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EDITOR'S PICK

The \$8 billion mountain

How this hill could loosen China's grip on rare earths

By David Crowder / El Paso Inc. staff writer
Jun 7, 2020



Anthony Marchese and Dan Gorski

Photo provided by Anthony Marchese

It's been a long time since the United States was a major producer of rare earth minerals that are vital to cars, cellphones, fighter jets and the nation's economy, but that may be about to change – starting 60 miles east of El Paso.

For the long drought, say thank you to China, which was blessed with an abundance of rare earths and has controlled the world market for years, slashing prices when necessary to keep new players in the U.S. and elsewhere from gaining a foothold.

China controls more than 95% of the rare earth market today.

But executives of the publically traded Texas Mineral Resources Corp., or TMRC, say a small mountain outside the town of Sierra Blanca known as Round Top holds a century's supply of a remarkable family of minerals with mysterious names – and they plan to mine it.

“Are you ready for ytterbium, gadolinium, lithium, holmium, strozium and erbium?” said Nick Pingitore, a geology professor at the University of Texas at El Paso for the last 43 years and a member of TMRC's board.

Round Top has long been an enticing prospect for rare earths, but China's domination of the market has made it hard to raise the hundreds of millions of dollars necessary to develop a mining operation there.

“But the situation now has changed because there is the threat that China will cut off supplies,” Pingitore said. “These are vital for electronics and defense.

“There's 920 pounds of rare earths in an F-35 fighter.”

A decade ago, China threatened to cut off Japan's supply of rare earth minerals over a dispute involving a Chinese fishing vessel that resulted in the arrest of the boat's captain.

“China said no more rare earths, and that captain got out of jail real fast,” Pingitore said.

China also refines most of the world's rare earths and, reportedly, recently threatened to cut off exports to the U.S.

Last month, the diplomatic instability between the U.S. and China led the Pentagon to propose legislation to end U.S. reliance on China.

Sen. Ted Cruz, R-Texas, introduced a bill on May 12 to rebuild a U.S. supply chain for rare earths and other strategic minerals, including lithium, which is used in rechargeable batteries.

“Round Top has a lot of lithium,” Pingitore said. “The thrust of the legislation is a discount for buying U.S. products or from U.S.-based companies, along with money for education.”

Cruz's bill, the Onshoring Rare Earths Act, would require the Pentagon to buy American when it comes to 35 minerals deemed critical to the defense and civilian industries.

“Much like the Chinese Communist Party has threatened to cut off the U.S. from life-saving medicines made in China, the Chinese Communist Party could also cut off our access to these materials, significantly threatening U.S. national security,” Cruz said at the time. “The ORE Act will help ensure China never has that opportunity by establishing a rare earth elements and critical minerals supply chain in the U.S.”

Geologists have known for decades that Round Top Mountain held a trove of rare earth minerals and there have been repeated efforts to establish a mining operation on the site, leased from the Texas General Land Office.

Five years ago, Texas Rare Earth Resources, or TRER, was one of the companies involved in the effort led by Dan Gorski, now CEO of a successor company, Texas Mineral Resources Corp., or TMRC, and Anthony Marchese, the company's chair.

"You know, I think the tide is finally turning in our favor," Marchese told El Paso Inc. last week. "We've got an administration that, No. 1, is finally waking up to the fact that we cannot continue to be reliant on China.

"This industry cannot be dependent on a sole source. Without these resources, you don't have the conveniences we have today. That's virtually all of our defense weaponry along with cellphones, refrigerators, hand dryers – everything. It's our way of life."

Gorski said one big advantage to the Round Top site is that there is a lot more than just rare earth minerals there.

"We're only looking at about a third of our revenue from rare earths," he said. "We've got a variety of commodities that we're going to produce there, and we are going to have very low costs because of the ability to leach these things right out of the rock.

"Maybe I'm being a little immodest in saying this, but really, the only rare earth deposit in North America that's got any chance at all economically is us."

Building and commissioning the mine will probably cost \$350 million, which they plan to raise with the help of the private funding partner, USA Rare Earth, Gorski said.

"You're going to be hearing a lot about them," he said.

An assessment released by the company estimates Round Top could produce about \$8 billion worth of rare earth minerals over 20 years.

