UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

PB
please return to RC

MAY 10 1990

MEMORANDUM

SUBJECT: Four Billings Montana Modeling Proposals

FROM: Joseph A. Tikvart, Chief
Source Receptor Analysis Branch (MD-14)

TO: Douglas M. Skie, Chief
Air Programs Branch, Region VIII (8AT-AP)

In response to your request, the Model Clearinghouse has reviewed John Notar's evaluation of the four proposals for modeling SO_2 in Billings/Laurel, MT. Our conclusion is that John has done a thorough review and we agree with his comments and conclusions.

In our estimation, with the possible exception of the fumigation phenomenon, the Billings/Laurel situation can be handled well by models and screening techniques recommended in the Guideline on Air Quality Models (Revised). The situation is not unlike many we have dealt with in the Ohio Valley and in Appalachia with sources located in river valleys with surrounding marginally complex terrain. These situations generally require the application of two models, a simple terrain model such as ISC and a complex terrain model such as COMPLEX I. Intermediate terrain between stack height and plume height needs to be evaluated with both of these models and the higher of the two estimates chosen.

Regarding fumigation, we suggest that the technique contained in the EPA SCREEN model be tried before spending a lot of contract monies in developing, testing and applying a nonguideline technique. If the SCREEN results show underestimates of the fumigation concentrations, and such concentrations are associated with the design value, then perhaps a more rigorous technique could be pursued.

We agree with John that it is important to carefully determine whether the area is urban or rural before selecting the models to be applied. We also agree that priority for spending contract monies should be on the emission inventory, including building dimension data needed for downwash calculations. Also, it might be useful to require collection of very short term, e.g. 3-5 minute, emissions and air quality data so we can understand the potential for emergency episodes, which has recently been raised as an issue in this area.

If you have any questions, please contact Dean Wilson at FTS 629-5683.

cc: D. Grano
W. Laxton
D. Wilson

bcc: Regional Modeling Contact, Regions I-X (with copy of incoming memorandum and list of FY-90 Clearinghouse memoranda)

FY 90 MODEL CLEARINGHOUSE MEMORANDA

Date	Region	Subject
10/17/89	VI	Ambient Air
11/7/89	II	Interpretation of On-site Meteorological Data Requirements and the Use of RTDM for a PSD Source
11/28/89	VIII	Utah PM-10 Secondary Sulfate and Nitrate Calculations
01/02/90	IV	Effect of Changing Stack Heights on Prevention of Significant Deterioration (PSD) Modeling and Monitoring
01/10/90	VIII	Utah PM-10, Secondary Sulfate and Projections
01/10/90	VIII	Review of The Utah County PM-10 Draft SIP
01/11/90	VI	Alternative Emission Reduction (Bubble) SIP Revision Authorizing Operation of a New Sulfur Recovery Plant at the Conoco Inc. Ponca City Refinery
01/16/90	VI	Recent Texas Air Control Board (TACB) Evaluation of the ISC Area Source Algorithm
01/16/90	V	Refined Metals Lead Modeling Analysis
02/22/90	III	Approval of Equivalence Demonstration Plan Integrated Intermediate Terrain Model
03/01/90	VIII	East Helena Lead SIP
03/23/90	III	Mon Valley SO_2 Study Allegheny County, PA
05/10/90	VIII	Four Billings Montana Modeling Proposals