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PROJECT 624-98-01

FAX TRANSMITTAL FORM

TO: Clare Holladay

FAX NO.

FROM: John Koogler

DATE: 11/12/99 SENT BY: Wendy

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REMARKS:

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MEMORANDUM

TO: Cleve Holladay

FROM: John Koogler

DATE: November 12, 1999

The attached describes the development of the vehicle generated PM10 emissions inventory for Suwannee American Cement and the basis of the air quality impact analysis.

Call if there are any questions.

Traffic Generated Fugitive Particulate Matter Emissions

The air quality impact of fugitive particulate matter (PM10) generated by vehicle traffic associated with the Suwannee American Cement plant has been assessed. The traffic included in the assessment was the automobile traffic generated by plant employees and the truck traffic required to deliver raw materials to the plant and to transport finish cement from the plant.

The emission rates of fugitive PM10 were calculated using EPA emission factors (EPA Publication AP-42, Section 13.2.1, October 1997). The impact of these emissions on ambient air quality was evaluated using the ISC-ST Air Quality Model (Version 99155); the same air quality model used for evaluating point source emissions from the plant and from off-site sources. The meteorological data used in the model represented the period 1989-1993. The surface meteorological data were from Gainesville, Florida, and the upper air data were from Waycross, Georgia.

The automotive traffic volume was from a report prepared for Suwannee American Cement by Burns Traffic Services, Inc. (undated). This report assumed employment of 100 persons and a traffic volume of 1.05 round trips per person per day. The automotive traffic flow was assumed to occur during a two-hour period in the morning, a two-hour period in the afternoon and a two-hour period at late night (periods of time corresponding to shift changes).

The volume of truck traffic was based on the number of trucks necessary to transport raw materials to the site and to transport finish cement from the site. It was assumed that all of the cement would be transported from the site by WB-50 tanker trucks. The empty weight of these trucks is 25,500 pounds and the loaded weight is 78,500 pounds (26.5 net tons per load). It was estimated that there will be 112 round trips per day, 312 days per year. Cement truck traffic was assumed to arrive at and leave the plant between 0500 and 2100 hours each day (16 hours per day).

Coal and other materials were all assumed to be received at the plant in WB-50 dump trucks. These trucks have an empty weight of 28,500 pounds and a loaded weight of 78,500 pounds (25.0 net tons per load). It was estimated that 127,896 tons per year of coal will be required to fire the kiln 8760 hours per year. This amount of coal will require approximately 16 round trips per day, 312 days per year. It was assumed that coal and other raw materials will be received at the plant between 0600 and 2000 hours each day (14 hours per day).

The raw materials required at the plant include clay, flyash, iron ore, gypsum and various other additives required for finished cement. To be conservative, it was assumed that all clay required for the production of raw meal will be transported to the plant from off-site. It was estimated that 54,000 tons of clay and 167,500 tons of the other raw materials combined will be required per year. Clay was accounted for separately as it will be stored in a different location than the other materials (see attached site plan).

The clay deliveries will require seven round trips per day and the delivery of the other raw materials will require approximately 22 round trips per day, 312 days per year.

The routes used by the various vehicles can be followed on the attached site plan. All traffic will enter the plant property by turning north off of U.S. 27 onto the paved plant access road. All vehicles will travel approximately 0.43 miles north on the plant access road to the plant site. Automobile traffic will enter the paved plant parking area at this point while truck traffic will continue into the plant. The cement trucks will travel to the point on the site plan designated 33; Cement Storage Silos and Truck Loading with Scales. The raw materials trucks (other than clay) will continue to the south end of the storage hall (on the east side of the plant site) to the storage area designated "Other Material/Iron Ore". The trucks delivering clay will proceed to the north end of the plant site to the point designated 44; Clay Feeder/Crusher. Coal trucks will proceed to the center of the plant site to the area designated 38; Coal Storage.

The routes traveled have been designated by roadway links identified by letters (A-B, B-C, etc.). These designations are shown on the attached site plan.

Fugitive PM10 emissions from vehicle traffic were estimated using procedures outlined in Compilation of Air Pollutant Emission Factors, Section 13.2.1, *Paved Roads*, EPA Publication AP-42 (October 1997). The general equation used to determine PM10 emissions was:

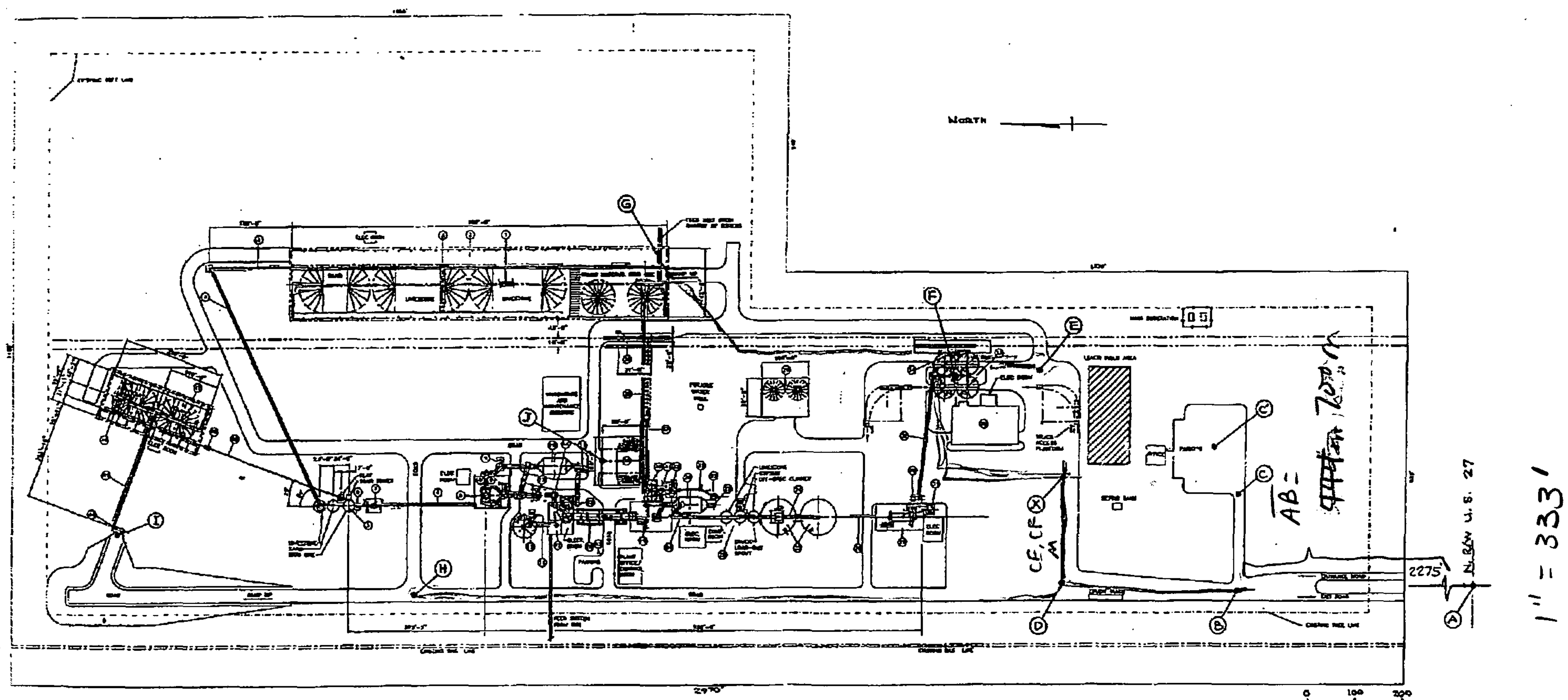
$$E\ (\text{lb/VMT}) = 0.016\ (\text{silt, }\%/2)^{0.65}\ (\text{vehicle weight, tons}/3)^{1.5}$$

The silt loading on the paved surfaces of 0.4 grams per square meter was selected from Table 13.2.1-2 of the referenced EPA document for normal conditions and low ADT (Average Daily Traffic) roads. The vehicle weight for loaded and empty trucks is as defined previously. The average automobile weight was estimated to be 1.5 tons.

The emissions generated by vehicle traffic were represented by volume sources in the ISC-ST air quality model. For roadway link A-B and B-D, 10 meter by 10 meter by 5 meter high volume sources located 10 meters center-to-center were used. For roadway link B-C (automobile traffic to parking), volume sources 6 meters by 6 meters by 3 meters high located 6 meters center-to-center were used. The parking area was represented by a single 45 meter by 45 meter by 3 meter high volume source. All other roadway links were represented by 10 meter by 10 meter by 5 meter high volume sources located 20 meters center-to-center.

The total PM10 emissions estimated for all vehicle traffic was 36.0 pounds per day. Scaling factors were used in the air quality model to account for the hours that emissions are actually expected to occur over each roadway link.

The modeling was conducted with point source emissions of PM10 particles, fugitive vehicle traffic generated PM10 emissions from Suwannee American Cement and PM10 emissions from all inventory sources (all assumed to be increment consuming). Modeling results are summarized in the attached table and output files have been transmitted electronically. The data show that the impacts of fugitive PM10 particles generated by vehicle traffic when combined with impacts of point source emissions of PM10 from Suwannee American and off-site sources will not result in exceedences of PSD increments or National Ambient Air Quality Standards for PM10 particles.



LEGEND

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SUWANNEE AMERICAN CEMENT CO.
BRANFORD, FLORIDA