



**UNITED STATES ENVIRONMENTAL PROTECTION
AGENCY
REGION 10**

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OFFICE OF THE
REGIONAL
ADMINISTRATOR

August 10 2023

Mr. Jess Byrne
Director
Idaho Department of Environmental Quality
1410 North Hilton Street
Boise, Idaho 83706

Dear Mr. Byrne,

The purpose of this letter is to request an in-person meeting, either in Seattle or Boise, to follow-up on our recent discussion regarding concerns with Idaho Department of Environmental Quality's air quality Permit to Construct issued to Perpetua Resources Idaho, Inc. on June 17, 2022. The Permit authorizes Perpetua Resources Idaho, Inc. to construct a gold, silver and antimony mine, referred to as the Stibnite Gold Project. The Agency previously provided comments on draft permits to the Department raising numerous issues. The Agency has reviewed the final Permit, statement of basis and the Department's response to comments and continues to be concerned that construction and operation of the Stibnite Gold Project under the terms set out in the Department's Permit would not comply with the Clean Air Act. As we discussed, the Agency does not oppose the Stibnite Gold Project, generally. The Agency's interest is ensuring that the Stibnite Gold Project is properly permitted and complies with the Clean Air Act to ensure the protection of human health and the environment.

The Agency has three primary concerns with the Department's Permit: (1) the Permit's emission limits are not adequate to limit the Stibnite Gold Project's potential to emit below the Prevention of Significant Deterioration permitting threshold; thus, construction of the Stibnite Gold Project would constitute construction of a major stationary source without a Prevention of Significant Deterioration permit, (2) the Permit's emission limits are not adequate to protect the particulate matter National Ambient Air Quality Standard, and (3) the Department's delineation between the Stibnite Gold Project boundary and the ambient air—where the National Ambient Air Quality Standards apply—is not adequately supported. Details of the Agency's evaluation of the final permit are enclosed for your review.

The Agency believes that the deficiencies in the Permit outlined in the enclosure and articulated in prior comments can be rectified through issuance of a revised permit to construct with adequate and enforceable conditions that limit the Stibnite Gold Project's potential to emit and ensure compliance with the National Ambient Air Quality Standards. I invite the Department to discuss these concerns with the Agency and collaborate with the Agency on an appropriate path forward.

Given the seriousness of the concerns raised by the EPA and the need to reach a timely resolution, I would like to schedule the meeting in the next 30 days, with your and my personal involvement, along with appropriate members of our permit and legal teams.

If you are supportive of such a meeting, please have your scheduler contact my Executive Assistant, Michelle Fraser, at (206) 553-4629 or fraser.michelle@epa.gov. Thank you for your attention to this matter.

Sincerely,

Casey Sixkiller
Regional Administrator

cc: Ms. Tiffany Floyd
Idaho Department of Environmental Quality

Mr. John Shackelford
Idaho Office of the Attorney General

Chairman Shannon F. Wheeler
Nez Perce Tribe

**ENVIRONMENTAL PROTECTION AGENCY
EVALUATION OF AIR QUALITY PERMIT TO CONSTRUCT**

Perpetua Resources Idaho, Inc.

Permit Number P-2019-0047

Issued: June 17, 2022

PRIOR ENVIRONMENTAL PROTECTION AGENCY (EPA) COMMENTS ON DRAFT PERMITS

Perpetua Resources Idaho, Inc. (PRI) submitted an application for a permit to construct (PTC) the Stibnite Gold Project (SGP) to Idaho Department of Environmental Quality (IDEQ) on August 20, 2019. Prior to issuance of the final PTC, IDEQ developed and offered for public comment three draft PTCs. EPA submitted two formal comment letters dated March 19, 2021, and March 16, 2022, on two of the prior permit drafts dated February 18, 2021, and January 13, 2022, respectively. In these comments, EPA raised numerous concerns with the adequacy of the draft PTCs to limit the SGP's potential to emit (PTE) to below major stationary source levels and to ensure the SGP does not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS). IDEQ issued the Final Permit, Statement of Basis (SOB), and Response to Comments (RTC) on June 17, 2022.

STATUTORY AND REGULATORY REQUIREMENTS

Major stationary sources in Idaho are required to obtain a prevention of significant deterioration permit (PSD) prior to commencing construction.¹ Similarly, major stationary sources in Idaho must obtain a Tier I operating permit.² For purposes of the PSD permitting requirement, a source meets the definition of major stationary source if it has a PTE of 250 tons per year or more of a regulated NSR pollutant or 100 tons per year or more of a regulated air pollutant if the source is of the type specifically listed in the regulations (e.g., lime plants).³ For the purposes of the requirement to obtain a Tier I operating permit, a source meets the definition of major stationary source if the source has a PTE of 100 tons per year or more of any regulated air pollutant, 10 tons per year or more of any hazardous air pollutant (HAP), or 25 tons per year of any combination of HAPs.⁴ Particulate matter and particulate matter with an aerodynamic diameter of less than or equal to 10 micrometers are regulated air pollutants.⁵

A state-issued permit condition can legally restrict a source's PTE if it meets two criteria: 1) the condition is legally enforceable by the state air pollution control agency; and 2) it is enforceable as a practical matter.⁶

¹ IDAPA 58.01.01.205; 40 CFR 52.670(c).

² In Idaho, major sources under Title V of the CAA and 40 CFR part 70 are referred to as Tier I Sources. IDAPA 58.01.01.300-397.

³ IDAPA 58.01.01.201 and 205.01 and 40 CFR 52.21(b); 40 CFR 52.670(c).

⁴ IDAPA 58.01.01.006; 58.01.01.008; 58.01.01.107; 40 CFR 70.2.

⁵ IDAPA 58.01.01.006; 40 CFR 52.670(c).

⁶ Terrell E. Hunt and John S. Seitz, "Limiting Potential to Emit in New Source Permitting" (June 13, 1989) ("Hunt Memo") at 2; John Seitz and Robert Van Heuvelen, "Release of Interim Policy on Federal Enforceability of Limitations on Potential to Emit" (Jan. 22, 1996) at 3.

