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Bokan . Dotson Ridge





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## Cautionary Notes and Disclaimers

This presentation may contain forward-looking statements including, but not limited to, comments regarding the timing and content of upcoming work programs, geological interpretations, receipt of property titles, in-situ valuations, mining costs, potential mineral recovery processes, and other related matters. Forward-looking statements address future events and conditions and therefore involve inherent risks and uncertainties. The Ucore Rare Metals Inc properties are at an early stage. More work is required before the mineralization and the Projects' economic aspects can be confidently modeled. Actual results may differ materially from those currently anticipated in this presentation. No representation or prediction is intended as to the results of future work, nor can there be any promise that the estimates and projections herein will be sustained in future work or that the Projects will otherwise prove to be economic.

57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
<b>La</b>	<b>Ce</b>	<b>Pr</b>	<b>Nd</b>	<b>Pm</b>	<b>Sm</b>	<b>Eu</b>	<b>Gd</b>	<b>Tb</b>	<b>Dy</b>	<b>Ho</b>	<b>Er</b>	<b>Tm</b>	<b>Yb</b>	<b>Lu</b>
Lanthanum 138.9055	Cerium 140.116	Praseodymium 140.90765	Neodymium 144.24	Promethium (145.0)	Samarium 150.36	Europium 151.964	Gadolinium 157.25	Terbium 158.92534	Dysprosium 162.5	Holmium 164.93031	Erbium 167.26	Thulium 168.9342	Ytterbium 173.04	Lutetium 174.967

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# Rare Earth Elements

## Heavy vs Light Rare Earth Elements

	Pure Metal Oxide	Principle Uses	Price US \$ / kg *
light	Lanthanum Oxide	Re-chargeable batteries	\$ 10
	Cerium Oxide	Catalysts, glass, polishing	\$ 11
	Praseodymium Oxide	Magnets, glass colourant	\$ 82
	Neodymium Oxide	Magnets, lasers, glass	\$ 77
	Samarium Oxide	Magnets, lighting, lasers	\$ 22
heavy	Europium Oxide	TV colour phosphors:red	\$ 2,250
	Terbium Oxide	Military: Guided missiles, smart weapons	\$ 1,250
	Dysprosium Oxide	Military: Lasers, high powered magnets	\$ 615
	Gadolinium Oxide	Magnets, superconductors	\$ 46
	Yttrium Oxide	Phosphors, ceramics, lasers	\$ 85

