



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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June 30, 1999

Ref: 8P-AR

Ursula Trueman, Executive Secretary
Utah Air Quality Board
P.O. Box 144820
Salt Lake City, UT 84114-4820

Re: "Intent to Approve" Production Increase for
Kennecott Bingham Canyon Mine

Dear Ursula:

On May 11, 1999, your office issued an "Intent to Approve" (i.e., proposed Approval Order, DAQE-357-99) to Kennecott Utah Copper Corporation, for a 46.5 million ton-per-year increase in allowed annual ore and waste rock production. The facility is subject to source-specific provisions in the PM₁₀ SIP for Salt Lake County. This will be the first AO issued for the Bingham Canyon Mine since the PM₁₀ SIP was promulgated. The public notice for the ITA says the public comment period expires on May 29, 1999. On May 28, I sent you a letter requesting a two-week extension of the public comment period. Prior to the end of the two weeks, we gave Regg Olsen of your staff a briefing on our concerns with the permit action. We would now like to submit the following comments, each of which has implications for future permit actions for PM₁₀ SIP sources:

Lack of ambient impact analysis:

The State's engineering review ("Modified Source Plan Review") for this permit action says, on page 16, that "This source is located in a Nonattainment area and will be required to obtain offsets. Therefore, modeling [for ambient air quality impact] was not performed." Our office is not aware of any language in the Utah SIP, or in any EPA guidance, that supports this line of reasoning. Under SIP permitting regulations, at R307-1-3.1.8 (now renumbered by the State as R307-401-6), the State is obligated to determine if the "proposed installation [in this case, the production increase that would be allowed through this permit action] will be in accord with applicable requirements of ... National and Secondary Ambient Air Quality Standards" and "the State Implementation Plan for the area, if the area is classified as a nonattainment or maintenance area." We find no SIP language that exempts the State from this obligation simply because emission offsets are being obtained.

EPA's nonattainment new source review requirements for new and modified major sources require emission offsets *and also* generally require ambient air quality modeling to demonstrate that there will be a net air quality benefit in the area affected by the source. (See 40 CFR Part 51,



Appendix S, Section IV.A, Condition 4.) Modeling is not required for volatile organic compounds or nitrogen oxides or if the new or modified source obtains offsets from other sources in the immediate vicinity of the source. In this case, the Bingham Canyon Mine is not in the immediate vicinity of the Smelter and Refinery which are providing the emission offsets. Further, the increase in ground-level fugitive emissions from the mining operation is being offset primarily by a reduction in stack emissions at the Smelter. Thus, although the subject permit action is not a major modification, we do not believe the emission offsets can ensure the increase in mine emissions won't cause or contribute to a violation of the PM₁₀ NAAQS.

We do believe a net PM₁₀ emission increase of the magnitude calculated in this permit action (921 tons per year) could threaten the PM₁₀ ambient standard in the vicinity of the mine haul roads. This might occur even if the background loadings of PM₁₀ near the mine are relatively low. There are several screening models recommended by EPA to estimate the localized ambient air quality impact of fugitive dust from haul roads. These models have been used by many state and local agencies over the years for NEPA and state permitting activities. The applicable models include CALINE 3, ISC3, and SCREEN3 as screening level approaches, or a more refined model such as Fugitive Dust Model (FDM).

We are aware of the argument expressed by your staff that most PM₁₀ emissions never leave the Bingham Canyon Mine pit. While we believe this may be true for some or most of the ore hauling, which occurs entirely within the pit, we do not believe this is true for the projected emission increase in this permit action. The State's engineering review explains, on page 5, that most of the allowed increase in truck hauling will be for waste rock, not ore, which is hauled out of the pit to waste piles up to 3.5 miles away. We would not expect fugitive PM₁₀ emissions from that hauling to remain mostly in the pit.

We are also aware that our office approved a countywide PM₁₀ attainment demonstration based on Chemical Mass Balance (i.e., receptor) analysis rather than dispersion modeling, due to low wind speeds, but that does not mean no valid models exist for localized ambient impact analysis of primary PM₁₀ emissions, on a source-specific basis, at low wind speeds. Further, the meteorological conditions that lead to high PM₁₀ concentrations in the County are not necessarily the same as those that would cause maximum concentrations in the vicinity of the mine and waste rock hauling activity.

Lack of evidence that offsets have been obtained in terms of actual emission reductions:

The "Abstract" for the ITA says the projected 921 ton per year increase in PM₁₀ "will be offset by the emission reduction credits banked as a result of the Smelter and Refinery Modernization." The "Abstract" says the amount of offset will be 1105 tons per year, after applying a 1.2 to 1 ratio. Neither the "Abstract" nor the State's engineering review provide any evidence that a reduction of at least 1105 tons per year in actual emissions has been achieved.

Under SIP permitting regulations, at R307-1-3.3.3.A(2) (now renumbered by the State as R307-403-4(2)), by the time a new or modified source commences construction, and, by the time a

new or modified source commences operation, any emission offsets shall be "in effect and enforceable" and shall be in terms of "actual emissions." (This SIP language was adopted by the State to meet the requirements of section 173(a)(1) of the amended Clean Air Act of 1990.) We interpret this to mean that, before Kennecott can be allowed to exceed the 12-month production rate of 150.5 million tons, adequate evidence must exist that Kennecott's Smelter/Refinery operations have achieved at least 1105 tons per year of actual emission reductions and that those reductions are reflected in enforceable AO or SIP limits.

