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October 28, 2020

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

Subject: Stibnite Gold Project Draft Environmental Impact Statement

Dear Ms. Jackson,

Midas Gold Idaho, Inc. (Midas Gold) appreciates the opportunity to provide comments on the Draft Environmental Impact Statement (DEIS). Clearly, the document represents a substantial effort by many individuals to compile and convey a very large volume of information and analysis regarding the Midas Gold proposed Stibnite Gold Project (SGP). The synthesis of hundreds of documents developed from a much greater multitude of data values, statistical analyses, and modeling projections into a single draft product is a noteworthy accomplishment, and Midas Gold is pleased to have been a stakeholder in its development.

In its comments, Midas Gold wishes to respectfully offer its perspective and insight to assist in clarifying and improving content for the Final Environmental Impact Statement (FEIS). This letter offers comments on the portions of the DEIS devoted to Air Quality in the Affected Environment (Section 3.3) and the potential Environmental Consequences (Section 4.3). Our comments are summarized below, and for your convenience, comments have been provided in a tabulated format (included as Attachment A) that references each appropriate subsection heading, page number, and paragraph.

1.0 Emission Inventories

We suggest providing additional detail to delineate the three emission inventories (EI) discussed and analyzed in the DEIS (i.e., Alternative 1 EIS, Alternative 2 EIS, and Alternative 2 [NSR (New Source Review)]).

The following outline provides a summary of the three EI.

The Alternative 1 EIS EI included the following source categories:

1. Ore processing (ore handling, crushing, transfers, grinding, etc.)
2. Refining (autoclave, electrowinning cells, retort, melting furnace, carbon kiln, etc.)
3. Ancillary (prill, lime, cement, shotcrete storage and handling, central mixer, process and building heaters, emergency equipment, etc.)
4. Mining (drilling, blasting, material extraction, hauling, and unloading)
5. Wind erosion (roads, tailings, material piles)

6. Ongoing construction and surface exploration
7. Mine site and Burntlog Route access road maintenance (water trucks, dozing, and grading)
8. Vehicle travel on the Burntlog Route access road
9. Tailpipes from on-site mining and maintenance equipment
10. Tailpipes from on-site helicopter takeoffs and landings
11. Tailpipes from vehicles on the entire 38-mile length of the Burntlog Route access road

Vehicle traffic on the Burntlog Route access road included maintenance equipment (grader, snow blower and plow trucks, water truck, etc.), 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, antimony concentrate, etc.) and services (including food supplies, trash, recyclables, etc.) transportation.

The Alternative 2 EIS EI included the lime processing (handling, crushing, screening, grinding, storage, kiln, etc.) associated with the on-site lime production in addition to all the sources included in the Alternative 1 EIS EI.

The Alternative 2 NSR EI included the lime processing (similar to Alternative 2 EIS EI) and source categories #1 through #8 listed under Alternative 1 EIS EI. Instead of the entire 38-mile length, the 1.6-mile long section of the Burntlog Route access road inside the project boundary (from the south gate to the processing area) was used for the Burntlog Route-related emission calculations for #7 and #8 above. Tailpipe emissions and the Burntlog Route access road offsite emissions were not included in the Alternative 2 NSR EI because they are outside the scope of the NSR analyses.

All the emissions calculated for each EI were included in their respective modeling analyses, without exception.

2.0 Screening Visibility Analysis

Section 4.3.2.1.2.4 states that "VISCREEN is viewed as an inherently conservative model." The VISCREEN modeling presented in the DEIS contains several conservative inputs. Combining these inputs with an already inherently conservative model has resulted in overly conservative plume blight predictions. These results have led to a conclusion in the DEIS that plume visibility impacts are "likely" in the Frank Church–River of No Return Wilderness (FCRNRW). A revised VISCREEN analysis is provided in the attached memorandum titled, "SGP VISCREEN Analyses and Revised 2020 Modeling" (Attachment B). This revised 2020 modeling was performed using more representative assumptions, and reasonable conservatism shows that the potential for plume visibility impacts is minimal: only 0.02 percent of the daytime hours.

We suggest updating the VISCREEN analysis and resulting conclusions (Sections 4.3.1.3.3, 4.3.2.1.2.4, and 4.3.7) based on the attached revised analysis (Attachment B).

3.0 Idaho Department of Environmental Quality's (IDEQ) National Ambient Air Quality Standards (NAAQS) analyses

In Section 4.3.2.2.4, the DEIS concludes that, using the conservatively high production and emission rates provided in the Alternative 2 NSR inventory and regulatory standard methods, the project demonstrates compliance with the applicable NAAQS. However, the DEIS also mentions that "under different AERMOD settings a few points showed exceedances for PM_{10} NAAQS" and "Midas Gold and IDEQ are conducting an analysis of such 'hotspots' using a weight-of-evidence approach that is under review." Midas Gold performed AERMOD modeling using site-specific meteorological data processed with two default regulatory-approved methods: BULKRN and non-BULKRN. The United States Environmental Protection Agency (EPA) considers both BULKRN and non-BULKRN methods regulatory defaults and acceptable for air quality analyses. Moreover, as of July 31, 2020, the IDEQ has completed the DEIS-mentioned weight-of-evidence analyses and concluded that the SGP impacts will not cause or significantly contribute to a violation of any applicable NAAQS. These analyses also demonstrated that the higher PM_{10} concentrations modeled with the BULKRN dataset occurred during winter, when the average snow depth and precipitation in the project area are 21–68 inches and 6 inches, respectively. Thus, the fugitive road dust emissions during the high-impact hours could be overestimated. Therefore, the high modeled PM_{10} impacts that exceed NAAQS are unlikely to occur. Based on the justification provided in the above discussion and for a complete analysis, Midas Gold proposes that the PM_{10} 24 hours modeled results with the non-BULKRN dataset be presented in DEIS Table 4.3-22 to conform with the conclusion provided in Section 4.3.2.2.4. As presented in the DEIS, the PM_{10} 24 hours results in Table 4.3-22 could be misinterpreted and lead to the misunderstanding that the project is not compliant with NAAQS.

We suggest updating Sections 4.3.2.2.4 and 4.3.7.3 to reflect IDEQ's confirmation of compliance with the NAAQS for all pollutants.

4.0 Roads Analysis

We suggest updating information on the access road analysis in Sections 4.3.2.2.4, 4.3.2.4.2, and 4.3.7.3 to include the alternate NAAQS analysis performed with EPA default methods (non-BULKRN) that demonstrate compliance with the NAAQS. In addition, see the modeling details provided in Section C of this letter.

5.0 Factual Corrections

We have identified some apparent inconsistencies, incorrect numbers, and other errors, including model inputs and results. We suggest applying the following corrections:

1. The DEIS incorrectly uses the term "hydrogen cyanide" instead of "cyanide." Please correct the term "HCN detoxification tanks" to "cyanide detoxification tanks" in Section 4.3.1.2.2 to acknowledge that the detoxification tanks destroy all cyanide compounds, not just HCN (hydrogen cyanide). This section also refers to the leaching solution as "HCN solution." Please correct "HCN solution" to "cyanide solution," as it is the cyanide anion (CN^-) that is used to extract gold from ore. Please also correct the terms "residual HCN" and "HCN concentration" to "residual cyanide" and "cyanide concentration," respectively, in this section.
2. In Table 4.3-2, please correct the ozone background and NAAQS values to match the values provided in DEIS Table 3.3-2 (background = 60 ppb = 117.7 $\mu g/m^3$, NAAQS = 70 ppb = 137.7 $\mu g/m^3$).
3. On page 4.3-27, please correct the HCN emissions to 1.8 tpy to match DEIS Table 4.3-6.

4. In Table 4.3-8, Row 3, please correct the ozone maximum, baseline, and total concentrations to 2.75 µg/m^3, 117.7 µg/m^3, and 120.5 µg/m^3, respectively, to match the ppb values provided in the previous row in this table.
5. On page 4.3-35, please correct the Hg deposition to 0.4 percent. See the following comment for details.
6. In Table 4.3-12, please correct the hydrographic sub-basin orientations with respect to the SGP site. The Row 2, 3, and 4 sub-basins are west, southeast, and northeast of the mine site, respectively. Please correct the AERMOD screen results in Row 2 to show the maximum estimated hydrographic sub-basin average deposition rate of 0.056 g/km^2-yr and update the associated percent contribution accordingly to 0.4 percent in Row 2. The values (2.58 g/km^2-yr and 18.6 percent) provided in this table relate to the hydrographic sub-watershed and, therefore, are incorrect for the hydrographic sub-basin "within the SGP area and the sub-basin west of the mine site." The Column 1 header is "Hydrographic Sub-basin," and therefore, it is not correct to compare the hydrographic sub-watershed results to the hydrographic sub-basin background.
7. In Table 4.3-13, Row 3, please correct the N deposition flux rate to 0.00011–0.0098 g/m^2/yr.
8. In Table 4.3-21, Row 4, please correct the total HAP emissions to 1.8 tpy.
9. On page 4.3-52, please correct the Alternative 2 impact scaling equation by replacing "-" with "+."
10. In Table 4.3-23, please correct the baseline concentrations in Rows 2 and 3 for CO, in Rows 6 and 7 for $PM_{2.5}$, in Row 8 for PM_{10}, and in Row 9 for SO_2 to match their respective values provided in DEIS Table 4.3-22, and update the resulting total NAAQS impacts and below NAAQS determinations.