\* Rounded from source: metal-pages.com; February 2013



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# Light vs Heavy

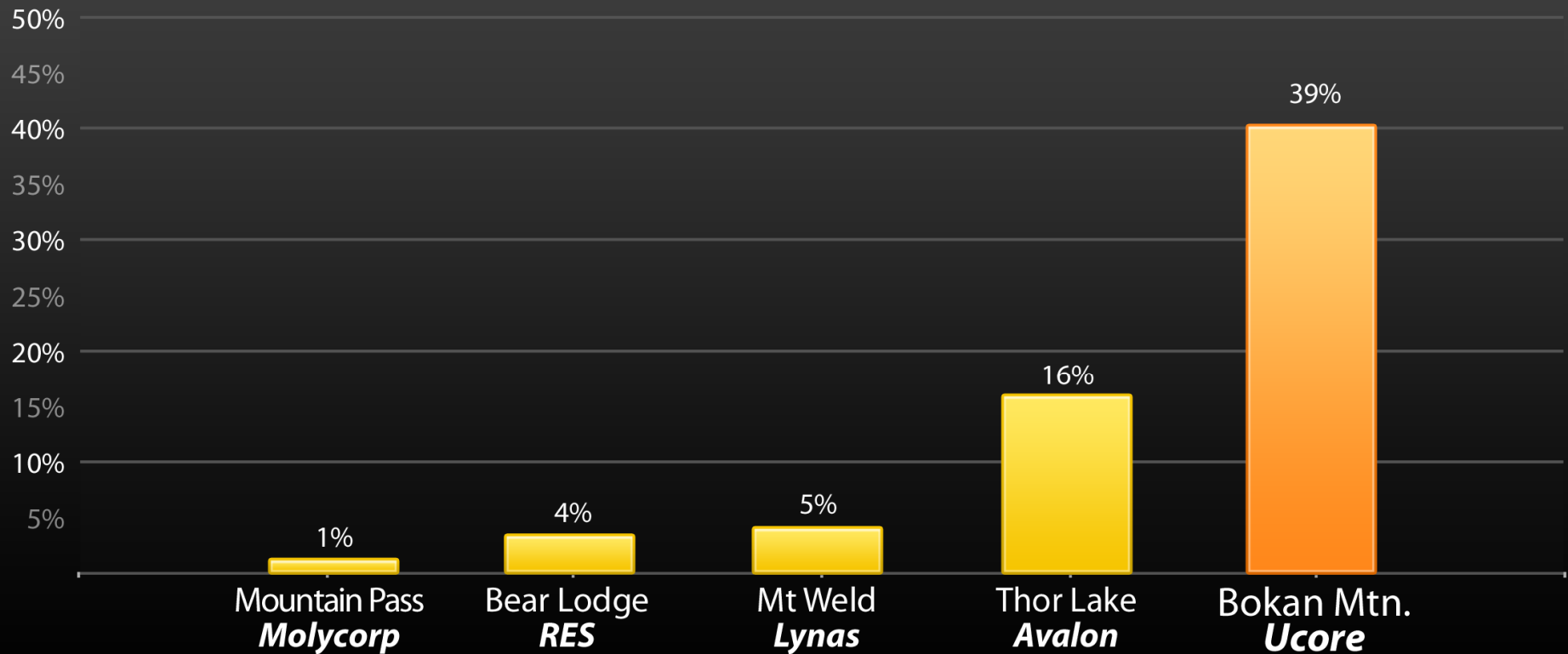


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# HREO content

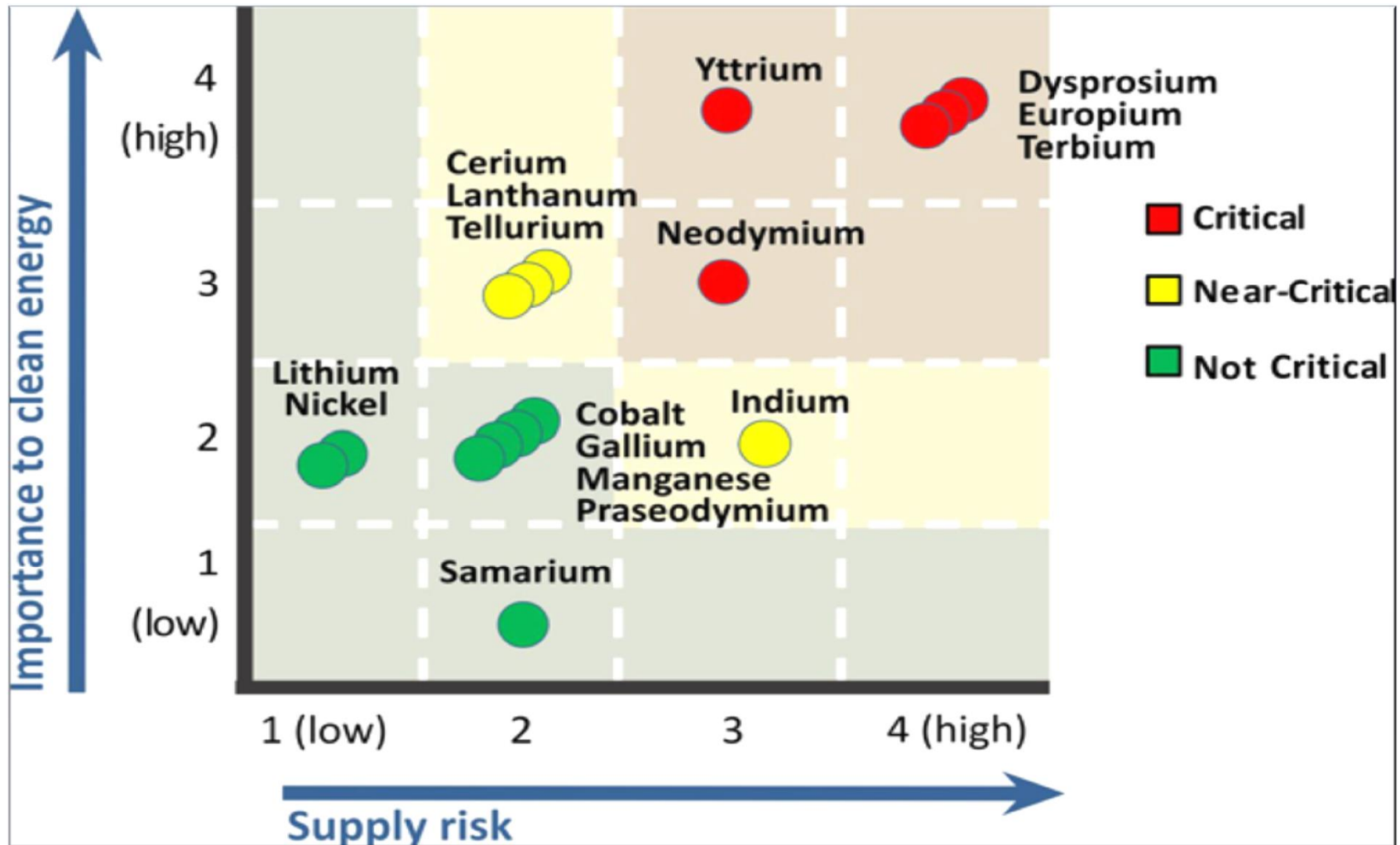
## Heavy vs Light Rare Earth Elements

HREO Content (as a percent of TREO)





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# “Technology Metals”

- Essential to military, automotive, green tech, hi-tech & medical
- U.S. & Japan largest combined consumers
- China produces 97% of the world's supply; withdrew critical REE's (Dy, Tb, Nd, Y) from global markets (the “Tech Metals Crisis”)





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# Critical Strategic Metals

U.S. deeply dependent on HREE's, particularly for military, national defense & homeland security applications.

