Michael S. (Mickey) Fulp
M.Sc., C.P.G.

MercenaryGeologist.com
contact@mercenarygeologist.com

America Is Under China's Thumb … and Russia's, too

A Monday Morning Musing from Mickey the Mercenary Geologist

Contact@MercenaryGeologist.com

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Under my thumb the girl who once had me down
Under my thumb the girl who once pushed me around
It's down to me
The way she talks when she's spoken to
Down to me, the change has come
She's under my thumb (Rolling Stones, 1966)

One year ago, I documented the extent to which the United States of America depends on foreign sources for most of its industrial metals, minerals, and materials (**Mercenary Musing, March 26, 2018**).

In summary, the USGS tracks 77 mineral commodities on an annual basis and the good old US of A has at least 25% import dependence for 64 of them.

We obtain many of these mineral supplies from a who's who list of the world's unfriendly, socio-fascist, corrupt, and/or unstable regimes. Moreover, we are most dependent on our two most powerful and longest-lived enemies, China and Russia.

Here's a breakdown:

- China is our primary, secondary or tertiary source for 31 commodities. These are mainly specialty metals and industrial minerals with small markets. However as discussed below, many are classified by our government as "critical minerals".

- Russia is an important source for 12 commodities, including five major metals and one major agricultural mineral.

- South Africa is the largest supplier of six major metals and a significant source of two industrial minerals.

- Other countries with high geopolitical risk that supply one or more minerals are Bolivia, Gabon, Georgia, Guinea, Kazakhstan, Mozambique, Philippines, Rwanda, Senegal, and Ukraine.

Let's view the issue in a different way:

In December of 2017, President Donald J. Trump signed Executive Order 13817: "*A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals*".

As defined by EO 13817, a "critical mineral" is:

- a non-fuel mineral or mineral material essential to the economy and security of the United States;
- sourced from a supply chain that is vulnerable to disruption; and,
- serves an essential function in the manufacturing of a product, the absence of which would have substantial consequences for the U.S. economy and/or national security.

Disruptions in supply chains may arise for any number of reasons, including natural disasters, labor strife, trade disputes, resource nationalism, conflict, etc.

Or, I might add, a transfer of control to a foreign power.

Included in the executive order was a mandate for the Department of the Interior's United States Geological Survey (USGS) to compile a list of mineral commodities considered critical to the economic well-being and national security of the United States. In May 2018, the USGS published this list of 35 "critical mineral" commodities.

The list is posted below with links to the USGS mineral commodity summaries. Note that I have also identified the commodities for which we are dependent on China (in **bright red**) and/or Russia (in **dark red**).

- **Aluminum**, used in almost all sectors of the economy; **Russia, China**
- **Antimony**, used in batteries and flame retardants; **China**
- **Arsenic**, used in lumber preservatives, pesticides, and semi-conductors; **China**
- **Barite**, used in cement and petroleum industries; **China**
- **Beryllium**, used as an alloying agent in aerospace and defense industries
- **Bismuth**, used in medical and atomic research; **China**
- **Cesium**, used in research and development
- **Chromium**, used primarily in stainless steel and other alloys; **Russia**
- **Cobalt**, used in rechargeable batteries and super-alloys; **China**
- **Fluorspar**, used in the manufacture of aluminum, gasoline, and uranium fuel; **China**
- **Gallium**, used for integrated circuits and optical devices like LEDs; **China**
- **Germanium**, used for fiber optics and night vision applications; **China, Russia**
- **Graphite (natural)**, used for lubricants, batteries, and fuel cells; **China**
- **Hafnium**, used for nuclear control rods, alloys, and high-temperature ceramics
- **Helium**, used for MRIs, lifting agent, and research
- **Indium**, mostly used in LCD screens; **China**
- **Lithium**, used primarily for batteries; **China**
- **Magnesium**, used in furnace linings for manufacturing steel and ceramics; **China**
- **Manganese**, used in steelmaking
- **Niobium**, used mostly in steel alloys; **Russia**
- **Platinum group metals**, used for catalytic agents; **Russia**
- **Potash**, primarily used as a fertilizer; **Russia**
- **Rare earth elements group**, primarily used in batteries and electronics; **China**

