KOOGLER & ASSOCIATES, *Environmental Services*
1213 NW 6th Street • Gainesville, Florida 32601 • 904/377-5822

K & A 102-82-03

July 1, 1986

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BAQM

Mr. C. H. Fancy
Deputy Chief, Bureau of Air
Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Subject: Occidental Chemical Agricultural Products Inc.
Proposed Prilled Sulfur Storage and Handling Facility
Permit No. AC24-119008

Dear Mr. Fancy:

I have reviewed your letter of May 15, 1986 requesting additional information related to the prilled sulfur storage and handling facility proposed by Occidental Chemical Agricultural Products Inc. (Occidental) for their Swift Creek Chemical Complex located in Hamilton County, Florida. The following information and modifications to facility design have been prepared in response to your requests. The number of the response items is consistent with the numbering used in your request for additional information.

FDER Request No. 1 -

> Please provide details of the prilled sulfur project water spray system including system layout, spraying equipment, source specific spray frequency and quantity. What wetting agent do you propose to use along with water? Please also correlate the above information with values used in the application for moisture content.

Response - The detail engineering design for the spray system to control fugitive particulate matter emissions at prilled sulfur receiving and transfer points has not been undertaken at this time. Preliminary design information has been developed however and should provide the Florida Department of Environmental Regulation (Department) with the information necessary to determine compliance with applicable sections of Rule 17-2.600(11), FAC and to complete the review of the subject air pollution source construction permit application.

A spray system will be installed around the periphery of the underground sulfur receiving hoppers (Rule 17-2.600(11)(b)4.a.(ii), FAC) and at all conveyor transfer points (Rule 17-2.600(11)(b)2.a.(iv), FAC). Specific spraying equipment has not yet been selected by Occidental. Conceptually however, the spray system installed around the periphery of each of the three receiving hoppers will supply water containing a wetting agent continuously into the hoppers while sulfur is being received. The wetting agent will be a non-ionic material such as Jefferson N-95, or equivalent. This is the same wetting agent that Occidental proposed for the vatted sulfur storage and handling facility permitted by the Department for the Swift

Creek Chemical Complex (AC24-61435). The surfactant will be mixed with water in accordance with manufacturer's recommendations. The spray system for each of the three receiving hoppers will be designed to provide water at a rate of up to ten gallons per minute (for sulfur receiving rates of 600-1,000 tons per hour). This is equivalent to adding up to 0.25 percent moisture at the receiving point.

A spray system will also be installed at each of the conveyor transfer points as required by Rule 17-2.600(11)(b)2.a.(iv), FAC. The sulfur transfer rates at conveyor Transfer Points 3a-3c will range up to 333 tons per hour, the sulfur transfer rates at conveyor Transfer Points 4 and 5 will range up to 1,000 tons per hour and the sulfur transfer rates at conveyor Transfer Points 10 - 12 (the sulfur recovery system) will range up to 70 tons per hour. The spray system proposed by Occidental will operate continually at each of these transfer points while sulfur is being transferred and will supply up to 0.2 percent additional moisture at each transfer point. The specific spray equipment has not been selected, however, the system will be similar to the system designed by Apollo Canada and installed at both the Pacific Coast Terminals in Port Moody and at the North Vancouver Wharves in Vancouver, British

Columbia. This system is described and documented with photographs in Occidental's report to the Department entitled Trip Report on the Investigation of the Effectiveness of Fugitive Particulate Matter Control Technologies at Canadian Solid Sulfur Handling Facilities, October 1984. The system will supply a surfactant/water mixture to the sulfur at each of the sulfur transfer points at a rate that is equivalent to adding up to 0.2 percent moisture at each point. The surfactant/water mixture will contain approximately one part surfactant to eighty parts water. The spray rates will range from 0.6 gallons per minute at the sulfur recovery transfer points up to 8 gallons per minute on the sulfur receiving transfer points.