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In general, practical enforceability for a source-specific permit term means that the provision must specify: (1) a technically accurate limitation and the portions of the source subject to the limitation; (2) the time period for the limitation (hourly, daily, monthly, annually); and (3) the method to determine compliance including appropriate monitoring, record keeping and reporting.⁷

Emission factors used to derive a PTE limit must be technically accurate.⁸ In general, emissions factors published in EPA's *AP-42 Compilation of Air Pollutant Emission Factors* (AP-42) are based on averages and are not intended for establishing source-specific limits.⁹ EPA recommends using emissions factors in AP-42 only when source specific emissions factors are not available and selecting conservatively higher emissions factors.¹⁰ EPA assigns each emissions factor in AP-42 a rating from A to E, with A being the best.¹¹ According to AP-42, "Factors based on many observations, or on more widely accepted test procedures, are assigned higher rankings. Conversely, a factor based on a single observation of questionable quality, or one extrapolated from another factor from a similar process, would probably be rated much lower."¹²

Emission factors also include numerous operating assumptions and variables regarding the source.¹³ Accordingly, the permit should contain conditions to ensure the operating assumptions and variables underlying the emission factor accurately reflect site-specific conditions and are enforceable.¹⁴

When permits require add-on controls operated at a specified efficiency level, permit writers should include, so that the operating efficiency condition is enforceable as a practical matter, those operating parameters and assumptions which the permitting agency depended upon to determine that the control equipment would have a given efficiency.¹⁵

⁷ John S. Seitz, "Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act" (Jan. 25, 1995) ("Seitz Memo") at 5-6; Kathie Stein, "Guidance on Enforceability Requirements for Limiting Potential to Emit through SIP and § 112 Rules and General Permits" (January 25, 1995) ("Stein Memo") at 6; *In re Shell Offshore, Inc.*, 15 E.A.D. 526, 551 (March 30, 2012); Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act, 84 FR 36304, 36318 (July 26, 2019).

⁸ Peabody Western Coal, 12 E.A.D. at 39; *see also* *In re Shell Offshore, Inc.* 15 E.A.D. at 559; *In the Matter of Yuhuang Chemical Inc. Methanol Plant St. James Parish, Louisiana, Title V Petition Response Order*, No. VI-2015-03 (August 31, 2016) ("Yuhuang Order") at 19, 28.

⁹ Peabody Western Coal, 12 E.A.D. at 38 ("Peabody not only proposes to rely on the AP-42 factors to establish both its PTE limit and to demonstrate compliance with that limit, Peabody compounds the potential inaccuracy of this approach by using unverified emission control assumptions in both calculations."); *see also* John S. Seitz and Eric Schaeffer, "Potential to Emit (PTE) Guidance for Specific Source Categories" (April 14, 1998) at 4 n.4.

¹⁰ *In re Shell Offshore, Inc.* 15 E.A.D. at 559.

¹¹ *Compilation of Air Pollutant Emission Factors (AP-42) Fifth Edition*, January 1995, Introduction at pp. 2; 4; 8.

¹² *Id.* at 8.

¹³ Peabody Western Coal, 12 E.A.D. at 39 n.40.

¹⁴ Hunt Memo at 7-8; *See also* Peabody Western Coal, 12 E.A.D. at 38 n.38; Yuhuang Order at 19, 28.

¹⁵ Hunt Memo at 7, 20-21; *see also* Cash Creek General LLC, Title V Petition Response Order, No. IV-2010-4 (June 22, 2012) at 17, 26 (granting in part because the permittee's claims of 90% control efficiency of PM emissions from storage piles and associated roadways was unsubstantiated and the permit lacked any requirements governing frequency of wet suppression, atmospheric or operations conditions under which wet suppression should be applied, the time of day that wet or chemical suppression should be applied, or the amount that should be applied).

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When permits contain emissions, production or operational limits, they should also have monitoring, recordkeeping, and reporting (MRR) requirements that allow a permitting agency to verify a source's compliance with its limits.¹⁶ The permit should provide for the collecting, maintaining, and reporting of information necessary to determine emissions of each pollutant as well as compliance with operating parameters.¹⁷ The permit must include conditions that clearly specify the monitoring requirements and how the permittee must demonstrate compliance via the monitoring requirements.¹⁸

With respect to National Ambient Air Quality Standards (NAAQS) compliance, in accordance with IDAPA 58.01.01.203.02: "No permit to construct shall be granted for a new or modified source unless the application shows to the satisfaction of the Department all of the following: NAAQS. The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard." See also 40 CFR 52.670(c). Similarly, new major stationary sources in attainment or unclassifiable areas are subject to IDAPA 58.01.01.205, which is an approved part of Idaho's State Implementation Plan.¹⁹ In order to satisfy the requirements of CAA Section 110(a)(2)(J), IDAPA 58.01.01.205 incorporates by reference several sections of 40 CFR 52.21, including 40 CFR 52.21(k). The regulation at 40 CFR 52.21(k) and CAA Section 165(a)(3) require that, "The owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of: Any national ambient air quality standard in any air quality control region; or Any applicable maximum allowable increase over the baseline concentration in any area."

EVALUATION OF FINAL PERMIT

1. The production limits in the PTC do not restrict the SGP's PTE to below major stationary source permitting thresholds under the prevention of significant deterioration (PSD) or Title V programs.

a. Underestimation of Emissions from Ore Processing Emission Units

In its prior comment letters, EPA advised DEQ that the emission factors relied upon in the draft permits were not representative of emissions. For instance, EPA's March 16, 2022 comment letter stated: "Some of the PTE limitations may not be technically accurate because they are not based on emission factors that are representative of the emission sources. For example, AP-42 Section 11.24 Metallic Minerals Processing emission factors applies to the processing of hard ores including gold. However, the application uses AP-42 emissions factors from Section 11.19.2 Crushed Stone Processing that is applicable to non-metallic mineral processing. The permitting record does not provide a reasoned explanation as to why emission factors from Section 11.24 were selected over those from Section 11.19.2."²⁰

¹⁶ Hunt Memo at 17; In re Shell Offshore, Inc. 15 E.A.D. at 551.

¹⁷ 84 Fed. Reg. 36,304, 36,320.

¹⁸ Yuhuang Order at 21.

¹⁹ 40 CFR 52.670(c).

