CROSSLAND URANIUM MINES LTD: REE POTENTIAL AT THE CHARLEY CREEK PROJECT, NORTHERN TERRITORY: an update: 4 May, 2011.

The following presentation:

- briefly outlines the Rare Earth industry,
- the factors driving Rare Earth supply and demand issues,
- the opportunity windows for suppliers and
- the potential for Crossland's Charley Creek Project to exploit those opportunities.

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- JORC Statement: The review of exploration activities and results contained in this report are based on information compiled by Geoffrey S Eupene, a Fellow of the Australasian Institute of Mining and Metallurgy. He is a director of the Company and a full time employee of Eupene Exploration Enterprises Pty Ltd. He has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration, and to the activity which he is undertaking to qualify as a Competent Person as defined in the December 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Geoffrey S Eupene has consented to the inclusion in this report of the matters based on his information in the form and context in which it appears.

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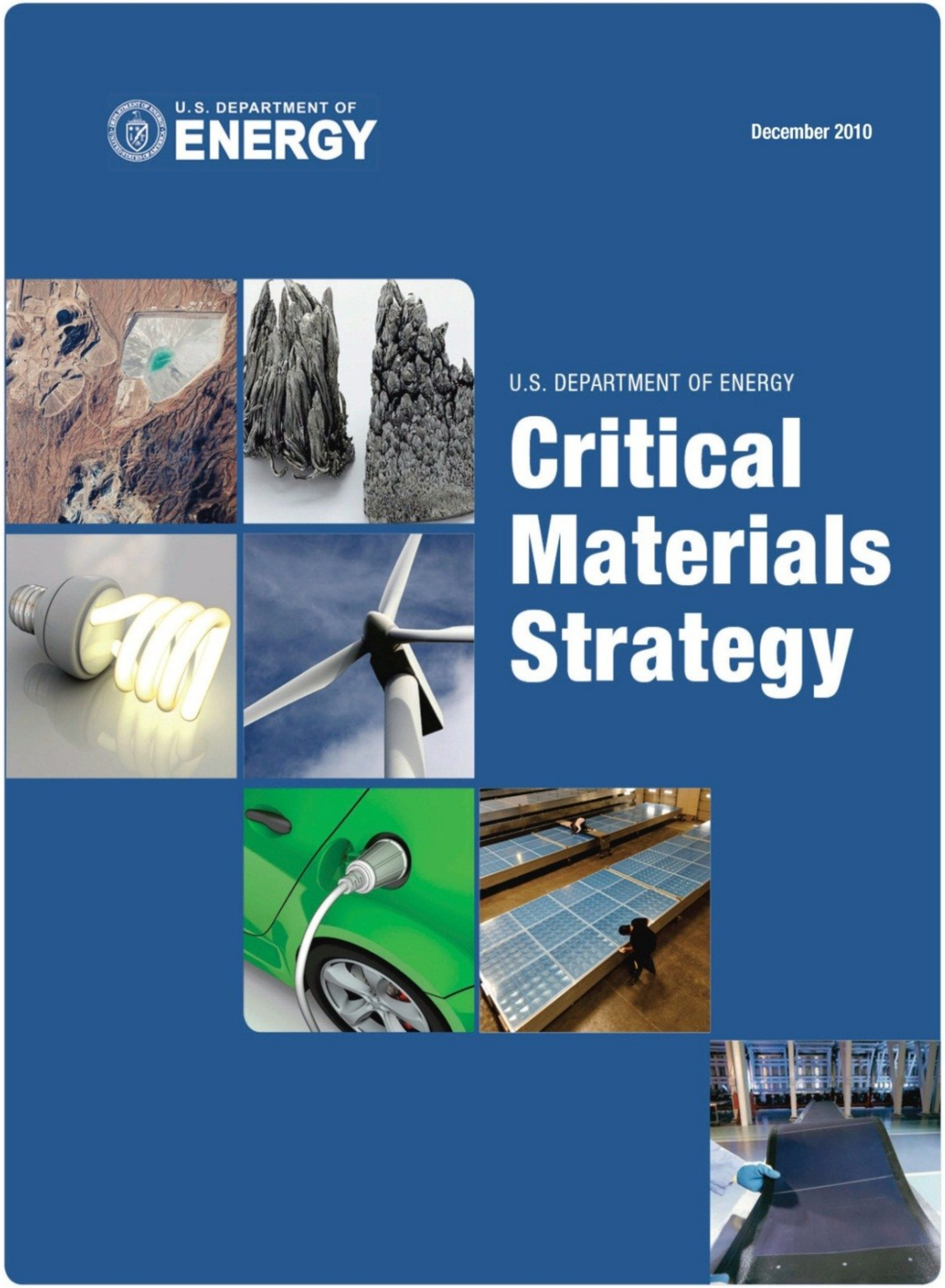
Understanding the Rare Earth Space can be a challenge, because the Rare Earth Elements (REE) are really 17 individual metals with ever- evolving uses, demand, and value.

This Dec 2010 report from US Dept of Energy, *Critical Minerals Strategy*, is a good starting point.

There are other specialist newsletters that also monitor the REE, such as John Kaiser's Bottom Fisher.



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Key Conclusions of USDoE Dec 2010 Report (abbreviated):