6.0 Clarifications

We have identified some areas where we recommend additional clarity and accuracy regarding processes, assumptions, data sets, methods, uncertainties, and analyses, and we suggest the following clarifications:

1. The DEIS incorrectly uses the term "best available control technology." Please replace the references to "best available control technology" with "applicable requirements." The DEIS correctly observes that the SGP is a minor source subject to IDEQ air permit to construct (PTC) requirements (pages 4.3-9, 12, 18, 12). The requirements of "best available control technology" do not apply to minor sources in Idaho; however, the PTC will impose enforceable conditions consistent with applicable requirements.
2. The DEIS incorrectly states that the emissions information was incomplete. For example, Table 4.1-2, Row 10 states: "Complete information has not been developed regarding some features of action alternatives…" We suggest that this statement be supplemented to acknowledge that the three EI (Alternative 1 and 2 EIS and Alternative 2 NSR) evaluated in this analysis are sufficiently conservative to cover all alternatives.
3. All necessary emissions information has been developed. The EI provided included emissions for the highest-emission alternatives and 15 LOM years, including the construction years. DEIS Section 4.3 also acknowledges that the EI provided by Midas Gold cover the highest emission scenarios and that the emissions of other alternatives will be the same or lower. In addition, see the modeling details provided in Section A of this letter.

4. Please expand Table 4.3-1 to include additional source category columns (e.g., "Ore Processing and Ancillary," "Lime Processing," "Onsite Mining Fugitive Dust and Blasting," "Burntlog Route Tailpipes," etc.) as delineated in Section A of this letter. Please also add a column at the end to verify the fact that all the emissions included in each EI were modeled (for example, "All Emissions Included in EI were Modeled").
5. Table 4.3-1 shows that the mobile source tailpipe and Burntlog route fugitive dust emissions were “not included” for the Alternative 2 NSR emissions inventory. These emissions were not included in the Alternative 2 NSR inventory because, as stated in the last sentence on DEIS page 4.3-7, “state regulations do not require mobile sources to be covered by the PTC.” Therefore, please change “not included” to “not required” to avoid any misunderstanding that the Alternative 2 NSR inventory was incomplete because these emissions were not included.
6. Clarity is needed in discussion related to transportation emissions, including antimony concentrate shipping for example, page 4.3-24. All SGP-related (personnel and cargo, including antimony concentrate, and services) traffic levels and emissions along the entire 38-mile length of the Burntlog Route (site to Landmark) were included in the EIS EI and modeling. Traffic emissions outside this area are beyond the EIS review scope and thus should not be discussed.

Thank you for considering our comments. Please contact me if you any questions.

Sincerely,

Alan Haslam
MIDAS GOLD IDAHO, INC.
Vice President – Permitting

Enclosures:

Attachment A: Stibnite Gold Project DEIS Air Quality (Sections 3.3 and 4.3) Comments Compilation Table

Attachment B: SGP VISCREEN Analyses and Revised 2020 Modeling (Technical Memorandum; Air Sciences 2020)

Attachment A

Attachment A: Stibnite Gold Project DEIS Air Quality (Sections 3.3 and 4.3) Comments Compilation Table

Comment Number	Page # or Global	Section #	Paragraph (count from top of page)	Commenter Initials	Relevant DEIS Text Excerpt (if applicable)	Comment
1	Global, Section 4.3.1.2.3 Page 4.3-7, Various places through DEIS		3	MG	As described in Section 4.3.2.1.1 for Alternative 1, and Section 4.3.2.2.1 for Alternative 2, different mine operational scenarios were used to develop separate emission inventories for this EIS, and for the modeling that supported the PTC application to IDEQ.	Proposed Change: Midas suggests that additional detail should be provided to delineate the three (Alternatives 1 and 2 EIS, and Alternative 2 NSR) emission inventories (EI) discussed and analyzed. The following outline provides a summary of the three EI. The Alternative 1 EIS EI included the following broad source categories: 1.Ore processing (ore handling, crushing, transfers, grinding, etc.); 2.Refining (autoclave, electrowinning cells, retort, melting furnace, carbon kiln, etc.); 3.Ancillary (prill, lime, cement, and shotcrete storage and handling, central mixer, process and building heaters, emergency equipment, etc.); 4.Mining (drilling, blasting, material extraction, hauling, and unloading); 5.Wind erosion (roads, tailings, material piles); 6.Ongoing construction and surface exploration; 7.Mine site and Burntlog Route access road maintenance (water trucks, dozing, and grading); 8.Vehicle travel on the Burntlog Route access road; 9.Tailpipes from onsite mining and maintenance equipment; 10.Tailpipes from onsite helicopter landing and takeoffs; and 11.Tailpipes from vehicles on the entire 38-mile length of the Burntlog Route access road. Vehicle traffic on the Burntlog Route access road included maintenance equipment (grader, snow blower and plow trucks, water truck, etc.), 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, antimony concentrate, etc.) and services (including food supplies, trash, recyclables, etc.) transportation. The Alternative 2 EIS EI included the lime processing (handling, crushing, screening, grinding, storage, kiln, etc.) associated with the onsite lime production in addition to all the sources included in the Alternative 1 EIS. The Alternative 2 NSR EI included the lime processing (similar to Alternative 2 EIS EI) and source categories #1 through #8 listed under Alternative 1 EIS EI. Instead of the entire 38-mile length, the 1.6-mile long section of the Burntlog Route access road inside the project boundary (from the south gate to processing area) was used for the Burntlog Route related emission calculations for #7 and #8 above. Tailpipe emissions and the Burntlog Route access road offsite emissions were not included in the Alternative 2 NSR EI because they are out of scope for the NSR analyses. **All the emissions calculated for each EI were included in their respective modeling analyses, without exception.** Reason for Proposed Change: Clarify the extent of emission sources covered and modeled under each EI and correct the descriptions of the emissions included in each alternative EI and the emissions modeled.
2	Global			MG	Incorrect terminology - best available control technology.	Proposed Change: Please replace the references to "best available control technology" with "applicable requirements." Reason for Proposed Change: The DEIS correctly observes that the SGP is a minor source subject to IDEQ PTC requirements (pages 4.3-9, 12, 18, 12). The requirements of "best available control technology" do not apply to minor sources in Idaho; however, the PTC will impose enforceable conditions consistent with applicable requirements.
3	Global			MG	VISCREEN - discussion and results.	Proposed Change: Please provide a discussion explaining that the use of conservative inputs into an already inherently conservative model may have resulted in overly conservative plume blight predictions. See the attached memorandum titled, SGP VISCREEN Analyses and Revised 2020 Modeling for more details. Also, please provide the VISCREEN results from the revised 2020 modeling provided in this memorandum. Reason for Proposed Change: Section 4.3.2.1.2.4 states that, "VISCREEN is viewed as an inherently conservative model." The VISCREEN modeling presented in the DEIS contains several conservative inputs. The combination of these inputs with an already inherently conservative model has resulted in overly conservative plume blight predictions. These results have led to a conclusion in the DEIS that plume visibility impacts are "likely" in the Frank Church–River of No Return Wilderness (FCRNRW). The revised 2020 modeling shows that the potential for plume visibility impacts are minimal: only 0.02% of the daytime hours.
4	Global			MG	NAAQS - discussion and results.	Proposed Change: Please update Sections 4.3.2.2.4 and 4.3.7.3 to reflect IDEQ's confirmation of compliance with the NAAQS for all pollutants. Reason for Proposed Change: In Section 4.3.2.2.4, the DEIS concludes that using conservatively high production and emission rates provided in the Alternative 2 NSR inventory and regulatory standard methods, the project demonstrates compliance with the applicable NAAQS. However, the DIES also mentions that "under different AERMOD setting a few points showed exceedances for PM10 NAAQS" and "Midas Gold and IDEQ are conducting an analysis of such "hotspots" using a weight-of-evidence approach that is under review." Midas performed AERMOD modeling using the site-specific meteorological data processed with two default regulatory-approved methods: BULKRN and non-BULKRN. EPA considers both BULKRN and non-BULKRN methods regulatory default and acceptable for air quality analyses. Moreover, as of July 31, 2020, the IDEQ has completed the DEIS-mentioned weight-of-evidence analyses and concluded that the Stibnite project impacts will not cause or significantly contribute to a violation of any applicable NAAQS. These analyses also demonstrated that the higher PM10 concentrations modeled with the BULKRN dataset occurred during winter when the average snow depth and precipitation in the project area are 21-68 inches, and 6 inches, respectively. Thus, the fugitive road dust emissions during the high impact hours could be overestimated. Therefore, the high modeled PM10 impacts that exceed NAAQS could be deemed unlikely to occur. Based on the justification provided in the above discussion and for a complete analysis, Midas proposes that the PM10 24 hours modeled result with the non-BULKRN dataset be presented in the Table 4.3-22 to conform with the conclusion provided in Section 4.3.2.2.4. As presented in the DEIS, the PM10 24-hours results in Table 4.3-22 could be misinterpreted and create a misunderstanding that the project does not show compliance with NAAQS.
5	4.1-4	4.1.2	Table 4.1-1, Row 10	MG	Complete information has not been developed regarding some features of action alternatives, such as vehicle travel distances and material handling rates. Emissions will vary among alternatives based on facility and operations/reclamation changes, such as moving the TSF to the EFSFSR.	Proposed Change: Please insert at the end "However, the Alternative 1 and 2 EIS inventories and the Alternative 2 NSR inventory are sufficiently conservative to cover all alternatives." Reason for Proposed Change: Correction. All necessary emissions information has been developed. The emission inventories provided included emissions for the highest-emission alternatives and 15 LOM years, including the construction years. The DEIS Section 4.3 also acknowledges that emission inventories provided by Midas cover the highest emission scenarios and that the emissions of other alternatives will be the same or less.

