ESSENTIAL
MINERALS
ASSOCIATION

January 10, 2023

U.S. Forest Service
Payette National Forest
Attn: Linda Jackson, Payette Forest Supervisor
Stibnite Gold Project
500 North Mission Street, Building 2
McCall, ID 83638

Submitted electronically via: https://cara.fs2c.usda.gov/Public/CommentInput?Project=50516

Re: Comments on the Payette and Boise National Forests' Supplemental Draft Environmental Impact Statement (SDEIS) for the Proposed Stibnite Gold Project (EIS #50516)

Dear Ms. Jackson:

The Essential Minerals Association (EMA) writes to provide comments on the US Forest Service's (USFS) consideration of the SDEIS to approve the Stibnite Gold Project submitted by Perpetua Resources, Idaho, Inc.

Introduction

The Essential Minerals Association (EMA) is the representative voice of companies that extract and process a vital and beneficial group of raw minerals that are the essential ingredients for many of the products used in everyday life. Our companies and the people they employ are proud of their industry and the socially responsible methods they use to deliver these beneficial resources.

The minerals produced by EMA's members are vital to the manufacturing processes for many, if not all, of the products we use every day. They are used in the production of food supply chain elements (agricultural feed, baking products, and water purification needs), batteries, protective masks, dialysis machines, semiconductors, solar panels, glass, ceramics, paper, plastics, rubber, detergents, insulation, pharmaceuticals, cosmetics, foundry cores and molds used for metal castings, paints, filtration, metallurgical applications, refractory products, and specialty fillers. Every sector of industry relies on a variety of essential minerals to generate their end products, making a robust and stable supply chain critical for the continued growth and success of our economy as well as our national security.

As you know, Perpetua Resources Idaho, Inc.—an - an EMA member company—is developing the Stibnite Gold Project in western Idaho, the largest known antimony resource in the U.S., and one of the top 10 gold deposits. This project will provide much-needed resources for renewable energy development as well as important defense capabilities, as is discussed in more detail below. For those reasons, EMA urges USFS to approve the 2021 Modified Mine Plan (MMP) alternative so that the project can proceed.

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The Antimony From this Project is Essential to our Economic and National Security

The sulfide mineral stibnite yields the much-needed element antimony. Designated by the United States Geological Survey (USGS) as a critical mineral, antimony is vital to the production of green energy products such as batteries, high-quality glass, and semiconductors. The U.S. Government prizes antimony for a range of military applications, including armor-piercing bullets, night vision goggles, infrared sensors, precision optics, laser sighting, explosives formulations, ammunition primers, tracers, flares, nuclear weapons, military clothing, and communications equipment. In the 1940's, the mill processing ore from the Idaho site's Yellow Pine Pit produced about half the country's tungsten supply for steel, and as much as 90% of antimony trisulfide for hardening of lead bullets, both essential to defeating the Axis powers during World War II.

Currently, no marketable antimony is mined in the United States and, according to the U.S. International Trade Commission (USITC), "establishing U.S. production will take time and U.S. antimony users will likely rely on imports for at least the next several years." Meanwhile, USGS reports that the U.S. is 84 percent dependent on foreign sources for antimony, with China being the dominant global producer. Our nation gets 71 percent of our antimony oxides from China, and 42 percent of our ore and concentrates from this global adversary.

According to the USITC, China also boasts the majority of antimony processing facilities. As a top processor of the world's antimony, China sources much of its ore from Russia, Tajikistan, and Burma. The U.S. and Tajikistan have a fruitful, cooperative relationship. However, since a 2021 coup d'état, the U.S. State Department warns that Burma is "facing a grave political, economic, human rights, and humanitarian crisis due to a brutal crackdown by a powerful military that acts with impunity."

China's sourcing of antimony from Russia, of course, poses the greatest concern. Oligarchs control much of Russia's mining industry. To cite just one example, on September 30, 2022, the Treasury Department Office of Foreign Assets Control (OFAC) levied sanctions on Suleiman Abusaidovich Kerimov and his family, as have Australia, Canada, the European Union, Japan, New Zealand, Switzerland, and the United Kingdom. These sanctions extend to Kerimov's son, Said Suleymanovich Kerimov, who controls antimony miner PJSC Polyus. The European Union, Switzerland, and the United Kingdom also have sanctioned Said Suleymanovich Kerimov.

Though warranted by Russia's invasion of Ukraine, U.S. sanctions against Russia threaten to disrupt antimony supply chains, which would exacerbate already tight supplies that have increased global antimony prices in recent years. With the war showing few signs of winding down, the State Department vowing to "continue to impose costs on the Kremlin for as long as its war of aggression continues," and the European Union imposing its ninth round of sanctions last month, global antimony supply and prices likely will not stabilize anytime soon.