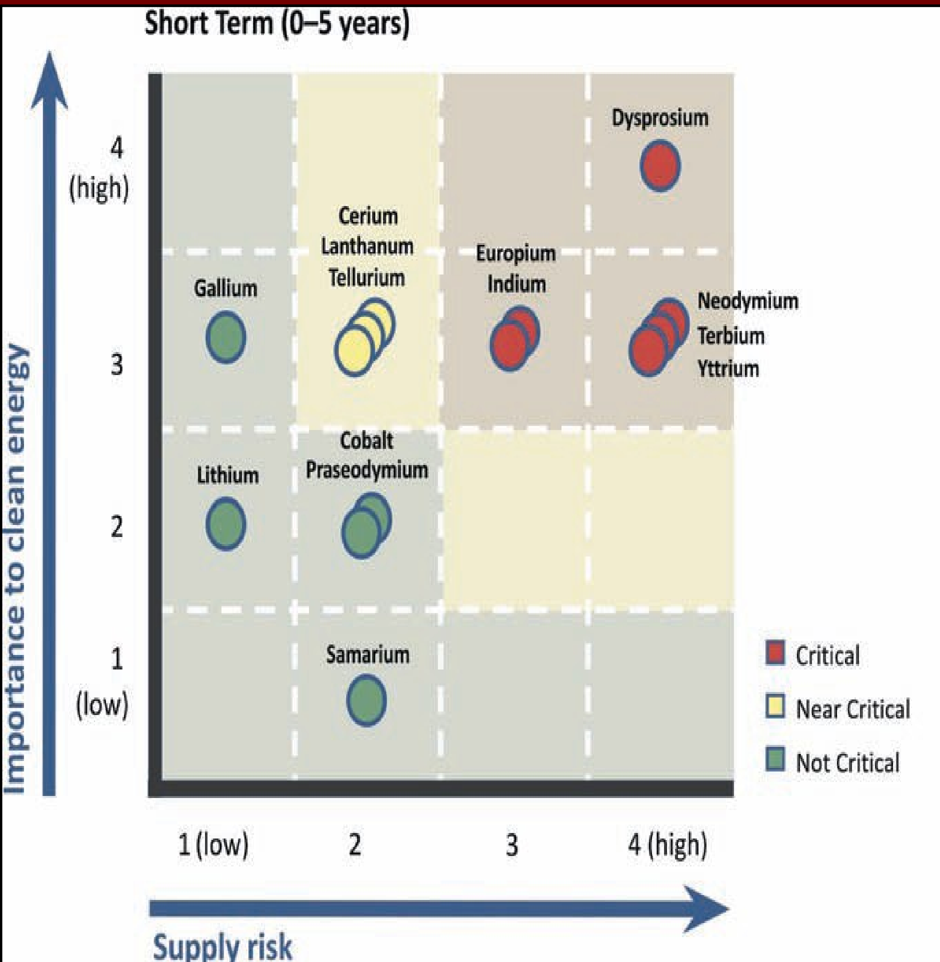
- Several clean energy technologies—including wind turbines, electric vehicles, photovoltaic cells and fluorescent lighting—use materials at risk of supply disruptions in the short term. Those risks will generally decrease in the medium and long term.

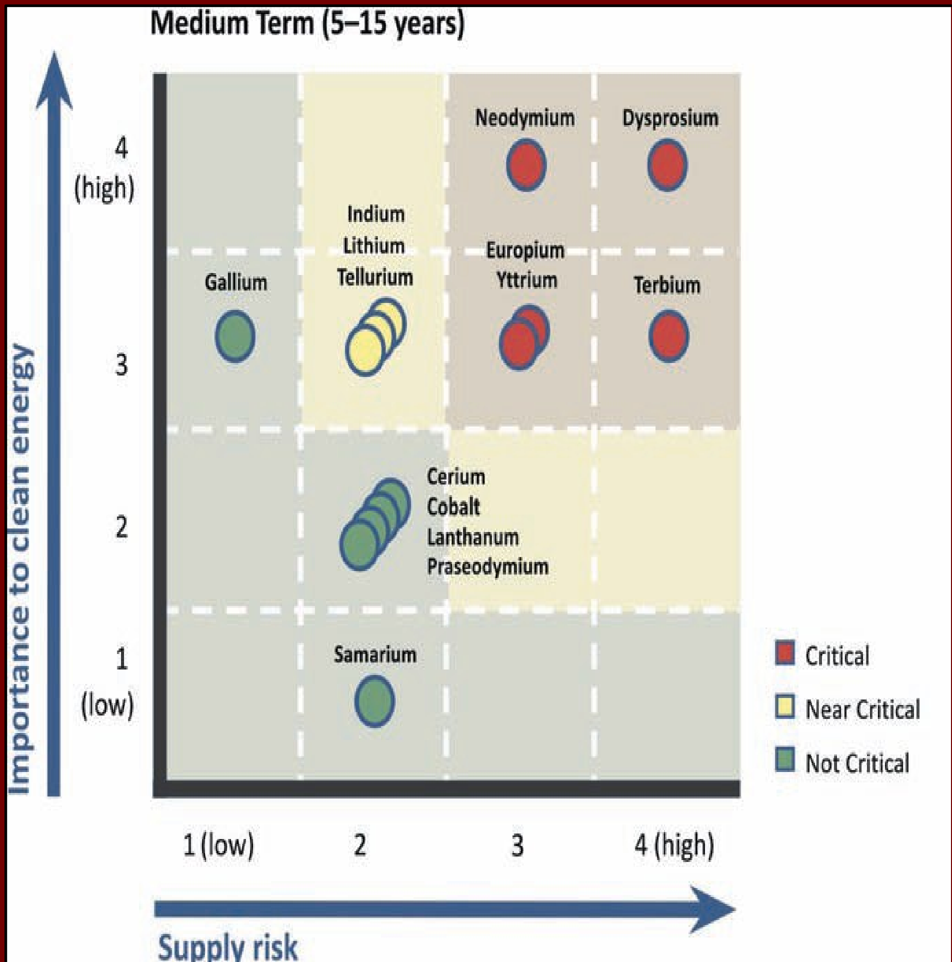
- Clean energy technologies currently constitute about 20 percent of global consumption of critical materials. As clean energy technologies are deployed more widely in the decades ahead, their share of global consumption of critical materials will likely grow.

- Of the materials analysed, **five rare earth metals (dysprosium, neodymium, terbium, europium and yttrium –Dy, Nd, Tb, Eu, and Y),** as well as indium, are assessed as **most critical** in the short term. For this purpose, “criticality” is a measure that combines **importance to the clean energy** economy and **risk of supply disruption**.

REE SUPPLY CRITICALITY

(from USDoE *Critical Materials Strategy*, Dec 2010)





Short Term Criticality:

Dy, Tb, Y, (Heavy REE)

Eu (Medium REE)

Nd (Light REE)

In

Medium Term Criticality:

Dy, Tb, Y (Heavy REE)

Eu (Med REE)

Nd (Light REE)

SUPPLY ISSUES

According to the USDoE report,
Rare earth metals are widely distributed.

