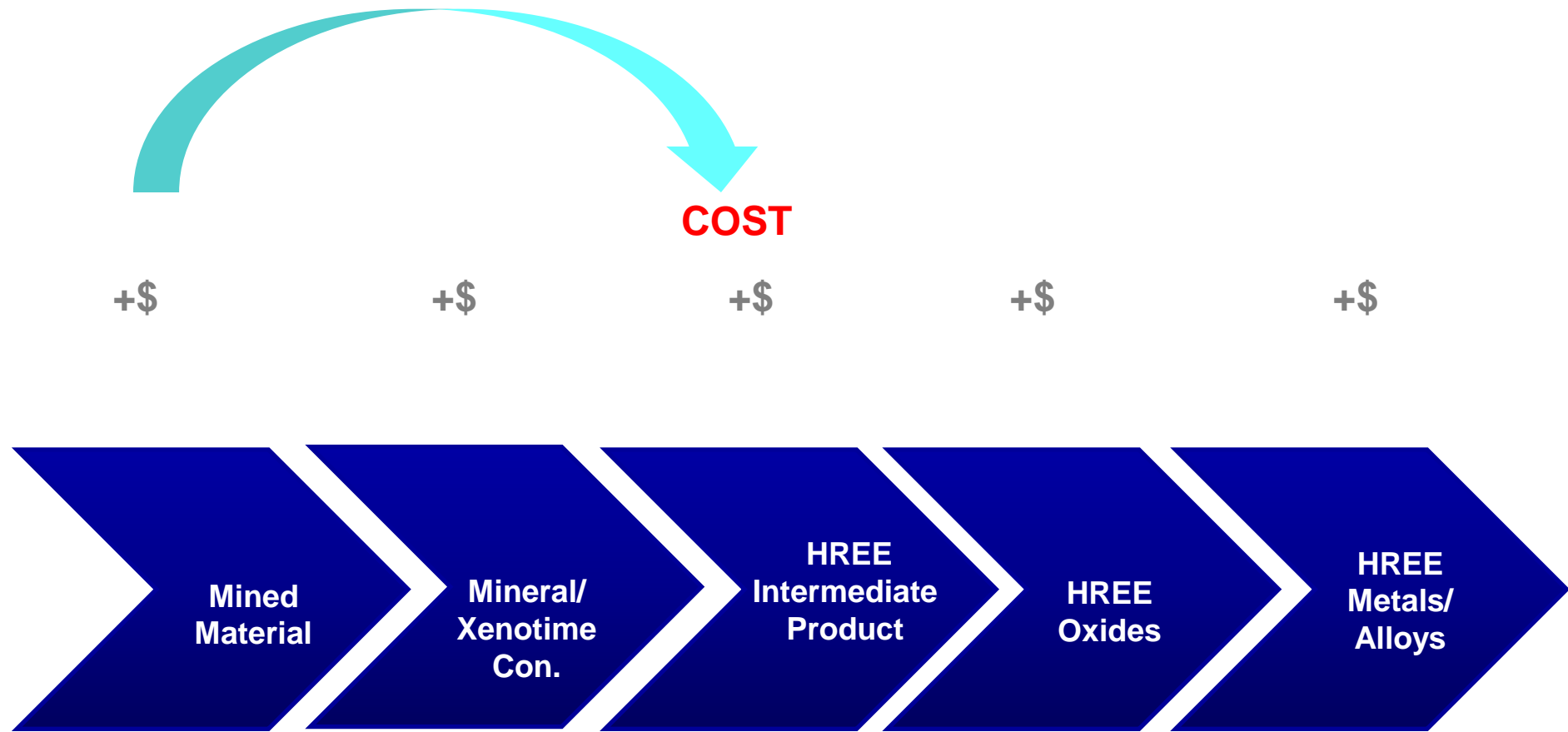
WD = 9.4 mm

EHT = 5.00 kV
I Probe = 1.4 nA

Signal A = InLens
ESB Gild = 600 V

Date :21 Mar 2012
System Vacuum = 5.12e-006 mbar

Direct Leach Scenario Allows TUC to Leapfrog a Processing Stage

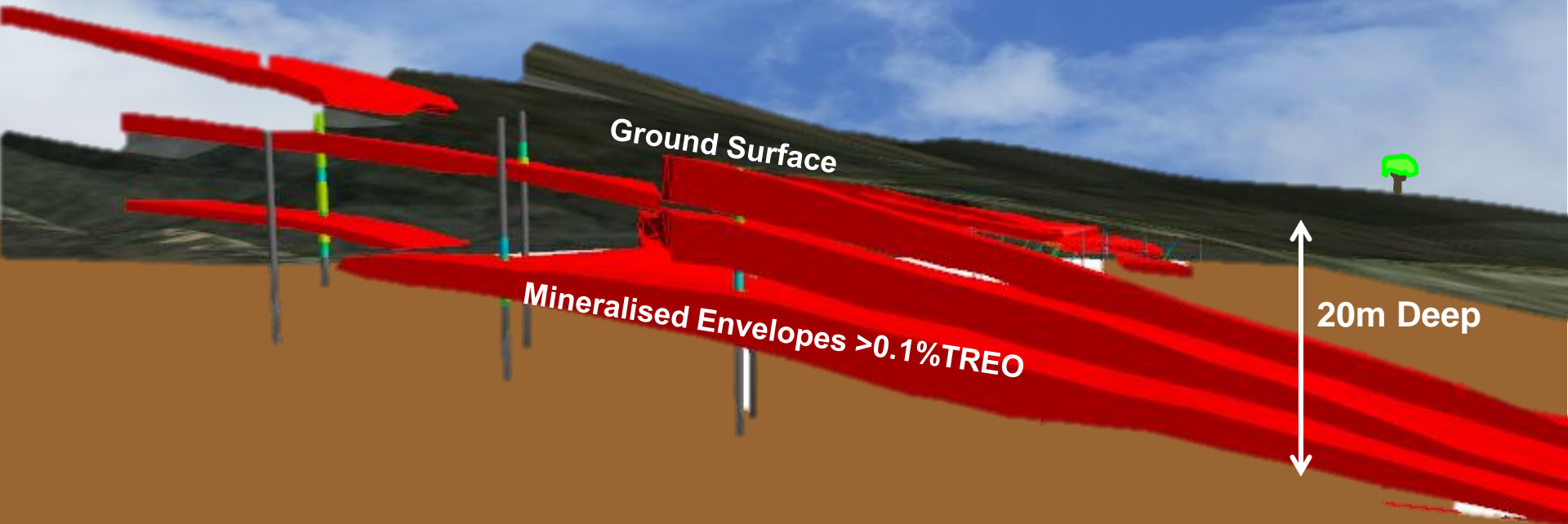


- Allows TUC to anticipate a lower opex and capex scenario

- ✓ **Correct HREE Market Space**
- ✓ **Potential for Strong Market Impact**
- ✓ **Large HREE Exploration Upside**
- ✓ **Cost Advantages – Mineral Processing +....**

Cost Advantages – Mining and Capex

Mining Cost Advantages



- At Surface Tabular Bodies – Easy Access and Potential for Low Stripping Ratio
- Soft Weathered Clay – Easier to Mine or Dig

Initial Target Exploration Size at Stromberg allows TUC to Anticipate A Small Modular Plant Concept to Minimise Start Up Capex

