STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. AC 41-27892

GENERAL ASPHALT COMPANY OF BRADENTON
DRUM MIX ASPHALT PLANT
BRADENTON, MANATEE COUNTY

DATE OF ISSUANCE

21st April 1980

DATE OF EXPIRATION

SEPTEMBER 23, 1980

Jacob D Varn

JACOB D. VARN
SECRETARY

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

April 21, 1980

Mr. W. Marshall Alford,
Executive Vice President
4705 15th Street, East
Bradenton, Florida

Dear Mr. Alford:

Enclosed is Permit Number AC 41-27892, dated April 21, 1980, to General Asphalt Company of Bradenton issued pursuant to Section 403, Florida Statutes.

Should you object to this permit, including any and all of the conditions contained therein, you may file an appropriate petition for administrative hearing. This petition must be filed within fourteen (14) days of the receipt of this letter. Further, the petition must conform to the requirements of Section 28-5.15, Florida Administrative Code, (see reverse side of this letter). The petition must be filed with the Office of General Counsel, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida 32301.

If no petition is filed within the prescribed time, you will be deemed to have accepted this permit and waived your right to request an administrative hearing on this matter.

Acceptance of the permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement action for violation of the conditions and requirements thereof.

Sincerely,

Steve Smallwood, Chief
Bureau of Air Quality Management

SS:caa
Enclosure

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

(1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners;

(c) All disputed issues of material fact. If there are none, the petition must so indicate;

(d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;

(e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;

(f) A demand for the relief to which the petitioner deems himself entitled; and

(g) Such other information which the petitioner contends is material.

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

Routing To District Offices And To Other Than The Addressee

To: _____ Loctn.: _____

To: _____ Loctn.: _____

To: _____ Loctn.: _____

From: _____ Date: _____

RECEIVED
APR 21 1980
Office of the Secretary

TO: Jake Varn, Secretary, FDER

FROM: Steve Smallwood, Chief, BAQM

DATE: April 21, 1980

SUBJ: Approval and Signature of Attached Air Construction Permit(s) described below.

Attached please find 1 Air Construction Permit~~(s)~~ for which the applicant is General Asphalt Company, of Bradenton, the proposed construction is for a drum mix asphalt plant

to be located at Bradenton, Manatee County, Florida.

Day 90, after which the permit would be issued by default, is Monday, April 28, 1980.

The Bureau recommends your approval and signature.

Margaret
Call Teddy when
this is signed.

Steve Smallwood

Steve Smallwood, Chief
Bureau of Air Quality Management

Date April 21, 1980

SS:caa

H6 - Rev 7/76

Check Sheet

Company Name: General asphalt Co & Bradenton Cross References:
Permit Number: AC 41-27892
PSD Number:
Permit Engineer:

Application:

- [x] Initial Application
  - [x] Incompleteness Letters
  - [ ] Responses
  - [ ] Waiver of Department Action
  - [ ] Department Response
  - [ ] Other

Intent:

- [x] Intent to Issue
- [ ] Notice of Intent to Issue
- [x] Technical Evaluation
- [x] BACT Determination
- [x] Unsigned Permit
- Correspondence with:
  - [x] EPA
  - [ ] Park Services
  - [ ] Other
- [ ] Proof of Publication
  - [ ] Petitions - (Related to extensions, hearings, etc.)
  - [ ] Waiver of Department Action
  - [x] Other

Final Determination:

- [ ] Final Determination
- [ ] Signed Permit
- [ ] BACT Determination signed is in TE & PD
  - [ ] Other

Post Permit Correspondence:

- [ ] Extensions/Amendments/Modifications
- [x] Other

missing PPC correspondence mentioned in EPA letter 4/23/80

Revision #3 KKW 06/03/94

Steve Smallwood

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30308

MAY 15 1980

REF: 4AH-AF

MAY 1980 RECEIVED BUREAU AQM

RECEIVED

MAY 21 1980

DEPT. OF ENVIRONMENTAL REGULATION

Mr. Marshall Alford
General Asphalt of Bradenton
4705 Fifteenth Street, East
Bradenton, Florida 33507

RE: Asphalt Plant, Application (PSD-FL-052);
Discussion with Mr. B. Thomas, FDER;
Letter from J. Koogler 4/28/80

Dear Mr. Alford:

In a recent discussion with Mr. Thomas of the Tampa office of the Florida Department of Environmental Regulation (FDER) and by letter from Mr. John Koogler, dated April 28, 1980, EPA was informed that the construction permit issued by FDER limits the hours of operation of the plant to 2340 hours per year. This permit condition limits potential emissions (uncontrolled) to less than 250 tons per year for all pollutants. Therefore, the proposed source is not subject to review under Federal Prevention of Significant Deterioration (PSD) Regulations (40 CFR 52.21) as promulgated June 19, 1978. This determination is consistent with the conclusion drawn in Mr. Koogler's letter.

Given that the history of the proposed construction has been somewhat confusing, particularly in light of the Partial Stay of PSD regulations issued February 5, 1980, let me summarize the events to date. Your application, received on January 28, 1980, requested permission to construct a 250 ton per hour asphalt plant fired with 121 million BTUs per hour of #6 fuel oil (worst case; 1.0% S). The application was received, determined subject to PSD review, and found to be incomplete. You were so notified. In response, you submitted a revised application based on #2 fuel oil firing (3 worst case; 0.33% S). The revised application was determined not to be subject to PSD regulations in light of the Partial Stay, and you were informed that PSD review was not required provided your state permit ensured potential emissions (controlled; based on continuous operation) of less than 250 tons per year for all pollutants (i.e., worst case #2 fuel oil firing or lb/hr units).

Your state permit (AC-41-27892) issued on April 21, 1980, allows residual fuel oil (#6; 1.0%S) firing, but limits hours of operation to 2340 hours per year. Enforceable permit conditions limiting hours of operation can be considered under the 1978 PSD regulations now in force. Further,

MAY 1980 RECEIVED BUREAU AQM

potential emissions (uncontrolled) as defined in these regulations is less than 250 tons per year for each pollutant based on the limited hours of operation. Therefore, your application is not subject to PSD review even though residual fuel oil firing is permitted.

In clarification of our previous letter (copy attached) which determined that your revised application (limited to #2 fuel oil firing) was not subject to PSD review in light of the partial stay, it should be noted that limits on hours of operation cannot be considered in calculating potential to emit as defined in the proposed 1979 PSD regulations. Further, let me point out that the proposed construction as permitted by FDER would be subject to review under the provisions of the proposed 1979 regulations were those regulations in force. Since the partial stay requires a source to meet the applicability requirements of both the 1978 regulation and the proposed 1979 regulation to be subject to review under the 1978 regulation, your source is not subject to PSD review. Further, if your state permit is revised to exclude residual (#6) fuel oil firing the proposed construction also would not require PSD review consistent with the determination outlined in my previous letter. Any other changes to the proposed construction or any further construction of air pollution emitting facilities at this source should be screened for preconstruction review requirements under federal PSD regulations.

Sincerely yours,

Tommie A. Gibbs, Chief
Air Facilities Branch

cc: John Koogler

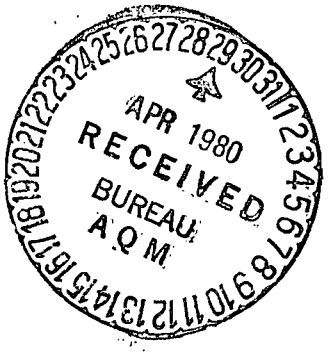
TAG:JLS:cg

Attachment

SHOLTES & KOOGLER, ENVIRONMENTAL CONSULTANTS
1213 N.W. 6th Street Gainesville, Florida 32601 (904) 377-5822

SKEC 276-80-01

April 28, 1980



Mr. Tommie A. Gibbs
Chief, Air Facilities Branch
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, GA 30308

Reference: 4AH-AF

Subject: General Asphalt Company of Bradenton
Permit Application (PSD-FL-052)

Dear Mr. Gibbs:

This letter is a follow-up to my letter of March 19, 1980 and is related to the applicability of Federal PSD regulations to the subject source. The information contained herein represents the results of several conversations between Mr. Jeff Shumaker of TRW, Mr. Bill Thomas of the Florida Department of Environmental Regulation, and myself. Hopefully this will clarify once and for all the sulfur dioxide emissions from the subject source and the use of fuel oil which results in these emissions.

In my letter of March 19, 1980 it was stated that General Asphalt would fire their aggregate dryer with LP gas as a primary fuel and No. 2 fuel oil as a stand-by fuel. This represented a change from the original permit which proposed the use of No. 6 fuel oil with one percent sulfur content. The change, discussed in my letter of March 19, 1980, was designed to eliminate the necessity for a Federal PSD review for the subject source.

Based upon information submitted in my March 19th letter it is my understanding that Jeff Shumaker corresponded with your office on March 25, 1980, giving his opinion that the asphalt plant as proposed by General Asphalt would not be subject to Federal PSD regulations.

During the time the material related to the subject plant was being reviewed by TRW, a permit application for a State of Florida Air Pollution Source Construction Permit was being reviewed by the Florida Department of Environmental Regulation. The application reviewed by FDER had not been changed to reflect the use of LP gas and No. 2 fuel oil. That application was reviewed with No. 6 fuel oil with one percent sulfur as the primary fuel and LP gas and No. 2 fuel oil as stand-by fuels.

The FDER permit application was not changed intentionally since it would have allowed General Asphalt to fire No. 6 fuel oil on a trial basis to determine the degree of sulfur dioxide removal resulting from the dryer exhaust gases passing through the bag collector. Preliminary data obtained from the National Asphalt Paving Association has indicated that 30-80 percent of the sulfur dioxide in the dryer exhaust gases will be removed as the gases pass through the bag collector. The variability is the result of the characteristics of the fines collected by the bag collector. In Florida where limerock is the primary aggregate in the manufacture of asphalt concrete, a sulfur dioxide removal toward the upper end of the 30-80 percent range would be expected. Based on the measured sulfur dioxide removal efficiency, General Asphalt anticipated to modify their State permit to allow the continued use of fuel oil with a higher sulfur content so long as the actual sulfur dioxide emission rate would not exceed 250 tons per year.

Based upon the permit application reviewed by the FDER, that agency issued, on April 21, 1980, a construction permit to General Asphalt (copy attached). The conditions of this permit state that the maximum allowable sulfur dioxide emission rate is 127.5 pounds per hour. This was calculated assuming the maximum firing rate of fuel oil to the dryer and the use of No. 6 fuel oil with one percent sulfur. The conditions of the permit also limit the operating hours of the plant to a maximum of 2,340 hours per year.

Based on these enforceable permit conditions, that is the sulfur dioxide emission rate and hours of operation, the maximum allowable sulfur dioxide emission rate from the plant will be 149 tons per year. This rate is less than 250 tons per year. The emission rate of the other pollutants, that is particulate matter, carbon monoxide, nitrogen oxides and hydrocarbons, are as stated in my letter of March 19, 1980; and are all less than 250 tons per year.

Based upon the aforementioned facts and my understanding of the conclusions reached by Jeff Shumaker, Bill Thomas and myself, the hot mix asphalt plant proposed by General Asphalt Company of Bradenton can burn No. 6 fuel oil with a one percent sulfur content for a maximum operating time of 2,340 hours per year and still not be subject to Federal PSD regulations. It had been concluded earlier that the plant was not subject to Federal PSD regulations for other pollutants.

For our record, we would appreciate a written concurrence of this conclusion. Thank you very much for your cooperation in this matter.

Very truly yours,

SHOLTES & KOOGLER
ENVIRONMENTAL CONSULTANTS

John B. Koogler, Ph.D., P.E.

JBK:sc
Attachment
cc: Mr. Jeff Shumaker
Mr. Bill Thomas
Mr. Marshall Alford

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30308

APR 23 1980

RECEIVED
APR 28 1980
DEPT. OF
ENVIRONMENTAL REGULATION

REF: 4AH-AF

Mr. Marshall Alford
Executive Vice President
General Asphalt Company of Bradenton
4705 Fifteenth Street, East
Bradenton, Florida 33507

Re: Asphalt Plant Permit
Application PSD-FL-052
Letter of 3/19/80

Dear Mr. Alford:

EPA has received a letter written on your behalf by Mr. J. Koogler dated March 19, 1980 modifying your permit application (PSD-FL-052). The modifications to your application change the applicability of the proposed 250 ton per hour asphalt plant (115 MM Btu/hr) under Federal Prevention of Significant Deterioration (PSD) Regulations (40 CFR 52.21) and the Partial Stay of regulations (published February 5, 1980; 45FR7800). Providing you receive a State permit with enforceable limitations assuring your proposed emission rates will not be exceeded, the proposed construction is not subject to review under Federal PSD Regulations.