- China holds around 36% of the REE reserves,
- Russia and others in the CIS hold 19%,
- the U.S. holds around 13%, and
- Australia has 5%, with
- the remaining 27% across many countries.

Comment: These shares could change quite quickly, given the relatively small tonnage of high value resources involved, and lack of exploration effort for them.

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MINERALOGY

- The light rare earths (**LREE** -atomic numbers 57–61), such as La and **Nd**, and medium rare earths (**MREE** -atomic numbers 62–64), such as **Eu**, are found mainly in **bastnäsite** and **monazite**.

- Heavy rare earths (**HREE** -atomic numbers 65–71), such as **Tb** and **Dy**, along with **Y** (atomic number 39), are somewhat **more scarce** and typically concentrated in **ionic adsorption clay** and **xenotime**, commonly found in southeastern China.

- Comment: Crossland's REE mix contains good **HREE**, and the mineralogy is monazite and xenotime in Cockroach Dam area. Most of the HREE are in xenotime. The mineralogy is not yet confirmed for Cattle Creek bedrock deposit.




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MINERAL ECONOMICS of REE

- There are three primary criteria that determine the economic feasibility of a potential rare earth mine:
  - tonnage,
  - grade and
  - the cost of refining the rare earth mineral.

- The rare earth content (mix) of each deposit is also essential to estimating the deposit's profitability

- A mine may be viable (and therefore attractive to investors) if:
  - a low-grade (<5%) ore occurred with large tonnage and familiar mineralogy or
  - a high-grade ore occurred with familiar mineralogy and moderate reserve tonnage.

- Globally, the four principal high-yield REE-bearing minerals are. bastnäsite, monazite, xenotime and ion adsorption clays. The following slide summarises the output from current producers:




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PRESENT REE SUPPLIERS (USDoE Report, p.30)

Table 3-2. Rare Earths Types and Contents of Major Contributing Source Minerals Supplying REEs to the Global Market (Percentage of Total Rare Earth Oxides)[21]

Designated Critical by USDoE

		LIGHT				MEDIUM			HEAVY							
TYPE	LOCATION(S)	Lanthanum (La)	Cerium (Ce)	Praseodymium (Pr)	Neodymium (Nd)	Samarium (Sm)	Europium (Eu)	Gadolinium (Gd)	Terbium (Tb)	Dysprosium (Dy)	Holmium (Ho)	Erbium (Er)	Thulium (Tm)	Ytterbium (Yb)	Lutetium(Lu)	Yttrium(Y)
Currently active:																
Bastnäsite	Bayan Obo, Inner Mongolia	23.0	50.0	6.2	18.5	0.8	0.2	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Xenotime	Lahat, Perak, Malaysia	1.2	3.1	0.5	1.6	1.1	0.0	3.5	0.9	8.3	2.0	6.4	1.1	6.8	1.0	61.0
Rare earth laterite	Xunwu, Jiangxi Province, China	43.4	2.4	9.0	31.7	3.9	0.5	3.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	8.0
Ion adsorption clays	Longnan, Jiangxi Province, China	1.8	0.4	0.7	3.0	2.8	0.1	6.9	1.3	6.7	1.6	4.9	0.7	2.5	0.4	65.0
Loparite	Lovozerskaya, Russia	28	57.5	3.8	8.8	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Various	India	23	46	5	20	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Various	Brazil	N.A.														

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REE distribution from current suppliers:

- According to the USDoE table, only the ion adsorption clays of Jiangxi Province, and the Lahat Malaysia xenotime by-products from tin mining have significant proportions of the heavy REE and Y.

- The largest portion of Eu comes from the Laterite deposits of Jiangxi.

- Supplies from the Chinese deposits are being restricted, and the Malaysian production capacity is also very small.

- Of the REE in critical supply category, only Nd is widely distributed among the other producers.

- We should look at likely new supplies in the next 5 year timeframe to see if the shortfall from Chinese source is likely to be overcome by new developments:

NEAR- TERM POTENTIAL REE SUPPLIERS (USDoE Report, p.31; CUX recently announced drill result.)

Designated Critical by USDoE

TYPE	LOCATION(S)	LIGHT				MEDIUM			HEAVY							
		Lanthanum (La)	Cerium (Ce)	Praseodymium (Pr)	Neodymium (Nd)	Samarium (Sm)	Europium (Eu)	Gadolinium (Gd)	Terbium (Tb)	Dysprosium (Dy)	Holmium (Ho)	Erbium (Er)	Thulium (Tm)	Ytterbium (Yb)	Lutetium(Lu)	Yttrium(Y)
Possible to come online in the next 5 years:																
Bastnäsite[22]	Mountain Pass, California, United States	33.2	49.1	4.3	12.0	0.8	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Monazite	Mount Weld, Australia	26.0	51.0	4.0	15.0	1.8	0.4	1.0	0.1	0.2	0.1	0.2	0.0	0.1	0.0	0.0
Apatite	Nolans bore, Australia	20.0	48.2	5.9	21.5	2.4	0.4	1.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Fergusonite[23]	Nechalacho, Canada	16.9	41.4	4.8	18.7	3.5	0.4	2.9	1.8	0.7	0.0	0.0	0.0	0.0	0.0	7.4
Bastnäsite & Parisite	Dong Pao, Vietnam	32.4	50.4	4.0	10.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.007
Alanite & apatite	Hoidas Lake, Canada	19.8	45.6	5.8	21.9	2.9	0.6	1.3	0.1	0.4	0.0	0.0	0.0	0.0	0.0	1.3
Trachyte	Dubbo Zirconia, Australia	19.5	36.7	4.0	14.1	2.5	0.1	2.1	0.3	2.0	0.0	0.0	0.0	0.0	0.0	15.8
Monazite?	**CUX CCA121 av. 37-42m**	**16.7**	**44.8**	**3.9**	**14.9**	**2.8**	**.6**	**2.5**	**0.4**	**1.9**	**0.4**	**0.9**	**0.1**	**0.7**	**0.1**	**9.4**

