The State
of Wyoming

Dave Freudenthal, Governor

Department of Environmental Quality

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January 21, 2003

Ms. Dolly Potter
Environmental Manager
Solvay Minerals
Green River Soda Ash Plant
P.O. Box 1167
Green River, Wyoming 82935

Re: Class II Protocol Review
Solvay Minerals Calciner A & B Fuel Switch

Dear Dolly:

On 12/12/02, the Division received the Class II Area Impact Analysis modeling protocol for the Solvay Minerals Plant Calciner A & B Fuel Switch. Since this facility is an existing major source, the proposed increases in several criteria pollutant emissions associated with this modification will trigger the requirements of Wyoming Air Quality Standards and Regulations, Chapter 6, Section 4 - Prevention of Significant Deterioration.

The Division has completed the review of the Class II dispersion modeling protocol and the following comments address the additional information which is needed in the air quality modeling protocol to be submitted to the Wyoming Air Quality Division:

1. The protocol states that VOC impacts will be calculated based upon procedures outlined in the EPA document *VOC/NOx Point Source Screening Tables*. However, the protocol does not state what analyses would be completed in the event that the calculated values from this table yields an Ozone concentration value that is greater than Wyoming's 1-hour Ozone ambient air quality standard of 160 ug/m^3.

   The protocol needs to identify additional analyses that will be completed in the event that the calculated Ozone concentration from the VOC/NOx Point Source Screening Tables is greater than Wyoming's Ozone standard.

2. Section 5.5, page 15 of the Class II modeling protocol states, that the highest sixth-high modeled impact will be used for comparison to all short-term ambient standards, including the PSD increments.

40 CFR Part 50, Appendix K, section 2.1: 24-Hour Primary and Secondary Standards provides the following basis for determining compliance with the 24-hour PM_{10} National Ambient Air Quality Standard (NAAQS):

Under 40 CFR 50.6(a) the 24-hour primary and secondary standards are attained when the expected number of exceedances per year at each monitoring site is less than or equal to one. In the simplest case, the number of expected exceedances at a site is determined by recording the number of exceedances in each calender year and then averaging them over the past 3 calender years.

40 CFR Part 50, Appendix K, section 2.2: Annual Primary and Secondary Standards provides the following basis for determining compliance with the annual PM_{10} National Ambient Air Quality Standard (NAAQS):

Under 40 CFR 50.6(b) the annual primary and secondary standards are attained when the expected annual arithmetic mean PM_{10} concentration is less than or equal to the level of the standard. In the simplest case, the expected annual arithmetic mean is determined by averaging the annual arithmetic mean PM_{10} concentrations for the past three calender years.

In summary, demonstration of compliance with the 24 hour PM_{10} NAAQS is achieved when the highest-fourth-high concentration is less than the 24-hour PM_{10} ambient standard of 150 $\mu g/m^3$, and demonstration of compliance with the annual PM_{10} NAAQS is achieved when the highest annual averaged concentration is less than the annual PM_{10} ambient standard of 50 $\mu g/m^3$.

Demonstration of compliance with the short-term PM_{10} increment is achieved when the highest-second-high concentration is less than the 24-hour PM_{10} increment of 30 $\mu g/m^3$.

3. Section 5.6, page 18, second paragraph of the Class II modeling protocol states, that once the inventory is compiled, nearby facilities will be screened to remove those with increment consuming emissions that do not impact Solvay's significant impact area.

The Division will not approve the proposed method of eliminating increment consuming sources based on the two criteria provided in the modeling protocol, as the proposed method is inconsistent with modeling guidance. The New Source Review Workshop Manual provides guidance on constructing the emissions inventory for purposes of evaluating increment consumption; this document stipulates that the increment emissions inventory includes all increment-affecting sources located in the impact area of the proposed modification, and all increment-affecting sources located within 50 kilometers of Solvay's impact area are included if those sources either individually or collectively affect the amount of PSD increment consumed.

Practically all sources within 50 kilometers + Solvay's radius of impact (ROI) have the potential to affect Solvay's significant impact area to some degree. Therefore, the Division contends that all increment consuming sources, including major and minor sources located within a distance of 50 kilometers + Solvay's ROI need to be included in the increment consumption analyses.

If you have any questions regarding air quality modeling related issues, please feel free to contact me at (307) 777-6188. All other permitting issues should be directed to Chad Schlichtemeier or Bernie Dailey at (307) 777-7391.

Sincerely,

Ken Rairigh

Ken Rairigh
Air Quality Engineer

cc: Bernard J. Dailey
Tony Hoyt