



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

January 14, 1987

MEMORANDUM

SUBJECT: Acceptability of Modified Dispersion Modeling Technique
for St. Joe Lead Smelter

FROM: *for* William A. Spratlin *Leo J. Robinson*
Director, Air and Toxics Division - Region VII

TO: Richard Rhoads (MD-14)
Director, Monitoring and Data Analysis Division
Office of Air Quality Planning and Standards

We have been asked to provide our comments (with input from your Division) on the acceptability of using a modified dispersion modeling approach in developing a revised control strategy for the Doe Run Company, Herculaneum Division plant (formerly called the St. Joe lead smelter). The procedure is briefly described in the attached letter from Todd Crawford to Dewayne Durst dated December 31, 1986.

There is considerable background concerning dispersion modeling and the Missouri lead SIP. You will recall that Missouri did not use dispersion modeling to develop its original lead SIP for St. Joe which was submitted in 1980. EPA took final action to disapprove the modeling portion of that SIP submittal. St. Joe, the other Missouri lead smelters, and the state of Missouri petitioned the Administrator to review that partial disapproval. After reconsideration the disapproval was withdrawn, but the Federal Register notice specifically required that any subsequent SIP revisions be supported by atmospheric dispersion modeling.

In June 1986, Region VII made a call for a SIP revision for the St. Joe lead smelter. The call was based upon continued measured violations of the ambient lead standard near St. Joe, even though all of the control measures in the original control strategy were implemented. Missouri was allowed one year to submit the SIP revision. The attached schedule shows the activities and interim dates the state considers necessary to meet the June submittal date.

We realize there are many detailed questions concerning the acceptability of meteorological data, emission data, and selection of correct modeling options which must be discussed with the state. Region VII will

follow through with those details and resolve them. However, before the state proceeds with any additional modeling to develop a control strategy, we would appreciate your thoughts on the acceptability of the state's modified dispersion modeling approach.

Briefly, the approach uses dispersion modeling to apportion the contribution of various point, volume, and area source emissions to the measured lead concentration at three monitoring stations which have had violations of the lead standard. Lead emission reductions would then be estimated for various control measures and the impact of these controls would be evaluated using the modeled contribution from a particular source. The state of Missouri feels this procedure uses dispersion modeling in developing the control strategy and meets all the requirements in EPA regulations. This procedure deviates from standard dispersion modeling practice because none of the sampling stations are located at the point of predicted maximum concentration based upon modeling results. The question is, should we accept this modified procedure as a basis for developing a revised control strategy for the St. Joe smelter? As you can see from the reference in the attached letter, our first reaction was to tell the state that the control strategy had to provide sufficient reductions so that dispersion modeling would show attainment of the lead standard at all receptors which are considered ambient air. However, we promised the state we would fully evaluate the reasons it felt the modified procedure was acceptable before making a decision. The purpose of this memorandum is to solicit your thoughts on this matter before the decision is made.

A related matter concerns the use of UNAMAP VI for this modeling activity. Region VII believes that because the control strategy has not yet been developed, UNAMAP VI should be used for future modeling on this project even though preliminary modeling has been done using UNAMAP V. We would appreciate your thoughts on this matter also.

Based on the dates in the attached schedule, we must get back to the state with an answer shortly. We would like to receive your reply within two weeks. If you have questions, call Carl Walter or me at FTS 757-2893.

Attachments