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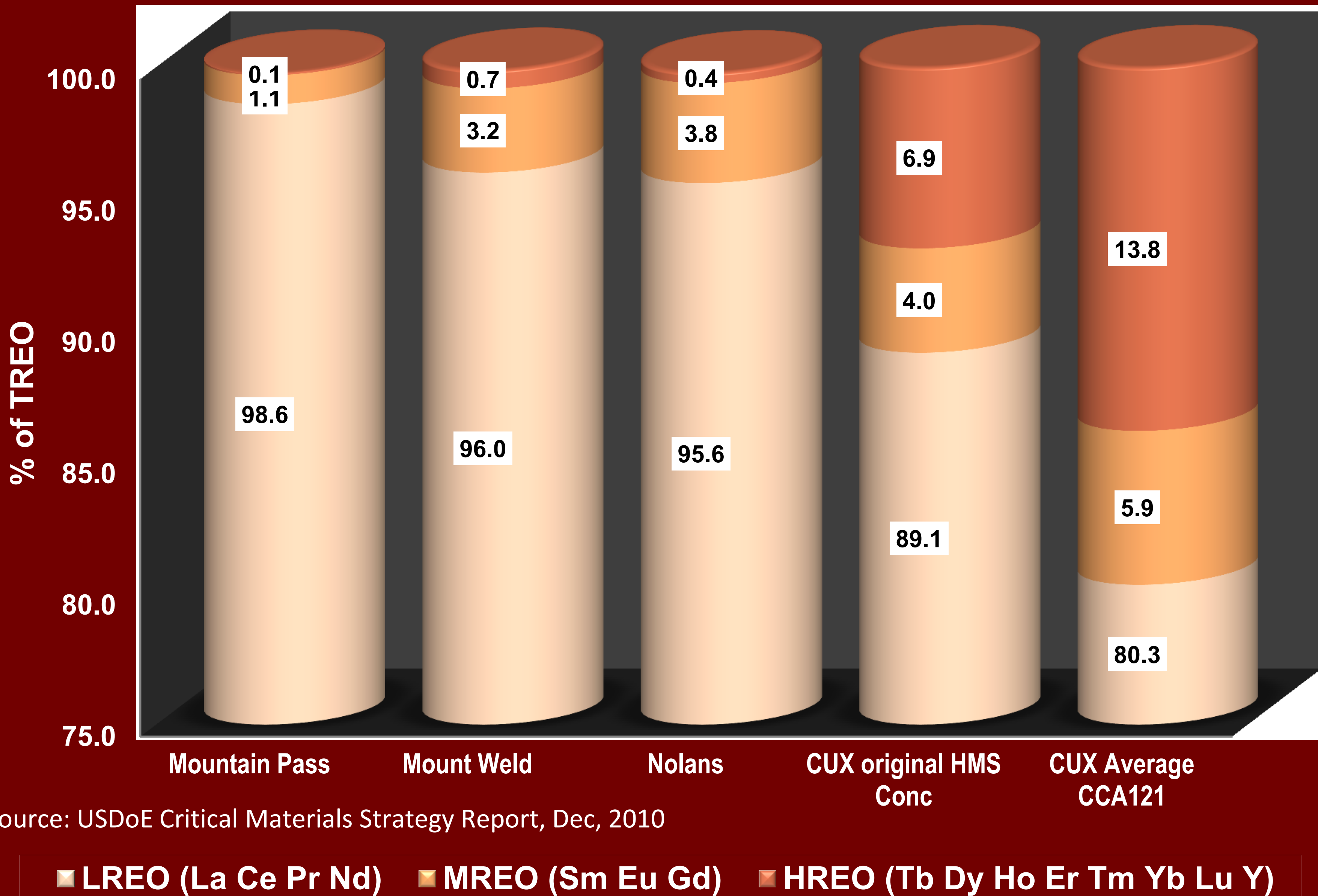
OBSERVATIONS:

- While production from the well- advanced projects of Molycorp (Mountain Pass, California) and Lynas (Mount Weld WA) will help to ease the supply criticality of **Nd**, and **Eu** in the case of Mount Weld, neither of these two projects in construction will contribute much to the criticality of supply of the Heavy REE
- It is only projects that are not yet committed that can contribute much to the supply of the critical HREE identified in the DoE report: **Tb, Dy**, and **Y**.

- The next slide demonstrates how the REE Distribution in the recently announced CUX drill intersection, as well as the 39% TREO+Y monazite concentrate produced from CUX's Alluvial test work compare with the projects under construction and the nearby advanced proposed project (Arafura's Nolans).

COMPARISON OF POSSIBLE NEW REE PRODUCTION* AND RECENT CUX RESULTS



* Source: USDoE Critical Materials Strategy Report, Dec, 2010

ORIGINAL CROSSLAND EXPLORATION CONCEPT:

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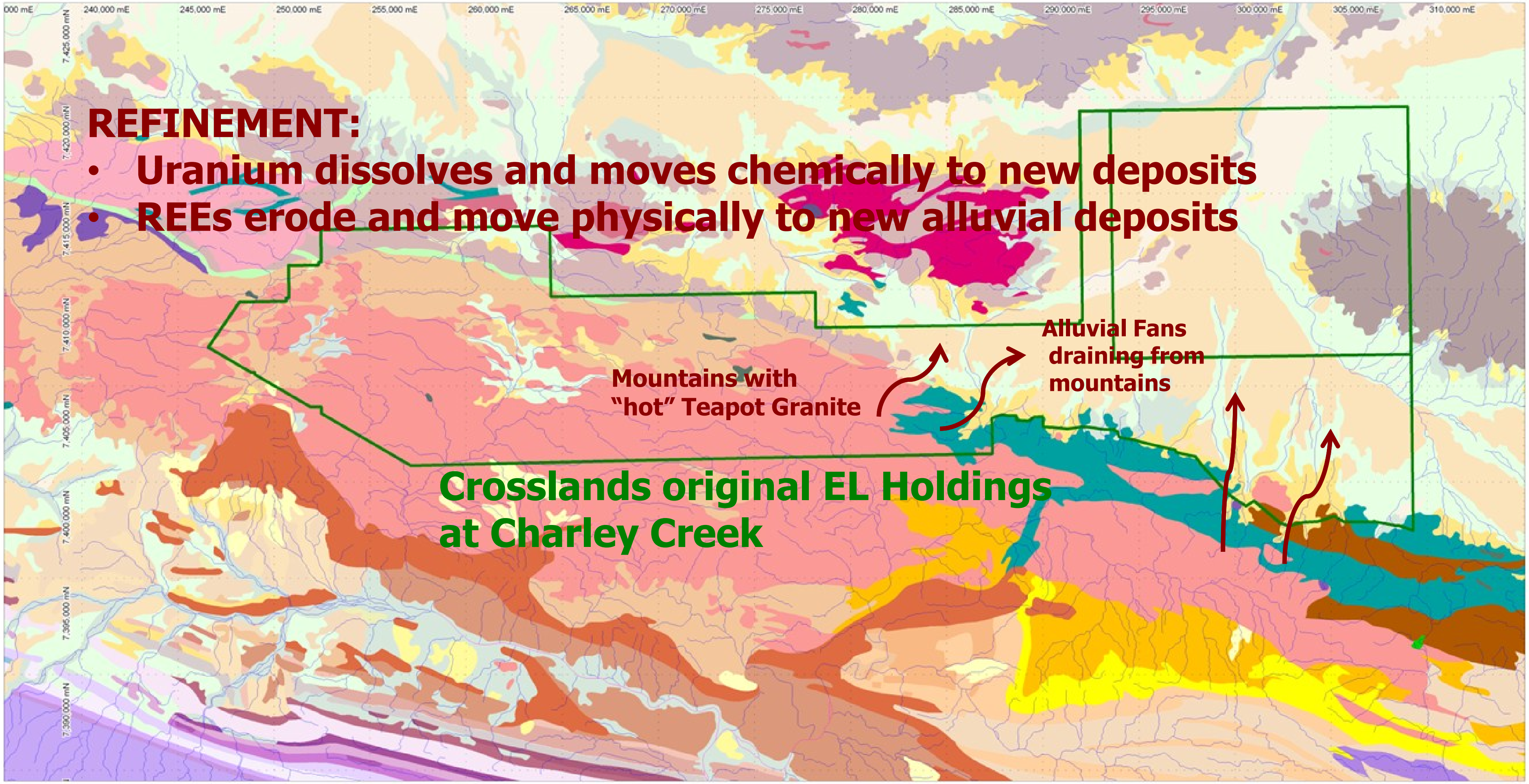

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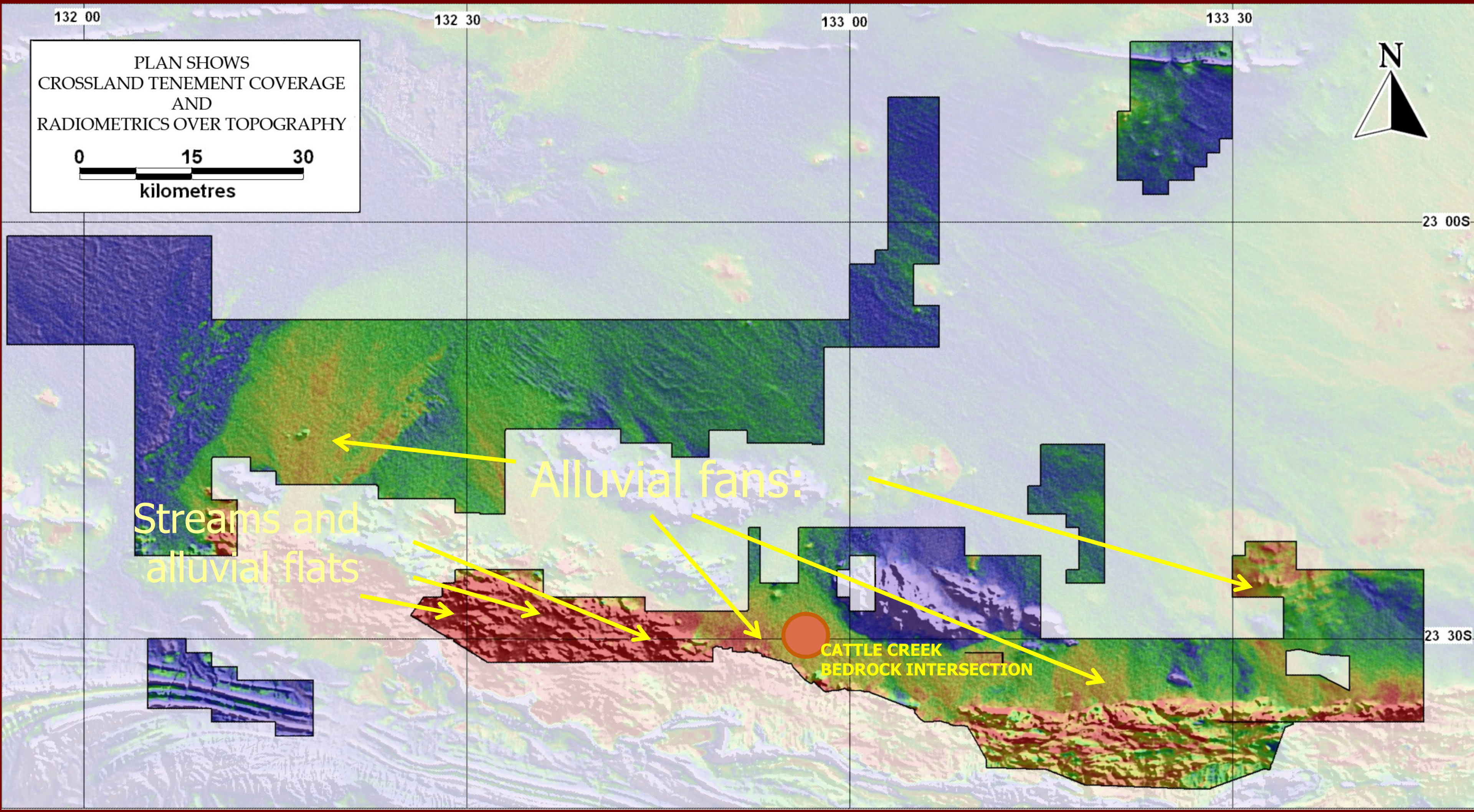
Crossland's REE Targets are:

- Alluvial deposits draining directly from granite source rocks in the mountains
- Alluvial deposits in the vast alluvial fans draining from the mountains
- Newly- discovered bedrock deposits below the flats.