In addition to water sprays at the receiving hoppers and the conveyor transfer points, a water spray system will also be installed in the sulfur storage area. This system, while not designed in detail, is proposed to deliver up to 500 gallons per minute of water containing the Jefferson N-95 surfactant, or equivalent, to the sulfur storage pile and to the area traveled by the payloaders. This spray system will satisfy the requirements of Rule 17-26.00(11)(b)3, FAC that requires the opacity of visible emissions at the sulfur storage pile not to exceed ten

percent and Rules 17-2.600(11)(b)3.d, FAC and 17-2.600(11)(b)5, FAC that require the area traveled by the front end loaders to be "periodically" sprayed so that visible emissions do not exceed ten percent opacity. The spray system on the storage pile will also satisfy the fire suppression requirements of Rule 17-2.600(11)(b)3.f.(I), FAC. The spray system in the sulfur storage area will operate as necessary to assure that the opacity of visible emissions does not exceed ten percent in accordance with the above-cited Rules.

The spray systems described in the above paragraphs will result in moisture levels in the prilled sulfur handled at the Swift Creek Chemical Complex that are higher than reported in the original construction permit application for permit AC24-0119008. In the original construction permit application, it was stated that, on the average, the prilled sulfur will contain 1.6 percent moisture as received and that the average moisture would remain at this level until the sulfur was discharged to the sulfur storage pile. The application further stated that the sulfur recovered from storage and delivered to the sulfur melter will have an average moisture content of 2.0 percent.

With the spray system proposed in the above paragraphs, the average moisture content of the sulfur as received will still be 1.6 percent. This moisture will increase, however, up to 2.4 percent as the sulfur is transferred to, and discharged onto the sulfur storage pile. Similarly, the average moisture content of the sulfur recovered from storage and delivered to the sulfur melter will be higher than originally reported. It is still estimated that the sulfur, as recovered from storage, will have an average moisture content of 2.0 percent resulting from an equilibrium between drain-down, evaporation, and precipitation. The average moisture content of the recovered sulfur will then be increased up to 2.6 percent total moisture by the time the sulfur is delivered to the sulfur melter as a result of the spray system described in the preceding paragraphs. The effect of the increased moisture levels will be a reduction in both suspended and total particulate matter emissions from the proposed facility as summarized in the revised copies of Tables 2-3 and 2-4 (Attachment 1); Tables that appeared in the original air construction permit application for permit AC24-119008.

FDER Request No. 2 -

Submit details of the proposed scrubber on the sulfur unloading building.

Response - The feasibility of installing a vent system and scrubber to control particulate matter emissions from the sulfur receiving building was reevaluated in light of the requirements in 17-2.600(11)b, FAC for the water spray systems on the receiving hopper and at the conveyor transfer points within the receiving building. It was determined that the water spray systems will adequately control sulfur particle emissions in the receiving hoppers and at Transfer Points 2-4; making the vent system and scrubber originally proposed in the application for permit AC24-119008 unnecessary.

The increased moisture levels expected in the sulfur as a result of the water spray systems, will result in a fugitive particulate matter emission rate from the receiving building (Transfer Points 1-4) of 0.13 pounds per hour (see Table 2-4, Attachment 1). Even if 100 percent of these emissions are collected in a ventilation system the particulate matter concentration in the 30,000 cubic foot per minute vent gas stream will be 0.0005 grains per cubic

foot. Since this concentration is considerably lower than the concentration that can be achieved by all but the most efficient and energy intensive scrubbers, there is nothing to be gained by adding a ventilation system scrubber on the receiving building.

FDER Request No. 3 -

What type of conveyors do you propose to use in prilled sulfur transfer operations and what will be the maximum angle of incline thereof?

Response - The conveyor systems proposed by Occidental for the prilled sulfur facility will be a deep-V belt system (Rule 17-2.600(11)(b)2.a.(I), FAC) with the belt width dependent on the sulfur transfer rate. The belts will be top-covered as described in the original construction permit application and the maximum incline on the belts will be 15 degrees in accordance with Rule 17-2.600(11)(b)2.a.(II), FAC.

FDER Request No. 4 -

What type of payloaders do you propose to use for prilled sulfur reclamation?

Response - The payloaders proposed by Occidental to recover sulfur in the sulfur reclamation area will be rubber-tired vehicles with a bucket capacity of approximately eight cubic yards. The bucket will be filled to no more than 75 percent

capacity during the transfer of prilled sulfur and the speed of the vehicles in the sulfur reclamation area will be limited to a maximum of 15 miles per hour. The maximum drop height of prilled sulfur from the payloader bucket to the sulfur reclamation hopper will be five feet. These specifications satisfy all requirements of Rule 17-2.600(11)(b)2.b, FAC as the rule applies to payloaders.

