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Comments:

Oct. 28, 2020

Ms. Linda Johnson, Supervisor
Payette National Forest
McCall, ID 83638

Dear Linda Johnson,

I am a retired geologist, living in McCall, who moved here in retirement to enjoy the rural nature of the county and the immensity of undisturbed public lands. Since my arrival, I have been exploring the area by hiking and remote camping.

Professionally I was both a published mapping geologist for the US Geological Survey (USGS) and a college professor. As such, I am quite aware that mining and the commodities it produces are vitally important to our country's standard of living. Nonetheless, each new mine needs to be evaluated on the basis of risks, gains, and possible losses. The very extensive work done by the Midas Gold Project and the Payette National Forest Service to produce a document to address this, namely the Draft EIS, is impressive. It represents a large expenditure of money and time by the work of many consultants, Midas Gold, and the USFS. Thank you.

There is no way, however, that a member of the general public can fully evaluate this report. Since its release to the public on 8/14/20, I have been reading and studying several portions. My comments, concerns, and questions regarding these parts of the DEIS are the basis of this letter. They are divided into sections with some quotes and page numbers added. Time precludes my adding many outside references. They can be provided at a later date if desired.

A number of topics were not studied. These include: vegetation, wetlands, fish, wildlife, water temperatures, timber, cultural resources, public health, social and economic effects, environmental justice, and tribal rights. Only a few comments are made on these topics toward the end of my letter.

I GENERAL

A. Time Constraint

Though I greatly appreciate the recent extension of comment time until 10/28/20, I feel that this is still far too short a time to properly read and understand this lengthy (>5000 pages) and complicated document. Also, due to its length and fragmented organization, I may well have missed some of the information that I am asking about.

B. USFS Amendments, Goals, and Needs

Your cover letter points out that several amendments to the Forest Plan standards are needed to allow approval of SGP mining in this area. These amendments (Appendix A) are rather extensive and severe. Alteration of the time frame is particularly troubling in that some alterations would not recover for ~40+ yrs. and some would require actions "in perpetuity" (CWTP). This does not "maintain the intent of the original [USFS] plan standard" [A-6]. Also, the multiple use standard is not maintained when most uses are affected for up to 20+ yrs. except for

the one: mining [A-7+].

Q: Though ultimately the supervisor's responsibility, are other persons involved in the decisions?
Q: Does the public have a say/vote regarding the granting of these amendments?
Q: Has the public been made aware of the extent and nature of these amendments by other means than the DEIS?
Q: Won't the alteration of the amendments set a preceedent?

USFS Goal SEGO02: Promote cooperation among stakeholders by involving them in planning, implementing, and monitoring Forest land management activities to better understand the trade-offs needed to make informed decisions [3.21-2].

Q: The stakeholders have been well involved to a point; however, isn't the DEIS public review time constraint a violation of this goal?
Q: Going forward, does the public have other ways to effect the outcome?
Q: How can the public be involved in implementing and monitoring in the future?

USFS Purpose and Need:
Ensure that the selected alternative, where feasible, would minimize adverse environmental impacts on National Forest System (NFS) surface resources;
Ensure that, prior to approval, measures are included that provide for mitigation of environmental impacts and reclamation of the NFS surface disturbance [ES-5].

Q: Mitigation and reclamation will not restore. If the amendments are taken and the permit granted, how can the USFS meet the above stated "purpose and need"?
Q: How is it decided if mitigation or elimination of an impact is best?
Q: If many of the environmental impacts result in conditions worse than baseline, will approval be denied?
Q: How do you rate the impacts that continue "in perpetuity"?
Q: How do you arbitrate if the public disagrees with the USFS, or with each other?
Q: A selected alternative? (Please see D. below.)

C. Exceptions by Idaho Power Company

There is information in the report about IPC's exceptions but I am no longer able to locate it.

Q: What exceptions to IPC goals and purposes are required within house or for DEIS approval? [Ap-D.] Do they have to make amendments also?

D. Concept of Alternatives

Having the 5 alternatives forces the reader into the assumption that it is necessary to "vote" for one of them [ES 3.1]. The Forest Service Purpose and Need states: "Ensure that the selected alternative would comply with other applicable federal and state laws and regulations" [ES-5; 1-7]. (Italics mine.) Yet elsewhere: "the alternative selected by the Forest Service in the Record of Decision could include a combination of project component options analyzed in different alternatives in the Draft EIS" [2-4]. (Italics mine.) My comments are made to individual points more than to an Alternative (Alt). To devise the best plan, I think this is the best approach.

Q: This is confusing. Which is correct?
Q: Isn't it more sensible to evaluate topics rather than an entire alternative?

E. Goals of Valley County

Economic Development Goal 1-Objective 2: Consider the long-term impacts and benefits on the local economy and environment of each proposed new commercial and industrial activity.

Economic Development Goal 1-Objective 3: Maintain the important role of the timber industry, tourism, outdoor recreation, mining, and agriculture in the local economy. ?[3.21-5]

The benefits are short-term for economic gain to the local economy and long-term for the negative environmental impacts. The "important role"s listed would all be negatively impacted except for mining (I assume agriculture includes ranching).

Q: For both these county goals there are internal conflicts. How do you decide the "winner"?
Q: Goals for IRAs, Wilderness, and Research Areas would all be compromised by granting SGP a permit to proceed. Have they agreed to make amendments?
?F. Other

Some figures and legends are unreadable on the computer (e.g. Fig. 2.4-11, 2-109; Fig. 9.4-1, 4.9-25; Ap N).

Q: What is the symbol for the medium gray color on Fig. A-10 just downstream from the DRSF?
Q: How can the public see an original, readable copy of the DEIS?

Mitigation measures by the USFS are labeled as "required" [D-1] whereas those of the SGP are labeled as "proposed" [D-20].

Q: Are the SGP mitigations "woulds" (definite action) or just "coulds" (no commitment)?
Q: Are SGP ones instead of the USFS ones, or in addition to?

II WATER = SIGNIFICANT ISSUE [ES-7]

A. Quantity

Almost twice the currently available water is needed for SGP operations in dry seasons [ES-23, -24]. (Current average precipitation is 32"/yr.)
Climate change is likely to create more extreme weather events, including drought, wind, severe thunderstorms, and fire. If overall precipitation decreases, or if more of it runs off immediately from violent storms, water availability will decrease. This provides a considerable concern for the viability of the SGP. It appears that there may not be enough water in the area to sustain a mining operation of this magnitude for its duration.

Q: How can the SGP be described as "not water dependent" for WOTUS [B 1-9]?

1. Groundwater

The SGP wants to have more water rights but also needs to remove it from pits. The following report information suggests that the water resources of the area are NOT capable of sustaining the SGP.

SGP has 0.7 cfs groundwater rights; but would need 2.39 cfs more and up to 5.63 cfs more in droughts. They are applying for 9.1 cfs more groundwater and surface rights [4.8-46]. Impact is not yet known [4.8-47]. (Ore processing would require 2.39 cfs and potable water would need to be 0.34 cfs [4.8-69]). New wells are proposed.

