

**January 10, 2023 Public Comment to the Forest Service's
Supplemental Draft Environmental Impact Statement (SDEIS).
Submitted by Thomas K. Welty, MD, MPH**

To:

**Linda Jackson, Payette Forest Supervisor
Stibnite Gold Project
500 N. Mission Street, Building 2, McCall, Idaho 83638**

I. Introduction:

I am a retired family physician/medical epidemiologist who has lived in McCall since 2007. I was a commissioned officer in the U.S. Public Health Service for 27 years (1970-1997): 24 working in administration, public health/epidemiology and direct patient care for Indian Health Service, and 3 working as an Epidemic Intelligence Service (EIS) officer and preventive medicine resident at Centers for Disease Control and Prevention (CDC), Atlanta, GA. I worked for the Cancer Branch at CDC 1982-85 investigating the health effects of Love Canal and other Superfund sites. Since I retired in 1997, I have provided volunteer medical/public health service with the Cameroon Baptist Convention Health Services in West Africa once or twice a year and remotely from US between my onsite visits.

II. My interests in the project and project area:

Since moving to McCall in 2007, I have hiked hundreds of miles in the Central Idaho Mountains, including some near Yellow Pine and Stibnite site. I want to ensure that this beautiful land is preserved for future generations, that the adverse environmental impacts left by a century of mining will be mitigated and that the proposed mining does not create new adverse environmental impacts. Four years ago, I toured the proposed Midas mine site, and in 2020, submitted comments on the Draft Environmental Impact Statement (DEIS) related to my concerns about the compliance of Perpetua with OSHA standards for its employees and restoration measures that will be implemented during and after completion of project activities to avoid or minimize adverse impacts on the human and natural environment.

I have reviewed the Supplemental Draft Environmental Impact Statement (SDEIS) which was released in October 2022. Some of my concerns have been addressed, but unfortunately the proposed Stibnite mine will result in unavoidable adverse environmental impact, and for that reason, **I strongly recommend that the Payette National Forest (FS) recommend a "No Action Alternative" because serious adverse environmental impacts cannot be avoided if the SGP is approved through either of the other two action alternatives (Johnson Creek or Brunt Log Road) that are listed in the SDEIS. A revised SDEIS is essential to document how all of these adverse environmental impacts will be avoided or mitigated if the SGP is implemented as Perpetua proposes.**

My comments focus on the following:

- I. Designating the Stibnite Mine Site as a Superfund Site under the Comprehensive Environmental Response, Compensation and Liability Information System- CERCLA.

- II. Monitoring water quality downstream in the East Fork of the South Fork and the South Fork of the Salmon River during and after cessation of water treatment.
- III. Assuring that Perpetua or its successor will pay for the reclamation/restoration costs even if they file for bankruptcy.
- IV. Evaluating the rationale for mining antimony as part of the SGP and assuring that the proposed antimony mining at Stibnite (if approved) can be done without creating adverse environmental impact.
- V. Managing hazardous materials (HazMat) Spills, Emergency Medical Services, Occupational Health and Safety, and Roadway Safety.
- VI. Reducing the economic cost of the SGP for Valley County residents

My questions and recommendations are bolded and underlined throughout this document.

I. Designating the Stibnite Mine Site as a Superfund Site under the Comprehensive Environmental Response, Compensation and Liability Information System- CERCLA