This determination is based on the revised emissions estimates in your application. Worst case firing conditions, Number 2 fuel oil (Number 6 fuel oil in original application modified to Number 2 fuel oil), emissions from aggregate and fuel oil storage yield a "potential to emit" from this source, as defined in the proposed revisions to the Federal PSD regulations (40 CFR 52.21 proposed September 4, 1980; 44FR5 1924) is as follows in tons per year for each pollutant emitted by the source:

TSP	SO_2	NO_x	CO	HC
132.9	166.4	78.2	17.8	3.7

Since potential emissions (proposed definition) of no pollutant exceeds 250 tons per year, the proposed new source is not a "major stationary source" (proposed definition) and would not be subject to PSD review were the proposed revised PSD regulations in effect. Therefore, in light of the Partial Stay of regulations, the construction is not subject to review under the current PSD regulations (promulgated June 19, 1978; 43FR26380). For this reason, your application has been withdrawn from the PSD review process.

Should you have questions regarding applicability under Federal PSD Regulations, please contact Mr. Kent Williams of my staff or Mr. Jeffrey Shumaker of TRW Inc. at 919-541-9100. TRW is under contract to EPA and its personnel are acting as authorized representatives of the Agency in providing aid to the Region IV PSD review program.

Sincerely,

Tommie A. Gibbs

Tommie A. Gibbs, Chief
Air Facilities Branch

TAG:JLS:jt

cc: S. Smallwood

METROPOLITAN DADE COUNTY, FLORIDA

909 S.E. First Avenue
Brickell Plaza, Building - Rm. 402
Miami, Florida 33131
Telephone: 579—2760

ENVIRONMENTAL RESOURCES MANAGEMENT

April 4, 1980

Ms. Rebecca W. Hanmer
Regional Administrator
Region IV
U.S. Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30308

DADE COUNTY RESOURCE RECOVERY FACILITY

Dear Ms. Hanmer:

In our December 20, 1979 correspondence to the Region IV Administrator, Dade County certified that the subject facility (The Facility) would emit less than 100 tons per year of non-methane hydrocarbons (based on stack test results conducted at a similar facility), and thus satisfy condition No. 5 of the EPA February 27, 1978 Authority to Construct Permit. The certification methodology assumed a maximum operational schedule of 24 hours/day, 6 days/week, 52 weeks/year (See Attachment A).

According to your January 23, 1980 reply you indicated that a limit on the number of hours of operation should be included in the permit conditions. Due to the complexity of monitoring operational hours and flow rates of four individual boilers, it appears more appropriate to limit an equivalent maximum amount of solid waste processed. The Facility will be equipped with electronic scales, providing an accurate system of monitoring quantities of solid waste received. Additionally, the Florida Department of Environmental Regulation (F-DER) requires a monthly submittal of quantities of solid waste received which could be readily utilized in demonstrating compliance with applicable permit provisos.

Resource Recovery (Dade County) Inc., (the facility's operator) has a contract (The Contract) with Dade County to process 936,000 tons of solid waste per year and the Dade Facility was designed accordingly to accommodate this quantity. Utilizing the Dade facility's contracted annual solid waste quantity and extrapolating emission and process data from a similar facility (Hempstead, New York) Environmental Science and Engineering, Inc. has now projected non-methane hydrocarbons emissions from the Dade facility to be approximately 66 tons per year (See Attachment-B). The emissions were determined with a derived

emission rate (based on pounds of pollutant per process unit), similar to the standard computational methodology presented in EPA emission determination documents (i.e.AP-42). Furthermore, the Dade facility could process up to 1,400,000 tons per year and demonstrate compliance with condition No. 5 of the EPA Construction Permit (See Attachment C).

The emission data originally transmitted on December 20, 1979 was based on an hourly emission rate, which assumed a maximum capacity boiler flow rate and a 24-hour/day operation (six days/week). Considering contractual requirements, the annual emissions determined utilizing the original hourly emission rate is analogous to the emissions derived with the process emission rate (See Attachment D).

Therefore, it is now requested that the EPA Authority to Construct Permit for the Facility be modified as follows:

> The source shall not process solid waste in quantities greater than 1,400,000 tons per/year, it having been determined according to submitted documentation that the resulting non-methane hydrocarbons will not exceed 100 tons per year. Quantities of solid waste processed shall be transmitted monthly to the Florida Department of Environmental Regulation and also made available to EPA on request.

In any case, it has been demonstrated that the Facility will emit less than 100 tons per year of non-methane hydrocarbons and thus satisfy Condition #5 of the Permit. The large quantity of allowable emissions "left over" after deducting the Facility's projected emissions (based on contractual solid waste processed) should account for any slight differences in the waste composition of the Hempstead and Dade Facilities.

We appreciate your continuing interest in this Facility so that it will be, as designed, an environmentally acceptable alternative in solid waste-energy resource recovery for Dade County.

Please contact me if you need any further information.

Very truly yours,

Colin Morrissey, Director
Environmental Resources Management

CM:REJ:toc
Attachments

cc: D. Kohlepp
K. Kosky
P. Thomson
J. Varn

Attachment A

CALCULATION SHEET - HYDROCARBON EMISSIONS

DADE COUNTY RESOURCE RECOVERY FACILITY

Given Information: (Hempstead Test Information)

Total Hydrocarbons (average) = 35.2 ppm dry basis, Methane <2 ppm dry basis

Flow Rate (average) = 4,272,864 SCFH (Dry); 5,808,553 SCFH (Wet)

Moisture in Stack Gas = (5,808,553 - 4,272,864) ÷ 5,808,553 = 0.26; 26%

Dade County Resource Recovery Source Information:

Flow Rate = 314,000 ACFM for 2 units @ 420°F

Flow Rate Dry Basis = 314,000 ACFM x (1 - 0.26) x 528/880 = 139,400 SCFM (Dry)

Total Flow = 139,400 SCFM (Dry) x 2 stacks x 60 min/hr = 16,728,000 SCFH (Dry)

Emission Calculation:

Total Hydrocarbons = 35 ppm = 0.0233 g/m^3

HC Emissions = 16,728,000 SCFH x 0.0233 g/m^3 x 0.02832 $m^3/ft.^3$ x 0.002205 lb/g = 24.3 lb/hr.

HC Emissions (Annual) = 24.3 lb/hr x 24 hr/day x 6 days/week x 52 weeks/year x ton/2000 lb = 91 tons/yr.

Originally submitted
12/20/79

ATTACHMENT B

Calculation Sheet - Hydrocarbon Emissions
Dade County Resource Recovery Facility

Given Information: (Hempstead Test Information by New York Testing Laboratories, Inc.)

Total Hydrocarbon (average) = 35.2 ppm dry basis = 0.0233 g/m^3
Methane <2 ppm dry basis

Flow Rate (average) = 4,272,864 SCFH (Dry); 5,808,553 SCFH (Wet)

Moisture in Stack Gas = 26% (refer to Attachment A)

Waste Heat Boiler Steam Flow (average) = 182,250 lbs/hr

Assumed Steam-Fuel Relationship: (from Hempstead experience) is 1.9 lbs steam/lbs fuel.

Assumed Refuse to Fuel Relationship: (from Hempstead) is 1.1 lb fuel/lb refuse

Emission Factor For Hempstead:

HC Emission Hempstead = 4,272, 864 SCFH x 0.0233 g/m^3 x 0.02832 m^3/ft^3 x 0.002205 lb/g = 6.22 lbs HC/Hr.

Fuel burned = 182,250 lbs steam/hr. x 1.0 lb fuel/1.9 lb steam x ton/2000 lb = 48 tons fuel/hour

Refuse input = 48 tons fuel/hr x 0.91 tons garbage/ton fuel = 44 tons refuse/hr.

HC Emission Factor = 6.22 lbs HC/hr x 1/44 tons refuse/hr = 0.14 lbs HC/ton refuse

Emission Calculation Dade County Resource Recovery:

Annual Refuse = 936,000 tons/yr

HC Emissions = 936,000 tons refuse/yr x 0.14 lbs HC/ton refuse x ton/2000 lb = 66 tons/yr.

ATTACHMENT C

Calculation Sheet - Maximum Potential Quantity of Solid Waste Processable at the Dade County Resource Recovery Facility Without Exceeding 100 Tons of Non-Methane Hydrocarbons (NMHC) per Year

Given Information:

NMHC Emission Factor: 0.14 lbs./ton refuse (Refer to attachment B)

100 Tons Per Year Emission Limit

Maximum Processable Solid Waste:

100 tons/year x 1/.14 lbs NMHC/tons refuse x 2000 lbs./ton = 1,428571 tons/year

1,400,000 tons/year* x .14# NMHC/ton refuse x 1/200# ton = 98 tons NMHC/year.

* $\approx$ 3,774 tons/day x 7 days/wk x 52 weeks/yr.

ATTACHMENT D

Calculation Sheet - Comparison of Dade County Resource Recovery Facility Emissions Based on Hours of Operation and Solid Waste Processed

Given Information:

Contract Requirements: Process 18,000 tons of Solid Waste in 123.6 hours per week. (18,000 tons/wk x 52 wks/yr = 936,000 tons per yr).

Overall Facility capacity: 3976 tons/day

Originally submitted NMHC Emission Rate: 24.3 lbs/hour (Attachment A)

NMHC Emissions Based On Operational Hours at Maximum Capacity:

Operational hours per day necessary to meet weekly contract requirements at maximum capacity:
18,000 tons/week x 1 week/7 days x 1 day/3976 tons x 24 hours/day = 15.52 hours/day*

NMHC Emissions: 24.3 lbs/hour x 15.52 hours/day x 7 days week x 52 weeks/year x 1 ton/2000 lbs. = 68.6 tons/yr.

NMHC Emissions Based On Annual Process Quantity:

66 tons/yr (Attachment B)

* or 18.11 hours/day, 6 days/week.

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

March 20, 1980

Mr. Tom Gibbs
U.S. Environmental Protection Agency, Region 4
Air Facilities Branch
345 Courtland Street, N.E.
Atlanta, Georgia 30308

RE: Best Available Control Technology (BACT) Determination for - General Asphalt Company of Bradenton, Bradenton, Florida (Drum Mix Asphalt Plant).

Dear Mr. Gibbs:

The Florida Department of Environmental Regulation has determined BACT for the above referenced source to be as follows:

Particulate:	Emission Limitation of 0.04 grains per DSCF, Achievable with a baghouse collector.
Opacity:	Less than 20 percent.
Sulfur Dioxide:	Sulfur content of oil not to exceed 1 percent sulfur by weight.
Test Methods:	Methods 1 through 5, and 9, 40 CFR 60

A complete copy of the BACT determination is attached.

Sincerely,

M. G. Hodges
Environmental Scientist
FDER, BAQM

Attachment
MGH:caa

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To: _____ Loctn.: _____
To: _____ Loctn.: _____
To: _____ Loctn.: _____
From: _____ Date: _____

TO: Jacob D. Varn,
Secretary

FROM: Steve Smallwood, Chief
Bureau of Air Quality Management

DATE: March 18, 1980

SUBJECT: BACT Determination - Drum Mix Asphalt Plant, General Asphalt Company of Bradenton to be located just East of Palmetto, Manatee County.

Facility: The proposed plant will manufacture asphaltic concrete at a rate of 250 tons of product per hour. The largest air pollution source will be the drum mixer which could potentially generate 1,433 tons of particulate per year, without emission controls.

BACT Determination Requested by the Applicant:

Particulate: 0.04 grains/DSCF to be attained with a 99.4% efficiency baghouse collector.

Date of Receipt of a Complete BACT Application:

January 24, 1980

Date of Publication in the Florida Administrative Weekly:

March 21, 1980

Date of Publication in a Newspaper of General Circulation:

March 19, 1980, Tampa Tribune

Study Group Members:

A BACT determination on an asphalt drum mix batch plant was completed August 21, 1979. There have been no significant technological improvements since that date. Therefore, the same BACT applied in this case and a study group was not required.