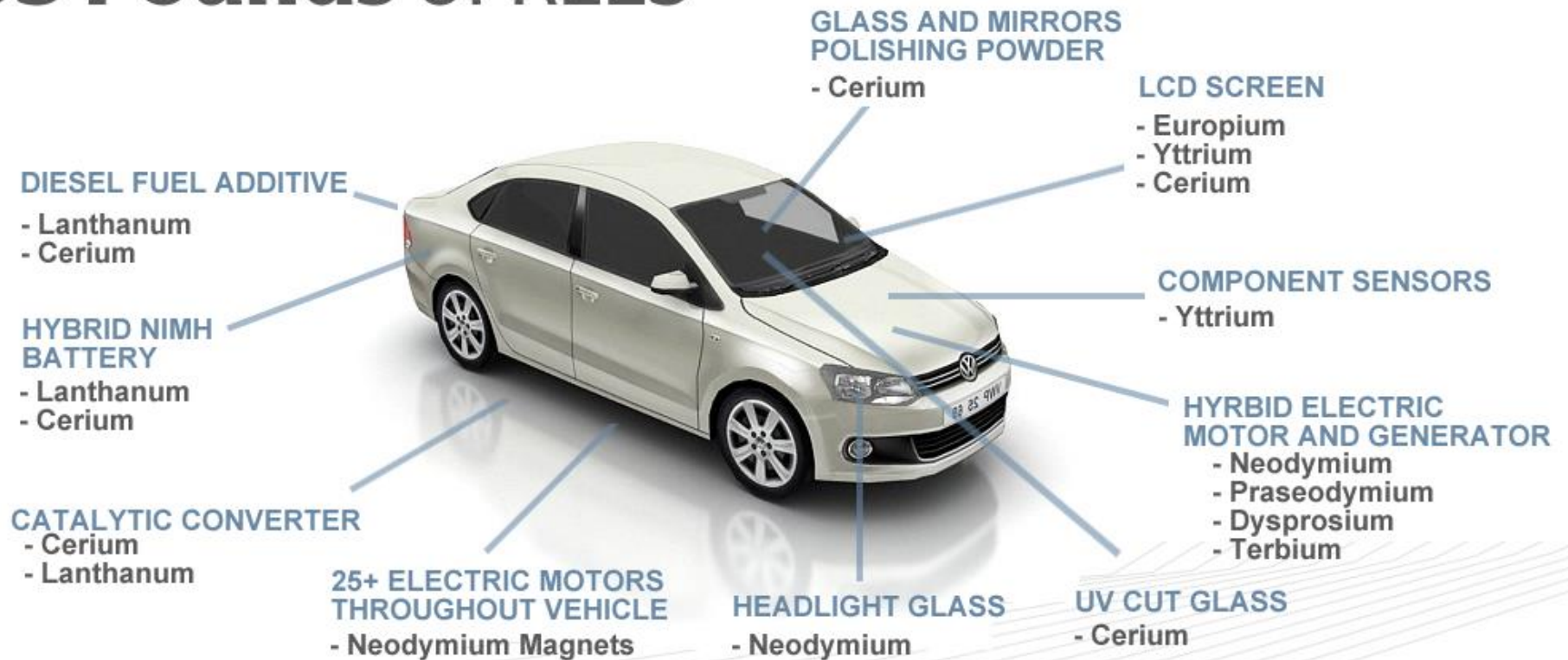
## Examples include:

- " Aircraft control
- " Guided missiles & smart bombs
- " Lasers, radar, sonar, mine detection
- " Computer technologies
- " Displays & optical equipment
- " Power generation
- " Coatings & ceramics