In the 1990s, mining companies and the forest service implemented some measures to reduce contaminants of surface water and groundwater at the Stibnite site including elevated concentrations of antimony, arsenic, copper, lead, mercury, and cyanide. In 2001, the Stibnite Mine Site was assessed and proposed to be added to the National Priorities List (NPL) as a Superfund site in 2001 (CERCLIS [Comprehensive Environmental Response, Compensation and Liability Information System] #9122307607). Key state and congressional leaders supported funding the cleanup of the Site but opposed the stigma of adding the site to the NPL; thus, the Site was not listed on the NPL. While some additional remediation was done, it was not completed because funding was limited since the site was not a NPL Superfund site. In 2021 the parties signed an Administrative Settlement Agreement and Order of Consent (ASAOC) to address certain legacy mining impacts under CERCLA that would not otherwise be addressed by the proposed Stibnite Gold Project (SGP) activities by Perpetua outside the project footprint. The ASAOC includes three primary phases. Phase 1 includes several “time critical removal actions” (TCRAs) consisting of stream diversion ditches designed to avoid contact of water with sources of contamination, and removal of approximately 325,000 tons of development rock and tailings from locations in Meadow Creek or East Fork SFSR that are currently impacting water quality. Phase 1 activities would be accomplished regardless of the status and potential approval of the SGP and is scheduled to be completed between 2021 and 2025. Perpetua is providing \$7.5 million in financial assurance for the Phase 1 scope of work. The SDEIS does not include a progress report of the activities accomplished in Phase 1, and Phases 2 and 3 are contingent on approval of the SGP by the Forest Service.

Perpetua should provide a progress report of accomplishments of Phase 1 of the ASAOC that can be included in an updated SDEIS prepared under a “No Action Alternative”.

Perpetua has repeatedly made claims in the media that the only way the ongoing contamination from previous mining can be remediated is if the SGP is approved. This claim is blatantly false since more funding could be obtained if the Stibnite Mine Site was officially designated as a Superfund Site and listed on the NPL as was proposed in 2001. This would

increase the likelihood that responsible parties or the Superfund would pay part or all of mitigation costs. In addition, if the current SGP is approved by the FS, there will likely be much more extensive contamination of both the surface and ground water that will need to be remediated. If the SGP is approved, much of the remediation that was previously done will be destroyed and then will need further remediation at the end of the SGP. The old Perpetua slogan of "Restore the Site" turns out to be a case of poorly planned wishful thinking. The success of post-closure reclamation is very much in doubt. Section 4.5.2.2 of the SDEIS (pp. 77-88) lays out the details of why revegetation of the site would be drastically hindered by a deficit of salvageable soil. Both quantity and quality of suitable soil are lacking. Existing soils are poor to begin with and most are contaminated with toxic metals. Stockpiling has detrimental effects on soil productivity. The proposals to address these unavoidable shortcomings are inadequate and include adding huge volumes of wood chips, imported compost, and other soil amendments to create what is creatively referred to as "Growth Media". The effects of climate change on vegetation establishment are not analyzed. Treatment of contaminated water is not addressed in this section of the SDEIS, but predictions that 40 years of post-mining metals removal would be required are low, with 100+ years being more likely.

Under a "No Action Alternative" the FS should work with state leaders and politicians to add the Stibnite Mine Site to the NPL and then solicit funds through CERCLA to fully remediate the site without further mining being done.

- II. **Monitoring water quality downstream in the East Fork of the South Fork and the South Fork of the Salmon River (EFSFSR) during and after cessation of water treatment (if the SGP is approved) to ensure they remain within EPA/IQED requirements.**

There is no information in the SDEIS on the water quality of the EFSFSR and S. Fork downstream from Sugar Creek and no information on levels of arsenic, mercury and antimony in fish caught in the river. It is critical to monitor these levels and to advise the public on whether fish caught in the EFSFSR and SFSR are edible and whether persons recreating on the EFSFSR and SFSR have health risks related to exposure to toxic chemicals from the Stibnite mine. As a family physician with 50 years' experience in public health, I strongly recommend that Perpetua monitor the contamination of water and fish in the EFSFSR and SFSR to prevent or reduce human exposures to these toxic contaminants. If levels exceed EPA and IDEQ human consumption standards, Perpetua should further investigate the source of the contamination and remediate it.

Perpetua should be required to obtain baseline and ongoing levels of arsenic, mercury, cyanide, lead, and antimony in the water and fish downstream from Sugar Creek in both the EFSFSR and SFSR (both during the water treatment and after cessation of water treatment, if the SGP is approved) and advise the public on the results of their monitoring on a regular basis.

If the levels detected indicate a threat to human health according to EPA/IQED standards, what actions would Perpetua be required to take to reduce the contamination and to protect human health? What penalties would Perpetua face if the contamination continues?