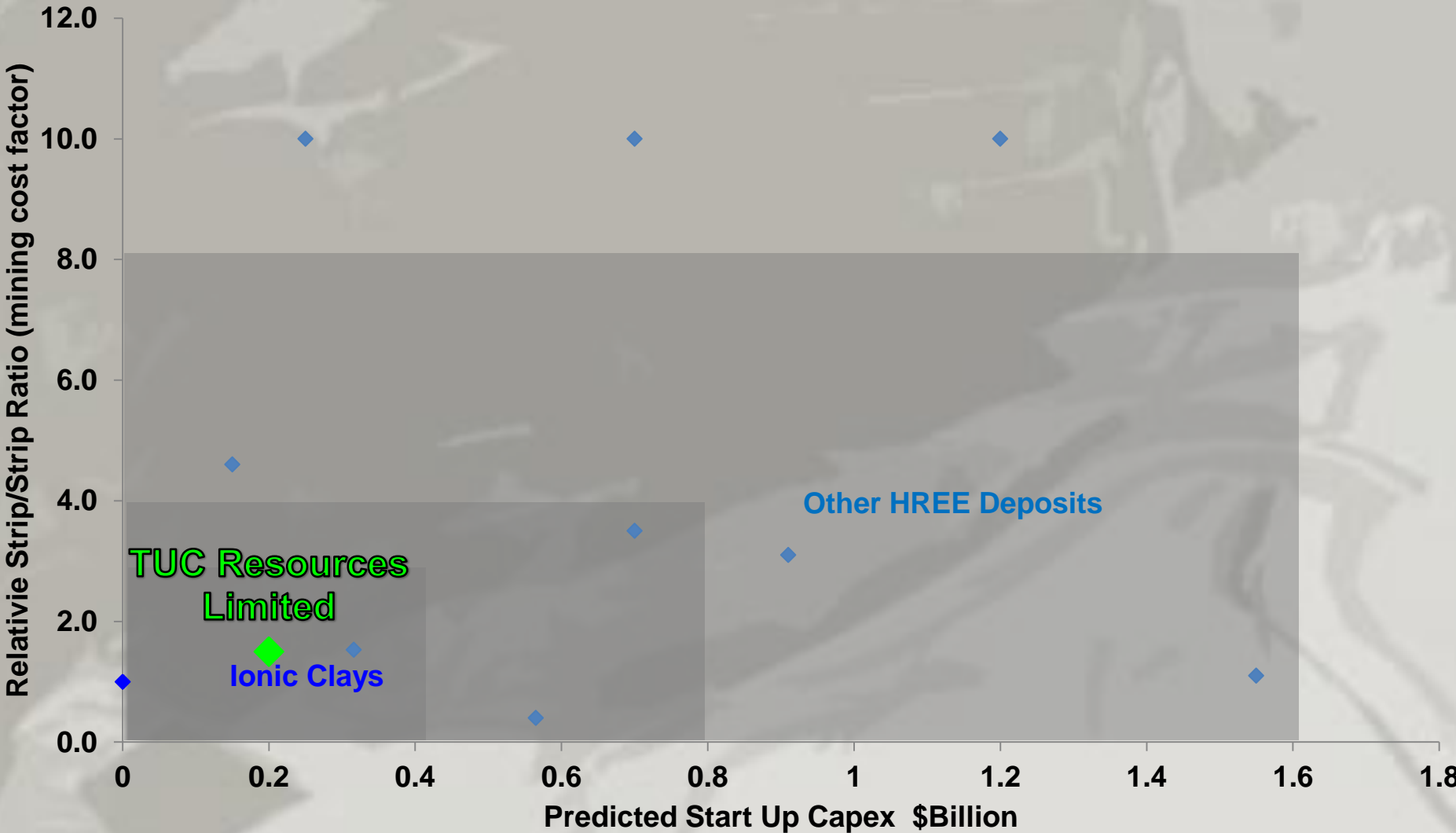
12-30tph Mill Capacity



Photo Courtesy of Bateman Engineering

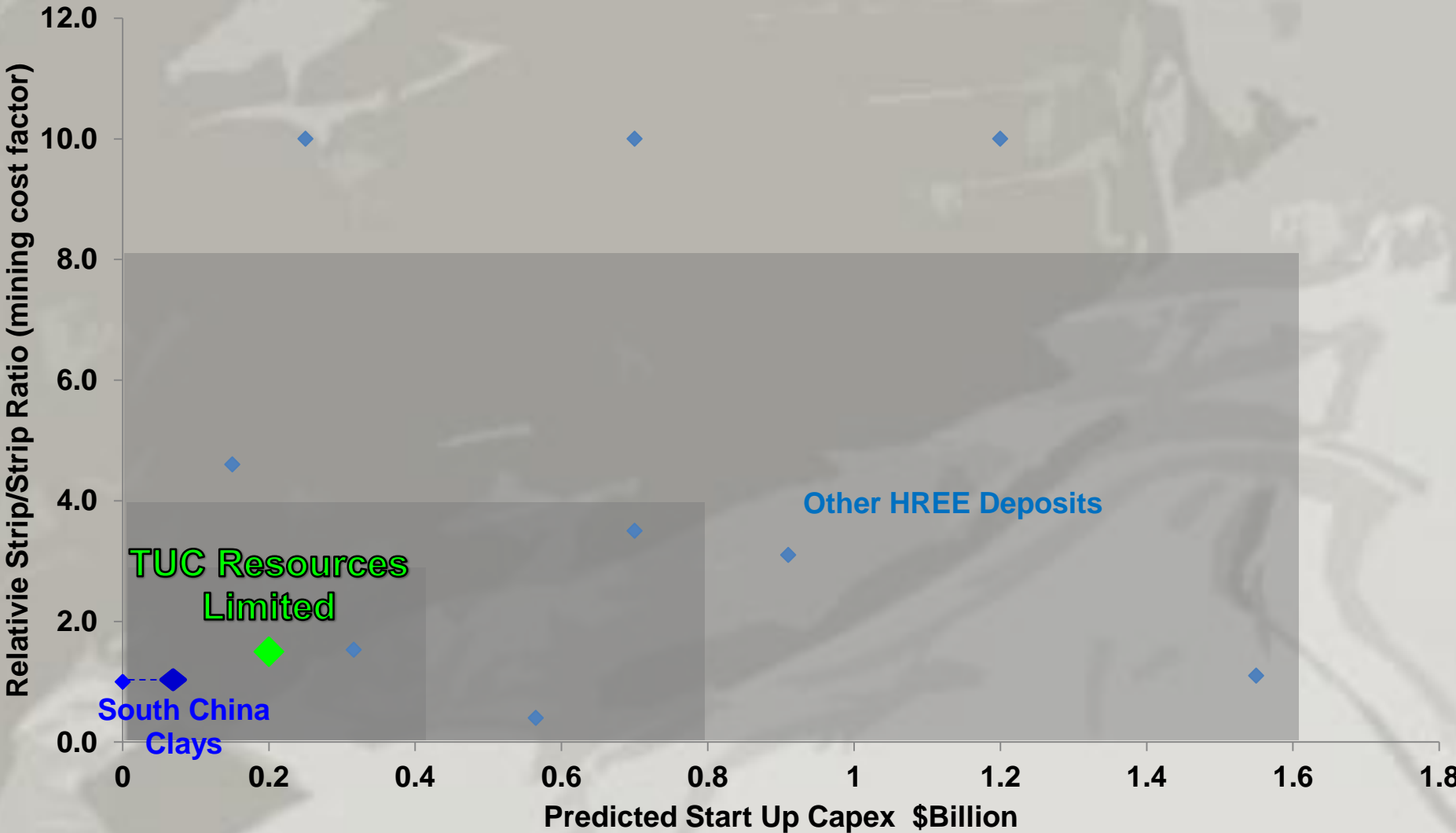
Stromberg - Potential for Lower Quartile Costs

Start Up Capex vs. Relative Strip (mining cost)



Stromberg - Potential for Lower Quartile Costs

Start Up Capex vs. Relative Strip (mining cost)

