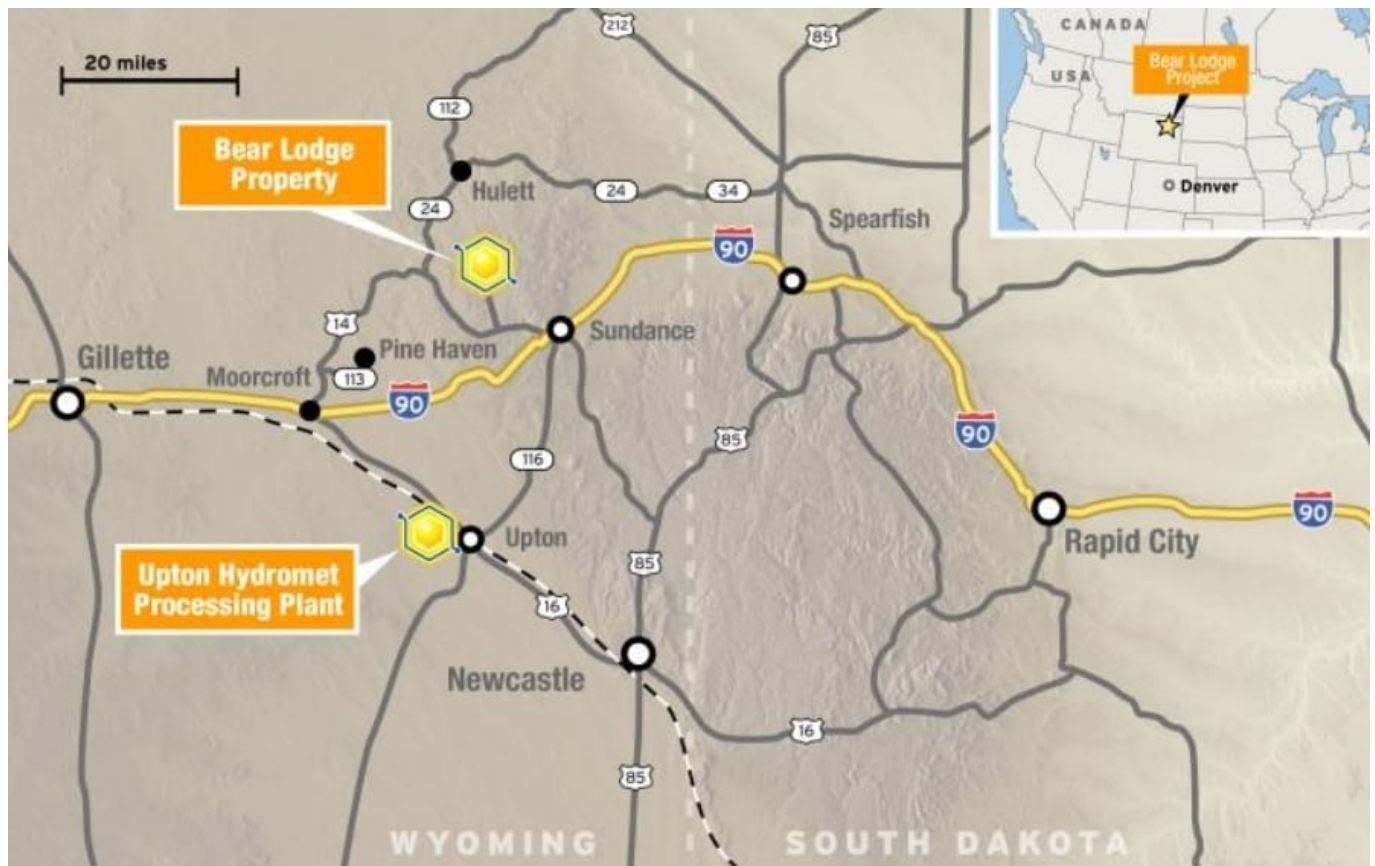


# **A highly attractive 'US based' rare earths project awaiting funding**

As discussed previously the ORE Act introduced by Senator Ted Cruz is the first step in recognizing the need for a domestic supply chain for critical materials, including rare earth elements (REE). Additionally the US Defense Department recently stated that it will seek \$1.7 billion for rare earths purchases in the 2021 National Defense Authorization Act.