Charley Creek Alluvial REE: CUX/PUC Titles showing Radiometrics and Topography

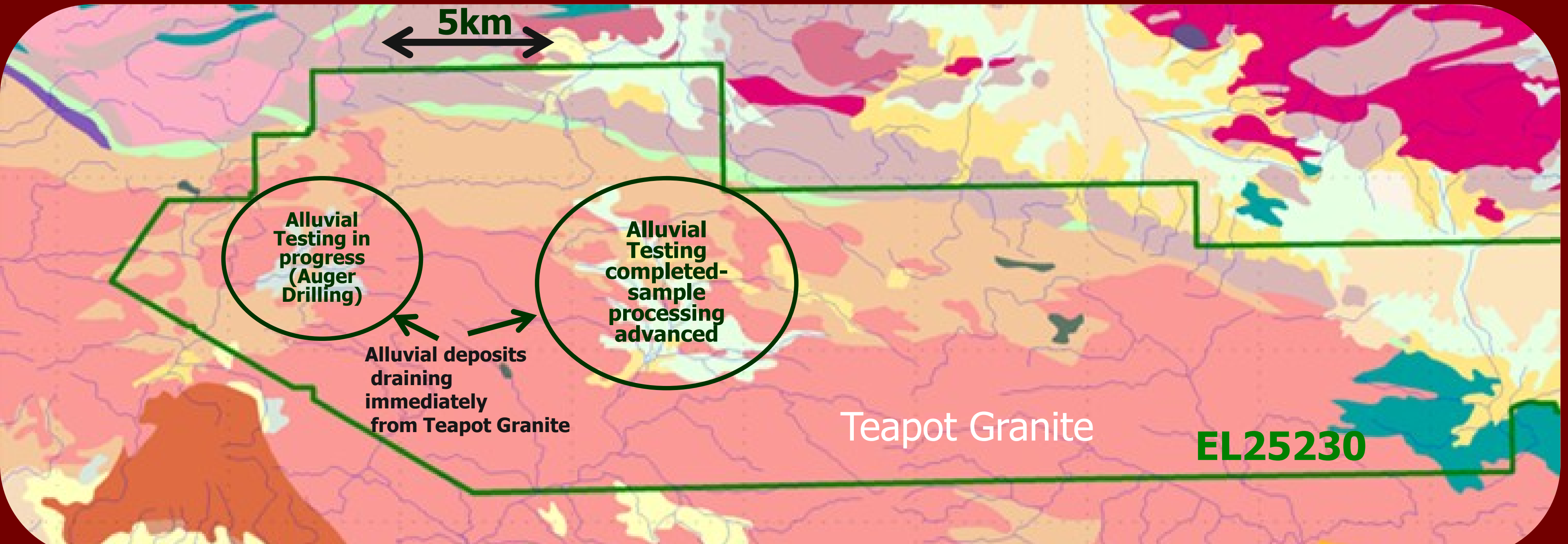


STRATEGY:

- Maintain credibility in the complex REE space- get good advice
- If possible establish a high grade alluvial source of Monazite/ Xenotime Heavy Mineral concentrate with good REO mix that we can get to market quickly from the original discovery area in the Teapot Granite
- We need to determine what processing and marketing options there will be for such a concentrate; e.g. on- site production of Rare Earth Carbonate mix
- See what else is out there on our over 4000sq.Km of holdings:
  - Will the vast alluvial fans fly as alluvial deposits?
  - Are there variations in REO mineralogy and mix that offer possibilities for customising supply?
  - Are there other bedrock sources of REO (and other metals) beneath the plains or in the mountains?

PROGRESS: Alluvial Deposits in the mountains draining immediately from the Teapot Granite in the Cockroach Dam Prospect Area:

- Over 50sq.Km already auger sampled on 400 by 100m grid (1400+samples)
- 25kg Samples being processed to primary heavy mineral concentrate on site
- Expect indicative resource numbers in June
- Expect good grades, good REO mix, possibility of fast permitting and production



OBSERVATIONS ON CUX REO MIX:

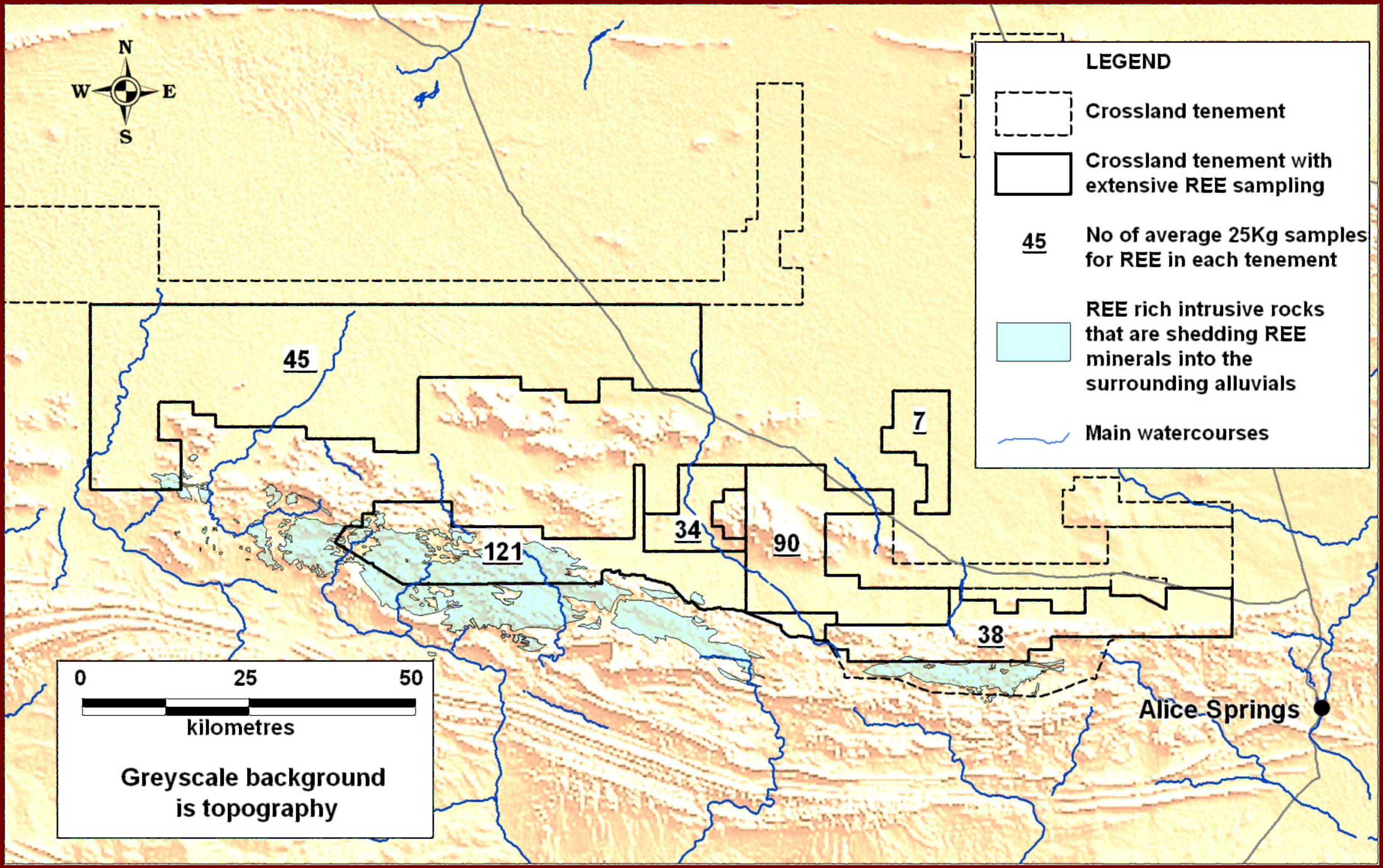

- The original Heavy Mineral Concentrate grades announced by CUX on 1 November 2010, of 39.1% TREO+Y is a typical REE mix that Crossland expects will be representative of alluvial concentrates that can be produced from the drainages of the Teapot Granite. Subject only to removal of variable amounts of (saleable) zircon, the ratios indicated previously should be readily achievable from an alluvial heavy mineral concentrate from the immediate drainages of the Teapot Granite.

- The REE distribution obtained from the bedrock intersection in Cattle Creek, CCA121, contained a greater proportion of Heavy REE and also Europium, suggesting it comes from a different source than Teapot Granite.

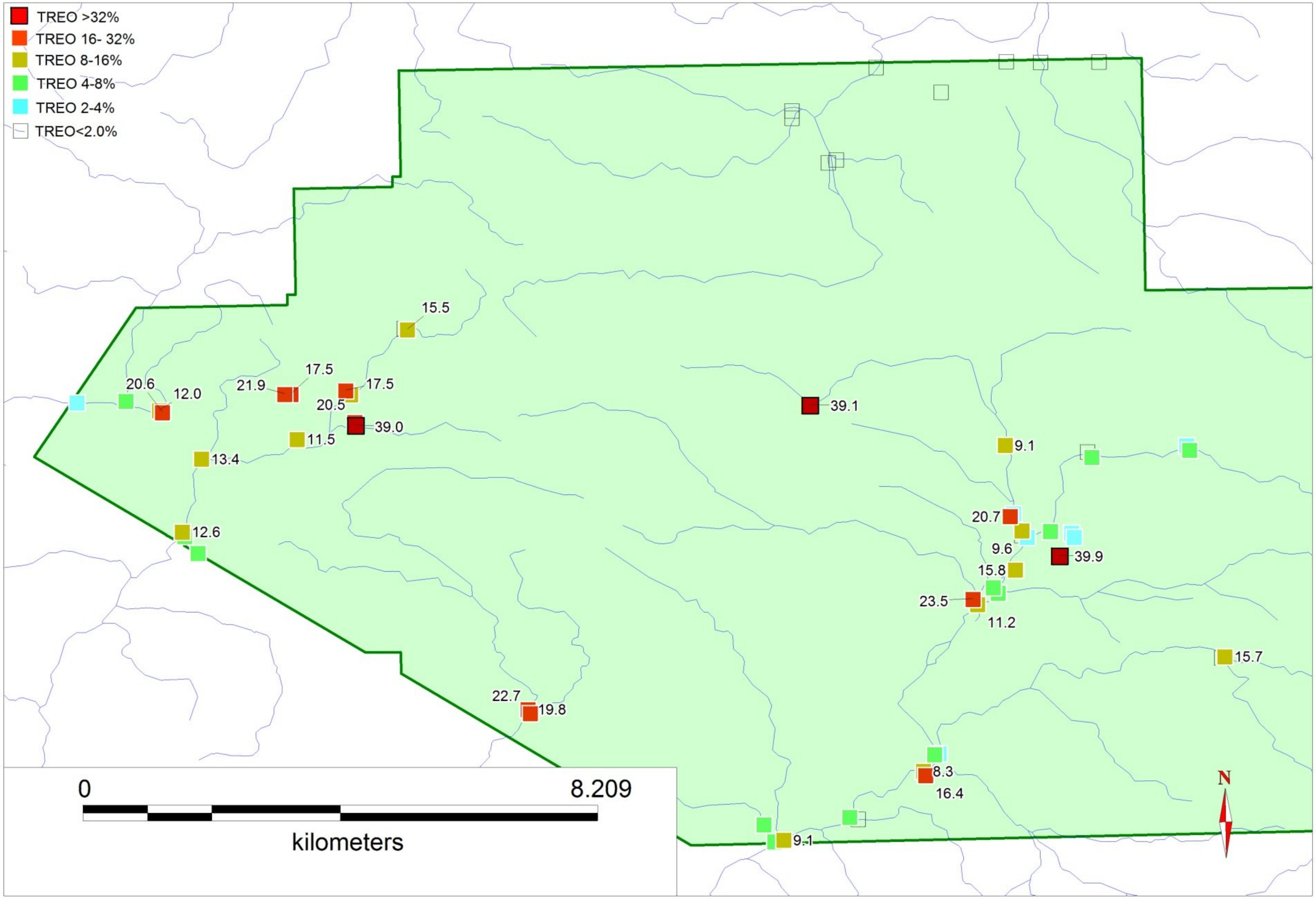
- There is a wide variety of REE mixes indicated in the regional stream sediments and in the drill samples. We have established that almost all HeavyREE is present in xenotime at Cockroach Dam. More widespread presence of xenotime could be attractive.

