



Occidental Chemical Corporation

November 1, 1990

Mr. C. H. Fancy, P.E.
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ref: Permit No: A024-170296
North Acid Clarification - SRCC

Dear Mr. Fancy:

At the suggestion of Mr. J. Cole of the Northeast District Office, I am addressing this letter to you. Occidental is requesting a modification to the referenced permit to allow an increase in the operating rate from 60 TPH to 90 TPH.

The acid clarification process consists of passing 42-48% phosphoric acid through a drum filter process to remove impurities prior to further processing. The currently permitted process, consisting of six drum filters, uses diatomaceous earth (DE) as the precoat filter media on the drums. Head losses through the filters limit production with this process to about 60 TPH.

By replacing the DE media with a membrane filter cloth our engineering calculations show that we can achieve a production rate of 90 TPH from four filters. The two remaining filters will be used with DE to process the repulped cake from the primary filters. This will allow an estimated 1.5 percent increase in the P_2O_5 recovery rate.

There are no particulate emissions present in this process. The only emissions are from the fluoride compounds present in the acid.

The plant was originally permitted under BACT with $0.05 \text{ lb F}^-/\text{ton } P_2O_5$. This is the same as our other acid clarification plants. In late 1988 we requested a rate increase from 41 TPH to 60 TPH. As part of this increase, we agreed to be governed by F.A.C. 17-2.600(3)(a)1 and a fluoride emission rate of $0.02 \text{ lb F}^-/\text{ton } P_2O_5$. As part of this permit modification, we are requesting that the fluoride emissions again be governed by BACT at $0.05 \text{ lb F}^-/\text{ton } P_2O_5$.

OxyChem®

Agricultural Products - Florida Operations
County Road 137, P.O. Box 300, White Springs, Florida 32096
(904) 397-8101

001031

Occidental Chemical Corporation

Page 2

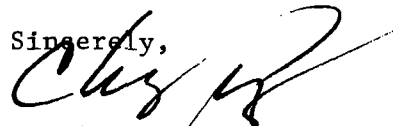
November 1, 1990

This request is made based upon our test results for a similar unit at our Swift Creek Chemical Complex. That unit is permitted for BACT at 0.05 lb F⁻/ton P₂O₅. Although most testing shows that compliance would be possible at a 0.02 lb F⁻/ton P₂O₅ emission rate, there are some tests where compliance would be marginal. Most notably this occurs in the warmer months and is due to the combined fluoride emissions from the process and the scrubber water.

I am enclosing an application for construction/modification and a check for \$1,500.00 to perform this work.

If you should require any further information, please do not hesitate to contact me at 904/397-8442.

Sincerely,



Charles B. Pults
Environmental Engineer

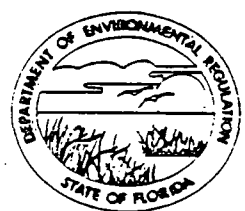
CBP:gmc

cc: W. M. Miller
D. Hill
A. Kutyna, FDER, JAX

#1,500 pd.
11-5-90
Receipt #151201

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

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



AC 24-K8960

APPLICATION TO ~~OPERATE~~ CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Phosphoric Acid Clarification [] New¹ [X] Existing¹
APPLICATION TYPE: [X] Construction [] Operation [X] Modification
COMPANY NAME: Occidental Chemical Corporation COUNTY: Hamilton

Identify the specific emission point source(s) addressed in this application (i.e. Line
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Packed Scrubber

SOURCE LOCATION: Street CR 137 City White Springs
UTM: East 328,320 North 3,368,810
Latitude ° ' "N Longitude ° ' "W

APPLICANT NAME AND TITLE: Hudson C. Smith, Vice President & General Manager
APPLICANT ADDRESS: P. O. Box 300, White Springs, FL 32096-0300

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Occidental Chemical Corporation
I certify that the statements made in this application for a construction/modification 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*
Hudson C. Smith, Vice President & General Manager
Name and Title (Please Type)
Date: 11/2/90 Telephone No. 904/397-8101

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

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 R. E. McNeill

R. E. McNeill

Name (Please Type)

Occidental Chemical Corporation

Company Name (Please Type)

P. O. Box 300, White Springs, FL 32096

Mailing Address (Please Type)



Florida Registration No. 12813 Date: _____ Telephone No. 904/397-8270

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.

Conversion of four of six drum filters from Diatomaceous earth to membrane cloth filtration. The remaining two filters will retain DE filtration and serve as secondary filters for the repulped cake. Throughput will increase from 60 TPH to 90 TPH.

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

Start of Construction 12/1/90 Completion of Construction 12/1/91

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.)

No changes to the pollution control equipment are anticipated.