Comment Number	Page # or Global	Section #	Paragraph (count from top of page)	Commenter Initials	Relevant DEIS Text Excerpt (if applicable)	Comment
6	4.3-5	4.3.1.2.1	4	MG	To illustrate the level of confidence in judging emission estimates, it can be noted that nearly all the emission factor values in Section 11.19.2 of Document AP-42, which is relied on for many Midas Gold sources, have emission factor ratings of "D" or "E." To compensate for this uncertainty, the accepted practice applied in this analysis is to over-estimate the activity rates for a given operation. This tends to avoid under-reporting the final estimates used for air quality analyses (Air Sciences 2018b).	Proposed Change: Please insert at the end "Use of Document AP-42 and conservative activity rates, represents the best available information for estimating emissions from SGP." Reason for Proposed Change: Confirms reliability of the information in Document AP-42 and conservative operational estimates.
7	4.3-6	4.3.1.2.1	1	MG	During full production, the daily ore-milling and processing rate would range from 20,000 to 25,000 tons per day (tpd). To ensure a conservative analysis, maximum daily ore processing emissions for the two inventories were based on the maximum design rate of 25,000 tpd, and this rate was assumed to be maintained for each annual operating scenario. Maximum annual emissions for the processing sources were based on the maximum daily emissions and multiplied by 365 days per year.	Proposed Change: Please insert at the end "Actual operating days will be less than 365." Reason for Proposed Change: Confirms actual operations proposal.
8	4.3-6	4.3.1.2.2	1, Bullet 5	MG	• HCN volatilization from the dilute cyanide solution in leach tanks, carbon-in-pulp tanks, and HCN detoxification tanks; and	Proposed Change: Please revise "and HCN detoxification tanks" to "and cyanide detoxification tanks." Reason for Proposed Change: Correction. The detoxification tanks destroy all the cyanide chemical compounds, not just HCN.
9	4.3-6	4.3.1.2.2	5	MG	The SGP would be subject to these federal standards through the use of a carbon-in-pulp process for capturing gold that has been extracted from the crushed ore using dilute HCN solutions and the use of a retort for purifying the gold-laden precipitate from electrowinning.	Proposed Change: Please revise "dilute HCN solutions" to "dilute cyanide solutions." Reason for Proposed Change: Correction. It is the cyanide anion (NaCN) that is used to extract gold.
10	4.3-7	4.3.1.2.2	2	MG	Sources of HCN emissions include volatilized HCN from several types of tanks used to extract gold from crushed ore (leach tanks, carbon-in-pulp tanks, HCN detoxification tanks).	Proposed Change: Please revise "HCN detoxification tanks" to "cyanide detoxification tanks." Reason for Proposed Change: Correction. The detoxification tanks destroy all the cyanide chemical compounds, not just HCN.
11	4.3-7	4.3.1.2.2	2	MG	Process tailings that contain trace amounts of residual HCN impounded in the TSF are the largest source of volatized HCN.	Proposed Change: Please revise "residual HCN impounded" to "residual cyanide impounded." Reason for Proposed Change: Correction.
12	4.3-7	4.3.1.2.2	2	MG	These emissions were estimated using published EPA field test data derived from HCN flux measurements at active gold processing facilities in Nevada and estimated physical properties specific to the SGP gold-refining processes (i.e., area, temperature, pH, HCN concentration) (Schmidt and Card 2010).	Proposed Change: Please revise "pH, HCN concentration" to "pH, cyanide concentration." Reason for Proposed Change: Correction. The calculation is based on the free cyanide anion concentration in solution.
13	4.3-7	4.3.1.2.3	6	MG	The inventories used for non-regulatory analyses presented in this EIS for Alternatives 1 and 2 include fugitive dust emissions from the Burntlog Route, as well as mobile tailpipe emissions from on-site mobile equipment.	Proposed Change: Please add "and mobile tailpipe" before "emissions from Burntlog Route" because the mobile tailpipe emissions from the off-site Burntlog Route were also included in the Alternatives 1 and 2 EIS inventories. See the discussion provided in Comment #1. Reason for Proposed Change: Correction.
14	4.3-8	4.3.1.2.3	2	MG	While the Alternative 1 and Alternative 2 EIS inventories include mobile source emissions along the Burntlog Route, these were considered to be outside the mine site, and not included as sources in the EIS modeling.	Proposed Change: Please change "and not included" to "but they are included." Reason for Proposed Change: Correction. The mobile source tailpipe and fugitive dust emissions along the whole 38-mile length (mine site to Landmark) of the Burntlog Route were included in the EIS modeling for both Alternatives 1 and 2. See the discussion provided in Comment #1.
15	4.3-8	4.3.1.2.3	Table 4.3-1	MG	Table 4.3-1 Columns	Proposed Change: Please expand this table to include additional source category columns (e.g., "Ore Processing and Ancillary," "Lime Processing," "Onsite Mining Fugitive Dust and Blasting," "Ore Processing and Ancillary," "Lime Processing," "Burntlog Route Tailpipes," etc.) as delineated in Comment #1. Please also add a column at the end to verify the fact that all the emissions included in each EI were modeled (e.g., "All Emissions Included in EI were Modeled"). Reason for Proposed Change: Clarification. See the discussion provided in Comment #1.
16	4.3-8	4.3.1.2.3	Table 4.3-1, Row 3	MG	Not included; Not included	Proposed Change: Please replace both occurrences of "Not Included" with "Not Required." Reason for Proposed Change: Correction. These emissions were not included in the Alternative 2 NSR inventory because, as stated in the last sentence on DEIS page 4.3-7, "state regulations do not require mobile sources to be covered by the PTC." See the discussion provided in Comment #1.
17	4.3-10	4.3.1.3.1	Table 4.3-2, Row 6	MG	112.2 and .15 µg/m3	Proposed Change: Please revise the ozone background and NAAQS values to match the values provided in the DEIS Table 3.3-2 (background = 60 ppb = 117.7 µg/m3, NAAQS = 70 ppb = 137.7 µg/m3). Reason for Proposed Change: Correction.
18	4.3-13	4.3.1.3.2.2	4	MG	The PGM-based estimates for PM2.5 concentration changes were added to the baseline PM2.5 concentrations to determine total estimated PM2.5 impacts for comparison to the NAAQS	Proposed Change: Please add "primary impacts and" before "baseline PM2.5 concentrations..." Reason for Proposed Change: Correction. The primary, secondary, and background concentrations are added together to estimate the total concentration, which is compared with NAAQS for compliance determination.
19	4.3-14	4.3.1.3.3	4	MG	This creates some uncertainty, because the emissions from the mine site and process operations area would spread out over several miles. To account for dispersed emission sources, accepted modeling practice is to determine a theoretical single-point plume origin correction distance. The calculated distance in this case was 17.8 km.	Proposed Change: Please insert at the end "This model adjustment is not discussed in the VISCREEN User's Guide nor does it fully account for the dispersed emissions. Reason for Proposed Change: The VISCREEN and CALPUFF 50-km results comparison provided in the attached memorandum titled, SGP VISCREEN Analyses and Revised 2020 Modeling demonstrates that the theoretical correction did not provide an adequate model adjustment. See Comment #3.

