Air Quality Permitting
Response to Public Comments

February 18, 2021

Permit to Construct No. P-2019.0047

Project No. 62288

Midas Gold Idaho, Inc.
Stibnite, Idaho

Facility ID No. 085-00011

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AIR QUALITY DIVISION

Proposed

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BACKGROUND

The Idaho Department of Environmental Quality (DEQ) provided for public comment on the proposed permit to construct (PTC) for Midas Gold Idaho, Inc. (Midas Gold) from September 10 – October 12, 2020, in accordance with IDAPA 58.01.01.209.01.c. An extension of the comment period was provided from October 13 – November 11, 2020. During these periods, comments were submitted in response to DEQ's proposed action.

Substantive comments were provided during the comment period, particularly concerning emissions of hazardous air pollutants (HAP) and toxic air pollutants (TAP). A response and HAP/TAP application addendum were submitted by Midas Gold[1] that included new HAP and TAP emission estimates and supporting information, new and revised TAP increment compliance demonstrations, and a source-by-source inventory of HAP and TAP emissions.

DEQ appreciates all of the comments received concerning this project, and updates to the proposed permit and technical review have been made by DEQ in response to the substantive comments received and the HAP/TAP application addendum submitted by Midas Gold. An additional 30-day public comment period will also be provided to allow for review and comment on these updates. Public comments will only be accepted on the updates.

The following have been updated in Permit to Construct No. P-2019.0047 Project 62288 (note that these updates have been highlighted in the permit and Statement of Basis):

- Table 1.1, Table 4.1, Table 5.1, Permit Conditions 2.2, 2.4, 2.6, 2.20, 2.22, 3.2, 4.1, 4.4–4.6, 4.13, 4.17–4.18, 4.25–4.27, and 4.34

The following sections of technical and regulatory analyses have been updated in the Statement of Basis:

- Emissions Inventories and Ambient Air Impact Analyses technical analysis sections
- Facility Classification, Subsection 210.20, Mercury Emission Standard, and Permit Conditions Review regulatory analysis sections
- Appendix A – Emissions Inventories, Appendix B – Ambient Air Quality Impact Analyses Review Memorandum, and Appendix F – Subsection 210.20 Interpretation of Addressed, appendices

Each comment pertaining to air quality and DEQ's response is provided in the following section.

[1] "Response to DEQ's Request for Information" and "HAP/TAP Addendum," Midas Gold, December 17 and 18, 2020. (respectively; 2020AAG2130, 2020AAG2147) Supporting emissions calculations were provided in the updated spreadsheet of emissions inventories "20200623-Midas Gold SGP PTC EI - Final-TAPr2.2.xls." (2020AAG2152)

HAZARDOUS AND TOXIC AIR POLLUTANT (HAP AND TAP) EMISSION UPDATES

Several comments were received concerning hazardous and toxic air pollutant (HAP and TAP) emissions of substances such as antimony (Sb), arsenic (As), cadmium (Cd), cyanide, mercury (Hg), nickel (Ni), and selenium (Se) from emission sources at the Stibnite Gold Project (SGP). This section is included to summarize updates made to the application and permit documents to address these comments, and is referenced in each relevant response that follows.

A response and HAP/TAP application addendum were submitted by Midas Gold[1] that included new HAP and TAP emission estimates, new and revised TAP increment compliance demonstrations, and a source-by-source inventory of HAP and TAP emissions. Relevant updates to permit documents include the following (note that these updates have been highlighted in the permit and Statement of Basis):

- Table 1.1 and Table 4.1 were updated in the permit and Table 1 in the Statement of Basis to remove the antimony process dryer and bagging operation (previously sources Sb1 and Sb2) as requested by Midas Gold, and consistent with proposed mercury control devices for the autoclave. These tables were also updated to include additional fugitive sources of PM, HAP, and TAP.
- Table 1.1, Table 4.1, Permit Condition 4.13, and Permit Conditions 4.25–4.27 were added or updated in the permit to reflect the proposed mercury control devices for the autoclave.
- Permit Conditions 2.20, 4.4–4.6, and 4.17–4.18 were added to address fugitive emissions of cyanide and carbon disulfide HAP from the process leach tanks (CIP 1–6 Leach 1–4, CIL 1–6, CIP 1–6, and CN Detox 1–2) and tailings storage facility (TSF).
- Permit Condition 2.22 was added in the permit to require compliance with all applicable NSPS and NESHAP requirements.
- The Statement of Basis was updated for consistency with the revised HAP and TAP emission estimates (Table 6 and the Emissions Inventories and Mercury Emission Standard sections) and new and revised TAP increment compliance demonstrations (Appendix B and the Ambient Air Quality Impact Analyses section). The facility was also re-classified as synthetic minor for emissions of single HAP and total HAP (Table 7 and the Facility Classification section).
- The Statement of Basis was updated to include a discussion of Subsection 210.20 and relevant DEQ guidance (Table 8, Subsection 210.20, and Appendix F).

Hazardous Air Pollutants (HAP)

The new HAP and TAP emission estimates included emissions from materials mined, moved, processed, and refined; from process reagent usage; and from fuel combustion at SGP. All permitted sources (fugitive and point) were evaluated, including the autoclave, lime kiln, and tailings storage facility. Metal HAP and TAP emissions from process materials were based on metal concentration profiles from onsite core samples of ore and limestone materials, including 98 samples of SGP limestone[2] and over 55,000 samples of SGP ore.[3,4] As a conservative assumption, the limestone profile was also used for emissions from aggregate materials. In the response to a request for additional information,[1] Midas Gold confirmed that the SGP ore samples were taken primarily from the mineralized zones of the SGP pits and were therefore more representative for the purposes of estimating emissions than data referenced in the *SGP Baseline Geochemical Characterization Report* (2017). Mercury emissions from the lime kiln

[2] "M3-PN170045 Stibnite Gold Feasibility Study RE: M3-MGI-029E Lime Kiln Analysis Memo" and MGI-17-431-FullGeochem - MB.xlsx, M3 Engineering & Technology, June 14, 2018. (ref. M3 2018; 2020AAG2153)

[3] "Geochemistry Statistics" email R. McCluskey to E. Memon, the Stibnite Gold Project, Air Sciences, September 26, 2017. (ref. Midas Gold 2017c; 2020AAG205)

[4] "Re: Te-2" and 2020-12-09_Fe and Se data.xlsx, the Stibnite Gold Project, December 9, 2020. It is noted that 1,500 of the samples were tested for Se. (ref. Midas Gold 2020; 2020AAG2153)

were estimated by assuming all mercury in the limestone feed is volatilized and emitted. For each non-mercury metal HAP and TAP, emissions from the lime kiln were calculated as PM emissions multiplied by the median metal concentration measured. Facility-wide HAP PTE also increased from 1.80 to 12.57 tons per year (T/yr) as a result of updating the emissions inventories to account for HAP and TAP emissions from fugitive sources encompassing drilling, blasting, excavating, hauling, stockpiling, and tailings.

In the response to a request for additional information,[1] Midas Gold confirmed that the emissions data from Barrick Goldstrike Mines relied upon to estimate mercury emissions is representative of the proposed autoclave, and that the remaining thermal source will not be constructed and instead be replaced by a dewatering/packaging circuit. The new circuit eliminates the potential for metal dust and mercury evaporation emissions from concentrate heating, and no HAP or TAP emissions will be generated in the new Sb circuit. As a result, the antimony process dryer and bagging operation emission sources Sb1 and Sb2 were removed from the permit. Midas Gold also specified that a venturi scrubber, vent gas cleaning tower, vent gas steam condensation tower, and one or more sulfur-impregnated activated carbon filters will comprise the mercury control devices for the autoclave. Permit Condition 4.13 was added to require these controls. Controlled mercury emissions from the autoclave were estimated based on SysCAD modeling of process chemistry at 0.2 pounds per year (lb/yr), which would comply with allowable emissions under NESHAP Subpart 7E limits (described in the next section) of over 138 lb/yr at the maximum annual projected production rate of 42.7 million tons per year (MMT/yr). And although not explicitly calculated, Midas Gold estimated that the uncontrolled PTE for HAP pollutants exceeded 10 T/yr of an individual HAP and 25 T/yr of total HAP. In reviewing the updated HAP/TAP application addendum and emissions inventories, DEQ recognized that because usage of process reagents were not correlated to material throughput rates and not otherwise inherently limited, HAP emissions limits and usage limits were necessary for potassium amyl xanthate (PAX) and sodium cyanide (Permit Conditions 4.4–4.6) to ensure that emissions remain below these HAP major thresholds for carbon disulfide and cyanide compounds. Cyanide emissions were sensitive to leachant process concentration and basicity, and monitoring of these process parameters was also required.

Toxic Air Pollutants (TAP), Mercury Emission Standard, and Subsection 210.20

After additional review by DEQ and Midas Gold, HAP emissions from many emission sources at SGP were determined to be exempt from demonstrations of compliance with TAP standards and/or exempt from the Mercury Emission Standard. The updated HAP and TAP inventory identifies Subsection 210.20-exempt sources and distinguishes between federally-regulated HAP and state-regulated TAP emissions. In the Statement of Basis, new and revised emission estimates of HAP and TAP were summarized (Table 6), relevant NSPS and NESHAP and exempt sources identified (Table 8), and a discussion of Subsection 210.20 and relevant DEQ guidance included (Table 8 and Appendix F), as presented at the November 14, 2018 board meeting, under Docket No. 58-0101-1801. For these standards, the term “addressed” is interpreted to mean that EPA (1) specifically regulated, (2) specifically regulated by a surrogate, (3) reviewed, or (4) evaluated the HAP emissions that are also TAP emissions (HAP TAP). In all cases it is presumed that EPA evaluated all 187 HAP when developing the emission standards for new, modified, or existing stationary sources regulated by NESHAP Subparts (40 CFR 63). Therefore, in all cases TAP that are not one of the 187 HAP are to be evaluated for compliance with the TAP provisions in IDAPA 58.01.01.210. Additional relevant guidance including examples of “addressed” are included in Appendix F to the Statement of Basis, which was included in Docket No. 58-0101-1801.

After exclusion of sources addressed by NSPS and/or NESHAP, the remaining applicable emission sources from concrete production (central mixer, cement/shotcrete silos, aggregate bin) and heating, ventilation, and air conditioning (HVAC) were evaluated for compliance with TAP increments by comparison of adjusted emissions to applicable screening emission levels (EL) for carcinogens and non-carcinogens (Table 6). Modeled impacts of applicable emissions

exceeding EL did not exceed any acceptable ambient concentrations for carcinogens and non-carcinogens (AACC/AAC), and compliance with TAP provisions was demonstrated.

After exclusion of sources within a source category subject to an area source NESHAP (40 CFR 63), applicable non-fugitive emissions from aggregate production (crushers, screens, and conveyors), concrete production (aggregate bin), and HVAC sources were evaluated for compliance with the Mercury Emission Standard (Table 6).

HAP and TAP Emissions Limits

As detailed in the Subsection 210.20 section of the Statement of Basis (Table 8), HAP emissions including mercury are addressed by National Emission Standards for Hazardous Air Pollutants Subpart EEEEEEE (NESHAP Subpart 7E). Compliance with applicable NSPS and NESHAP requirements is required and incorporated by reference in the PTC (Permit Condition 2.22), and applicable emission limits and requirements will be explicitly incorporated into the Tier I operating permit. In regulating gold ore mining in NESHAP Subpart 7E, explicit Hg emission limits reflecting maximum available control technologies (MACT) and source testing are required for the autoclave, electrowinning cells and pregnant solution tank, mercury retort, induction melting furnace, and carbon regeneration kiln;

- 84 pounds of Hg emissions per million tons of ore processed in the autoclave (ore pretreatment)
- 0.8 pounds of Hg emissions per ton of concentrate processed in the electrowinning cells and pregnant solution tank, mercury retort, induction melting furnace, and carbon regeneration kiln (carbon process with mercury retort)

Beyond the NESHAP and reagent limits described above, HAP and TAP particulate metals are regulated indirectly (i.e., surrogate limits) via facility-wide fugitive dust requirements for particulate matter (PM) (Permit Conditions 2.1–2.6, 3.9, 5.9), material throughput and operational limits (Permit Conditions 3.3-3.8, 4.4–4.11, 5.4–5.8, 6.2), PM emission limits (Permit Conditions 4.3, 5.3), control device requirements (Permit Conditions 3.10, 4.13–4.16, 5.9–5.15), and associated testing, monitoring, recordkeeping, and reporting requirements. These requirements were considered reasonable and appropriate to ensure the control of PM, HAP, and TAP constituents.

Arsenic (As) represented the single greatest metal HAP emission at 2.40 T/yr (facility-wide), with most HAP metals emitted annually at one ton or less. Adjusted metal HAP TAP emissions were estimated at 5.7E-06 pounds per hour (lb/hr), which did not exceed 2% of the applicable EL. Iron (Fe) represented the single greatest TAP emission at 15 lb/hr, which did not exceed 15% of the applicable EL. Any uncertainties in metal HAP and TAP emission estimates are not expected to affect classification as a HAP minor source or to affect compliance with TAP, NSPS, NESHAP, and other applicable air quality requirements. Although some degree of uncertainty is present in all emission factors used in estimating emissions, all emission factors were adequately supported and the approach of estimating potential emissions (PTE) at design capacity for combustion sources and at maximum throughputs for process sources was considered a conservative approach. While a material balance is a useful approach to developing emission estimates, it is not a requirement and other methods such as the use of representative performance test data (i.e., autoclave emissions data from Nevada operations) are valid and accepted by DEQ. Additional relevant guidance regarding the hierarchy of emission data acceptability can be downloaded at DEQ's website: https://www2.deq.idaho.gov/admin/LEIA/api/document/download/5521

DEQ is satisfied that HAP and TAP emissions estimates in the addendum and application materials provided by Midas Gold are representative of potential emissions from SGP and emissions from applicable (non-exempt) sources demonstrated preconstruction compliance with TAP standards and the Mercury Emission Standard. The accuracy of autoclave emission estimates will ultimately be determined via testing as required by NESHAP Subpart 7E.

