# Texas Mineral Resources and USA Rare Earth Report Significantly Upgraded Resource and Confirm Prior Potential Economics in Updated Round Top Preliminary Economic Assessment

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**$1.56 Billion NPV, 70% IRR, 1.4 Year Payback**

SIERRA BLANCA, Texas - Texas Mineral Resources Corp. (OTCQB: TMRC)

- **Strong potential profitability with 70% IRR, $1.56 billion NPV and a $350 million initial CapEx**
- **Rare earth revenue stream contains significant heavy rare earth component (70%)**
- **Upgraded significant long-life resource estimate includes lithium, technology metals and industrial minerals, providing balanced and diversified revenue streams**
- **TMRC and USA Rare Earth plan to shortly initiate pre-feasibility study followed by a bankable feasibility study**

Texas Mineral Resources Corp. (TMRC), an exploration company targeting the heavy rare earths and a variety of other technology metals and industrial minerals, and USA Rare Earth, LLC, its funding and development partner, are pleased to announce highlights of the expanded and updated NI 43-101 Preliminary Economic Assessment (PEA) on the Round Top Project in Sierra Blanca, Texas. The full version of the updated PEA, completed by Gustavson Associates of Lakewood, Colorado, is posted on the TMRC website (www.tmrcorp.com).

**Highlights of the PEA Include:**

- **Net Present Value (NPV):** $1.56 Billion at a 10% discount rate, pre-tax.
- **Internal Rate of Return (IRR):** 70%.
- **Payback Period:** 1.4 years.
- **Capital Cost:** $350.4 Million, **including** a complete on-site rare earth oxide (REO) and mineral separation plant, and a 25% contingency provision of $65.7 Million.
- **Current Spot Market Pricing Assumptions:** Yields 70% IRR.
- **Mining Rate:** 20,000 tonnes per day (TPD).
- **All mineral processing at site:** Deployment of conventional ion exchange and ion chromatography (CIX/CIC) technology to generate high purity individual rare earth oxides at the site as well as technology metals and industrial minerals.
- **REO Production:** Averaging 2,212 tonnes per year (TPY) total, including approximately 174 TPY of Neodymium (Nd) and 65 TPY of Praseodymium (Pr).
- **New Lithium Resource:** Estimated 8,956 TPY lithium carbonate production
- **Heap Leach Processing Technology:** Proven conventional technology utilizing leach pads built to Texas Environmental Standards.
- **Economic Mine Life:** 20 years, based on mining only 14% of the existing Mineral Resource Estimate, implying overall potential mine life of 140 years.
- **Direct Employment:** 179 employees.
- **Ease of Shipping Access:** Only 3 miles north of Interstate Highway 10 and within 3 miles of a major railroad. 85 miles southeast of El Paso, Texas.
- **Located on State Property:** 6.25% Net Smelter Royalty (NSR) owed to Texas General Land Office (GLO).

"The completion of this expanded PEA is a key milestone in our mission to establish Round Top as not only a robust and reliable provider of the full range of rare earths, but also a supplier of critical tech metals and industrial minerals from the same deposit," said Dan Gorski, President and CEO of TMRC. "We believe that the new PEA confirms our vision that a low-cost open pit heap leach operation is as applicable to Round Top's unique mineralogy in the rare earths and tech metals sectors as it has been to gold and copper operations. As a result of its unique geology and mineralogy, the Round Top deposit should be ideally suited for high volume, low cost surface mining and heap leaching. This combined with the essentially zero stripping ratio, the availability of nearby flat and even topography for leach fields and the presence of nearby rail facilities, power and water, creates an operational and logistical opportunity. Given that we've expanded this PEA to assess not only Round Top's rare earths, but the deposit's projected production of lithium, uranium, beryllium, gallium, hafnium and zirconium - all of which are on the U.S. Government's Critical Minerals List - we're pleased that it appears we can recover such a wide range of critical minerals with an overall estimated CapEx of only $350 million."

"This updated and expanded PEA not only confirms potential robust economics and an optimistic outlook for the Round Top

project, but also could provide the United States and its allies a means for fulfilling their stated goal of providing a long-term source of critical materials required for defense applications and advanced technology manufacturing capabilities, without the sole reliance on China to provide these materials," said Pini Althaus, Chief Executive Officer of USA Rare Earth. "The tech metals at Round Top, including lithium, also provide a domestic option for the electrical vehicle sector and clean technology and energy storage applications."

