WINGS
ENTERPRISES, INC

1185 Ross Avenue
St. Louis, MO 63146
314.503.4986

November 12, 2009

Open Letter to the USGS
Cc: DoE, DoD & GAO
989 National Centers
Reston, VA 20192

Re: Rare Earths, Strategic and Critical Resources and National Security

Resolving Supply and Production Issues for the U.S. Economy
&
National Defense

Dear Sirs,

Wings continues to work towards the promotion of a Domestic Rare Earth Refinery (see attached letters from Missouri's Federal Representatives including Senator Bond). Our goal is to resolve the Rare Earth (RE) Resource Supply imbalance between the U.S. and China. The obstacle our Nation faces is that any potential U.S. producer of RE resources must overcome the significant financial, capital, market and tax advantages enjoyed by the Chinese. Many, possibly all, of these Chinese advantages are State sponsored.

As you know, the real challenge is not a mining or a mineral resource issue: the U.S. has the resources. The real issues are the U.S. cost of capital as it relates to potential market risks from China, tax issues, supply reliability / credibility for end users, and Chinese control of the market.

The first issue is the cost of U.S. capital relative to the financial risk. The issue relates to the significant capital requirements necessary to develop a reasonably large processing facility that converts concentrates into highly refined elements and metals (costing hundreds of millions of dollars). These capital costs represent an 'unrealistic' financial challenge for any one rare earth mining operation to overcome. This challenge is unrealistic because even if an individual mining company manages to overcome these capital requirements in the short term, China remains a real financial threat to the viability of that individual producer in the long term. RE Technology based end users see this as a ‘supply credibility problem.’

Against the high cost of capital in the U.S., these individual U.S. mining companies must compete against China’s significant cost advantages for

capital; typically state sponsored for all refining activities (China actually built an entire city dedicated to the production of rare earth products). These U.S. firms must also overcome significant Chinese advantages in labor cost, environmental standards, and mining cost. These issues are compounded by the generous tax advantages available to integrated Chinese producers and end use consumers of RE products.

The risks to any U.S. entrant are further complicated due to China's dominance in the production and supply chain. China currently produces between 90 and 99% of the various lanthanides inside a state managed system. National priorities and an aggressive pricing history suggest that China can move prices up or down at will. Because of these compounded advantages China can wipe out any potential U.S. entrant into the market. As a result, small independent U.S. producers are facing a number of unrealistic financial risks. Under the current environment any independent U.S. based RE producer cannot be viewed as a dependable, or even credible, supplier in the long term.

Consequently any RE based technology company, especially with high capital requirements, cannot develop a business that would be dependent upon privately funded U.S. based RE producers. These companies must move to the most reliable supplier of RE products. This decision is enforced through the low tax environment for end use consumers of RE products, and China's tendency to announce potential export restrictions, inventory building programs or other 'nationalistic industrial policy initiatives' for RE products (scare tactics to herd RE technology companies inside China).

Today China represents the only "credible" RE supply in the world. China is limiting all supply agreement and tax advantages to technology firms that are willing to locate inside China. Consequently these RE based technology developers continue to migrate into China. This is resulting in high value technology transfer from the U.S., Europe and other parts of Asia. The U.S. must devise a strategy that motivates these companies to locate inside the U.S. Wings is promoting a structure that we feel will achieve this goal.

Our basic proposal is to develop a National Domestic Facility that will act as a collection and processing facility for all available rare earth resources in the Western Hemisphere. Under Wings proposed structure a National RE Facility would be able to accept and process various types of rare earth concentrates, including Monazite and other Thorium bearing rare earth feed stocks. Under this strategy many existing mining operations may be able to produce RE byproduct concentrates, including substantial Monazite byproducts from South America.

