UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

May 25, 1999

REPLY TO
ATTENTION OF: OEA-095

Patrick L. Hanrahan
Modeling Coordinator
Air Quality Division
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204-1390

Re: Request for approval of AERMOD for U.S. Gypsum

Dear Mr. Hanrahan:

This is in response to your April 22, 1999 request that EPA approve the use of the AERMOD model (version 98314) to assess the ambient air quality impacts of the proposed U.S. Gypsum plant to be located near Rainier, Oregon.

We have reviewed the information supplied to us by you and U.S. Gypsum's consultant in support of their use of a non-Guideline model, i.e., a model not currently recommended in EPA's Guideline on Air Quality Models (40 CFR 51, Appendix W). Based on this and other information about AERMOD and ISCST3, we agree that AERMOD appears to be superior to the Guideline model ISCST3 on a theoretical basis, particularly in its methods of characterizing the atmospheric boundary layer and dispersion. Furthermore, we agree that AERMOD's performance in comparison to observed concentrations appears to be superior to ISCST3's performance, and AERMOD has no significant bias toward under-prediction of maximum concentrations.

In addition to the analyses you provided, we performed some modeling of the U.S. Gypsum facility to further investigate AERMOD's behavior for this application. We especially considered the impacts on the bluff south of the facility, since ISCST3 indicated maximum impacts there. For this application, we believe AERMOD should be expected to provide improved predictions of impacts on elevated terrain, relative to ISCST3. Results from AERMOD showed that highest impacts from U.S. Gypsum are not on elevated terrain, but appear to be very near to the facility, in flat terrain, as a result of downwash.

We hereby grant approval for the use of the AERMOD model for assessment of air quality impacts of the proposed U.S. Gypsum plant for this permit application. In accordance with our Agency's division of responsibilities with respect to non-Guideline model approval, this

approval by EPA Region 10 is a case-specific approval and should not be construed to imply approval for other applications of AERMOD. EPA's Office of Air Quality Planning and Standards is currently considering generic approval of the AERMOD model as a replacement for the ISCST3 model, and is expected to formally propose later this year that AERMOD be recommended in EPA's Guideline on Air Quality Models.

Please note that in your process for issuance of the U.S. Gypsum PSD permit, you must give public notice of this case-specific use and approval of the AERMOD model as the basis for this permit approval, and you must give opportunity for a public hearing on this matter.

If you have any questions, or if we can be of further assistance, please contact me at (206) 553-1531.

Sincerely,

Robert B. Wilson
Regional Meteorologist
Office of Environmental Assessment

cc: Joseph A. Tikvart, EPA/OAQPS, Research Triangle Park, NC