FDER Request No. 5 -

How high a curb do you propose to use for prilled sulfur reclamation?

Response - The berm that will be constructed around the prilled sulfur storage area will be three feet in height in accordance with Rule 17-2.600(11)(b)3b, FAC.

FDER Request No. 6 -

Would it not be more consistent with your "worst case" emission estimates to use just the 7% silt content within the prilled sulfur storage area to account for possible extended periods of low inventory?

Response - In the calculations for estimating the fugitive particulate matter emissions resulting from wind erosion in the sulfur storage area, it was stated in the construction permit application that the silt content for 75 percent of the sulfur storage area was estimated to be 3.0 percent while the silt content of the remaining 25 percent of the area was estimated at 7.0 percent. The silt content of 3.0 percent was estimated to be representative of the fraction of the storage area covered with prilled sulfur and the 7.0 percent silt content was estimated to be representative of an area traveled by payloaders; an area where the prilled sulfur had been reclaimed but where sulfur fines had not yet been removed by washing in accordance with Rule 17-2.600(11)(b)3.e, FAC.

Occidental is of the opinion that the estimate stated in the original construction permit application does represent the "worst case" situation. During periods of low inventory, prilled sulfur and crushed sulfur will be

removed from the unused portions of the sulfur storage area by payloader and then by water spray in accordance with Rule 17-2.600(11)(b)3.e, FAC. Once the sulfur prills and sulfur fines are removed from these areas, the effective silt content of the areas will be zero; resulting in no fugitive particulate matter emissions whatsoever. The estimate of 25 percent of the storage area being covered by crushed sulfur fines and 75 percent being covered with prilled sulfur is the "worst case" scenario for wind erosion.

If the Sulfur Rule did not require reclaimed areas of prilled sulfur storage pads to be cleaned periodically, the 7.0 percent silt content suggested by the Department would be a "worst case" situation. This situation will not occur however because of the requirement of the Rule 17-2.600(11)(b)3.e, FAC and the intent of Occidental to comply with the rule.

FDER Request No. 7 -

What will be the contemporaneous net emissions increase at the swift Creek Chemical Complex as a result of the construction and operation of the prilled sulfur facility?

Response - Air pollutants that potentially will be emitted as a result of the proposed prilled sulfur storage and handling

facility are particulate matter and hydrogen sulfide. The only contemporaneous net emission increases of these pollutants at the Swift Creek Chemical Complex are associated with the vatting facility permitted under permit AC24-61435 and these emissions have been addressed in the permit application for the proposed prilled sulfur facility. The increases in emission rates of neither of the pollutants exceeds the de minimis emission rate increases defined in Rule 17-2.500(2)(e)2, FAC.

The responses provide have necessitated some modifications to the information originally in the construction permit application (DER Form 17-1.202(1)). You will find attached copies of these pages of the application form that have been revised. If there are any questions regarding the information provided herein, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler /apps

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

JBK:app

cc: Pradeep Raval
W. W. Atwood
J. D. B. Kuersteiner
R. E. MacNeill
D. T. Sawyer
Carl J. Axelson