PUBLIC COMMENTS AND RESPONSES (September 10 – November 11, 2020)

Public comments regarding the technical and regulatory analyses and the air quality aspects of the proposed permit are summarized below. Questions, comments, and/or suggestions received during the comment period that did not relate to the air quality aspects of the permit application, the Department's technical analysis, or the proposed permit were not addressed. For reference purposes, a copy of the Rules for the Control of Air Pollution in Idaho (Rules) can be found at: http://adminrules.idaho.gov/rules/current/58/0101.pdf.

Comment #1: Midas Gold Idaho, Inc. (Midas Gold)	Condition 2.6: The condition currently references "(Permit Conditions 2.1–2.4)." With the addition of Condition 2.5, the reference may need to be updated to "(Permit Conditions 2.1–2.5)."
DEQ Response:	Permit Condition 2.6 was revised to correct the condition referenced to Permit Condition 2.5.
Comment #2: (Midas Gold)	Condition 2.20: Please correct the condition cross-reference from "0" to "5.3."
DEQ Response:	Permit Condition 2.20 was revised to correct the condition referenced to Permit Condition 5.3.
Comment #3: (Midas Gold)	Condition 3.2: Please correct the table cross-reference from "1.1" to "3.1."
DEQ Response:	Permit Condition 3.2 was revised to correct the table referenced to Table 3.1.
Comment #4: (Midas Gold)	Condition 4.34: Please change the visible emission monitoring frequency from "each test run" to "each test." This request is made based on industry-standard practices and review of similar requirements in other permits. Monitoring frequency of once per each test run seems excessive and unnecessary as these source types typically do not generate visible emissions.
DEQ Response:	Permit Condition 4.34 was revised to reduce the frequency of visible emissions monitoring to once per test. The proposed frequency was considered reasonable and appropriate for capturing representative emissions during each performance test. This is also consistent with DEQ source testing guidance.
Comment #5: von Lindern, Idaho Conservation League (ICL)	With regard to toxic metals, the screening analysis indicates potential exceedance of carcinogenic and non-carcinogenic toxicity criteria for arsenic (As), antimony (Sb), cadmium (Cd), nickel (Ni), and mercury (Hg). Despite considerable uncharacterized uncertainties in the source terms and emissions estimates that cannot be appropriately evaluated without a representative material balance for toxic metals, DEQ has dismissed any concern relative to these toxins based on modeling results. This facility anticipates mining and processing an estimated 200 to 600 tons of Hg, 200K to 1M tons of Sb, 400K to 1M tons of As. Approximately 85% of the Sb and some undetermined fraction of the Hg will exit the site as product. The remaining toxic metals will be discharged to various environmental media, sinks, and repositories on-site or shipped to hazardous waste facilities. The applicant projects that the most significant thermal source on the site will exhaust 0.2 pounds per year (lb/yr) of Hg over 20 years to the atmosphere. This extraordinary level of control must be verified by material balance calculations to be relied upon. The applicant has not produced a material balance for toxics, and DEQ has not assessed the overall coherence of toxic

metal pathways necessary to verify the applicant's assertions.

It seems that the draft permit does not require measurement, monitoring, reporting, or testing of toxic metals either in the process streams, emissions, or releases from the operations during the entire 20-year life of mining, milling, and refining. With respect to toxic metals, the permit only requires the applicant to operate the equipment in conformance with manufacturer's recommendations with the implicit assumption that this will result in health-protective Hg, Sb, As, Cd, and Ni ambient concentrations. If this interpretation is correct, then neither the emission estimates nor ambient metals concentrations will be verified by DEQ. This conclusion should be reconsidered after thorough review of a material balance.

DEQ Response: As discussed in the HAP and TAP Emission Updates, several comments were received concerning HAP and TAP emissions of substances such as As, Sb, Cd, Ni, and Hg from emission sources at the SGP. A response and HAP/TAP application addendum were submitted by Midas Gold that included new HAP and TAP emission estimates, new and revised TAP increment compliance demonstrations, and a source-by-source inventory of HAP and TAP emissions. After exclusion of sources addressed by NSPS and/or NESHAP, applicable emission sources from concrete production and HVAC were evaluated for compliance with TAP increments, and compliance with TAP provisions was demonstrated. After exclusion of sources within a source category subject to an area source NESHAP (40 CFR 63), emissions from the remaining applicable non-fugitive sources in aggregate production, concrete production, and HVAC were evaluated for compliance with the Mercury Emission Standard (Table 6).

Applicable emissions did not exceed 15% of the applicable EL. Any uncertainties in metal HAP and TAP emission estimates are not expected to affect classification as a HAP minor source or to affect compliance with TAP provisions. Although some degree of uncertainty is present in all emission factors used in estimating emissions, all emission factors were adequately supported and the approach of estimating PTE at design capacity for combustion sources and at maximum throughputs for process sources was considered a conservative approach. The use of representative performance test data (i.e., autoclave emissions data from Nevada operations) was determined to be valid and accepted by DEQ.

Comment #6: (von Lindern, ICL) The application makes several references to similar operations in Nevada regulated by the Nevada Division of Environmental Protection (NDEP). However, there are significant differences between the DEQ and NDEP regulatory approaches that could question DEQ's reliance on data from the Nevada operations cited. NDEP guidance cites AP-42 and material balances as the two main sources for developing emission factors for the mining industry.

According to NDEP website information sources, NDEP requirements are significantly more stringent than DEQ's. NDEP has implemented the Nevada Mercury Control Program (NMCP) that applies Hg emissions controls on thermal units located at precious metal mines that include both the EPA promulgated NESHAP Subpart 7E and additional NMCP permitting conditions. NMCP requires that all precious metal processing facilities that operate, construct, or modify a thermal unit that emits Hg must apply for, and obtain, a Mercury Operating Permit to Construct. DEQ is requiring only the minimal federal requirements and a generic PTC. NESHAP Subpart 7E sets Hg emission limits for three source categories that are groups of units promulgated in 2013; two of which apply to this application. NMCP requires unit-level emission limits that are periodically re-evaluated for applicable sources. DEQ relies on alleged similar NDEP emission reports to assess NESHAP Subpart 7E compliance, with Hg emission data presented from two Nevada operations (Goldstrike

and Twin Creeks) to show that these facilities are in compliance with allowable limits.

This somewhat convoluted analysis portends that 2 autoclave examples from Nevada operations show that these facilities are, respectively, utilizing 0.2% to 10.9% of the 84 lb/ton allowable Hg emission; and 14.2% to 27.4% of the allowable 0.8 lb/ton concentrate carbon-based mercury retort emission limit. It is then assumed a nominal 10.0% and 20.0%, respectively, will be utilized at Stibnite. This results in an estimated 21.34 lb/yr emissions from the autoclave and 3.36 lb/yr retort emissions. The ** footnote suggests the actual autoclave emissions will be an extremely low 0.2 lb/yr.

The assertion that these two facilities operate in compliance with the federal portion of the Nevada permit is not conclusive evidence that the Stibnite facility will meet the standard without showing that the ore composition, process parameters and operational factors are comparable.

NESHAP Subpart 7E Mercury Sources

Subpart 7E Oper. % of Subpart 7E for Controlled Hg Emissions Controlled Systems* Hg Emissions*						
Description	ton/yr	hr/yr	%	lb/hr	lb/yr	ton/yr
Autoclave	** 0.107	8,760	10.0%	0.002	21.34	0.011
Refinery Sources (Kiln, EW, Retort, Furnace)	0.008	1,248	20.0%	0.003	3.36	0.002
Total 7439-97-6	0.115			0.005	24.70	0.012

*Based on Similar Source Hg Reporting Levels provided below

**Expected actual emissions from Autoclave: 0.0105 g/hr, 2.3E-05 lb/hr, 0.20 lb/yr (M3 2019)

Similar Source Hg Reporting Levels
Goldstrike Autoclaves 2 & 3 (2015 & 2016 Hg Reports) = 10.9%
Twin Creeks Autoclaves 1 & 2 (2015 & 2016 Hg Reports) = 0.2%
Goldstrike Refinery (2015 & 2016 Hg Reports) = 14.3%
Twin Creeks Refinery (2015 & 2016 Hg Reports) = 27.4%

Review of the cited sources is confusing. There is an obvious and considerable difference in the two example reported values with no explanation for the difference or why the nominal values for the analysis were selected. The State of Nevada regulates more than 35 mines with applicable thermal process units, and has accumulated hundreds of emission test results. There is no indication in the DEQ application as to why these two particular test results were offered to demonstrate compliance with the applicable NESHAP requirements. The Goldstrike autoclaves report 32 lb/yr in 2016 and a facility-wide release of 271 lb/yr and has ranged from 166 to 709 lb/yr over the previous decade. The unusually low 0.2 lb/yr attributed to (M3 2019) is an undated and unlabeled excel sheet attachment to an email requesting various process information with the single cited value in a column title “Final Cleaned Autoclave Vent Offgas to Atmosphere.” It is not discernable from the referenced material what facility or process stream this test result applies to and any indication is appropriate for consideration in relation to the Stibnite proposal.

The application also references pages from the Nevada Operating permit. The NDEP Barrick Goldstrike Mine Class 1 Permit is 148 pages and does not include an antimony

facility. The Draft DEQ Permit, in contrast, is 34 pages and requires almost no toxic metal monitoring, testing, reporting or assessment during the life of the mining operation.

Additional comments were provided discussing the relative jurisdictional risk of other states to that of Idaho.

DEQ Response:

As discussed in the HAP and TAP Emission Updates, Midas Gold confirmed in the response to a request for additional information that the emissions data from Barrick Goldstrike Mines relied upon to estimate emissions is representative of the proposed autoclave and process, and that the remaining thermal source will not be constructed and will be replaced instead by a dewatering/packaging circuit. As a result, the antimony process dryer and bagging operation emission sources Sb1 and Sb2 have been removed from the permit.

While it is acknowledged that there are differences between Idaho and Nevada regulatory programs and requirements, compliance with applicable federal regulations and state Rules for the Control of Air Pollution in Idaho (Rules) are required to obtain a PTC. Beyond the explicit Hg emission limits for sources in NESHAP Subpart 7E, HAP and TAP particulate metals are regulated indirectly (i.e., surrogate limits) via facility-wide fugitive dust requirements, material throughput and operational limits, PM emission limits, and control device requirements. DEQ views these limits as sufficient to ensure compliance with applicable HAP and TAP requirements based on estimates of potential emissions and predicted modeled TAP concentrations, and the accuracy of autoclave and refinery emission sources estimates will ultimately be determined via testing as required by NESHAP Subpart 7E.

Comment #7: (von Lindern, ICL)

DEQ notes that fugitive emissions are exempt from the NESHAP Subpart 7E requirements for Hg and does not require any evaluation of fugitive Hg emissions. The application does note that human health toxicity for As, Sb, Cd, and Ni were exceeded and required air quality modeling to assess potential exceedance of ambient criteria. DEQ has determined that the modeling shows no significant impact and only requires general dust control measures independent of toxic metal concentrations. This is a dangerous conclusion given the lack of confidence in the source terms that cannot be assessed without a comprehensive toxic metals material balance for the operations.

It is also important to note that during promulgation of NESHAP Subpart 7E, the EPA did not include fugitive emissions in the definition of source categories. This was because there was little information to quantitatively evaluate fugitive emissions and how these may be controlled; not because there were no health concerns. NDEP has since conducted extensive evaluations of fugitive emissions at gold mining sites and has noted that fugitive Hg emissions account for as much as 20% of point source emissions, and that there are large differences in emissions between mines and emissions that vary greatly at different stages of mine development, activity, age, and reclamation. These emissions are dependent on metals concentration/host rock characteristics, surface area of mining disturbed materials, characteristics of tailings impoundments, climatic conditions, ore processing techniques, age of materials and reclamation, and natural background conditions. DEQ should take advice from NDEP and require periodic monitoring, testing, reporting and assessment of the metal content and magnitude of fugitive emissions.

DEQ Response: As discussed in the HAP and TAP Emission Updates, HAP emissions from many emission sources at SGP were determined to be exempt from demonstrations of compliance with TAP standards and/or exempt from the Mercury Emission Standard. DEQ is satisfied that compliance with fugitive dust requirements, material throughput and operational limits, PM emission limits, and control device requirements will be sufficient to ensure compliance with applicable air quality requirements.

Modeled TAP impacts are well below applicable acceptable ambient concentrations for non-carcinogens (AAC) and carcinogens (AACC). Maximum modeled concentrations for the eight non-carcinogenic TAPs that were modeled range from 0.1–14.1% of applicable AACs. Maximum modeled concentrations for the four carcinogenic TAPs that were modeled range from 0.05–1.8% of applicable AACCs. Modeled emission rates were based on applicable facility-wide maximum potential TAP emissions. DEQ also notes that the identified acceptable air impacts for carcinogenic compounds (such as Arsenic) are based on a 1-in-1,000,000 life-time cancer risk and on continual exposure to the maximum modeled, 5-year averaged impact.