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The ultimate goal of the facility is to establish supply and production stability. Under this structure the National Facility is not 100% dependent upon any one "primary producer (Mt. Pass, Avalon or Pea Ridge)," but can be supplied at some minimum level through byproduct producers alone. The DoD can provide minimum price supports with a limited goal to keep the facility operating during any Chinese pricing pressure event. Because this facility would only employ the most efficient processing technologies it would be competitive with China on a WTO basis. Furthermore, most Western technology firms would be willing to accept some level of 'cost premium' to protect their trade secrets and patents (no such protection in China). Although this solution is not perfect, the alternative of private financing is even less likely to succeed.

This facility would serve all potential primary RE producing mines such as Pea Ridge, Mt. Pass, or Avalon when they come into production. This greatly eliminates the capital risk for these Western producers.

Furthermore, under this strategy the supply side risks to the United States are greatly reduced. This strategy will position the U.S. as a credible and stable supplier.

To be WTO compliant the private sector would have the ability to acquire majority ownership of this National facility over time. However it will prove important that the DoE retain some ownership to provide education, research and commercial access functions of this facility to help expand opportunities for our economy.

As I have stated before in previous letters, this facility would initially be funded by the DoE. The facility would be supported by DoD with minimum price supports (as for other Strategic and Critical materials). This facility would accept RE concentrates from primary and byproduct producers, providing a stable and dependable supply of RE concentrates.

I know that the USGS is understaffed and overburdened with other important issues. However, domestic RE production, supply and credibility issues are a very real problem facing the future of our country. Failure to overcome this problem will tax our National Security and future industrial development.

I believe that it would be very helpful to have the USGS comment directly on this *supply side strategy*.

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Specifically:

1) Is there significant potential to create RE resources from primary producers and byproduct producers of RE concentrates throughout the Western Hemisphere if the U.S. had a centralized processing facility that can accept low grade RE concentrate feed stocks?
2) Is there significant potential to boost rare earth supply if this centralized U.S. facility is capable of accepting Thorium bearing RE concentrate feed stocks from North and South America?"
3) Would the inclusion of Thorium bearing REs significantly impact the supply of available 'heavy' rare earths?

I think it is important for the DoD, DoE and GAO to consider this type of strategy. By including Thorium bearing RE concentrates into the supply equation it radically modifies the amount and relative value of RE resources available to the U.S. However, if the DoD, DoE, and GAO are not made aware of the RE supply potential for this strategy they cannot make informed decisions.

I am not asking that the USGS support or promote my proposal, but only to comment on the *supply impact* of total available RE resources if the U.S. had a centralized facility to accept low grade concentrates including Monazite and other Thorium bearing RE minerals.

Is there anything that the USGS can do to answer this question for U.S. policy makers?

Sincerely,

Jim Kennedy
President, Wings Enterprises, Inc.
314.494.1638

Notes on Thorium:

Regarding Thorium, our goal is two-fold. Ultimately Wings would like to see the development of Thorium based nuclear energy. Under our proposal all of the Thorium would be processed into Nuclear Fuel within this National Refinery in anticipation of the future development of Thorium based Nuclear Power Plants.

The U.S. developed and operated Thorium Energy Reactors in the late 1950's up until the 1970's. Thorium Energy was abandoned because it was

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not suitable for the production of fissile material (nuclear weapons material). However, Thorium based nuclear energy was far superior in every other measure: safety, capital cost, efficiency, environmental safety and extremely low Actinide waste (radioactive waste). In fact, Thorium reactors have the potential to consume and convert much of our Nations stockpiled nuclear waste into many alternative and useful byproducts while reducing the overall level of highly hazardous Actinides.

Senator Hatch, Senator Reid and others are promoting research in this area. China, Russia, France and India are currently conducting Thorium Energy research, with the goal of developing the next generation of nuclear energy. If they succeed at this and we fail our nation will sink into economic obscurity. Energy equals economics. This is the most promising green technology in our future. We must lead in this effort.

The storage of Thorium is relatively safe and inexpensive. For example, there are no significant legal or environmental issues related to storing Thorium as a nuclear fuel in Missouri. Missouri may also soon have an International Intra Modal Port Facility capable of dealing with Customs Issues related to receiving these materials from South America. A number of State and Federal Legislators are interested in the development of a National RE Refinery in Missouri.