Comment Number	Page # or Global	Section #	Paragraph (count from top of page)	Commenter Initials	Relevant DEIS Text Excerpt (if applicable)	Comment
20	4.3-19	4.3.1.5	2	MG	Assumptions and uncertainties for the air quality analyses includes: uncertainty in impact analysis due to changes in emissions sources in the proposed action that are different or were not included in the emissions inventory used for the air modeling and analysis; inherent uncertainties in EPA and industry emission factors used; and uncertainties due to lack of on-site background information including ambient air, soil conditions, and some meteorological data.	Proposed Change: Please revise the start of this paragraph to read "Air quality analyses for proposed projects, like SGP, inevitably include assumptions and uncertainties because the analyses are based on best available information to estimate emissions and to predict ambient air impacts before construction and operation commence. Common assumptions and uncertainties in any air quality analysis may include uncertainty in impact analysis due to changes ..." Reason for Proposed Change: Acknowledgment for the reader that assumptions and uncertainties are common in project reviews and are not unique to SGP.
21	4.3-19	4.3.1.5	4	MG	Several areas of uncertainty result from the need to make assumptions about physical conditions, to predict regulatory review outcomes, and from incomplete information at the time of this analysis were identified:	Proposed Change: Please insert at the start of the sentence "Despite the application of best available information in the air quality analyses, [s]everal areas of uncertainty..." Reason for Proposed Change: Confirm for readers that the best available information was included in the review, and some amount of uncertainty is inherent in the process.
22	4.3-19	4.3.1.5	4, Bullet 2	MG	• Potential new and altered emission sources that may be added to the SGP under different action alternatives (e.g., Relocated and re-sized pits and waste rock areas, addition of a batch plant, and/or waste incinerator);	Proposed Change: Please delete this bullet. Reason for Proposed Change: The size and location of pits and waste rock areas are not expected to change. The batch plant was included in the emission inventories and modeling, and there is no proposal for a waste incinerator. This bullet identifies an uncertainty that is not realistic or factually accurate.
23	4.3-19	4.3.1.5	4, Bullet 3	MG	• Inability to quantify emissions related to antimony concentrate shipment, as the destinations (foreign and/or domestic), shipping methods (overland truck and/or rail) travel distances, load transfers, and selection of routes to transportation hubs for this product are not known;	Proposed Change: Please delete this bullet. Reason for Proposed Change: Emissions related to antimony concentrate transport generated on-site and along the entire 38-mile length of the Burntlog Route were included in the emission inventories and modeling. See the discussion provided in Comment #1. Antimony shipment emissions outside this area are beyond the scope of the EIS review.
24	4.3-20	4.3.1.5	1, Bullet 2	MG	• Use of estimated hourly and daily emissions and the related ambient air and visibility impacts due to construction over an assumed annual schedule of 355 days (with no activity assumed for 10 days per year), even though these activities would likely be compressed into approximately half that time each year due to weather constraints, resulting in higher short-term emission rates within the active months.	Proposed Change: Please remove this bullet. Reason for Proposed Change: Correction. The short-term construction emissions did account for a higher activity rate during the peak construction season in addition to the construction schedule of 355 days per year. See Appendix F1 - Alternative 1 Pages 6, 68, 73, and 82; and Appendix F2 - Alternative 2 Pages 6, 68, 73, and 82.
25	4.3-21	4.3.2.1.1	1	MG	This assumed schedule is a source of uncertainty in the analysis, as weather conditions would affect the construction schedule, and would suggest higher daily activity during the months of May through November, and higher short-term emission rates.	Proposed Change: Please remove this bullet. Reason for Proposed Change: Correction. The short-term construction emissions did account for a higher activity rate during the peak construction season in addition to the construction schedule of 355 days per year. See Appendix F1 - Alternative 1 Pages 6, 68, 73, and 82; and Appendix F2 - Alternative 2 Pages 6, 68, 73, and 82.
26	4.3-21	4.3.2.1.1	5	MG	Tailpipe emissions for off-highway diesel engines included in Alternative 1 are controlled by use of engines that meet Tier IV or better EPA performance standards (e.g., stationary internal combustion new source performance standards, 40 CFR 60, Subparts IIII and JJJJ).	Proposed Change: Please remove the 40 CFR Subpart examples. Reason for Proposed Change: Correction. These Subparts do not apply to off-highway engines.
27	4.3-21	4.3.2.1.1	5	MG	Due to modeling limitations, although these emissions were calculated, the modeling of air quality effects accounted for emissions only in the SGP area.	Proposed Change: Please delete this sentence. Reason for Proposed Change: Correction. All emissions from Alternatives 1 and 2 EIS inventories (including emissions from within and outside of the SGP area) were modeled. See the discussion provided in Comment #1.
28	4.3-22	4.3.2.1.1	3	MG	The PTC would include stipulations that are based on applicable state and federal regulations, and that are consistent with best available control technology for new surface mining and processing operations.	Please update this statement based on the information provided in Comment #2.
29	4.3-22	4.3.2.1.1	3, Bullet 2	MG	• The main ore processing facility building, and coarse ore stockpile would be enclosed.	Proposed Change: Please update this bullet consistent with the dust control measures provided in the NSR permit application and the EIS and NSR emission inventories. Reason for Proposed Change: Correction. Dust emissions from most ore processing activities will be reduced by "water sprays and moisture carryover." Enclosures were not proposed or used for emission calculations for these activities.
30	4.3-22	4.3.2.1.1	3, Bullet 3	MG	• Water sprays and dust collection systems for ore processing facility material handling activities would be installed.	Proposed Change: Please update this bullet consistent with the dust control measures provided in the NSR permit application and the EIS and NSR emission inventories. Reason for Proposed Change: Correction. Dust emissions from material handling activities will be reduced by "water sprays and moisture carryover." Dust collection systems were not proposed or used for emission calculations for these activities.
31	4.3-22	4.3.2.1.1	3, Bullet 4	MG	• Water sprays and/or bag house dust collectors would be installed at the ore-crushing system and at ore reclaim feeders that deliver ore to the grinding circuit.	Proposed Change: Please update this bullet consistent with the dust control measures provided in the NSR permit application and the EIS and NSR emission inventories. Reason for Proposed Change: Correction. Dust emissions from ore crushing and conveyance will be reduced by "water sprays and moisture carryover." The ore reclaim feeders underneath the stockpile will be underground and thus enclosed. A dust collection system was not proposed or used for emission calculations.
32	4.3-23	4.3.2.1.1	1, Bullet 1	MG	(e.g.,40 CFR 60, Subparts IIII and JJJJ)	Proposed Change: Please remove the 40 CFR Subpart examples. Reason for Proposed Change: Correction. These Subparts do not apply to off-highway engines.
33	4.3-24	4.3.2.1.1	3	MG	The level of traffic and related emissions for the transport of material beyond Cascade, such as the shipping of antimony concentrate, are not sufficiently predictable to be quantified. Based on current estimates, transport of concentrate would require two truck trips per day, so the contribution to SGP emissions would be small. However, for informational purposes emission factors per mile of travel for fully-loaded heavy transport trucks are provided in the Air Quality Analysis report for the Alternative 1 emission inventory (Air Sciences 2018b).	Proposed Change: Please delete this paragraph. Reason for Proposed Change: SGP-related (personnel and cargo, including antimony concentrate, and services) traffic levels and emissions along the entire 38-mile length of the Burntlog Route (site to Landmark) were included in the emission inventories and modeling. See the discussion provided in Comment ES1. Traffic emissions outside this area are beyond the scope of the EIS review.

Attachment A: Stibnite Gold Project DEIS Air Quality (Sections 3.3 and 4.3) Comments Compilation Table

Comment Number	Page # or Global	Section #	Paragraph (count from top of page)	Commenter Initials	Relevant DEIS Text Excerpt (if applicable)	Comment
34	4.3-27	4.3.2.1.1	3	MG	The estimated SGP HCN emissions (1.9 tpy) would be less than the majority (6 out of 7) of the facility emissions…	Proposed Change: Please correct the HCN emissions to 1.8 tpy to match Table 4.3-6 and the Alternative 2 NSR inventory. Reason for Proposed Change: Correction.
35	4.3-31	4.3.2.1.2.3	Table 4.3-8, Row 3	MG	Ozone, 8 hours, 0.003 μg/m3, 0.129 μg/m3, 0.131 μg/m3	Proposed Change: Please correct the ozone maximum, baseline, and total concentrations to 2.75 μg/m3, 117.7 μg/m3, and 120.5 μg/m3, respectively, to match the ppb values provided in the previous row in this table. Reason for Proposed Change: Correction.
36	4.3-33	4.3.2.1.2.4	2	MG	Given these considerations, the results provided in Table 4.3-10 represent a screening-level indication that plume visibility impacts in the FCRNRW are likely, but there is uncertainty around the frequency and magnitude of those impacts.	Proposed Change: please change "likely" to "uncertain." Reason for Proposed Change: The assertion that "plume visibility impacts in the FCRNRW are likely" is based on overly conservative VISCREEN modeling results. The revised 2020 modeling shows that the potential for plume visibility impacts are minimal. See Comment #3.
37	4.3-33	4.3.2.1.2.4	Table 4.3-10	MG	Table 4.3-10 Frequency of Modeled Visible Plumes - Screening Results for FCRNRW: Percent of Time when Perceptibility Threshold is Exceeded	Proposed Change: Please add the Table 1 results from the attached memorandum titled, SGP VISCREEN Analyses and Revised 2020 Modeling to this table. Footnote this results as "2002 modeling results." Reason for Proposed Change: New information, alternate analysis. See Comment #3.
38	4.3-33	4.3.2.1.2.4	Table 4.3-10, Note 1	MG	1 The 10-degree solar angle reflects conditions after sunrise (day), and before sunset (night).	Proposed Change: Please revise Note 1 to "Solar angle is the angle between the line of sight and the direct solar beam. The 10-degree solar angle refers to a situation in which the sun is in front of the observer (forward scattering) such that the scattering angle is 10 degrees." Reason for Proposed Change: Correction.
39	4.3-33	4.3.2.1.2.4	Table 4.3-10, Note 2	MG	2 The 140-degree solar angle reflects mid-day conditions.	Proposed Change: Please revise Note 2 to "The 140-degree solar angle refers to a situation in which the sun is behind the observer (backward scattering) such that the scattering angle is 140 degrees." Reason for Proposed Change: Correction.
40	4.3-34	4.3.2.1.2.4	Table 4.3-11	MG	Table 4.3-11 Magnitude of Modeled Visible Plumes - Screening Results for FCRNRW: Ratio of Maximum Impact to Perceptibility Threshold	Proposed Change: Please add the Table 2 results from the attached memorandum titled, SGP VISCREEN Analyses and Revised 2020 Modeling to this table. Footnote this results as "2002 modeling results." Reason for Proposed Change: New information, alternate analysis. See Comment #3.
41	4.3-34	4.3.2.1.2.4	Table 4.3-11, Note 1	MG	1 The 10-degree solar angle reflects conditions after sunrise (day), and before sunset (night).	Proposed Change: Please revise Note 1 to "Solar angle is the angle between the line of sight and the direct solar beam. The 10-degree solar angle refers to a situation in which the sun is in front of the observer (forward scattering) such that the scattering angle is 10 degrees." Reason for Proposed Change: Correction.
42	4.3-34	4.3.2.1.2.4	Table 4.3-11, Note 2	MG	2 The 140-degree solar angle reflects mid-day conditions.	Proposed Change: Please revise Note 2 to "The 140-degree solar angle refers to a situation in which the sun is behind the observer (backward scattering) such that the scattering angle is 140 degrees." Reason for Proposed Change: Correction.
43	4.3-34	4.3.2.1.2.4	2	MG	Although sunlight would not be present during most of the year, it is noted that plume visibility is predicted for 63 to 73 percent of modeled "nighttime" hours (6:00 p.m. to 6:00 a.m.) due to the prevalence of relatively stable atmospheric conditions, characterized by lower wind speeds. For daytime conditions, a visible plume is predicted for up to 30 percent of annual daytime hours, with much greater potential for visible plumes at times of low sun angle.	Proposed Change: Please add at the end "However, these results are based on highly conservative modeling. The revised 2020 modeling shows that the potential for plume visibility impacts are minimal: only 0.02% of the daytime hours." Reason for Proposed Change: New information, alternate analysis. See Comment #3.
44	4.3-35	4.3.2.1.2.5	3	MG	Some of the HgP emissions would be converted by combustion to Hg0 particles, which are controlled by filters and a wet scrubber (Midas Gold 2016).	Proposed Change: Please remove this statement because it is not correct and not found in the cited reference: (Midas Gold 2016). Reason for Proposed Change: Correction.
45	4.3-35	4.3.2.1.2.5	3	MG	A source of bias in the analysis is the use of this screening level modeling approach that does not account for recent findings showing the importance of Hg0 deposition to plants, and this flux being the largest point of entry for atmospheric Hg into terrestrial environments. Taking these factors into account suggests that total Hg deposition predicted by the model is likely biased low.	Proposed Change: Please remove/update this statement because it is not correct. Reason for Proposed Change: Correction. Hg0 deposition is mainly a long-range transport phenomenon. The AERMOD analysis for the Hg2 and HgP species was done per the technical guidance provided by EPA, C. Eckley. Per C. Eckley, Hg2 and HgP are the only forms of mercury that will deposit in the near-field range of the AERMOD domain. The AERMOD screening modeling approach was performed following the instructions provided by USFS and EPA. Considering the AERMOD's inherent conservatism to provide biased high results, it is not technically justifiable to state that the results were biased low within the model domain.
46	4.3-35	4.3.2.1.2.5	4	MG	This analysis indicates a maximum estimated increase in Hg deposition rate of 18.6 percent or less of the existing background rate.	Proposed Change: Please correct the percentage value from "18.6" to "0.4." Reason for Proposed Change: Correction. The estimated increase in Hg deposition to the native hydrographic sub-basin was 0.4 percent. The SGP Hg deposition to the entire native hydrographic sub-basin was 0.056 g/km2-yr. The average background for this sub-basin was 13.9 g/km2-yr. 0.056/13.9 = 0.4%.

