Koerner, Jeff

From: Horton Joe [JBHorton@suwanneecement.com]
Sent: Monday, October 17, 2005 11:56 AM
To: Koerner, Jeff
Cc: Messer Tom
Subject: Additional Information
Attachments: Proposed Permit Language 10-13-05.doc

Jeff,

Please find attached the information we discussed during our meeting on Wednesday October 12th. Please let me know if you have any questions or wish to discuss any further.

Thanks,
Joe

Proposed Permit Language and Conditions from SAC

CEM DATA SYSTEM TO DEP

#. Continuous Monitor Data Retrieval System: The owner or operator, at its sole expense, shall:

a. Insure all of the CEMS are operational, recording and continuously transmitting available data to the Department's Northeast District Office; and

b. Having provided the Department's Northeast District Office with one personal computer equipped with a modem and software, and corresponding hardware at the owner's facility, to enable the Department at any time to connect to the CEM system and allow the Department access to data from the continuous monitors for SO_2, NOx and VOC expressed in terms of the units of the emission limiting standards of this permit, data from the continuous opacity monitor systems, and data from the monitor for the temperature at the inlet to the in-line kiln/raw mill particulate matter control device. The computer and software provide the Department with a numerical and graphical display of these data in real time pursuant to the averaging requirements of this permit, and allow the Department to electronically store and retrieve such data, and print such data as the Department may select. The software also allows the Department to review the exception log for any previous period of time accessible through the CEMS data management system.

[Rule 62-4.070(3), F.A.C.]

Comment [SC1]: Facility-wide condition, deleted from Section F, and updated here.

CEM DATA TO WEBSITE

c. The owner or operator shall also continue, at its sole expense, to post the above data on a real-time basis, as averaged pursuant to the averaging times for each applicable pollutant specified in Section #. Specific Condition #.#., to an Internet site accessible to the Department and public at any time via standard Internet browser software.

MERCURY SAMPLING INO

#. Material Balance Records of Mercury: The owner or operator shall demonstrate compliance with the mercury throughput limitation by material balance and making and maintaining records of monthly and rolling 12-month mercury throughput. The owner or operator shall, for each month of sampling required by this condition, perform daily sampling of all raw material feeds and all fuels and shall composite the samples into a daily samples. Each daily samples shall be composted each month into a monthly composite analyzed to determine mercury concentration of these materials for the month. The owner or operator shall determine the mass of mercury introduced into the pyroprocessing system (in units of pounds per month) from the total of the product of the mercury content from the monthly composite analysis and the mass of each material or fuel used during the month. The consecutive 12-month record shall be determined from the individual monthly records for the current month and the preceding eleven months and shall be expressed in units of pounds of mercury per consecutive 12-month period. Such records shall be completed no later than 45 days following the month of the records. No consecutive 12-month period shall exceed the mercury limit of 117.5 pounds per calendar year.

INITIAL STARTUP OF FACILITY

#. CEM System Certification & Startup of Facility: As pursuant to 40 CFR 60.7 and 60.13, and 40 CFR 60 Appendix B, Performance Specifications, and Appendix F, Quality Assurance Procedures. [Rules 62-4.070(3), 62-210.800 and 62-297.520, F.A.C., and BACT] the owner or operator will install prior to startup all CEMs required for compliance and will certify the CEM systems within 60 days of reaching average daily production at or above 90% and no later then 180 days after the initial startup. Upon certification of the CEMs systems the owner or operator will demonstrate compliance against all applicable standards as specified in Section #, Specific Condition #.# with the exception of NO_x.

An initial NOx limit of 3.0 lb/ton of clinker and 380.5 lb/hr will be allowed after certification of the CEM system until one of the following conditions are met:

- 12 calendar month period of operation from the date of certification of the CEM system
- A totalized clinker production of 150,000 tons regardless of timeframe
- A calendar month of production of 75,000 tons of clinker or more.