## 33 Pounds of REES





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# Green Technology



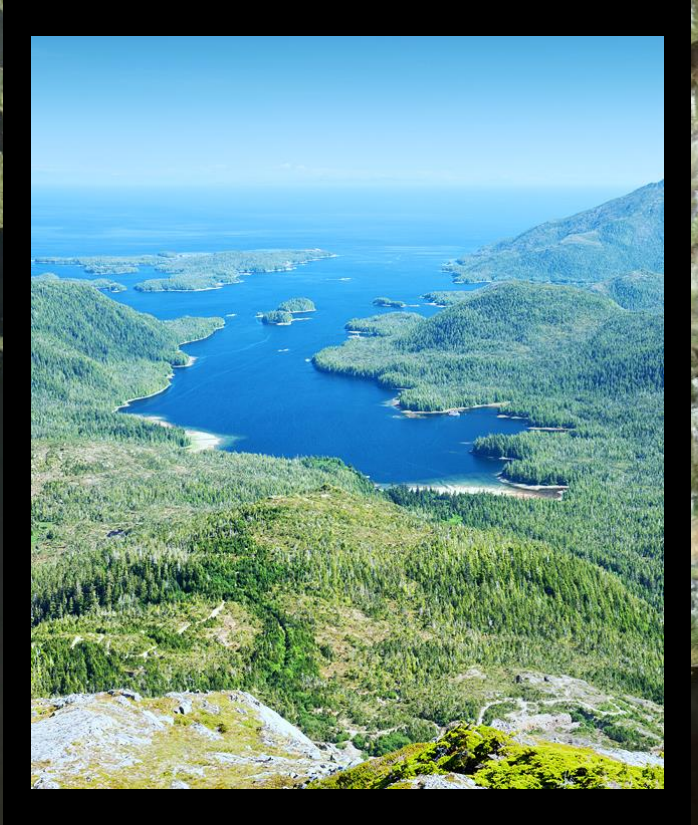


Ketchikan

Prince of Wales Island

Moira Sound

Bokan



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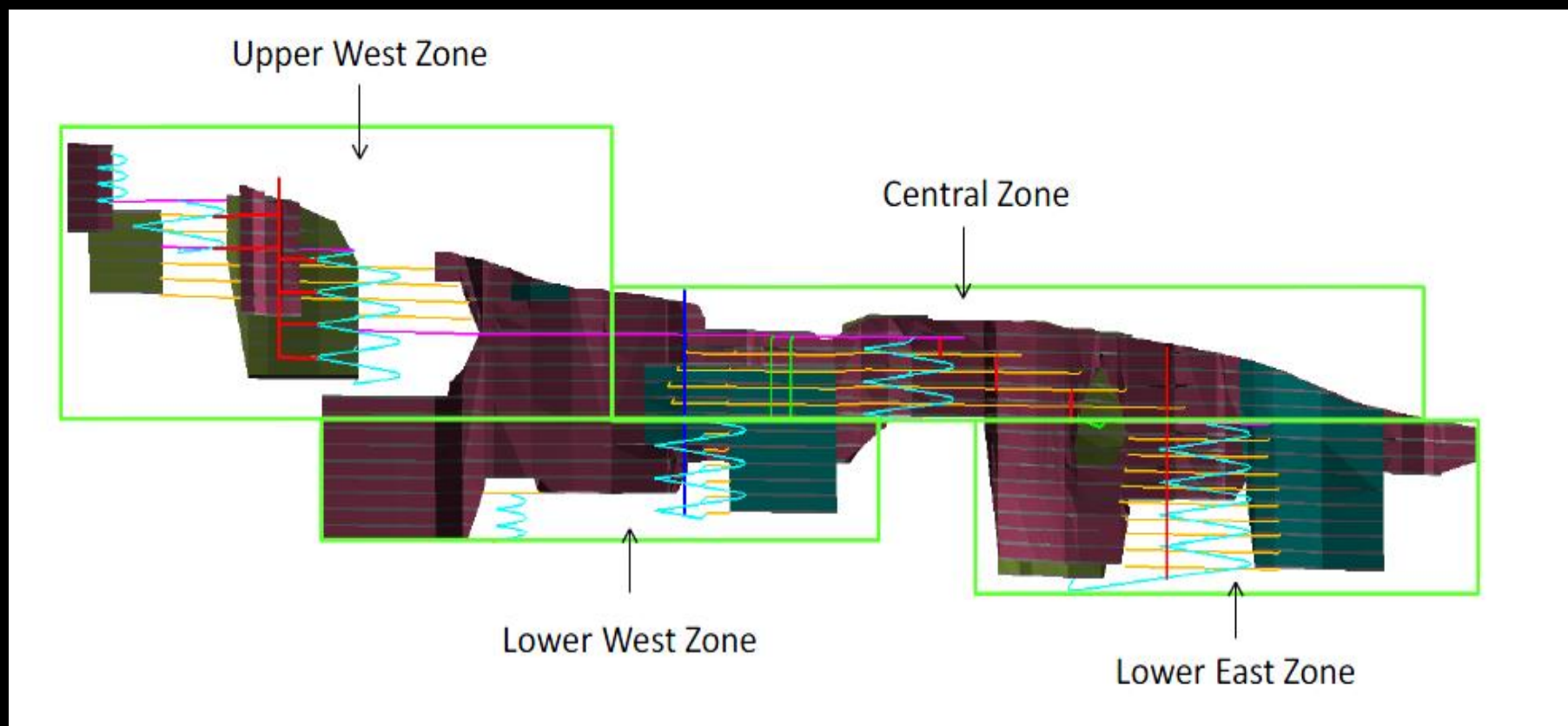
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Location