Q: Is there evidence that 9.1 cfs is sustainably obtainable?
Q: How will the proposed new well field and water rights impact the stream flows [2-52]?
Q: Where will it be placed?
Q: What happens if the withdrawal of groundwater lowers the water table below recharge for the local aquifer and SGP wells?
Q: If water, instead of chemicals, is used for dust abatement at the pit and on all access roads, how much would that affect total usage?

Groundwater is mostly in alluvial deposits whose seasonal fluctuation to the water table water is 2-20' [3.8-20]. And in shallow bedrock (e.g. fracture systems). "The Draft EIS provides a general description of SGP's water balance. A large component of the water balance includes groundwater management. No aquifer pump test results have been provided for the bedrock aquifer from which pit dewatering would occur" [4.1-3]. Data…"may indicate an absence of a larger scale, deeper groundwater system…" [3.8-21]. No bedrock data flow data is available [3.8-25].

Q: Shouldn't these bedrock tests be done before approval is considered?
Q: Why were the alluvium well pumping tests done in winter, not summer too [3.8-26]?
Q: As an indication of groundwater flow, what is the discharge from legacy adits?

Groundwater drawdown from pit dewatering and stream rerouting are modeled to produce large cones of depression in the water table around all 3 pits: max lowering in alluvium would be up to 200' with areas outward in the order of 1,700 to 5,700' [4.8-29]. In bedrock the cone depth is 500'-600' and again extends outward 1,400-3,000' [4.8-29]. "SGP would result in some irreversible changes to the groundwater system" [4.8-66]. "…there is less confidence about overall long-term recovery of the bedrock aquifer" [4.8-69].

Q: Won't the pit dewatering wells (to lower the groundwater table)[2-47], act in opposition to the water well levels needed for mine functioning, employee housing, etc?

The SGP is in the groundwater recharge zone of the EFSFSR [4.8-7]. "Characterizing the hydraulic properties of a fault system presents a difficult problem and such characterization is seldom achieved in groundwater studies" [4.8-75]. Fractures and faults have been ignored.

Q: Could pit dewatering, added to excess well field use, mean no water for the employee housing? for the EFSFSR?
Q: How would a 10-year, post-closure, aquifer recharge time period impact wildlife or water availability for treatment at the CWTP "in perpetuity" and other users?
Q: Because lined pits and stream courses could not contribute to recharging the groundwater, wouldn't that be another problem for the aquifer recharge?

2. Surface water

Surface water flow is marginal by end of summer and it is likely to decrease with climate change. The SGP will make it even less.

Surface water flows are difficult to separate from groundwater flow because the two influence each other. One gives to the other depending on the flows and water levels of each.
Some stream stretches are currently losing to groundwater [3.8-26]. This means that the surface water can NOT be counted on to appreciably or reliably improve the groundwater flows or vice versa.

Required minimum flow rates downstream of mine site are held by the Forest Service and IDWR [2.8-29]. The large drawdowns of >400' across the EFSFSR valley in the Yellow pit area could impact downstream flow for

several years following mine closure. [4.8-35] Mine pit dewatering will lower stream flow in parts of several streams under average precipitation. [4.8-14,-15] Surface water flow variation is ~100 cfs. (EFSRSR) [3.8-14].

Q: Base flow in EFSFSR below Sugar Creek is ~17 cfs; SGP wants to use 4.05 cfs. How can that equal 12% [4.8-48]?
Q: If stream flows are very low, how would that impact the fish tunnel?
Q: Might there be times when not enough water is available to the EFSFSR to meet its downstream rights holders' needs?
Q: What would SGP do under those circumstances?

General surface water recovery would take ~10 years post closure [4.6-65]. Post closure, 0 to ~4 yrs., the modeled Meadow Creek flow is 0 cfs. [4.8-21]. The modeled refilling time for the Hanger Flats pit is 7 yrs.; for West End 41; Yellow Pine = ?? for filling DRSF; Midnight 10 [4.8-42]. That is 61 years total water disturbance time for the West End pit.

Q: How would a dry Meadow Creek impact wildlife?
Q: What is the refill time for Yellow Pine?

"Details of surface water management, discharge limits, and permitting is not yet available" [4.1-3]. "As a result of data limitations and simplifying assumptions, all predictive models, no matter how well constructed and calibrated, contain uncertainty" [4.8-77].

Q: Isn't this uncertainty a strong factor in considering permitting?

B. Quality (Temperature was not studied by me; therefore is not discussed.)

Many risks for toxic water production, some in perpetuity, are indicated in the SGP. The SGP DEIS report data project that the quality of the water post-SGP would be degraded from its current conditions.

"…climate change could potentially affect the severity of a spill. Climate-change related trends with respect to annual periods of frozen ground, variability in the groundwater tables, increased precipitation and flooding, and conditions affecting the ability of crews to quickly implement response measures would all factor into spill severity." [4.4-11]
1. Models

Models are using the existing conditions as baseline [4.9-3], but that is a bit unfair because 1) their advertising emphasizes that legacy problems will be cleared up, and 2) the ultimate USFS goal should be to do just that. (A list of potential impacts is on 4.9-1.)
Modeling problems include: "Concentrations of these constituents were underpredicted by up to 48 percent, 60 percent, and 88 percent for sulfate, arsenic, and antimony, respectively" [4.9-4]. (Italics mine.)

Q: Might we not prefer conditions to be improved to near pre-mining?
Q: Wouldn't designation and cleanup as a Superfund Site result in better water quality than SGP is likely to provide post closure ?

2. Groundwater

Contaminated surface water will eventually create contaminated ground water.

"Because groundwater is not currently used as a public drinking water source at the mine site and is assumed to be unlikely to be used as a drinking water source in the future,…" [4.18-20].

Not correct. The groundwater will be used for the employees. Well pumping causes drawdown which can reverse local flow directions thus indrawing contaminated groundwater. Therefore, although up gradient now, the employee housing well(s) could be of concern in the future.

"IDAPA 58.01.11.150.03, Ground Water-Surface Water Interactions requires that contaminants entering groundwater cannot impair surface water bodies " [4.9-24].
"Several proposed activities…would reduce, but not eliminate, the potential for the release of leached chemicals to surface water and groundwater" [4.9-132].
No study of legacy adit drainage water composition was presented. These would be useful as an indication of groundwater quality.

3. Surface Water

The SGP will create a surface water pollution problem worse than the present conditions.
The surface water in the mine area is already contaminated. It will stay contaminated to similar, or worse, levels after the SGP mining ends. Antimony and arsenic are predicted to be above standard water quality during and after mining [4.9-24]. "Antimony concentrations are predicted to be elevated…" by up to 6 times baseline in half the model nodes. "Arsenic concentrations are predicted to be elevated…" by almost 8 times baseline in >half the model nodes.… " [4.9-133] (Italics mine.)
"Geochemical modeling by SRK (2018b) indicates that mining activity would contribute to higher dissolved mercury concentrations in the mine site drainages" [4.9-42]. Also, "…mining has the potential to increase production of methyl mercury." [4.9-133] (Sugar Creek is the worst for mercury [3.9-28]).

Q: Wouldn't these be inappropriate conditions for the USFS to leave in the area?
Q: What health hazards would this present to humans and wildlife?
Q: Doesn't this violate SGP's stated goals of legacy restoration and repair of the environment?