CO LIMIT

#.#. Permitted Maximum Allowable Emission Rate: The permitted maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EU	EMISSION LIMIT		AVERAGING TIME	BASIS
CO	004	3.0 lb/ton of clinker	380.5 lb/hour	30 Day [1]	BACT

[1] CO will be calculated on a 30-day rolling average with no data exclusion except as is defined by Rule 62-210.200(179). The average will update every valid hour of operation and drop the previous 720th valid hourly average.

MERCURY INPUT DATA

Mercury Feed Tracking

Mercury Concentration mg/Kg (ppm)

		From Testing (Milestone)
Limestone		0.023
Sand		0.037
Iron Ore		0.005
Fly Ash (wet)		0.098
Fly Ash (dry)		0.078
Coal		0.035
Clinker Production	3,043.20	tons/day
	1,055,467.00	tons/year

		Raw Material Rates (Dry)
Kiln Feed	Feed Rate (stons)	1,789,230
Limestone	Percent of Feed (%)	87.21%
	Feed Rate (stons)	1,560,445
Sand	Percent of Feed	7.63%
	Feed Rate	136,493
Iron Ore	Percent of Feed	1.27%
	Feed Rate	22,777
Fly Ash (wet)	Percent of Feed	3.88%
	Feed Rate	69,495
Fly Ash (dry)	Percent of Feed	0.00%
	Feed Rate	0
Coal (milled)	Hourly Feed Rate	20.00
	Feed Rate (stons)	157,680

	Mercury Concentration per Input
Kiln Feed	-
Limestone	71.780
Sand	10.101
Iron Ore	0.228
Fly Ash (wet)	13.621
Fly Ash (dry)	0.000
Coal	11.038
Monthly TOTAL (From Individual Feeds)	**106.767**

This would be the projected mercury amount from the data collected over the last two years. This represents the actual projected amount so some additional variance to insure that if a number was slightly above average that it would not cause the 12-month rolling to exceed 106.7 lbs per year. Assume a 10% increase on this to be conservative and you get a number around 117.5 lbs per year.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
National Wildlife Refuge System
Branch of Air Quality
7333 W. Jefferson Ave., Suite 375
Lakewood, CO 80235-2017

IN REPLY REFER TO:

September 21, 2005

RECEIVED
SEP 26 2005
BUREAU OF AIR REGULATION

Ms. Trina Vielhauer
Division of Air Resources
Department of Environmental Protection
2600 Blair Stone Road, MS # 5500
Tallahassee, Florida 323-2400

Dear Ms. Vielhauer:

Thank you for involving us in the review of the Prevention of Significant Deterioration (PSD) permit application for the Suwannee American Cement – Brandford Plant (DEP File No. 1210465-014-AC (PSD-FL-352)) project near Brandford, Florida. The project consists of adding a new kiln at the existing plant. The facility is approximately 82 kilometers (km) from Okenfenokee Wilderness, 110 km from St. Marks Wilderness, and 133 km from Chassahowitzka Wilderness, which are Class I air quality areas administered by the Fish and Wildlife Service (FWS).

The FWS Branch of Air Quality reviewed the permit application and additional documentation supplied by the applicant. FWS examined whether the project may have an effect on the air quality related values (AQRVs) in the Class I Wilderness Areas.

On July 27, 2005, we discussed the modeling analysis' preliminary results with the applicant and its contractor. During the conference call, FWS expressed concern with the use of "CALPUFF-Lite" modeling. CALPUFF-Lite is a screening mode of the Environmental Protection Agency (EPA) approved long-range regional haze computer model CALPUFF. CALPUFF-Lite uses ISC meteorology data to drive the model. The EPA's Interagency Workgroup on Air Quality Modeling (IWAQM) guidance outlines specific times when the use of CALPUFF-Lite is appropriate, and how to apply the model results (see Enclosure). If the modeled visibility impacts are above the allowable visibility threshold at any location on the receptor analysis ring, a refined CALPUFF

analysis should be performed. Contrary to the IWAQM guidance, the applicant is interpreting the CALPUFF-Lite results by only considering visibility impacts over an arc on the receptor ring that intersects the Class I area. Ultimately, we did agree to review the changes the applicant proposed to make to the modeling inputs, methodology, and subsequent results.