One of very few companies that has a quality US based rare earths deposit is Rare Element Resources Ltd. (OTCQB: REEMF). Their flagship project is the Bear Lodge Critical Rare Earth Project in northeastern Wyoming, USA. The Project has a projected 45-year mine life with an initial 9-year high-grade zone.

**Bear Lodge – A world class resource in a top tier mining district in Wyoming, USA – Location map**



In 2011, the US Geological Survey determined that the Bear Lodge Project contains one of the largest disseminated rare earth deposits in North America. Extensive geological work by the Company since 2004, including drilling, geophysical and geochemical sampling and assaying, has resulted in a Measured & Indicated Resource of **18 million tons grading at 3.05% Total Rare Earth Oxide (TREO)** at a 1.5% cutoff grade. This includes 3.0 million tons of Measured and 15 million tons of Indicated resource. Total contained M&I Resource is estimated at **over 450,000 metric tonnes of TREO**. It is worth noting that the cutoff grade is the starting point for some projects.

The site has easy access and within a short trucking distance there is an industrial park with a railway, utilities and large unused land. This is an advantage unlike a number of potential opportunities in the space which are located in remote locations with challenging logistics. The one challenge is that the deposit is in the Black Hills National Forest but with the current administration and the desire to establish a domestic source this should not be an impediment to

permitting. As indicated on their website “the US Forest Service is preparing the Environmental Impact Statement (EIS) on the site, the draft of which was completed in January 2016 and is now suspended. The Company completed its applications for two key permits/licenses with a goal of receiving them at the same time as the final record of decision, the decision document for the EIS, which is currently on hold until markets support resumption of the process.”

The project’s most valuable end-products are Neodymium and Praseodymium (Nd/Pr) oxide which would account for over 80% of total potential revenues. It has some Terbium and Dysprosium (Tb/Dy) (approx. 0.5%) which with Nd/Pr would produce 95% of the project’s potential revenues.

In February, 2020, President and CEO of Rare Element Resources, Randall J. Scott, stated:

“We are very encouraged by the pilot plant results using our proprietary technology to produce a thorium-free Nd/Pr oxide. This product is key to unlocking the supply chain for rare earth magnet production in the U.S. Our ability to produce this product is timely given the current interest and associated funding initiatives of U.S. governmental agencies. The Company recognizes the critical nature of the products produced from the Bear Lodge pilot plant and we will continue to work closely with those who can enhance our trajectory to full production.”

The October 2014 PFS resulted in a post-tax NPV10% of US\$330 million and a post-tax IRR of 29%. Even better was that the upfront CapEx came in at a very low US\$290 million with only a 2.9 year payback period. All very impressive numbers for a 45 year life project. The Company sees potential for further cost reductions helped by their proprietary technology, additional by-products. If they choose to take a modular approach to development then this could cut PFS initial capital costs by 50-60%.

The Company also stated:

“The attractive location is a key factor in the Project’s low capital costs. Its proximity to a major interstate highway and a transcontinental rail line, as well as the availability of low-cost power, natural gas and water, means infra-structure development costs will be low. Additionally, local communities will be an excellent source of skilled personnel as residents of the area are experienced in natural resource development and operations.”

Rare Element Resources has developed a proprietary RE recovery/processing technology. The technology has delivered a 99.999% pure, thorium-free TREO powder that has then been separated into heavy and light rare earth fractions in a single step. Optimization work continues with a focus on reducing costs and further separating the fractions into products attractive to potential end-users. This work was done with Umwelt-und Ingenieurtechnik GmbH Dresden, Germany (“UIT”), an affiliate of Synchron. Synchron, is a division of General Atomics, a leading US contractor to the defense department. Synchron owns 49% of Rare Element Resources after exercising its option to purchase company shares in October last year

Construction of the Bear Lodge Project is expected to take 12-16 months after receipt of the necessary permits (EIS on hold awaiting financing), completion of a positive Feasibility Study, and securing project financing.