EPA's New Source Performance Standards for Asphalt Batch Plants:

Particulate Emission Limitation:	No greater than 0.04 grains/Dry Standard Cubic Foot
Opacity:	Less than 20%

BACT Determination by Florida Department of Environmental Regulation:

Particulate:	Emission limitation of 0.04 grains/DSCF achievable with a baghouse collector.
Opacity:	Less than 20%
Test Method:	Methods 1 through 5, 40 CFR 60
	Method 9, 40 CFR 60

Justification of DER Determination:

This BACT is consistent with previous determinations by DER for asphalt plants. No significant technological improvements have occured since the previous BACT determinations for this type of plant was completed. Therefore, more stringent standards are not justified.

Details of the Analysis May be Obtained by Contacting:

Victoria Martinez, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, Florida 32301

Recommendations from: Bureau of Air Quality Management

by: Steve Smallwood
Steve Smallwood

Date: 3-18-80

Approved by: Victoria L. Tschinkel /for
Jacob D. Varn

Date: 3-18-80

Attachment

SS:caa

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

Routing To District Offices And/Or To Other Than The Addressee

To: _____ Loctn.: _____

To: _____ Loctn.: _____

To: _____ Loctn.: _____

From: _____ Date: _____

TO: David Puchaty, Manager, S. W. District, FDER
William Priesmeyer, Assistant Pollution Control Director, Manatee County Health Department

FROM: Steve Smallwood, Chief
Bureau of Air Quality Management

DATE: March 17, 1980

SUBJ: Proposed Department Action on General Asphalt Co. of Bradenton's Application to Construct a Drum-Mix Asphalt Batch Plant in Palmetto, Manatee County, Florida.

Attached is one copy of the Proposed Construction Permit, Technical Evaluation and BACT Determination for General Asphalt Co. of Bradenton.

Pursuant to 17-2.091 and 40 CFR 51.18 this information is to be maintained on file for public review for 30 days.

Comments are to be submitted to the Bureau of Air Quality Management in writing.

SS:caa

Attachment

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

MEMORANDUM

TO: W. Marshall Alford, Exec. V.P., General Asphalt Co.
John B. Koogler, Sholtes & Koogler Env. Consultants

FROM: Steve Smallwood, Chief
Bureau of Air Quality Management

DATE: March 17, 1980

SUBJ: Proposed Department Action on General Asphalt Co. of Bradenton's Application to Construct A Drum-Mix Batch Plant in Palmetto, Manatee County, Florida.

Attached is one copy of the Proposed Construction Permit, Technical Evaluation and BACT Determination for General Asphalt Co. of Bradenton.

Comments are to be submitted to the Bureau of Air Quality Management.

SS:caa

Attachment

Public Notice

The Florida Department of Environmental Regulation, (FDER), has an application from and intends to issue a Construction Permit to General Asphalt Company of Bradenton for a Drum Mix Asphalt Plant to be located on SR 45 (U.S. 41-North) at Palmetto, Manatee County, Florida. Determination of Best Available Control Technology (BACT) was required. Copies of the Application, Technical Analysis, BACT and Proposed Permit are available for inspection at the following FDER and County Health Department Offices:

FDER, S. W. District
7601 Highway 301 North
Tampa, Florida

Manatee Co. Health Dept.
202 6th Avenue E.
Bradenton, Florida

FDER Bureau of Air Quality Mgt.
2600 Blair Stone Road
Tallahassee, Florida

Persons wishing to comment on this action shall submit comments, in writing, to M. G. Hodges of the Tallahassee office, within 30 days of this notice.

Technical Evaluation

and

Preliminary Determination

General Asphalt Company of Bradenton

Bradenton, Florida

Construction Permit

Application Number:

AC 41-27892

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

March 17, 1980

I. PROPOSED DEPARTMENT ACTION

The Department intends to issue the proposed Construction Permit to General Asphalt Company of Bradenton for the construction of a CMI Model PSD732 Drum Mix Asphalt Plant with Aeropulse bag collector at a location approximately 3 miles north of the intersection of US 41 and US 19 east-northeast of Palmetto, Manatee County, Florida. Issuance will be subject to public comment received in response to this notice.

Any person wishing to file comment on this proposed action may do so by submitting such comments in writing to:

M. G. Hodges
Florida Department of Environmental Regulation
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

All comments received prior to April 18, 1980 will be considered and noted in the Departments' Final Determination.

Any person whose substantial interests would be affected by the issuance or denial of this permit may request an administrative hearing by filing a petition for hearing as set forth in Section 28-5.15 (copy attached). Such petition must be filed within 14 days of the date of this notice. Such petition is to be filed with:

Mary Clark
Office of General Counsel
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

II. SUMMARY OF EMISSIONS AND AIR QUALITY ANALYSIS:

a. The proposed location on US 41, approximately 3 miles north of the intersection with US 19, east-northeast of Palmetto, Manatee County, is approximately 24 miles due south of the southern boundary of the Hillsborough County particulate nonattainment area, which places the proposed source within the area of influence of that nonattainment area.

b. The only significant source of particulates, SO_2 and NO_x will be the 250 tons of asphalt/hour drum mixer. The controlled emissions are as follows:

- 8.8 tons per year of particulate
- 119.4 tons per year of sulfur dioxide
- 15.2 tons per year of oxides of nitrogen

III. SYNOPSIS OF APPLICATION

a. Name and Address of Applicant

General Asphalt Company of Bradenton
4705 15th Street East
Bradenton, Florida

b. This project will entail the installation of a new CMI Model PSD732 drum mix plant, and will be serviced by an Aeropulse Model 612-10 bag collector. The drum mix process feeds the asphalt to the dryer mixer, coating the aggregate, thereby reducing the quantity of particulate emitted. The plant, at peak operation, will produce approximately 250 tons/hr. of product consisting of 93% aggregate and 7% liquid asphalt. Particulate emissions from the dryer mixer will be vented to an Aeropulse Model 612-10 bag collector, having a 5.7/1 air/cloth ratio and a 99.4% particulate removal efficiency. Sulfur dioxide emissions will be controlled by the sulfur content of the #6 fuel oil, which will be limited to 1% sulfur by weight. Nitrogen oxides emissions will require no control, as the projected emissions are well below 250 tons/year.

c. Description of Process, Proposed Process Rate and Emission Rates:

The proposed facility will operate 9 hours per day, 5 days per week and 52 weeks per year. The operation will utilize 465,000 pounds per hour of aggregate, 35,000 pounds per hour of liquid asphalt and a maximum of 19.33 barrels per hour of 1% sulfur #6 fuel oil. The dryer mixer will have potential emissions of approximately 1,433 tons per year of particulate, controlled to 8.8 tons per year by the baghouse. Uncontrolled emissions of oxides of nitrogen will be approximately 15 tons per year. Sulfur dioxide emissions will be approximately 119 tons per year, based on combustion of 1% sulfur #6 fuel oil.

IV RULE APPLICABILITY

The proposed plant is to be located within the area of influence of the Hillsborough County Particulate Nonattainment Area (see 17-2.13). The proposed plant will be a major source (see 17-2.02(6) and 17-2.17(1)(c)2.c), and is therefore exempt from the nonattainment rule only if reasonable assurance is provided that the source will not impact on the nonattainment area (17-2.17(3)(a)1.a.(ii)).

The proposed plant is to be located approximately 24 miles from the boundary of the particulate nonattainment area and therefore is not subject to the Fugitive Particulate Matter provisions of 17-2.17. The plant is, however, subject to the Fugitive Particulate Matter provisions of 17-2.05, Prohibited Acts.

The proposed plant is also a major emitting facility with respect to particulate (17-2.02(70)) and therefore subject to the PSD provisions of 17-2.04, which subjects the particulate emission to control by BACT (17-2.03).

With respect to sulfur dioxide, the plant is neither a major source or a major emitting facility, nor located within a sulfur dioxide nonattainment area or area of influence. Therefore, the sulfur dioxide emissions are not subject to BACT or LAER, but are subject to a permit condition that would provide reasonable assurance that the ambient standards will not be violated, 17-4 FAC.

The information provided indicates that the plant is not a major emitting facility for nitrogen oxides or volatile organic hydrocarbons. Therefore, the proposed source is not subject to control by BACT (17-2.03, 17-2.02(70)),due to the pollutant quantity, the nonattainment rule due to the proposed location, or PSD (17-2.04) due to the type of pollutant.

V. FINDINGS

1. Based on the data presented in the application and EPA emission factors published in AP-42, the total maximum emissions are projected to be equal to or less than the amounts set forth in the following table.

	Total Facility Emissions (projected, uncontrolled)	
Pollutant	#/hour	Tons/year*
Particulate	1,225	1,433
SO_2	127	119
NO_x	16	15

*based on operating schedule

2. The proposed facility is a major particulate emitting facility since it has potential particulate emissions of more than 250 tons per year.

3. The proposed facility is not a major emitting facility for sulfur dioxide or nitrogen oxides, since it is not one of the 28 source categories listed in Definition, 17-2.02(70), and will not have uncontrolled emissions greater than 250 tons per year.

4. Ambient modeling shows that neither the PSD increments nor the ambient air quality standards will be violated by the proposed source. The following table shows the impacts.

Air Quality Impacts

Pollutant	State Air* Quality Standard	Class II* Increment PSD	Predicted* Impact	Significant Impact*	Fraction of PSD Increment Consumed
Particulate Annual	60	19	0.1	1	0.5%
24-Hour	150	37	1.9	5	5.1%
SO_2					
Annual	60	20	2.4	1	12.0%
24-hour	260	91	32.2	5	35.4%
3-hour	1300	512	257	25	50.2%

*Values in mg/m^3

5. Reasonable assurance has been provided that ambient air quality standard for sulfur dioxide will not be violated.

6. The installation of the Aeropulse baghouse on the drum/mixer is a reasonable requirement to comply with the provisions of 17-2.03 (BACT), 17-4.23 and Federal NSPS to minimize the discharge of particulate matter.

7. Construction should commence and be completed within a reasonable time based on the projections in the application.

8. Construction should reasonably conform to the application submitted.

9. The applicant should report any delays in construction and completion.

10. The actual particulate emissions from the baghouse stack and the fuel oil sulfur content should be tested using standard test methods prior to the issuance of an operating permit. As part of the operating permit, particulate emissions from the baghouse and fuel quality should be periodically tested. Tests do not need to be required for other emission points or pollutants except for specific tests required by the Department based on a reasonable belief that the emissions from an uncontrolled emission point are excessive.

11. Upon obtaining an operating permit the applicant should submit periodic reports on the actual operation of the facility.

12. PSD requirements are satisfied by modeling results submitted with the application.

VI. PROPOSED ALLOWABLE EMISSIONS AND PERMIT CONDITIONS

See Draft Permits

Attachment: Rule 28-5

March 17, 1980

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICANT: General Asphalt Company of Bradenton
W. Marshall Alford, Exec. V. P.
4705 15th Street East
Bradenton, Florida

PERMIT/CERTIFICATION NO. AC 41-27892

COUNTY: Manatee

PROJECT: Asphalt Batch Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the construction of a 250 ton per hour asphalt batch plant to be located on US 41, approximately 3 miles north of the intersection of US 19, and approximately 3 miles east-northeast of Palmetto, Manatee County. The Universal Transverse Mercator (UTM) coordinates are 347.7 East by 3051.7 North. The latitude and longitude is 27°34'57" North by 82°32'33" West.

Construction shall be in accordance with the attached permit application and plans, documents and drawing except as otherwise noted on page 3, "Specific Conditions".

Attachments are as follows:

1. "Application to Construct Air Pollution Sources" dated January 16, 1980.

2. Best Available Control Technology Determination.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed

PERMIT NO.: AC 41-27892
APPLICANT: General Asphalt Company
of Bradenton

on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations indicated in the attached drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit shall constitute grounds for revocation and enforcement action by the department.

3. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

13. This permit also constitutes:

[X] Determination of Best Available Control Technology (BACT)
[X] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

SPECIFIC CONDITIONS:

PERMIT NO.: AC 41-27892
APPLICANT: General Asphalt Company
of Bradenton

Specific Conditions

1. Maximum Allowable Emission Rates from the asphalt batch plant dryer stack shall be:

   Particulate Matter - 7.54 pounds/hr., not to exceed 0.04 grains/DSCF

   Sulfur Dioxide - 127.5 pounds/hr.

2. Sulfur content of fuel oil shall not exceed 1% sulfur, by weight.

3. Operating time periods shall not exceed 9 hours/day, 5 days/week, and 52 weeks per year. Total hours of operation shall not exceed 2,340 hours/year.

4. Process input rate shall not exceed 250 tons/hour.

5. Applicant shall submit estimated dates on which construction will begin and on which construction will be completed to the Bureau of Air Quality Management prior to commencement of construction.

