#### Texas Rare Earth Resources



May 2013 Marcum Conference Presentation

(Symbol: TRER)



## Forward Looking Statement

This presentation contains forward-looking statements within the meaning of the U.S. Securities Act of 1933, as amended, and U.S. Securities Exchange Act of 1934, as amended. The estimated resources at the Round Top project, potential recoverability of resources, the possibility of selling the Company in 2014 and the potential value of such sale, the possible 15,000 – 22,000 mtpd heap leach project, the potential beryllium, uranium, and thorium mineralization at the property, exploration potential of Little Blanca, Little Round Top, Sierra Blanca and other geologic features at the site, possible whole rock recoveries, anticipated climate, labor and regulation at the Round Top project, potential unit costs compared to FCX Morenci, anticipated processing choices, potential heap leach recovery, potential market and values for REEs, including ytterbium, erbium, holmium, thulium, lutetium and thorium, process economic objectives, including gross margin and potential for margin growth with increased tonnage, future financing possibilities and anticipated balance sheet objectives, management objectives and the likely business friendly environment in Texas are forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by such statements. Such factors include, among others, uncertainty of mineralized material and mineral resource estimates, risks relating to completing metallurgical testing at the Round Top project, risks related to project development determinations, risks related to fluctuations in the price of rare earth minerals, the inherently hazardous nature of miningrelated activities, potential effects on the Company's operations of environmental regulations, risks due to legal proceedings, risks related to uncertainty of being able to raise capital on favorable terms or at all, as well as those factors discussed under the heading "Risk Factors" in the Company's latest annual report on Form 10-K as filed on November 15, 2012 and other documents filed with the U.S. Securities and Exchange Commission. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those described in forward-looking statements, there may be other factors that cause results not to be as anticipated, estimated or intended. Except as required by law, the Company assumes no obligation to publicly update any forward-looking statements, whether

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### Cautionary Note to Investors

The United States Securities and Exchange Commission ("SEC") limits disclosure for U.S. reporting purposes to mineral deposits that a company can economically and legally extract or produce. This presentation uses certain terms that comply with reporting standards in Canada and certain estimates are made in accordance with Canadian National Instrument. NI 43-101 ("NI 43-101") and the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") - CIM Definition Standards on Mineral Resources and Mineral Reserves, adopted by the CIM Council, as amended (the "CIM Standards"). NI 43-101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosures an issuer makes of scientific and technical information concerning mineral projects. This presentation uses the terms "resource." "measured and indicated mineral resource." The presentation uses the terms "resource." "measured and indicated in accordance with NI 43-101 such terms are not recognized under the SEC's Industry Guide 7 and are normally not permitted to be used in reports and registration statements filed with the SEC. Mineral resources in these categories have a great amount of uncertainty as to their existence and, under the SEC. Mineral resources in these reason and a great amount of uncertainty as to their existence and, under Canadian regulations, cannot form the basis of a pre-feasibility or feasibility study, except in limited circumstances. The SEC normally only permits issuers to report mineralization that does not constitute SEC Industry Guide 7 compliant "reserves" as in-place tonnage and grade without reference to unit measures. Under SEC Industry Guide 7 standards, a "final" or "bankable feasibility study is required to report reserves, the three-year historical average price is used in any reserve or cash flow analysis to designate reserves and all necessary permits and government approvals must be filed with the appropriate government authority. Our Round Top project currently does not const reserves.

This presentation contains statements regarding a historical beryllium resource, potential mineralization of uranium, lithium and thorium and the potential grade of mineralization at Little Blanca, Sierra Blanca and Little Round Top that have not been reviewed by an independent third-party consultant. Such statements are not compliant with NI 43-101 and do not represent SEC Industry Guide 7 compliant reserve estimates or economic recoveries. The estimates of management as presented in this press release are preliminary in nature and may not occur as anticipated or estimated, if at all. While management believes these statements have a reasonable technical basis, they are based on estimates of management which may not occur as anticipated. The estimated beryllium resource is based on a historical internal feasibility study by Cypress Sierra Blanca, Inc. and does not represent a Guide 7 compliant reserve. Actual beryllium mineralization may not be economically recoverable. Estimates of uranium occurring in this presentation are based on an analysis of limited, historical drill holes at the Round Top project and may not be indicative of mineralization throughout the project area. Estimates of thorium and lithium are based on management's assessment of limited, historical drill hole data and may not be indicative of mineralization throughout the project area. Such mineralization estimates may not occur in the amounts estimated and does not represent a Guide 7 compliant reserve. Estimated grade of mineralization at Little Blanca, Sierra Blanca and Little Round Top are based on limited drill hole data and may not be indicative of mineralization and grade across such properties. Investors are cautioned not to assume that these