Comment #8: Nez Perce Tribe (NPT) The permit does not, but must, include the potential for fugitive emissions from the tailings storage facility. There are no fugitive emissions from the tailings storage facility in the emissions inventory or appended to the Statement of Basis. Significant fugitive emissions were seen from the tailings storage facility of the Thompson Creek Mine based on an aerial tour of the Thompson Creek Mine, and similar emissions are expected from the project. In addition to PM_{10} emissions, fugitive tailings would have higher metals and cyanide concentrations than other fugitive emissions at the mine and would thus be more injurious to the environment. The potential to emit concentrations of PM_{10}, metals, and cyanide from the tailings storage facility should be included in the emissions inventory and modeled emissions scenarios and appropriate emissions controls should be identified in the permit.

DEQ Response: As discussed in the HAP and TAP Emission Updates, a response and HAP/TAP application addendum were submitted by Midas Gold that included new HAP and TAP emission estimates, including cyanide and carbon disulfide from the TSF. In the response to a request for additional information, Midas Gold confirmed it will have one TSF as identified in Figure 1 of the PTC application, in the Meadow Creek drainage upstream of the Hangar Flats pit and adjacent to (west of) the Hanger Flats Development Rock Storage Facility (DRSF). The TSF has the potential to emit mercury and hydrogen cyanide (HCN) due to evaporative flux. Spent ore from the mill will be pumped (not hauled) to the TSF as thickened tailings slurry. This process will not create criteria pollutant nor HAP/TAP emissions. The majority of the TSF surface will be either wet beach or a supernatant liquid, with some dry areas. PM from dry beach areas was estimated using EPA's wind erosion equations in AP-42 Section 13.2.5, Industrial Wind Erosion. These equations predicted that a fastest-mile wind speed of over 19 meters per second (m/s) is required to cause windblown dust from a flat, dry tailings surface. Based on SGP onsite meteorological data, the highest fastest-mile wind speed recorded was only 12.5 m/s, resulting in no estimated emissions of windblown dust and dust metal emissions from the TSF. While these emission estimates were supported, reasonable precautions to minimize dust from any high-wind events forecast to exceed 25 mph (11.2 m/s) is required in the permit (Permit Condition 2.5).

Comment #9: (NPT) Mercury emissions from the lime kiln are not quantified. Although there are no Hg limits or controls proposed for emission units associated with the lime production in the permit, there is Hg in the carbonate rock at Stibnite and Hg in the limestone will be released from the lime kiln. Mercury emissions should be accurately characterized, and there should be controls for Hg on the lime kiln regardless of the legal loopholes in the Idaho Administrative Procedures Act rules.

DEQ Response: As discussed in the HAP and TAP Emission Updates, a response and HAP/TAP application addendum were submitted by Midas Gold[1] that included new HAP and TAP emission estimates, including emissions from the lime kiln based on a metals concentration profile of the source limestone.

Mercury emissions from the lime kiln were estimated by assuming all mercury in the limestone feed is volatilized and emitted. For each non-mercury metal HAP and TAP, emissions from the lime kiln were calculated as PM emissions multiplied by the median metal concentration measured.

As detailed in the Mercury Emission Standard section of the Statement of Basis, as a source category lime manufacturing plants are subject to NESHAP 40 CFR 63, Subpart AAAAA (5A) and as such HAP emissions from the lime kiln (including mercury) are therefore exempt from this standard. Although there are no NSPS and NESHAP standards applicable to the SGP lime kiln, a baghouse control device was proposed and is required for the lime kiln (Permit Condition 5.11).

Comment #10: (NPT) DEQ erred in identifying that the public access road between Stibnite Road at Sugar Creek and Thunder Mountain Road at Meadow Creek is not ambient air. It is incorrect to consider control of the public access road as a reason to escape National Ambient Air Quality Standards (NAAQS). As the Forest Service identified in their EIS, the term "ambient air," for modeling purposes, refers to a defined area where the public has access that is subject to NAAQS. The NAAQS are promulgated to protect public health and welfare. Long-standing EPA policy has defined "ambient air" as "that portion of the atmosphere, external to buildings, to which the general public has access," and further that "the exemption from ambient air is available only for the atmosphere over land owned or controlled by the source and to which public access is precluded by a fence or other physical barriers" (EPA 2018c). More recent EPA policy expanded the range of measures that could be implemented to exclude the public from access, such as signage, monitoring of access, security surveillance, and similar effect measures (EPA 2019).

The road between Stibnite Road at Sugar Creek and Thunder Mountain Road at Meadow Creek is to be used as a public access road. The public is accessing the road and is not being excluded. Therefore, the road must be considered ambient air. Midas Gold's controlling public access is irrelevant. The relevant factor is that the public is not excluded; the only way to make the road meet the Environmental Protection Agency's ambient air definition is to exclude the public from accessing the road. As the public access road is ambient air, all emissions, modeling, and controls must be characterized and considered, and subject to the NAAQS.

DEQ Response: As discussed in the response to Comment #15, minimum requirements for primary and secondary access points to the SGP were identified and specified in the permit Access Management Plan (AMP) requirements (Permit Condition 2.7) and thus available for public review. AMP requirements include monitoring and discouraging public access.

DEQ contends that the roadway between Stibnite Road at Sugar Creek and Thunder Mountain Road at Meadow Creek was appropriately excluded from consideration as

ambient air. The roadway is completely within the boundary of mine and Midas Gold will be responsible for its maintenance and assuring conditions are safe for those using it. Use of the roadway by those not having business at the mine is completely at the discretion of Midas Gold and will be tightly controlled. Section 3.3.10 of the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis), provides a description of measures that will be taken to restrict access. Those using the road will be considered guests of Midas Gold (in much the same way tours of a business/industry may be provided to those in a school class), and they will be required to abide by access and safety procedures established by Midas Gold.

Comment #11: (NPT) The potential for fugitive dust and volatile organic compound ("VOC") emissions from the on-site landfarm has not been included in the emissions inventory. The Project will be operating a landfarm onsite, as identified in the Forest Service Stibnite Gold Project Draft Environmental Impact Statement (EIS). As identified by the Federal Remediation Technologies Roundtable, "landfarming sites must be managed properly to prevent both on-site and off-site issues with contamination. Leachate collection, fugitive dust emission control, adequate monitoring, and environmental safeguards are required." Landfarm emissions should be characterized and subject to facility-wide fugitive dust and VOC control requirements.

DEQ Response: Although identified as a possible onsite activity in the Plan of Restoration and Operations (PRO),[5] Midas Gold did not propose landfarming activities at the SGP within the PTC application. In the response to a request for additional information,[1] Midas Gold confirmed that landfarming activities are not currently planned. As a result, these activities are not authorized by the PTC. Any activities or operating scenarios not regulated by the permit or otherwise addressed in the application are not expressly permitted, and any changes proposed after permit issuance will need to be evaluated as to whether they may require modification or revision of the PTC.

Comment #12: (NPT) The modeling assumptions used for the access road are incorrect. The modeling assumptions in Table 29 of the Statement of Basis state the access road length is 1.6 miles within the Project boundary, however, the access road proposed by Midas Gold is longer, either three or four miles in length depending on the option.

DEQ Response: The source ACCRD (Access Road) listed in Table 30 of the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis), refers to the access road portion within the SGP operations boundary that runs from the south gate to the process area. ACCRD is characterized by dust emissions generated from travel of maintenance equipment, light-duty pickup trucks and buses used for employee, visitor, and contractor transportation, and heavy-duty trucks used for cargo (including fuel, consumables, machine parts, ore processing supplies, ore concentrate, etc.) and services (including food supplies, trash, recyclables, etc.) transportation. ACCRD was represented in the model as a series of LINE sources laid along the actual route. The length of ACCRD is 1.6 miles (verified by DEQ by comparing a graphical representation of the modeling input file to aerial photographs on Google Earth) and does not change with modeling scenarios.

[5] Section 8.7.4 of "Stibnite Gold Project Valley County, Idaho Plan of Restoration and Operations," the Stibnite Gold Project, September 2016. (ref. SGP 2016; 2020AAG205)

Comment #13: (NPT) The density of limestone in the modeling is unrealistically low at 1.09 g/cm^3. A more universally accepted range for limestone density should be used in the modeling.

DEQ Response: There were 15 emission sources that were modeled using a limestone density of 1.09 g/cm^3 ("limestone, dust" in The Engineering Toolbox): LS1-LS12, LSBM, LK, and LCR. The Engineering Toolbox lists a higher density of 1.36 g/cm^3 for "limestone, crushed." An argument could be made that this higher density value is more appropriate for some of those 15 emission sources. However, a lower density is the more conservative assumption because it allows material to remain airborne for a longer period of time. Hence, theoretically a lower limestone density suggests higher modeled concentrations. To satisfy the commenter's concern, DEQ performed a sensitivity analysis using a density of 2.74 g/cm^3 for those 15 emission sources (while keeping everything else in the model constant). This density value is on the higher end for solid limestone. Results from DEQ's sensitivity analyses show that the modeled particulate concentrations remain unchanged. This is consistent with DEQ's source-group analyses in Table 29 of the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis), which show that process/ancillary sources (such as those 15 emission sources) contribute an inconsequential amount to the modeled design concentrations.

Comment #14: (NPT) The PTC permit requires 93.3% fugitive dust emissions control to demonstrate compliance with the 24-hour PM_{10} NAAQS. This is an extremely high level of control, and the importance of achieving such a high level of control to assure NAAQS compliance is acknowledged by the DEQ permit writer and modeling staff.

The Tribe believes 93.3% fugitive dust emissions control is an unachievable level of control and, therefore, the SGP will violate the PM_{10} NAAQS.

(Supporting statements from the Permit Conditions and Emissions Inventories sections of the Statement of Basis concerning fugitive dust control were also cited.)

DEQ Response: DEQ believes as suggested that frequent monitoring (at least once every 12 hours) will be required to ensure sufficient application of chemical and water dust suppression, and that other measures could become necessary depending on local SGP site-specific conditions (e.g., limiting speeds and/or applying crushed gravel, as identified in Permit Condition 2.6) to ensure that reduction of PM emissions from haul roads by at least 93.3% will be achieved.

While achievable, DEQ recognizes this represents an aggressive level of control. Midas Gold has committed to undertaking all measures necessary to achieve the required level of control, and has confirmed based on a review of test studies that this level of control can be achieved using water and magnesium chloride dust suppressants (Appendix A to the application – Model Parameter/ Assumption/Data Level of Conservatism).

Comment #15: (NPT) The Fugitive Dust Control Plan (FDCP) and Operations and Maintenance Plan (O&M) are critical to meeting the requirements of the PTC permit and meeting the NAAQS and are submitted by Midas Gold within 60 days after issuance of the PTC permit. However, the public's opportunity to comment on these plans will not be available until after DEQ issues a draft Tier I operating permit. Midas Gold must apply for a state of Idaho Tier I air operating permit within 12 months after a gold mining emissions unit is built. However, the issuance of the draft Tier I air operating permit may not occur until a year or two later. This means that the Project could be operating air emissions sources for up to three years before the Tribe and the public have an opportunity to comment on the FDCP and the O&M plans. Strict adherence to these

plans is critical to ensuring compliance with meeting the NAAQS, and giving the public and the Tribe the opportunity to review and comment early and often as these plans are developed and finalized is, therefore, necessary and appropriate.

DEQ Response: Because the FDCP, O&M, and AMP documents are meant to be site-specific, 60 days is typically allowed for development of plans based upon as-installed equipment and onsite conditions at SGP. While the timing of the other plans is determined from the date of permit issuance, the O&M manual is determined from the date of process equipment installation since it will rely heavily upon manufacturer and vendor-supplied information. Although any site-specific measures developed will not be available for review until after such plans are produced, for these plans minimum requirements were identified and specified in the permit (Permit Conditions 2.1–2.6, 2.7–2.8, 2.20–2.21) and thus available for public review. At the time of permit issuance, DEQ views these minimum requirements as sufficient along with the other testing, monitoring, recordkeeping, and reporting requirements to ensure compliance with permit limits. Because additional measures beyond these may be identified as necessary to ensure compliance with fugitive dust requirements, evaluating and updating the FDCP is required at least once per year.

Additional guidance on controlling fugitive dust and developing a FDCP is provided online at DEQ Air Quality's "Compliance Assistance" webpage.

As public records, DEQ encourages interested parties to request copies of such documents. Public record requests can be made online at DEQ's "Public Records Request" webpage.

Plans are also posted online for public review during processing of the initial Tier I permit and subsequent renewals, or approximately once every five years.

Comment #16: (NPT) If Midas Gold does not commence construction of an emissions unit within two years, and an extension to the PTC permit is needed, DEQ should re-open the tribal and public comment period. Midas Gold is sure to be revising its proposed construction and operations scenarios during that time, which will lead to revisions in emissions scenarios and updated PTC permit application submissions. DEQ should provide the public with the opportunity to comment on a PTC permit renewal and any updated application materials submitted by Midas Gold since its original application.

DEQ Response: General Provision 7.5 states that the permit will expire if construction has not commenced within two years of permit issuance. If construction has not commenced, any request would be evaluated by DEQ for any additional applicable requirements prior to granting an extension.