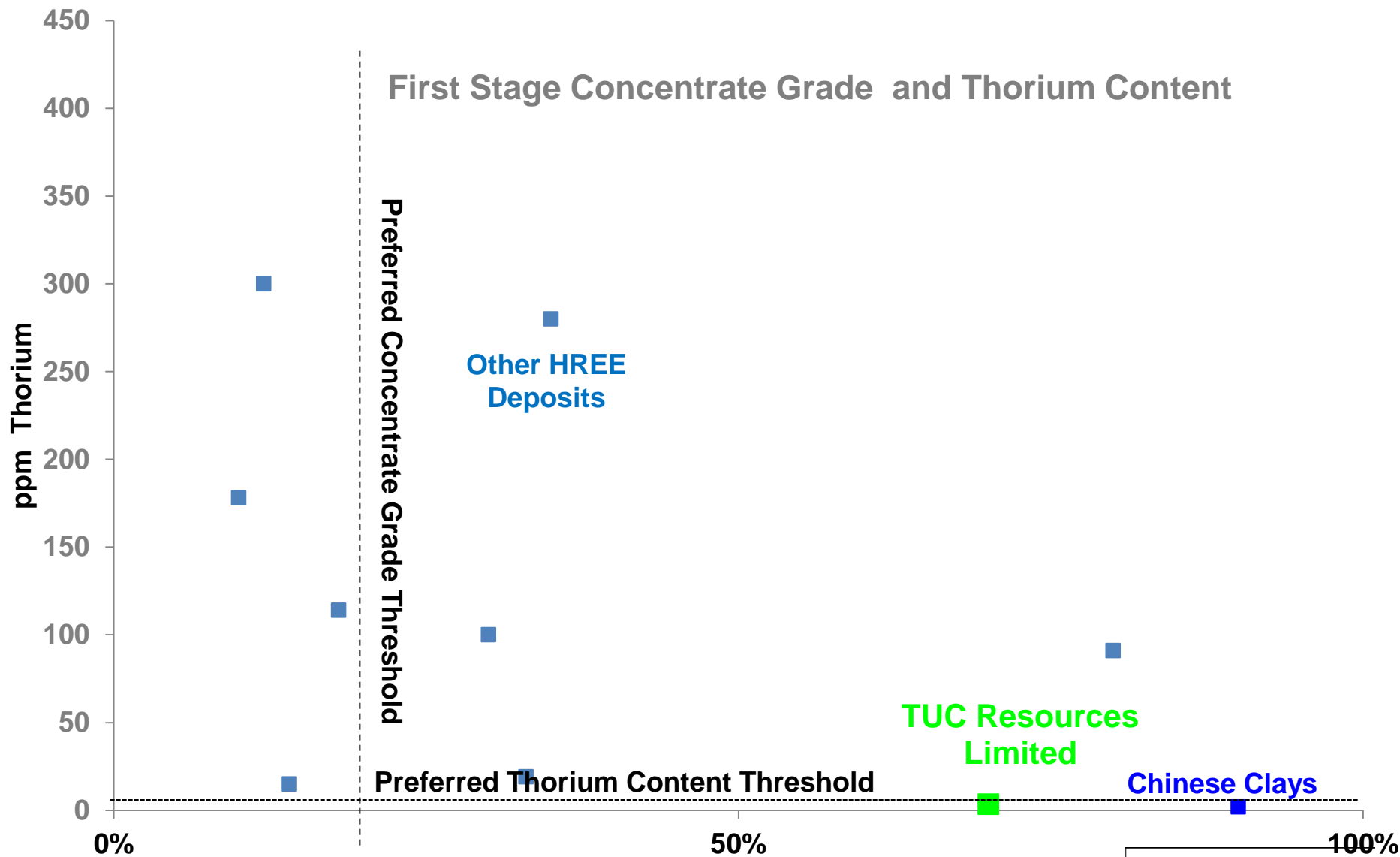


10:1 Strip Ratio utilised where possible underground mining scenario

- ✓ **Correct HREE Market Space**
- ✓ **Potential for Strong Market Impact**
- ✓ **Large HREE Exploration Upside**
- ✓ **Cost Advantages – Mineral Processing**
- ✓ **Cost Advantages – Mining and Capex +....**

Price Advantage

TUC's Stromberg has Other Price Advantages ; Potential Con. Grade and Low Deleterious Elements



Comparing physical separation deposits with direct leach deposits.

Likely First Stage Concentrate Grade



Assumes Comparable Solution and Precipitation Grade for TUC Material

Efficient Leach of Raw Material
Potentially Provides Direct route to
Competitive price position on
intermediate /carbonate product.

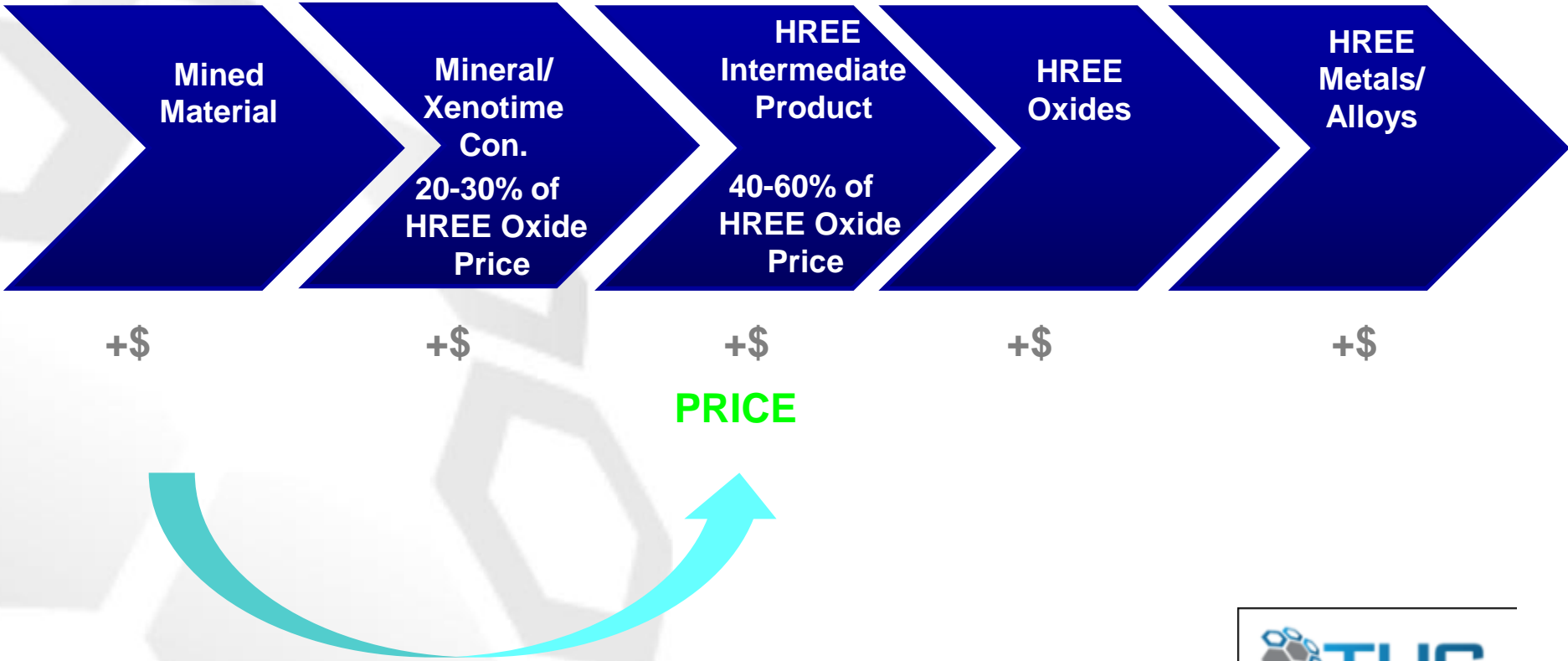
Testing of Conceptual Flow Sheet in
Progress.