### Company Overview

- Mining company engaged in the business of acquiring, exploring and developing mineral properties
- Principal focus is to explore, develop and extract rare earths from the 950 acre Round Top lease located in Hudspeth County, Texas
- Round Top is one of four principal rhyolite bodies, an igneous volcanic rock, making up the group of mountains known as The Sierra Blanca
- An independent third party PEA found that there are an estimated over 1 billion metric tonnes of measured, indicated and inferred resources\* containing 531 grams per tonne or over 1 billion pounds of rare earth elements ("REE")
- ombines measured and indicated resources of 359,150,000 tonnes and inferred resources of 674,675,000 tonnes. See Cautionary Note to Investors

### Management Team



Daniel Gorski, CEO and Director: Appointed as chief executive officer as of July 2012 and has served as a director since January 2006, as well as chief operating officer until January 2012. Prior, Mr. Gorski served as the Company's president and chief executive officer from January 2007 to May 2011. From July 2004 to January 2006, Mr. Gorski was the co-founder and vice president of operations for High Plains Uranium, Inc., a uranium exploration and development company that went public on the Toronto Stock Exchange in December 2005. Between June 1996 to May 2004, he served as an officer and director of Metalline Mining Co., a publicly traded mining and development company with holdings in the Sierra Mojada Mining District, Coahuila, Mexico. From January 1992 to June 1996, Mr. Gorski was the exploration geologist under contract to USMX Inc. and worked exclusively in Latin America. He earned a B.S. in 1960 from Sul Ross State College in Alpine, Texas, and an M.A. in 1970 from the University of Texas in Austin, Texas.

Anthony Marchese, Director: Served as a director since December 2009. Since May 2011, he has served as a Senior Vice-President with Axiom Capital Management, Inc., a New York City based FINRA member broker/dealer. Mr. Marchese also serves as the general partner and chief investment officer of the Insiders Trend Fund, LP, an investment partnership whose mandate is to invest in those public companies whose officers and/or directors have been active acquirers of their own stock. Mr. Marchese's prior experience includes Monarch Capital Group, LLC (president and chief operating officer – 2003 to 2011), Laidlaw Equities (senior vice president – April 1997 to March 2002), Southcoast Capital (senior vice president – May 1988 to April 1997), Oppenheimer & Co., Inc. (limited partner – September 1982 to May 1988), Prudential-Bache (vice president – July 1981 to August 1982), and the General Motors Corporation (analyst – June 1980 to June 1981). Mr. Marchese served in the U.S.



### Select Financial Highlights

Fiscal Year End:	August 31st
Symbol:	(OTC BB: TRER)
Stock Price (5/22/2013):	\$0.40
3 Month Trading Range:	\$0.14 - \$0.80
Shares Outstanding (4/8/2013):	37 million
Market Cap:	\$14.8 million
Average Daily Volume:	65,000
Cash (2/28/2013):	\$4.7 million
Insider Ownership:	36%
Institutional Ownership:	17%
Float:	47%

#### **Recent Events**

5/8/2013 – Successfully Independently Confirms Potential Favorable Heap Leaching Characteristics

5/8/2013 – Leaches Significant Beryllium and Lithium from Round Top Rhyolite

4/16/2013 – Further Defines Heavy Rare Earth Mineralogy and Initial Leaching Characteristics of Round Top Project

4/4/2013 – Co-Sponsors the 2013 World Rare Earth Summit on April 19th at Stanford University

4/2/2013 – Engages IntelliMet for Metallurgical Study



#### **Investment Opportunity**

We expect to have the lowest cap ex, lowest op ex and highest returns among competing Heavy REE projects due to our bulk size, potential simple sulphuric acid heap leach and