The Analysis: "It does not take into account mixing zones or higher discharge concentration limits that could be requested by Midas Gold" [4.9-69]

Q: This is another unknown with more possible risks. Who would police this possibility?

EFSFSR: Net effects for stream (including treatment of legacy wastes) = high antimony, arsenic, mercury, and copper. [4.9-36; 4.9-76]
Q: Why not remediate to pre-mining levels of pollutants?
Q: The ore stock pile and processing plant are next to the EFSFSR. Doesn't that increase the risk of contamination by accidents?

4. Sedimentation

Increased sedimentation and fugitive dust will be very hard to control.

Surface water quality could also be impacted by increased sedimentation associated with mining activities, access road construction and use, and the construction and maintenance of required utilities. Erosion and sedimentation could occur during active surface material disturbance associated with mine construction, operations, closure, and reclamation, … [4.9-134].
Sedimentation impacts also could be caused by the deposition of fugitive dust from vehicles and heavy equipment into adjacent water bodies. [4.9-135]

Q: Couldn't mass wasting and avalanches onto new infrastructure also increase sedimentation?
Q: Wouldn't some of these impacts be lessened by my access route suggestions? [See below.]

5. Legacy Waste

The SGP will not repair legacy wastes; only move them.

"…legacy waste materials from historical mining activity influence both groundwater and surface water quality at the mine site. These legacy materials include waste rock, the Bradley tailings, and spent ore in the SODA." [4.9-17]
"Legacy tailings, including the Bradley Tailings and SODA materials, would be removed under Alternatives 1, 2, and 4, and placed within the TSF" in Meadows Creek valley.
"…the TSF would be located within the EFSFSR drainage under Alternative 3". [4.9-133]

Regarding legacy materials: waste rock, Bradley tailings, SODA spent ore, heap leach pads [4.9-17]: "Despite the finding of low acid generation potential, a few metals constituents still proved to be leachable from the HCTs [humidity cell testing with neutralizing potential-acid buffering] under neutral to alkaline pH conditions. Arsenic, antimony, and aluminum were consistently present in leachate at concentrations above applicable water quality criteria. Manganese, selenium, and sulfate also were occasionally elevated above water quality criterial for some samples. " "A few constituents are mobile under these neutral to alkaline pH conditions, including arsenic, antimony, aluminum, and manganese, …" "In addition, sulfate, TDS, copper, cadmium, and zinc were occasionally elevated above the respective water quality criteria" [4.9-18]. (Italics mine.)

Q: Considering the risks of long term TSF leakage problems, wouldn't placing it directly within the EFSFSR valley (Alt 3) be contra indicated?
Q: Wouldn't the Alt 3 location shorten the length of the EFSFSR available for fish habitat?
Q: How does this location impact the employee housing and its needs?
Q: Are all the legacy deposits being reprocessed for gold or are some merely being moved to new locations?

The historical Hecla and Stibnite Mine, Inc. spent ore heap leach pads also would be excavated and likely used as construction materials for the TSF embankment and potentially in other locations, …" [4.9-17] (Italics mine.)
Q: What contamination is present in these materials?
Q: If they are used for the TSF embankment, any contamination can leach out to the water systems. Yes?
Q: Who monitors where this ore is used?

6. Tailings Storage Facility

The TSF will be a permanent source of toxic material needing treatment forever.

"Under all action alternatives, 100 MT of mineralized material (tailings) would be generated and deposited in the TSF." …" "Ore from the West End pit, expected to be representative of potential tailings, would be capable of leaching arsenic, antimony, copper, cyanide [Footnote 1], manganese, mercury, nitrite, sulfate, and dissolved solids into surface water and groundwater in concentrations that exceed water quality criteria." [4.9-133]

"Surface water created in association with the consolidation of the TSF would exceed water quality standards until the volume of flow dropped to a level where it could be treated in a passive BCR system at the toe of the facility. … The exceedance in Meadow Creek would continue in perpetuity, due to the flow of Meadow Creek through Hangar Flats pit lake" [4.9-134]. (Italics mine.)

Q: Wouldn't the lower Meadow Creek be receiving flow from the TSF, its DRSF, and the Hangar Flat pit?
Q: Can the SGP guarantee it can treat this water in perpetuity?
Q: Can SGP catch all this water and treat it before it reaches the groundwater or ERSFSR?
Q: Couldn't a break occur in any collection passive BCR system, especially over the long term?

"If ore processing is not occurring, excess water collected from the various facilities would need to be discharged to the TSF for storage. In the case of a longer-term closure, water treatment could be necessary to allow discharge to the area streams and prevent filling of the TSF. A plan would need to be developed, reviewed and approved by the appropriate regulatory authorities, and implemented at the time of any longer-term temporary closure" [2-63].
Q: What if the TSF is full or frozen?
Q: What if sudden, "…uncontrolled runoff from the TSF [4.9-27]" occurs?
Q: What happens if there is no viable storage plan possible or it doesn't appear in time?

"If installed properly, the engineered liner would minimize seepage through the base of the TSF. However, there could be manufacturing defects, post-installation damage, holes in the liner, or weaknesses along the seams that may allow minor amounts of seepage to occur" [4.9-58]. Post closure liner leakage could be a possible 710 m3/yr [4.9-59]. Information on the adequacy of the leak detection layer for Alternative 2 has not been provided. The liner/leak detection is specific to Alternative 2 " [4.1-3]. "…the liner system proposed by Midas Gold does not meet the default regulatory requirements of IDAPA 50.01.13." [4.9-136]. Liners for different Alternatives may differ.

Q: What if the liner isn't installed properly and no-one knows?
Q: Is there non-Midas oversight for the installation??Q: Is there any realistic way to reduce the number of risks expressed here?
Q: Is minimize an acceptable goal for TSF water leakage?
Q: Why are the liners different for different Alternatives?
Q: Doesn't any TSF need to have a leak detection system regardless of alternative?

"There are identified rockfalls above the Meadow Creek valley site (STRATA 2014a) that could impact the integrity of the liner during initial construction, …" and impact the TSF lake by sudden overflow [4.2-7, -8].

Q. Can the TSF sludges or TSF lake be protected from disturbance by avalanche or rockfall?
Q: Could rockfall or avalanche cause overtopping of the TSF dam-a major failure cause?
Q: Doesn't eventual filling of the TSF lake result in toxic overflow to its DRSF and below in perpetuity?

"After installation of the TSF cover, consolidation water from the tailings would discharge to the tailings surface and mix with meteoric water that has infiltrated the cover, as well as runoff water that flows across the TSF surface. The geochemistry of the consolidation water and infiltration water would be impacted by the tailings; if left untreated, this water could affect downstream water quality as it drains from the TSF. An engineered passive treatment system would be utilized to treat this water post closure." [4.9-13]

Q: What are the treatment system and cover?
Q: What is the passive treatment system and how affective would it be?
Q: Who will monitor the passive system if the Midas company is no longer around in the future?
Q: Who will monitor and remediate any leakage in "perpetuity"?

7. DRSFs and RIBs
Both DRSFs and RIBs will produce contaminated outflow. This water will need to be treated in perpetuity.
"Development rock is defined as rock that contains no commercial antimony, gold, or silver ore. An estimated "350 million tons of development rock" would be produced during mining operations" [2-25]. "Development rock disposed on-site or used for construction or reclamation material would alter the mine site geochemistry" [4.9-8].
"Under all action alternatives, metal concentrations would exceed IDAPA 58.01.11 groundwater quality standards below the development rock depositories" [4.9-136].
"… arsenic, iron, antimony, aluminum, and manganese concentrations would be elevated in the RIB water, …."