²⁰ March 16, 2022, EPA Comment 5

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DEQ's Response to Comment did not provide any additional information or rationale for decision making. Instead, DEQ stated, "Representativeness of these parameters was discussed with and reconfirmed by PRI at various points during review and the estimates of emissions and underlying assumptions were supported to the satisfaction of DEQ."²¹

Even if a permitting authority was unable to find more accurate emission factors than AP-42, the introduction to Section 11.19 states, "The construction aggregate industry covers a range of subclassifications of the nonmetallic minerals industry (see Section 11.24, Metallic Minerals Processing, for information on that similar activity)." IDEQ did not follow the listed instructions to see Section 11.24 for Metallic Minerals Processing.

IDEQ did not state that it performed any analysis of other emission information. IDEQ did not state that it sought out emission factor information of higher quality than AP-42, as required by IDEQ Guidance²² (Guidance) which states, "When estimating emissions, emissions data that *best* reflects emissions from a stationary source must be used" (emphasis added). DEQ did not make a determination that the emission factor chosen meets the Guidance. Similarly, the Guidance states "The rating of the AP-42 factor must be considered..." However, IDEQ did not state how it considered the rating of the factor chosen or if IDEQ considered other factors with higher ratings. For reference, AP-42 Section 11.24 has a rating of "C" for primary crushing emission factor. AP-42 Section 11.19 has no emission factor for primary crushing, but states that tertiary crushing can be used for primary and secondary crushing and the rating for tertiary crushing is "E", the lowest rating assigned by AP-42. Setting aside the choice of using an emission factor for Non-Metallic Minerals instead of the Metallic Minerals, IDEQ has not evaluated the available emission factors based on the rating, as required by its own Guidance.

EPA's document AP-42 Metallic Mineral Processing Plants – Background Information for Proposed Standards Volume 2 Appendices (EPA-450/3-81.009b) lists visits and emission testing at various mineral processing and mining operations. Appendix C – Summary of Test Data includes data on nine plants that processed metallic minerals. Table C-1 specifically includes testing at processing equipment at a gold mine with baghouse control. Thus, the metallic mineral processing plants evaluated and tested to form the basis for the emissions factors in AP-42 Section 11.24 are most similar to the metallic mineral processing emission units at the SGP. These background documents clearly indicate that the emissions factors in Section 11.24 are most appropriate for estimating emissions from the SGP.

Multiplying the emission factor found in AP-42 Section 11.24 by the production limitation on the primary crusher (OC7) results in an emission estimate over 90 tons of PM per year for that unit alone. Similarly, if AP-42 Section 11.24 emission factors are multiplied by the production limits for the remaining emission units OC1 through OC13, potential PM emissions from that collection of units *exceeds 800 tons PM per year*. Given the PSD threshold of 250 tons per year and the fact that even Section 11.24 is an average emission factor (and approximately half of all emission units will emit above an average rate), the PTC fails to restrict emissions below major source thresholds.

²¹ RTC at pp. 3; 23; 25-26.

²² Guidance available at <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/5521>.

Based on the above information, IDEQ did not follow DEQ Guidance, did not support the use of the chosen emission factor, and was arbitrary when choosing emission factors for the ore processing emission units. Accordingly, the PTC does not restrict the Facility's PTE below major source thresholds as a legal and practical matter.

b. Underestimation of Emissions from Lime Plant Emission Units

EPA previously commented that IDEQ's emission estimates for the lime production emission units are not technically accurate because they do not appear to be based on emission factors that are representative of the emission sources. For example, EPA commented that AP-42 Section 11.17 Lime Manufacturing emission factors applies to the processing of lime derived from marble. However, IDEQ used AP-42 emissions factors from Section 11.19.2 Crushed Stone Processing. In addition, the limestone excavating emission estimates (Material Load & Unload) appear to use emission factors from Section 11.19.2 Crushed Stone Processing instead of Section 11.9 Western Surface Coal Mining emission factors that are representative and specific to mining excavation activities. The permitting record does not explain why emission factors from AP-42 Section 11.19.2 were selected over those from Sections 11.17 and 11.9. If IDEQ does not have a good technical reason for their selection of emission factors, the most conservative emission factor should be used for emission units.²³

IDEQ responded to EPA and other commenters that: "As described previously in the Representativeness and Uncertainty of Emissions section, 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 to emit (PTE) at design capacity was considered a conservative approach. Emission factors with control efficiencies built into them were adequately supported by that corresponding control device listed in the permit. Representative emission factors from EPA's AP-42 Section 11.17, 11.19.2 and 11.9 were used to estimate emissions from the lime plant, lime plant support equipment, and marble overburden mining, respectively. The facility's emission inventory includes crushers, screens, and conveyors controlled by water sprays. EPA's AP-42 11.19.2 (08/2004) provides representative emission factors for these specific processes and controls."²⁴

Consistent with the evaluation in Section 1.a., above, DEQ failed to apply appropriate emission factors to the lime plant emission units, did not follow IDEQ guidance specific to emission factor use in permits and failed to create an enforceable restriction on the lime plant's potential to emit below major source thresholds (e.g., 100 tons PM per year).

IDEQ's selection of emissions factors for the lime plant and basis therefor suffer from the same deficiencies as the ore processing units evaluated in Section 1.a., above. IDEQ relied upon sections of AP-42 that are not specific to the process units being permitted. For instance, IDEQ relied upon non-metallic mineral processing emission estimates in EPA's AP-42 Section 11.19 instead of evaluating EPA's emission factors for lime manufacturing, Section 11.17. A single example of how important it is to accurately estimate emissions is illustrated by a process unit in

²³ March 16, 2022, EPA Comment 11.

²⁴ RTC at pp. 27-28.

the Lime Plant, LS3/LS4 (primary Screen/Secondary Crusher). If the emission factor for secondary crushers (0.62 lb/ton) in Section 11.17 is applied to those production units, potential emissions would exceed 100 tons PM per year from those units alone. The same result applies to emission unit LS5 (secondary screen), resulting in an additional 128 tons PM per year. These two simple examples highlight the importance of accurately estimating future emissions from the proposed SGP.