### **Closing remarks**

Rare Element Resources has a highly attractive ‘US based’ rare earths project, with excellent economics, including a low upfront CapEx of \$290 million. All that is needed is some funding. Given the recent new high priority towards rare earths, and particularly US rare earths deposits, one would think that Rare Elements Resources’ fairly advanced stage Bear

Lodge Project would stand an excellent chance of achieving funding. It is certainly in the national interest.

The current market cap of Rare Elements Resources is just US\$84 million. Analysts see plenty of upside ahead with a price target of \$2.90 which compares favorably to the current price of \$0.812/share.

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## **As Chinese rare earths' stock prices rally, pressure rises for the rest of the world...**

Rising US-China tension has resulted in some rare earths' stock prices rising sharply, particularly those in China. Given the recent US moves to introduce critical materials legislation it seems likely that the non-Chinese rare earth stocks will also rally strongly this year, particularly if the new bills and financial support are passed.

Let's start with a recap of the recent US support highlights for rare earths:

- May 18, 2018 – The US declared a list of 35 critical materials. A large part of the list includes rare earths.
- May 2, 2019 – U.S. Sen. Lisa Murkowski and others submitted the American Mineral Security Act
- In mid May, 2020, Senator Ted Cruz submitted the Onshoring Rare Earths Act – the 'ORE Act'
- On May 28, 2020 US Representative Michael Waltz submitted the American Critical Mineral Exploration and Innovation Act of 2020

The ORE Act focuses on six critical materials – **Rare earths**, scandium, lithium, cobalt, graphite, and manganese. The Critical Mineral Exploration and Innovation Act directs the U.S.G.S. to complete updated resource assessments for each critical mineral. It has been reported that there will be a focus on **rare earths** and other so-called strategic minerals.

Then just last week rare earths expert and Technology Metals Show host Jack Lifton stated exclusively to InvestorIntel: “The US Defense Department has announced last week that it will seek \$1.7 billion for rare earths purchases in the 2021 National Defense Authorization Act that means the budget for fiscal 2021. In addition they will ask for another \$300 million (**a total of \$2 billion**), for rare earths for specialized weapons which they name as hypersonic missiles...”

Given all of the above proposed support to the rare earths sector, it is abundantly clear that the US is now finally moving rapidly to secure critical rare earths supply, particularly from US deposits, where possible. Current rare earths producers and listed rare earths stocks stand to be beneficiaries. Especially if they have US rare earths projects, but quite likely any non-Chinese rare earth juniors that can achieve funding and production should find very strong western demand for their products. Most of the western world is now looking to diversify their supply chains especially after the trade war and COVID-19 problems of the past 2 years.

Some rare earth miners with US projects include:

- MP Materials (private)
- Rare Element Resources Ltd. (OTCQB: REEMF)
- Texas Mineral Resources Corp. (OTCQB: TMRC)
- Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF)

Some miners with US rare earth processing potential include:

- Energy Fuels Inc. (NYSE: UUUU | TSX: EFR) recently

stated their White Mesa Mill in the USA could be used in future for rare earths processing.

- Lynas Corporation (ASX: LYC) has received US support for a planned US rare earths processing facility.
- Peak Resources (ASX: PEK) plan to have a US rare earths processing facility.

Some rare earth miners with Canadian projects include:

- Avalon Advanced Materials Inc. (TSX: AVL | OTCQB: AVLNF)
- Appia Energy Corp. (CSE: API | OTCQB: APAAF)
- Search Minerals Inc. (TSXV: SMY)

Some rare earth miners with Australian projects include:

- Alkane Resources Ltd. (ASX: ALK | OTCQX: ALKEF)
- Scandium International Mining Corp. (TSX: SCY)

### **Rare earths are vital ingredients for modern technology**



### **Closing remarks**

The massive recent news of two new rare earth/critical materials related Acts and a proposed “US\$2 billion towards rare earths in 2021”, appears to have been somewhat missed by the market. The Chinese rare earths stocks have already bounced leaving the potential rest of the world rare earth

miners to play catch up.

News flow in future months should continue to be extremely promising for the rare earths sector following on from the tremendous news from the last few weeks.

Investors should not wait too long as any further increased US-China tensions, threats of China supply loss, or passing of rare earths related Bills, will likely send non-Chinese rare earth miners stock prices higher.