[4.9-67]. Streams crossing the DRSFs may be lined to prevent contact with rock below. [2-70, -71]
Table 4.1-1 Incomplete and Unavailable Information: "Assumption that post-closure runoff from DRSFs will not interact with development rock" " Rapid infiltration basin (RIB) testing results were not available for inclusion in the Draft EIS. Disposal of groundwater into RIBs also may be complicated during winter operations" [4.1-3].

Q: How can the quoted IDAPA requirement be met?
Q: Why was it assumed in Table 4.1-1 that post closure DR runoff would not be reacting with the DRSF rock, especially when elsewhere in the DEIS it says it might be during mine operation?
Q: When will more information be available regarding the RIBs?
Q: If development rock is used for any construction, doesn't it become a source of contaminated water [2-46]?
Q: Because pit dewatering water includes contact water, will it not contaminate the RIBs and require treatment [2-48, -49, -51]?
Q: Is durability "in perpetuity" of liners for streams crossing DRSFs even possible?

8. Pit Walls and Lakes

The SGP will leave three toxic lakes whose outflow is contaminated.
"…mineralized materials would be exposed in pit walls, also resulting in exposure to oxygen and water, and the potential for leaching" [4.9-132].
All the pits are predicted to contain concentrations of toxic elements above measured baseline conditions or water standards for many years, some indefinitely. [4.9-33, -34]
The "water in contact with development rock, exposed mineralized surfaces, and tailings" [4.9-134] will be treated indefinitely. [4.9-28] The CWTP would be used; later mainly some sort of passive water treatment. Overflow from both Hangar Flats and the West End pits would need treatment in perpetuity. [4.9-134]
Q: Wouldn't flow from the Hangar Flats DRSF have to be pumped uphill to get into the pit?
Q: Isn't the water in the current Yellow Pine pit contaminated? Wouldn't discharging it into the EFSFSR therefore be harmful? [p. 2-46]
Q: Any pit lakes and the TSF with low inflow would risk evaporation leading to increasing % contaminants/unit H20 and in lake sediment-isn't this an increased risk for wildlife, especially birds, and for accidental escape into the environment?
Q: How will, and well, would any passive water treatment system proposed by SGP work?
Q: Contact water put into RIBs and evaporated will leave a contaminated residue on the rocks. How is that disposed of, or is it left in place?
Q: Wouldn't minerals exposed to air and/or water in wall rock of pits weather and contribute contamination to the pit lakes after closure?

9. Minerals and Acid Mine Drainage

The rocks to be moved or exposed contain minerals whose chemistry is possibly conducive to AMD water pollution.

This extremely serious mining problem is not fully treated by the DEIS. Multiple sources of AMD are possible. Once blasted, broken and crushed, more opportunities along the many surfaces exist for the physical and chemical break-down of these minerals.

The metals to be mined occur in several finely disseminated sulfide minerals. This poses the problem of creating acid mine drainage (AMD). The SGP acknowledges this possibility from the rock to be moved (PAGs=potentially acid generating) but not from all other sources.
"The mining of certain minerals, including gold, copper, and nickel, is associated with acid drainage problems that can cause long-term impairment to waterways and biodiversity. Furthermore, some effluents generated by the metals mining industry contain large quantities of toxic substances, such as cyanides and heavy metals, which

have serious human health and ecological implications".*
"AMD emanating from mine waste rock, tailings, and mine structures, such as pits and underground workings, is primarily a function of the mineralogy of local rock material and the availability of water and oxygen. Because mineralogy and other factors affecting AMD formation are highly variable from site-to-site, predicting the potential for AMD can be exceedingly challenging and costly". *
Acid Mine Drainage (AMD) is produced when sulfide-bearing material is exposed to oxygen and water. The production of AMD usually, but not exclusively, occurs in iron sulfide-aggregated rocks. Although this process occurs naturally, mining can promote AMD generation simply through increasing the quantity of sulfides exposed. Naturally-occurring bacteria can accelerate AMD production by assisting in the breakdown of sulfide minerals.

****

All action alternatives would result in exposure of 2,162,366 m2 of mineralized rock in pit walls, including some rock materials that would be PAG (potentially acid generating)-about 56,881 m2 [4.9-14, -15, -17]. "Potential leaching from these exposures would be mitigated by backfilling with development rock and/or development of pit lakes, which would reduce the potential for exposure to oxygen" [4.9-133]. (Italics mine.)

Above is incorrect: Unless the water is completely stagnant, there is oxygen in the water and oxidation can take place underwater….think of rust.

The actions of blasting and crushing would result in potential exposure of these materials [ore, development rock, and newly generated tailings] to oxygen and water [4.9-132].

Modeling: "The composition of development rock placed in each DRSF is assumed to contain at least some potentially acid-generating (PAG) material" [4.9-9]. Amount Would be ~ 11.4 MT [4.9-10 to 4.9-12].

"Non-acid generating test results indicate that multiple development rock samples could go acidic given that non-acid generating values greater than 10 kilograms sulfuric acid per ton and pH values less than four were confirmed " [4.9-143]. (Italics mine.)

"The analysis shows that the development rock, both that deposited in DRSFs and other receptacles, and that remaining in the pit walls, would be generally non-acid generating, but would be capable of leaching arsenic, antimony, aluminum, manganese, sulfate, TDS, copper, cadmium and zinc into surface water and groundwater in concentrations that exceed water quality criteria" [4.9-133]. (Italics mine.)

Q: The geology indicates sulfide minerals are the source of the ore, therefore doesn't that contradict the above statement?
Q: What is the chemistry of current adit drainage water?
Q: Why is there not more recognition and concern over AMD in the DEIS?
Q: What will be the estimated maximum size fraction for the DRSFs?

* Akcil and Koldas, 2006, "Acid Mine Drainage (AMD): causes, treatment and case studies." Journal of Cleaner Production 14 (2006) 1139-1145.
10. Water Treatment

The water routing and treatment involve many complexities. In reality, this scenario is unlikely to work without pollution developing and is unmanageable indefinitely.

Many different approaches to toxic water treatment are being proposed to be used simultaneously. Some "in perpetuity"-a future made different by climate change.

"Qualitatively, operation of the wastewater treatment plant would incrementally increase organic carbon mass loading rates in the Headwater EFSFSR subwatershed" [4.9-42].

Transport of these chemicals and reagents [for the CWTP] would add approximately 40 round trips for delivery to the operational AADT presented in Table 2.4-3. An estimated 2 to 4 employees would be required to operate the Centralized WTP" [2-111]. "The Centralized WTP would provide treatment for contact water for an indefinite period of time post closure." [2-114].
Q: Why does the on site use of lime require water treatment "in perpetuity"? What chemicals would be needed? Where would that water go? Who will be responsible for this in 150 years?
Q: What are "equalization ponds"? [2-52]
Q: What would be the passive treatment system for the Fiddle Creek DRSF, the pit outflows, the TSF, Hangar Creek, etc [2-71]?
Q: Could the passive BCR system be operated "in perpetuity"?
Q: Can SGP permitting proceed without the liner/BCR information?
Q: What about treatment for the RIB water?
Q: If employees are needed on site, will the housing and wastage treatment for it remain indefinitely also?