- **Rhenium**, used for lead-free gasoline and super-alloys
- **Rubidium**, used for research and development in electronics
- **Scandium**, used for alloys and fuel cells. **China**
- **Strontium**, used for pyrotechnics and ceramic magnets **China**
- **Tantalum**, used in electronic components, mostly capacitors
- **Tellurium**, used in steelmaking and solar cells; **China**
- **Tin**, used as protective coatings and alloys for steel
- **Titanium**, overwhelmingly used as a white pigment or metal alloys; **China**
- **Tungsten**, primarily used to make wear-resistant metals; **China**
- **Uranium**, mostly used for nuclear fuel; **Russia**
- **Vanadium**, primarily used for titanium alloys; **Russia**
- **Zirconium**, used in the high-temperature ceramics industries; **China**

Note that we are beholden to China for 20 commodities on our government's critical minerals list. Again, most are minor metals but many are essential to a modern lifestyle, e.g., the rare earth elements and lithium.

On the other hand, Russia is a significant source of eight commodities, including major metals aluminum and chromium, the PGMs (platinum and palladium), and potash, a primary agricultural mineral. Most concerning to me is our dependence on Russia and its former satellites, Kazakhstan and Uzbekistan, for nearly 40% of our annual uranium supply.

The focus of President Trump's initiative now switches to a multi-agency strategy to implement the executive order.

The Trump administration is to be commended for its efforts to remedy a situation that renders America's economy and security vulnerable to many foreign governments with high geopolitical risk.

Over the past two years, tens of millions of acres in the Western US have been restored to mineral entry; exploration and mining projects have been permitted in a timely manner; onerous bureaucratic regulations have been rolled back; there are time limits imposed for delivery of environmental studies; and Section 232 national security rulings have been declared for specific commodities and materials.

According to my sources, the federal bureaucracy has done a 180 degree turn by adopting a "can do" versus the "can't do" attitude that ruled the eight-year Obama regime.

Despite Trump's proactive agenda to reduce our vulnerability to mineral supply disruptions, we must realize this effort will be an incremental process playing out over a long period of time.

The ever-increasing domination of the world's mineral resources by the purported "People's Republic" of China does not bode well for our secure future. We are increasingly under China's thumb. In my opinion, the current situation is analogous to our relationship with the OPEC cartel from the mid-1970s to the mid-2010s.

We solved that problem with Yankee ingenuity, improved technologies, and capitalism and have became net petroleum exporters since the shale revolution began 10 years ago.

That said folks, the situation with minerals may get worse before it gets better.

As I write today, one particular critical mineral not flagged in the above compendium is in jeopardy of being transferred to an enemy.

In next week's missive, I will detail a mineral monopoly now controlled by a US-domiciled multi-national corporation that is scheduled for sale to a sovereign Chinese company in the very near future.

Please stay tuned.

Ciao for now,

Mickey Fulp
Mercenary Geologist

The **Mercenary Geologist Michael S. "Mickey" Fulp** is a Certified Professional Geologist with a B.Sc. in Earth Sciences with honor from the University of Tulsa, and M.Sc. in Geology from the University of New Mexico. Mickey has 35 years of experience as an exploration geologist and analyst searching for economic deposits of base and precious metals, industrial minerals, uranium, coal, oil and gas, and water in North and South America, Europe, and Asia.

Mickey worked for junior explorers, major mining companies, private companies, and investors as a consulting economic geologist for over 20 years, specializing in geological mapping, property evaluation, and business development. In addition to Mickey's professional credentials and experience, he is high-altitude proficient, and is bilingual in English and Spanish. From 2003 to 2006, he made four outcrop ore discoveries in Peru, Nevada, Chile, and British Columbia.

Mickey is well-known and highly respected throughout the mining and exploration community due to his ongoing work as an analyst, writer, and speaker.

Contact: **Contact@MercenaryGeologist.com**

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