6. Applicant shall submit an application for an Operating Permit at least 90 days prior to expiration of this Construction Permit.

7. Any material deviation from construction as specified in the application shall be reported to the Chief of the Bureau of Air Quality Management.

Expiration Date: September 23, 1980

DRAFT

Issued this _____ day of _____, 19 ____.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

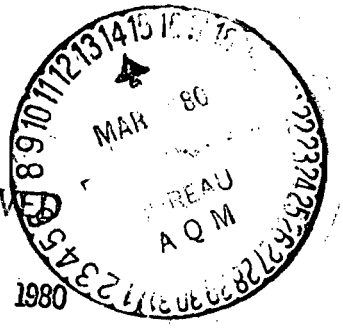
Smallwood

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30308

MAR 7 1980



REF: 4AH-AF

RECEIVED

MAR 13 1980

DEPT. OF
ENVIRONMENTAL REGULATION

Mr. Marshall Alford
Executive Vice President
General Asphalt Company of Bradenton
4705 Fifteenth Street, East
Bradenton, Florida 33507

Re: Asphalt Plant Permit
Application (PSD-FL-052);
Letter of 1/22/80

Dear Mr. Alford:

EPA received on January 28, 1980 your application to construct an asphalt plant in Palmetto, Florida (PSD-FL-052). Review of this application under the Federal Prevention of Significant Deterioration (PSD) Regulations (40 CFR 52.21) has shown it to be incomplete.

To allow review of the application to continue please submit information on the following items:

1. Is the asphalt plant an addition to an existing source? If so, present information on the allowable emissions rates for all existing emission units (emitting facilities). Also, information on emissions increases and decreases for any other modifications to the source since August 7, 1977.

2. Estimate emissions of carbon monoxide (CO) and hydrocarbons (HC) from the proposed asphalt plant and associated facilities such as fuel oil storage, etc. Also, estimate fugitive emissions of particulate (TSP) from aggregate storage and handling and from any associated haul roads, etc.

3. A National Ambient Air Quality Standards (NAAQS) analysis and an increment analysis for emissions of sulfur dioxide (SO_2) is required. This analysis may require one year's site specific monitoring data.

In addition to the required additional information listed above, please note that an inappropriate emission factor was used in the application to estimate NO_x emissions. Use of the residual fuel oil factor of 60 lb $NO_x/10^3$ gallon and assuming continuous yearly operation, which is consistent

with the definition for potential emissions, yields potential NO_x emissions from the plant of about 213 tons per year. Since your plant is subject to a 250 ton per year applicability criteria, this fact will not affect your application unless the asphalt plant is an addition to an existing source and previous modifications since August 7, 1977 have increased emissions of NO_x such that the total potential emissions exceed 250 tons per year.

As you are aware the date a complete application is received is used in determining increment rights. For this reason it is in your company's best interest to submit the necessary information as soon as possible. You may also be aware that due to a recent court decision (Alabama Power vs Douglas Costle) the 1978 Federal PSD Regulations are under revision. In addition, on February 5, 1980 the Administrator announced a partial stay of the PSD Regulations. Your application has been reviewed in accordance with the provisions of that stay; however, you are advised that additional requirements may be necessary depending on the outcome of ongoing revisions to the PSD regulations.

Sincerely yours,

Tommie A. Gibbs, Chief
Air Facilities Branch

TAG:JLS:jt

STATE OF FLORIDA

DEPARTMENT OF
Health & Rehabilitative Services
District Six
202 SIXTH AVENUE EAST

Bob Graham, Governor

MANATEE COUNTY HEALTH DEPT.
BRADENTON, FLORIDA 33508

January 29, 1980

Mr. Dan Williams, P.E.
Florida Department of
Environmental Regulation
Southwest District
7601 Highway 301, North
Tampa, Florida 33610

RE: GENERAL ASPHALT COMPANY OF BRADENTON
HOT MIX ASPHALT PLANT

Dear Dan:

Enclosed are construction applications for General Asphalt plant.

I have a copy and will call you after you start your review of the project.

If we may be of further assistance, please advise.

Very truly yours,

William L. Priesmeyer
Ass't Pollution Control Director

WLP:vf

Enclosures
Check No. 3218 $20.00

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Nº 33524

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from GEN. ASPHALT CO./OF BRADENTON

Date 24 JAN 80

Address SR 45 (US 41N), PALMETTO

Dollars $ 20.00

Applicant Name & Address W. MARSHALL ALFORD, EXEC. V.P. 4705 15TH ST. E., BRADENTON

Scurce of Revenue

Revenue Code 0101 Application Number AC 41-27892

By

DER PERMIT APPLICATION TRACKING SYSTEM MASTER RECORD

FILE#000000027892 COE# DER PROCESSOR:HODGES DER OFFICE:TLH
FILE NAME:GENERAL ASPHALT COMPANY DATE FIRST REC: 02/24/80 APPLICATION TYPE:AC
APPL NAME:ALFORD, W. MARSHALL APPL PHONE:(813)/58-6468 PROJECT COUNTY:41
ADDR:4705 15TH STREET EAST CITY:BRADENTON ST:FLZIP:
AGNT NAME:KOOGLER(JOHN B. AGNT PHONE:(904)377-5822
ADDR:1213 N.W. 6TH STREET CITY:GAINESVILLE ST:FLZIP:

ADDITIONAL INFO REQ: / / / / / / REC: / / / / / /
APPL COMPLETE DATE: / / COMMENTS NEC:Y DATE REQ: / / DATE REC: / /
LETTER OF INTENT NEC:Y DATE WHEN INTENT ISSUED: / / WAIVER DATE: / /

HEARING REQUEST DATES: / / / / / /
HEARING WITHDRAWN/DENIED/ORDER -- DATES: / / / / / /
HEARING ORDER OR FINAL ACTION DUE DATE: / / MANUAL TRACKING DESIRED:N
THIS RECORD HAS BEEN SUCESSFULLY ADDED
FEE PD DATE#1:02/24/80 $0020 RECEIPT#00033524 REFUND DATE: / / REFUND $
FEE PD DATE#2: / / $ RECEIPT# REFUND DATE: / / REFUND $
APPL:ACTIVE/INACTIVE/DENIED/WITHDRAWN/TRANSFERRED/EXEMPT/ISSUED:AC DATE:02/24/80
REMARKS:CMI MODEL PDM732 DRUM MIX PLANT WITH AEROPULSE BAG COLLECTOR. PALMETTO, MANATEE CO. UTM = 347.7 E. / 3051.7 N. LAT/LON = 27DEG 34MIN 57SEC N. / 82DEG 32MIN 33SEC W. ON SR 45 (US 41 N.).

DETACH AND RETAIN THIS STATEMENT

THE ATTACHED CHECK IS IN PAYMENT OF ITEMS DESCRIBED BELOW.
IF NOT CORRECT PLEASE NOTIFY US PROMPTLY. NO RECEIPT DESIRED

GENERAL ASPHALT COMPANY OF BRADENTON

DATE	DESCRIPTION		AMOUNT
01-80	Ref.	101	
55555	0180	20.00	
200			

Marshall

BEST AVAILABLE COPY

AC-41-27892

MANATEE COUNTY HEALTH DEPT.
BRADENTON, FLORIDA
RECEIVED
JAN 24 1980
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO ~~OPERATE~~/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Hot Mix Asphalt Plant [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: General Asphalt Company of Bradenton COUNTY: Manatee

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) CMI Model PDM732 Drum Mix Plant with Aeropulse Bag Collector

SOURCE LOCATION: Street SR 45 (US 41 - North) City Palmetto

UTM: East 347.7 km North 3051.7 km

Latitude 27 ° 34 ' 57 "N Longitude 82 ° 32 ' 33 "W

APPLICANT NAME AND TITLE: W. Marshall Alford, Executive Vice President

APPLICANT ADDRESS: 4705 15th Street, East, Bradenton, Florida

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of General Asphalt Company of Bradenton

I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: _____

W. Marshall Alford, Executive Vice President
Name and Title (Please Type)

Date: _____ Telephone No. 813/758-6468

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been ~~designed~~/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

CERTIFICATE NO. 12925 (Affix Seal) STATE OF FLORIDA REGISTERED ENGINEER

Signed: _____

John B. Koogler, Ph.D., P.E.
Name (Please Type)

SHOLTES & KOOGLER ENVIRONMENTAL CONSULTANTS
Company Name (Please Type)

1213 N.W. 6th Street, Gainesville, Florida
Mailing Address (Please Type)

Florida Registration No. 12925 Date: 1/16/80 Telephone No. 904/377-5822

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Project involves the location of a 250 TPH CMI drum mix asphalt plant on US 41, approximately 3 miles north of the Intersection with US 19. The plant will be equipped with a Aeropulse bag collector which will assure compliance with applicable particulate matter emission regulations.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction 4/15/80 Completion of Construction 4/30/80

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The capital cost of the bag collector and fan is $124,765.00.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

NONE

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 9 ; days/wk 5 ; wks/yr 52 ; if power plant, hrs/yr ____ ;

if seasonal, describe: ____

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? NO
   a. If yes, has "offset" been applied?
   b. If yes, has "Lowest Achievable Emission Rate" been applied?
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. YES
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. YES
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? YES
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? NO

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Aggregrate	Part.	2-3	465,000	A, I
Liquid Asphalt	None	-	35,000	20, I

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 500,000

2. Product Weight (lbs/hr): 499,992

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Part. Matter	7.54	8.8	17-2.03 (BACT)	7.54	1225.0	1433.2	G
SO_2*	127.5	119.4	"	N/A	127.5	119.4	G
NO_x	16.2	15.2	"	N/A	16.2	15.2	G

*With #6 oil

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])
Aeropulse Model	Part. Matter	99.4%	>1.0 um	See V, 5
612-10 Bag Collector				
with 5.7/1 air-to-cloth				
ratio				

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard

[4]Emission, if source operated without control (See Section V, Item 3)

[5]If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
#6 Oil	15.48	19.33	121.0
#2 Oil (Standby)	15.48	19.33	113.1
L.P. Gas (Standby)	0.090	0.113	118.6

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: #6 oil/#2 oil

Percent Sulfur: 1.0/0.33 Percent Ash: 1.5/0.4

Density: 7.96/7.10 lbs/gal Typical Percent Nitrogen: 0.3/0.3

Heat Capacity: 18,719/19,618 BTU/lb 149,003/139,288 BTU/gal

Other Fuel Contaminants (which may cause air pollution): NONE

F. If applicable, indicate the percent of fuel used for space heating. Annual Average N/A Maximum N/A

G. Indicate liquid or solid wastes generated and method of disposal.

Fines collected in bag collector are recycled to dryer as fines (18 of flow diagram).

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 27 ft. Stack Diameter: 32" x 42-1/2" (3.47' equiv. dia.) ft.

Gas Flow Rate: 42,000 ACFM Gas Exit Temperature: 300 °F.

Water Vapor Content: 25 % (22,000 scfm dry) Velocity: 74.0 FPS

SECTION IV: INCINERATOR INFORMATION

N/A

Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume (ft^3)	Heat Release (BTU/hr)	Fuel		Temperature (^oF)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[X] Yes [ ] No

Contaminant	Rate or Concentration
Part. Matter	0.04 gr/scf.dry

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Part. Matter	0.04 gr/scf.dry
SO_2	1.0% sulfur fuel oil

D. Describe the existing control and treatment technology (if any). Control system designed as integral part of proposed plant

1. Control Device/System: Aeropulse Model 612-10 bag collector with 5.7/1 air/cloth ratio
2. Operating Principles: Impingment, Filtration
3. Efficiency:* 99.4% (See V,5)
4. Capital Costs: $124,765.00
5. Useful Life: 15 yrs. with proper maint.
6. Operating Costs: $15,000.00 annual
7. Energy: 0.32 x 10^6 kwh annual
8. Maintenance Cost: $15,000.00 annual
9. Emissions: (200 HP fan motor)

Contaminant	Rate or Concentration
Part. Matter	0.04 grains/ scf.dry
SO_2	1% sulfur fuel oil

*Explain method of determining D 3 above.

10. Stack Parameters

a.	Height:	27	ft.	b.	Diameter:	32" x 42-1/2"(3.47' equiv.)	ft.
c.	Flow Rate:	42,000	ACFM	d.	Temperature:	300	°F
e.	Velocity:	74.0	FPS				

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

Proposed control system is supplied with plant and tests on similar units have shown NSPS can be met. Also, applicant is familiar with bag collectors and prefers the proposed system from operating standpoint. Bag collector eliminates water consumption and disposal problem. For these reasons, other systems were not investigated.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy**:

h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: (See Section VI, D)

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company: Barber Brothers Contracting Co., Inc.