III GEOLOGY

A. Rock Types and Minerals

There are geologic risks from several sources and the need for antimony may be overstated.

"Over the life of the mine, approximately 130,000 to 318,000 tons of limestone/marble would be mined annually,…" under Alt. 2 [2-103]. The rocks in the West End pit area contain some asbestos minerals. Asbestos refers to any of six naturally occurring minerals that can consist of thin, fibrous crystals. They are a known health and safety risk, with the possibility of causing asbestosis, lung cancer, and both pleural and peritoneal mesothelioma. (2016, Stewart, D.E., et al. Geologic Map of the Stibnite Quadrangle, Valley County, Idaho. Idaho Geological Survey Map 51; Wikipedia)
Q: Why does the DEIS not mention this health hazard?
Q: What is the extent of the fibrous asbestos minerals in the rocks to be mined?
Q: What is there presence % in the rocks?
Q: Wouldn't the fugitive dust for mining the marble be a serious problem?

To generate lime from the marble, additional equipment that constitute air emission sources would be installed in the ore processing area [4.3-44]. This would also increase the local CO2 footprint of the operation, while decreasing CO2 from trucking it in vs trucking within the mine site. But also, building, then decommissioning, this equipment will take more energy and create more CO2 pollution.
Q: Not all limestone or marble deposits contain asbestos minerals. Would the presence of them here imply that trucking the limestone in is the better alternative?
In the mine site's ore deposits, precious metals (gold and silver) typically occur in association with very fine-grained disseminated arsenical pyrite (Fe(S,As)2), and to a lesser extent, arsenopyrite (FeAsS) (SRK 2017). Antimony occurs as the mineral stibnite (Sb2As3) often in the same areas [3.9-57].
Q: What happens to all the sulphur generated in the processing?
The strategic importance of antimony is true, but the need for domestic mining is questionable [Footnote 2]. No processing site is selected [4.4-9].

Q: Will the antimony processing have to be done overseas?
Q: How much would that add to the CO2 footprint?
Q: Is there any current market?

B. Faults and Fractures

Several major faults cross the mining area. Motion on any of these is possible and would create earthquakes.

Untold damage could occur.

The SGP area is part of the Centennial Tectonic Belt, a major zone of crustal activity with young motion including this year. Fault motion generates earthquakes and numerous ones are known from the region [3.2-17, -18]. They could be stronger than magnitude 6. Also, the Johnson Creek valley is along a north-south shear zone where the rocks are especially weak and have been shattered by motion. "….activation of these features during a strong seismic-induced ground shaking event is possible [3.2-19]." "Mitigation of effects of earthquakes of medium to high intensity could be achieved by a variety of actions but it is not clear if these will be taken [4.2-3]." (Italics mine.) No mitigations can eliminate risk. Damage is possible to all facilities, to the infrastructure, machinery, and people. Serious toxic contamination could result.

Q: Isn't this an unacceptable risk for the USFS to take?
Q: Wouldn't a route along Johnson Creek be especially dangerous?

There have been 300 world dam failures, or 3.41/yr., from 1928 to 2015. Of these, 59% were due to seepage, earthquakes, or overtopping and another 17.3% were structural. [Ap E-3].

Q: Why are earthquake mitigation actions not required in the DEIS?
Q: How will the 500 site employees be protected from earthquake hazards?
Q: How could post-closure water treatments be monitored for earthquake damage "in perpetuity"?
Q: In the case of severe earthquake damage, how could a rapid response be assured?
?C. Mass wasting

Fractures increase the likelihood of mass wasting and avalanches of all types both in and out of the mine site. Several rock units are also highly foliated which exacerbates the possibility of rock failure.

"It is possible that a rockfall or landslide could occur from a seismic event and cause greater effects on operations (URS Corporation 2013). Several areas of the mine site are within avalanche hazard zones…" "Presence of personnel at the mine site and increased value of facilities and structures as a result of Alternative 1 could increase the magnitude of impact through property damage and personal injury or loss of life from avalanches." [4.2-4]

Mass-wasting hazards [4.2-4] could be mitigated. "…assuming design, construction, maintenance, and oversite of the structure is performed at the highest levels of industry standard" [4.2-5]. (Italics mine.)

Q: Who will be doing the oversight?
Q: What about overtopping of pit lakes by rockfall or avalanche?

The competency of the main mine rock is rated "competent", i.e. strong and resistant to breaking, and has high compressive strength [4.2-6]. This means nothing as the rock is already broken or foliated.

Q: Why is the competency even considered relevant, if the rock is highly fractured, sheared, and/or foliated?

"Several landslides have been identified within the footprints of the proposed Hangar Flats and Yellow Pine pits,..." [4.2-4]. There is also a landslide near the employee housing.

Q: Does SGP have plans to stabilize these landslides?

IV HAZARDOUS MATERIALS

A. Spills

Safety is problematic and any chemical accident has a higher probability of damage to the environment in this location than in many other possible sites.

Spills/leaks on the access road by haulage or at the mine site are possible. There is as of now, no plan for control, prevention, or countermeasures (cleanup?) of spills of hazardous materials [2-58]. Even without a notable spill of high volume, over 20+ years, plenty of toxic materials could be seeping into the ground and eventually reach the water table. They will ultimately feed into the East Fork of the South Fork of the Salmon River (EFSFSR). (See also D.4. and E.4.) Thirty-eight (38) spills of hazardous materials occurred in Idaho in 2019 [4.7-3].

Standards for many of the models use comparisons to current conditions which includes the presence of hazardous materials already.
1928 to 2015 there have been 300 failures, or 3.41/yr. Of these, 59% were due to seepage, earthquakes, or overtopping and another 17.3% were structural. (Appendix E-3)

Q: Why are there no plans yet ?
Q: How serious would the accumulation of small leaks on site be?
Q: What would be the standards used if this were a HazMat Superfund Site undergoing cleanup?

"If it is determined in the analysis in Chapter 4, Environmental Consequences, that the SGP design features are not sufficient to avoid and/or reasonably minimize the potential impact, then additional mitigation measures could be identified to further reduce the potential adverse effects" [2-81, -82]. (Italics mine.)
Q: Who decides if they are not sufficient-is it the USFS?
Q: Who evaluates the additional mitigation measures?
Q: Is this a "could" (might happen) as stated or a "would" (must happen)?

B. Storage

Many different locations for storage of fuels and other hydrocarbons will be present throughout all facilities. Each storage site presents a leak risk.

Storage of antifreeze, pesticides, insecticides, herbicides, ammonium nitrate, explosives, sodium cyanide, and copper sulfate, lead nitrate, aerophone, sodium metabisulfite, K amyl xanthate, nitric acid, sulfuric acid, H2 peroxide, sodium hypochlorite, magnesium chloride … will occur. [2-60, -61] Sodium cyanide need is 3,900 tons/yr. [4.7-7].

Q: Aren't the number of sites and chemicals greatly increasing the risks more than additionally- perhaps exponentially?
Q: Where is the spent cyanide stored and then sent?