Based on the above and corresponding issues highlighted in Section 1.a., IDEQ did not follow IDEQ Guidance, did not support the use of the chosen emission factor and was arbitrary when choosing emission factors for the lime processing emission units, and did not restrict the lime plant's PTE below major source thresholds.

c. Lack of Emission Limits

IDEQ's permit imposes only production limits for the ore processing units while relying on the unrepresentative emission factors that significantly underestimate emissions. While use of production limits alone to limit PTE may be acceptable in certain circumstances, such as when the limits are derived from conservative emission factors, this is not the case here.

In addition to inadequate production limits derived from unrepresentative emission factors, the Final Permit lacks emissions limits for several emission units, including the ore crushers, screens, and conveyors. This further undermines the enforceability of the synthetic minor limits. EPA advised IDEQ of this problem in its March 19, 2021, letter (Comments 1-4). Despite these comments, the Final Permit does not contain either source-wide emission limits applicable to all emission units or unit-specific limits on the mining and ore processing emission units.²⁵ As a result, enforcement of the synthetic minor limits is constrained to the inaccurate production limits with no corresponding limitation on the emissions from those units. As discussed above, IDEQ used emission factors that significantly underestimate the emissions from the ore processing units as well as the lime plant units. Based on the analysis above, DEQ's permit does not restrict the SGP's PM PTE to below PSD or Title V major source thresholds as a legal and practical matter.

d. Lack of Sufficient Monitoring, Recordkeeping and Reporting

EPA previously commented that the Draft Permit lacked sufficient monitoring, recordkeeping and reporting (MRR) to ensure the production and emission limits are enforceable as a practical matter.²⁶ EPA commented that the Final Permit did not include core monitoring, recordkeeping, and reporting (MRR) requirements directly, but rather allowed the permittee to develop these MRR requirements post permit issuance in an Operations and Maintenance Manual (O&M Manual). EPA, as well as many other commenters, raised procedural and substantive concerns with IDEQ's approach to incorporating MRR requirements into the permit. Procedurally, EPA commented that the O&M Manual ought to be developed and available for public comment prior to permit issuance and that any changes to the O&M Manual ought to be reviewed and approved

²⁵ Includes Drilling Activities, Blasting Activities, Excavating and hauling activities, Rock dumps and hauling activities, Prill Silos #1-2, OC1 through OC13.

²⁶ March 16, 2022 EPA Comments 6, 7, 12, 13, 22-25

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by IDEQ prior to the change. Substantively, EPA commented that the permit condition specifying the minimum requirements for the O&M Manual lacked the necessary specificity to ensure the permit include adequate MRR.

IDEQ's RTC included some responses to EPA's comments. IDEQ revised PTC Condition 2.20 from draft to final to require that the O&M manual be developed 30 days prior to startup of any process equipment. Condition 2.20 also states: "The requirements in the O&M manual shall be incorporated by reference to this permit and shall be enforceable permit conditions." In addition, PTC Condition 2.21 requires: "The O&M manual shall be submitted for approval to DEQ 30 days prior to startup of any ore processing, ore concentration and refining, lime production, or aggregate production emission source regulated by this permit (as identified in Table 1.1) at the address provided (Permit Condition 2.26), and shall remain onsite at all times. Any changes to the O&M manual shall be submitted to DEQ for review, comment, and approval 30 days prior to the change."²⁷

These conditions in the Final PTC and Idaho's RTC do not fully address EPA's concerns regarding the development and approval of the O&M Manual. IDEQ did not require the applicant to develop and submit the O&M Manual as part of its application. Accordingly, the O&M Manual will not be subject to public review and comment, even though the Manual will establish enforceable conditions in the permit. In addition, Conditions 2.20 and 2.21 do not mandate IDEQ *approval* prior to startup or a change to the O&M Manual, only that the Permittee submit the O&M Manual to IDEQ for approval. Finally, Condition 2.20 specifies that the O&M Manual shall be incorporated by reference into the permit. However, this condition does not make clear whether only the approved O&M Manual is incorporated by reference or any version of the O&M Manual submitted by the permittee. Moreover, given that the O&M Manual establishes permit conditions that bear on emission and compliance, revisions to the O&M Manual constitute permit revisions that ought to be subject to public review and comment.²⁸

Condition 2.20 contains the minimum content requirements for the O&M Manual. In response to commenters questioning the sufficiency of these minimum requirements, IDEQ reasserted that Condition 2.20 contains the minimum requirements for the O&M Manual and that Condition 2.20 requires the permittee to describe various methods, procedures, and schedules to monitor emission units and control equipment.²⁹ Neither the Final Permit nor IDEQ's RTC adequately address EPA's concerns.

At the outset, these minimum requirements are vague and may not compel specific, enforceable conditions in the ultimate O&M Manual. For many critical monitoring and operational requirements, Condition 2.20 merely requires the permittee to "describe" the procedures and/or schedule. In addition, the requirement to "Describe the schedule and procedures for routine inspection (Permit Condition 2.10), maintenance, repair, and replacement of control equipment" does not specify any particular method (e.g. EPA Test Methods 9, 22) for visual observation of opacity or fugitive emissions. Accordingly, this vague condition will not lead to sufficient MRR in the O&M Manual.

²⁷ RTC at p. 15.

²⁸ See IDAPA 50.01.01.209.04.

²⁹ RTC at pp. 13-18; 20 (Comments 6, 7, 8, 11, 12, and 15).

In addition to these overarching concerns with Condition 2.20, numerous permit conditions reference the O&M Manual to satisfy MRR requirements. However, as illustrated in Table 1, below, Condition 2.20 does not mandate specific MRR for all of these corresponding production or emission limits.³⁰