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

A024-21062 2/4/80 - 1/31/85 AC24-2699 7/6/76 - 12/31/76

A024-94819 1/10/85 - 1/10/90

A024-170296 3/5/90 - 1/10/95

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. N/A
(Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? _____

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. _____

3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. _____

4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? _____

5. Do "National Emission Standards for Hazardous Air Pollutants"
(NESHAP) apply to this source? _____

H. Do "Reasonably Available Control Technology" (RACT) requirements apply
to this source? _____

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 justifi-
cation 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		
48% Phosphoric Acid	F ⁻	0.6	386,700	A

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

1. Total Process Input Rate (lbs/hr): 392,500 as 48% P₂O₅

2. Product Weight (lbs/hr): 375,000 as 48% P₂O₅

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	
Fluoride	4.71	20.6	0.05 lb F ⁻ /	4.71			B
			ton P ₂ O ₅				
			BACT				

¹See Section V, Item 2.

²Reference 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)

³Calculated from operating rate and applicable standard.

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

J. 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)
Packed, Counter -				
Current Scrubber	Fluoride	94.9%	N/A	Design and Test Data

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*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 _____ Maximum _____

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

Filter cake and used filter cloth will be sent to the gypsum stacks for disposal.

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

Stack Height: 60 ft. Stack Diameter: 3.6 ft.
 Gas Flow Rate: 30550 ACFM 29250 DSCFM Gas Exit Temperature: 90 °F.
 Water Vapor Content: 3.2 % Velocity: 50 FPS

SECTION IV: INCINERATOR INFORMATION

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 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.):

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

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

- 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

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:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

- 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:

4.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:¹
- d. Capital Costs:
- 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:

F. Describe the control technology selected:

- 1. Control Device:
- 2. Efficiency:¹
- 3. Capital Cost:
- 4. Useful Life:
- 5. Operating Cost:
- 6. Energy:²
- 7. Maintenance Cost:
- 8. Manufacturer:
- 9. Other locations where employed on similar processes:
- a. (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:

Explain method of determining efficiency.
 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:

¹Applicant 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

1. _____ no. sites _____ TSP _____ () SO₂* _____ 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

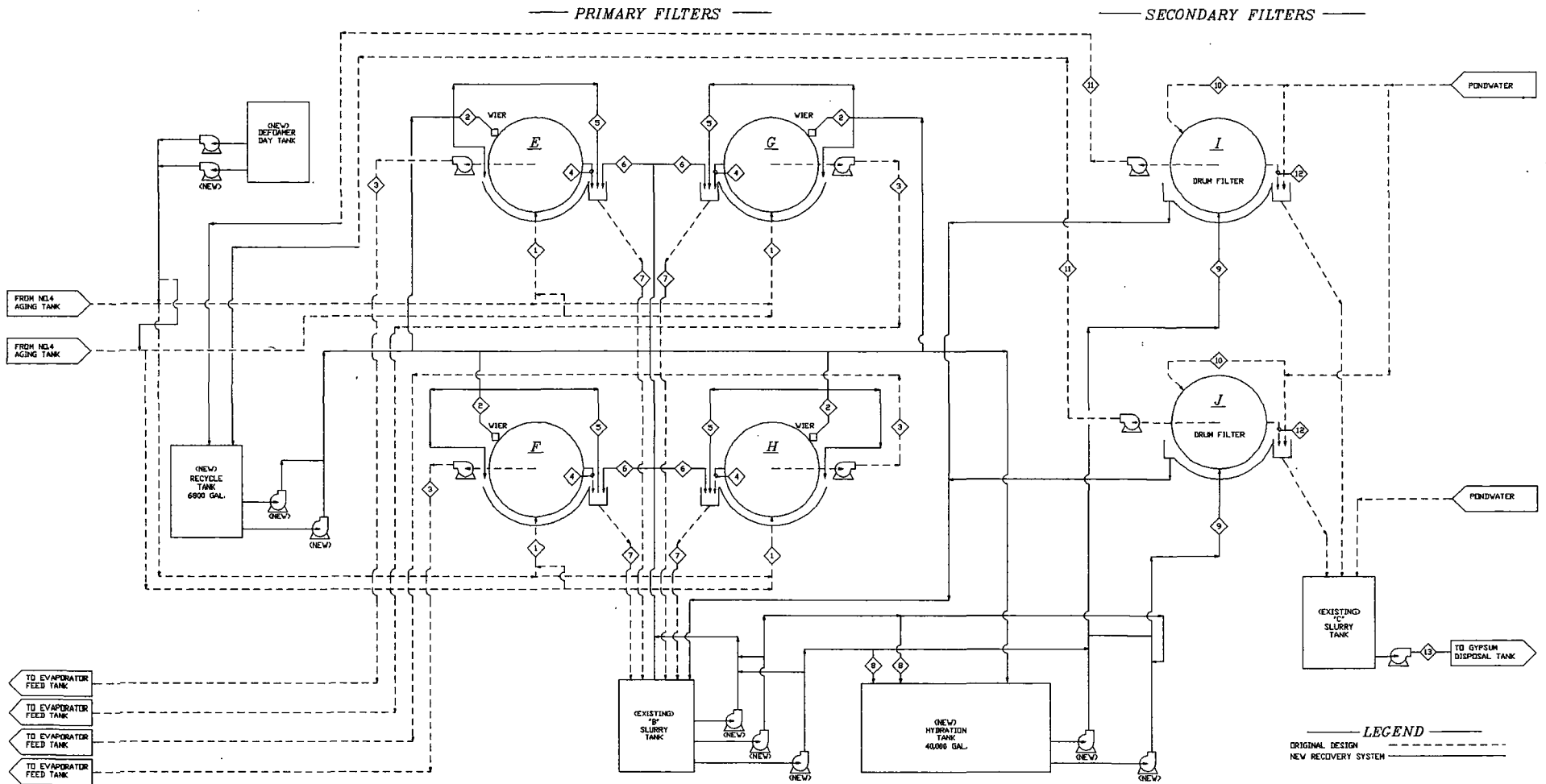
Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

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.