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## **Lifton and Scott on Rare Element Resources' proprietary rare earths separation technology**

“Back in October of 2017, Synchron which is an affiliate of General Atomics, a large private defense contractor, made an investment in Rare Element Resources to acquire about 33% ownership of the company. At the time we also provided an option to acquire up to 49% of the company for an additional \$5 million. That option was for four years however Synchron decided to exercise its option two years earlier.” States Randall Scott, President, CEO and Director of Rare Element Resources Ltd. (OTCQB: REEMF), in an interview with InvestorIntel’s Jack Lifton.

Randall went on to say that Rare Element Resources is working with Umwelt-und Ingenieurtechnik GmbH (UIT), another General Atomics affiliate, in Germany to confirm and enhance Rare Element Resources’s proprietary rare earth separation



technology. The testwork has made significant progress and has now progressed to pilot plant stage. Randall also said that Rare Element Resources proprietary technology has the potential to produce 98-99% mixed rare earth oxide concentrate and initial test work and initial pilot plant testing done by UIT has confirmed the technology.

To access the complete interview, [click here](#)

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## The Delist Debate: Shareholder Casualties in a Market War

✘ The 14<sup>th</sup> Amendment to the United States Constitution has spawned famous legal battles over the years. Passed in 1868 following the US Civil War, it formed the basis for *Brown v Board of Education* (1954, attacking racial segregation), *Roe v Wade* (1973, abortion rights), *Bush v Gore* (2000, presidential election), and *Obergefell* (2015, same sex marriage).

What is less well known is that this amendment also is the basis for the US concept of “corporate personhood”, making the company distinct from the shareholders.

Section 1 of the amendment begins, “*All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States...*”. In that context, “persons” has been interpreted by the courts to include corporations.

This isn't just a US phenomenon. The United Kingdom landmark case of *Salomon*, dating to 1897 from the House of Lords,

confirmed the 1862 statutory theory of corporate personality, meaning that the creditors of a company couldn't recover from the shareholders personally for the company's debts. Prior to becoming a Dominion in 1867, Canada imported Britain's laws, including that same 1862 *Corporations Act*.

This means a company is in law considered for most purposes to be a "person". It has rights and obligations. It can sign contracts in its own name, sue and be sued, buy and sell assets, hire and fire, pay taxes. Commerce continues.

When the company does well and its equity increases in value, the theory of corporate personhood means that the common shareholders are the winners. The converse is true as well, in that a decrease in equity value hurts those same shareholders.

Being able to buy and sell the shares of a company is important. It allows cash to flow to and from shareholders, in accordance with their separate needs and plans. This is the primary function of the world's stock exchanges – to enable buyers and sellers of those shares to meet in a credible marketplace. We call that "liquidity", in that the shareholders can liquidate their holdings into cash. (See here for a prior article on the current liquidity crisis in the junior markets and the TSXV's response to it.)

The relentless war being waged through those stock exchanges and on the extractive sector generally has created a long list of casualties. Need proof of that war?

Freeport-McMoran Inc. is the world's largest producer of molybdenum and copper, and also produces gold, cobalt and silver. It's a good proxy for the global mining industry. In the summer of 2011 in the midst of the commodity superbull market, its shares were trading over \$50 a share on the NYSE. Those same shares are currently trading around \$5.60 a share, with a 52-week low of around \$3.50. Since FCX has 1.2B common shares outstanding, that plunge from \$50 represents a

destruction of wealth of roughly \$50 billion.

But at least the shares are continuing to trade, and the shareholders have the opportunity to buy and sell as each sees fit. That opportunity is denied to shareholders of companies that delist from stock exchanges.

One example of this is Rare Element Resources Ltd. (REE on NYSE, at least for now). REE announced on Feb 1, 2016 that it will voluntarily delist its shares from the NYSE. Quoting from the press release:

*The Company's board of directors has determined that it would be in the best interest of the Company and its shareholders to voluntarily delist from the NYSE MKT exchange due to costs associated with the continued listing and NYSE MKT continued listing requirements... The Company intends to have its shares traded on the OTC Pink Current Information marketplace once the delisting from NYSE MKT is complete.*

The NYSE is the world's largest stock exchange. On Feb 5, 2016 it saw 1,167,104,502 shares change hands through its platform at an average price of \$79.84, for traded value of over \$93B. That was in merely one day. The shareholders of REE had access to that liquidity and to the credibility that being listed on that global stage brings with it.

