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Shawn B. Kendall
Executive Assistant

April 8, 1993

Mr. Joe Tikvart
OAQPS Source Receptor Analysis Branch
Technical Support Division
MD-14
Research Triangle Park, NC 27711

Dear Mr. Tikvart:

A meeting was held on April 7th at the USEPA Region VI offices in Dallas, TX to review the status and direction of the Hidalgo Good Engineering Practice Stack Height Review Project. Attending the meeting were Mr. Jim Yarbrough and several other USEPA Region VI personnel, members of my model development oversight committee from ENSR (Bruce Egan, Robert Paine and Dan Godden) and myself. The focus of the meeting was to review the Technical Comparison Document which contains information on the comparison of models, the ambient SO₂ monitor siting study, and the methodology for the evaluation of the performance of models. The monitor siting study contained in the draft version of the Technical Comparison Document is based on preliminary modeling with a partial year of data from the new 150-meter tower. Final monitor siting modeling using the full year of data from the 150-meter tower is currently underway and will be completed in the next two weeks. It is Phelps Dodge's intention to complete and submit the final Technical Comparison Document including the final designated monitor sites by May 1st in order to provide Phelps Dodge with the necessary time to secure permission from various property owners to place the sulfur dioxide monitoring stations on their property.

Two of the key aspects associated with this program are the model evaluation scoring criteria, and the monitor siting criteria. The model comparison criteria is the same as that which was previously reviewed by Mr. Cox in 1990 with two fundamental changes. The first of these changes has to do with the relative weight assigned to monitors on the scoring criteria which are based on a paired in space analysis. In our earlier draft, we had proposed to weight the monitors on the basis of the highest observed concentrations in each category. However, in reviewing this situation further, it was observed that a model which significantly overpredicted a concentration at a site would not be significantly penalized, because the relative weight would be based on the observed. Therefore, we have changed the proposed method of determining monitor site weights to use as a divisor the average of the maximum predicted and observed concentrations. The only other change with respect to the scoring criteria was to use a 3-hour average concentration for the correlation fractional bias (i.e., paired in time and space analysis) instead of the 1-hour average. This was on the basis of discussions between Mr. Cox, Mike Mills from ENSR, and myself.

For monitor siting, Phelps Dodge has developed a methodology for objectively determining optimal monitoring locations based on model predictions. Model predictions from each model are analyzed for the entire receptor network. At each receptor, a relative concentration normalized to the maximum robust highest concentration predicted for each averaging time is calculated, and multiplied by weights for each averaging time consistent with those found in the model performance evaluation. In addition, for the scientific component, the number of occurrences of a concentration above a threshold, and the sum of the concentrations in excess of the threshold are used to compute a scientific merit, which has approximately a 35 percent weight. The objective of the methodology is to identify those receptors which will have the largest impact on the overall model score for the performance evaluation. Each model is used to site three monitors on the basis of this score. The fourth monitor for each model is based on the difference of the model scores throughout the network. The objective of this scoring criteria is to establish three receptors for each model which represent the highest impact areas, and one receptor for each model which highlights the location where the models disagree the most, and would penalize the opposing model to the maximum extent.

Although there are no specific concerns or reservations by USEPA Region VI personnel or NMED personnel, Mr. Yarbrough feels that it would be important, because of the significance of this model development program for your staff to review the final model comparison scoring criteria, and the proposed monitor siting criteria. The model evaluation criteria is contained in Section 10 of the attached reports. The proposed monitor siting scoring criteria is discussed in Sections 6 and 7 of the attached reports.

Pursuant to 74-2-11 New Mexico Statutes Annotated, New Mexico AQCR Section 110, New Mexico AQCR 702, Part II, Section E, 40 CFR Section 2.203, and any similar provisions under applicable statutes and regulations, notice is hereby given to New Mexico and USEPA that the enclosed document entitled "MPDM - Version 1.0 - Technical Comparison Document - Comparison and Analysis of Models Applicable to the Phelps Dodge Hidalgo GEP Stack Height Review Project - March 31, 1993" submitted pursuant to Section 123 of the Clean Air Act, is confidential business information of PDC and entitled to confidential treatment. This information is not reasonably available to persons unconnected with the model development effort being undertaken by PDC. PDC has maintained and will continue to maintain the confidentiality of the information contained therein by allowing only its attorneys, employees and contractors who are working specifically on the model development effort to have access to the information. Only authorized USEPA and NMED personnel may also have access to this information.

This model development project is being performed with a view to possible approval by NMED and USEPA; if such approval is not received or requested however, Phelps Dodge intends to preserve its rights to market or otherwise use the information developed. Disclosure of this information is likely to cause substantial harm to the competitive position of Phelps Dodge in making commercial use of this information under those circumstances. As you are aware, if the Mesoscale Puff Dispersion Model is selected as the best performing model and is used in the final review of the emission limit for the Hidalgo smelter, Phelps Dodge intends to make the model and its basic documentation available to the public under a no fee licensing arrangement.

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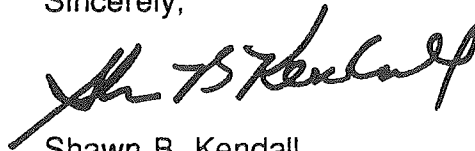
It is our understanding that if USEPA or New Mexico should make a preliminary determination that this document is not entitled to confidential treatment, then USEPA and/or NMED will immediately give Phelps Dodge written notice of such a determination. Please furnish any such notice to:

Mr. Scott A. Crozier
Vice President and General Counsel
Phelps Dodge Corporation
2600 North Central Avenue
Phoenix, AZ 85004-3014

You should also note that Phelps Dodge Corporation has taken the additional step of placing a copyright notice on this sensitive material. The material contained in these documents is not to be duplicated and a notice to that effect has been placed in the document. Additional copies of the material for agency review will be provided upon written request. The request should be sent to my attention and include the name and address of the party(ies) which require the copy(ies). Additionally, no references may be made in context to the techniques or methodologies described in the materials submitted herewith without the express written consent of Phelps Dodge Corporation.

I and the members of my model development team would be most appreciative of any comments you have with respect to the monitor siting criteria and the model evaluation criteria. Please feel free to have your staff contact me at (602) 234-8308, or Mr. Robert Paine at (508) 635-9500. Thank you for your support and consideration in reviewing this matter.

Sincerely,



Shawn B. Kendall
Project Director
Hidalgo GEP Stack Height Review Project

SBK/la

Enclosure(s)

cc: S. A. Crozier
L. M. Pruett
J. Yarbrough
R. J. Paine
B. R. Nicholson