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# Orebody & Mine Design





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# Geology/Mineralization





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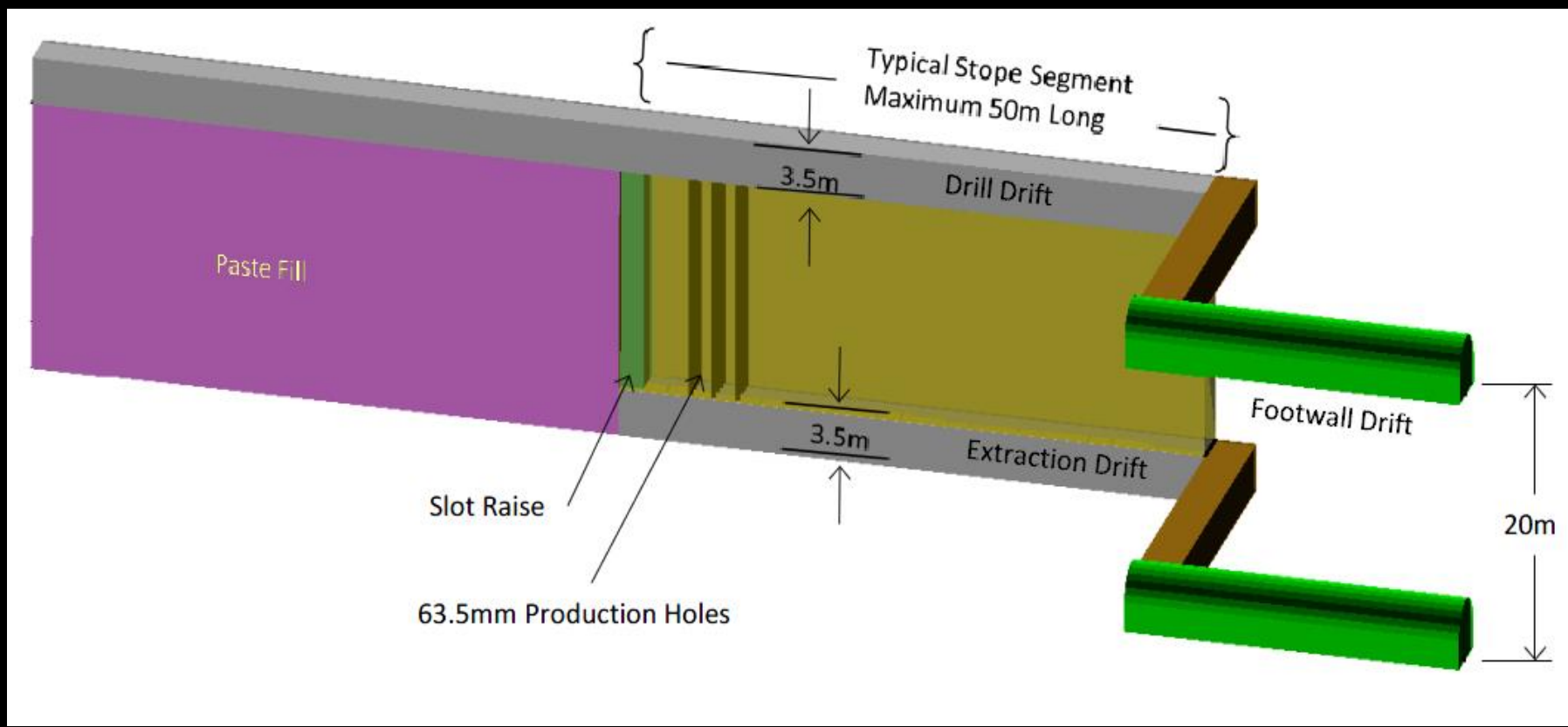
# Mine Operations

- Camp
  - 1,500 tonne per day underground mine
  - Trackless equipment underground
  - Emphasis will be on local hire and training
- ” 190 employees



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# Mine Operations





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# Unique Technology

## Utilizing ore sorting and mag. separation

- Sorting rejects approx. 52% of mill feed as waste
- Magnetic separators reject approx. 50% of feed
- 1,500 tpd mine but 750 tpd grinding circuit and 375 tpd leach and separation circuit

RESULT IS ALL TAILINGS WILL GO U/G AS BACKFILL

## Nitric Acid Leach

- Recycle 80% and at 225°C vs 90°C.

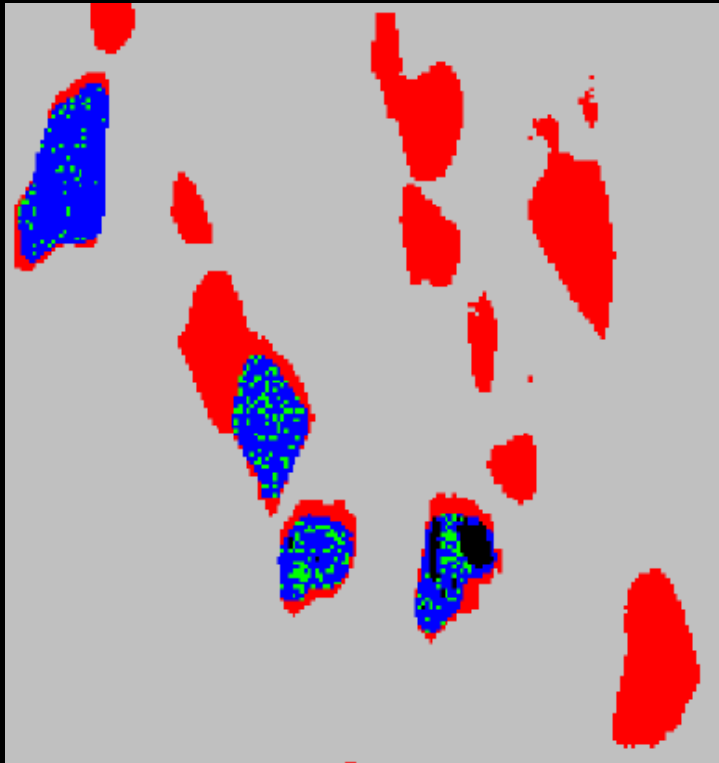
## Solid Phase Extraction (SPE)