TABLE 2-3

SUMMARY OF FACTORS AFFECTING FUGITIVE PARTICULATE MATTER EMISSIONS FOR SOURCES IN PROPOSEDS PRILLED SULFUR FACILITY

OCCIDENTAL CHEMICAL AGRICULTURAL PRODUCTS, INC.
SWIFT CREEK CHEMICAL COMPLEX
HAMILTON COUNTY, FLORIDA

	Activity	Equation	Equation Parameters: Silt (%)	Moisture (%)	Drop Height (ft)	Wind Speed (mph)	Batch Size (cu.yd.)	Other
1.	Railcar off-loading	1	3	1.8	8	2.5	---	
	Truck off-loading	1	3	1.8	8	2.5	---	
2.	Hopper to Belt	1	3	1.8	8	1.0	---	
3.	Belt to Belt	1	3	2.0	1	1.0	---	
4.	Belt to Belt	1	3	2.2	1	1.0	---	
5.	Belt to Belt	1	3	2.4	2	4.0	---	
6.	Belt to Storage Pile	1	3	2.4	25/5	1.0/12.0	---	
7.	Loader Travel	4	7	---	---	---	---	(3)
8.	Loader to Hopper	2	3	2.0	4	8.0	6	
9.	Hopper to Belt	1	3	2.0	1	1.0	---	
10.	Belt to Belt	1	3	2.2	2	2.0	---	
11.	Belt to Belt	1	3	2.4	2	2.0	---	
12.	Belt to Belt	1	3	2.6	2	2.0	---	
13.	Belt to Melter	1	3	2.6	5	2.0	---	
14.	Wind Erosion	3	3/7	2.0	---	12.0	---	(4)
15.	Melter	(2)	---	---	---	---	---	(4)

(1) See Table 2-2.
(2) Emission parameters as in permit application for permit No. AC24-61435.
(3) Augmentation factor = 1.0; Number of equivalent traffic lanes = 2.0; Surface dust loading = 12,000 lb/mi; Vehicle weight = 19 tons (average).
(4) Number of days with precipitation $\geq$ 0.01 inches = 115; fraction of time wind speed $\geq$ 12 mph - 5 percent (annual).

Revised 6/30/86

TABLE 2-4

SULFUR THROUGHPUT RATES, DURATION OF ACTIVITY AND EMISSION RATES
FOR ACTIVITIES IN PROPOSED PRILLED SULFUR STORAGE AND HANDLILNG FACILITY

OCCIDENTAL CHEMICAL AGRICULTURAL PRODUCTS, INC.
SWIFT CREEK CHEMICAL COMPLEX
HAMILTON COUNTY, FLORIDA

Source No.(1)	Activity	Sulfur Throughput Rate (tons/hr)	Sulfur Throughput Rate (tons/yr)	Duration of Activity (hr/day)	Duration of Activity (hr/yr)	Uncontrolled Emission Factor (lb/ton)	Control Type	Control Efficiency	E(30um),Controlled (lb/hr)	E(30um),Controlled (tpy)	E(total), Controlled (tpy)
1	Railcar Unloading (2)(3)	1,000	300,000	5-10	300 Max.	0.00052	Bldg/Spray	50/21	----	----	----
	Truck Unloading (2)(3)	600	300,000	24	500 Max.	0.00052	Bldg/Spray	50/21	0.12	0.031	0.065
2	Hopper to Conveyor (2)	1,000/600	300,000	5-10/24	300/500	0.00003	Bldg	50	0.01	0.001	0.003
3	Belt to Belt (2)	1,000/600	300,000	5-10/24	300/500	0.00003	Bldg/Spray	50/19	0.01	0.001	0.003
4	Belt to Belt	1,000/600	300,000	5-10/24	300/500	0.00003	Bldg/Spray	50/17	0.01	0.001	0.002
Receiving building from which uncaptured emissions from points 1-4 are collectively discharged.									0.13	0.034	0.073
5	Belt to Belt	1,000/600	300,000	5-10/24	300/500	0.00021	Spray	16	0.06	0.014	0.029
6	Belt to Storage Pile	1,000/600	300,000	5-10/24	300/500	0.00234	Drop Chute	---	0.62	0.156	0.328
7	Loader Travel	0.6 mi/hr.	2,510 mi/yr.	24	4285	4.197 lb/VMT	Sprays	50	1.26	2.634	5.531
8	Loader to Hopper	70	300,000	24	4285	0.00095	None	---	0.07	0.142	0.298
9	Hopper to Belt	70	300,000	24	4285	0.00002	Enclosure	---	0.01	0.002	0.004
10	Belt to Belt	70	300,000	24	4285	0.00007	Spray	17	0.01	0.008	0.017
11	Belt to Belt	70	300,000	24	4285	0.00007	Spray	16	0.01	0.007	0.015
12	Belt to Belt	70	300,000	24	4285	0.00007	Spray	15	0.01	0.006	0.013
13	Belt to Melter	70	300,000	24	4285	0.00017	Enclosure	---	0.01	0.015	0.053
14	Melter	70	300,000	24	4285	0.00571	None	---	0.01	0.030	0.030
15	Wind Erosion	4.8 ac	4.8 ac	Variable(4)	Variable(4)	---	Sprays	---	9.39	1.408	2.957
TOTAL									11.55	4.456	9.348

(1) See Figure 2-2 for source location
(2) Three identical points; data shown are for all points totaled.
(3) These activities will not occur simultaneously. Emissions from truck unloading were selected as "worst case" emissions.
(4) Emissions are generated when the wind speed exceeds 12 miles per hour.

