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Comments: I was born and raised in Valley County and have spent much of my 42 years here recreating in the surrounding mountains during the winter. I have worked in the avalanche industry professionally for the past 20 years. I started ski patrolling and doing avalanche control work at Snowbird, UT before becoming a helicopter ski guide in Northeastern Nevada and finally a backcountry ski guide in the Lick Creek Drainage outside of McCall. I have been an instructor and course leader for the American Institute for Avalanche Research and Education (AIARE) for the past 12 years and have taught extensively in the McCall area.

After reading the Avalanche Hazard Assessment Reports (2018,2021) and the Concept Avalanche Plan, I have several areas of concern.

- 1)The Avalanche Hazard Assessment Reports mischaracterize the snow climate along the proposed Burnt Log Route and greatly underestimate snowfall.
- 2)Significantly higher snowfall totals will increase avalanche frequency and possibly their destructive potential.
- 3)Wind, a significant contributor to avalanche occurrence, was not considered when calculating avalanche frequency.
- 4)Burnt Log Route road cut was not considered when assessing avalanche path location and frequency. The Burnt Log Route will require a significant (26' wide) road cut, thus creating new and steepening current avalanche paths as well as increasing avalanche frequency.
- 5)The proposed Burnt Log Route and all of its alternatives cross several avalanche start zones, which will further increase avalanche frequency.
- 6)The increased danger of the road way acting as a terrain trap was not addressed.
- 7)All of these oversights greatly increase risk to personnel and vehicles as well as hazardous material spill.
- 8)The alternative Cabin Creek winter OSV route poses significant dangers to the public and needs further assessment.

According to the Avalanche Hazard Assessment Report 2021 (DAC2021), "The Stibnite Gold Project is located in the Salmon River Mountains of Idaho, which for the most part have a Continental snow climate, typically characterized by relatively low precipitation, shallow snowpack depths and cold temperatures." I believe this is a gross mischaracterization of our snow climate.

Snow Water Equivalent (SWE), not snowpack depth, which does not consider snow density, is the best metric for determining the amount of winter precipitation a region receives. The mountains of Colorado are a textbook example of a Continental snow climate. SNOTEL data from the region shows that median peak snowpack SWE is 12-18" and 30-year maximums are between 20-30" (Figures 1&2). SNOTEL data from the Wasatch Range, Utah, a textbook example of an Intermountain snow climate, show median peak snowpack SWE values ranging from 15-30" with 30-year maximums varying from 30-40" (figures 3 & 4). The notoriously snowy microclimate of Little Cottonwood Canyon has a median peak snowpack SWE of 41" and a 30-year maximum of 75" (figure 5). For comparison, Deadwood Summit (the closest SNOTEL site to the proposed Burnt Log Route) has a median peak snowpack SWE of 42" and a 30-year maximum of 79" (figure 6). Clearly, this portion of the Salmon River Mountains is in a very snowy climate.

Despite nearly all of the proposed Burnt Log Route lying above 7,000' (Deadwood SNOTEL site is at 6,860') and reaching a maximum elevation of 8,600', DAC 2021 argues that snow accumulation along the route will diminish significantly due to "precipitation shadow effects" (p.16). To determine this, they relied on snowfall data from two points, Yellow Pine, which lies at 5,100' at the bottom of a deep canyon, and 9 years worth of data (1950-58) from Stibnite mine at 6,555'. From this extremely weak data set DAC 2021 predicts that peak snowpack along

the Meadow Creek Ridge (8,000-8,600') will be between 90-100" with a 10-year maximum of 150". Using this same logic, Profile Gap (7,600') at the head of Profile Creek, a nearby tributary of the East Fork of the South Fork, should lie in the same precipitation shadow. While there are no SNOTEL sites at Profile Gap, we do know when the road finally melts out and is open to summer traffic. On average, this is a week or so after the road over Lick Creek Summit (6,900') opens. Through working in Lick Creek as a ski guide and avalanche instructor, I can state the average peak snowpack is between 144-156" with a maximum of 180". Because of its later melt out date, it stands to reason Profile Gap should have a similar, if not slightly greater snowpack than Lick Creek Summit. Meadow Creek Ridge, with further orographic lifting due to its increased elevation, should see even greater snowpack depths. While far conclusive, this anecdotal evidence suggests that snowpack depths and thus precipitation totals have been greatly underestimated in this data spars region.

By underestimating the amount of snowfall along the proposed Burnt Log Route the frequency of avalanche occurrence has been underestimated as well. Moreover, wind, which can play a large role in slab and thus avalanche formation, was not accounted for. Nearly 20 miles of the Burnt Log Route are above the elevation of 7,000' and 5 miles are above 8,000'. Wind will have a significant impact on the proposed route and the avalanche paths affecting it. It becomes clear that avalanche size and frequency has the potential to be much higher than projected in the conducted reports.

According to the SDEIS the proposed Burnt Log roadway will be 26' across, including shoulders (SDEIS 4-400). A roadway of this width will require significant road cuts when traversing slopes. Analysis of avalanche paths was done without the addition of these steepened slopes. These road cuts on their own pose and avalanche risk. This is highlighted by the fact that several slide paths identified in DAC2018 on the Landmark Grade are roadcuts (WL-N-4, WL-N-5 and WL-N-6). But, when these cut banks are combined with already identified slide paths, avalanche frequency is assured to increase.

The proposed 8A Route in Upper Riordan crosses several avalanche paths (U1, U7, U8, U9, E1, E2, E3) in the start zone (Hamre2021, figure 31). This portion of the avalanche path sees the most activity and is where avalanches are likely to be triggered. Placing a road cut in this portion of the slope will only further increase the likelihood and frequency of avalanche, further increasing risk.

Moreover, these exceptionally wide roadbeds create terrain traps. Terrain traps are defined as, "Any terrain feature that increase the consequences of an avalanche (AIARE 1 Student Handbook)." The fact that none of the reports take into account the increased risk terrain traps pose to winter time road users indicates the overall hazard of wintertime travel along the Burnt Log Route is greater than previously indicated.

Finally, the proposed Cabin-Trout Creek winter OSV alternative route passes under 17 identified slide paths that can strike to road (DAC2021 Avalanche Hazard Map 6 of 10). This is a large amount of risk to place on winter recreationists. No plan for avalanche mitigation or closure is presented. I believe this route and the general public using it deserve more analysis and a thorough risk management plan.

In closing, I believe a misrepresentation of the snow climate as well as ignoring wind as a contributing factor has led to an underreporting of avalanche size and frequency in the supporting documents for the SDEIS. If constructed, the Burnt Log Route will be the second highest road open year-round in the State of Idaho and will be located in one of its most remote and snowy regions. Avalanches, drifting and blizzard conditions pose significant risks to mine personnel and greatly increase the chance of hazardous material spill. I believe a significant amount of snowpack data and observations need to be collected over a period of many years before the true risks of winter travel along the proposed Burnt Log Route can accurately be assessed.

Thank you for your time.