Comment #17: (NPT) DEQ's consistent, vigilant, comprehensive, and continuous surveillance and monitoring for assurance of permit compliance will be critical to ensuring the Project is meeting the 93.3% fugitive dust control PTC permit requirements that guarantee PM_{10} NAAQS are met and human life, animal life, and vegetation, and the Tribe's Treaty-reserved resources are not injured or unreasonably affected. However, the state of Idaho lacks the robust compliance assurance, monitoring, and enforcement resources that will be necessary to inspect and regulate such a facility in a remote location and ensure the Project is meeting permit conditions and not violating the NAAQS. The minimum inspection frequency required of a PTC permit is once every five years. Given the extraordinary level of fugitive emissions controls necessary to achieve 93.3% control, and the State's own acknowledgment that this level of control will be very challenging, a once every five years inspection frequency is woefully inadequate to ensure NAAQS compliance. DEQ's own compliance monitoring and

enforcement resources for the Project should, at a minimum, include weekly on-site inspections, establish a multi-site, continuous ambient emissions monitoring network, and install web-camera monitoring. There is no indication that DEQ has this level of program resources available to accomplish their responsibilities under the Clean Air Act to implement and enforce PTC permit conditions and ensure the NAAQS are not violated.

DEQ Response: The primary responsibility for compliance with permit limits and complying with associated testing, monitoring, recordkeeping, and reporting requirements is that of the permittee (Midas Gold). DEQ is responsible for inspection of permitted facilities, and the responsibility is shared in responding to complaints.

For a facility subject to federal NSPS and NESHAP requirements and required to obtain a Tier I permit, DEQ's onsite inspection schedule will be once every two years in accordance with the Compliance Assurance Monitoring Strategy agreement with EPA.

For any fugitive dust or odor complaint received by Midas Gold, response is required (Permit Conditions 2.3 and 2.15). Any complaints received by DEQ will be responded to appropriately and as resources allow. For remote locations, a complaint response may involve a phone call to the facility. Site visits may be required based on the nature and frequency of complaints.

Comment #18: (ICL) From a regulatory perspective, we are concerned with the relative timing of the issuance of this PTC with the broader environmental analysis of the project by the Forest Service. To have this air permit issued prior to having the EIS finalized is putting the cart before the horse in some respects. The scope, extent, and impacts of mine operations on the site is pending based on the alternative selected by the Forest Service and approval of regulatory agencies. While the modeling in this permit did incorporate multiple scenarios, the lack of clarity around what alternative will be selected in the EIS makes it impossible to properly assess this permit and the modeling it is based on. In our opinion, the EIS should be finalized prior to the issuance of this permit.

From the public review perspective, the permit remains critically incomplete and should again be returned for supplemental analyses. We believe that an extension of the comment period and an informational public hearing are warranted for this permit.

The standard 30-day public comment period offered by DEQ for this PTC is too short to evaluate a pollution source of this magnitude. This public comment period overlaps with several other state and federal review processes associated with the Stibnite Mine permitting, including the public comment period for the $5{,}000^{+}$ page draft EIS. This overlap makes it nearly impossible for the public to give the permit a competent and thorough review. It is not possible, in the time allotted with the reference material provided, for an independent reviewer to assess the consistency and accuracy of the applicant's assertions. We request that the comment period be extended by at least an additional 30 days to allow for further review of this PTC. We also request that DEQ provide an opportunity for an informational public hearing for this permit given its highly complex nature and the controversial nature of the mine proposal itself.

DEQ Response: While DEQ recognizes the importance of the EIS, the procedures and requirements to obtain a PTC are independent of the EIS process, and each program has separate and distinct authorities. A PTC is issued based on information included and referenced within the air permit application. Any activities or operating scenarios not regulated by the permit or otherwise addressed in the application are not expressly permitted, and any changes proposed after permit issuance will need to be evaluated as to whether

they may require modification or revision of the PTC.

DEQ acknowledged the complexity of and level of public interest in this project, and granted extension of the comment period as requested. Although a period of 30 days is reserved for public review under Subsection 209.01, a 30-day extension for review and comment was also provided. Because updates to the application, the proposed permit, and technical review were made, an additional 30-day public comment period will also be provided to allow for review and comment on these updates.

Comment #19: (ICL)

We concur with Mr. Lindern's conclusion that IDEQ should not approve the current permit and request that the applicant provide a comprehensive material balance for various toxic metals for the operations during key lifetime periods.

We believe that DEQ should require weekly unannounced periodic monitoring and assessments of metals content in fugitive dust and significant point sources. If DEQ does not require metals monitoring in this permit, the implication is that DEQ is accepting Midas Gold's modeling as fact before the specifics of the mining operation are even set in stone. DEQ should also establish "trigger levels" noting when emissions are approaching but have not yet exceeded permitted levels of emissions.

DEQ Response:

As discussed in the response to Comment #6, particulate metals are regulated indirectly (i.e., surrogate limits) via facility-wide fugitive dust requirements, material throughput and operational limits, PM emission limits, and control device requirements. DEQ views these limits as sufficient to ensure compliance with applicable HAP and TAP requirements based on estimates of potential emissions and predicted modeled TAP concentrations.

While establishing trigger levels for emissions limits is a proactive approach to monitoring and could be included as part of site-specific FDCP requirements, trigger levels are not required by regulation beyond the opacity levels defined for nonmetallic mineral processing (NMMP). Because PM emissions from haul roads were determined to be the greatest contributor to ambient air quality impacts, haul road trigger levels for NMMP identified as best management practices were applied to all haul roads at the SGP as a reasonable precaution and minimum requirement of the FDCP (as required by Permit Conditions 2.5 and 2.6).

Comment #20: (ICL)

Inspection reports and permit compliance records need to be publicly available on the DEQ website. We will also be asking the Forest Service to provide a link to the DEQ website as part of the Forest Service's implementation and monitoring website. Posting this already-existing information on the agency webpages will eliminate the need for Public Records Requests and increase both project transparency and applicant accountability.

DEQ Response:

At this time, only issued permitting documents relating to air quality are posted online on DEQ's "Issued Permits and Water Quality Certifications" webpage.

Application materials (and Tier I permit-required plans) are posted during the public comment period for each respective permitting action on DEQ's "Public Comment Opportunities" webpage, and inspection reports and compliance documents are not currently posted online.

As public records, DEQ encourages interested parties to request copies of such documents. Public record requests can be made online at DEQ's "Public Records Request" webpage.

Comment #21: Save the South Fork Salmon (SSFS)

The stated dust control efficiencies, which are "critical to NAAQS compliance," are unrealistic and therefore cannot form a reasonable basis for approval of the air permit.

Idaho Air Rules Section 203.02 prohibits the issuance of a permit for a new or modified stationary source if that source "would cause or significantly contribute to a violation of any ambient air quality standards." DEQ has not reasonably determined that combined fugitive dust from mining operations and vehicular traffic will be sufficiently controlled so that emissions will not cause or contribute to a violation of ambient air quality standards. DEQ, therefore, cannot approve Midas Gold's air permit application.

The Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis) states that emissions from unpaved roads were based on a combined control efficiency above 93% with combined chemical application and watering, and that "it is critical for NAAQS compliance that this high level of control be achieved." The Impacts Analysis also recognizes that these fugitive emissions from roadways are the most difficult to control. Just within the mine site itself, there will be 55 miles of unpaved roadways with a fleet of 32 haul trucks weighing between 37 and 357 tons. The Impacts analysis also recognizes that "it may prove challenging to consistently and continuously achieve targeted levels of fugitive dust control." But consistently achieving at least a 93% control efficiency is exactly what is required to comply with particular ambient air quality standards. Neither Midas Gold nor DEQ has demonstrated that that 93% efficiency of fugitive dust control from unpaved roadways using the methods described in the application is reasonable.

DEQ Response:

As discussed in the response to Comment #14, DEQ recognizes this represents an aggressive level of control. Midas Gold has committed to undertaking all measures necessary to achieve the required level of control, and has confirmed based on a review of test studies that this level of control can be achieved using water and magnesium chloride dust suppressants (Appendix A to the application – Model Parameter/ Assumption/Data Level of Conservatism).

Comment #22: (SSFS)

The FDCP lacks the necessary detail to ensure that the Stibnite Gold Project will comply with NAAQS.

In order to justify its unreasonable assumption that Midas Gold can effectively control fugitive dust from unpaved roads and vehicular traffic, the draft permit requires Midas Gold to have a FDCP in place at the time the final permit is issued. The details of this plan at this time is trivial both in content and detail. The permit should not be issued without a FDCP that is open to public review and verifies methods to achieve and verify the dust control effectiveness proposed.

Ensuring compliance with NAAQS for PM may require additional measures beyond chemical application and watering, particularly during the warm weather season. These additional measures may include lowering vehicle speeds, road treatments with crushed rock, and grading or scarifying, as needed. More monitoring may be proposed, such as performing daily visible emissions checks during daylight hours, monitoring weather conditions, including wind speed and direction, and keeping daily records on watering or chemical application. Considering the unusually high effectiveness of dust control required to meet NAAQS and the difficulty in meeting those efficacy requirements due to the nature of dust creation, there should be requirements for extensive, detailed, and continuous monitoring and recordkeeping to verify the efficacy of emissions controls, regular inspections, and additional measures, including enforceable limits on traffic volume or vehicle speed, to ensure that dust is controlled during the warmer weather season.

Because an effective FDCP is required to potentially reach control efficacy rates required to meet NAAQS, the FDCP should be available for public comment prior to approval of this permit. Without this FDCP and an explanation of how Midas Gold can reasonably meet the required 93% dust control efficacy, DEQ failed to explain how Midas Gold will meet NAAQS and thus approve the permit.

DEQ Response: As discussed in the response to Comment #14 and Comment #15, Midas Gold has committed to undertaking all measures necessary to achieve the required level of control, and minimum requirements were identified and specified in the permit for the FDCP. As suggested, because additional measures beyond these may be identified as necessary to ensure compliance with fugitive dust requirements, evaluating and updating the FDCP is required at least once per year.

Comment #23: (SSFS) The impact analysis underestimates potential emissions by assuming the emissions scenario will be the same throughout the entire life of mining.

Emissions from blasting, mining, and materials management were modeled as a volume source inside a pit at year seven, after several years of mining will have deepened the pits. Emissions escaping from the pits from blasting and associated ore transport and handling would be greater and have more impact per volume of ore processed in the earlier years when pits are less deep. Emissions may also vary due to spatial distribution over the different years the mine is in operation. Thus, the predicted ambient air quality impacts may be underestimated by not analyzing the maximum potential daily emissions during earlier years when the pits are less deep or not analyzing the different spatial distribution or potentially different concentrations from one pit and disposal area to the next.

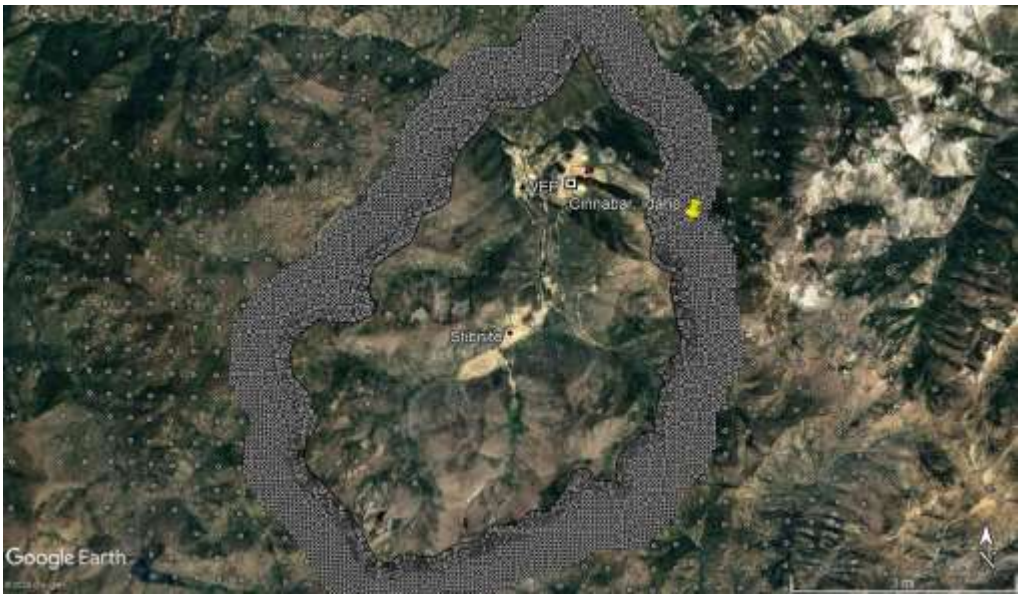
DEQ Response: Emissions from mining operations (drilling, blasting, material extraction and movement, mobile mine machinery use, and other ancillary sources) vary for each year of the life of the mine (LOM). However, for the modeling analyses, the mining operation potential emissions were estimated using conservatively high maximum activity rates as limited in the permit and summarized in Table 3 of the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis), (i.e., extracting and hauling 180,000 tons per day (T/day) of ore or development rock). The maximum mine production rate is approximately 42.7 MMT/yr; however, a maximum daily production rate of 180,000 T/day used for potential emission calculations results in a conservatively higher production rate of approximately 65.7 MMT/yr, approximately 50 percent higher than the projected production rate. Also, the modeled emissions were based on maximum short-term activity rates occurring continuously, including blasting emissions based on one blast occurring every hour for the applicable 1-hour standards, and two blasts occurring every day for the applicable 24-hour standards. Actual blasting is not expected to exceed one blast per day.