Table 1: Evaluation of O&M Manual Requirements

Conditions	O&M Manual Requirements	Evaluation
<p>Conditions 3.11-3.12:</p> <ul style="list-style-type: none"> The permittee shall install and operate dust collection systems with a minimum control efficiency of 90% on all drilling rigs in accordance with the O&M manual. The permittee shall install, operate, and maintain water sprays in accordance with the O&M manual (Permit Condition 2.20) to control PM emissions from each ore processing crusher and conveyor. 	<p>Condition 2.20 does not contain any specific minimum requirements for water sprays.</p>	<p>The MRR for drill rigs and rock crushing equipment is inadequate. The O&M manual contains no provisions regarding water sprays. While Condition 2.20 does require incorporation of certain manufacturer’s guarantees, this requirement is specific to certain control devices: wet scrubber, vent gas cleaning tower, venturi scrubber, carbon filter, baghouse and bin vent filter cartridge control device.</p>
<p>Conditions 3.16-3.20:</p> <ul style="list-style-type: none"> The devices and methodologies used to measure weights shall be identified in the O&M Manual. 	<p>Condition 2.20 requires the O&M Manual to “Describe each monitoring device and methodology used to measure weight rates of materials to demonstrate compliance with each material throughput limit (Permit Conditions 3.5–3.9, 4.8–4.11, and 5.4–5.8). Procedures for proper installation, calibration, and maintenance shall be included.”</p>	<p>This condition lacks specificity with respect to the scale used to determine the weights of materials, particularly daily ore loading conditions in 3.16-3.20. In order for these daily limits to be practically enforceable, the permit must contain monitoring, recordkeeping and reporting of total daily weights of ore. This necessitates use of an accurate scale. Condition 2.20</p>

³⁰ Conditions 3.11-3.12; 3.16-3.20; 4.13-4.17; Table 4.2, Footnote C; 4.21-4.23; 4.29-4.32; 5.11-5.16; 5.17-5.26.

		<p>does not mandate the use of any particular scale, or that the permittee maintain the scale within a certain percent accuracy. Without these minimum conditions in Condition 2.20, IDEQ has limited grounds to disapprove an O&M Manual that allows for inappropriate or inaccurate scales. See the regulation at 40 CFR 63.11646(a)(8)-(10) for detailed requirements for the measuring and recording of weights.</p> <p>Neither Condition 2.20 nor Conditions 3.16-3.20 contain required calculations for summing daily weights to demonstrate continuous compliance.</p> <p>In its response to comments, IDEQ stated that the permittee will use a weighometer to measure weights.³¹ While this may be true, no condition in the permit requires the use of a weighometer.</p>
<p>Conditions 4.13-4.17</p> <ul style="list-style-type: none"> The permittee shall install, operate, and maintain venturi scrubber (VS1), vent gas cleaning tower (ST1), vent gas steam condensation tower (CT1), and carbon filter (CA5) systems in accordance with the O&M manual (Permit 	<p>Describe the schedule and procedures for routine inspection (Permit Condition 2.10), maintenance, repair, and replacement of control equipment.</p> <ul style="list-style-type: none"> See-no-see visible emissions inspection of each wet scrubber, carbon filter, baghouse, and bin vent shall be 	<p>No conditions specify any specific methods for see-no-see inspections, e.g. Method 22 observations.</p> <p>Without referencing the method, the compliance determination is subjective and likely unenforceable.</p>

³¹ RTC at p. 15.

<p>Condition 2.20) and consistent with manufacturer's recommendations.</p> <ul style="list-style-type: none"> The permittee shall install, operate, and maintain a carbon filter (CA2) in accordance with the O&M manual (Permit Condition 2.20) and consistent with manufacturer's recommendations. 	<p>conducted at least once per day.</p> <ul style="list-style-type: none"> Describe the schedule and procedures for corrective action that will be taken if visible emissions are present from wet scrubber (WS2, WS3), carbon filter (CA1, CA2, CA3, CA4, CA5), baghouse (BH2, BH3, BH4, BH5), or bin vent filter (LS, LS1, Mills2, ACS1, ACS2, ACS3, ACS4, CS1, CS2) control equipment at any time. Procedures should include how to determine whether filter cartridges are ruptured or are not appropriately secured in place, and how to determine whether the wet scrubber, condenser, and carbon filters are operating properly. 	
<p>Table 4.2 Footnote C</p> <p>Pounds per hour, as determined by a test method prescribed by IDAPA 58.01.01.157, EPA reference test method, continuous emission monitoring system (CEMS) data, or DEQ-approved alternative.</p> <p>Condition 4.8 The permittee shall process ore concentrate as the raw</p>	<p>Describe each monitoring device and methodology used to measure weight rates of materials to demonstrate compliance with each material throughput limit (Permit Conditions 3.5–3.9, 4.8–4.11, and 5.4–5.8). Procedures for proper installation, calibration, and maintenance shall be included.</p> <p>Establish operating ranges for control equipment, based on</p>	<p>Condition 2.20 does not contain MRR requirements specific to Venturi Scrubber (VS1) Vent Gas Cleaning Tower (ST1) or Vent Gas Steam Condensation Tower (CT1) used to control emissions from the Autoclave.</p> <p>Condition 2.20 contains a requirement to describe the schedule for taking corrective action if visible emissions are</p>