Those same shareholders will soon be facing the Pinks, where the traded volume that same day for all the OTC markets totalled \$797M, on only 92,000 trades. The REE shareholders will have to contend with limited liquidity and, in all likelihood, a more punitive bid-ask spread and less disclosure / compliance.

We're not picking on REE. It's a classic example of *The Rolling Stones* song, I'm Gonna Walk Before They Make Me Run. REE is voluntarily delisting before it fails to meet the NYSE's continuing listing requirements and gets punted off the exchange. In that context, it's a good decision for the

company.

But it's an example of a decision that might be good for the company but not for the shareholders still holding shares. It's hard to see how that decision is "in the best interest of the shareholders" who are distinct from the company.

In writing this article I did some research on the insider trading history for REE. Some officers and directors sold their shares at prices far above today's 7 cents, others didn't. It's tempting to lash out at the sellers who took capital out of the market, but it would also be unfair. As long as they didn't mislead the marketplace or fail in their disclosure obligations, then the insiders of a company are just as entitled to sell as are the arm's length shareholders.

That, too, is part of the theory of corporate personhood. The officers and directors are distinct from the company itself. Their rights and obligations are related to but separate from the company's. The 14<sup>th</sup> Amendment enshrined these principles and they won't go away anytime soon.

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## **Innovative processing for the technology metals market**

☒ November 10, 2015 – I would like to take this opportunity to thank everyone who attended the Technology Metals Summit on Wednesday, October 14th. This was the 3rd one we have done and we are actually in the throes of planning another one for May 2016 – a 2-day event, 1 day on technology related to cleantech and the 2nd day dedicated to technology metals.

Yes, Jack Lifton, Sue Glover and I threw this one together in record time, but the audience was full of industry leaders and investors that reinforced that the sector is not only evolving, but is arguably redirected towards competitive environmentally conscious technologies.

The Technology Metals Summit panel where this stood out the most prominently was co-moderated by Alastair Neill of Trinity Management Ltd. and Pol Le Roux, Vice President Sales and Marketing for Lynas Corporation Ltd. and was titled: Innovative processing for the technology metals market. With a record seven panelists, [click here](#) to see the following companies represented in this valuable dialogue and debate on technology metals extraction processing techniques: Jaye T. Pickarts, P.E., COO of Rare Element Resources Ltd.; Neil Izatt, IBC Advanced Technologies; Dr. David Dreisinger, Vice President, Metallurgy, Search Minerals Inc.; Patrick Wong, CEO & Director, Innovations Metals Corp.; Kiril Mugerma, President & CEO, GeoMega Resources Inc.; Wes Berry, Vice President & CTO, K-Technologies, Inc.; and Cameron Davies, COO, Rare Earth Salts.

To access the panel highlights, [click below](#) on the InvestorIntel YouTube channel, or [click here](#) to access



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**Lifton on the “most interesting panel ever seen”**

# at the Global Technology Metals Market summit

October 6, 2015 – In a special **InvestorIntel** interview, Publisher Tracy Weslosky speaks with Jack Lifton, Sr. Editor for **InvestorIntel** about the upcoming Global Technology Metals Market summit on Wednesday, October 14th he will be presenting his thoughts on how the financial world views the resource world. He then discusses the significance of the recent strategic materials research contract announced by Texas Rare Earth Resources with the U.S. Defense Logistics Agency. Jack also discusses the panel he describes as the “most interesting one he has ever seen” titled *Innovative processing for the technology metals market* that will be moderated by Dr. Luc Duchesne and Pol Le Roux at next week’s event and touches on his thoughts on Lynas.

**Tracy Weslosky:** I’m going to start with a, I can’t wait to see you this next week at the Technology Metals Summit. Can you give us a glimpse into what you’re going to be talking about?