III. Assuring that Perpetua or its successor will pay for the reclamation/restoration costs, even if they file for bankruptcy.

Because of the history of mining companies (especially Canadian companies) going bankrupt and not paying for reclamation, the USFS now mandates that the mining companies provide cash bonding or lines of credit to cover the estimated reclamation/restoration costs in full for any mines that are on USFS property. The SDEIS states that water treatment will only be necessary for 25 years after mine closure. However, those estimates of the duration of water treatment required are based on unproven assumptions that a composite liner consisting of a 60-mil, single-sided, textured, linear low-density polyethylene liner over a geosynthetic clay liner (GCL) would be employed to contain the tailings. A similar polyethylene cover will be applied over top of the tailings and covered with soil. However, these liners and covers will likely be pierced by the sharp rocks and their long-term efficacy has not been studied in such harsh conditions. Water treatment will probably be needed for at least 100 years. Laurel Sayer, CEO of Perpetua in the Star News Viewpoint published Aug 20, 2020 includes a statement: "We will set aside funds necessary for reclamation before any mining activity begins." As part of the approval of a plan of operations for the SGP, the Payette National Forest Supervisor must require Midas Gold to post financial assurance to ensure that NFS lands and resources involved with the mining operation are reclaimed in accordance with the approved plan of operations and reclamation requirements (36 CFR 228.8 and 228.13). It is essential that Perpetua pay for the ongoing costs of water treatment and reclamation on both Federal and private lands in perpetuity if necessary and mechanisms need to be clearly stated how this will occur before the SGP is approved. Otherwise, taxpayers will likely end up paying these costs as has happened in the Summitville Mine in Colorado.

If the FS approves the SGP, will Perpetua be required to post a cash bond to continue water treatment for at least 100 years since the assumptions that water treatment will only be needed for 25 years post mine closure are likely flawed?

Will the State of Idaho require Perpetua to post a cash bond to cover the estimated reclamation/restoration costs for the land privately owned by Perpetua before beginning mining? Or will Perpetua only have to provide a corporate guarantee?

Will the funds for reclamation/restoration be payable to the USFS and readily available regardless of the financial viability of Perpetua or its successor?

Does the USFS have a methodology to cover the costs of water treatment and reclamation/restoration in perpetuity if they are needed beyond 25 years post closure or even beyond 100 years? If not, what is the USFS's rationale and justification for failing to present a methodology to cover the costs of water treatment and reclamation/restoration in perpetuity?

I asked these questions in my comments on the first DEIS but did not find answers in the SDEIS. Rather than including a mechanism requiring Perpetua to pay the costs of water treatment and remediation/reclamation in perpetuity, the SDEIS states that water treatment and remediation/reclamation will only be needed for 25 years post closure which is likely based on flawed assumptions. **It is essential that another supplemental DEIS is written to address these concerns before the SGP is approved.**

IV. Evaluating the rationale for mining antimony as part of the SGP and assuring that the proposed antimony mining at Stibnite (if approved) can be done without creating adverse environmental impact.

Antimony is a critical mineral according to a recent US Geological Survey Report (See <https://www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals>) and currently it is not being mined or processed in US. (See <https://pubs.er.usgs.gov/publication/pp1802C> and <https://pubs.usgs.gov/periodicals/mcs2022/mcs2022-antimony.pdf>)

Perpetua recently received \$24.8 million grant from DOD to promote the mining of antimony “to secure an American source of critical minerals for missiles and munitions,”. The mine would produce an estimated 115 million pounds of antimony. The antimony could be used by the defense department for munitions, mortars, artillery, mines, flares, grenades and missiles. However, at present, there is no facility in US that can process the antimony that will be mined to produce useful products which also include fire retardants and stabilizers.

Will the DOD also fund development of a facility to process antimony in US?

If not, the benefits of mining antimony at the SGP will be limited as it will need to be shipped outside US for processing which may not be cost effective and the processed antimony that is required in US, may not be the antimony that is mined in US.