Accurately accounting for all potential configurations is effectively impossible. DEQ contends that other conservative assumptions in analyses (such as assuming that design value modeled values occur simultaneously with design value background concentration values) will offset any unintended underestimation of emissions that occur because of uncertainties and variabilities.

Comment #24: (SSFS) The impacts analysis failed to consider particulate ambient air concentrations at the Cinnabar site. The permit application proposes mining rates of 180,000 tons material per day from the West End pit. The West End pit is located in the Sugar Creek drainage about two kilometers northeast of Cinnabar Peak. Modeling shows that particulate ambient air concentrations at Cinnabar Peak would exceed NAAQS limits

and qualitatively show that lower mining rates at the West End pit of about 120,000 tons per day would be required in winter to barely comply with ambient air quality standards. There is no demonstration of NAAQS compliance for winter conditions. Therefore, a permit that allows operations during winter conditions cannot be issued. (If the permit applicant argues that the scenario modeled isn't representative, the burden is on the applicant to provide a representative modeling analysis. If there is less activity in the winter, then there would be more activity in the warmer seasons where there would be a serious potential for dust to reach the annual levels throughout. The draft permit's dust control efforts would be challenged to meet the levels modeled and needed to show compliance assuming 93% control efficiency.)

DEQ Response: The figure below shows the location of West End Pit (WEP) with respect to Cinnabar. It shows that WEP is located to the west, not northeast, of Cinnabar.



The figure below (note that north is facing to the right) shows the locations of WEP, Cinnabar, and the hotspot receptors that show modeled violations of 24-hour PM_{10} NAAQS when using the BULKRN met dataset.

To evaluate the degree of NAAQS compliance confidence for 24-hour PM_{10}, DEQ

performed a weight-of-evidence analysis as described in Section 4.1.4 of the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis). NAAQS compliance was demonstrated in the application using meteorological data processed with an EPA-approved method using regional cloud cover to calculate stability parameters rather than site-specific monitored solar radiation and measured temperature differences with height.

All modeled violations for 24-hour PM_{10} when using BULKRN met data at a proposed mining rate of 180,000 tons material per day (T/day) occur during winter. During winter, fugitive road dust emissions are likely overestimated because of the higher moisture content of material handled or driven over. The permit requires at least 93.3% control of maximum potential fugitive emissions, but the fugitive emissions may in fact be controlled by more than that, especially during winter and periods of precipitation. Also, background concentrations in such remote areas during winter are generally much lower because of the absence of wildfires and dust-generating sources. Background PM_{10} concentrations represent the higher end of the distribution. Accounting for reduced fugitive emissions during wintertime conditions and accounting for lower background concentrations will easily demonstrate compliance with the 24-hour PM_{10} NAAQS without the need to rerun the model for wintertime conditions. The 180,000 T/yr mining rate was established as a permit limit (Permit Condition 3.5) and is reflected in the modeling for all months of operation.

DEQ is confident that operation of the SGP will not cause or contribute to a violation of NAAQS. This is based on: (1) the submitted application materials and analyses, (2) DEQ's supplemental analyses, and (3) the assumption that the facility is constructed and operated as described in the application and limited by the PTC.

Comment #25: (SSFS)

The analysis of HAP failed to consider all potential sources and therefore underestimates emissions. DEQ failed to consider all sources of HAP, and thus HAP emissions are underestimated. While DEQ did consider emissions from diesel and propane combustion from stationary sources and from cement production, emissions from several other potential sources were omitted:

- the autoclave,
- the proposed onsite lime kiln, and
- Sb, Se, and other heavy metals and HAP from the large number of stationary and mobile source dust emissions.

The feed for both the autoclave and lime kiln contain considerable metals and HAP. The concentrations of HAP and metals in the feed of ore is inexplicably lower than the concentrations documented in the *SGP Baseline Geochemical Characterization Report* (2017). Similarly, the concentration of metals and HAP in the material to be processed for lime in the permit application were based on generic offsite data, and are inconsistent with the concentrations expected in the onsite feed in this area specifically chosen for significant heavy metal concentrations in the ground. Failure to appropriately represent HAP and metal concentrations in these feed materials is a significant oversight and needs to be addressed.

HAP, including Hg, are not considered in any of the voluminous fugitive dust generated by both stationary and mobile sources for the proposed action. Any assessment of metals and HAP in dust or emissions generated anywhere in the project area should be based on the ore concentrations documented by Midas Gold in the *SGP Baseline Geochemical Characterization Report* (2017).

DEQ Response: As discussed in the HAP and TAP Emission Updates, new HAP and TAP emission estimates new HAP and TAP emission estimates included emissions from materials mined, moved, processed, and refined; from process reagent usage; and from fuel combustion at SGP. All permitted sources (fugitive and point) were evaluated, including the autoclave, lime kiln, and tailings storage facility. Metal HAP and TAP emissions from process materials were based on metal concentration profiles from onsite core samples of ore and limestone materials, including 98 samples of SGP limestone and over 55,000 samples of SGP ore. Each profile included concentrations of metals such as Sb, As, Cd, Hg, Ni, and Se. SGP ore samples were taken primarily from the mineralized zones of the SGP pits and were therefore more representative for the purposes of estimating emissions than data referenced in the *SGP Baseline Geochemical Characterization Report* (2017).

Midas Gold also specified that a venturi scrubber, vent gas cleaning tower, vent gas steam condensation tower, and one or more sulfur-impregnated activated carbon filters will comprise the mercury control devices for the autoclave. Permit Condition 4.13 was added to require these controls. Controlled mercury emissions from the autoclave were estimated based on SysCAD modeling of process chemistry.

Comment #26: (SSFS) Modeling using straight-line dispersion of emissions fails to account for the topography of the area, and results in an underestimation of the impacts. The near-field analyses of impacts within 10 kilometers of the project site all assume straight-line dispersion based upon onsite surface winds measured in a central location within the project area, and are only representative of a small area near the monitoring station. Actual dispersion in this area is terrain driven, flowing up, down, and around valleys, and over ridges to the next valley. Assessing impacts using straight-line dispersion therefore may not reflect impacts at all locations and actually underestimate impacts of emissions.

DEQ Response: DEQ concurs with the commenter that dispersion in complex mountainous terrain is not well characterized by straight-lined Gaussian dispersion models utilizing a single wind direction and speed. DEQ also concurs that a potentially more accurate way to assess impacts of a source in complex terrain would be to use a more refined model with terrain-influenced meteorology and pollutant concentration "memory" from one time-step to the next, such as CALPUFF or other puff models. The objective of the air impact analysis is to satisfactorily evaluate whether the proposed project will not cause a violation of an applicable air quality standard or increment.

The Gaussian, straight-line model AERMOD has been identified by EPA as the "regulatory guideline model" for stationary source permitting, as established in 40 CFR 51, Appendix W (Guideline on Air Quality Models). AERMOD was used by Midas Gold to evaluate NAAQS and TAP increment compliance, and DEQ contends that it is appropriate for this purpose. DEQ also contends that results obtained, using the input parameters described in the application, assure compliance with a high degree of confidence, thereby justifying permit issuance. Also, the Midas Gold PTC is a minor source permit, and use of resource-intensive models such as CALPUFF would be overly burdensome for such projects.

Straight-line Gaussian dispersion models tend to over-predict impacts in complex terrain, especially with increasing distance from the source. However, improved algorithms in the AERMOD model do address terrain effects at a reasonably conservative (over prediction of concentrations) level. Also, studies have generally demonstrated that Gaussian models perform reasonably well at estimating the magnitude of maximum impacts, especially at longer averaging periods; however, they perform poorly at predicting the location and time of maximum impacts. The

EPA-approved AERMOD Gaussian model has been established as acceptably accurate for assessing air quality impacts from stationary sources, even in rather complex terrain.

Comment #27: (SSFS) The impact analysis fails to account for release of Hg from terrestrial sources. The impacts analysis does not account for Hg respiration from vegetation after uptake. Uptake of Hg by vegetation is the largest point of entry for atmospheric Hg into terrestrial environments. Due to the long history of mining in the area, the predicted impact from respiration is 19% above background levels. The impact analysis did not account for this potential release of Hg.

DEQ Response: Mercury modeling was not performed by the applicant for the PTC application because it was not required by regulation.

Comment #28: (SSFS) There are no air impact analyses regarding post-mining conditions. The entire air quality analysis says nothing about post-mining conditions, other than the applicant will attempt to revegetate. Because of the climate, metals, and chemicals in the area, there will be limits to the effectiveness of revegetation. The area will remain a source of dust and erosion contaminated with heavy metals. The permit should account for this source of emissions.

DEQ Response: DEQ's requirement for permit issuance is to assure that all operations performed will not cause a violation of NAAQS or a TAP increment. DEQ is confident that emissions and impacts to ambient air resulting from post-mining conditions will be less than those associated with activities during active mining or ore processing.

In the response to a request for additional information,[1] Midas Gold confirmed that post-mining activities at the SGP will not commence until mining is completed in approximately 12 years or more. Post-mining activities will remain subject to permit conditions, including pertinent facility-wide conditions such as fugitive dust, visible emissions, and odor requirements (Permit Conditions 2.1–2.15) and operating limits such as the hauling limit (Permit Condition 3.5). Any activities or operating scenarios not regulated by the permit or otherwise addressed in the application are not expressly permitted, and any changes proposed after permit issuance will need to be evaluated as to whether they may require modification or revision of the PTC.

Comment #29: (NPT) Permit Condition 2.1 should include secondary NAAQS factors when considering what are reasonable precautions. In addition to "...proximity of dust-emitting operations to human habitations and/or activities and atmospheric conditions which might affect the movement of PM...," DEQ should include public welfare protection, proximity to critical habitats, and potential for damage to the environment.

DEQ Response: PTC permit issuance only requires demonstration of compliance with NAAQS and TAP increments. As stated in Section 4.1.2 of the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis), "Modeling for ozone and secondary $PM_{2.5}$ were not performed for this minor stationary source. These analyses are typically associated with applications for major stationary sources. Nonetheless, taking the ratio of the VOC, NO_x, and SO_2 emissions from the SGP facility by the emissions and resulting concentrations of O_3 and secondary $PM_{2.5}$ from EPA's modeled emission rates for precursors (MERPs) guidance yields estimated O_3 and secondary $PM_{2.5}$ concentrations of less than 1 ppb of O_3 and less than 0.1 $\mu g/m^3$ of $PM_{2.5}$ (24-hour and annual) for the SGP facility. These estimated concentrations have a negligible effect on compliance demonstration with the NAAQS."

Comment #30: (NPT) There is no monitoring procedure identified for fugitive emissions other than for haul roads (Permit Condition 2.5). A method and duration should be identified for the other sources of fugitive emissions (e.g. stockpiles, transfer points, tailings storage facility, access roads, tailpipe emissions from startup and idling). DEQ should require Method 22 evaluation for a minimum of six minutes at each source during fugitive emission inspections.

DEQ Response: While Method 22 is specified as the default approved test method for visible fugitive emissions (Permit Condition 2.25), duration is not specified by regulation.

As discussed in the response to Comment #19, fugitive visible emission limits are not required by regulation beyond the opacity levels defined for NMMP. Because PM emissions from haul roads were determined to be the greatest contributor to ambient air quality impacts, haul road trigger levels for NMMP identified as best management practices were applied to all haul roads at the SGP as a reasonable precaution and minimum requirement of the FDCP. Extending applicability of this requirement facility-wide and applying the specified observation periods was considered reasonable and appropriate for this activity.

Comment #31: (NPT) There is discrepancy in frequency of the recordkeeping Permit Condition 2.2 ("each day") and inspection Permit Condition 2.4 ("every 12 hours"). Recordkeeping frequency should be adjusted to match the inspection frequency.

DEQ Response: Permit Condition 2.4 was updated for consistency with the inspection frequency as requested and to ensure that fugitive emissions are reasonably controlled.

Comment #32: (NPT) During winter months when daylight is less than 12 hours, it should be specified that one inspection per day should occur during daylight hours.

DEQ Response: Permit Condition 2.2 was updated as requested to require at least one daily inspection during daylight hours to help ensure that fugitive emissions are reasonably controlled.

Comment #33: (NPT) Prior to onset of winter conditions each year, the condition of the haul and access roads should be assessed before freeze-up and required maintenance needed to maintain the roads through the winter months should be performed, and any preventative dust suppression activities should be completed before the roads are frozen and liquid application of suppressants or water are unrealistic.

DEQ Response: Permit Condition 2.6 was updated as requested to include this requirement to help ensure that fugitive emissions are reasonably controlled.

As discussed in the response to Comment #14, DEQ believes as suggested that frequent monitoring (at least once every 12 hours) will be required to ensure sufficient application of chemical and water dust suppression and that this is a reasonable precaution in advance of the winter season to minimize fugitive dust from roadways.

Comment #34: (NPT) Permit Condition 2.10 includes a tiered approach for visible emissions evaluation. The see/no see part of this evaluation should specify a method and duration. DEQ should require Method 22 for a minimum of six minutes at each source.

DEQ Response: Permit Condition 2.10 addresses visible emissions from point sources. The intent of a see/no see evaluation is instantaneous observation; if any dust is at all visible, either corrective actions are to be employed or Method 9 observation performed.

Permit Condition 2.4 addresses visible emissions from fugitive sources. As discussed in the response to Comment #19, limits are not required by regulation beyond the opacity levels defined for NMMP, and corresponding observation periods are specified. While Method 22 is specified as the default approved test method for visible fugitive emissions (Permit Condition 2.25), duration is not specified by regulation.