**Jack Lifton:** I’ve decided to talk about how the financial world views the resource world. There’s isn’t very much understanding in finance. I’d like to make the point that the Chinese seem to understand this a lot better than we do, how to finance companies that make critical materials for our society. Never mind the share prices and the pumps and the promotion and all of that. We really need to get these companies financed. I’ve changed my mind now after 75 years. I’ve decided that national governments should indeed invest in these resources. I’m going to talk a little about that.

**Tracy Weslosky:** Okay. Speaking of governments, I want to ask you because I know you sit on the board, board of directors for Texas Rare Earth Resources, and they’ve just announced a

deal with the U.S. Defense Logistics Agency. I understand that this is the first time they've ever awarded a contract like this before. Talk to me about this.

**Jack Lifton:** It's certainly the first one ever in the rare earths field. I wouldn't know about the actual history. The point of this contract is to determine whether or not continuous ion chromatography is an effective and economical means of recovering rare earths from deposits such as Texas Rare Earth's. To me it's the first I've ever heard of this although I understand in World War Two they might have awarded similar contracts to the ancestor of this agency. People have to understand this is not just an award to Texas Rare Earth's to supply a few grams of yttrium. This is in fact the agency determining whether or not Texas Rare Earth is on the right path to develop its project with the right non-traditional technology, which is continuous ion chromatography. I understand that the originator of that technology will be a panelist next week at the conference. Is that correct?

**Tracy Weslosky:** It is correct. I was just about to say, I'm kind of putting you in the hot seat here Jack because what we have next week is we're going to have a number of the top disruptive, innovative and revolutionary and ground-breaking rare earth extraction technology representatives all on the same panel.

**Jack Lifton:** Right.

**Tracy Weslosky:** Now, can I get you to comment on how you think that's going to go down?

**Jack Lifton:** It's all a matter of economics. The three technologies I'm looking at are MRT, the technology being developed for Ucore Rare Metals, the continuous ion chromatography that's being developed for Texas Rare Earth and what I call targeted solvent extraction, which is the very modern variation of solvent extraction that has been developed

by Rare Element Resources...to access the complete interview click here or for more information on the Global Technology Metals Summit, go to [TechnologyMetals.com](http://TechnologyMetals.com)

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## **Lifton on asteroid mining rare earths and Molycorp's Mountain Pass**

**Some rules don't change.** But that doesn't mean that our poorly educated journalists have to know of them or even have to understand them, when they are described or applied. One rule, frequently swept under the rug by junior mining promoters eager to take advantage of journalistic ignorance can be stated as:

**“In order for any deposit to be developed into a profitable mine the infrastructure to access it must already exist, or, if not, then its costs must be included in the feasibility study.”**

Trivially this means for example no commercial mining until I can get to the deposit and either process the material to a commercial form at the site or move it to a processing site without logistics' costs destroying the project economics.

A corollary of the above “rule” is that the cost of infrastructure must be quantified and covered before the project enters development.

Now, the above rules of economics having been stated let's get to what I am talking about today.

Mining carried out at the margins of contemporary engineering



and process technology has always been a science fiction theme. This idea either directly as a driver or indirectly as a justification, in fact, has served to advance the idea of extraterrestrial exploration and as a reason to survey the sediments of the ocean's bottom. Neither the immense pressures of the deep ocean or the hard vacuum of outer space has thus been a barrier to the imagination, but in the real world of diesel-powered machinery using air as a source of oxidizer and of people who can only operate at all under narrow conditions of standard pressure and temperature-i.e., those that obtain on average at sea level on the surface of the earth-such mining has always faced not only the limitations of the human body but also infrastructure barriers.

Human adaptability and engineering have recently (in my lifetime) provided suits, in which, or machines, through or in which, people can operate under immense pressure or no pressure environments. However, so far, artificial intelligence (AI), AI has not progressed to the point where it can substitute at the drill point for an old man with an eye for minerals and a nose for grade. Remotely operated spectrographic equipment (sea-bed exploration) or gross long rang spectroscopy (astronomy) cannot yet even begin to substitute for hands on analysis.