Comment Number	Page # or Global	Section #	Paragraph (count from top of page)	Commenter Initials	Relevant DEIS Text Excerpt (if applicable)	Comment
47	4.3-35	4.3.2.1.2.5	4	MG	However, it should be recognized that this rate underestimates the total Hg deposition, as the mechanism of Hg0 flux is not included in the screening model.	Proposed Change: Please remove/update this statement because it is not correct. Reason for Proposed Change: Correction. Hg0 deposition is mainly a long-range transport phenomenon. The AERMOD analysis for the Hg2 and HgP species was done per the technical guidance provided by EPA, C. Eckley. Per C. Eckley, Hg2 and HgP are the only forms of mercury that will deposit in the near-field range of the AERMOD domain. The AERMOD screening modeling approach was performed following the instructions provided by USFS and EPA. Considering the AERMOD's inherent conservatism to provide biased high results, it is not technically justifiable to state that the results were biased low within the model domain.
48	4.3-36	4.3.2.1.2.5	Table 4.3-12, Row 2	MG	Within SGP area and the sub-basin east of the mine site	Proposed Change: Please change "east" to "west." Reason for Proposed Change: Correction.
49	4.3-36	4.3.2.1.2.5	Table 4.3-12, Row 3	MG	Sub-basin northeast of the mine site	Proposed Change: Please change "northeast" to "southeast." Reason for Proposed Change: Correction.
50	4.3-36	4.3.2.1.2.5	Table 4.3-12, Row 4	MG	Sub-basin southeast of the mine site	Proposed Change: Please change to "southeast" to "northeast." Reason for Proposed Change: Correction.
51	4.3-36	4.3.2.1.2.5	Table 4.3-12, Row 2	MG	AERMOD result of 2.58 g/km2-yr and 18.6% contribution to existing background	Proposed Change: Please correct the AERMOD screen results to show the maximum estimated hydrographic sub-basin average deposition rate of 0.056 g/km2-yr and update the associated percent contribution accordingly to 0.4% in Row 2. Reason for Proposed Change: Correction. The values (2.58 g/km2-yr and 18.6%) provided in this table relate to the hydrographic sub-watershed and, therefore, are incorrect for the hydrographic sub-basin "within the SGP area and the sub-basin west of the mine site." The Column 1 header is "Hydrographic Sub-basin," and therefore, it is not correct to compare the hydrographic sub-watershed results to the hydrographic sub-basin background.
52	4.3-36	4.3.2.1.2.6	5	MG	The Level 2 analysis assumes that 100 percent of Alternative 1 emissions of NOX would be completely transformed into NO2, and then HNO3 on release to the atmosphere. This assumed extent of conversion is expected to result in a conservative over-estimation of nitrogen deposition.	COMMENT - No conclusion relative to baseline Reason: All others comment impact relative to baseline. Why not here?
53	4.3-37	4.3.2.1.2.6	Table 4.3-13, Row 3	MG	0.00011 - 0.0037	Proposed Change: Please correct the deposition flux rate to "0.00011 - 0.0098." Reason for Proposed Change: Correction.
54	4.3-42	4.3.2.2	2	MG	For Alternative 2, there would be no need to haul lime in from offsite unless the lime plant is off-line for an extended period. This change would **make unnecessary approximately 2,900 annual lime delivery trips**, with related reduction in emissions from mobile sources.	Clarification - 2,900 single or return trips?
55	4.3-43	4.3.2.2	4	MG	The PTC would include stipulations that are based on applicable state and federal regulations, and that are consistent with best available control technology for new surface mining and processing operations.	Please update this statement based on the information provided in Comment #2.
56	4.3-49	4.3.2.2.2.2	Table 4.3-21, Row 4	MG	5.3	Proposed Change: Please correct the HAP total to 1.8 tpy in Row 4. Reason for Proposed Change: Correction.
57	4.3-51	4.3.2.2.4	3	MG	However, under different AERMOD settings a few points showed exceedances for PM10 NAAQS.	Proposed Change: Please move this statement to Table 4.3-22 as a footnote to the PM10 24-hour results. Reason for Change: See Comment #59.
58	4.3-51	4.3.2.2.4	3	MG	As of the date of this EIS, Midas Gold and IDEQ are conducting an analysis of such "hotspots" using a weight-of-evidence approach that is under review.	Proposed Change: Please change this sentence to "Midas Gold and IDEQ completed an analysis of such "hotspots" using a weight-of-evidence approach and confirmed compliance with the NAAQS for all pollutants." Reason: New information. See Comment #4.
59	4.3-52	4.3.2.2.4	Table 4.3-22, Row 10	MG	PM10 24 hours modeled concentration 121.5, total concentration 158.5	Proposed Change: Please revise the PM10 24 hours modeled concentration to the non-BULKRN data result (75.7 µg/m3) and corresponding total concentration (112.7 µg/m3). Please add a footnote to these results stating, "However, under different AERMOD settings a few points showed exceedances for PM10 NAAQS." See Comment #57. Reason for Proposed Change: Alternate analysis that is consistent with IDEQ's review and conclusion of NAAQS compliance. See the discussion provided in Comment #4.
60	4.3-52	4.3.2.2.4	Equation	MG	Lime Kiln (Alternative 2) Impact = Alternative 1 Modeled Impact x (100 – % Emissions Change)/100	Proposed Change: Please correct the equation by replacing "-" to "+." Reason for Proposed Change: Correction.
61	4.3-53	4.3.2.2.4	4	MG	As shown in Table 4.3-23, the PM2.5 "annual" average (computed as the mean values from April through November) and PM10 24-hour average concentrations are predicted to be slightly over the respective NAAQS.	Proposed Change: Please insert at the end "However, the alternate modeling analysis using the EPA approved non-BULKRN method shows compliance with the NAAQS." Reason for Proposed Change: Alternate analysis. See Comment #62 and Comment #4.
62	4.3-54	4.3.2.2.4	Table 4.3-23, Row 6	MG	PM2.5 1 year modeled concentration 9.4, total concentration 12.8	Proposed Change: Please add a footnote to the PM2.5 1 year results (last column - "Below NAAQS?", "No"), "The alternate modeling analysis using the EPA approved non-BULKRN method shows modeled concentration of 6.4 µg/m3 and a total impact of 9.9 µg/m3, which is below the NAAQS." Reason for Proposed Change: Alternate analysis.