<p>material in the autoclave, and the maximum input to the autoclave shall not exceed 6,960 T/day.</p> <p>Condition 4.13 The permittee shall install, operate, and maintain venturi scrubber (VS1), vent gas cleaning tower (ST1), vent gas steam condensation tower (CT1), and carbon filter (CA5) systems in accordance with the O&M manual (Permit Condition 2.20) and consistent with manufacturer's recommendations.</p> <p>Conditions 4.21-4.23</p> <ul style="list-style-type: none"> • The devices and methodologies used to measure weights shall be identified in the O&M Manual, and the devices shall be installed in accordance with the requirements of NESHAP Subpart EEEEEEE. • The devices and methodologies used to measure weights shall be identified in the O&M Manual. • At least once per shift, the permittee shall monitor and record the circulation flow rate in the venturi scrubber, the circulation flow rate in the vent gas cleaning tower, the 	<p>manufacturer specifications and conditions measured during performance testing.</p> <ul style="list-style-type: none"> • Minimum pressure drop across each wet scrubber, vent gas cleaning tower, and venturi scrubber; • Minimum circulation flow rate for each wet scrubber, vent gas cleaning tower, venturi scrubber; • Maximum inlet gas stream temperature to each carbon filter; • Maximum pressure drop across each carbon filter; • Minimum pressure drop across each baghouse. <p>Describe the schedule and procedures for corrective action that will be taken if visible emissions are present from wet scrubber (WS2, WS3), carbon filter (CA1, CA2, CA3, CA4, CA5), baghouse (BH2, BH3, BH4, BH5), or bin vent filter (LS, LS1, Mills2, ACS1, ACS2, ACS3, ACS4, CS1, CS2) control equipment at any time. Procedures should include how to determine whether filter cartridges are ruptured or are not appropriately secured in place, and how to determine whether the wet scrubber, condenser, and carbon filters are operating properly.</p>	<p>present, but does not mandate any specific corrective actions.</p> <p>NESHAP Subpart EEEEEEE contains detailed MRR requirements at 40 CFR 63.11646(a)(8)-(10), including maintenance and calibration requirements. However, Condition 4.21 does not require maintenance or calibration in accordance with NESHAP Subpart EEEEEEE, only installation in accordance with NESHAP Subpart EEEEEEE.</p>
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<p>pressure drop across the venturi scrubber, and the pressure drop across the vent gas cleaning tower to ensure compliance with O&M specifications.</p>		
<p>Conditions 5.11-5.16</p> <ul style="list-style-type: none"> • The permittee shall install, operate, and maintain water sprays in accordance with the O&M manual (Permit Condition 2.20) to control PM emissions from each portable crushing and screening plant. Water sprays shall operate at all times, except as specified in the O&M manual during winter conditions, when this equipment is operated to ensure compliance with Fugitive Dust requirements (Permit Conditions 2.1–2.6). • The permittee shall install, operate, and maintain a baghouse system (BH4) in accordance with the O&M manual (Permit Condition 2.20) and consistent with manufacturer’s recommendations. All emissions from the parallel flow regenerative kiln shall be ducted to the baghouse at all times 	<p>Establish operating ranges for control equipment, based on manufacturer specifications and conditions measured during performance testing.</p> <p>Describe the schedule and procedures for routine inspection (Permit Condition 2.10), maintenance, repair, and replacement of control equipment.</p> <p>The replacement dates for each baghouse and bin vent filter cartridge and for each activated carbon filter medium shall be recorded at the time of each replacement. For cartridges, records shall include the manufacturer and model. For carbon filters, records shall include the manufacturer, type, and form of medium added. Records shall also include any changes in supplier and other relevant information</p> <p>Describe the schedule and procedures for corrective action that will be taken if visible emissions are present from wet scrubber (WS2, WS3), carbon filter (CA1,</p>	<p>Condition 2.20 does not contain any specific minimum requirements for water sprays. Thus, the permit lacks sufficient MRR for these conditions.</p>

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<p>to ensure compliance with parallel flow regenerative emission limits.</p>	<p>CA2, CA3, CA4, CA5), baghouse (BH2, BH3, BH4, BH5), or bin vent filter (LS, LS1, Mills2, ACS1, ACS2, ACS3, ACS4, CS1, CS2) control equipment at any time. Procedures should include how to determine whether filter cartridges are ruptured or are not appropriately secured in place, and how to determine whether the wet scrubber, condenser, and carbon filters are operating properly.</p>	
<p>Condition 5.3 Emissions from the lime production plant stacks shall not exceed any emission rate limit in the following table . . .</p>	<p>None</p>	<p>The permit does not contain any requirements to calculate emissions to demonstrate ongoing compliance with these emission limits. The permit does not contain any formulas, data reduction methods, or periodic calculation requirements to demonstrate continuous compliance with these emission limits.</p>
<p>Conditions 5.17-5.26</p> <ul style="list-style-type: none"> The devices and methodologies used to measure weights shall be identified in the O&M Manual. 	<p>Describe each monitoring device and methodology used to measure weight rates of materials to demonstrate compliance with each material throughput limit (Permit Conditions 3.5–3.9, 4.8–4.11, and 5.4–5.8). Procedures for proper installation, calibration, and maintenance shall be included.</p>	<p>Same evaluation as Conditions 3.16-3.20.</p>

In addition, the Permit does not require testing for the ore processing or lime production emission units to confirm the accuracy of emission factors. As discussed above, IDEQ used inaccurate emission factors to derive production limits for ore processing and lime production emission units. In its RTC, IDEQ acknowledges the uncertainty present in emission factors. However, IDEQ did not require initial or routine testing to confirm the accuracy of the emissions

factors used to establish production and emission limits. Given the low quality of the emissions factors used, such testing is critical to ensuring the adequacy of the synthetic minor limits. However, the Final Permit does not require any testing.

Given the absence of sufficient MRR requirements for the corresponding production limits, emission limits, and control equipment requirements, many of the synthetic minor emission limits are not enforceable as a practical matter.

2. The SGP, as permitted, will cause or contribute to a violation of the PM₁₀ NAAQS.

a. Unsubstantiated estimates of fugitive dust control

EPA, as well as several other commenters, questioned the basis for IDEQ's determination that PRI could achieve a 93.3% control efficiency to control fugitive dust from haul roads at the SGP. Specifically, EPA commented that IDEQ did not provide a reasoned analysis demonstrating that the studies showing that 90% control efficiency is achievable using magnesium chloride reflect conditions at the SGP. EPA also commented that IDEQ did not include specific details necessary to support such a demonstration in the permitting record.³²

In its RTC, IDEQ responded stating that 93.3% is an aggressive level of control and that PRI has committed to undertaking all measures to achieve this level of control. IDEQ further stated that, based on a review of test studies, the 93.3% level of control can be achieved using water and magnesium chloride dust suppressants (citing PRI's application). IDEQ explained that chemical and water dust suppressants are used in combination for the control of dust from haul roads, and that achieving the target combined control efficiency of 93.3% is ultimately important to ensure compliance with applicable standards. According to IDEQ, it is for this reason that the combined control efficiency was listed in the permit in lieu of separate chemical (90% control) and water (33.3%) dust suppressant control efficiencies.³³

IDEQ's responses do not adequately address EPA's comments. IDEQ did not proffer further evidence that conditions at the SGP are comparable to areas where studies indicating a 90% control efficiency on fugitive dust is achievable. Even so, these studies do not support IDEQ's contention that a control efficiency of 93.3% is achievable. Ultimately, IDEQ appears to have back-calculated the control efficiency necessary to demonstrate NAAQS compliance, rather than determine a control efficiency that is achievable in practice.³⁴

b. Underestimation of Fugitive Dust Emissions

With respect to demonstrating NAAQS compliance, EPA commented that IDEQ's use of a median silt content of 4.0% underestimates fugitive dust emissions from haul roads. EPA commented that the arithmetic average silt content for haul roads based on Perpetua's site-specific data is 4.3%. Use of the 4.3% average value results in about 7% more fugitive dust emissions from the haul roads than estimated using the median value. IDEQ's modeling

³² March 16, 2022, EPA Comment 19.