Notwithstanding the fact that we (the human race) aren't ready nonetheless we are regaled this week with a stupid article about a "3 trillion GBP asteroid" passing by our planet. The promoter's universe in which we are presumed to live assumes that without exception none of us understand the law of supply and demand. Alas most of us do in fact understand this law, and so we are mostly not at all impressed by the truly dumb journalists who do not and never will understand the limits of science and engineering.

This week's treasure laden asteroid is fantasized, with no direct evidence whatsoever, to contain a million tons of platinum in its "core." The article's author and his/her

editor simply multiply this number by the USD\$1500/troy ounce price for 99.99% metal that they find on the business page of *the Garbage Gazette* for which they work and the asteroid's fantasy deposit is "worth" 3.5 trillion GBP.

Let's assume for the sake of argument that we had access to up to a million tons of 99.99% platinum in the global 2015 marketplace of the planet Earth. The current world industrial demand for platinum mostly for automotive exhaust catalyst, but with a significant portion of demand for jewelry and some chemical engineering uses, is between 350 and 400 tons per year. Perhaps 60% of this demand is satisfied by new production from mines almost entirely in southern Africa. The rest comes from recycling of the scraps from the principle uses.

This would mean that the asteroid "deposit" would/could satisfy the needs of our society for platinum for some 2,500 years. Again assuming this is truly accessible the consequences would be economic chaos for the platinum markets. Such an immediate "supply" would collapse the price of the commodity essentially to ZERO, unless it could be economically produced at a slow enough rate. But even so that rate would have to be still at a cost low enough to compete with and replace the current supply marketed at (for argument's sake) USD\$1500/troy ounce. Even then it, the supply from the asteroid could only be increased so long as the increase did not distort the market and reduce the selling price due to overabundance.

But even if the "core" of the asteroid consisted of London Platinum and Palladium Market certified bars of pure platinum there will be logistics and engineering costs arising from such necessary engineering aspects as the following:

1. The asteroid will have to be put into an accessible orbit-it is now shortly just passing the earth. Its orbit could theoretically be adjusted to one either

circling the earth or circling the moon. The moon would be better so that if there were an accident the asteroid would impact the moon rather than the earth, where a couple of million tons might be just enough for an extinction level event. However I note that the tonnage all of the warships of all of the combatant's in World War II was probably less than the total mass of this asteroid, so we are faced with the question of just how much energy it would take to capture this asteroid (i.e., control its orbit). Thank goodness we don't have to lift two million tons into orbit from the earth's surface, since this would mean accelerating the two millions tons to some 14,400 miles per hour just to get it into earth orbit. Let's see what the back of my envelope says: Oh yeah, it would take all of the energy the human race has produced so far converted into liquid oxygen and hydrogen. Then, let's see we would have to build a fleet of spaceships, launch facilities, and so forth that would take the industrial and economic output of the USA for several years.

2. Wait, you say, you would only have to produce enough fuel and rocket engines for the rocket engines to be implanted in the asteroid to change its course. You're right and this would only take a few trillion dollars and I'll bet less than a generation. But wait, Oh darn, the asteroid is just passing the earth we may never see it again even if it's in orbit around the sun, so we have to do all the calculations, build the ships, build the engines, and produce the fuel for both the ships and the orbital transfer in a couple of months. Uh Oh – that's going to be tough for a world whose attention span is taken up by an immature "entertainer" licking donuts.
3. The recruiting, education, and training of thousands of engineers and astronauts who contribute nothing to our earth bound economy until the mine is producing,
4. The planning, design, manufacturing, and testing of

“space suits” for humans and mining equipment for use in hard vacuum,

5. The design of transport vessels to carry the ore concentrates back to the earth,
6. Facilities to process and refine the ore concentrates, and
7. A political solution to the twin problems of who pays for all of this and what do they get out of it?

Funny I didn't see anything about any of the above things in the newspaper story.

But since we would have to in any case restrict the supply in order not to distort the market let's look a little further to see if this problem has arisen before.