(2) Mailing Address: P.O. Box 66296

(3) City: Baton Rouge (4) State: LA 70806

(5) Environmental Manager: Paul Barber

(6) Telephone No.: 504/355-5611

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration
Part. Matter	Not available from this source. See Attachment 1 for test results on similar unit in Plainview, Nebraska

(8) Process Rate*: 250 TPH

b.

(1) Company: Western Engineering Company

(2) Mailing Address: P.O. Box 350

(3) City: Harlan (4) State: Iowa 51537

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager: Tom Wagner

(6) Telephone No.: N/A

(7) Emissions*:

Contaminant	Rate or Concentration
Part. Matter	0.023 Grain/scf.dry

(8) Process Rate*: 300 TPH

10. Reason for selection and description of systems:

Bag collector is integral part of proposed plant. The particulate matter collected in this system can readily be recovered and returned to the mix in order to meet mix specifications. The applicant is familiar with bag collectors having operated another plant for years with a bag collector. The bag collector also eliminates a water consumption and disposal problem and requires less maintenance than a scrubber.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data N/A

1. _____ no sites _____ TSP _____ ( ) SO^2* _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 71 to 12 / 31 / 71
month day year month day year

2. Surface data obtained from (location) Tampa

3. Upper air (mixing height) data obtained from (location) Tampa

4. Stability wind rose (STAR) data obtained from (location) N/A

C. Computer Models Used

1. CRSTER, unmodified Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	0.95 grams/sec
SO^2	16.07 grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

SECTION V: SUPPLEMENT REQUIREMENTS

1. Plant can run either virgin materials or a combination of virgin materials and recycled asphalt concrete. In either case, the resulting product will consist of 93 percent aggregrate and 7 percent asphalt cement.

   The plant production is rated at 250 TPH (500,000 lb/hr). This rate can be confirmed by truck weights.

Input:	Sand, stone, screenings - 0.93 x 500,000	= 465,000 lb/hr
	Moisture in aggregate (8%)	= 37,200
	Asphalt cement - 0.07 x 500,000	= 35,000
Output:	Asphalt concrete	= 499,992 lb/hr
	Moisture in product and to atmosphere	= 37,200
	Particulate matter to atmosphere	= 8

2. Emission measurements on existing similar plant demonstrate that particulate matter levels in the stack gas can be maintained well below 0.04 grains/scf.dry (Attachment 1).

3. Potential and Actual Emission Rates

   (a) Particulate Matter

   Potential (AP-42, supplement 8)
   = 250 ton/hour x 4.9 lb/ton x 2,340 hr/yr
   x 1/2000 ton/lb = 1433.2 ton/yr
   = 1225.0 lb/hr

   Actual (at 0.04 grains/scf.dry)

   = 22,000 ft^3/min x 60 min/hr x 0.04 grains/ft^3
   x 1/7000 lb/grain = 7.54 lb/hr
   = 0.95 gram/sec

   (b) SO_2 (Max. with #6 fuel oil)

   Potential and Actual (AP-42)

   Actual = 650 gal/hr x 1.0% sulfur x 0.157 lb SO_2/
   %S/gal oil
   x 2340 hr/hr x 1/2000 ton/lb = 119.4 ton/yr

   Hourly = 811.9 gal/hr x 1.0 x 0.157 = 127.5 lb/hr

   (c) NO_x

   Potential and Actual (AP-42)

   Annual = 650 gal/hr x 0.020 lb/NO_x/gal oil
   x 2340 x 1/2000 = 15.2 ton/yr

SECTION V: - (continued)

(c) NOx - (continued)

Hourly = 811.9 gal/hr x 0.020 = 16.2 lb/hr

4. The bag collector is an Aeropulse Model 612-10 bag collector. The collector contains 612 bags with a total cloth area of 7,344 square feet. At an air flow rate of 42,000 acfm the air/cloth ratio is 5.7/1. The bags are 14 oz. felted Nomex and can withstand temperatures to 425°F. The bags are cleaned by reverse jet air cleaning. The pressure drop across the collector will range from 3 inches to 8 inches of water.

5. Control Efficiency for Particulate Matter

$$= \frac{1225.0 - 7.54}{1225.0} \times 100 = 99.4\%$$

6. See Attachment 2.

7. See Attachment 3.

8. See Attachments 4 and 5.

SECTION VII G

The air quality modeling results summarized in the following table show that the impact of the particulate matter emissions from the proposed plant will not be significant even at the point of maximum impact. The point of maximum impact will occur approximately 0.6 km from the plant site. If follows, therefore, that the impact of the particulate matter emissions from the proposed plant will not be significant on the Hillsborough County non-attainment area located approximately 34 km north of the plant site.

The air quality modeling shows that the impact of sulfur dioxide emissions from the proposed plant will be significant. The impact, however, will not result in significant deteriorations of ambient air quality. The maximum impact of sulfur dioxide emissions from the proposed plant will occur during a 3-hour time period. This impact will consume approximately 50 percent of the allowable PSD increment.

The sulfur dioxide emissions from the plant will result from combustion of fuel oil containing approximately 1 percent sulfur. Oil with this sulfur content is proposed as the best available controlled technology for sulfur dioxide emissions. This oil represents a reasonable compromise between sulfur content, cost and availability. The applicant has found that fuel with a lower sulfur content can be obtained only by blending a higher sulfur residual fuel oil with No. 2 oil. It was further found that most of the supplies of No. 2 fuel oil have been allocated making a supply of this fuel, and hence enhance a supply of a lower sulfur blend, unreliable.

AIR QUALITY IMPACT SUMMARY

GENERAL ASPHALT CO. OF BRADENTON

Time/Pollutant	Predicted Impact (ug/m^3)	Significant Impact (ug/m^3) (1)	PSD Increment (ug/m^3) (2)	Fraction PSD Increment Consumed (%)
Part. Matter				
Annual	0.1	1	19	0.5%
24-Hour	1.9	5	37	5.1%
SO_2				
Annual	2.4	1	20	12.0%
24-Hour	32.2	5	91	35.4%
3-Hour	257	25	512	50.2%

(1) Defined in CH 17-2.17 FAC

(2) PSD increment for Class II area

NOTE: Since the maximum 24-hour and annual particulate matter impacts, occuring at a distance of 0.6 km from the plant, are not significant, is follows that the impact on the Hillsborough County non-attainment area will not be significant.

ATTACHMENT I

TEST RESULTS

ENVIRO-TEST LTD.

WESTERN ENGINEERING COMPANY
Plainview, Nebraska

Testing Dates: October 11, 13 and 14, 1978

Project #: 78-127
Report Date: 11-3-78

INTRODUCTION:

The purpose of this report is to present the results of particulate emission tests conducted on Western Engineering Company's drum mix asphalt plant located in Plainview, Nebraska. The plant is a CMI model and is equipped with an Aeropulse model 684 reverse puls baghouse. Tests were performed on October 11th, 13th and 14th 1978

Mr. Joe Francis of the State of Nebraska Department of Environmenta Control, Air Quality Division, was present to observe Tests 1 through 4.

TEST PROCEDURES:

Test methods used were in accordance with procedures presented in the December 23, 1971 (as amended) issue of the Federal Register entitled "Environmental Protection Agency....Standards of Performance for New Stationary Sources," Methods 1 through 5.

Leak checks were conducted at the conclusion of each test and were within the allowable limit detailed in the above mentioned publication. A meter correction factor of 1.002 was used in calculating corrected volume of gas samples.

A quartz lined probe was used for all the tests in order to comply with the requirements of the State of Iowa, Department of Environmental Quality.

During Tests 1 & 2, a light, hazy dust plume was visible at the outlet of the baghouse stack, indicating some dust leakage from the bags. The baghouse was opened and inspected by Western Engineering personnel and several of the bags were found to have leaks or fault seals. After repairs and replacements were completed, a complete EPA Method 5 test series was conducted consisting of three repititions. Data and results from all 5 tests performed are included in this report.

CALIBRATION:

Calibration of the dry gas meter was performed by the Public Servic company of Colorado, using a Bell prover. All other necessary calibrations of the pitobe and temperature sensors were performed by Enviro-Test Ltd, following the methods outlined in the December 23, 1971, issue of the Federal Register entitled,"Environmental Protection Agency.....Standards of Performance for New Stationa Sources." Copies of all calibration data are included at the end of this report.

DISCUSSION:

All work at the job site was halted by rain on Thursday, October 1
necessitating the performance of the final test on Saturday,
October 14. No observer was present for this test.

The average production rate for all five tests was 324 t./hr.
The average production rate for the final three tests was 311 t./h

TEST RESULTS:

A summary of results for the particulate emission tests is presented in Table 1. A diagram of the test location, including stack dimensions and port location is presented in Figure 1.

A drawing of the sample train is presented in Figure 2.

Additional information in this report includes:

1. Copies of the computer printouts for each repitition.
2. Copies of the preliminary data and field sheets for each repitition.
3. Copies of the field calculations for Test 4.
4. Copies of nomenclature and formulae used.
5. Copies of the laboratory data sheets listing the recorded weights for each sample.
6. Copies of calibration data for sample equipment.

NOTE: These test results fairly and accurately represent the emission levels at the subject plant at the stated conditio
They are not to be construed or interpreted to represent emission levels at any other operating conditions.

TABLE I
PARTICULATE SUMMARIES
WESTERN ENGINEERING
OUTLET

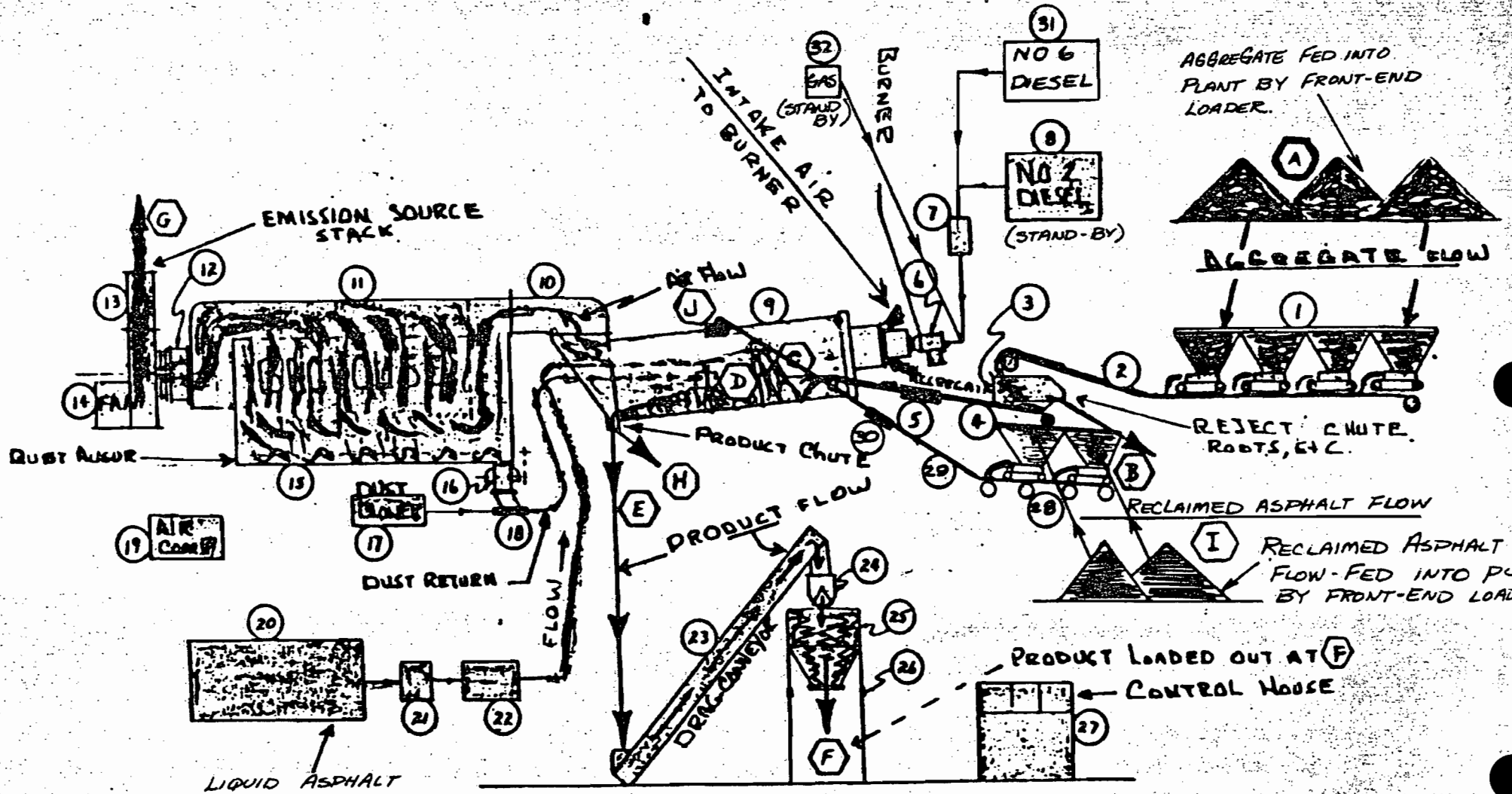
TEST #	1	2	3	4	5
DATE	10/11/78	10/11/78	10/13/78	10/13/78	10/14/7
BP IN. HG	28.00	28.00	27.95	27.95	28.20
PS IN. HG	28.05	28.05	28.00	28.00	28.25
TS F	274	275	276	276	276
H2O VOL%	26.7	27.1	29.0	26.8	29.1
CO2 .	5.0	5.0	6.0	6.0	5.0
O2	15.0	14.8	14.4	14.3	14.5
EXCESS AIR%	245.1	232.2	217.7	212.1	214.8
ACFM	49911	51085	50984	49269	51507
SCFM	33659	34404	34228	33077	34889
DSCFM	24672	25081	24302	24212	24736
GR/DSCF TOTAL	0.030	0.028	0.022	0.016	0.017
FILTER PAPER GR/DSCF	0.016	0.014	0.010	0.005	0.008
PROBE WASH GR/DSCF	0.014	0.014	0.012	0.011	0.009
CONDENSIBLES GR/DSCF	0.000	0.000	0.000	0.000	0.000
GR/ACF	0.015	0.014	0.011	0.008	0.008
LB/HR EMISSIONS	6.4	6.0	4.7	3.4	3.6
ISOKINETIC	114.0	97.6	108.6	104.1	95.2
PROCESS RATE T/HR	336	348	360	285	290
BAGHOUSE READING PRESSURE DROP INCHES	6.5	6.5	6.5	6.5	6.0