Comment #35: (NPT) DEQ should require the permittee to designate specific employees to be the on-site visible and fugitive emissions observers solely responsible for fulfilling the ongoing PTC permit requirements of conducting the required test methods and procedures of EPA Reference Method 9 and Method 22, initiating any appropriate corrective actions, and completing and maintaining recordkeeping.

DEQ Response: Although designation of specific employees is not required by the permit or by regulation, training on the specified methods is required for observers. Because certification is required for Method 9, only trained employees will be able to perform once-per-day observations of point sources as required by Permit Condition 2.10. Similarly, only employees with an understanding of the procedures of Method 22 will be able to perform the 12-hourly observations of fugitive sources as required by Permit Condition 2.4.

Comment #36: (NPT) DEQ should have a 95% completeness requirement for recordkeeping of fugitive and visible emissions inspection records.

DEQ Response: The permit requires that records be maintained at all times to ensure compliance (General Provision 7.10) and that records be retained for a period of five years.

Comment #37: (NPT) Permit conditions should include the following additional monitoring requirements:

- Real-time continuous $PM_{2.5}$ and PM_{10} monitoring located to capture worst-case dust emissions from haul roads (set trigger for one-hour NAAQS, make publicly accessible, and if there is an on-going exceedance of trigger after control measures taken, reassess control efficacy and/or shut down until problem resolved);
- Publicly-accessible web cameras, equipped with opacity measurement and alert system, set to have the sun behind the camera during daylight hours, looking at emission sources for ongoing assurance of point and fugitive emissions controls;
- Use of aerial drones to view spatial and temporal emissions such as distance and time road dust travels from roadways, and extent and duration of blast emissions; and
- Pairing/collocating meteorological monitoring (wind speed, direction, ambient temperature, delta temperature, relative humidity, precipitation, and solar radiation) with the real-time continuous $PM_{2.5}$ and PM_{10} monitoring, publicly-accessible web cameras, and aerial drones.

DEQ Response: DEQ is requiring extensive fugitive dust control measures in the permit and has conducted a modeling analysis that demonstrates compliance with NAAQS. Therefore, DEQ is not requiring any ambient air monitoring in the permit.

Comment #38: (NPT) The Statement of Basis refers to an Access Control Plan (ACP) on page 39 and an Access Management Plan (AMP) on page 24, while the PTC permit refers to an Access Management Plan (AMP) on pages 9 and 10. If these are the same plans, we suggest DEQ be consistent in the naming of this plan.

DEQ Response: The Statement of Basis was updated for consistency with the permit, with all instances now referencing the Access Management Plan as intended.

Comment #39: (SSFS) The estimated HAP metal concentrations are significantly lower than those reported in Stibnite assay data. The references used in the PTC application to provide estimated HAP metal concentrations were from "generic" off-site lime and ore feedstocks from facilities not representative of the Stibnite mine – i.e. facilities that do not process Sb. Every ore body is unique in its chemical composition and one cannot use proxy data from another mine or some sort of average to accurately characterize rock chemistry at the Stibnite site. It is not known, for example, if these values were taken from similar Nevada mines, as was done for many other parameters, or whether they were actual Stibnite ore assay values. As discussed further below, the PTC application should have used HAP metal concentrations reported in the latest Stibnite assay data and data supplied in other permit processes. Lack of using appropriate HAP metal concentrations renders the air permit emissions calculations incorrect and incomplete.

The assumptions made regarding the concentrations of HAP metals from various emission sources are unsupported and appear to be severely underestimated. The PTC application only gives HAP metal concentration values for dust emissions from ore processing. See PTC Application, Appendix B at 28. The derivation of these values is in question. The reference provided to support these values is in an email from R. McClusky of Midas Gold (Midas Gold 2017c). Were these values from Nevada mines, and why weren't the reported Stibnite ore assay values used? The contents of this email are not available for public review, and the public is thus unable to verify whether these values are reasonable.

HAP metal concentration values can be found in Table 30-7 of SRK, *SGP Baseline Geochemical Characterization Report* (2017) at page 3-27. As shown in Table 3-7, the assay values for HAP metals are significantly higher than those given in the application. If ore samples are averaged (which would be appropriate for calculations involving dust emissions from ore processing), the Sb concentrations are 55 times higher in the SRK report than the 23 parts per million (ppm) given in the application. As and Hg value are five times higher. Since As, Sb, and Hg are the primary contaminants of concern (COC) at Stibnite and are present throughout the site in rock, soil, and water, the values in the SRK report appear to be more reasonable. Air permit emission calculations that are not based on reasonable values found in the Stibnite assay data are therefore incomplete.

The PTC application should be considered incomplete or inaccurate until Midas Gold either reruns all calculations and modeling involving HAP using the actual rock assay concentrations, or provides clear justification as to why the presently used values provide a more accurate prediction of emissions.

DEQ Response: In the response to a request for additional information,[1] Midas Gold confirmed that HAP and TAP emissions from all permitted sources (fugitive and point) were evaluated, including the autoclave, lime kiln, and tailings storage facility. Metal HAP and TAP emissions from process materials were based on metal concentration profiles from onsite core samples. SGP ore samples were taken primarily from the mineralized zones of the SGP pits and were therefore more representative for the purposes of estimating emissions than data referenced in the *SGP Baseline Geochemical Characterization Report* (2017). In applying these datasets, the use of either median or geomean values in emission estimates was supported because concentration averages were unduly influenced by a small number of high values which skewed distributions.

Comment #40: (SSFS)

HAP calculations for potential emissions sources are missing. The only HAP calculations of this sort presented in the PTC application are specifically for dust emissions from ore processing. There is no single table shown for HAP emissions by source, yet the PTC application shows much higher facility-wide HAP emission rates than for ore dust alone. See PTC application at 120 (Table 9). What is unknown therefore, are the HAP contributions from other sources, and how these values might increase if real assay concentration values were used in the calculations and modeling. For example, calculations might use an average derived from the development rock samples shown in SRK Table 3-7, above, to represent HAP content of fugitive dust from any number of activities not directly associated with ore processing onsite. One could parse this analysis even finer by making appropriate assumptions about what HAP concentrations would be applicable to each source (e.g., use ore values for the tailings storage facility and development rock values for the development rock storage facilities). Most of the project area is mineralized to some extent and the development rock values are certainly more representative of true conditions than the obviously low values given in the PTC application.

Furthermore, Hg was the only HAP that was considered when modeling fugitive dust effects, though As and Sb are accounted for in ore processing dust. And there is no explanation as to why that is the case. Additionally, HAP metals were not accounted for in the autoclave exhaust. Why were they omitted in emissions calculations? Many will certainly volatilize in the autoclave. Are the stack scrubbers designed to remove all of them? The autoclave wet scrubber manufacturer does not guarantee its control efficiency. See PTC Application at 26.

Another HAP source that seems to have been overlooked are emissions from the lime kiln itself. Along with the accounted for carbon dioxide, many of the HAP metals will also be volatilized during the calcining process. Nowhere is it stated what the feedstock for the lime kiln will be. Presumably, it will be mined from one of several marble formations on site. Some of these (particularly the Fern marble) contain significant amounts of Hg. The average HAP concentrations for carbonate rocks shown in the SRK Table 3-7, above, should be of some value in calculating lime kiln HAP stack emissions.

Mercury from the lime kiln, in particular, must be considered. Those of us who have lived around McCall for a while are aware that the Hg contamination in Payette Lake is a result of being directly downwind of Ash Grove Cement Company's plant in Lime, Oregon, which had the dubious distinction of being the Northwest's single largest Hg emitter. Hg and lime manufacture go hand in hand. Ash Grove finally cleaned up their operation with some effective emission controls. Will any such controls be required for the Stibnite operation? It seems that Midas Gold in their PTC application is trying hard to avoid regulations pertaining to the lime kiln, as they spend some time trying to discount potentially applicable regulations. See PTC Application at 231. An example of one somewhat disingenuous argument is that certain performance standards are inapplicable because their lime kiln is a parallel flow regenerative (PFR) shaft design rather than a rotary kiln. While the regulation in question was written in 1984, the PFR was not invented until 1989. This appears to be merely an attempt to avoid the actual intent of the regulation. The HAP are still going up the stack regardless.

Midas Gold needs to include HAP concentration calculations from sources other than the ore processing alone, and do so using appropriate HAP metal concentration data and consider all HAP that may be emitted.

DEQ Response:

As discussed in the HAP and TAP Emission Updates, new HAP and TAP emission estimates were provided that included emissions from materials that will be processed at SGP. All permitted sources (fugitive and point) were evaluated, including the autoclave, lime kiln, and tailings storage facility. Metal HAP and TAP emissions from process materials were based on metal concentration profiles from onsite core samples. SGP ore samples were taken primarily from the mineralized zones of the SGP pits and were therefore more representative for the purposes of estimating emissions than data referenced in the *SGP Baseline Geochemical Characterization Report* (2017).

Midas Gold also specified that a venturi scrubber, vent gas cleaning tower, vent gas steam condensation tower, and one or more sulfur-impregnated activated carbon filters will comprise the mercury control devices for the autoclave. Controlled mercury emissions from the autoclave were estimated based on SysCAD modeling of process chemistry. Non-mercury metal HAP and TAP emissions from the autoclave mercury control system are expected to be less than the mercury emissions. As a conservative assumption, non-mercury HAP and TAP emissions were assumed to be equal to mercury emissions. This was considered conservative because mercury is the most difficult metal to control as it exists in both gaseous and particulate forms. All other metals identified for SGP exist only as particulates and therefore are expected to be more easily controlled by the mercury control system. Mercury emissions from the lime kiln were estimated by assuming all mercury in the limestone feed is volatilized and emitted. For each non-mercury metal HAP and TAP, emissions from the lime kiln were calculated as PM emissions multiplied by the median metal concentration measured.

Because As, Sb, Hg, and other HAP emissions from the autoclave and lime kiln are addressed by NESHAP (Table 8 of the Statement of Basis), requirements for each of these sources is governed by the relevant NESHAP in addition to material throughput and operational limits, PM emission limits and testing, and control device requirements (Permit Conditions 4.3, 4.7, 4.13, 4.32, 5.3, 5.5, and 5.11).

Comment #41: (SSFS)

The inaccurate and incomplete HAP concentrations raises questions as to whether the facility is a major source. The apparent under-reporting of HAP emissions discussed above raises questions as to the classification of the Stibnite Gold Project facilities as a "non-major" emissions source as defined in IDAPA 58.01.01.008.10. The regulations are somewhat confusing regarding how fugitive dust is accounted for. Subpart c of suggests that fugitive dust doesn't get counted. But an exception is made for "designated facilities," which the lime kiln appears to be under IDAPA 58.01.01.008.10.c.i, thus requiring the inclusion of fugitive dust in an inventory. But as mentioned before, some sources of fugitive dust are counted in the PTC application, while others are not. Sometimes As and Sb are counted as HAP, and sometimes not. A full inventory and accounting of all HAP from all sources needs to be explicitly set forth for public review, and requires inclusion of a Fugitive Dust Control Plan that apparently does not yet exist. Because a Fugitive Dust Control Plan showing continuous 93.3% dust control (that IDEQ documents would be challenging to consistently meet) is necessary to support the National Ambient Air Quality Standards compliance demonstration, the Fugitive Dust Control Plan must go through public review and include methods to verify continuous compliance.

Once such a comprehensive inventory of HAP emissions based upon real assay data is complete, IDEQ needs to review the provisions of IDAPA 58.01.01.008.10 to determine the proper classification of this facility.

DEQ Response: As discussed in the HAP and TAP Emission Updates, a response and HAP/TAP application addendum were submitted by Midas Gold that included new HAP and TAP emission estimates and a source-by-source inventory of HAP and TAP emissions. For new facilities, emissions from all emission sources (including fugitive sources) should be included in facility-wide criteria pollutant, HAP, and TAP emissions inventories. The facility was re-classified as synthetic minor for emissions of single HAP and total HAP and although not explicitly calculated, Midas Gold estimated that the uncontrolled PTE for HAP pollutants exceeded 10 T/yr of an individual HAP and 25 T/yr of total HAP.

While all emissions should be accounted for within these inventories, certain emissions may not be applicable and therefore not counted for regulatory purposes. HAP emissions from many emission sources at SGP were determined to be exempt from demonstrations of compliance with TAP standards and/or exempt from the Mercury Emission Standard. Fugitive emissions of criteria pollutants are not counted toward PSD classification, with the exception of fugitive emissions from designated facilities such as the lime kiln.

As discussed in the response to Comment #15, minimum requirements for the FDCP were identified and specified in the permit and thus available for public review. At the time of permit issuance, DEQ views these minimum requirements as sufficient along with the other testing, monitoring, recordkeeping, and reporting requirements to ensure compliance with permit limits and synthetic minor classification.

Comment #42: (SSFS) The PTC needs to include a stringent air quality monitoring program to ascertain the validity of the model predictions. Given the ubiquitous presence of metal HAPs on site, the numerous air dispersion pathways, and the model uncertainties, it is essential that extensive monitoring be required to confirm compliance with permit conditions. One specific monitoring project should include water quality monitoring for pH, and metal HAP in the chain of lakes located in the headwaters of the West Fork Monumental Creek. This site is located 6 miles NNE of Stibnite in the Frank Church River of No Return Wilderness and is a logical location to monitor airborne contaminant deposition from the Stibnite Gold Project. Should any of the various monitoring programs indicate non-compliance, appropriate corrective actions taken in a timely manner need to be stipulated.