Mixed Heavy Rare Earth Carbonate



Direct Leach Scenario Allows TUC to Anticipate receiving a Higher Pay Factor

- TUC aims to Enter Market at Intermediate Stage - Not mineral Concentrate Stage

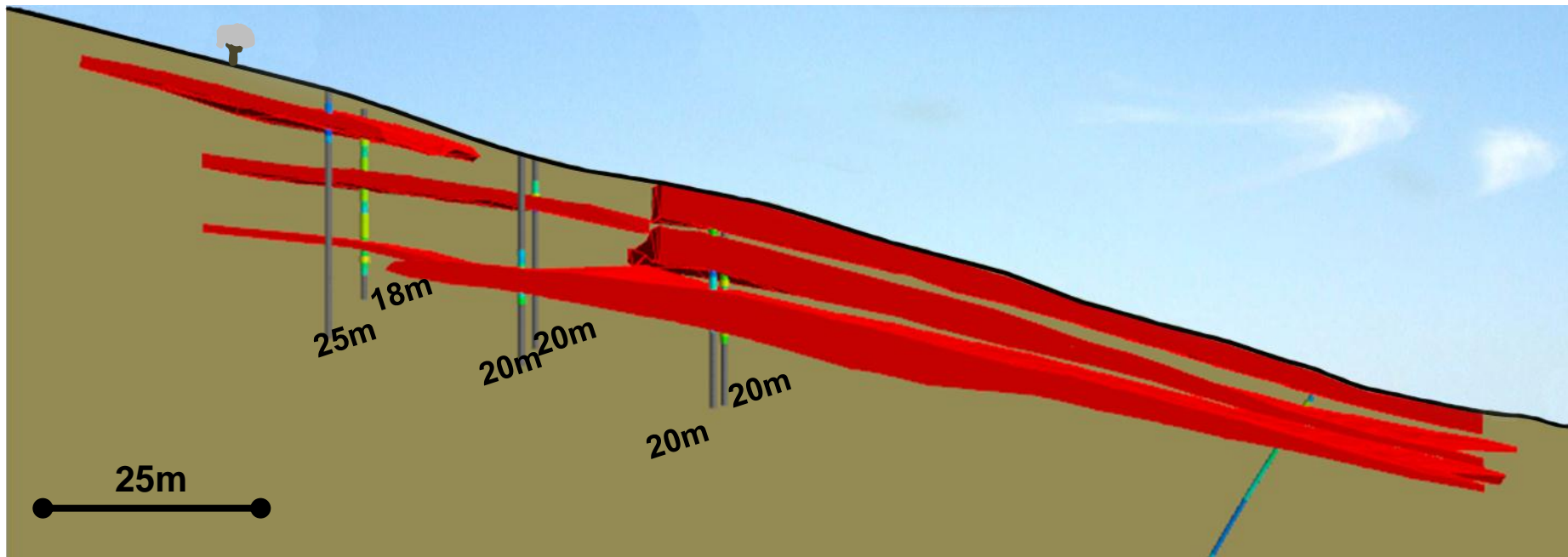


- ✓ **Correct HREE Market Space**
- ✓ **Potential for Strong Market Impact**
- ✓ **Large HREE Exploration Upside**
- ✓ **Cost Advantages – Mineral Processing**
- ✓ **Cost Advantages – Mining and Capex**
- ✓ **Price Advantage – Potential for Higher Value Mixed Rare Earth Intermediate Product +.....**

**Potential for Shorter Development Time –
Early Mover Advantage**

Development Time Advantages – Shallow Drill Holes

- Potential for Quicker Resource Development



- ✓ **Correct HREE Market Space**
- ✓ **Potential for Strong Market Impact**
- ✓ **Large HREE Exploration Upside**
- ✓ **Cost Advantages – Mineral Processing**
- ✓ **Cost Advantages – Mining and Capex**
- ✓ **Price Advantage – Potential for Higher Value Mixed Rare Earth Intermediate Product**
- ✓ **Potential for Shorter Development Time – Early Mover Advantage +...**