Incation near a junction in West Texas

	Texas Rare Earth Resources	Quest Rare Minerals	Avalon Rare Metals	Alkane Resources	Tasman Metals	Metamac Exploration s	Great Western Minerals	Ucore Rare Metals
Project Name	Round Top Mountain	Strange Lake	Nechalacho	Dubbo	Norra Karr	Kipawa	Steenkakr aal	Bokan Mt
Location	El Paso, Texas, USA	Quebec, Canada	NWT, Canada	New South Wales	Granna, Sweden	Quebec, Canada	South Africa	Alaska, USA
HREO/ TREO	72.0%	37.0%	20.8%	25.8%	51.7%	13.7%	8.0%	38.6%
TREO Resource (t)	0.66M	4.4M	1.80M	0.65M	0.41M	0.10M	.074M	.03M
HREO Resource t	477,500	1.58M	373,547	167,960	214,210	14,005	5,900	10,565
Resource Category	Measured/ Indicated/ Inferred	Indicated/ Inferred	Measured/ Indicated/ Inferred	Measured/ Inferred	Indicated / Inferred	Indicated/ Inferred	Indicated /Inferred	Inferred
Market Cap	\$15M	\$40.8M	\$100.4M	\$175.2 M	\$46.9M	\$17.4M	\$58.6M	\$41.4M

Source: Quest Rare Minerals Corporate Presentation, Great Western Minerals, Texas Rare Earth Resources PEA



### Valuable Assets & Their Applications

- Valuable Assets: Dy, Y, Yb, Er, Ho, Tm, Lu
- Potential major Uranium and Thorium discovery in Texas
- Heavy rare earths key to <u>lasers</u> used in medicine to treat tumors, the spine, skin cancer prevention mole removal, "good looks" acne scar, wart and tattoo removal and other minimuminvasive surgeries
- Many <u>laser</u> applications in military, industry and meteorology
- Lithium-ion Batteries
- Dysprosium for <u>hi-power magnets</u> for electric or hybrid vehicles or wind turbines for clean energy
- Yttrium for high efficiency lighting technologies for clean energy
- Uranium and Thorium = zero carbon emission electricity
- Beryllium for military, electronics, copper alloys and Fluoride-Lithium-Beryllium Th nuclear reactors



### **ROI** of Key Minerals

- Objective \$15-\$20/t margin @ 90% utilization of 22,000 mtpd throughput from \$250-\$375 mm cap ex
- Unique 141.6 year resource growth plus exploration potential
- Unique Yttrofluorite mineralogy potentially permits simple sulfuric acid whole ore heap leach recovery, unlike other deposits' monazite or bastnasite REE minerals
- TRER has rare heavy REE of which China Baotou or Molycorp have little; TRER top 6 elements = Dy, Y, Li, Be, U, Yb vs. MCP=Ce, La, Nd
- Lithium and Beryllium recovered from sulfuric acid potentially from heap leach operation
- Beryllium potential growth in Thorium reactors
- Very large deposit key wealth creation in West Texas
  - 141.6 years resources = 1,034 mmt @ 90% utilization 22,000 mtpd

# Unique Round Top Resources Texas Rare Earth RESOURCES

- Potentially largest deposit of Dy, Y, Yb, Ho, Er, Lu, Tm with estimated 1.5 bil lbs REOs in situ host rock with 70% heavy REOs; We target 2,500 t Heavy Rare Earth Oxide output for 1/10<sup>th</sup> of world market and can mine more
- Measured and Indicated Resources\* of 359 mmt at 639 g/t and Inferred Resources\* of 675 mmt at 638 g/t REOs
- Measured and Indicated Resources total 50 yrs @ 20,000 mtpd and Inferred Resources 92 yrs @ 15,000 mtpd.
- Separate Beryllium zone estimated 298,000 t @ 1.9% BeO Cyprus Minerals 1988 historical resource\*\*;
- Beryllium and Lithium recovered from strong sulfuric acid leach tests separately as reported May 8, 2013; not yet assayed\*\*\*
- Potentially 100+ mm lbs uranium\*\*\*, from May 16, 2011 TRER press release; Potentially 400+ mm lbs thorium\*\*\*

\*Based on historical resource estimate of Cyprus Sierra Blanca, Inc. and does not represent Guide 7 compliant reserves. See Cautionary Note to Investors.

Estimates of uranium and thorium are based on analysis of limited drill hole data and are not contained in the Company's June 2012 PEA.