ATTACHMENTS 2 THROUGH 5

2 - Flow Diagram

3 - Location Map

4 & 5 - Site Plan



GENERAL ASPHALT CO. of BRADENTON - FLOW DIAGRAM

PALMETTO PLANT SITE

ATTACHMENT 2

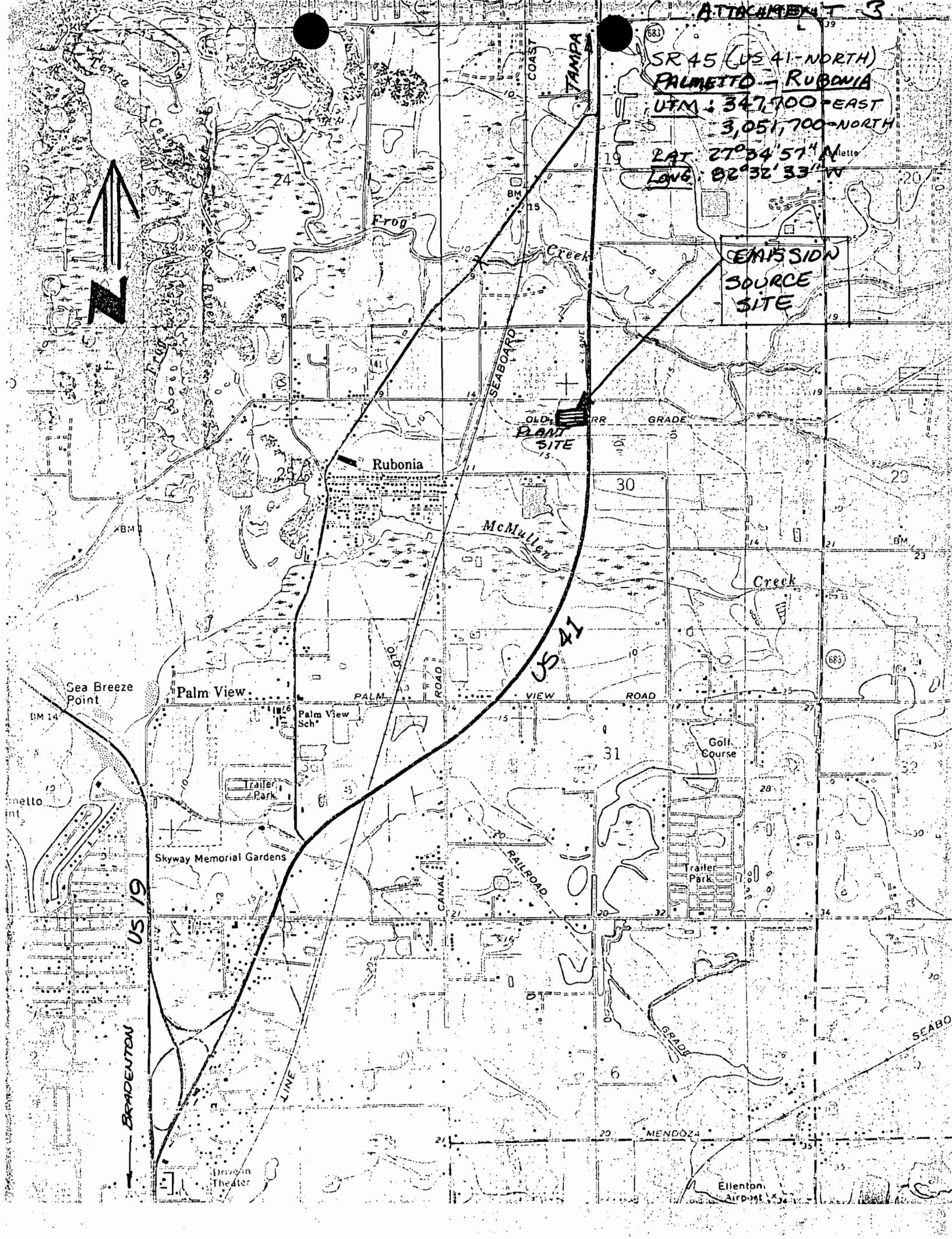
EQUIPMENT IDENTIFICATION

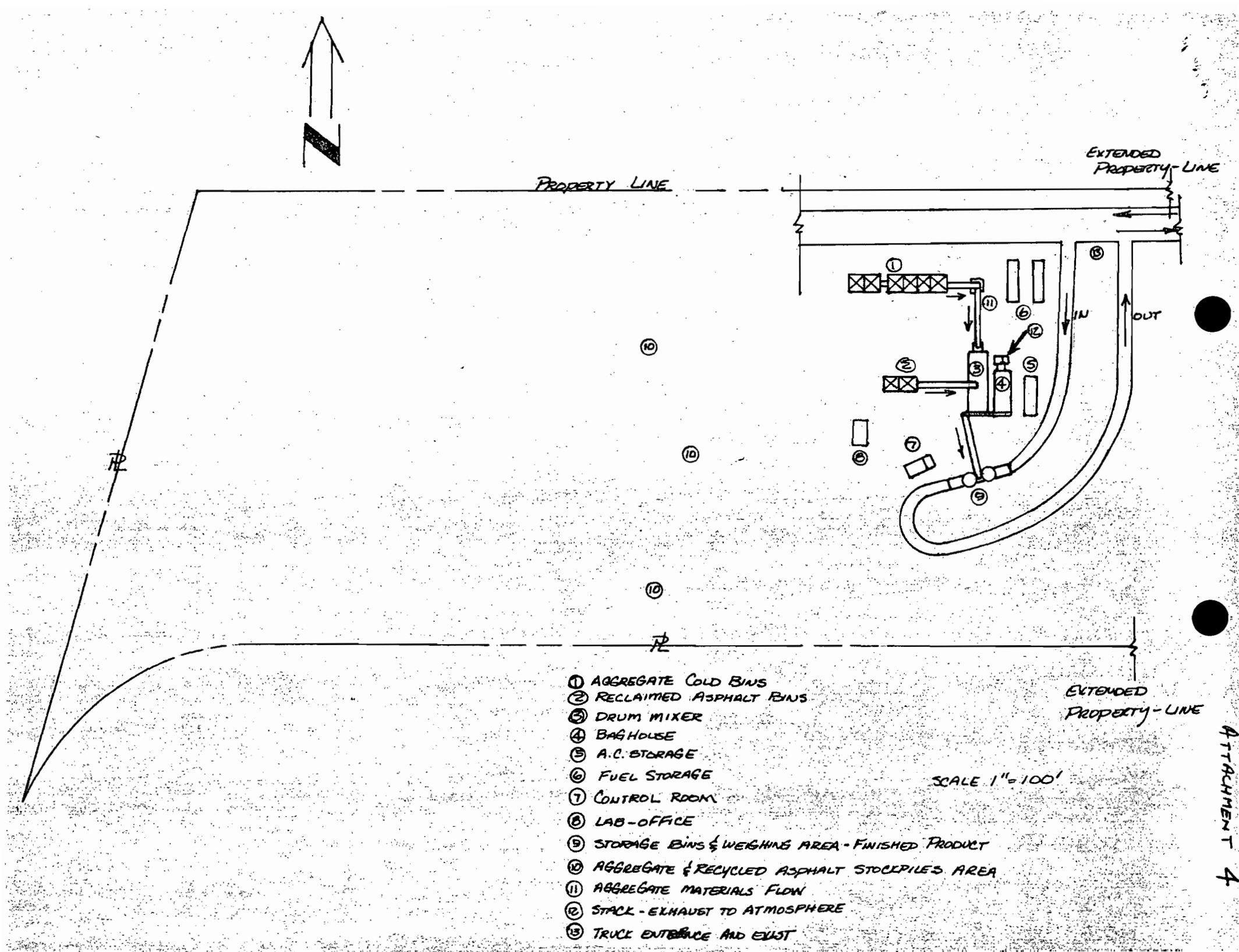
GENERAL ASPHALT CO. OF BRADENTON

1. FOUR (4) COLD FEED BINS W/BELT FEEDERS
2. AGGREGATE GATHERING CONVEYOR
3. SCALPING SCREEN
4. SLINGER CONVEYOR
5. AGGREGATE WEIGHT BRIDGE
6. AUTOMATIC OIL BURNER
7. FUEL OIL PUMP
8. FUEL OIL STORAGE TANK (STAND-BY)
9. DRUM MIXER
10. AIR DUCT - DRUM MIXER TO BAGHOUSE
11. BAGHOUSE
12. MODULATING AIR DAMPER
13. EXHAUST STACK
14. EXHAUST FAN
15. BAGHOUSE HOPPER W/GATHERING SCREEN
16. ROTARY FEEDER - AIR LOCK
17. DUST BLOWER PACKAGE
18. COLLECTED DUST & CONVEYING AIR RECIEVER
19. AIR COMPRESSOR
20. ASPHALT HEATER - STORAGE TANK
21. ASPHALT SUPPLY PUMP
22. AUTOMATIC LIQUID ASPHALT UNIT
23. DRAG CHAIN CONVEYOR
24. DRAG DISCHARGE BATCHER
25. HOT MIX SURGE BIN
26. LOAD CELL - WEIGHOUT SYSTEM
27. CONTROL HOUSE
28. TWO (2) RECLAIMED FEED BINS W/BELT FEEDERS
29. RECLAIMED ASPHALT CONVEYOR
30. RECLAIMED ASPHALT WEIGHT BRIDGE
31. FUEL OIL STORAGE TANK
32. LP PUMPING STATION (STAND-BY)

DISCHARGE & PRODUCT TRANSFER POINTS

- A — AGGREGATE STOCKPILES
- B — OVERSIZE - REJECT
- C — DRUM MIXER - AGGREGATE INLET
- D — DRUM MIXER - HOT MIX DISCHARGE (FINES & ASPHALT)
- E — DRUM MIXER - HOT MIX DISCHARGE
- F — TRUCK LOADING
- G — EXHAUST GAS DISCHARGE
- H — DRAG CONVEYOR BY-PASS
- I — RECLAIMED ASPHALT STOCK PILES
- J — DRUM MIXER - RECLAIMED ASPHALT INLET