Strategy – Activities – Goals 2012

Secure Cornerstone REE Value Chain Partner



Advanced Discussions in Progress

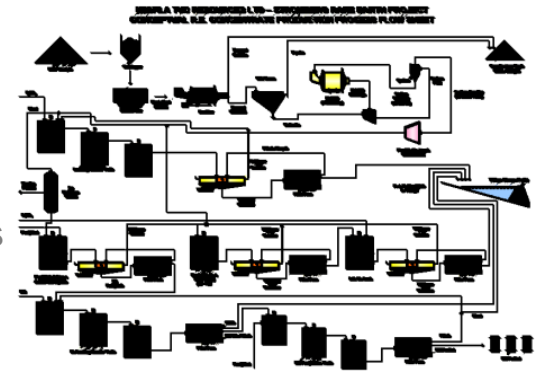
Stakeholder Engagement



Develop Access to Large Exploration Upside in
Aboriginal Freehold Land Tenements

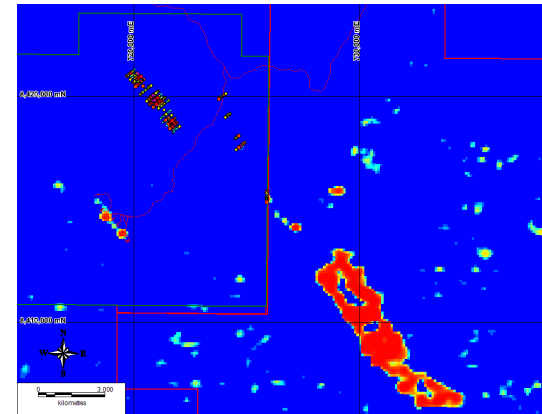
Prove/Improve Process Flow Sheet