Estimates of beryllium and lithium based on May 8, 2013 independent third party lab results from sulphuric acid leaching. These elements may not exist in amounts currently estimated and investors should not assume that they will ever be converted into Guide 7

<sup>\*</sup> See Cautionary Note to Investors.



### **Exploration Opportunities**

- 1. Round Top 359 mmt of Measured and Indicated\* and 675 mmt of Inferred Resources\*
- 2. Little Round Top estimated higher grades based on limited sampling
- 3. Little Blanca almost same estimated grades as Round Top based on limited sampling
- 4. Sierra Blanca 50% of Round Top estimated grades based on limited sampling; Only could be economic after development of cheap heap leach with low sulphuric acid prices or very high SEC 3 Yr. Avg. Historical REE Prices
- 5. Beryllium trial mine with 1% uranium showings at contact of Round Top rhyolite and underlying sediments
- 6. Beryllium resource on Sierra Blanca estimated by Cabot in 1986\*\*
- 7. Beryllium resource on Little Blanca estimated by Cabot in 1986\*\*
- 8. Potential exploration beneath and around the bases of the four mountains plausible in feeder faults, volcanic vents, magnetic anomalies, possible epithermal hot springs targets and other deeper exploration

Combines measured and indicated resources of 359,150,000 tonnes and inferred resources of 674,675,000 tonnes. See Cautionary Note to Investors

Based on a historical resource estimate. Does not represent Guide 7 compliant reserves. See Cautionary Note to Investors.



#### Leach REE Recovery

- Whole ore sulfuric acid heap leach REE recovery yielded up to 94% Yttrium tests for 41% or 221 of 531 REE g/t
- 92% Dy and 90% to 96% recoveries in 9 of 15 REE and commercial 81% Th and 65% U recoveries into sulfuric acid solution
- Lithium and Beryllium recoveries and obtained 85% Dy and 81% Yttrium recoveries
- Will be losses in Intellimet refinery, possible scale up, and weaker acid concentrations
- Intellimet ion exchange refining process from acid solution whichever "front end" chosen
- Current studies compiled to attract strategic alternatives



### Process Economic Objectives

- \$15 to \$20/tonne gross margin at 22,000 mtpd heap leach at base case prices
- \$50 per tonne gross margin with SEC-compliant 3 yr avg historic prices that are \$34 per tonne higher than our "base case
- Estimate 90% truck, loader, crusher, etc. utilization or 20,000 mtpd throughput of 22,000 mtpd capacity
- Margins may grow with higher tonnages as unit costs per tonne will hopefully fall with more tonnes
- Estimated \$250 mm to \$375 mm cap ex for 22,000 mtpd sulphuric acid heap leach



#### Dysprosium

- Likely largest revenue opportunity
- U.S. DOE "critical" REE
- Magnets for electric vehicles, wind turbines and other devices
- Control rods of nuclear reactors
- Sonar systems, sensors, transducers
- Infrared radiation
- Storage disks
- With Vanadium in lasers
  - Film industry "white light" medium source rare earth lamps



#### Yttrium

- LEDs and OLEDs substituted for fluorescent light bulbs
- Phosphors as red color in TVs
- High temperature superconductors as yttriumbarium-copper oxide
- Medicine as infrared radiation to treat cancers or precision needles in spinal surgery
- Yttrium iron garnets as microwave filters in communications devices including satellites
- Catalyst in ethylene polymers
- Alloys of Aluminum or Magnesium
- De-oxidizing Vanadium



#### **Uranium**

- We are approaching Uranium Scarcity
- BHP Billiton tabled its Olympic Dam mine expansion due to \$32 billion estimated cap ex, which has nearly 40% of world known uranium resources.
- Prime Minister Abe favors reactor restarts to counter recession in Japan bwith cheap fuel.
- Many U.S. reactors obtain fourth 20 year licenses, replacing aged parts, to sidestep shutdown costs.
- There are 64 nuclear reactors under construction worldwide, including 29 in China, 10 in Russia, 7 in India, 4 S. Korea, 2 each Taiwan, Japan, Pakistan, Slovenia and 1 each US, France, Finland, UAE, Brazil, Argentina.
- Cameco estimates 3% CAGR for uranium use to 2022.