C. Dust Treatment
Magnesium chloride is a toxic material and not a good choice for dust control.
Estimates are that 436 MT [4.2-3] or 426 MT [4.2-23] of rock will be moved during the life of the mine. Dust abatement on dirt roads and for ice control involve the use of such chemicals as sand, salt, or magnesium chloride. "…application of dust control binding agents (magnesium chloride)…" [D-23]. Neither contact water nor magnesium chloride [2-51, -54] should be used for dust abatement. (Refs.) (250,000 gal/yr will be consumed-part on roads.) "No ice and snow removal chemicals will be used on roads" [D-11].

Q: Why the obvious disagreement within the DEIS on the use of mag chloride?
Q: Are SGP and the USFS aware that several states have abandoned the use of MgCl on roads due to its

toxicity?
Q: Because contact water may be contaminated, how can it be used on roads?

"In addition, spent heap leach ore from historical mining operations may be reused for road construction purposes." [4.2-11].

Q: Isn't this contaminated material and therefore not allowed?

V ACCESS AND TRAFFIC = significant issue [ES-7]
A. Access

The more spread out and the longer the access route, the greater the opportunity for negative impacts.

"Climatic changes causing an increase in catastrophic events, such as floods, landslides, and avalanches, can add stress to roadways and other infrastructure, which may result in more frequent maintenance and repairs" [4.4-14].
1. The Yellow Pine Route

The Yellow Pine Route would be used short-term (1 to 2 years) while the Burntlog Route is being constructed, or it would be used for operations also if Burntlog is not built (Alt 4).

Q: Does this route require further upgrading for these purposes?
Q: If it is going to be upgraded for heavy truck traffic, why not use it for the entire SGP lifetime?
Q: How can the added risks of avalanche and rockfall on the Yellow Pine route be weighed against the problems and risks of building and using the Burntlog route?
Q: Because of the water and geologic sensitivities along the Johnson Creek and up the Stibnite Road, added to the needed improvements thereto while Burntlog is constructed, isn't any use of the Yellow Pine route an extra environmental degradation and risk factor?

2. The Burntlog Route

The construction and decommissioning of the Burntlog route is an unnecessary addition to risk, and disturbance of wildlife and recreation. It also extends the problems into a longer time.

Access via the Burntlog route is long and circuitous for access to the areas beyond Monumental Summit. The 2 alternatives at Riordan Creek not adequately discussed [2-92, -93].
The Burntlog route would directly impact 350 acres on 38 mi. of road [4.19-16, -17] and pass near, or through, several areas of special designation such as the FCRNRW, Inventoried Roadless Areas, and the Chilcoot Peak Research Natural Area [3.4-17]. Indirectly, it would impact a far larger area, i.e. the area between it and the Johnson Creek Road.

Decommissioning the Burntlog route is a huge, costly project. It further extends the risks such as safety, wildlife disturbance, hazardous waste, and the pollution of light, noise, and CO2. No reclamation can restore the scenic integrity, especially the trees.

Q: How can the USFS justify destroying special designation areas?
Q: Who administers these areas and do they have a say?
Q: Couldn't this expense be used for another route?
Q: Why the 2 alternatives at Riordan Creek [2-92, -93]?

3. Old Thunder Mountain Road

This potential access road was evaluated and dismissed: "Access to the mine site during operations and closure and reclamation would be using Warm Lake Road to Johnson Creek Road (CR 10-413) to Old Thunder Mountain Road (FR 440); reconstructing a portion to connect with a new road to be constructed along a portion of the same alignment as the Burntlog Route as part of Alternative 1, connecting to Meadow Creek Lookout Road (FR 51290) and then to Thunder Mountain Road (FR 50375)" [2-141].
Technical and economic feasibility of using the Old Thunder Mountain road (FR 440) should be considered again [2-141]. It would be much shorter and cross fewer drainages than Burntlog, it would avoid the close proximity to the FCRNRW and the Chilcoot Natural research area, impact less of the IRAs, avoid much of Johnson Creek, and not create a wildlife disturbance zone between the Burntlog and Johnson Creek roads. Access to the Monumental Summit area would be maintained.
Q: Why was the Old Thunder Mtn. route dismissed?
Q: Wouldn't public and emergency access along this route be better from both north and south directions?

4. Other

Another possibility would be to follow the power lines with the main access route. The lines will need service roads anyway. Combining the disturbance of 2 roads into one would minimize the impacted land. Idaho Power line routes combined with the SGP access route seems like a win-win. This could be done for much of the route. Even up Cabin Creek to avoid more of the Warm Lake properties.

Q: Has any consideration been given to using power line roads for all or partial access?
Q: Why is this not a viable option?
Q: Could this idea be implemented for at least some of the distances?
Q: Who is responsible for heavy truck damage to the paved Warm Lake Rd.?

Public accèss to Monumental Summit and beyond is necessary and fair to the public.

Q: Where is the public access on Map 2-95 and Map 2-99?
Q: Isn't a public road through the mine site costly and dangerous?
Q: Would this be the same road used through the site post-closure?

The Landmark Maintenance Facility would occur in a different location to Alternative 1 [4.2-18].

Q: Why? Where??
B. Traffic
The high increase of traffic would increase spill and vehicular accident risks, ruin the area for many types of recreation, transport abundant noxious weed seed, and negatively affect wildlife.

Over 65 round trips per day from construction through operations, with 25 round trips/day during closure and reclamation (or 50 for Alt 2) for 25+ years. Plus 60 per year for the Alt 2 WTP in perpetuity is a lot of traffic. About 66% would be heavy vehicles. Noxious weeds like knapweed are more likely to be spread throughout the region the longer the route and the more traffic. That means more chemicals would be used to control the weeds and then spread into the environment.

Incomplete and unavailable information related to access and transportation include certain traffic count data, traffic management, and road maintenance details [4.16-1].

Q: What weed control can be provided other than herbicides?
Q: How much of road maintenance, snow removal, repair, dust control, and clearing costs, would be by USFS and the county?

Q: Will SGP remunerate?
Q: Are these entities willing and able to bear the additional costs?

VI OTHER
A. Air Quality

The SGP would contribute to air pollution.

Most of the HAP (hazardous air pollutant) emissions from operations come from the combustion of fossil fuels and fugitive dust containing trace metals [4.3-27]. Additional sources include Hg from gold ore refining sources, exposed crushed rock surfaces, and fugitive dust, and HCN [hydrogen cyanide] from volatilization from the dilute cyanide solution, detoxification tanks, and impoundment of process tailings in the TSF [4.3-27]. Asbestos minerals may also be a problem for Alt 2.

For years 1 thru 14 the values of total pollutant emissions for Alt 1 range from >700 to >1250 tons/yr [4.3-25]. At average, that amounts to 13,650 tons overall including 6,659 tons of CO2 [4.3-26] plus 500 lbs. of Hg [4.3-28]. Or 67,400 MTCO2 eq/yr of green house gas emissions [4.4-7]. At full production, 214 million MTCO2/yr. would be generated from power use [4.4-8]. There would be ~4055 MT GHGs produced by the antimony mining alone [4.4-9]. Many of the sources are difficult or impossible to mitigate [4.3-27].
Q: How does "tons" relate to MT (metric tons)?
Q: Could comparisons be given to other CO2 sources?