DEQ Response: As discussed in the HAP and TAP Emission Updates, DEQ is satisfied that compliance with fugitive dust requirements, material throughput and operational limits, PM emission limits, and control device requirements will be sufficient to ensure compliance with applicable air quality requirements.

Although the suggested monitoring may be beneficial and useful for other purposes, water quality parameters measured at the suggested locations would be difficult to correlate directly to air quality emissions and impacts from the SGP. It was therefore not considered appropriate to require monitoring of these parameters in the PTC to ensure compliance with air quality requirements.

Comment #43: (von Lindern) It seems the PTC is premature, as the nature of operations have yet to be assessed at the draft EIS stage. As noted earlier, there are overlapping comment periods for at least four major regulatory actions regarding this facility including: DEQ, Idaho Department of Lands, Forest Service, and the EPA. All of these submittals including the PTC are exceedingly difficult to review.

Many of the technical material presentations are shallow, vague descriptions with non-specific citations to voluminous non-transparent reference materials. It is unfortunate that the applicant has gone to the effort to collect such an impressive

database, yet presents analyses nearly impossible to unravel without tedious and unnecessary reverse engineering efforts from cumbersome poorly organized reference materials. There are material and contaminant balance deficiencies across all media. This is particularly true, as there are apparent inconsistencies in the applicant's assertions to different review authorities with respect to important interdisciplinary issues.

The metallurgical process considerations key to determining pertinent regulatory permit considerations assume a configuration not yet evaluated nor approved by other agencies. There is little technical specificity to adequately evaluate assertions made by the applicant, only broad statements to operate in a manner similar to operations in other States, with no confirmation that either the technical or regulatory schemes are comparable.

The title of the spreadsheet Air Sciences spreadsheet alone (2020AAG1077), not to mention the intricate contents, are testimony to the complexity and extended review required to adequately understand this application. Most importantly, the applicant's assertions and presentation lacks transparency and coherence. EPA defines transparency to "… ensure that the regulatory science underlying its actions is publicly available in a manner sufficient for independent validation." https://www.regulations.gov/document?D=EPA-HQ-OA-2018-0259-9322 Coherence is the quality of being logical and consistent, or presented in a manner in which all the parts fit together to form a united whole. It is not possible for an independent reviewer to assess the consistency and accuracy of the assertions made in the PTC.

No coherent evaluation of COC – Hg, As, Sb, Cd, Ni - has been presented, nor can one be developed from the references and support materials provided. As a result, a public reviewer can neither quantitatively assess, nor rely on the source descriptions for environmental modeling and impact analyses. These data should be developed coherently in a comprehensive, connected format applying basic scientific principles of conservation of mass and energy. This document does not include a material mass balance for COC. As noted in the earlier comments, a complete material balance for COC should be required.

DEQ Response:

As discussed in the response to Comment #18, the procedures and requirements to obtain a PTC are independent of the EIS and other permit and approval processes and programs. Any activities or operating scenarios not regulated by the permit or otherwise addressed in the application are not expressly permitted, and any changes proposed after permit issuance will need to be evaluated as to whether they may require modification or revision of the PTC.

As discussed in the HAP and TAP Emission Updates, while a material balance is a useful approach to developing emission estimates, other methods are valid and accepted by DEQ. The complexity of this project is also acknowledged by DEQ. Because updates to the application, the proposed permit, and technical review were made, an additional 30-day public comment period will also be provided to allow for review and comment on these updates.

Comment #44: (von Lindern)

In the earlier comments, it was identified that fugitive dusts were evaluated only for particulates with no regard for toxic metals, and in particular As. In the 10/27/2020 Public Information Meeting regarding the PTC, DEQ confirmed this conclusion and indicated that greater than 93% control of fugitive dusts will be required as a permit condition to meet off-site ambient particulate criteria. It is not unreasonable to assume that particulates containing up to 0.5% As would represent inappropriate carcinogenic and carcinogenic risk at the same off-site locations. Moreover, this is, as DEQ

expressed, an aggressive level of control not typical for other sites. Reportedly, Midas Gold has assured DEQ that this level of control will be achieved, although no details have been developed to support this claim. Of greatest concern is that DEQ anticipates not requiring any ambient monitoring to assure the 93% criteria is achieved, and no monitoring to assess risk to human health during operations.

There are numerous sources of fugitive dusts throughout the proposed operations. These sources will be rich in As. An estimated 737,683–2,213,215 tons of As will be disturbed during mining. About 57% of the disturbed As will be in the development rock (317,495-1,216,926 tons). Both the Yellow Pine and Hangar Flats Development Rock are extremely high in As concentration, 1,300–5,200 mg/kg and 1,200–5,200 mg/kg, respectively. EPA Health-based Regional Screening Levels (RSL) for As tri-oxide for Residential Soils are 0.68 mg/kg (carcinogenic) and 35 mg/kg non-carcinogenic). Composite Workers soil RSL for worker ingestion are 3.6 mg/kg (carcinogenic) and 580 mg/kg (non-carcinogenic)
https://semspub.epa.gov/work/HQ/200043.pdf

Dusts generated from waste rock excavation will exceed these criteria by 2 to 9 times for worker non-carcinogenic risk and 1900 to 7650 times for carcinogenic risk, with an order of magnitude greater risk for residential soil criteria. Depending on chemical species, these levels in the air or in any dusts deposited on local surfaces, could represent substantial risk to workers, local populations and frequent site visitors; and will likely require respiratory protection for workers. In the PTC, the applicant apparently evaluated HAP and TAP from mining operations only for Hg. Only process related As emissions were evaluated for compliance modeling. In addition, DEQ indicated that these limited evaluations were conducted at median concentrations.

DEQ should require that the applicant develop emission estimates for all COCs from mining and processing sources and consider human health risk assessments for worker, trespasser, frequent site visitor, and post-reclamation scenarios for these rock dusts, including evaluation of public typical and reasonable maximum exposures at the most sensitive locations identified in DEQ's NAAQS analyses.

DEQ Response:

As discussed in the response to Comment #48, the analyses performed for permit issuance differ from those performed for risk assessments and similar analyses, and it is only required to demonstrate TAP compliance at receptor sites located either at or beyond the boundary of the project.

As discussed in the HAP and TAP Emission Updates, a response and HAP/TAP application addendum were submitted by Midas Gold that included new HAP and TAP emission estimates. After exclusion of sources addressed by NSPS and/or NESHAP, the remaining applicable emission sources were evaluated for compliance with TAP increments by comparison of adjusted emissions to applicable EL (Table 6 of the Statement of Basis). After adjustment, emissions of four carcinogenic TAP required modeling of ambient impacts (As, Cd, formaldehyde, and Ni). Modeled impacts of applicable emissions exceeding EL did not exceed any acceptable ambient concentrations for carcinogens and non-carcinogens (AACC/AAC), and compliance with TAP provisions was demonstrated.

DEQ is requiring extensive fugitive dust control measures in the permit and has conducted a modeling analysis that demonstrates compliance with NAAQS. Therefore, DEQ is not requiring any ambient air monitoring in the permit..

And although beyond the scope of the air quality permit, Midas Gold is expected to comply with all applicable requirements concerning individual safety and exposure to hazardous materials.

Comment #45: (von Lindern) The 93% control requirement for fugitive dust control will be difficult to achieve, and impossible to confirm without an ambient monitoring requirement in the fugitive dust control plan for the site. Moreover, due to the extremely high As levels anticipated, the permit should require ambient monitoring, including particulate metals analyses, to confirm compliance.

DEQ Response: As discussed in the response to Comment #14, DEQ recognizes this represents an aggressive level of control. Midas Gold has committed to undertaking all measures necessary to achieve the required level of control, and has confirmed based on a review of test studies that this level of control can be achieved using water and magnesium chloride dust suppressants (Appendix A to the application – Model Parameter/ Assumption/Data Level of Conservatism).

As discussed in the HAP and TAP Emission Updates, DEQ is satisfied that compliance with fugitive dust requirements, material throughput and operational limits, PM emission limits, and control device requirements will be sufficient to ensure compliance with applicable air quality requirements.

DEQ is requiring extensive fugitive dust control measures in the permit and has conducted a modeling analysis that demonstrates compliance with NAAQS. Therefore, DEQ is not requiring any ambient air monitoring in the permit..

Comment #46: (von Lindern) The ambient modeling analyses excludes all on-site or applicant-owned properties. The applicant has indicated that visitors will have unimpeded access to on-site locations and personnel will live on-site, including reproductive aged women and, possibly, children; the predicted contaminant concentrations for housing and public access locations should be included in the public disclosures.

DEQ Response: As discussed in the response to Comment #48, the analyses performed for permit issuance differ from those performed for risk assessments and similar analyses, and it is only required to demonstrate TAP compliance at receptor sites located either at or beyond the boundary of the project.

As stated in Section 3.3.10 of the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis), "The worker housing facility will be located within the project operations boundary, near the south access security gate. This housing facility will be used strictly for accommodating employees, contractors, and official visitors, and it will not be accessible to the general public. Therefore, the atmosphere over the land occupied by the worker housing facility is not considered ambient air, and receptors were not placed at this location for the air quality analyses." On-site areas are not considered part of ambient air. Therefore, concentrations at on-site areas were not estimated in the modeling analyses.

Comment #47: (von Lindern) The PTC application provides almost no usable information with respect to the production and disposition of Hg from the Midas Gold operations. Somewhat reliable estimates of Hg production can be developed by evaluating 3- to 6-year old feasibility studies and references to "similar operations in Nevada". These indicate several hundred tons of Hg (240-640 tons) will be processed as ores. The PTC application provides no quantitative estimates as to how this Hg will partition or transform through the metallurgical processes.

Pilot flotation, oxidation and leachate testing conducted for Sb and Au sometimes provide Hg observations that can be used to generalize likely Hg behavior, but quantification is neither provided, nor can be estimated with any degree of confidence. A significant but unquantifiable portion of Hg will exit the site in either Sb or Au

concentrate product. Flotation, oxidation and leaching pilot studies indicate the Hg will follow gold, with larger portions volatilizing during pressure oxidation and carbon-based refining. The PTC application optimistically asserts this unknown quantity will largely be captured with only 0.2 lb/yr escaping to the atmosphere. The unknown, but apparently substantial quantity of captured Hg, will reportedly exit the site remainder to an unknown, but cited as licensed, destination. Midas Gold has indicated these materials will be handled similar to model sites in Nevada, which have reportedly been unable to export the hazardous materials and have maintained these wastes in on-site temporary storage for several years.

DEQ Response: As discussed in the HAP and TAP Emission Updates, metal emissions from metallurgical processes were determined to be exempt from demonstration of compliance with state TAP increments (including Sb) and the Mercury Emission Standard (Hg). HAP and TAP emissions (including Hg) from all emission sources were estimated based on representative test data, concentration profiles of materials, and process chemistry. Any uncertainties in metal HAP and TAP emission estimates are not expected to affect classification as a HAP minor source or to affect compliance with TAP provisions.

And although beyond the scope of the air quality permit, Midas Gold is also expected to comply with all applicable requirements for transport, storage, and disposal of hazardous materials.

Comment #48: (von Lindern) Both the NAAQS and COC-related analyses provided are largely performed for "average" conditions. Numerous EPA guidance and sound scientific practice indicate that analyses of potential COC impacts should be conducted at expected typical (central tendency) and reasonable maximum concentrations, with appropriate discussion of the uncertainty and likelihood of worst-case conditions. Even if the input values were shown to be coherent, the modeling presented in the PTC fails with regard to worst case analyses. Even qualitative evaluation for COCs falls short, as there is no discussion of the uncertainty associated with the assertions and conclusions.

DEQ Response: Permit issuance requires the application demonstrate to DEQ's satisfaction that impacts of applicable pollutants from applicable sources not exceed established standards, as stated in IDAPA 58.01.01.203.02 and 203.03. Agency "satisfaction" represents high confidence of compliance with standards, but it does not require certainty. Also, IDAPA 58.01.01.202.02 (Application Procedures, Estimates of Ambient Concentrations) requires that "All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models)." Appendix W dictates the models to be used for air permitting, including those programs that process hourly meteorological data and terrain data used in the models. DEQ-specific guidance and procedures are also provided in the *Idaho Air Modeling Guideline* (*State of Idaho Guideline for Performing Air Quality Impact Analyses*, Idaho Department of Environmental Quality, September 2013, State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf).

The analyses to evaluate compliance must be performed using established methods and data to the extent such methods/data are reasonably representative and available. The following are considered in evaluating whether the compliance demonstration is to DEQ "satisfaction":

- Consistency of methods/data used with requirements of Appendix W and the *Idaho Air Modeling Guideline*.
- Accuracy or conservatism of emission estimates, considering potential uncertainty

in estimates and variability in parameters affecting emissions. Permit-required control measures, and associated verification of such measures, affect DEQ confidence of emission estimates.

- Modeled impact levels, the extent of elevated impacts, and the frequency of elevated impacts.
- Potential for exposure. Although the ambient air standards and TAP increments must be met at all ambient air locations, DEQ reviewers exercise a higher degree of scrutiny when modeled levels approach standards and have the potential to impact areas where people are likely to be present, including homes, schools, businesses, and hospitals.