#### Ytterbium

- At 56.5 g/t Yb is #3 REE in Round Top after Yttrium and Cerium by weight. It is half of the TRER "5 ultra rare heavies." This is a high potential end market.
- Priced at nil in TRER June 2012 PEA, \$102.79/kg as oxide 3 yr avg in Ucore Jan 2013 PEA & \$55/kg=\$25/lb in "base case."
- US DOE Dec 2011 estimated total 2,000 t market Yb, Er, Ho, Tm, and Lu together.
- Used as radiation source in portable xrays, stress gauges after earthquakes or underground explosions, laser amplifiers, catalysts and stainless alloys to improve grain and strength.
  - Uses in dentistry, fiber optics, ceramics, solid state lasers, disk lasers, other lasers.



#### **Erbium**

- At 32.8 g/t Erbium is the #4 REE Round Top,
- Priced at nil in TRER June 2012 PEA, \$88.20/kg as oxide 3 yr avg in Ucore Jan 2013 PEA & \$55/kg=\$25/lb in "base case."
- Used as neutron absorber in nuclear reactor control rods, pink coloring in glasses, vanadium alloys to reduce metal hardness, amplifiers, lasers, photographic filters to absorb infrared light and Yttrium-Al garnet lasers in skin surgery to remove acne scars, warts, moles and tattoos.



#### **Thorium**

- 200 times BTU value of Uranium reactors
- Plutonium & other wastes burned in reactor much like natural gas, gasoline, etc. consumed when burned
- Cannot make atomic bombs; blacklisted by U.S. military early 1950s
- Dr. Alvin M. Weinberg as director of Oak Ridge Labs designed (and was fired for it in 1973) Liquid Fuel Thermal Reactor (LFTR) or "molten salt reactor" uses Fluoride-Lithium-Beryllium core, potentially multiplying Be future demand in Th reactors
- Round Top has roughly 200 g/t or 0.4 lb/t possibly worth 1/3 of Uranium @ \$60/lb long-term or \$6 per t of Round Top ores
- At 15,000 mtpd Round Top may produce enough Th to generate twice the electricity of all current Uranium reactors worldwide.
- Th has tremendous potential to reduce global carbon emissions by displacing coal-fired generators.



#### Objective: Maximize Shareholder Value

- Will not build mine ourselves, looking at strategic partners
- Sufficient capital to operate through 2014
- Future market growth
  - Round Top expansion > 20,000 mtpd, price upsides > low rare heavy REE "base case" prices, Be, Li, and U revenues, ultra long resource life and exploration potential suggests appropriate valuation > 5 to 10x EBITDA
- Engaged Asian financial advisor January 24th due to preliminary indication of possible interest in Asia
- Process development fine-tuning ongoing to optimize acid strength, acid consumption, water use, recovery rates, plant design and maximum environmental protections
- Management is committed to shareholder value
  - Directors and officers own almost 45% of the shares, and recently bought more

  - Led proxy battle to take company back in mid-2012 Minimal salaries as "burn rate" cut to \$200,000-\$300,000 per month



### Maintain Strong Balance Sheet

- Sell beryllium developed mine 887' tunnel 10' x 10' with steel sets each 5' with Historical Resource of Cyprus Minerals 298,000 tons 1.9% BeO.
- Sell Macho silver-lead-zinc exploration property and former mine in NM
- Sell a royalty on Round Top minerals: 1% royalty worth \$44 mm @ 20,000 mtpd initially at 75% of June 2013 PEA prices at 10% discount rate mtpd
- Offtake agreement
- Sell future production, a form of debt; Ask \$60 mm for either 1 mm lbs U, 3 mm lbs Th, 0.75 mm lbs Yb, or some other combination of our products delivered 2018 to 2025
- Lease trucks, shovels or other machinery from CAT or other suppliers



### Investment Highlights

- Independent 3<sup>rd</sup> party PEA found that there are an estimated over 1 billion metric tonnes of measured, indicated and inferred resources\* containing 531 grams per tonne or over 1 billion pounds of Rare Earth Elements ("REE")
- Return on REE Investment is Potentially Significant
- Attractive Valuation vs. Comparables
- Strong Balance Sheet
- Management is Evaluating Strategic Alternatives
- Significant Management/Directors Investment and Ownership
- Experienced Management Team

<sup>\*</sup> Combines measured and indicated resources of 359,150,000 tonnes and inferred resources of 674,675,000 tonnes. See Cautionary Note to Investors.



#### Contact Us

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