**Overview of the Round Top Project and PEA**

The PEA has been completed based on the Measured, Indicated and Inferred Resource Estimate Technical Report originally filed on June 22, 2012 by Texas Rare Earth Resources and updated with the publication of this PEA. The resource was estimated by Gustavson Associates of Lakewood, Colorado. The resource incorporated into the current mine plan totals 364,000 measured and indicated tonnes and an additional 735,000 inferred tonnes of a combination of rare earth minerals, technology metals and industrial minerals. A summary of the operating assumptions and financial model for the project is as follows:

| **Item** | **Annual** |
|---|---|
| Tonnes Mined* | 7,300,000 |
| Tonnes Processed | 7,300,000 |
| | **($million)** |
| Life of Mine Total Revenue | $8,440 |
| Initial Capital Expenditure | $350 |
| Life of Mine Sustaining Capital | $252 |
| Total Before-Tax Cash Flow (undiscounted) | $5,021 |
| Before-tax NPV @ 10% | $1,564.9 |
| Before-tax IRR (%) | 70% |

*** "Tonnes" defined by metric system (1,000kg/2,205lbs)**

**Capital Cost Estimate**

Initial capital cost estimates for the project are as follows:

| **Item** | **Total Cost ($M)** |
|---|---|
| Process Capital | $201.30 |
| Infrastructure | $25.20 |
| Pre-Production and Environmental | $27.85 |
| Mine Development | $8.35 |
| Indirects, EPCM | $22.00 |
| Contingency (25%) | $65.70 |
| **Total Capital Cost** | **$350.40** |

Initial capital costs include all costs required to bring the facility to production, including full processing facilities. The ongoing life of mine sustaining capital costs are estimated to be $252M over the initial 20-year mine life.

**Key Operating Statistics**

| | **Base Case** |
|---|---|
| Average Annual Revenue ($M/yr.) | $395.5 |
| Average Revenue Per Tonne ($/T) | $54.18 |
| Average Operating Cost ($/T) | $15.61 |
| Average Operating Margin ($/T) | $38.58 |
| Operating Margin (%) | 71% |

**Operating Cost Estimate**

| **Item** | **Average** |
|---|---|

| | Unit Cost ($/tonne mined) |
|---|---|
| Mining | $2.67 |
| Crushing and Conveying | $0.91 |
| Heap Leach | $3.55 |
| Recovery | $3.96 |
| Rail Systems | $0.23 |
| G&A | $1.78 |
| Contingency (20%) | $2.50 |
| **Total Operating Cost** | **$15.61** |

**Mineral Pricing and Marketing Considerations**

In developing rare earth pricing assumptions, Texas Mineral Resources utilized currently available spot prices of rare earth oxides, tech metals and industrial minerals derived from Asian Metal Pages July 2019 prices, Alibaba June 2019 prices and industry communication. **Certain rare earth oxides, although produced, will not be marketed for sale due to poor market conditions and are NOT included in the economics of the PEA. Instead they will be warehoused until such time as market conditions improve.**

| | Tonnes per year produced | Spot Price Assumptions ($/kg) | Marketed/ Warehoused |
|---|---|---|---|
| **REO** | | | Marketed |
| Yttrium | 1,642 | 3.60 | Marketed |
| Praseodymium | 65 | 3.50 | Marketed |
| Neodymium | 174 | 44.00 | Marketed |
| Samarium | 64 | 1.83 | Marketed |
| Terbium | 22 | 575.50 | Marketed |
| Dysprosium | 197 | 270.50 | Marketed |
| Lutetium | 44 | 618.63 | Marketed |
| Scandium | 5 | 1040.76 | Marketed |
| Lanthanum | 114 | 1.68 | Warehoused |
| Cerium | 419 | 1.90 | Warehoused |
| Gadolinium | 70 | 28.46 | Warehoused |
| Holmium | 52 | 58.59 | Warehoused |
| Erbium | 210 | 27.00 | Warehoused |
| Thulium | 42 | No Quote | Warehoused |
| Ytterbium | 324 | 16.08 | Warehoused |
| | | | |
| **Technology Metals** | | | |
| Lithium Carbonate | 8,956 | 13.75 | Marketed |
| Uranium Oxide | 75 | 56.10 | Marketed |
| Hafnium Oxide | 39 | 864.00 | Marketed |
| Gallium Oxide | 42 | 162.00 | Marketed |
| Beryllium Hydroxide | 109 | 220.00 | Marketed |
| Zirconium Oxide | 578 | 15.12 | Marketed |
| Thorium Oxide | 1,239 | No Quote | Warehoused |
| | | | |
| **Industrial Minerals** | | | |
| Aluminum Sulfate | 202,253 | 0.21 | Marketed |
| Iron Sulfate | 72,421 | 0.10 | Marketed |
| Magnesium Sulfate | 12,779 | 0.13 | Marketed |
| Manganese Sulfate | 4,966 | 1.19 | Marketed |
| Potassium Sulfate | 50,267 | 0.43 | Marketed |
| Sodium Sulfate | 30,416 | 0.20 | Marketed |

| | |
|---|---|
| **NPV @ 10% Discount** | **$1,564.9M** |

**Sensitivity Analysis**

A sensitivity analysis was performed, to test the impact of changes to several key assumptions included in the economic model, with the following results:

| **Changes to revenues** | **NPV at 10%, $M** | **IRR, %** |
|---|---|---|
| Increase of 25% | $2,354 | 95% |
| Increase of 10% | $1,927 | 80% |
| Base Case | $1,564 | 70% |
| Decrease of 10% | $1,358 | 60% |
| Decrease of 25% | $932 | 45% |