Comment Number	Page # or Global	Section #	Paragraph (count from top of page)	Commenter Initials	Relevant DEIS Text Excerpt (if applicable)	Comment
63	4.3-54	4.3.2.2.4	Table 4.3-23, Row 8	MG	PM10 24 hours modeled concentration 124.2, total concentration 179.7	Proposed Change: Please add a footnote to the PM10 24 hours results (last column - "Below NAAQS?", "No"), "The alternate modeling analysis using the EPA approved non-BULKRN method shows modeled concentration of 79.1 µg/m3 and a total impact of 116.1 µg/m3, which is below the NAAQS." Reason for Proposed Change: Alternate analysis.
64	4.3-54	4.3.2.2.4	Table 4.3-23	MG	Columns: • Baseline Concentration2 (µg/m3) • Total NAAQS Impact3 (µg/m3) • Below NAAQS?	Proposed Change: Please correct the baseline concentrations in Rows 2, 3 (CO), 6, 7 (PM2.5), 8 (PM10), and 9 (SO2) to their respective values provided in Table 4.3-22. Also, update the corresponding total NAAQS impacts and below NAAQS determinations for these rows. Reason for Proposed Change: Correction.
65	4.3-60	4.3.2.3.2	1	MG	PTC would include stipulations that are based on applicable state and federal regulations, and that are consistent with best available control technology for new surface mining and processing operations.	Please update this statement based on the information provided in Comment #2.
66	4.3-60	4.3.2.4.1	1	MG	The topographic features of the Yellow Pine Route (e.g., a portion of the route is along a river through a canyon) do not affect the nature of the air emissions during construction.	Reference RFAI-83c: 4 yrs of construction, additional drilling and blasting of outcrops, road closures and limited work periods/seasons, environmental and safety mitigations will all add up to additional air emissions during construction.
67	4.3-62	4.3.2.4.2	2	MG	The PTC would include stipulations for control of airborne dust from vehicle traffic along the Yellow Pine Route that are based on applicable state and federal regulations, and that are consistent with best available control technology for new surface mining and processing operations.	Please update this statement based on the information provided in Comment #2.
68	4.3-62	4.3.2.4.2	3	MG	The results of the ambient air evaluation would be the same for Alternative 2, as provided in Table 4.3-23. As shown in Table 4.3-23, the PM2.5 1-hour and "annual" averages (the latter computed as the mean values from April through November) and PM10 24-hour average concentrations are predicted to be slightly over the respective NAAQS.	Proposed Change: Please insert at the end "However, the alternate modeling analysis using the EPA approved non-BULKRN method shows compliance with the NAAQS." Reason for Proposed Change: Alternate analysis. See Comment #62 and Comment #4.
69	4.3-62	4.3.2.4.2	4	MG	It is important to reiterate that this route would not be subject to NAAQS and, for those persons who choose to drive through the Operations Area Boundary, no assurance of NAAQS compliance can be given.	Proposed Change: Please insert at the end "However, the alternate modeling analysis using the EPA approved non-BULKRN method shows compliance with the NAAQS." Reason for Proposed Change: Alternate analysis. See Comment #62 and Comment #4.
70	4.3-70	4.3.7.3	1	MG	As of the date of this EIS, Midas Gold and IDEQ are evaluating the analysis of such "hotspots" using a weight-of-evidence approach and that analysis is under review.	Proposed Change: Please change this sentence to "Midas Gold and IDEQ completed an analysis of such "hotspots" using a weight-of-evidence approach and confirmed compliance with the NAAQS for all pollutants." Reason: New information. See Comment #4.
71	4.3-70	4.3.7.3	2	MG	A supplemental analysis for the controlled access road through the mine site included in Alternative 2 showed exceedances of the NAAQS for particulate matter (both PM10 and PM2.5) along the roadway.	Proposed Change: Please insert at the end "However, the alternate modeling analysis using the EPA approved non-BULKRN method shows compliance with the NAAQS." Reason for Proposed Change: Alternate analysis. See Comment #62 and Comment #4.
72	4.3-73	4.3.7	Table 4.3-30, Row 8	MG	SGP sources may cause visible plumes at the closest Class II wilderness area (FCRNRW) for a significant fraction of daylight hours.	Proposed Change: Please remove "for a significant fraction of daylight hours." Reason for Proposed Change: The assertion that plumes will be visible "for a significant fraction of daylight hours" is based on overly conservative VISCREEN modeling results. The revised 2020 modeling shows that the potential for plume visibility impacts are minimal. See Comment #3.

Attachment B

SGP VISCREEN ANALYSES AND REVISED 2020 MODELING

PREPARED FOR:	Midas Gold Idaho, Inc.
PREPARED BY:	Air Sciences Inc.
PROJECT NO.:	335-20-2
DATE:	September 1, 2020

Introduction

Air Sciences Inc. (Air Sciences) has conducted several VISCREEN modeling analyses in support of the National Environmental Policy Act (NEPA) process for the Midas Gold Idaho, Inc. (Midas Gold) Stibnite Gold Project (SGP). The original modeling was provided to the U.S. Forest Service (USFS) for review in July of 2018. The final modeling was submitted in March of 2019. This modeling was incorporated into the Draft Environmental Impact Statement (DEIS) dated August 2020.

Between the July 2018 and March 2019 VISCREEN modeling, the USFS requested several input changes to the model to increase its conservatism, and Midas Gold agreed to incorporate these changes. These changes are as follows:

1. Adding non-point source emissions
2. Adding mobile equipment emissions
3. Increasing the background visual range to 270 kilometers (km)
4. Adding large-diameter particulate matter emissions
5. Adding nighttime hours

As stated in the DEIS, VISCREEN is viewed as an inherently conservative model, and the use of the abovementioned inputs has further increased its conservativism. As a result, the March 2019 VISCREEN plume blight predictions may be overly conservative and misleading. These results have led to a conclusion in the DEIS that plume visibility impacts are "likely" in the Frank Church–River of No Return Wilderness (FCRNRW). The original July 2018 VISCREEN modeling predicted that the plumes resulting from the SGP in the FCRNRW are not likely to be visible to a casual observer.

The purpose of this memorandum is to:

1) provide a technical discussion of the conservatism added to the model by the abovementioned model input changes, and

2) provide a revised 2020 modeling analysis that incorporates most of the USFS changes while revising two of these inputs to increase the representativeness of the model.

Conservatism of Model Input Changes

As previously discussed, the use of the abovementioned model inputs may have resulted in overly conservative and misleading plume blight predictions. This conclusion is based on a comparison of the VISCREEN and CALPUFF model results. VISCREEN was rerun for the area within the FCRNRW that is 50 km from the SGP (the nearest distance modeled by CALPUFF). These results were then compared to the CALPUFF model visible impact results for the same location (the FCRNRW area 50 km from the SGP). This comparison shows that VISCREEN significantly overpredicts visibility impacts. At the 50-km common distance, CALPUFF predicted insignificant visibility impacts (less than the 5% extinction threshold), while VISCREEN predicted a visible plume 38% of the time, even though both models used the same Alternate 1 EIS inventory.

A technical discussion of the model input changes incorporated into the March 2019 VISCREEN modeling is provided in the following subsections.

Adding Non-Point Source and Mobile Equipment Emissions

In the July 2018 VISCREEN modeling, the maximum daily emissions from all process and auxiliary point sources (crushers, conveyors, generators, stacks, and other stationary point sources) were included in the model. These sources are located within the process area of the mine site and were conservatively assumed to form a single overlapping, coherent plume. (VISCREEN can only model a single plume.)

In the March 2019 VISCREEN modeling, the maximum daily emissions from non-point fugitive sources (drilling, blasting, material handling, dozing, grading, wind erosion, and transportation), mobile tailpipes, and the Burntlog Route were added to the model. The non-point fugitive and mobile tailpipe sources are spread out over several miles within the mine site and the Burntlog Route extends 38 miles from the mine site. The treatment of these dispersed sources as a single point source emitting a single coherent plume is not representative of realistic conditions, is highly conservative, and creates uncertainty in the modeling prediction.

A theoretical single-point plume origin correction distance of 17.8 km was introduced into the model to help account for the dispersed nature of the fugitive, mobile tailpipe, and Burntlog

Route sources added by request of the USFS. This model adjustment is not discussed in the *Workbook for Plume Visual Impact Screening and Analysis* (VISCREEN User's Guide).[1] Additionally, the VISCREEN and CALPUFF results comparison demonstrates that the theoretical correction did not provide an adequate model adjustment.

Increasing the Background Visual Range to 270 km

In the July 2018 VISCREEN modeling, a background visual range of 60 km was used. This range was obtained from the regional visual range map provided in the VISCREEN User's Guide for the SGP location. In the March 2019 VISCREEN modeling, the background visual range was increased to 270 km. This visual range represents a high estimate of the theoretical visual range for the four nearest Class I areas under natural conditions (conditions estimated to have occurred before human-caused pollution). The median visual ranges (natural conditions) for these Class I areas are between 248 to 266 km.

The FCRNRW is a Class II area. Using a visual range of 270 km for the FCRNRW area is highly conservative because a higher background visual range increases VISCREEN predictions of plume blight. The actual median background visual range is expected to be significantly lower.

Adding Large-Diameter Particulate Matter Emissions

In the July 2018 VISCREEN modeling only PM_{10} (particulate matter less than 10 microns) emissions were included, as these particulates are the major contributor to light scattering and plume blight. The VISCREEN default median particle diameter of 2 microns was used. This is a conservative assumption for PM_{10} emissions because smaller diameter particles result in higher plume blight predictions.