Testing
In Progress



Precipitate A Mixed Rare Earth Carbonate

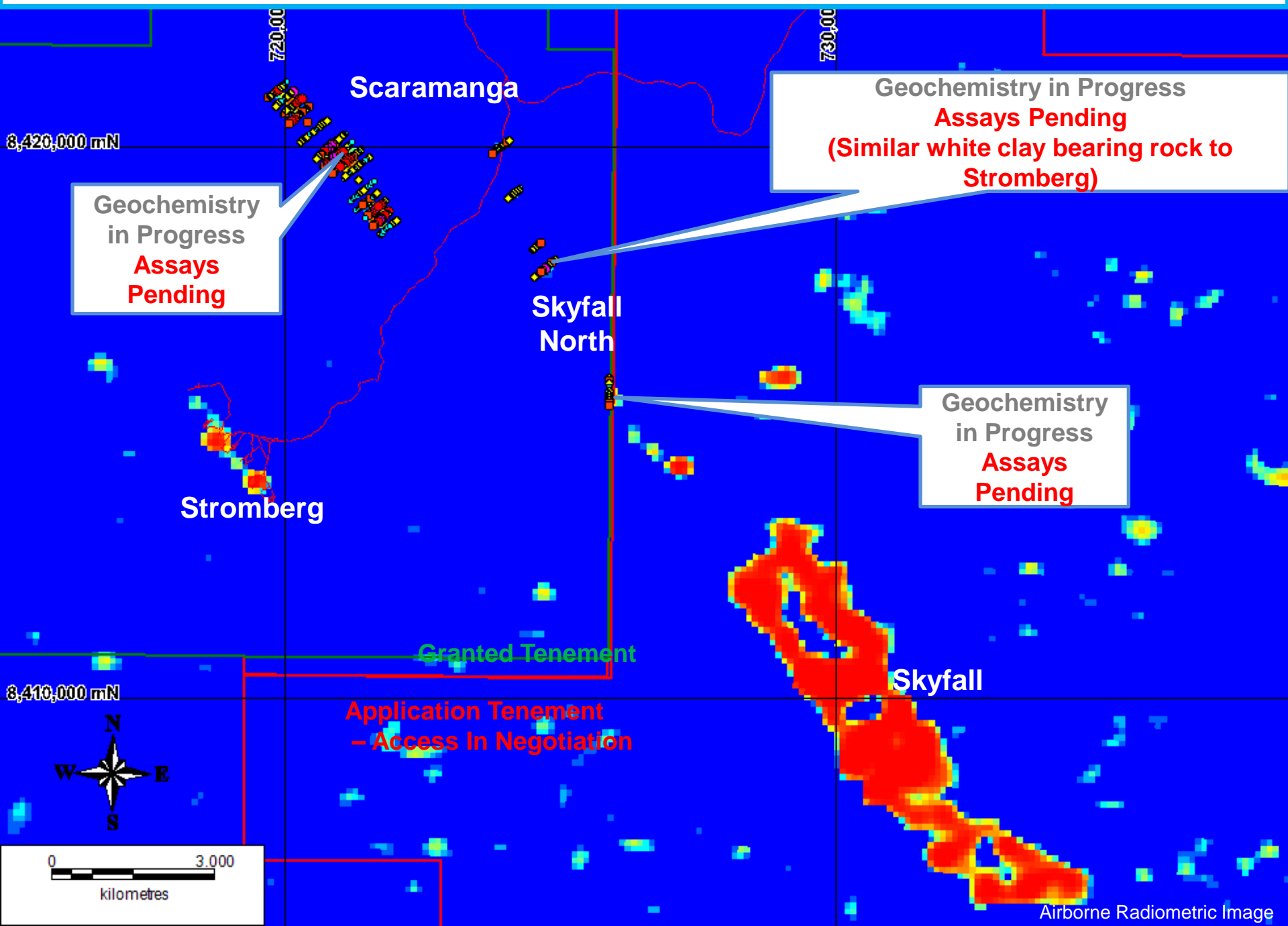
Validate Exploration Upside



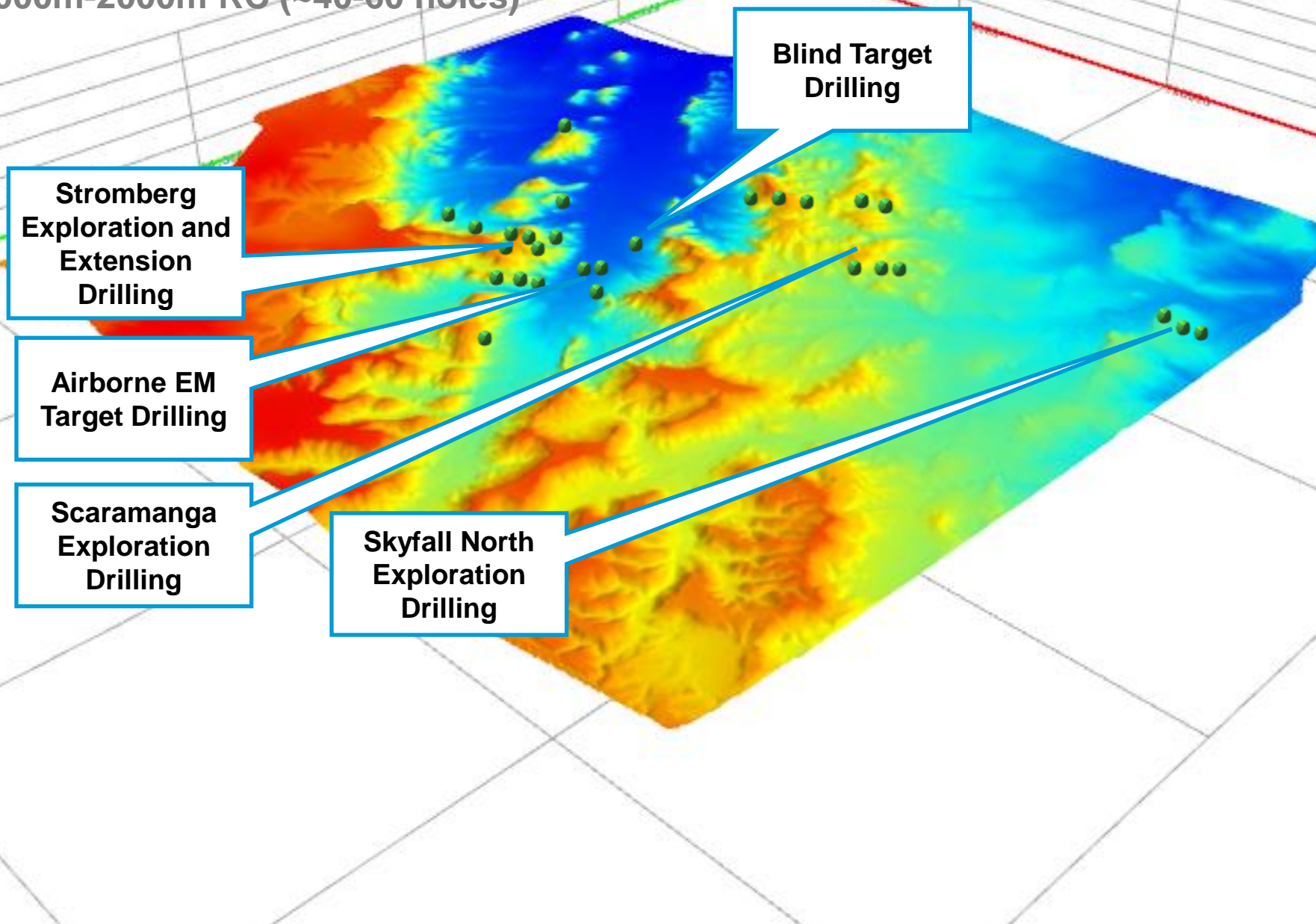
Geochemistry Programs
in Progress
Drilling Planned



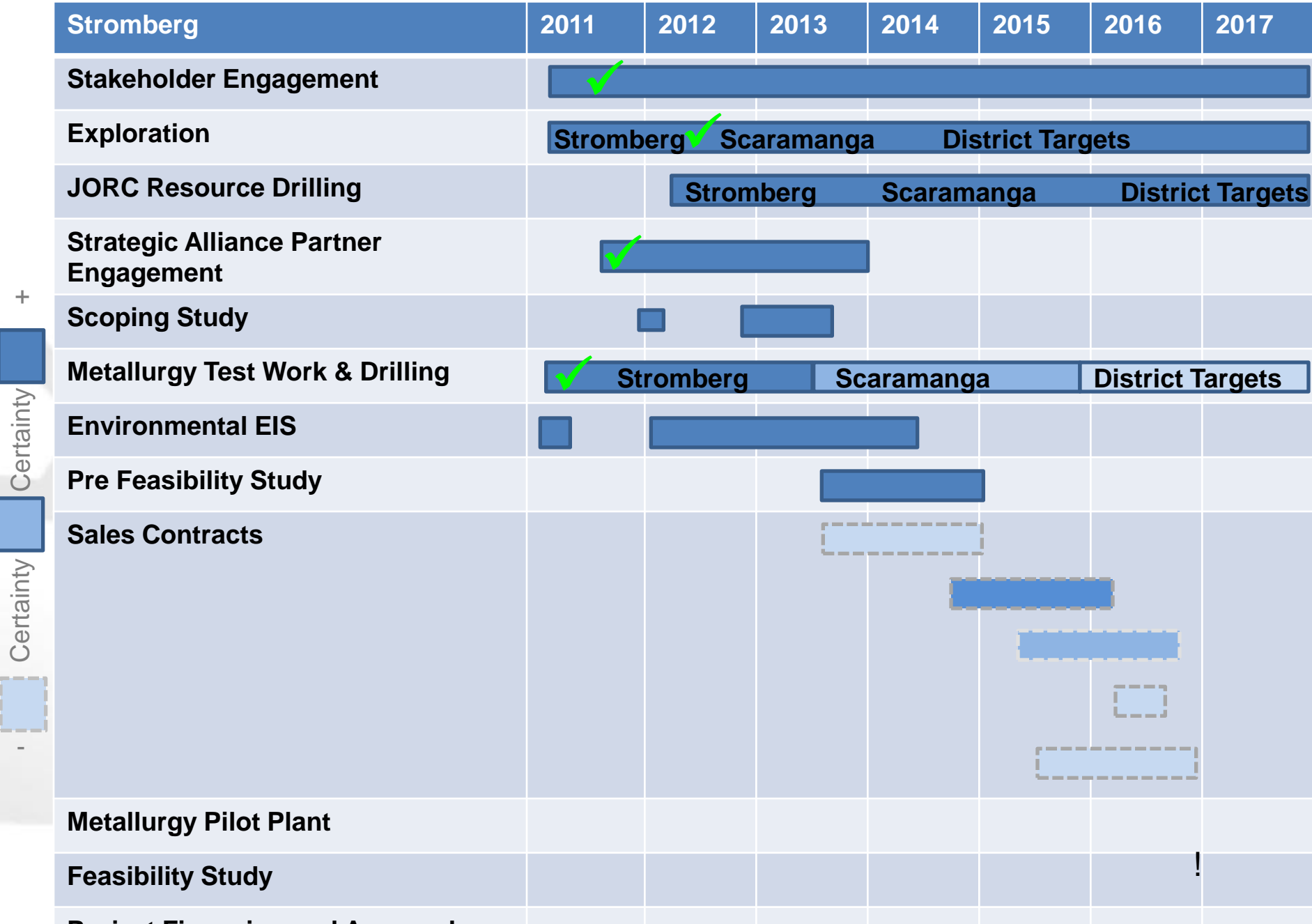
Geochemistry In Progress - Full district Potential - Drilling to Follow