Gee whiz we only have to look at the rare earths markets right now today on terra firma to see what happens to price when supply exceeds demand. But even here there is a further complication: **The supply of all of the rare earths is not in surplus**; it is just the supply of the lower atomic numbered rare earths, lanthanum and cerium, that is in oversupply. *So why are the prices of all of the market critical rare earths trending downward rather than firming?*

One answer would be that the production of the KEY rare earths, neodymium and praseodymium, is determined by the production of lanthanum and cerium, because the overwhelming majority of Nd and Pr is and must always be co-produced with La and Ce. This is how these elements are nearly always found in nature. Whenever anyone presents you with an elemental analysis of a “rare earths deposit” always look at the key ratios:

1. Nd and Pr/TRE0
2. Nd/Pr
3. SEG/TRE0, and
4. HRE/TRE0

## 5. HRE + Y

I was present in the Spring of 2013 in Ganzhou at a CSRE/ACREI joint conference where the General Manager of the world's largest vertically integrated producer of light rare earths located in Bayan Obo, Inner Mongolia, said that he was now forced to overproduce La and Ce in order to keep up with the demand for Nd and Pr.

With that in mind look at the above ratios for the three highest grade light rare earth projects in production today:

	<b>Molycorp Mountain Pass</b>	<b>Lynas Mt. Weld</b>	<b>Baotou</b>
Nd and Pr/TREO	16.3	23.4	21
Nd/Pr	3	3.6	4
SEG/TREO	1.1	4.1	2.1
HRE/TREO	0.2	0.47	0.25
HRE + Y	0.3	1.23	0.55

Note that outside of China not only does Mt Weld have the best distribution going for a large high grade accessible deposit but it is in fact better in SEG and HREEs than Baotou by a factor of two.

But as we know the established rare earth markets and the demand geography for the rare earths overwhelmingly favors China.

Humor me and let's look at the above metrics for my favorite three US deposits:

	<b>Bear Lodge</b>	<b>Bokan Mountain</b>	<b>Round Top</b>
Nd and Pr/TREO	23	16	7.2
Nd/Pr	3.6	4.3	2.7
SEG/TREO	5.15	7.7	3.8
HRE/TREO	0.74	10.1	26.7
<i>With Y added to the HREs for HRE/TREO one gets:</i>			
HRE + Y	2	36	70.1

- Bear Lodge – Rare Element Resources Ltd. (TSX: RES | NYSE MKT: REE)

- Bokan Mountain – Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF)
- Round Top – Texas Rare Earth Resources Corp. (OTCQX: TRER)

Clearly (with Thorium and Uranium content eliminated) the USA deposits above are far better balanced in market critical rare earths than all the current producers outside of China but Lynas.

**It is clear that the total demand for rare earths for the manufacturing of rare earth permanent magnets is limited by how much neodymium or didymium (neodymium plus praseodymium) is produced.** It may well be that there is not enough new Nd + Pr being produced to allow any substantial increase in the production of rare earth permanent magnets even though there is enough being produced to satisfy the current demand. Therefore the prices of the magnet critical HREs are depressed as demand for them is lessened. But as the markets move to support high Nd+Pr producers such as Lynas the demand for the magnet rare earths, Tb and Dy, will once again increase and prices will go up.

China has and has been producing from HRE dominant deposits.

To be charitable the original investors in the revival of Molycorp did not understand that the market critical rare earths are more important than lanthanum and cerium. Nor did they understand, or know of, or use the 5 metrics above.

The continuation of Lynas is by no means assured, but support for its existence by Japanese investments in off-takes and even in facilities finance indicates that the Japanese have learned a lot more about the rare earth markets than many who invested in Molycorp.

Events are moving rapidly. If the world's economy, and, in particular, that of the USA and/or Europe resumes a 4% growth rate then the end-use markets for the market critical rare

earth's will resume its steady growth. Then and only then will commodity prices rebound. China probably today has the power to create the necessary uptick in the growth of global GDP. And, in fact, this is the probable result of the new goal of re-setting the Chinese domestic economy away from one that is export-led to one that is domestic consumption-led.

The world's economy is struggling to resume steady growth. Asteroids will come and go, and in fact there will be asteroid mining one day, but it will be for local use and the most precious of all mined goods will be ICE (water). Think about that. What else can you use to produce fuel (hydrogen and oxygen), atmosphere, and a medium in which to grow plants?

[Disclaimer: Please review Jack Lifton's bio below where he lists his clients and Board positions.]