From: Ashley Mohr
To: Mohr, Ashley
Subject: Fw: Discussion Topics - Norit Modeling (Monday, June 27th)
Date: Friday, August 09, 2013 12:21:47 PM

----- Forwarded by Ashley Mohr/R6/USEPA/US on 08/09/2013 12:21 PM -----

From: Dinesh Senghani/R6/USEPA/US
To: Ashley Mohr/R6/USEPA/US@EPA
Date: 08/17/2011 09:41 AM
Subject: Fw: Discussion Topics - Norit Modeling (Monday, June 27th)

Ashley,

Here is ODEQ's reply for Norit modeling comments/concerns.

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Environmental Engineer
U.S. EPA Region 6
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----- Forwarded by Dinesh Senghani/R6/USEPA/US on 08/17/2011 09:39 AM -----

From: "Fielder, Phillip" <Phillip.Fielder@deq.ok.gov>
To: Dinesh Senghani/R6/USEPA/US@EPA
Cc: Erik Snyder/R6/USEPA/US@EPA
Date: 08/17/2011 08:23 AM
Subject: FW: Discussion Topics - Norit Modeling (Monday, June 27th)

Here is our reply to your comments on the Norit permit.

Please note that the sooner we get these issues resolved the sooner we can issue the permit and the sooner we can start the timeline of the compliance plan which requires Norit to make changes to comply with the 1-hr standards.

Phil

- Cumulative Analysis Receptor Grid
  Applicant indicated that the 20-km circular grid used in the cumulative analysis was not based on the significance modeling analysis results

There have been a significant number of modeling scenarios that have been reviewed for this facility. The final permit just addresses the final modeling scenarios that were run mainly to address the new 1-hour standards. The final receptor grid of 20-km was determined by AQD to capture the highest areas of impact due to terrain affects. The 20 km grid was used in the significant impact analysis also. The results indicated that the impact was below the SIL at distances of less than 20 km except for the areas of localized terrain which the 20-km grid was used to capture.

- Modeled Negative Emission Rates
  Applicant modeled the following sources with negative NO2 and SO2 emission rates: CARBE, CARBW, ACTIVE, ACTIVW
  Modeling of negative emissions was used only in the significance modeling to determine if a full impact analysis was required to be conducted. However, since the significance modeling was above the significant impact levels (SIL) and full impact analyses were conducted this is not an issue. Also, this issue only applies to the NO_2 due to the conversion issues of NO.
- Consolidated Stack Emissions (Primary Carbonizer Boiler, Secondary Carbonizer Boiler, Activator Boiler, and Main Activator Stacks) with SO2 Reductions
  Clarification of merged stack approach and basis of emission reductions
  Total emissions are significantly less than 5,000 TPY, the threshold for the merged stack approach.
- NO2 1-hour Modeling
  Applicant conducted a Tier 2 analysis for 1-hour NO2 and used a 0.75 conversion factor to adjust NOx to NO2
  Based on the comment, and initial calculations of the NO2 impacts using 80% rather than 75% which resulted in a calculated impact of 188.8 $\mu g/m^3$ which is above the standard of 188.0 $\mu g/m^3$, the NAAQS was evaluated using PVMRM which produced an impact of 146.7 $\mu g/m^3$ that when added to the background of 20.8 $\mu g/m^3$ gives an impact of 167.5 $\mu g/m^3$ which is in compliance with the NAAQS.
- SO2 Background Concentration
  Applicant did not include background SO2 concentration in cumulative modeling analysis and stated exclusion of background monitored concentration was to in an effort to reduce the potential for double-counting of modeled and monitored contributions
  Since the sources included in the model was a comprehensive list of sources which included all minor sources within 10 km and all major sources of SO_2 out to 100 km, as stated in the March 1, 2011, AQMG modeling guidance, the background was excluded from the modeled impacts to determine compliance with the NAAQS. The impact within the modeling domain from mobile sources and area sources that were not modeled was expected to be negligible.
  The list of background sources that were not modeled were provided to EPA. The list contained minor sources from 10-100 km and the majority of the emissions from those sources are less than 10 TPY. The ratio of emissions to distance for all source was below 1.

There was a source included on that list that was not supposed to be included since that facility was closed permanently. That source was listed as the Zeledyne Tulsa Glass Plant.

- NAAQS Exceedance Contribution Analysis
  Unclear if applicant demonstrated no contribution to all modeled NAAQS exceedances, including those below the 98th-percentile (for NO2 or 99-th percentile for SO2)

The modeling was re-evaluated for all exceedances using the MAXDCONT output option to the Highest 20th High where there were no more violations of the NAAQS and it was determined that the facility can either increase stack height or reduce emissions such that the facility does not cause or contribute to a violation of the NAAQS. The current permit contains a compliance plan that requires the facility to complete within one year an analysis of the available options and to implement those options within the next three years to ensure compliance with the new 1-hour SO2 and NO2 NAAQS. The wording of the compliance plan has been adjusted to take into account this issue.

It should be noted that this action is a retro-active PSD enforcement related permit, therefore, issuance of the permit with the compliance plan moves the facility toward compliance.

- Ozone Modeling Analysis
  Unclear if applicant conducted an analysis to demonstrate that the facility does not cause or contribute to exceedance of the O3 NAAQS.
  Modeling was completed for both compliance options, new single stack and present configuration, which indicated that the modeled maximum impacts were in the range of 0.4-0.5 ppb of ozone resulting from the growth in potential NOx emissions above existing actual emissions which is not significant.
- Class I Impacts Analysis
  Applicant utilized AERMOD to model impacts at Class I area located 175 km from the facility
  The applicant did actually model that impacts from the facility on nearby Class I areas. The memorandum did not include wording that addressed the modeling conducted using CALPUFF. Additional wording will be incorporated into the permit memorandum addressing the modeling that was conducted and the fact that the impacts from the facility were significantly below the Class I SIL and AQRV guidelines from the FLM at all Class I areas within 300 km and that the visibility impacts were not significant. All modeling and reports were previously provided to the EPA.