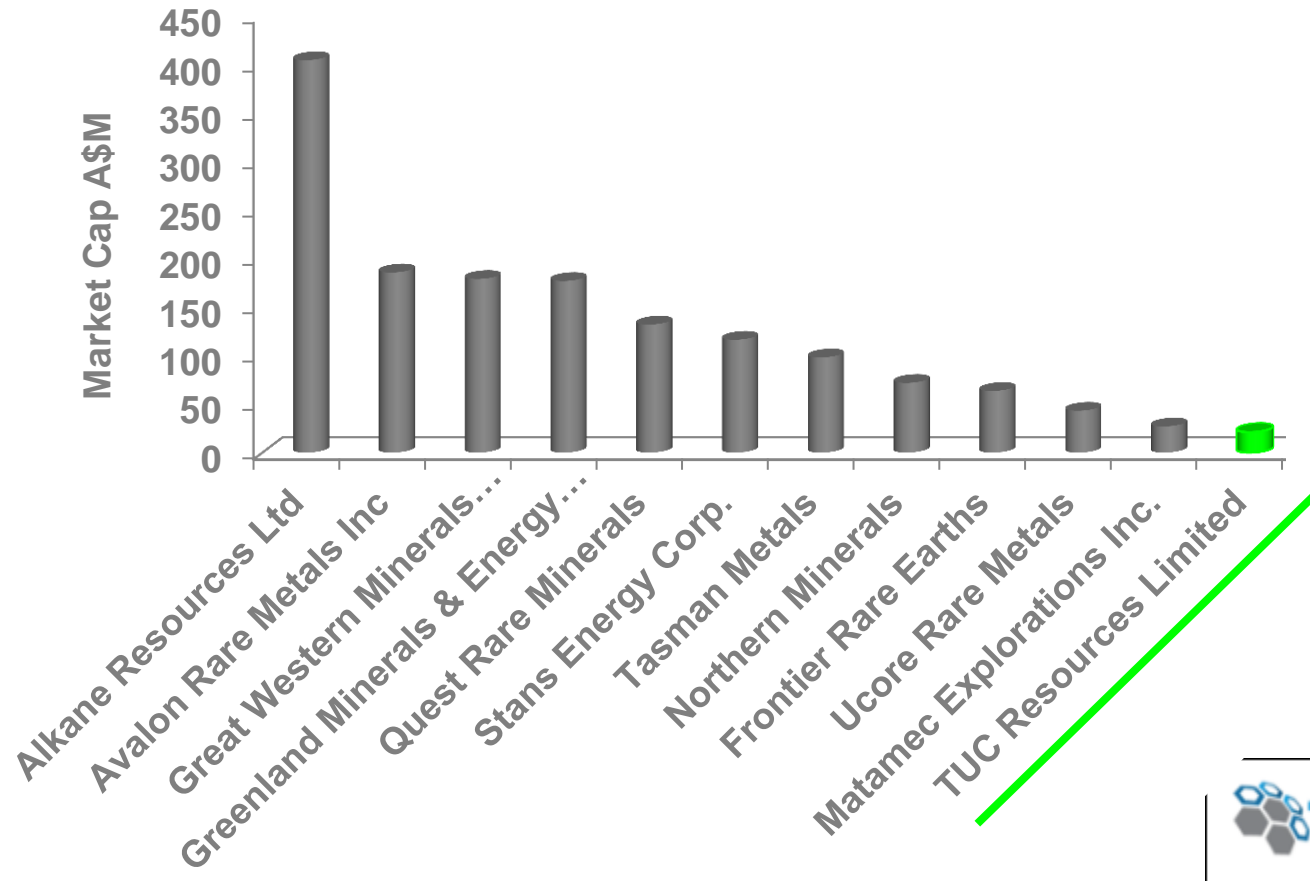
**Planned First Stage Exploration Drilling – July to September 2012,
1000m-2000m RC (~40-60 holes)**



Planned Stromberg Development Schedule – Parallel Opportunities



- ✓ Correct HREE Market Space
- ✓ Potential for Strong Market Impact
- ✓ Large HREE Exploration Upside
- ✓ Cost Advantages – Mineral Processing
- ✓ Cost Advantages – Mining and Capex
- ✓ Price Advantage – Potential for Higher Value Mixed Rare Earth Intermediate Product
- ✓ Potential for Shorter Development Time – Early Mover Advantage
- ✓ Aggressive Exploration Program Underway



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