"The pollution resulting from air emissions is not permanent" [4.3-67].
Above statement is incorrect. It may dissipate to a point but does not disappear.
Haze-forming pollution can travel thousands of miles [3.3-13].

Q: We now know that these pollutants remain in the atmosphere and contribute to climate change and health problems, so how can the quoted statement be made?
Lime kiln production for Alt 2 would produce CO2, as would the ~40 truck round trips/yr for the Centralized Water Treatment Plant in perpetuity [4.4-17]. The GHG emissions for Alt 2, including CO2, methane, and nitrous oxide, would be ~117,587 MTCO2 eq/yr [4.4-19].
Q: Are the amounts of CO2 production for the lime kiln alone given somewhere?
Q: Why are GHG emissions from traffic and mine operations not included?

Table of effects on 4.19-71 to -73. "After closure and reclamation, the scenic integrity at the mine site would likely slowly improve under all action alternatives" [4.20-53; Table on 4.20-55]. (Italics mine.)

Q: Does this likely mean uncertainty? If so why-through dissipation?
Q: Would the CWTP affect air quality?

B. Fire and Wildfire

A catastrophic fire with terrible consequences might occur in the SGP area in the next 20 yrs.

As we have seen this fall along the west coast, wildfires are a more increasing threat as our climate changes and overall temperatures rise. The limited access and rough terrain would provide added challenges for firefighters.

Q: How likely is it that a vehicle along the haulage road would ignite a wildfire?
Q: How likely is it that a vehicle hauling dangerous chemicals would be trapped by a wildfire?
Q: Wouldn't falling dead timber or blowdowns be another unpredictable risk to traffic?
Q: How would the mine site, chemical storages, employees, and employee facilities survive a massive,

surrounding wildfire?
Q: What emergency measures could be put in place?

C. Recreation and Visual Impacts

The visual, noise, and night light damage for 15+ years will destroy a huge area of recreational use for some people.

As a hiking/birding recreationist in this area, it would become unusable for me.

Visual impacts can include communication facilities, transmission lines, new substations, loss of wildlife to view, loss of trees, lights (traffic and operations), scenic integrity, and the CWTP. There would be a "…less-natural looking and sounding recreation setting along the Burntlog Route… " [4.19-15]. "…this modified recreation setting could … require users to go further to achieve semi-primitive non-motorized or primitive recreation setting" [4.19-23]. "Therefore, the recreation setting of these areas [the mine site and BLR] would experience long-term alterations" [4.19-65].
(Italics mine.)

Q: If Burntlog route is built, does the USFS realize that the area between it and the Johnson valley will be impacted?
Q: Why does Ap N begin with Chapter 3; where are 1 & 2?
Q: Aren't the impacts listed above in violation of USFS goals?

"A series of very high frequency radio repeaters …10-foot towers on 3-foot by 3-foot concrete pads…. a cell tower …approximately 60 feet tall … would include surface disturbance of approximately 30 feet by 60 feet and an access road" [2-57].
Q: Have the repeaters, the cell tower, and their service roads been added to the area disturbed figures?
Q: Do the repeaters or cell tower affect birds?

D. Topography and Climate

The consequences of both severe snow or rain storms needs to be studied and emergency plans drafted.

Historical documents record some very high snowfall in this area. Passes closed by avalanches and drifting snow were common (Idaho Historical Society, pub. 201: Pans, Picks, and Shovels). Ice will be common on the roads during swing and winter seasons. The Burntlog route would be especially dangerous for blowing snow and ground blizzard; the Yellow Pine route more susceptible to avalanches and rockfalls and mudslides. (See also D.1.) Av. annual snow = ~84" [3.3-37]. "The majority of the SODA and the proposed Hangar Flats DRSF are within mapped avalanche hazard zones (Figure 3.2-5) (Mears and Wilbur Engineering 2013)" [3.2-25].

Q: Why it there not more information in the DEIS about operating in winter conditions?

Mudslides and rockfalls are fairly frequent in steep terrain that is subject to wide temperature variation as this area is-both at the site and along the access roads. Climate change predicts an increase in severe weather events [3.2-21, -22]. That could mean extreme rain events which could cause unpredicted damage. And there is potential for future slides near worker housing [3.2-26].

Q: Why is there not more information in the DEIS about flooding and mudslides??
"Climate change impacts to wildlife and wildlife habitat in the SGP area would include habitat loss and fragmentation, physiological sensitivities, and alterations in the timing of seasonal life cycles" [4.4-13]. Drying and dying timber, compacted soils creating faster runoff, higher water temperatures, and changes in slope

stability can also occur. [3.4-10, -14]

Q: Don't the unknowns of climate change over the life of the mine suggest another large risk to the SGP in this remote area?

E. Noise

The effect of noise pollution on wildlife and recreation habitat in the entire SGP area would be unacceptable especially for 20+ years.

This is especially important because of the mine's location surrounded by Roadless Areas, National Forest, and the Frank Church-River of No Return (FC-RNR) wilderness. A Wilderness area is designed to protect its wildlife. "Closure and reclamation noise would be audible up to 1.2 miles…" from the mine site and along the Burntlog route [4.19-21, -22]. Off site facilities would be at 85dBA, construction >90dBA, and 73-95dBA on site. Blasting = 102dBA Mine site av. = 99 dBA [Section 4.6].

Measurements from 34-52 dBA compare to EPA guide of 55dBA for humans outdoors [3.6-5, -8]. "…60 dBA is comparable to a normal conversation and is considered a comfortable noise level" [4.18-26].

Q: How many acres would become uninhabitable, and by which wildlife members, if this mine were to be active for 20+ years and water treatment to continue forever?
Q: What noise levels does it take to disturb various animals, especially birds?
Q: Why the apparent disparity in comfort of dBA levels for humans?

F. Power

Power to the SGP means new transmission lines, substations, corridor improvements, moving the Thunder Mtn. Estates line, maintenance, the consumption of fuels for generations, and risks of pollution.

Q: Who pays for all of this, Idaho Power (i.e. public consumers) or SGP?

Construction, operation, and maintenance of the transmission line would require use of Horse Heaven Road (FR 416W) and NFS Trail 233 (Horse Heaven Meadow), and construction of approximately 4 miles of new spur roads to transmission line structures. Maintenance of the transmission line also would require minor upgrades to Cabin Creek Road (FR 50467) [2-56].

Q: Were these roads, noise, dust, CO2, etc., included in the SGP impacts?

An upgraded line would follow Trail FT 233 and connect to FT 097 and the Horse Heaven Road (FR 416W) [4.19-20]. An intentional 2 mi gap would prevent public use.
Q: Why should public use be prevented?
G. Public, Employees, and Economics

There is uncertainty regarding the true magnitude of local employment and local economic gain.

"there would be an increase in local jobs due to the SGP, there would be limited in-migration of workers during construction, operations, and closure/reclamation" [4.19-3]. "Many of the SGP's employees, contractors, and suppliers may be expected to originate from Valley and Adams counties" [3.21-1]. These statements disagree with other sources (Star News, 10/1/20).

Q: How many people from Valley County are really expected to be employed by SGP?