³³ RTC at p. 3.

³⁴ SOB at p. 59; 65-66 (Table 28).

sensitivity study showed values just below the NAAQS, such that an 7% increase in fugitive dust from haul roads would have resulted in 24-hour PM₁₀ NAAQS violations.³⁵

In response, IDEQ stated the use of site-specific median values for silt content is commonly accepted by DEQ, and the values used in calculations were supported by PRI.³⁶ This response does not adequately justify why a median value rather than the arithmetic average is more appropriate taking into consideration the site-specific sampling. Given that a small difference in the silt content will result in an exceedance of the NAAQS, IDEQ's insistence on using a median silt content appears arbitrary and unreasonable and indicates that PRI has not demonstrated that the emissions will not cause or contribute to a NAAQS violation. On the contrary, operation of the SGP will likely cause or contribute to a violation of the PM₁₀ NAAQS.

c. Lack of Conditions to Ensure Continuous Compliance with PM₁₀ NAAQS

EPA, along with several other commenters, commented that the permit lacks conditions sufficient to ensure continuous compliance with the PM₁₀ NAAQS. Specifically, EPA raised concerns with the adequacy and practical enforceability of the Fugitive Dust Control Plan (FDCP). Specifically, EPA raised concerns that the permit did not contain specific conditions necessary to ensure continuous compliance with the 93.3% control efficiency, but rather allowed the permittee to develop these conditions as part of an FDCP after permit issuance and allowed the permittee to change the FDCP without IDEQ approval. EPA also commented that the permit lacks conditions necessary to make the 93.3% control efficiency practically enforceable, such as frequency of dust suppression, requirements for when to use chemical dust suppression, amount of dust suppression that must be applied, vehicle weight, vehicle speed, vehicle daily miles traveled, and road silt content.³⁷ With respect to Condition 2.5 requiring PRI to apply fugitive dust control measures such that visible emissions are below 10% opacity, EPA also commented that permitting record does not support a correlation of the 10% opacity requirement in Condition 2.5 with a 93.3% control efficiency.³⁸

In response to these comments, IDEQ updated permit condition 2.8 to require IDEQ approval of the FDCP 30 days prior to startup and after any subsequent changes. IDEQ also responded that the permit contains activity rate limits that serve as surrogate limits for fugitive sources. IDEQ also stated that it typically does not include vehicle speed, type, and miles traveled in permits. IDEQ also asserted that Conditions 2.1-2.6 contain the minimum requirements for the contents of the fugitive dust plan.³⁹ Finally, IDEQ responded that "An instantaneous 10% opacity limit for vehicle traffic on haul roads is considered a very conservative control trigger level to ensure that an appropriate control measure is taken to reasonably control emissions of fugitive dust (Permit condition 2.5)."⁴⁰

³⁵ March 16, 2022 EPA Comment 20.

³⁶ RTC at p. 4.

³⁷ March 16, 2022, EPA Comments 16 – 19

³⁸ *Id.* at Comment 19.

³⁹ RTC at p. 9.

⁴⁰ *Id.*

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These responses do not fully address EPA's comments with respect to the practical enforceability of emission limits necessary for NAAQS compliance. Condition 2.8 does not require that IDEQ approve the FDCP prior to startup, only that the permittee submit the FDCP 30 days prior to startup. Similarly, Condition 2.8 does not clearly require IDEQ approval of FDCP changes prior to the permittee making the changes.

Conditions 2.1 through 2.6 are insufficient to ensure the permittee achieves 93.3% fugitive dust control efficiency on haul roads. First, the permitting record indicates that application of magnesium chloride is necessary to achieve up to 90% control of fugitive dust. However, Conditions 2.1 through 2.6 do not require the permittee to use magnesium chloride for dust suppression. Rather, Condition 2.6 merely requires that the FDCP contain reasonable precautions including: "apply water or suitable dust suppressant (e.g. magnesium chloride, calcium chloride) to disturbed areas, haul roads, equipment staging areas, parking areas, and storage piles during the dry season and at other times as necessary to control fugitive dust." Moreover, magnesium chloride degrades over time. However, the permit does not require the permittee to reapply magnesium chloride at regular intervals.

Similarly, IDEQ assumed a combined control efficiency of water and chemical dust suppression to achieve 93.3%. However, Conditions 2.1 through 2.6 contain no explicit requirements that the permittee use both water and chemical dust suppression in a manner necessary to achieve the 93.3% control efficiency. Magnesium chloride does not perform as a dust suppressant in dry conditions. Therefore, supplemental watering will be necessary. However, the permit does not require supplemental watering to ensure the magnesium chloride performs as a dust suppressant.

With respect to vehicle weight and vehicle miles traveled, compliance with the NAAQS is dependent on vehicle miles traveled staying at or below 7,758 per day.⁴¹ However, the permit contains no such limit. IDEQ also did not make clear how the activity limits, including Condition 2.4 (Blasting Limits) and Condition 3.5 (Daily Hauling and Excavating Limits), would necessarily restrict vehicle miles traveled to at or below 7,758 per day. There are no requirements or restrictions on the manner the permittee uses the haul roads.

Regarding the silt content, the permit does not contain conditions to ensure the silt content on haul roads remains at or below 4%. Condition 3.13 contains the minimum requirements for the Haul Road Capping Plan (HRCP). According to IDEQ, Condition 3.13 limits maximum silt content to 4.0%. This is not accurate. Condition 3.13 states that "The permittee shall use capping material with a maximum of 4.0% silt content." This condition does not require the permittee to maintain the haul road silt content to at or below 4.0%. Nor does the requirement account for mixing of the capping material with the base or wearing of the cap over time. Condition 3.13 also contain no explicit sampling or compliance demonstration methods. Rather, Condition 3.13 allows the permittee to develop a "silt content sampling plan including standard operational procedure for sampling, frequency of sampling, and ASTM (or equivalent) method of analysis for silt content."