In addition to lithium and the other minerals Pingitore named, Gorski said the area also has aluminum sulfate, which is used by utilities for water treatment.

"We're also going to be producing a significant amount of what we call macro-nutrient fertilizers for which there's really a ready market," he said.

The next thing to happen comes this week, Marchese said.

"That's when we open up our stage-one plant lab here in Denver," he said. "We're starting the process development here because all the back-up technology is here. The Colorado School of Mines and all the infrastructure is here."

While Marchese and Gorski feel the struggling rare earth industry in the U.S. got no help from the Obama administration, in contrast with the Trump administration, they say both sides have reason for supporting the industry.

“This is not a Republican or Democratic party subject,” Marchese said. “If you’re a Democrat or liberal, and you want green energy, it will not be possible to have green energy without the minerals we produce.

“Either way, we need to get to the next step.”

Environmental problems contributed significantly to the demise of what once was the biggest rare earth mining operation in the world, California’s Mountain Pass, an open-pit mine that opened in 1952 and met the nation and the world’s electronic product needs into the 1990s.

By 2000, however, the U.S. government and private industry were questioning the need to deal with expensive environmental issues when rare earths and other products could be acquired from China for far less money and trouble.

Environmental issues could be a problem for Sierra Blanca, an economically challenged community of 550 people that is the seat of Hudspeth County, population 4,490, says activist Bill Addington, who is well-known there and in El Paso.

“Rare earths are pretty good and relatively safe,” Addington said. “But it’s the by-products that we’re worried about, and they’re talking about crushing 20,000 tons a day of that material.”

One of the products is beryllium, which Cyprus Minerals was pulling out of Round Top Mountain in the 1980s when Addington himself was working there.

“Little did I know that beryllium was extremely carcinogenic and you can look at the Centers for Disease Control website to find out what happened to workers that worked around processing facilities, mines or whatever,” he said. “Even the security guards and secretaries have come down with cancer.

“People are concerned, and it’s not just me.”

One big concern is the fact that the 20,000 tons to be crushed per day would be laid out over an area the size of five football fields and soaked with sulfuric acid to leach-mine out the beryllium.

“It’s a very toxic process, and, the crushing activity is a big concern because we’re just so close to the mine downwind in Sierra Blanca,” Addington said. “Beryllium particles are small and super light and will lodge very deep in the lungs.

“A minute quantity can set you up for some really bad health problems, including chronic beryllium disease and lung cancer.”

Marchese was surprised by the issues Addington raised and said they are amply addressed in the company’s public documents.

“In the first place, we will be producing a small amount of beryllium,” Marchese said. “As for his concern about what is known as berylliosis, which occurs when a worker gets it in their lungs, anybody working in that area will have a suit on, and that will not be a problem.”

As for leaching mineral out of rock, Marchese said it will be done with a diluted solution of 93% water and 7% sulfuric acid, he said it is used around the world and totally harmless.

“You could put your hand into the solution and, at most, it would give you a tingling sensation,” Marchese said. “We are not taking pure sulfuric acid and pouring it over the rock and letting the fumes escape.

“Leaching is done with every mineral you can mine, and we are blessed with a deposit that can be leached.

“The United States has the strictest environmental laws in the world, period. We feel comfortable with U.S. guidelines and the fact that what we will be doing is very benign.”

So what about the company’s finances?

The price of TMRC’s stock traded over the counter has risen ten-fold since December, from 27 cents a share in early December to \$2.43 Friday morning with 56 million shares issued and outstanding.

The company’s 10-Q report filed Feb. 29 showed assets of \$1.9 million, down from \$2.2 million last August and accumulated debt of \$38 million.

Asked about the debt, Marchese responded in writing, saying, “Our funding and development partner, USA Rare Earth, is responsible for financing the development of Round Top.

“In exchange, they can earn up to 80% of the project. So our expenses at this point are minimal. Our 10-K does NOT have a ‘going concern’ clause, which indicates that our accountants do not feel we have any financial issues.”

USA Rare Earth’s finances, he said, are wholly private “and there is nothing of a financial nature out in the public domain.”

He continued, “We at TMRC have been allowed to see their finances and have no doubt they have the financial wherewithal.”

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