In the March 2019 VISCREEN modeling, large-diameter particulate matter (>10 microns) emissions were added to the model, but the median diameter was left at 2 microns. With the inclusion of the large-diameter particulate matter, 70% of the total particulate modeled was larger than 10 microns. Therefore, modeling the total particulate at 2 microns significantly increased the conservatism of the model.

Adding Nighttime Hours

In the July 2018 VISCREEN modeling, only daytime hours were evaluated for the Level 2 analysis because any plume that occurs at night would not have sunlight to illuminate it. In the March 2019 VISCREEN modeling, nighttime hours were added, which significantly increased

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[1] EPA 1992. Workbook for Plume Visual Impact Screening and Analysis (Revised). United States Environmental Protection Agency. Office of Air Quality Planning and Standards. EPA-454/R-92-023. October 1992.

plume blight predictions because nighttime hours typically have lower wind speeds and higher stability classes.

Revised 2020 Model Inputs and Results

As stated in the Introduction, the use of the conservative inputs into an already inherently conservative model results in overly conservative plume blight predictions that are unrepresentative of expected conditions. Revising only two of these inputs increases the representativeness of the model while maintaining a reasonable level of conservatism:

1) Revising the background visual range to 60 km per Figure 9 of the VISCREEN User's Guide.

2) Revising the median particulate diameter to 10 microns. The VISCREEN model limits the maximum particulate diameter input to 10 microns. Therefore, modeling at 10 microns is conservative because more than half of the total particulate modeled (70%) is greater than 10 microns.

The results from the revised 2020 VISCREEN model inputs are provided in the tables below:

Table 1. Frequency of Modeled Visible Plumes – Screening Results for FCRNRW: Percent of Time when Perceptibility Threshold is Exceeded

Plume Parameter	Background	% Day Hours: 10 Degrees	% Night Hours: 10 Degrees	% Day Hours: 140 Degrees	% Night Hours: 140 Degrees
Plume Contrast (C)	Terrain	0	0	0	0
Color Contrast (ΔE)	Terrain	0.02	2.9	0	0
Plume Contrast (C)	Sky	0	0	0	0.38
Color Contrast (ΔE)	Sky	0	2.3	0	0

Table 2. Magnitude of Modeled Visible Plumes – Screening Results for FCRNRW: Ratio of Maximum Impact to Perceptibility Threshold

Plume Parameter	Background	Day (10 Degrees)	Night (10 Degrees)	Day (140 Degrees)	Night (140 Degrees)
Plume Contrast (C)	Terrain	--	--	--	--
Color Contrast (ΔE)	Terrain	1.0	2.2	--	--
Plume Contrast (C)	Sky	--	--	--	1.3
Color Contrast (ΔE)	Sky	--	1.9	--	--

Table 1 shows that the revised 2020 VISCREEN model predicts that 0.02% (1 hour) of the annual daytime hours and 2.9% (107 hours) of the annual nighttime hours may experience a visible plume within the FCRNRW area. Table 2 provides the highest magnitude of the predicted visible plumes.

2020 VISCREEN Results by Viewing Condition

Each VISCREEN run evaluates potential plume blight for a variety of viewing conditions. The two plume blight parameters estimated by VISCREEN are color contrast (ΔE) and contrast (C). VISCREEN calculates these values at two different solar angles: 10 degrees and 140 degrees. Each of these estimates is performed for two different viewing backgrounds: terrain and sky. The SGP VISCREEN results are summarized for the following eight viewing conditions:

1. Color contrast: terrain as background and 10 degrees solar angle (ΔE-Terrain-10)
2. Color contrast: sky as background and 10 degrees solar angle (ΔE-Sky-10)
3. Color contrast: terrain as background and 140 degrees solar angle (ΔE-Terrain-140)
4. Color contrast: sky as background and 140 degrees solar angle (ΔE-Sky-140)
5. Contrast: terrain as background and 10 degrees solar angle (C-Terrain-10)
6. Contrast: sky as background and 10 degrees solar angle (C-Sky-10)
7. Contrast: terrain as background and 140 degrees solar angle (C-Terrain-140)
8. Contrast: sky as background and 140 degrees solar angle (C-Sky-140)

The following sections provide four tables for each of the eight viewing conditions:

1. Number of visible plume hours during daytime
2. Number of visible plume hours during nighttime
3. Maximum VISCREEN results during daytime hours
4. Maximum VISCREEN results during nighttime hours

Results Summary for ΔE-Terrain-10 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the ΔE-Terrain-10 combination, for the applicable wind speeds and stability classes, are provided in Table 3 and Table 4, respectively.

Table 3. ΔE-Terrain-10: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	1	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 4. ΔE-Terrain-10: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	1	106
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted ΔE for daytime and nighttime hours for the ΔE-Terrain-10 combination, for the applicable wind speed and stability class combinations, are provided in Table 5 and Table 6, respectively.

VISCREEN determines the appropriate screening threshold for each model run. The range of thresholds determined by VISCREEN are listed in the bottom rows of these tables.

Table 5. ΔE-Terrain-10: Maximum VISCREEN ΔE Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	0.10	0.27	1.47	2.07	-
2	-	0.03	0.10	0.51	0.85	-
3	-	0.02	0.06	0.30	0.28	-
4	-	0.01	0.04	0.22	-	-
5	-	0.01	0.03	0.17	-	-
6	-	-	0.03	0.14	0.14	-
7	-	-	0.02	0.12	-	-
8	-	-	0.01	0.10	-	-
9	-	-	-	0.09	-	-
10	-	-	0.01	0.08	-	-
Minimum ΔE Threshold		8.22	1.92	1.82	2.00	N/A
Maximum ΔE Threshold		8.57	8.60	6.61	2.00	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 6. ΔE-Terrain-10: Maximum VISCREEN ΔE Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	1.42	2.12	4.32
2	-	-	-	0.50	0.93	1.70
3	-	-	-	0.29	0.56	0.98
4	-	-	-	0.21	0.36	0.42
5	-	-	-	0.17	0.32	-
6	-	-	-	0.14	0.13	-
7	-	-	-	0.12	-	-
8	-	-	-	0.09	-	-
9	-	-	-	0.08	-	-
10	-	-	-	0.02	-	-
Minimum ΔE Threshold		N/A	N/A	1.82	2.00	2.00
Maximum ΔE Threshold		N/A	N/A	6.60	2.00	2.00

The stability classes in this table are not adjusted for elevation differences.

Results Summary for ΔE-Sky-10 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the ΔE-Sky-10 combination, for the applicable wind speeds and stability classes, are provided in Table 7 and Table 8, respectively.

Table 7. ΔE-Sky-10: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 8. ΔE-Sky-10: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	85
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted ΔE for daytime and nighttime hours for the ΔE-Sky-10 combination, for the applicable wind speed and stability class combinations, are provided in Table 9 and Table 10, respectively.

Table 9. ΔE-Sky-10: Maximum VISCREEN ΔE Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	0.08	0.21	1.25	1.97	-
2	-	0.03	0.07	0.44	0.83	-
3	-	0.02	0.05	0.26	0.24	-
4	-	0.01	0.03	0.19	-	-
5	-	0.01	0.03	0.15	-	-
6	-	-	0.02	0.12	0.12	-
7	-	-	0.02	0.10	-	-
8	-	-	0.01	0.09	-	-
9	-	-	-	0.08	-	-
10	-	-	0.00	0.07	-	-
Minimum ΔE Threshold		1.62	0.21	0.21	2.00	N/A
Maximum ΔE Threshold		1.63	9.12	9.17	2.00	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 10. ΔE-Sky-10: Maximum VISCREEN ΔE Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	1.21	2.00	3.85
2	-	-	-	0.44	0.90	1.65
3	-	-	-	0.25	0.54	0.97
4	-	-	-	0.18	0.36	0.41
5	-	-	-	0.15	0.31	-
6	-	-	-	0.12	0.11	-
7	-	-	-	0.10	-	-
8	-	-	-	0.08	-	-
9	-	-	-	0.07	-	-
10	-	-	-	0.01	-	-
Minimum ΔE Threshold		N/A	N/A	0.21	2.00	2.00
Maximum ΔE Threshold		N/A	N/A	9.16	2.00	2.01

The stability classes in this table are not adjusted for elevation differences.

Results Summary for ΔE-Terrain-140 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the ΔE-Terrain-140 combination, for the applicable wind speeds and stability classes, are provided in Table 11 and Table 12, respectively.

Table 11. ΔE-Terrain-140: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 12. ΔE-Terrain-140: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted ΔE for daytime and nighttime hours for the ΔE-Terrain-140 combination, for the applicable wind speed and stability class combinations, are provided in Table 13 and Table 14, respectively.

Table 13. ΔE-Terrain-140: Maximum VISCREEN ΔE Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	0.02	0.05	0.25	0.35	-
2	-	0.01	0.02	0.08	0.14	-
3	-	0.00	0.01	0.05	0.05	-
4	-	0.00	0.01	0.04	-	-
5	-	0.00	0.01	0.03	-	-
6	-	-	0.01	0.02	0.02	-
7	-	-	0.00	0.02	-	-
8	-	-	0.00	0.02	-	-
9	-	-	-	0.01	-	-
10	-	-	0.00	0.01	-	-
Minimum ΔE Threshold		6.70	2.31	2.00	2.00	N/A
Maximum ΔE Threshold		6.82	6.83	4.46	2.00	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 14. ΔE-Terrain-140: Maximum VISCREEN ΔE Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	0.24	0.36	0.76
2	-	-	-	0.08	0.15	0.29
3	-	-	-	0.05	0.11	0.16
4	-	-	-	0.03	0.06	0.07
5	-	-	-	0.03	0.05	-
6	-	-	-	0.02	0.02	-
7	-	-	-	0.02	-	-
8	-	-	-	0.02	-	-
9	-	-	-	0.01	-	-
10	-	-	-	0.00	-	-
Minimum ΔE Threshold		N/A	N/A	2.00	2.00	2.00
Maximum ΔE Threshold		N/A	N/A	4.46	2.00	2.00

The stability classes in this table are not adjusted for elevation differences.