- SPE columns separate individual rare earths

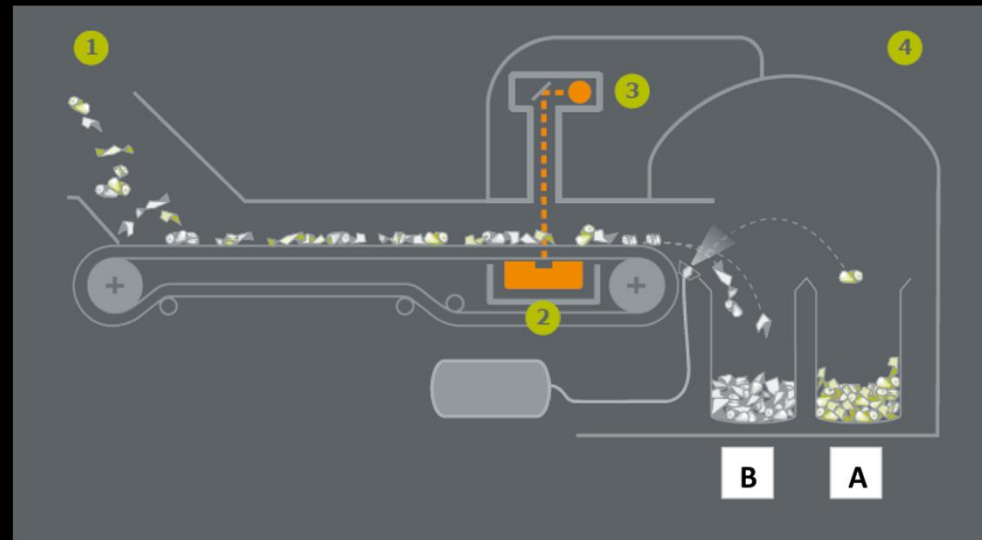


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# Ore Sorter



- 1 Feeding of unsorted material
- 2 X-ray camera
- 3 X-ray source
- 4 Separation chamber





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# Ore Sorter





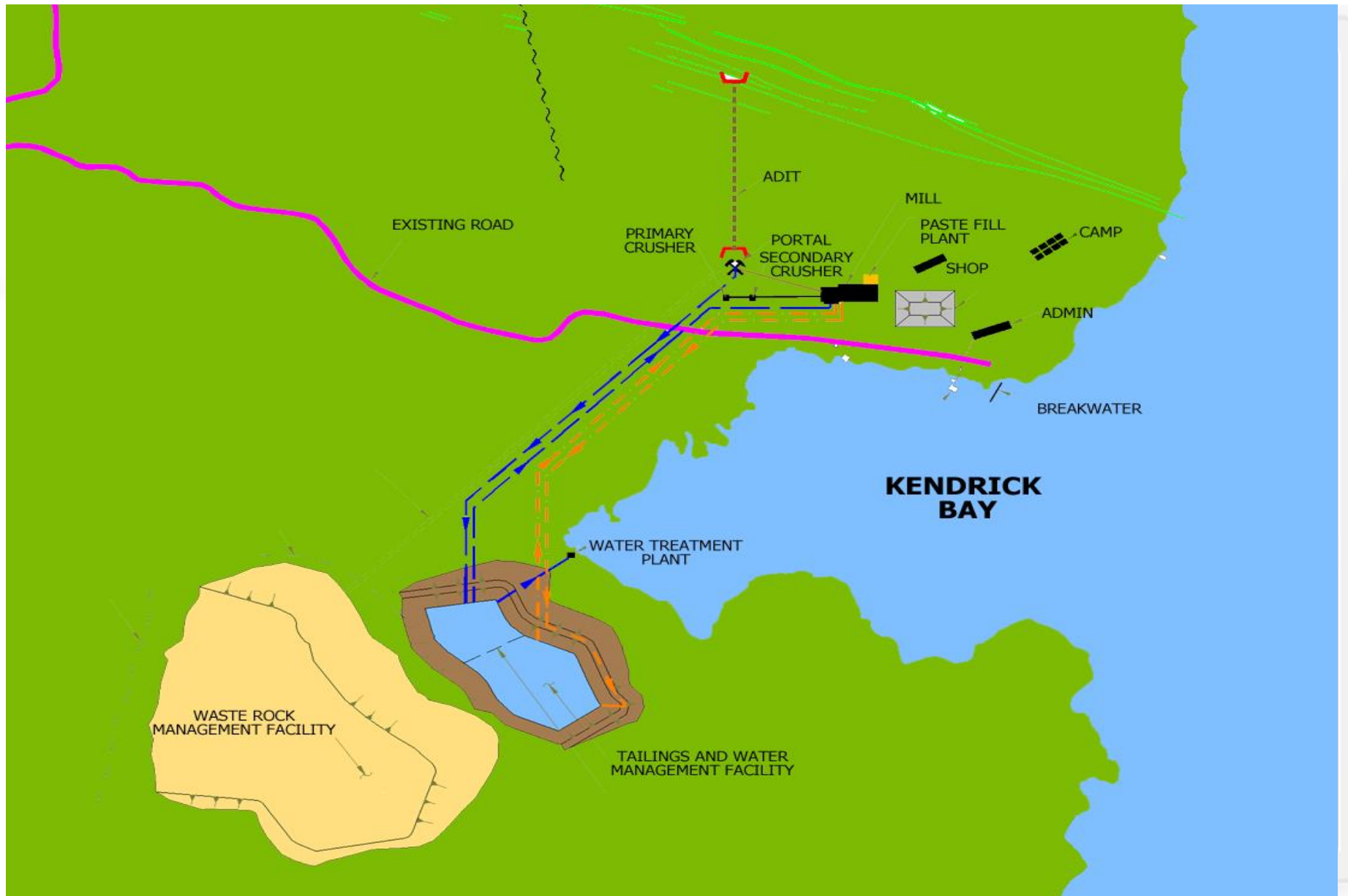
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# Sustainable Mining