Finally, IDEQ's response to EPA's comment on the basis for the 10% opacity limit in Condition 2.5 does not provide additional basis for a correlation between opacity and the 93.3% control.

⁴¹ SOB at Appendix B, p. 65

The permit contains no testing requirements to establish a correlation between fugitive dust control and opacity. Nor does the permit contain any specific method for determining opacity or the frequency or location of opacity observations.

3. Neither the permit record nor permit conditions demonstrate that the entirety of the SGP ought to be excluded from the scope of “ambient air.”

“Ambient air” is defined as that portion of the atmosphere, external to buildings, to which the general public has access.”⁴² General public includes “any person(s) other than those who are permitted access to the property as employees or business invitees of a specific stationary source (including trespassers).”⁴³ EPA interprets access to encompass two key concerns: legal access and physical or practical access.⁴⁴ Legal access concerns whether the general public has the right or permission to enter a specific property. Physical access addresses whether the general public is able to, under actual circumstances, enter a particular parcel of land. In order to preclude physical access to a parcel of land, the source must employ measures, which may include physical barriers, that are effective in precluding access to the land by the general public.⁴⁵ Such measures can include video surveillance, monitoring, clear signage, and routine security patrols.⁴⁶ Measures can be effective even if there is not 100 percent certainty that they will prevent public access.⁴⁷ Measures must be reasonable taking into consideration the nature of the measure used, source location, type and size of source and property to be excluded, and surrounding area.⁴⁸

a. Legal Right to Exclude General Public

As stated above, legal access concerns whether the general public has the right or permission to enter a specific property. IDEQ asserts in the SOB and RTC that PRI has “complete and sole authority to control access to or through the facility, granting access at their discretion to anyone wishing to visit the site or pass through the site.”⁴⁹ Neither the SOB nor the RTC, however, evaluate PRI’s claims. In light of the fact that the SGP encompasses the East Fork South Fork Salmon River and is located within National Forest lands, the permitting record ought to contain a more thorough evaluation of PRI’s legal authority and members of the general public’s right of access to the SGP area of operations.

b. Measures to Exclude General Public as a Practical Matter

EPA commented that the permit lacks conditions to ensure PRI employs sufficient measures such that the entirety of the SGP is appropriately excluded from the definition of ambient air. Specifically, EPA raised concerns that the general public may be able to access the SGP,

⁴² IDAPA 58.01.01.006.10; 40 CFR 50.1(e).

⁴³ “Revised Policy on Exclusions from ‘Ambient Air’” Memorandum from Andrew R. Wheeler to Regional Administrators, December 2, 2019, at p. 6.

⁴⁴ *Id.* at 5.

⁴⁵ *Id.* at 9.

⁴⁶ *Id.* at 7.

⁴⁷ *Id.* at 8.

⁴⁸ *Id.*

⁴⁹ RTC at p. 21.

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regardless of their legal right to do so.⁵⁰ The basis for EPA's comment was that the permit does not contain specific measures the permittee will take to exclude members of the public from the SGP. Rather, the permit allows the permittee to develop an Access Management Plan ostensibly designed to exclude members of the public. In response, IDEQ asserted that Condition 2.7 contains the requirements for the ACP, including adequately informing anyone approaching an access point that travel beyond the established gate involves entering an active mine site as a guest of the permittee and providing verbal and written requirements that must be followed while on the SGP site.⁵¹ The SOB also states that the primary and secondary access points are controlled by adjacent natural features, such as streams and creeks, steep topography, and areas of thick vegetation and undergrowth.⁵² In addition, the SOB states that PRI will place boulders across trails and adjacent to the train to prevent vehicle access.⁵³ Finally, according to the SOB, PRI security personnel will routinely patrol mine facilities and roadways for unauthorized individuals.⁵⁴

IDEQ's responses and statements in the SOB do not adequately address EPA's concerns. As permitted, the general public will likely have physical or practical access to portions of the SGP. The SGP operations area boundary covers 2,372 acres of land within the Payette and Boise National Forests. The SGP is located in Valley County, Idaho. The nearest settlement is the village of Yellow Pine, Idaho, approximately 14 miles by road.⁵⁵ The Payette National Forest includes the Frank Church River of No Return Wilderness. The Salmon River runs through the Payette National Forest. The SGP is surrounded by numerous recreation areas in the Payette and Boise National Forests.⁵⁶ National Forest roads 374, 440, and 640 provide vehicle access to the site.⁵⁷

Given the scale of the SGP, proximity to recreation opportunities, and multiple access points, the permittee should employ multiple measures to preclude public access. However, condition 2.7 is vague and leaves the permittee considerable latitude on the methods used to exclude members of the general public. While the SOB indicates that placement of boulders on secondary roadways is necessary to prevent access, Condition 2.7 contains no such requirement. Also, Condition 2.7 does not specify a minimum patrol frequency or minimum signage requirements. Nor does Condition 2.7 require the permittee to post or monitor the vast operations boundary to effectively preclude recreators from entering the site. Condition 2.7 only requires the permittee to employ measures to "discourage" access to secondary roadways and trails. This does not meet the standard to effectively exclude members of the general public. Similarly, EPA questions whether the entire boundary surrounding the operations area incorporates natural features that preclude access. Given the numerous recreational opportunities in the surrounding wilderness areas, access by recreators off trail appears possible. Therefore, the Final PTC does not ensure that the

⁵⁰ March 16, 2022, EPA Comments 26-27

⁵¹ RTC pp. 20-21; 42

⁵² SOB at p. 55.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Stibnite Gold Project Supplemental Draft EIS, Forest Service, p. 1-7.

⁵⁶ See [Payette National Forest - Thunder Mt./Monumental Area, Krassel RD \(usda.gov\)](#); [Payette National Forest - Monumental Trailhead \(usda.gov\)](#); [Payette National Forest - Lookout Mt Trailhead \(usda.gov\)](#); [Boise National Forest - Meadow Creek / Summit Trailhead \(usda.gov\)](#).

⁵⁷ SOB at p. 6.

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entirety of the SGP is appropriately excluded from the definition of ambient air. This implicates IDEQ's determination that the SGP will not cause or contribute to a violation of the PM₁₀ NAAQS.