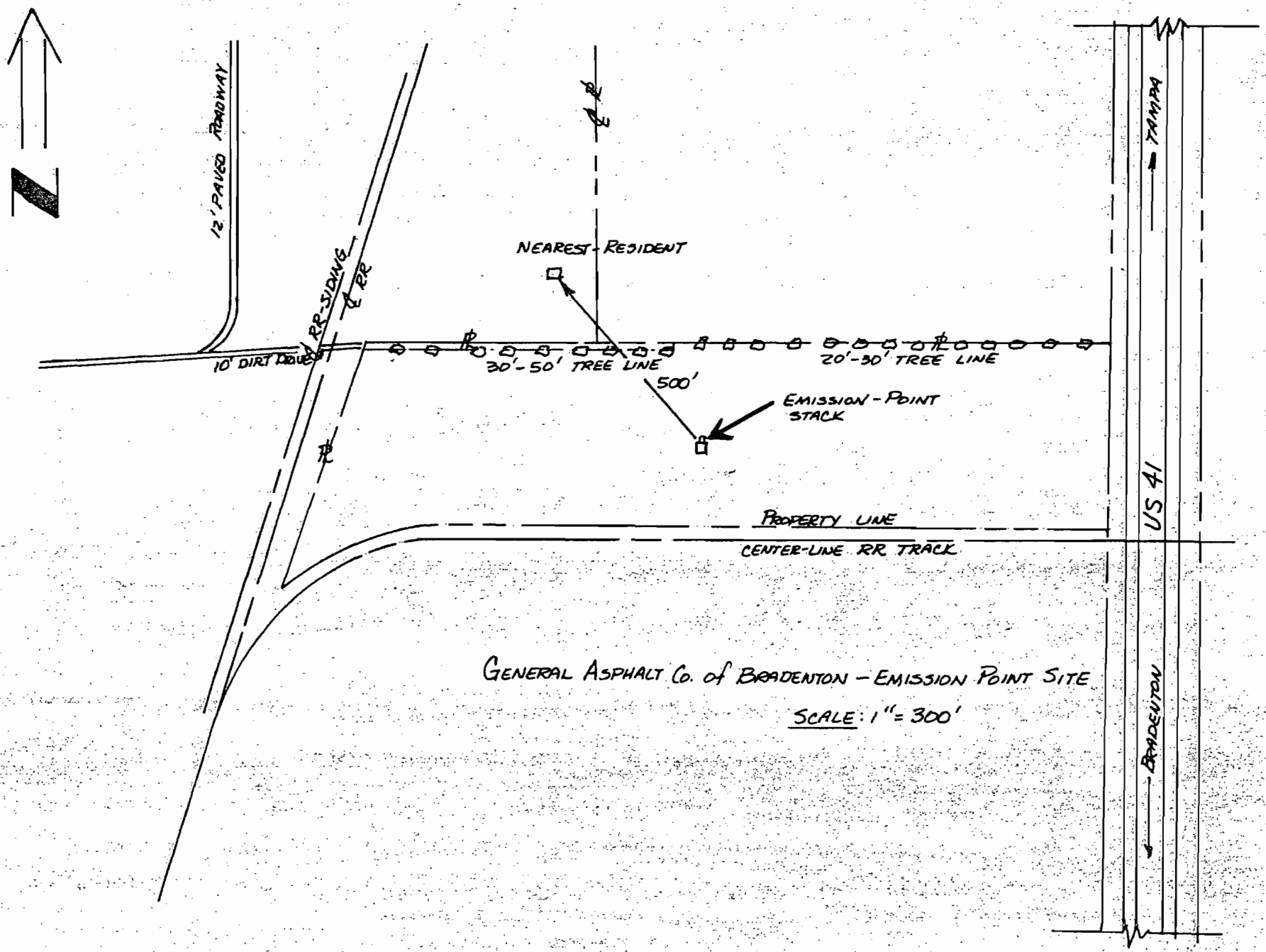

ATTACHMENT 3
SR 45 (US 41 - NORTH)
PALMETTO → RUBONIA
UTM: 347,700 - EAST
3,051,700 - NORTH
LAT: 27°34'57" N
LONG: 82°32'33" W
EMISSION SOURCE SITE
OLD PLANT SITE
Rubonia
Palm View
Sea Breeze Point
Palm View Sch
Trailer Park
Skyway Memorial Gardens
Golf Course
Trailer Park
Drive-in Theater
Ellenton Airport
Terra Ceia
Frog Creek
McMullen Creek
Tampa
Coast
Seaboard
Line
RR
Grade
Palm View Road
US 41
US 19
Bradenton
Railroad
Canal
Mendoza
BM
683



① AGGREGATE COLD BINS
② RECLAIMED ASPHALT BINS
③ DRUM MIXER
④ BAGHOUSE
⑤ A.C. STORAGE
⑥ FUEL STORAGE
⑦ CONTROL ROOM
⑧ LAB-OFFICE
⑨ STORAGE BINS & WEIGHING AREA - FINISHED PRODUCT
⑩ AGGREGATE & RECYCLED ASPHALT STOCKPILES AREA
⑪ AGGREGATE MATERIALS FLOW
⑫ STACK - EXHAUST TO ATMOSPHERE
⑬ TRUCK ENTRANCE AND EXIST

SCALE 1"=100'

ATTACHMENT 4



GENERAL ASPHALT Co. of BRADENTON – EMISSION POINT SITE

SCALE: 1" = 300'

ATTACHMENT 5

ATTACHMENT 6

AIR QUALITY MODELING

Best Available Copy

Plant Name:
General Asphalt Co. of Bradenton

POLLUTANT: PART   EMISSION UNITS: GM/SEC   AIR QUALITY UNITS: GM/M**3

HOT MIX ASPHALT PLANT
BRADENTON, FL
SHOLTES & KOOGLER ENVIRONMENTAL CONSULTANTS
JANUARY, 1980

	MET FILE STN NO.	YR	REQUESTED STN NO.	YR
SURFACE	12842	71	12842	71
UPPER AIR	12842	71	12842	71

PLANT LOCATION: RURAL
NO TAPE OUTPUT
MET DATA WILL NOT BE PRINTED

DAY-- 1 1 1 1 1 1 1 1 1 1 ...

* * * * * * * * * * * * * * * * * * * N O T E * * * * * * * * * * * * * * * * * * *

ALL TABLES, INCLUDING SOURCE CONTRIBUTION, THAT CONTAIN "ANNUAL" IN THE HEADING ARE BASED ONLY ON THOSE DAYS MARKED BY "1" IN THE ABOVE TABLE

RING DISTANCES(KM)= 0.30 0.40 0.50 0.60 0.80

STACK # 1--STACK NO 1 SOURCE NUMBER

STACK	MONTH	EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	ALL	0.9500 PART. MATTER 16.07 SO_2	3.23	1.06	22.60	422.00	19.94

Best Available Copy

Plant Name:
General Asphalt Co. of Bradenton

POLLUTANT: PART EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

~~MAXIMUM MEAN CONC = 5.2064E-07 DIRECTION = 9 DISTANCE = 0.6 KM~~

YEAR = 71

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR \ RANGE	0.3 KM	0.4 KM	0.5 KM	0.6 KM	0.8 KM
1	3.27127E-03	1.59536E-07	1.71632E-07	1.33907E-07	1.73264E-07
2	1.03993E-07	1.74243E-07	2.10243E-07	2.20502E-07	2.07063E-07
3	9.22780E-03	1.47353E-07	1.70640E-07	1.73426E-07	1.57447E-07
4	3.63336E-03	1.33343E-07	1.44523E-07	1.42061E-07	1.22675E-07
5	9.23969E-03	1.33495E-07	1.56027E-07	1.55779E-07	1.33291E-07
6	9.39070E-03	1.46469E-07	1.64974E-07	1.65354E-07	1.50516E-07
7	1.24973E-07	1.33716E-07	1.33403E-07	1.34390E-07	[illegible]
8	1.91325E-07	2.75546E-07	3.00103E-07	2.92172E-07	2.43474E-07
9	2.97257E-07	4.43325E-07	5.12701E-07	5.20632E-07	4.70725E-07
10	2.14971E-07	3.13393E-07	3.63644E-07	[illegible]	3.24251E-07
11	1.12776E-07	1.67734E-07	1.90162E-07	1.92033E-07	1.73115E-07
12	3.11534E-03	1.27413E-07	1.53267E-07	1.62539E-07	1.57221E-07
13	5.73067E-03	9.43523E-03	1.17219E-07	[illegible]	1.24226E-07
14	5.23337E-03	9.02004E-03	1.13409E-07	1.23369E-07	1.25303E-07
15	6.47272E-03	1.05303E-07	1.32411E-07	1.44282E-07	1.46468E-07
16	5.33452E-03	9.96623E-03	1.23244E-07	1.33707E-07	1.34573E-07
17	3.53139E-03	6.31337E-03	8.11914E-03	9.04985E-03	9.42620E-03
18	2.57300E-03	4.95960E-03	6.35142E-03	8.06274E-03	9.14513E-03
19	1.99134E-03	3.39613E-03	5.54061E-03	[illegible]	6.31325E-03
20	2.10274E-03	4.31040E-03	5.95126E-03	6.39203E-03	7.45314E-03
21	3.51129E-03	7.20533E-03	9.09263E-03	1.13933E-07	1.23005E-07
22	4.29395E-03	3.75173E-03	1.19591E-07	1.35404E-07	1.43432E-07
23	5.16550E-03	1.01052E-07	1.39193E-07	1.62525E-07	1.30293E-07
24	5.90474E-08	1.10482E-07	1.47753E-07	1.70213E-07	1.87395E-07
25	4.62233E-03	3.70757E-03	1.16153E-07	1.32436E-07	1.43614E-07
26	5.52450E-03	1.04946E-07	1.40337E-07	1.61378E-07	1.74322E-07
27	7.54103E-03	1.37562E-07	1.73465E-07	2.01993E-07	2.16473E-07
28	6.37671E-03	1.19339E-07	1.53576E-07	1.64951E-07	1.71459E-07
29	5.94791E-03	1.06327E-07	1.34013E-07	1.46516E-07	1.51332E-07
30	6.22632E-03	1.15479E-07	1.51563E-07	1.71374E-07	1.85990E-07
31	5.33946E-03	1.05177E-07	1.33176E-07	1.42149E-07	1.52413E-07
32	6.01753E-03	1.03499E-07	1.39024E-07	1.53202E-07	1.57293E-07
33	3.59220E-03	1.55331E-07	1.99492E-07	2.20015E-07	2.25413E-07
34	5.39475E-03	1.07636E-07	1.31673E-07	1.41366E-07	1.40334E-07
35	4.26434E-03	6.91334E-03	3.26316E-03	3.70326E-03	3.55734E-03
36	5.39769E-03	9.74057E-03	1.25659E-07	1.39469E-07	1.44521E-07

ANNUAL OPERATING FACTOR = (9 HR/DAY × 5 DAY/WK × 52 WK/YR) / 8760 HR/YR = 0.267

MAX ANNUAL PART MATTER IMPACT = 0.52 $\mu g/m^3$ × 0.267 = 0.14 $\mu g/m^3$

MAX ANNUAL SO_2 IMPACT = 0.52 $\mu g/m^3$ × 0.267 × $\frac{16.07}{0.95}$ = 2.35 $\mu g/m^3$

Plant Name:
General Asphalt Co. of Bradenton

POLLUTANT: PART EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 24-HOUR CONC= 5.0666E-06 DIRECTION= 9 DISTANCE= 0.6 KM DAY=167