The analyses performed for permit issuance differ from those performed for risk assessments and similar analyses. DEQ does not attempt to characterize the uncertainty and variability in results and analytical input variables beyond that needed to attain agency satisfaction of compliance. Furthermore, the application and the Ambient Air Quality Impact Analyses Review Memorandum (Appendix B to the Statement of Basis), discuss the uncertainty and variability in key variables at an appropriate level considering the magnitude and extent of impacts.

Comment #49: (ICL)

The emissions inventory spreadsheet, created by Midas Gold and provided to DEQ as part of their permit application, is missing crucial information that prevents DEQ and the public from properly analyzing the potential emissions from this project. Through a thorough review of the emissions inventory spreadsheet, we have identified a number of missing or incomplete items:

- Fugitive emissions for all HAP/TAP from all operational sources - roads, disposal areas, tailings piles, etc. ('Summary' tab, Column Y & Column AQ); currently, Hg is the only HAP/TAP that has calculated fugitive emissions
- Estimates of uncontrolled emissions for HAP/TAP for each piece of process equipment for each stage in the process, including a discussion of the control equipment involved at each stage and corresponding limits ('Proc-UNCTRL' tab)
- Hg fugitive emissions from all sources ('MineHg' tab); currently, there are only fugitive Hg estimates from stockpiles, rock dumps, tailings, and pits but not from roads and other potential sources

These substantive omissions should be addressed by Midas Gold in a revised application to DEQ, followed by a subsequent revision of the draft permit by DEQ based on the new information. Only then should DEQ relist the permit for public comment and make a final decision regarding whether to issue or deny the permit.

DEQ Response:

As discussed in the HAP and TAP Emission Updates, a response and HAP/TAP application addendum were submitted by Midas Gold that included new HAP and TAP emission estimates and a source-by-source inventory of HAP and TAP emissions (including Hg and fugitives). HAP and TAP emissions calculations are included in the updated emissions inventory spreadsheet (summarized on 'TblB1' tab). And although not explicitly calculated, Midas Gold estimated that the uncontrolled PTE for HAP pollutants exceeded 10 T/yr of an individual HAP and 25 T/yr of total HAP. Because updates to the application, the proposed permit, and technical review were made, an additional 30-day public comment period will also be provided to allow for review and comment on these updates.

Comment #50: (ICL)

According to DEQ, for Midas Gold to attain compliance with air quality standards, they will need to control their fugitive particulate emissions at greater than 93.3% efficiency. That is a very high bar to reach consistently. As noted in the Statement of Basis, "it may prove challenging to consistently and continuously achieve the targeted level of fugitive dust control for emissions from traffic on unpaved roadways, with over 55 miles of haul truck routes within the mining operations boundary, a fleet of 32 haul trucks weighing between 37 and 357 tons, and a targeted dust control efficiency of 93.3%..." (pg. 20). Later in the Statement of Basis, DEQ highlights fugitive dust control as a key assumption used in the modeling analyses and notes that 93% is "an aggressive level of control" (Appendix B, pg. 8). While that standard may be theoretically possible to achieve, it would likely require aggressive control measures, like daily dust suppression.

DEQ has required Midas Gold to complete a Fugitive Dust Control Plan (FDCP) as a condition of this permit. However, despite the FDCP clearly being a crux of Midas Gold's air quality compliance, it is unclear if the public will have the opportunity to review and comment on this plan. We formally request the opportunity to do so. Furthermore, the permit specifies that the FDCP shall be submitted within 60 days of permit issuance. Thus, the permit will be approved without DEQ or the public knowing specifically how Midas Gold will attain this aggressive standard of dust control.

This should not be the case for such an important piece of Midas Gold's air quality compliance. For instance, we have no indication of how Midas Gold will suppress fugitive emissions sources other than roads. Given that the specifics of the FDCP are crucial to ascertaining exactly how Midas Gold will achieve the lofty 93.3% dust control efficiency required to achieve compliance, this permit should not be approved until a FDCP is submitted to DEQ, reviewed by both DEQ and the public, and approved or denied pending modifications. While we understand that DEQ typically does not ask permittees for fugitive dust control plans prior to permit issuance, this is an extraordinary project in many ways. A review of the FDCP prior to permit issuance is necessary in this instance to ensure compliance with air quality standards.

Another issue is that the permit only addresses fugitive emissions for particulate matter. While PM is an important pollutant derived from fugitive emissions that must be controlled, DEQ neglects to identify and address other pollutants found in fugitive emissions from the proposed mine operation - particularly toxics like As, Hg, and Sb. The emissions inventory spreadsheet that the permit is based on (from Midas Gold) does not include that information. There is sufficient reason to believe that fugitive emissions of TAP and HAP could be significant given that core samples taken from throughout the project site indicate, for example, a median As concentration of 667 ppm. Without proper emission estimates and subsequent modeling for fugitive HAP and TAP, it is impossible to know if this project will meet air quality standards.

When estimating fugitive emissions from HAP and TAP, all sources from each of the various parts of the operation must be considered, not just haul roads. That includes, but is not limited to, each tailings pile, disposal area, open pit, stockpile, etc. There also needs to be a recognition that these sources are not static; over the course of the mine's lifetime, the sizes of each of these fugitive sources will grow and shrink. Therefore, this is an emission estimate that needs to be modeled as a dynamic rather than static source. Furthermore, some of these fugitive sources may be pretty close to the fence line, which could result in the modeling showing violations. We want to see fugitive emissions calculated for all sources and modeled appropriately.

DEQ Response: As discussed in the HAP and TAP Emission Updates, a response and HAP/TAP application addendum were submitted by Midas Gold that included new HAP and TAP emission estimates, including for fugitive sources of As, Hg, and Sb as suggested. DEQ views the fugitive dust requirements, material throughput and operational limits, PM emission limits, and control device requirements as sufficient to ensure that air quality standards are not exceeded by emission sources applicable to them.

As discussed in the response to Comment #15, minimum requirements for the FDCP were identified and specified in the permit and thus available for public review. At the time of permit issuance, DEQ views these minimum requirements as sufficient along with the other testing, monitoring, recordkeeping, and reporting requirements to ensure compliance with permit limits and applicable air quality standards.

As discussed in the response to Comment #28, all mining activities will remain subject to permit conditions during the life of the mine. Any activities or operating scenarios not regulated by the permit or otherwise addressed in the application are not expressly permitted, and any changes proposed after permit issuance will need to be evaluated as to whether they may require modification or revision of the PTC.

Comment #51: (ICL) Lastly, there is the issue of monitoring and enforcement. DEQ must have sufficient monitoring measures and enforcement mechanisms in place to ensure compliance with this permit. How does DEQ plan to ensure that Midas Gold is indeed attaining >93.3% dust control efficiency so that air quality standards are being met? Typically, the highest control efficiency that operations purport to achieve is in the 85-90% range, and we are frankly skeptical that Midas Gold can consistently hit the very high bar of 93.3%. What kind of monitoring will be in place to track dust control efficiency? If Midas Gold is found to be under that control threshold, what actions, if any, will be triggered for DEQ? We would like answers to all of these questions from Midas Gold and DEQ during this public comment period.

DEQ Response: As discussed in the response to Comment #17, the primary responsibility for compliance with permit limits and complying with associated testing, monitoring, recordkeeping, and reporting requirements is that of the permittee, and Midas Gold has committed to undertaking all measures necessary to achieve the required level of control.

As discussed in the HAP and TAP Emission Updates, DEQ is satisfied that compliance with fugitive dust requirements, material throughput and operational limits, PM emission limits, and control device requirements will be sufficient to ensure compliance with applicable air quality requirements.

Comment #52: (ICL) The public and DEQ are not able to properly analyze the potential impact of Hg emissions from this project because the emission inventory spreadsheet does not contain process activity uncontrolled emissions for Hg (or any TAP or HAP for that matter). This is of concern because 1) all TAP and HAP should have calculated uncontrolled process emissions, 2) there is a range of Hg concentrations in the throughputting ore (based on geochemistry of core samples) that could variably affect process emissions, and 3) based on the information provided, there is no way to know how much Hg gets taken off in various processing steps prior to the autoclave. Mercury emission estimates should be developed using a model that incorporates the variability of Hg concentrations for the throughputting ore to more accurately calculate what the actual Hg emissions would be at the site.

In addition, Midas Gold and DEQ should not base their Hg emissions estimates off

emissions work that has been done for gold mines in Nevada. The geochemistry of the Stibnite ore differs significantly from the gold ore in Nevada and has significant variability in Hg concentrations that could affect the process emission calculations. Furthermore, the proposed Stibnite operation would have a different process flow than those Nevada mines, particularly in terms of the Sb milling and related processing.

We also request that DEQ/Midas Gold provide additional information regarding what specific Hg control processes exist at each step of the ore processing. We are particularly interested in knowing what, if any, Hg control processes are incorporated into the Sb circuit.

DEQ Response: As discussed in the HAP and TAP Emission Updates and in the response to Comment #25, new HAP and TAP emission estimates were provided that included emissions from materials that will be processed at SGP. All permitted sources (fugitive and point) were evaluated, including the autoclave, lime kiln, and tailings storage facility. Metal HAP and TAP emissions from process materials were based on metal concentration profiles from onsite core samples (including Hg). The antimony process dryer and bagging operation emission sources Sb1 and Sb2 were removed from the permit, and no HAP or TAP emissions will be generated in the new Sb circuit. Although not explicitly calculated, Midas Gold estimated that the uncontrolled PTE for HAP pollutants exceeded 10 T/yr of an individual HAP and 25 T/yr of total HAP.

Comment #53: (ICL) Despite the high levels of heavy metals in the dust and soils, DEQ currently does not plan to do any air monitoring for heavy metal concentrations. At the informational hearing, DEQ stated that this type of air monitoring would be "groundbreaking." Our view is that this project would be groundbreaking in terms of its scale, complexity, and potential to pollute the air and therefore innovative measures should accordingly be taken by DEQ. We ask that DEQ evaluate whether this type of monitoring would be technically feasible; if it is, we request that DEQ include it in the permit.

DEQ Response: DEQ is requiring extensive fugitive dust control measures in the permit and has conducted a modeling analysis that demonstrates compliance with NAAQS. Therefore, DEQ is not requiring any ambient air monitoring in the permit.

Comment #54: (ICL) Given the significance and scale of this project and the intense public interest it has garnered, we request that DEQ conduct a risk assessment for HAP/TAP that can impact human health. In particular, this assessment should consider the high concentrations of As in fugitive dusts, which exceed both carcinogenic and non-carcinogenic critical toxicity criteria by orders of magnitude. As-laden particulate is potentially an unacceptable risk for both inhalation and incidental ingestion through direct contact with recently deposited dusts. Because these dusts will tend to accumulate seasonally, the air quality analyses conducted for this PTC are insufficient to assess this potential human health risk. Human health risk assessments should be performed to address this critical pathway. It may be necessary to collect fugitive dust emissions and appropriately dispose of the particulates to avoid unacceptable cumulative exposures.

DEQ Response: As discussed in the responses to Comment #5 and Comment #48, the analyses performed for permit issuance differ from those performed for risk assessments and similar analyses. After exclusion of sources addressed by NSPS and/or NESHAP, the remaining applicable emission sources were evaluated and modeled impacts of applicable emissions exceeding EL did not exceed any acceptable ambient concentrations for carcinogens and non-carcinogens (AACC/AAC), and compliance with TAP provisions was demonstrated.

Performance of a Human Health Risk Assessment is outside of the scope of regulatory requirements for minor source air quality permits to construct in the state of Idaho. Toxic substances are generally addressed in IDAPA 58.01.01.161, which states: "Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation." How Section 161 is addressed for the issuance of air quality PTCs for stationary sources is further refined by IDAPA 58.01.01.203.03. This section specifically defines impact assessment requirements of toxic air pollutants (TAP) that are needed for permit issuance, stating that no permit shall be granted unless the applicant shows to the satisfaction of the Department that:

"03. Toxic Air Pollutants. Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586."

This Section effectively limits the scope of the TAP analyses to those methods specified in Section 210. Section 210 defines the required analyses regarding source types assessed, emission calculation, and acceptable impacts.

Although a thorough risk assessment is not a regulatory option in Section 210, the identified acceptable air impacts of carcinogenic compounds from applicable sources are based on a 1-in-1,000,000 life-time cancer risk and on continual exposure to the maximum modeled, 5-year averaged impact.

And although beyond the scope of the air quality permit, Midas Gold is expected to comply with all applicable requirements concerning individual safety and exposure, and transport, storage, and disposal of hazardous materials.

Comment #55: (ICL)

Inspection reports, air quality monitoring data, and permit compliance records need to be publicly available on the DEQ website. We will also be asking the Forest Service to provide a link to the DEQ website as part of the Forest Service's implementation and monitoring website. Posting this already-existing information on the agency webpages will eliminate the need for superfluous Public Records Requests and increase both project transparency and applicant accountability.

Based on the information provided in our comments, we request that DEQ return the application to Midas Gold as incomplete. Once Midas Gold has resubmitted a complete application and DEQ has made the appropriate modifications to the permit, the permit should be re-noticed for public comment.

DEQ Response:

As discussed in the response to Comment #20, issued permitting documents relating to air quality are posted online on DEQ's "Issued Permits and Water Quality Certifications" webpage.

Application materials (and Tier I permit-required plans) are posted during the public comment period for each respective permitting action on DEQ's "Public Comment Opportunities" webpage.

Because updates to the application, the proposed permit, and technical review were made, an additional 30-day public comment period will also be provided to allow for review and comment on these updates.