FWS reviewed the applicant's August 25, 2005, "Response to the Request for Further Information." Three changes to the modeling were outlined: 1) the ammonium concentration was changed from the default value to a land-use value for a forested area, 2) the ozone values were changed from the default value to the local ozone monitor data, and 3) and the use of CALPUFF-Lite modeling. For this project, FWS agrees with the change to the ammonium concentration and the use of the ozone monitoring data. However, the applicant continues to interpret the CALPUFF-Lite modeling results contrary to the IWAQM guidance. The model's results showed one day with 5.16% change in extinction on the 82 km receptor ring representing Okenfenokee Wilderness Area, which is above the 5% change of visibility threshold.

Upon examining the information presented, including the amount and type of emissions from this project, the distance to the Class I area, and the magnitude of visibility impact, in this specific case, FWS does not anticipate this project will have a significant impact on the three Class I refuges. Therefore, we have no further comments at this time, but would expect that any future projects submit a modeling protocol for review and apply appropriate models and methodologies.

We appreciate the opportunity to provide comments on this permitting action. We look forward to working closely with your agency to ensure both the protection of the Class I Wilderness Areas. If you have any questions, please contact Catherine Collins at (303) 914-3807.

Sincerely,

Sandra V. Silva

Sandra V. Silva, Chief
Air Programs Branch

Enclosure

cc:
Cleve Holladay
Florida Department of Environmental Protection
Air Permitting
2600 Blair Stone Road, M.S. 5500
Tallahassee, Florida 32399-2400

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Enclosure
Excerpts from IWAQM Phase 2 Summary Report
Regarding Use of CALPUFF Model in Screening Mode

Below are two excerpts from the "Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts," EPA-454/R-98-019, December 1998. These discuss the use of the CALPUFF computer model in a screening mode – also known as CALPUFF-Lite.

[Pages 6 – 7]

2.0 MODELING RECOMMENDATIONS

For most of the modeling situations discussed in the Guideline where a refined modeling technique is recommended, a screening analysis is also provided. The screening analysis is meant to be easy to conduct and to provide a worst-case maximum impact estimate. If the results of the screening analysis show compliance with existing regulatory requirements, then no further modeling for compliance with standards and increments is required.

Basically, IWAQM's recommendations for a screening analysis is an approach of using a simplified set of meteorology with CALPUFF. To encourage the results to be higher than would be estimated using a fully developed CALMET and CALPUFF analysis, rings of receptors are used. The maximum concentration value found anywhere on the receptor rings are used (rather than restricting the analysis to receptors only located within the Class I area(s) of interest). More discussion of the steps to be taken and processing requirements for a screening analysis is provided in Section 2.1.

IWAQM's recommendations for a refined analysis involve the following differences from the screening analysis:

- use of a fully developed time and space varying characterization of the meteorology using CALMET, and
- the receptors are placed within the Class I area(s) of concern, and
- the background concentrations of ozone and ammonia are allowed to vary in time and space, and
- the concentration and AQRV impacts are computed to more directly correspond to the standards, increments, and thresholds of concern.

More discussion of the steps to be taken and processing requirements for a refined analysis is provided in Section 2.2.

Sections 2.1 and 2.2 focus on how to apply models, specific options and data sets to be employed, and the processing of the input and output data. Section 2.3 provides more general recommendations on practical issues and limitations of longrange transport modeling assessments.