PROGRESS: Regional stream sediment sampling:

- 195 results received
- 530 more in progress
- Cattle Creek Prospect identified
- Alluvial Fan potential appears promising



Cockroach Dam Alluvial Heavy Mineral TREO+Y results



CATTLE CREEK PROSPECT: Crossland's new bedrock REE discovery

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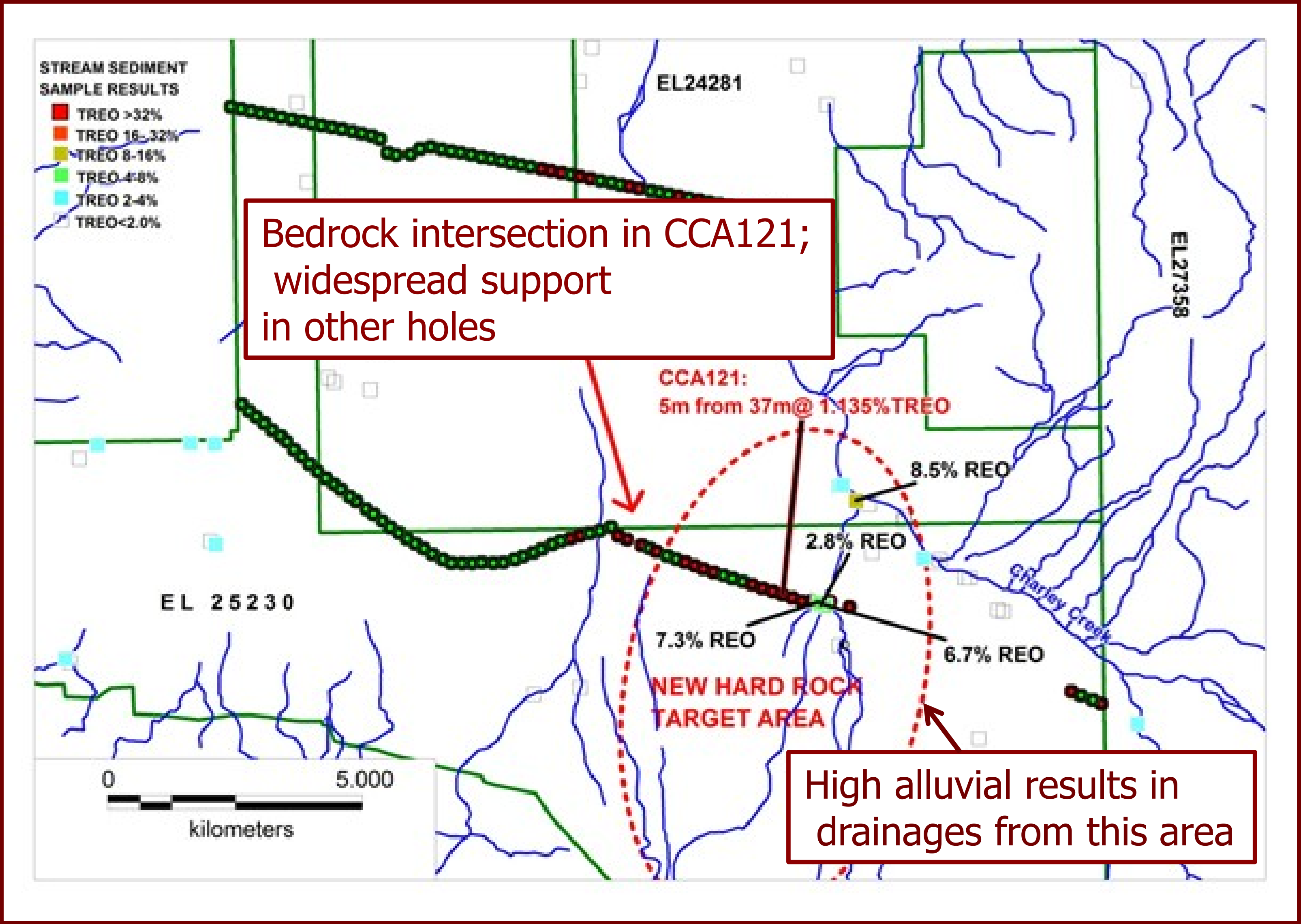

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First hole of 2011 drill program at Cattle Creek

- Over 40km^2 prospect area
- 92 holes/4118m already completed at Cattle Creek
- Results will start to flow in the next week or two
- Additional drilling planned based on results

Things to do at Crossland (on REE):

- 92 holes already completed at Cattle Creek:
- Over 1000x 4m composite samples already at the laboratory: initial results soon
- There is much to learn and follow up from the data we already have:
  - High grade Alluvial Heavy Mineral Concentrates at Cattle Creek
  - Heavy REO proportions of almost 70% from stream concentrates, and 63.6% from drill samples- are these from additional Xenotime sources?
  - Fans close to the ranges with high contents of REO access to large volume alluvial concentrations for a much longer term alluvial based operation
  - Concentrate process routes and market potential
- **Do we have a bedrock deposit at Cattle Creek Prospect that has grades, tonnage and REO mix to support a stand alone REE production facility?**