Estimated GHG reduction over life of mine : 284,000 tonnes of CO<sub>2</sub>

Summary (1,500 tpd mine production case)				Tonne CO <sub>2</sub> reduction	
Switching sulfuric to nitric acid				Per Day	LOM
Reduction of freight from Asia (80% recycling of HNO <sub>3</sub> )				17.39	62,611
Reduction of acid consumption and leaching temperature				9.71	34,972
Waste heat recovery from power plant				36.67	132,019
Switching diesel to natural gas power generation				5.23	18,824
X-ray ore sorting (52% reduction in grinding energy)				9.89	35,612
<b>TOTAL</b>				<b>78.90</b>	<b>284,039</b>

U/G mine & no tailings on surface at closure results in very  
Small footprint and minimizes impacts.



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# Conceptual Project Design



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# PEA Results

- Preproduction capital - \$221 m incl. \$25 m contingency and includes the REO separation plant

- IRR - 43%

- NPV - \$577 m at 10% discount rate, pre-tax

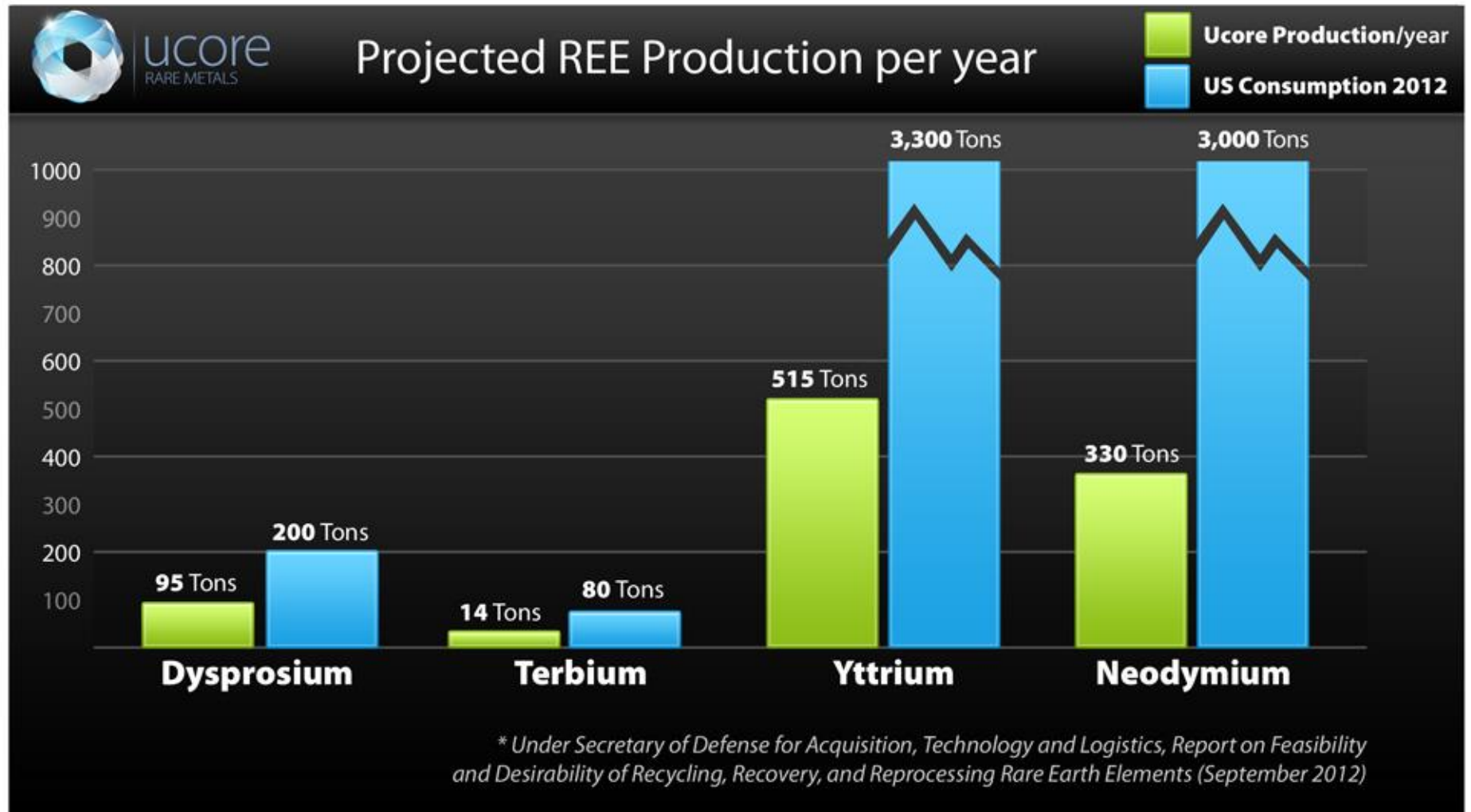
- Payback period – 2.3 years

” 11 year mine life

” Produce 2,250 tonnes REOs including 95 tonnes  $Dy_2O_3$ , 14 tonnes  $Tb_2O_3$  and 515 tonnes  $Y_2O_3$