| **Changes in operating costs** | **NPV at 10%, $M** | **IRR, %** |
|---|---|---|
| Increase of 25% | $1,432 | 62% |
| Increase of 10% | $1,559 | 67% |
| Base Case | $1,564 | 70% |
| Decrease of 10% | $1,728 | 73% |
| Decrease of 25% | $1,854 | 78% |

| **Change in initial capital expenditure** | **NPV at 10%, $M** | **IRR, %** |
|---|---|---|
| Increase of 25% | $1,542 | 56% |
| Increase of 10% | $1,603 | 64% |
| Base Case | $1,564 | 70% |
| Decrease of 10% | $1,684 | 77% |
| Decrease of 25% | $1,744 | 92% |

"We are encouraged by the results of the updated PEA and plan to move aggressively forward to complete a pre-feasibility study followed shortly thereafter by a bankable feasibility study. At current mineral pricing the Round Top project continues to demonstrate favorable economics. The revised PEA significantly diversifies TMRC's expected revenue stream and maintains strong potential profitability while lessening the dependence on any single stream to achieve project success," commented Anthony Marchese, chairman. "We should have the ability to satisfy the urgent need in the U.S. to establish a rare earth supply chain, provide an inroad into supplying technology metals into the electric vehicle and green energy market and utilize Round Top's proximity to rail and road transport to supply industrial minerals into the domestic U.S. market. Given the projected 100+ year mine life, Round Top has the unique potential to serve as a reliable long-term partner to both the U.S. government and multiple essential industries."

***About Texas Mineral Resources Corp.***

Texas Mineral Resources Corp.'s focus is to develop and commercialize its Round Top heavy rare earth technology metals and industrial minerals project located in Hudspeth County, Texas, 85 miles southeast of El Paso. Additionally, the Company plans on developing alternative sources of strategic minerals through the processing of coal waste and other related materials. The Company's common stock trades on the OTCQB U.S. tier under the symbol "TMRC."

***About USA Rare Earth, LLC***

USA Rare Earth, LLC has an option to earn up to an 80% interest in the Round Top rare earth and technical metals industrial minerals project located in Hudspeth County, Texas. Round Top hosts a large range of critical heavy rare earth elements, high-tech metals, including lithium, uranium and beryllium, and is among the lowest-cost rare earth projects in the world. The Round Top Deposit hosts 15 of the 17 rare earth elements, plus other high-value tech minerals (including lithium) and is well located to serve the US internal demand. Round Top contains 13 of the 35 minerals deemed "critical" by the Department of the Interior and contains critical elements required by the United States; both for national defense and industry. For more information about USA Rare Earth, visit www.usarareearth.com

**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 press release 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 press release uses the terms "resource," "measured and indicated mineral resource," and "inferred mineral resource." We advise U.S. investors that while these terms are defined 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 economic and legal feasibility. "Inferred resources" have 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 governmental authority. **The PEA is not a definitive feasibility study and our Round Top project currently does not contain any known proven or probable ore reserves under SEC Industry Guide 7 reporting standards.** The results of the PEA disclosed in this press release are preliminary in nature and include inferred mineral resources that are considered speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves and there is no certainty that the results of the PEA will be realized. U.S. investors are urged to consider closely the disclosure in our latest reports and registration statements filed with the SEC. You can review and obtain copies of these filings at http://www.sec.gov/edgar.shtml. U.S. **Investors are cautioned not to assume that any defined resource will ever be converted into SEC Industry Guide 7 compliant reserves.**

**Forward-Looking Statements**

This press release 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, including, but not limited to, statements regarding the potential development of the Round Top project, estimates and projections regarding the economic feasibility of the Round Top project from the update PEA, including, NPV, IRR, payback period, capital cost, pricing assumptions, mining rate, average recoveries, oxide production amounts and methodologies, mine life, employment requirements, resource amounts and grades, projected revenues, initial capital costs, life of mine sustaining capital, cash flow projections, capital and operating cost estimates and projections, and sensitivity analysis, inclusion of uranium in future economic analyses, the potential to render high purity oxides, the Round Top facility generating critical technology oxides, release of the full PEA within a short period of time and other such similar statements. When used in this press release, the words "potential," "indicate," "expect," "intend," "hopes," "believe," "may," "will," "if, "anticipate," and similar expressions are intended to identify 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 to projected and estimated economics not reflecting actual economic results due to the uncertainty of mining processes, potential non-uniform sections of mineralized material, potential mining hazards and accidents, changes in equipment and labor costs, changes in projected REE prices and demand, competition in the REE industry, risks related to project development determinations, the inherently hazardous nature of mining-related activities, potential effects on the Company's operations of environmental regulations, risks due to legal proceedings, liquidity risks and 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 in November 2018 and other documents filed with the U.S. Securities and Exchange Commission. Except as required by law, the Company assumes no obligation to publicly update any forward-looking statements.

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