2.1 Screening Analysis

Section 4.7 presents comparisons of puff and plume model simulation results to demonstrate what differences might arise in simulated concentration values when the plume and puff model employ essentially identical meteorology and dispersion characterizations. The results shown in Section 4.7 show striking evidence that treating the sequence of meteorological events of all hours (including calms), can result in puff simulated maxima that are considerably higher than plume simulated maxima for almost any distance downwind or averaging time. This was most evident for the shorter averaging times that were 24-hours or less. The IWAQM concludes from these results that use of a plume model as a screen for a puff model's impacts is unlikely to be successful. In Section 4.8, a summary is presented of comparisons of results obtained by using a puff model with single station meteorology (a screening analysis) versus fully generated wind fields (a refined analysis) for each hour. These results suggest that the maximum concentration values simulated using the proposed screening approach for a receptor ring may occasionally underestimate results obtained from a refined model simulation. To address this tendency, IWAQM recommends use of the maximum concentration found anywhere on the receptor rings, rather than limiting the analysis to only receptors within the Class I area(s) of concern (as would be the case in a refined analysis). These conclusions are for maxima on receptor rings at fixed distances from isolated point sources where the terrain was relatively flat.

With these thoughts in mind, the following CALPUFF screening procedure is suggested by IWAQM (as outlined in Table 1):

1) generate five years of ISCST3 input meteorology using PCRAMMET,

2) generate an ISCST3 control file (use standard ISC defaults and create receptor rings as appropriate for the application); use the ISC2PUF conversion program to create the CALPUFF control file,

3) edit the CALPUFF control file to select MESOPUFF II chemistry, and specify domain-wide background concentration values for ozone and ammonia (see Section 2.2.2),

4) run CALPUFF with the ISCMET.DAT data option, and pick the maximum concentration for each pollutant, for each receptor ring and averaging time modeled. Perform increment and AQRV comparisons as required. For haze impact assessment, use the FLM provided "clean" background extinction coefficient and assume a RH value of 90%.

[Pages 16-17]

2.3.1 Screening procedures uncertainties

In Section 4.8 comparisons are presented of CALPUFF simulation results generated either through the use of ISC or CALMET meteorology. Anticipating that most analyses will involve a moderate to tall stack, of order 35-m to 200-m in height, it is seen that the screening estimates of sulfur-dioxide and sulfate concentration maxima obtained using ISC meteorology, typically range within ±70% of that simulated using CALMET meteorology. The sulfur dioxide and sulfate deposition fluxes obtained using ISC meteorology, typically range within ±60% of that simulated using CALMET meteorology. This suggest that the screening analysis as proposed is not providing a biased (overestimate) of these impacts. It was for this reason that IWAQM recommended that all receptors on the ring be included in the screening assessment. It was hoped that this would provide a measure of conservatism to the screening analysis. Adding a measure of conservatism is deemed reasonable, as the proposed screening analysis completely disregards the terrain and land-use induced wind effects, that would arise if fully-developed three-dimensional wind fields were developed using available surface and upper-air observations. The IWAQM concludes that the impacts estimated by the screening procedure proposed are conservative and yet less onerous than results as would be obtained by the Phase 1 Level 1 screening, and addresses concerns raised at the Sixth Modeling Conference.

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August 29, 2005

Mr. Cleve Holladay
Air Dispersion Modeler
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Electronic Files of Revised Air Dispersion Modeling for the Proposed Suwannee American Cement Expansion in Branford, Florida
PN 050430.0002

Dear Mr. Holladay:

On August 25, 2005, Suwannee American Cement (SAC) submitted revised pages to the SAC air dispersion modeling report as part of a Response to Additional Information (RAI) request from the Florida Department of Environmental Protection (DEP). Please find enclosed a CD containing all input, output, intermediate computer files, and meteorological data files used in this revised modeling analysis. The CD contains the modeling files associated with runs of the Class II PM_{10} increment consumption using a 25 m spacing along the plant boundary (see response to RAI Question 6).

If you have any questions or comments concerning the files, please give me or Josh Dunbar a call at (919) 489-5299.

Sincerely,

ENVIRONMENTAL QUALITY MANAGEMENT, INC.

Kent Berry

D. Kent Berry

DKB/tlp

Enclosures

cc: H. Ellis (Enviroplan)
J. Horton (SAC)