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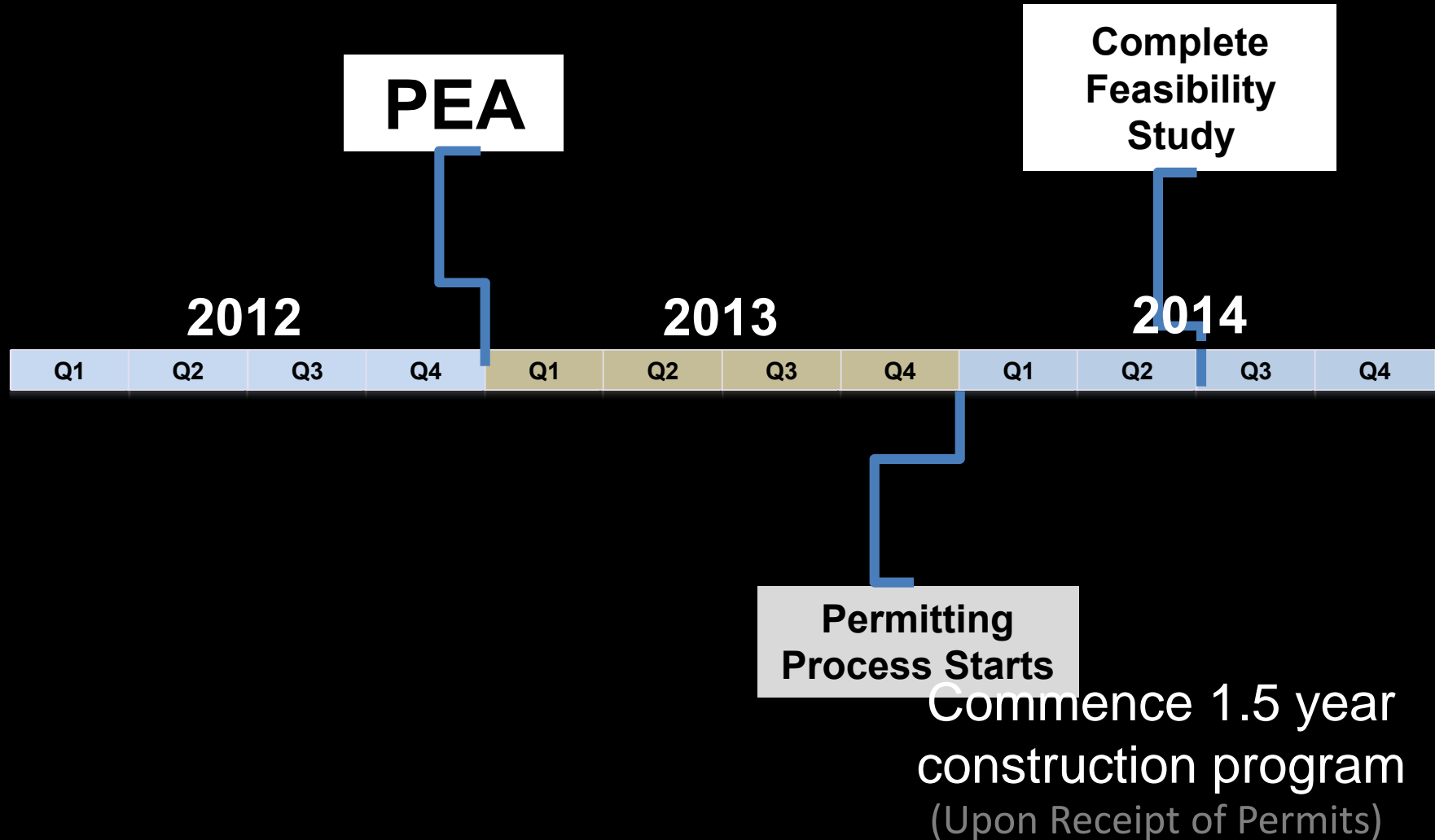
# Community/Gov't Relations

- “ Local hire: training
- “ State: enacted resolution, AIDEA
- “ Dept. of Defense
- “ Federal: POW road bill, meetings with and offers of support from Federal Representatives



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# Steps to Production





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# What Have We Got?

- Deposit with a high percentage of HREOs
  - Project with very robust economics
  - Very small footprint and no tailings on surface at closure
  - Production of individual REOs
- ” Great government support; Federal, State, Local and Alaska citizens



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# Drill Jumbo



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# ANFO Charging Truck



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# Underground Scooptram



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# Underground truck



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Rockbolter





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