According to State "banking" letters to Kennecott on May 5, 1993 and June 9, 1999, the amount of emission offset credit the State has been allowing Kennecott to bank, for their Smelter and Refinery operations, is the difference between the annual "allowables" in the PM₁₀ SIP and the annual "allowables" in the current AO's for those operations. While we see no reason to believe this basis for banking is not in accord with R307-1-3.3.5 ("Baseline for Determining Credit for Emission and Air Quality Offsets," now renumbered by the State as R307-403-7), it does not constitute evidence, in our view, that actual emission reductions have occurred. We believe it necessary to request an explanation of how the State intends to implement 3.3.3.A(2)'s requirement for a reduction of actual emissions, for purposes of emission offsets. Specifically, we are seeking the following information:

- 1) identification of the specific period of time the State considers representative for the actual emissions at the Smelter and Refinery, in accordance with the definition for "Actual Emissions" in R307-1-1 (now renumbered by the State as R307-101-2), for determining actual emission reductions under R307-3.3.3.A(2),
- 2) identification of the specific tests or other emission measurements (including dates) conducted at the Smelter and Refinery, for documenting actual emission reductions under R307-3.3.3.A(2),
- 3) description of calculations by the State to analyze and validate such tests or other emission measurements,
- 4) description of calculations to convert the information from (2) and (3) into tons per year of actual emission reductions,
- 5) identification of specific Smelter and Refinery AO conditions that pertain to the actual emission reductions and calculations referenced in (2) and (3) above, to ensure the reductions are enforceable, and
- 6) explanation of how the State will ensure that the emission offsets applied to Bingham Canyon Mine, will no longer be associated with the Smelter or Refinery, in terms of actual emission reductions pursuant to R307-3.3.3.A(2).

Please be advised that submittal of individual stack test reports, stack test review memos, or Smelter main stack monthly monitoring reports to our office (which your staff recently directed Kennecott to send us) does not constitute an explanation. We are requesting an explanation in terms of what R307-3.3.3.A(2) requires. This is not the same as a request for a compliance evaluation or compliance demonstration with the AO's.

Emission factors and calculation error in original PM₁₀ SIP annual emission estimate for NO_x:

Please find enclosed a detailed discussion by Tim Russ of our office. The State's engineering review for the Bingham Canyon Mine permit action explains that the estimate of annual NO_x emissions has changed from 4048 tons per year, in the original PM₁₀ SIP, to 5060 tons per year in this permit action "with new emission factors." Followup discussion with your office revealed this explanation to be incorrect. The new NO_x estimate is actually based on the same emission factor as the original PM₁₀ SIP calculation. The real reason for the increase in the NO_x estimate is apparently that the original PM₁₀ SIP calculation was erroneously based on fuel usage of 22 million gallons per year. The PM₁₀ SIP (as well as the ITA on May 11, 1999) actually allows Kennecott to use 27.5 million gallons. We will need to discuss with your office the possible steps to address this error through the SIP revision process.

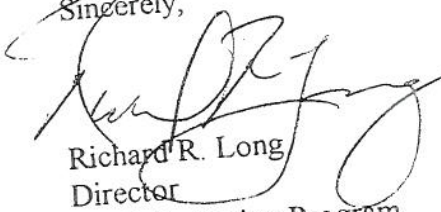
Also, to ensure a more accurate emission inventory for PM₁₀ SIP updates, we recommend the State not use a single generic "Miscellaneous" emission factor for tailpipe emissions from all non-road equipment at the Bingham Canyon Mine. The enclosure by Tim Russ presents the rationale and details for this recommendation.

Language about AO taking precedence over PM₁₀ SIP:

Condition 4 of the ITA says the AO "shall take precedence [over the PM₁₀ SIP] as provided by R307-305-2, UAC." (This regulation is numbered R307-1-3.2.4 in the EPA-approved SIP.) It is our understanding the ITA is referring to certain 'director's discretion' language in the regulation. As explained in several discussions with your staff in recent months, we do not interpret that language as giving the State authority to unilaterally revise the federally enforceable PM₁₀ SIP. The July 8, 1994 Federal Register notice on approval of the PM₁₀ SIP, explains that "should different emission limitations exist [between the AO and the PM₁₀ SIP], EPA will enforce the more stringent of the two (or more) emission limitations." We have been discussing how to resolve the matter of 'director's discretion' with your staff. We believe one component of resolution may involve deletion of the "shall take precedence" provision in AO's, in favor of some other phrase which is less problematic as a Federal legal matter. For example, the phrase "incorporates provisions of the PM₁₀ SIP" has been used instead in some AO's.

If you have any questions or wish to discuss this letter, please feel free to contact me at (303) 312-6005, or your staff may contact Mike Owens at (303) 312-6440 for general technical questions, Jonah Staller of Regional Counsel at (303) 312-6855 for legal questions, Kevin Golden at (303) 312-6442 for modeling questions, or Tim Russ at (303) 312-6479 for questions about emission factors for non-road engines. Thank you for the opportunity to review this permit action.

Sincerely,



Richard R. Long
Director
Air & Radiation Program

Enclosure

cc: Regg Olsen (UDAQ)
Rick Sprott (UDAQ)
Lynn Menlove (UDAQ)
Nando Meli (UDAQ)