YEAR= 71

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.3 KM	0.4 KM	0.5 KM	0.6 KM	0.8 KM
1	2.6242E-06 (52)	3.2132E-06 (62)	3.2529E-06 (62)	3.9439E-06 (62)	2.4314E-06 (52)
2	2.7300E-06 (113)	4.0215E-06 (61)	4.6253E-06 (61)	4.6330E-06 (61)	3.3960E-06 (61)
3	1.1757E-06 (132)	1.6943E-06 (132)	1.0233E-06 (331)	1.9631E-06 (57)	1.7779E-06 (57)
4	1.7324E-06 (120)	2.0572E-06 (120)	1.9622E-06 (120)	1.3441E-06 (235)	1.5474E-06 (205)
5	1.7236E-06 (120)	2.0700E-06 (120)	2.0310E-06 (120)	1.3471E-06 (120)	1.4250E-06 (120)
6	1.3639E-06 (113)	2.2399E-06 (114)	2.9754E-06 (114)	3.2257E-06 (114)	3.0119E-06 (114)
7	2.0040E-06 (113)	2.5373E-06 (114)	3.2139E-06 (114)	3.3954E-06 (114)	3.1231E-06 (114)
8	1.5531E-06 (130)	1.9439E-06 (130)	2.2530E-06 (256)	2.3412E-06 (256)	2.1462E-06 (256)
9	2.3920E-06 (167)	4.3071E-06 (167)	4.9470E-06 (167)	5.0666E-06 (167)	4.6256E-06 (167)
10	2.5123E-06 (153)	3.4633E-06 (153)	3.6444E-06 (153)	3.5173E-06 (153)	3.2123E-06 (153)
11	1.4164E-06 (44)	2.5301E-06 (44)	3.0039E-06 (44)	3.0433E-06 (44)	2.6352E-06 (44)
12	3.2961E-06 (52)	3.5160E-06 (52)	3.1327E-06 (52)	3.0155E-06 (44)	2.9182E-06 (44)
13	1.3367E-06 (123)	2.3337E-06 (73)	2.3373E-06 (73)	2.3737E-06 (73)	2.3117E-06 (73)
14	2.0156E-06 (104)	2.1753E-06 (104)	2.7365E-06 (53)	2.3060E-06 (53)	2.6340E-06 (53)
15	1.6370E-06 (73)	2.2126E-06 (73)	2.4106E-06 (40)	2.7024E-06 (40)	2.7551E-06 (40)
16	1.3145E-06 (33)	2.5030E-06 (33)	2.7312E-06 (33)	2.7039E-06 (33)	2.4263E-06 (33)
17	9.4364E-07 (121)	1.3402E-06 (121)	1.5557E-06 (121)	1.6452E-06 (121)	1.6131E-06 (121)
18	1.3620E-06 (124)	1.5944E-06 (124)	1.3441E-06 (20)	2.0534E-06 (20)	1.9335E-06 (20)
19	3.7255E-07 (124)	1.6144E-06 (20)	2.4075E-06 (20)	2.9609E-06 (20)	3.0301E-06 (20)
20	5.4319E-07 (311)	7.5163E-07 (311)	1.0300E-06 (331)	1.2516E-06 (331)	1.2553E-06 (331)
21	7.4452E-07 (323)	1.5046E-06 (329)	2.0232E-06 (329)	2.3353E-06 (303)	2.5976E-06 (303)
22	3.5557E-07 (355)	1.3537E-06 (355)	2.5374E-06 (356)	2.3394E-06 (356)	2.7356E-06 (356)
23	1.4400E-06 (270)	2.1096E-06 (270)	2.4292E-06 (292)	3.1130E-06 (292)	3.5395E-06 (292)
24	1.1016E-06 (156)	1.6314E-06 (156)	2.1365E-06 (357)	2.4376E-06 (357)	2.4733E-06 (352)
25	1.0576E-06 (156)	1.5562E-06 (156)	1.7673E-06 (235)	1.3037E-06 (235)	1.7354E-06 (335)
26	9.0030E-07 (153)	1.6197E-06 (153)	2.0974E-06 (153)	2.4122E-06 (94)	3.0279E-06 (94)
27	1.6317E-06 (190)	2.4193E-06 (190)	2.6440E-06 (190)	2.5677E-06 (327)	2.4930E-06 (327)
28	1.5376E-06 (143)	2.1642E-06 (143)	2.3433E-06 (143)	2.2726E-06 (143)	2.0501E-06 (94)
29	1.1260E-06 (133)	1.3335E-06 (143)	2.2304E-06 (143)	2.3333E-06 (143)	2.2536E-06 (143)
30	1.3730E-06 (133)	1.9344E-06 (133)	2.1965E-06 (133)	2.1911E-06 (133)	2.2165E-06 (353)
31	1.1060E-06 (143)	1.4016E-06 (143)	1.4941E-06 (35)	1.6449E-06 (35)	1.5772E-06 (35)
32	1.0234E-06 (144)	1.3763E-06 (230)	1.9345E-06 (35)	2.2520E-06 (35)	2.3477E-06 (35)
33	1.6070E-06 (144)	2.1050E-06 (144)	2.1262E-06 (144)	1.9570E-06 (144)	2.0330E-06 (227)
34	1.4345E-06 (137)	2.2016E-06 (137)	2.2903E-06 (137)	2.1037E-06 (137)	1.6137E-06 (137)
35	1.1633E-06 (211)	1.3975E-06 (187)	1.4301E-06 (137)	1.3342E-06 (187)	1.2633E-06 (53)
36	1.2024E-06 (229)	1.5301E-06 (229)	1.5525E-06 (229)	1.5133E-06 (135)	1.5944E-06 (135)

24-HR. OPERATING FACTOR = (9 HR/DAY OPERATION) / 24 HR/DAY = 0.375

MAX 24-HOUR PART MATTER IMPACT = $5.07\ \mu g/m^3 \times 0.375 = 1.9\ \mu g/m^3$

MAX 24-HOUR SO_2 IMPACT = $5.07\ \mu g/m^3 \times 0.375 \times 16.07/0.95 = 32.2\ \mu g/m^3$

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Plant Name:
General Asphalt Co. Of Bradenton POLLUTANT: PART EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

YEARLY MAXIMUM 3-HOUR CONC= 1.5201E-05 DIRECTION= 12 DISTANCE= 0.4 KM DAY= 52 TIME PERIOD= 7

YEAR= 71

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR \ RANGE	0.3 KM	0.4 KM	0.5 KM	0.6 KM	0.8 KM
1	9.2311E-06 (352, 5)	9.3256E-06 (52, 3)	1.1837E-05 (52, 3)	1.2003E-05 (52, 3)	1.0337E-05 (52, 3)
2	1.1103E-05 (113, 5)	1.3175E-05 (113, 5)	1.3546E-05 (51, 5)	1.2567E-05 (51, 5)	1.0061E-05 (51, 5)
3	3.6503E-06 (131, 4)	1.0935E-05 (53, 5)	1.0607E-05 (53, 5)	1.0031E-05 (53, 5)	3.1532E-06 (132, 6)
4	3.7036E-06 (123, 5)	9.1514E-06 (127, 4)	3.6392E-06 (127, 4)	7.5060E-06 (127, 4)	7.4405E-06 (35, 4)
5	5.9902E-06 (120, 4)	3.4025E-06 (139, 5)	3.0071E-06 (139, 5)	7.2094E-06 (120, 4)	7.0369E-06 (205, 6)
6	3.2709E-06 (113, 4)	3.3967E-06 (113, 4)	3.3233E-06 (114, 4)	9.6633E-06 (114, 2)	9.5036E-06 (114, 2)
7	3.3203E-06 (113, 4)	1.1140E-05 (114, 5)	1.3034E-05 (113, 5)	1.3033E-05 (114, 5)	1.1255E-05 (114, 5)
8	3.3353E-06 (113, 5)	1.0977E-05 (257, 5)	1.1424E-05 (257, 5)	1.0554E-05 (257, 5)	3.3263E-06 (232, 5)
9	1.1595E-05 (165, 5)	1.3110E-05 (123, 5)	1.2763E-05 (133, 5)	1.2101E-05 (149, 3)	1.1635E-05 (203, 6)
10	1.1264E-05 (163, 4)	1.4320E-05 (163, 4)	1.3342E-05 (163, 4)	1.2254E-05 (153, 3)	1.0305E-05 (172, 6)
11	7.3644E-06 (196, 4)	9.5006E-06 (196, 4)	9.1125E-06 (44, 5)	9.3655E-06 (96, 3)	9.5365E-06 (96, 3)
12	1.4416E-05 (52, 7)	1.5201E-05 (52, 7)	1.3630E-05 (52, 7)	1.1760E-05 (52, 7)	3.5332E-06 (52, 7)
13	7.3544E-06 (123, 4)	9.1436E-06 (123, 4)	2.0246E-06 (35, 6)	9.5563E-06 (35, 6)	3.6423E-06 (35, 6)
14	1.1239E-05 (104, 4)	1.3113E-05 (104, 4)	1.2264E-05 (104, 4)	1.0533E-05 (104, 4)	3.1225E-06 (53, 6)
15	9.5379E-06 (79, 4)	1.0331E-05 (79, 4)	1.0436E-05 (79, 4)	9.3730E-06 (79, 4)	7.1512E-06 (79, 4)
16	7.6471E-06 (39, 4)	9.2126E-06 (39, 4)	9.3049E-06 (39, 4)	3.3630E-06 (79, 3)	3.4133E-06 (79, 3)
17	5.7411E-06 (76, 5)	9.5532E-06 (76, 5)	1.0351E-05 (76, 5)	1.0637E-05 (76, 5)	3.9693E-06 (76, 5)
18	7.8429E-06 (124, 5)	3.5656E-06 (124, 5)	7.7990E-06 (39, 3)	3.6046E-06 (39, 3)	9.3253E-06 (301, 4)
19	4.1753E-06 (124, 5)	5.2513E-06 (67, 3)	5.3394E-06 (67, 3)	7.4145E-06 (67, 3)	7.0334E-06 (67, 3)
20	3.3755E-06 (93, 4)	5.4901E-06 (301, 5)	3.0236E-06 (301, 5)	9.2019E-06 (301, 5)	9.1233E-06 (301, 5)
21	4.9375E-06 (102, 5)	5.1203E-06 (329, 4)	7.3304E-06 (329, 4)	3.3723E-06 (329, 4)	3.3230E-06 (357, 1)
22	4.6427E-06 (270, 4)	7.3331E-06 (356, 6)	3.7337E-06 (356, 6)	3.3303E-06 (356, 5)	3.2337E-06 (301, 6)
23	1.0304E-05 (270, 4)	1.2332E-05 (270, 4)	1.2230E-05 (270, 4)	1.0721E-05 (270, 4)	9.2493E-06 (309, 2)
24	6.2370E-06 (99, 4)	3.7471E-06 (90, 4)	1.0516E-05 (357, 5)	1.1703E-05 (357, 5)	1.1561E-05 (357, 5)
25	7.7943E-06 (235, 4)	1.1196E-05 (235, 4)	1.1447E-05 (235, 4)	1.0842E-05 (235, 4)	7.3092E-06 (235, 4)
26	4.9513E-06 (267, 5)	3.0194E-06 (267, 5)	3.7764E-06 (267, 5)	3.3424E-06 (267, 5)	5.6964E-06 (267, 5)
27	3.6405E-06 (101, 5)	3.3303E-06 (101, 5)	9.3253E-06 (327, 4)	1.0637E-05 (313, 4)	1.0633E-05 (313, 4)
28	7.6533E-06 (101, 5)	3.7233E-06 (101, 5)	3.1573E-06 (143, 7)	3.7224E-06 (143, 7)	3.3316E-06 (143, 7)
29	5.9410E-06 (133, 5)	7.5303E-06 (322, 4)	3.6567E-06 (322, 4)	3.6337E-06 (322, 4)	7.6011E-06 (302, 5)
30	5.3375E-06 (133, 5)	5.6161E-06 (133, 4)	7.1034E-06 (133, 4)	7.5220E-06 (3, 5)	3.0944E-06 (3, 5)
31	4.5727E-06 (243, 4)	5.9363E-06 (243, 4)	7.6457E-06 (35, 6)	3.4972E-06 (35, 6)	3.1513E-06 (35, 6)
32	6.5536E-06 (323, 4)	3.6473E-06 (323, 4)	3.7023E-06 (230, 4)	7.7503E-06 (230, 4)	7.0471E-06 (212, 4)
33	3.2349E-06 (91, 5)	1.1354E-05 (91, 5)	1.1444E-05 (343, 5)	1.1555E-05 (343, 5)	1.0203E-05 (343, 5)
34	3.3506E-06 (137, 4)	1.2724E-05 (137, 4)	1.3002E-05 (137, 4)	1.1359E-05 (137, 4)	9.9300E-06 (137, 4)
35	7.0957E-06 (211, 4)	7.3043E-06 (260, 4)	7.2349E-06 (260, 4)	5.1776E-06 (260, 4)	5.5233E-06 (53, 3)
36	7.3354E-06 (229, 4)	9.2904E-06 (229, 4)	3.9633E-06 (229, 4)	3.6920E-06 (135, 4)	9.1406E-06 (135, 4)

3-HOUR OPERATING FACTOR = 1.0

MAX 3-HR SO_2 IMPACT = 15.2 ug/m³ × 1.0 × 16.07/0.95 = 257 ug/m³