Revised 6/30/86

Attachment 1-2

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

ST. JOHNS RIVER DISTRICT
3319 MAGUIRE BOULEVARD
SUITE 232
ORLANDO, FLORIDA 32803

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Prilled Sulfur Storage Facility [X] New[1] [ ] Existing[1]

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

COMPANY NAME: Occidental Chemical Agricultural Products, Inc. COUNTY: Hamilton

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Swift Creek Prilled Sulfur Storage & Handling Facilit

SOURCE LOCATION: Street U.S. Highway 41 City N.W. of White Spgs.

UTM: East (17) 321.30 km. North 3369.83 km

Latitude 30 ° 26 ' 52 "N Longitude 82 ° 51 ' 32 "W

APPLICANT NAME AND TITLE: Hudson C. SMith, General Manager

APPLICANT ADDRESS: Post Office Box 300, White Springs, Florida 32096

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Occidental Chemical Agricultural Products Inc.

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: _____

Hudson C. Smith, General Manager
Name and Title (Please Type)

Date: _____ Telephone No. (904) 397-8300

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

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

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.

Signed _____

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

Koogler & Associates
Company Name (Please Type)

1213 N.W. 6th Street, Gainesville, Florida 32601
Mailing Address (Please Type)

Florida Registration No. 12925 Date: April 7, 1986 Telephone No. (904) 377-5822

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. A facility will be constructed at the Swift Creek Chemical Complex (SCCC) adjacent to the vatted sulfur storage facility (AC24-61435) to unload, store and recover prilled sulfur for use in existing sulfuric acid plants at the SCCC. The prilled sulfur storage capacity will be 150,000 tons and the annual throughput will be 300,000 tons. The facility will operate in compliance with all applicable regulations. Further description is contained in the attachment package to this application.

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

Start of Construction July 1986 Completion of Construction July 1991

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.)

Spray system for conveyor system	$ 200,000
Conveyor covers, transfer hoods, drop chute	235,000
Water spray system for storage area	50,000
TOTAL	$ 475,000

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

None

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;

if power plant, hrs/yr_____; if seasonal, describe:_____

F. If this is a new source or major modification, answer the following questions. (Yes or No) Minor modification to a major emitting facility

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. NO

3. Does the State "Prevention of Significant Deterioriation" (PSD) requirement apply to this source? If yes, see Sections VI and VII. NO

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? NO

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? NO

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? NO

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

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		
Prilled Sulfur	Part. Matter	3	1.2-2.0 million;	max. rate to storage points 1-6
			0.14 million;	max. recovery rate points 8-13

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

1. Total Process Input Rate (lbs/hr): Not applicable - Prilled Sulfur Storage

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Part. Matter	11.55	4.46	17-2.540(2)	11.55	13.12	6.90	(1)
(1) See attached application package for emissions from individual sources.							

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 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).

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Spray System for Conveyor and Hopper	Part. Matter	15-21% depending on moisture in sulfur	0-30 um	Estimate
Water Sprays (Vehicle Travel)	Part. Matter	50%	0-30 um	Estimate
Work Practices	Part. Matter	Variable	0-30 um	Estimate

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
NOT APPLICABLE			

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average NOT APPLICABLE Maximum _____

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

Run-off from prilled sulfur storage area will be collected in a sump and sprayed on pile for dust control. Excess run-off will be discharged into process water ponds.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):
(All sources are unconfined; no point source emissions)

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

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

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

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

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

Stack Height: _____ ft. Stack Diamter: _____ 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.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

(SEE ATTACHMENT PACKAGE)

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

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, design pressure drop, 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 8 1/2" 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 8 1/2" 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 8 1/2" 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. The appropriate application fee in accordance with Rule 17-4.05. 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

(NOT APPLICABLE)

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

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

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter: ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

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

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

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:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]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

(NOT APPLICABLE)

A. Company Monitored Data

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.

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

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. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

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

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ 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	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of 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.

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.