For these reasons and others, the United States has the economic, human rights, environmental and national security reasons to produce antimony domestically. Along with

Idaho, America's antimony reserves lie mainly in Alaska, Montana and Nevada. Once permitted, Idaho's Stibnite Gold Project is projected to supply up to 35% of U.S. needs during its initial six years of production, with the potential to extend production well beyond this initial phase.

By providing a reliable, sustainable antimony supply, the Stibnite Gold Project promises to support the Biden administration's decarbonization goals by leveraging new liquid metal battery (LMB) technologies. An LMB is comprised of a liquid calcium alloy anode, a molten salt electrolyte, and a cathode comprised of solid particles of antimony. The high energy capacity, high voltage, low cost, and long cycle life of LMBs makes them ideal for large, utility-scale stationary power grid storage used alongside renewables like wind and solar. In 2021, Perpetua Resources signed an offtake agreement with American startup Ambri, which developed a low-cost antimony-based LMB for the stationary, long-duration, daily cycling energy storage market. LMBs also do not require cooling or access to limited supplies of in-demand materials like cobalt, nickel, and lithium. By decoupling power supply and power demand, LMBs will enable widespread use of sustainable energy sources and the development of more-efficient power systems. By the end of the current decade, the energy storage market is expected to reach at least $50 billion.

Again, antimony is used widely in military applications, and the Stibnite Gold Project will support the Biden Administration's national defense goals. On December 19, 2022, the Department of Defense (DoD) issued its first critical minerals award using Ukraine Supplemental Appropriations. DoD's Office of the Assistant Secretary for Industrial Base Policy, through the Defense Production Act, awarded Perpetua an investment of up to $24.8 million to complete the environmental and engineering studies necessary to obtain a Final Environmental Impact Statement, a Final Record of Decision, and other ancillary permits. As DoD stated in its press release, "This investment is essential to ensure the timely development of a domestic source of antimony trisulfide for the manufacture of small arms and medium caliber cartridges, as well as many other missile and munition items." DoD added that Perpetua's Stibnite Gold Project "is the sole domestic geologic reserve of antimony that can meet Department of Defense (DoD) requirements."

The 2021 Modified Mine Plan Properly Balances Production with Stewardship and Public Input

In the SDEIS, the Forest Service identifies the 2021 MMP submitted by Perpetua as the Preferred Alternative. EMA supports this decision because the 2021 MMP strikes an appropriate balance between production of important mineral resources with prudent environmental stewardship and public input. Perpetua made numerous modifications to their mine plan in response to public comments received during the 75-day public comment period in 2020. First, Perpetua agreed to reduce the volume of mined material by ten percent to 115.2 million tons, which is less than the SDEIS' baseline condition of 132.3 million tons. The 2021 MMP also reduces the disturbance area for open pits by seven percent and decreases the size of the Hanger Flats pit by 70 percent while also planning to completely backfill Hanger Flats once operations are complete. Perpetua's new plan eliminates the Fiddle Development Rock Storage Facility, thereby reducing the project disturbance area by 168 acres. The 2021 MMP includes more geosynethic covers for onsite features, increased riparian vegetation to lower stream

temperatures, additional habitat features for the East Fork South Fork Salmon River to replace bull trout habitat, and a modified ore processing circuit to improve tailings chemistry.

Further, the SDEIS' own discussion of the environmental impacts of the various alternatives shows the 2021 MMP's efforts to minimize the project's potential effects. For example, the SDEIS considers several possible air quality impacts, but notes that the 2021 MMP's impacts would be less than the National Ambient Air Quality Standards (NAAQS) for the area because emissions would be below deposition significance levels. The Preferred Alternative also would have levels of Hazardous Air Pollutants (HAPs) that are below the State of Idaho's acceptable ambient non-carcinogenic concentrations/acceptable ambient carcinogenic concentrations (AAC/AACCs). The 2021 MMP would meet or improve upon the USFS' baseline conditions for aluminum, copper, antimony, arsenic, and mercury contamination for fish habitat. Possible impacts on human health due to changing environmental conditions are rated as either Negligible or Minor for the Preferred Alternative. Overall, the 2021 MMP is indicative of the effort that Perpetua has made to avoid, minimize, and remediate the possible impacts the project will have in a responsible manner that will still facilitate the extraction of the important antimony resources.

Conclusion

The 2021 MMP should remain the Preferred Alternative and should be adopted as the USFS' final action in the Final EIS. As discussed above, the project will provide vital mineral resources for our country's economic and national security while also carefully protecting local air, land, water, and wildlife and creating 8,000 combined jobs over the course of construction, operations, and closure and reclamation. This is precisely the balance that responsible mining projects should strike, and Perpetua has spent a decade working with the USFS and local stakeholders to do just that. The USFS should recognize this and adopt the Preferred Alternative and the final agency action and allow the mine project to proceed.

Please feel free to contact me if you have any questions or require additional information.

Sincerely,

Chris Greissing
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