Results Summary for ΔE-Sky-140 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the ΔE-Sky-140 combination, for the applicable wind speeds and stability classes, are provided in Table 15 and Table 16, respectively.

Table 15. ΔE-Sky-140: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 16. ΔE-Sky-140: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted ΔE for daytime and nighttime hours for the ΔE-Sky-140 combination, for the applicable wind speed and stability class combinations, are provided in Table 17 and Table 18, respectively.

Table 17. ΔE-Sky-140: Maximum VISCREEN ΔE Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	0.04	0.11	0.67	1.00	-
2	-	0.01	0.04	0.23	0.42	-
3	-	0.01	0.02	0.14	0.13	-
4	-	0.01	0.02	0.10	-	-
5	-	0.00	0.01	0.08	-	-
6	-	-	0.01	0.06	0.06	-
7	-	-	0.01	0.05	-	-
8	-	-	0.00	0.05	-	-
9	-	-	-	0.04	-	-
10	-	-	0.00	0.04	-	-
Minimum ΔE Threshold		7.71	3.25	2.00	2.00	N/A
Maximum ΔE Threshold		7.72	7.89	3.91	2.00	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 18. ΔE-Sky-140: Maximum VISCREEN ΔE Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	0.64	1.01	1.95
2	-	-	-	0.23	0.46	0.84
3	-	-	-	0.13	0.28	0.50
4	-	-	-	0.10	0.18	0.21
5	-	-	-	0.08	0.16	-
6	-	-	-	0.06	0.06	-
7	-	-	-	0.05	-	-
8	-	-	-	0.04	-	-
9	-	-	-	0.04	-	-
10	-	-	-	0.01	-	-
Minimum ΔE Threshold		N/A	N/A	2.00	2.00	2.00
Maximum ΔE Threshold		N/A	N/A	3.91	2.00	2.00

The stability classes in this table are not adjusted for elevation differences.

Results Summary for C-Terrain-10 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the C-Terrain-10 combination, for the applicable wind speeds and stability classes, are provided in Table 19 and Table 20, respectively.

Table 19. C-Terrain-10: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 20. C-Terrain-10: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted C for daytime and nighttime hours for the C-Terrain-10 combination, for the applicable wind speed and stability class combinations, are provided in Table 21 and Table 22, respectively.

Table 21. C-Terrain-10: Maximum VISCREEN C Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	0.00	0.00	0.01	0.02	-
2	-	-	0.00	0.01	0.01	-
3	-	-	0.00	0.00	0.00	-
4	-	-	-	0.00	-	-
5	-	-	-	0.00	-	-
6	-	-	-	0.00	0.00	-
7	-	-	-	0.00	-	-
8	-	-	-	0.00	-	-
9	-	-	-	0.00	-	-
10	-	-	-	0.00	-	-
Minimum C Threshold		0.43	0.11	0.05	0.05	N/A
Maximum C Threshold		0.44	0.44	0.27	0.05	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 22. C-Terrain-10: Maximum VISCREEN C Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	0.01	0.02	0.04
2	-	-	-	0.01	0.01	0.02
3	-	-	-	0.00	0.01	0.01
4	-	-	-	0.00	0.00	0.00
5	-	-	-	0.00	0.00	-
6	-	-	-	0.00	0.00	-
7	-	-	-	0.00	-	-
8	-	-	-	0.00	-	-
9	-	-	-	0.00	-	-
10	-	-	-	-	-	-
Minimum C Threshold		N/A	N/A	0.05	0.05	0.05
Maximum C Threshold		N/A	N/A	0.27	0.05	0.05

The stability classes in this table are not adjusted for elevation differences.

Results Summary for C-Sky-10 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the C-Sky-10 combination, for the applicable wind speeds and stability classes, are provided in Table 23 and Table 24, respectively.

Table 23. C-Sky-10: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 24. C-Sky-10: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted C for daytime and nighttime hours for the C-Sky-10 combination, for the applicable wind speed and stability class combinations, are provided in Table 25 and Table 26, respectively.

Table 25. C-Sky-10: Maximum VISCREEN C Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	0.00	0.01	0.01	-
2	-	-	-	0.00	0.01	-
3	-	-	-	0.00	0.00	-
4	-	-	-	0.00	-	-
5	-	-	-	0.00	-	-
6	-	-	-	0.00	0.00	-
7	-	-	-	0.00	-	-
8	-	-	-	0.00	-	-
9	-	-	-	0.00	-	-
10	-	-	-	-	-	-
Minimum C Threshold		0.40	0.16	0.05	0.05	N/A
Maximum C Threshold		0.40	0.41	0.19	0.05	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 26. C-Sky-10: Maximum VISCREEN C Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	0.01	0.01	0.02
2	-	-	-	0.00	0.01	0.01
3	-	-	-	0.00	0.00	0.01
4	-	-	-	0.00	0.00	0.00
5	-	-	-	0.00	0.00	-
6	-	-	-	0.00	0.00	-
7	-	-	-	0.00	-	-
8	-	-	-	0.00	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Minimum C Threshold		N/A	N/A	0.05	0.05	0.05
Maximum C Threshold		N/A	N/A	0.19	0.05	0.05

The stability classes in this table are not adjusted for elevation differences.

Results Summary for C-Terrain-140 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the C-Terrain-140 combination, for the applicable wind speeds and stability classes, are provided in Table 27 and Table 28, respectively.

Table 27. C-Terrain-140: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 28. C-Terrain-140: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted C for daytime and nighttime hours for the C-Terrain-140 combination, for the applicable wind speed and stability class combinations, are provided in Table 29 and Table 30, respectively.

Table 29. C-Terrain-140: Maximum VISCREEN C Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	0.00	0.00	0.01	-
2	-	-	-	0.00	0.01	-
3	-	-	-	0.00	0.00	-
4	-	-	-	0.00	-	-
5	-	-	-	0.00	-	-
6	-	-	-	0.00	0.00	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Minimum C Threshold		0.43	0.11	0.05	0.05	N/A
Maximum C Threshold		0.44	0.44	0.27	0.07	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 30. C-Terrain-140: Maximum VISCREEN C Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	0.01	0.01	0.02
2	-	-	-	0.00	0.00	0.01
3	-	-	-	0.00	0.00	0.00
4	-	-	-	0.00	0.00	0.00
5	-	-	-	0.00	0.00	-
6	-	-	-	0.00	0.00	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Minimum C Threshold		N/A	N/A	0.05	0.05	0.05
Maximum C Threshold		N/A	N/A	0.27	0.07	0.05

The stability classes in this table are not adjusted for elevation differences.

Results Summary for C-Sky-140 Viewing Conditions

The number of potential visible plume daytime and nighttime hours for the C-Sky-140 combination, for the applicable wind speeds and stability classes, are provided in Table 31 and Table 32, respectively.

Table 31. C-Sky-140: Number of Visible Plume Hours for Daytime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

Table 32. C-Sky-140: Number of Visible Plume Hours for Nighttime Meteorological Data

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	-	-	14
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-

The stability classes in this table are not adjusted for elevation differences.

The maximum predicted C for daytime and nighttime hours for the C-Sky-140 combination, for the applicable wind speed and stability class combinations, are provided in Table 33 and Table 34, respectively.

Table 33. C-Sky-140: Maximum VISCREEN C Results for Daytime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	0.00	0.00	0.03	0.04	-
2	-	-	0.00	0.01	0.02	-
3	-	-	0.00	0.01	0.01	-
4	-	-	0.00	0.00	-	-
5	-	-	0.00	0.00	-	-
6	-	-	-	0.00	0.00	-
7	-	-	-	0.00	-	-
8	-	-	-	0.00	-	-
9	-	-	-	0.00	-	-
10	-	-	-	0.00	-	-
Minimum C Threshold		0.40	0.16	0.05	0.05	N/A
Maximum C Threshold		0.40	0.41	0.19	0.05	N/A

The stability classes in this table are not adjusted for elevation differences.

Table 34. C-Sky-140: Maximum VISCREEN C Results for Nighttime Hours

Wind Speed (m/s)	Pasquill Stability Class					
	A	B	C	D	E	F
1	-	-	-	0.03	0.03	0.06
2	-	-	-	0.01	0.02	0.03
3	-	-	-	0.01	0.01	0.02
4	-	-	-	0.00	0.01	0.01
5	-	-	-	0.00	0.01	-
6	-	-	-	0.00	0.00	-
7	-	-	-	0.00	-	-
8	-	-	-	0.00	-	-
9	-	-	-	0.00	-	-
10	-	-	-	-	-	-
Minimum C Threshold		N/A	N/A	0.05	0.05	0.05
Maximum C Threshold		N/A	N/A	0.19	0.05	0.05

The stability classes in this table are not adjusted for elevation differences.