The USGS report states: "because the permitting of minerals development activities is administered under existing mineral disposal laws and regulations, any recommendations to improve permitting processes for critical minerals will improve permitting processes for all minerals administered under the same laws and regulations by the Bureau of Land Management and other Federal land management agencies." I am concerned that because of the priority to develop a domestic source of antimony, there will be intense political pressure on the FS to approve the SGP.

How will the FS ensure that the review of the SGP proposal is not biased by political pressure to identify and approve a domestic source of antimony that can be mined?

It is essential that if such mining is approved by the FS, it does not result in adverse environmental effects. Also, it is clear in the references cited above, and in a 2022 extensive review of antimony contamination and its risk management in complex environmental settings (See <https://www.sciencedirect.com/science/article/pii/S016041202100533X>), that there are serious adverse environmental effects and adverse health effects when humans are exposed to antimony occupationally or through drinking water that must be considered. **Further research is essential to determine optimal ways to reduce environmental contamination with antimony during its mining as well as developing innovative and appropriate technologies for controlling Sb bioavailability and toxicity and sustainably managing Sb-polluted soils and water, subsequently minimizing its environmental and human health risks.** The process of mining antimony and gold in the SGP, will also increase arsenic contamination of soils and water since the mining process will release arsenic that coexists in

rocks that contain antimony and gold. Some studies have shown that adverse effects of antimony are increased as arsenic levels increase.

What specific measures will Perpetua take to avoid adverse environmental and human health effects from mining antimony in addition to gold? Can some of this mining be done underground to reduce these adverse effects? Can adequate amounts of antimony be obtained from processing tailings at the Stibnite site or other US mines? What measures will Perpetua take to mitigate any anthropogenic environmental and human health risks of antimony, if the SGP is approved by the FS to mine antimony?

The Nez Perce Tribe submitted comments on the 2020 DEIS that summarize economic and logistical challenges related to mining antimony through the SGP. See chrome-extension://efaidnbnmnnibpcajpcgclclefindmkaj/https://nezperce.org/wp-content/uploads/2020/12/2020-10-27-Payette-NF-NPT-Comments-Stibnite-Gold-Project-Draft-Environmental-Impact-Statement-DEIS.pdf

“Gold is an important joint product with antimony, but gold-antimony veins are commonly mined just for their gold. Because the presence of antimony makes gold more difficult and more expensive to process (the antimony interferes with the heap leaching agent by consuming oxygen and hindering the effect of cyanide on the gold ore), some amount of gold ore that has a high antimony grade may be stockpiled. The report goes on to note that “enhanced recovery of antimony from precious-metal deposits may represent the most readily available source of antimony if demand were to increase rapidly” and that antimony could be recovered from existing mines in Idaho and Nevada.”

“Unless the SGP commits to secondary antimony processing, which has not been included in the in the SDEIS, any production will in fact have to go through China, at which point there can be no assurances that antimony metal in return supplied to the United States market will have been sourced from the United States.”

“The aspect of antimony as a strategic and critical mineral has been over-emphasized with respect to the proposed SGP. Recovery of antimony from precious-metal deposits currently being mined in Nevada and elsewhere in the United States represent a readily available source of antimony, if domestic production was considered justifiable. The more critical issue regardless of source would be antimony smelting capacity, which is currently limited. Present plans to ship antimony concentrates to China for smelting would in fact only do more to compound any present strategic or critical mineral issues.”

“The matter of antimony production from the SGP is primarily a matter of economics. If the SGP proceeds to antimony production, and economics do not warrant antimony production, it is not assured that antimony production will be included as part of the process, throughout the life of the SGP.”

This information needs to be included in an updated SDEIS. According to the references cited above, much of the historic antimony mining was done through underground mines and that would reduce adverse impacts as would extracting antimony from existing tailings or existing gold mines.

Can some of the DOD grant money Perpetua received be used to identify measures that will minimize environmental contamination with antimony and to determine the best

ways to mitigate the adverse effects of any contamination that occurs? The above information needs to be considered in an updated SDEIS that considers alternate sources of domestic antimony and processing it.

