J. C.
J. H.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Research Triangle Park, North Carolina 27711

January 8, 1991

MEMORANDUM

SUBJECT: Meteorological Data for the Ashland Petroleum Company GEP Modeling Analysis

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

TO: Bruce P. Miller, Chief
Air Programs Branch, Region IV

In response to your request the Model Clearinghouse has reviewed your position with respect to the appropriate models and data bases to be used for the Ashland Petroleum GEP analysis. Our recommendation summarized below is consistent with my memorandum to you of April 14, 1988. We have discussed our recommendation with both Brenda Johnson and Lewis Nagler and believe they are in agreement with our recommendation.

Our recommendation of April 14, 1988 was to use RTDM together with a simple terrain model for the facility. To account for the multiple stack problem, we indicated that the Company would need to write some software to appropriately sum the complex terrain/simple terrain impacts from the various stacks at each receptor, on an hour-by-hour basis. For those stack\receptor combinations that are in intermediate terrain, between stack height and plume height, the software would need to choose the higher of the complex terrain or simple terrain model estimates, again on an hour-by-hour basis.

Regarding the appropriate meteorological data, in April 1988 we agreed that the data from the 30m M3 tower could be used for modeling the highest stacks, but that data from one of the 10m towers in the valley should be used for modeling the short (12m to 20m) stacks. Region IV was to make a judgment on which data should be used for modeling stacks of intermediate height.

My understanding of your latest questions are that they are the same as the 1988 issues, except there is some new information that could affect EPA's position. First, you point out that EPA is planning to propose that the CTSCREEN model be made available for use in complex terrain and you ask if that could be used now for Ashland. Second, it is my understanding that there are no meteorological data available for the 10m towers in the area, thus precluding the use of such data for modeling the short stacks. You ask if it would be appropriate to erect a new 12m tower in the valley and collect one year of data, to be used in conjunction with the M3 data to model the facility with RTDM/ISCST (as per the 1988 recommendation).

Since CTSCREEN is not yet included in the Guideline on Air Quality Models we cannot require its use at this time. Nevertheless, if the State wishes to use the model and will describe how it would be applied in combination with a simple terrain screening technique, we could treat such a proposal as a nonguideline model and make a judgment on whether or not it could be used. Regarding the low level meteorological data, we still believe that it is necessary to have such data for modeling with RTDM; thus we recommend its collection. However, we recommend that the Company not just erect a 12m tower, but instead a 76m tower, with instrumentation at several levels, such that data appropriate to different stack heights is available. It would also be wise to collect "sigma theta" and "delta T" data from that tower in order to determine on-site stability.

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

cc: D. Grano
B. Johnson
D. Wilson