Q: Of the ~500 people living at the mine site, how many will be properly trained for avalanche rescue or fire control?

"The SGP would make a significant contribution to the Valley County economy in terms of direct and indirect employment and wages during the life of the SGP" [4.18-21]. The amount appears to be in disagreement. Any boom to the local area's economy will be followed by the inevitable bust when the mining ends. [4.18-22]
Q: What would be a reasonably accurate estimate of the economic impact?
Q: What would be the economic consequences when the mine closes?

VI SUMMARY [Compiled from underlined section statements above.]

The SGP wants to have more water rights but also needs to remove it from pits. The report information suggests that the water resources of the area are NOT capable of sustaining the SGP.

Surface water flow is marginal by end of summer and it is likely to decrease with climate change. The SGP will make it even less.

The SGP DEIS report data project that the quality of the water post-SGP would be degraded from its current condition.

Contaminated surface water will eventually create contaminated ground water.

The SGP will create a surface water pollution problem worse than the present conditions.
Increased sedimentation and fugitive dust will be very hard to control.

The SGP will not repair legacy wastes; only move them.

The TSF will be a permanent source of toxic material needing treatment forever.

Both DRSFs and RIBs will produce contaminated outflow. This water will need to be treated in perpetuity.

The SGP will leave three toxic lakes or DRSFs whose outflow is contaminated.

The rocks to be moved or exposed contain minerals whose chemistry is possibly conducive to AMD water pollution.

The water routing and treatment involve many complexities. In reality, this scenario is unlikely to work without pollution developing and is unmanageable indefinitely.

There are geologic risks from several sources and the need for antimony may be overstated.
Several major faults cross the mining area. Motion on any of these is possible and would create earthquakes. Untold damage could occur. Fractures increase the likelihood of mass wasting and avalanches of all types both in and out of the mine site. Several rock units are also highly foliated which exacerbates the possibility of rock failure.

Safety is problematic and any chemical accident has a higher probability of damage to the environment in this location than in many other possible locations. Many different sites for storage of fuels and other hydrocarbons will be present throughout all facilities. Each storage site presents a leak risk. Magnesium chloride is a toxic material and not a good choice for dust control.

The more spread out and the longer the access route, the greater the opportunity for negative impacts. The

construction and decommissioning of the Burntlog route is an unnecessary addition to risk, and disturbance of wildlife and recreation.

The high increase of traffic would increase spill and vehicular accident risks, ruin the area for many types of recreation, transport abundant noxious weed seed, and negatively affect wildlife.

The SGP would contribute to air pollution.

A catastrophic fire with terrible consequences might occur in the SGP area in the next 20 yrs.

The visual, noise, and night light damage for 15+ years will destroy a huge area of recreational use for some people.

The consequences of both severe snow or rain storms needs to be studied and emergency plans drafted.

The effect of noise pollution on wildlife and recreation habitat in the entire SGP area would be unacceptable, especially for 20+ years.

Power to the SGP means new transmission lines, substations, corridor improvements, moving the Thunder Mtn. Estates line, maintenance, the consumptions of fuels for generation, and risks of pollution.

There is uncertainty regarding the true magnitude of local employment and local economic gain.

VII CONCLUSION

I began reading the DEIS with a slight concern. But the more I read, the more my concern grew and the more opposed I became.

"Interactive effects may be either greater or less than the sum of the individual effects; thus, the action's contribution to the cumulative case could increase or decrease the net effects" [4.1-6].
The complexity of this mining project, the number, type, and magnitude of required chemicals, the amount of disturbance, the consequences of any problem in this special place (near specially designated areas and at the head of an important drainage) where the stakes are so high, the length of time impacts will be made, and the current and future unknowns all must be combined to consider if the risks are worth providing monetary gain to a company.
Midas Gold Idaho is a for profit company. The goals of the SGP are naturally at odds with all other area users (except perhaps USFS for timber sales) and the few local people who might benefit economically for 20 years. They have been liberally granting "bribes" to local communities to gain their support, but money isn't everything.

As a company, the SGP has been touting primarily three benefits: economic, strategic, and environmental. The economic benefits are real but not sizable for Valley County. The strategic benefit of the mined antimony is exaggerated [Footnote 2], and the environmental benefits are a distortion. The DEIS was needed to see through the hype. It also shows that problems are almost inevitable, strict oversight would be needed (by whom and who pays?), and their site monitoring "in perpetuity" is unrealistic. The state is likely to be left with an expensive damage that even the bonding money cannot fix.

The Stibnite mining area was proposed as a Superfund site in 2001 but no action was taken [3.7-14]. It could be proposed again. Clean up could be achieved beyond that promised by the SGP.
For the public good, there is a need to NOT have mining in the wrong places. I conclude that the Midas Stibnite Gold Mine Proposal is very much in the WRONG place. My reasons for this conclusion have been given in this letter. The Forest Service should reject the proposal.

Sincerely,

Kim Manley, PhD (Geology)

Footnotes

[1] Due to the highly poisonous nature of cyanide the process is considered controversial and its usage is banned in a small number of countries and territories. … Studies show that residual cyanide trapped in the gold-mine tailings causes persistent release of toxic metals (e.g. mercury) into the groundwater and surface water systems. Studies show that residual cyanide trapped in the gold-mine tailings causes persistent release of toxic metals (e.g. mercury) into the groundwater and surface water systems. Despite being used in 90% of gold production: gold cyanidation is controversial due to the toxic nature of cyanide. …. cyanide spills can have a devastating effect on rivers, sometimes killing everything for several miles downstream. (Wikipedia). ….there are some jurisdictions around the world that have banned cyanide in heap-leach applications at gold mines, as well as in processing plant applications. Bans or restrictions have been implemented or are planned in jurisdictions in Argentina, Eastern Europe, Central America and the United States. (USGS; Wikipedia)

[2] "Beginning in 2018, many large-scale producers reduced production, and many small-scale producers were put on care-and-maintenance status in response to stricter environmental standards from Provincial and National Governments." including a mine in Nevada that produced 800 MT in 2013-14. … "In September 2019, one of China's largest mining and metal-producing state-owned companies was the only bidder on the inventory of 18,600 tons of antimony and rare earths from the defunct Fanya Metal Exchange." (Italics mine.)
Recycling provides ~14% of domestic consumption. The US produced 4,370 MT in 2019; it exported 1,790 MT. Major import sources between 2015-18 were: Metal: China, 52%; India, 20%; Vietnam, 8%; Ore and concentrate: Italy, 76%; China, 17%; Oxide: China, 64%; Belgium, 10%; Thailand, 10%. Government stockpiles are 1,100 MT.
"World Resources: U.S. resources of antimony are mainly in Alaska, Idaho, Montana, and Nevada. Principal identified world resources are in Australia, Bolivia, China, Mexico, Russia, South Africa, and Tajikistan. Additional antimony resources may occur in Mississippi Valley-type lead deposits in the Eastern United States."
"Substitutes: Selected organic compounds and hydrated aluminum oxide are substitutes as flame retardants. Chromium, tin, titanium, zinc, and zirconium compounds substitute for antimony chemicals in enamels, paint, and pigments. Combinations of calcium, copper, selenium, sulfur, and tin are substitutes for alloys in lead-acid batteries."
(USGS National Minerals Information Center 2020)