In summary, I recommend the “No Action Alternative” for mining antimony as part of the SGP, and that the DOD obtain the antimony it needs from existing gold mines in Idaho and Nevada when there is a domestic facility available to process it.

V. **Managing HazMat Spills, Roadway Safety, Emergency Medical Services, Occupational Health and Safety**

HAZARDOUS MATERIALS (HazMats)

If approved, the SGP will require large quantities of hazardous materials to be transported to and from and used at the mine site during the 15 years of mining operations (Table ES-1) and, to a more limited extent, for as long as water treatment is necessary which will likely be more than 25 years post closure. In total, more than 3,000 loads of hazardous materials would be transported to or from the mine every year during operations (Table ES-1). The loads would include more than 8,300,000 gallons of flammable materials (diesel, propane, gasoline) as part of more than 9,400,000 gallons of hazardous bulk liquids to be brought to the mine site annually. In addition, more than 46,000 tons of hazardous bulk solids would be transported to or from the mine site (Table ES-1). This includes the annual use of 4,000 tons of sodium cyanide, which would be delivered in 167 trips carrying 24 tons each, or roughly one trip every other day. These materials are stored at the mine site and are a risk for wild fires in the event that accidental releases of flammable materials are ignited.

Hazardous materials include fuels, explosives, acids, cyanide, ammonium nitrate, lime, antimony concentrate and other toxic materials. All of these are highly toxic to fish, and humans should spills of these materials happen along Highway 55 and in McCall, into the NF Payette River, along mine access roads into the SFSR, Johnson Creek, and EFSF and its tributaries. One spill, at the right time and place, could kill 100% of the eggs, fry, juveniles, and spawning adults of up to four species. Appendix D of the Air Quality special report includes the Transportation Management Plan, but vital information is missing, including a list of Perpetua Emergency Response Staff, their qualifications, training and role in addressing HazMat spills, fires and accidents and the Fire and Explosion Emergency Response Plan (OHSF-008-H). This information was not in Appendix D of the Air Quality Report nor in the SDEIS.

What categories of personnel are members of the Perpetua Emergency Response Staff that are mentioned in Appendix D, where are they based, what training do they have to manage emergencies, what equipment and medical supplies are accessible to them, and what is their expected response time to deal with emergencies in these remote areas?

Where can the Fire and Explosion Emergency Response Plan (OHSF-008-H) that is referenced in Appendix D be accessed? Will all Perpetua employees have a copy of this plan? How often will Perpetua staff be trained on this plan?

Why are there no project-specific spill risk calculations for numbers of spills, and spill probability, in the SDEIS? (SDEIS 4-345)

Why wasn't Hwy 55, through Boise, McCall, and New Meadows, nor Hwy 95 north, considered in any transportation and spill analysis?

Risk extends from the origin of the reagents, to the mine, and to the destination of the wastes taken away. (SDEIS 5-34). The estimated spill rate per truck mile in the SGP SDEIS was 100 times lower than would normally be calculated because the estimated number of miles traveled only assumes those miles are from the State Highway 55/Warm Lake Road junction. Both proposed access routes have segments exposed to landslide/rockfalls and avalanches, raising the probability of accidents and HazMat spills.

Appendix D also mentions that for HazMat spills or accidents, local EMS and law enforcement will be contacted.

I recommend that a mechanism be set up for Perpetua to reimburse Valley County for the costs of providing law enforcement and EMS for handling HazMat spills, accidents and medical emergencies.

SEWAGE TREATMENT

The SDEIS fails to provide baseline data to characterize organic carbons or quantify the increase in organic carbon from the sewage treatment plant. The SDEIS (4-220) predicts 25,000 -50,000 gpd of discharge from the sewage treatment plant to the EFSFSR. However, it fails to provide detailed information about the sewage treatment plant, describe the potential effluent concentrations, or analyze the potential effects of these discharges to surface waters.

I recommend that Perpetua provide detailed information about the sewage treatment plant and the potential contamination of surface waters by the discharges from the plant.

AIR QUALITY

The project is going to increase particulate matter and arsenic exposure from fugitive dust. Perpetua has claimed they will be able to control >93% of road generated fugitive dust using specific procedures and methodologies that have not yet been fully reviewed by IDEQ. Through a highly questionable interpretation of Idaho Air Quality Regulations, Perpetua was essentially allowed to average the life of mine impact of their arsenic emissions over a 70-year life time. The Forest Service is not requiring air quality monitoring within and next to the project area.

It is essential to monitor air quality for the health of employees and visitors, because the mining activities will likely reduce air quality. The FS should require air quality monitoring next to the site and along the public access road to Thunder Mountain.

PUBLIC HEALTH AND SAFETY

Section 3.18 Public Health and Safety 3.18.1 in the SDEIS is not adequate in that it does not describe the medical services that will be available to the 500 or more employees living and dining in relatively close quarters, where the potential for transmission of infectious diseases exists. Employees from the local community who lodge at the on-site facility could potentially transmit infectious diseases to the local communities upon return from the onsite housing facility. Table 2.8-1 Alternative Comparison and Impact Summary p. 241 of SDEIS states, “Emergency medical technicians and emergency equipment and supplies would be on-site, including an ambulance, first aid, and medical supplies”.

Will Perpetua establish agreements with Cascade Medical Center or St. Luke’s Hospital in McCall so that EMS providers on site can consult with health care providers who can help them appropriately manage complicated patients who present for care and refer them for a higher level of care if indicated? How will the Perpetua Emergency Response Staff function in this setting? How will patients requiring a higher level of care be evacuated from the mine site? Is the landing strip lighted for night time evacuations? How will evacuations be done if weather precludes air evacuations? What if avalanches or earthquakes obstruct the Brunt Log, Stibnite and Johnson Creek roads?

These are all questions that need to be addressed proactively so that Perpetua employees receive appropriate care for urgent or emergent problems that arise in this isolated setting.

VI. Reducing the economic cost of the SGP for Valley County residents

Idaho Headwaters Study Group has released the findings of an independent report by Power Consulting (Missoula MT), entitled: *An Evaluation of the Potential Socio-Economic Impacts of the Proposed Stibnite Mine on Valley County, Idaho (DEC 2022)*. (See: Studystibnite.org) **General Economic Findings include:**

- Public and protected lands in Valley County added over \$11,000 to what the average income per resident would have been without those lands.
- Incomes of residents of Valley County are \$7400 higher (on average) than those of other non-metropolitan counties in Idaho due to economic benefits from local natural amenities.
- Any employment economic “benefit” from the mine could be almost completely wiped out by even a 2% decline in the visitor-recreation and non-labor income sectors, due to degradation of those natural amenities.
- Perpetua's property tax revenues of \$300,000 per year are expected to amount to 1.3% of Valley County's annual budget.
- Local workers' pay will likely be no more than 2-3% of Perpetua's overall mine spending.

- Mine operations will create additional burdens on city and county services, such as schools, roads, police, fire department, hospitals and telecommunications facilities that will not be offset by the \$300,000 paid by Perpetua in property taxes.
- Rather than making local purchases, Perpetua will likely attempt to minimize their costs and secure supply chains from regional or national sources.
- Valley County's housing market will become increasingly less affordable for the locals if the mine is built.

It is clear from this independent economic report that the “No Action Alternative” is the best option for the long-term economic vitality of Valley County.

Based on the Idaho Headwaters Study Group Study, I strongly recommend the “No Action Alternative”?

If the SGP is approved, can Perpetua be required to pay taxes or fees to cover costs of additional city and county services required, such as schools, roads, police, fire department, hospitals and telecommunications facilities so that Valley County residents do not have to pay those costs?

SUMMARY

In summary, if the FS approves either of the two Action Alternatives (Johnson Creek Access vs Burnt Log access), unavoidable environmental adverse impacts will occur. For now, FS should approve the “No Action Alternative” and prepare another SDEIS if Perpetua decides to pursue the SGP with a focus on avoiding any adverse environmental impacts as required by Federal legislation and rules. The new SDEIS should then be released for public review and comment.