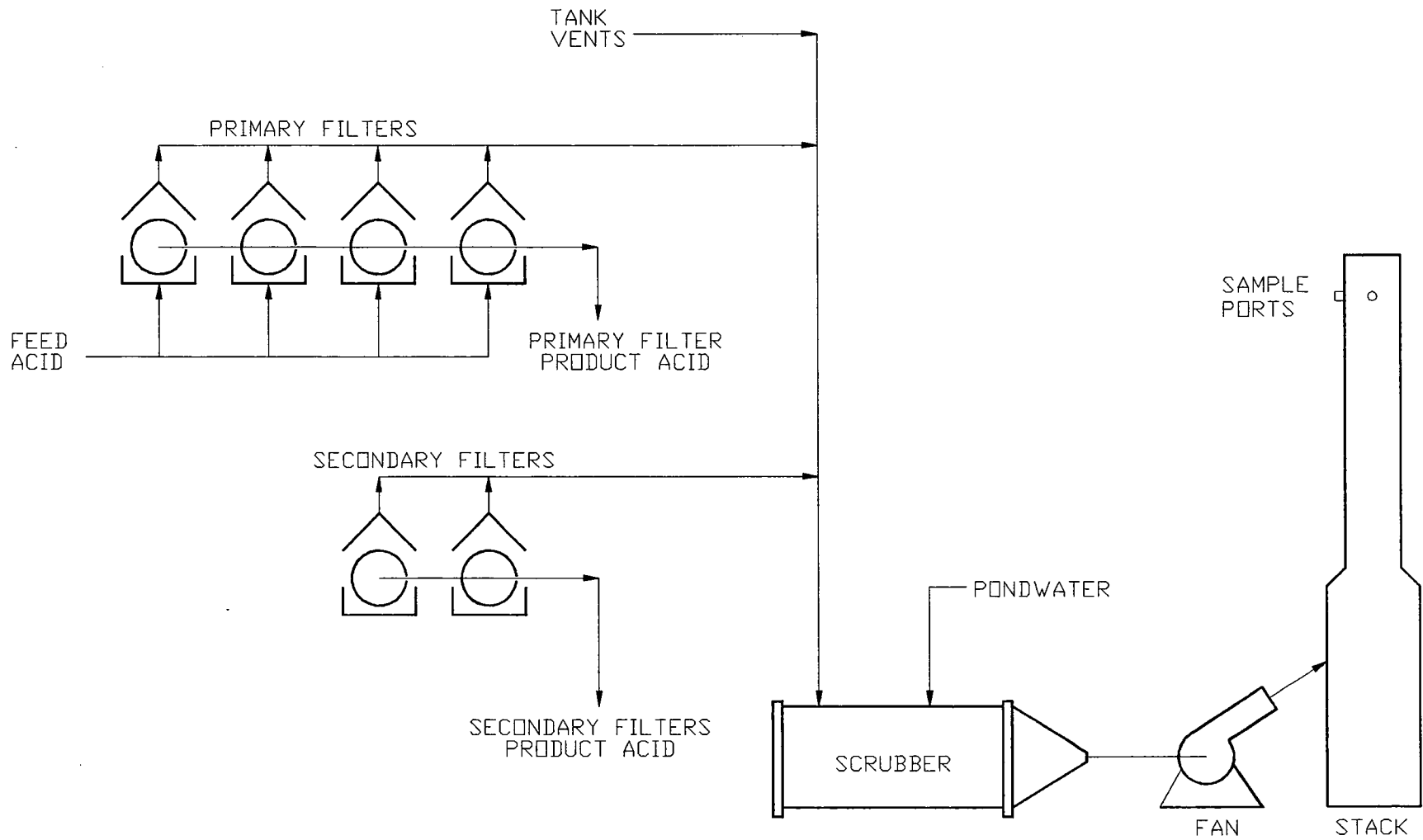
FLOW DIAGRAM "A"



DESCRIPTION	STREAM NO.	1-EF GA PRIMARY FILTER FEED	2-EF GA PRIMARY CAKE WASH	3-EF GA PRIMARY FILTER PRODUCT	4-EF GA PRIMARY FILTER CAKE	5-EF GA NEW ACID RECYCLE	6-EF GA PRIMARY CAKE SLURRY	7-EF GA PRIMARY CAKE SLURRY	8 HYDRATION TANK FEED	9-L SECONDARY FILTER FEED	10-L SECONDARY PW CAKE WASH	11-L SECONDARY FILTER PRODUCT	12-L SECONDARY FILTER CAKE	13 DISPOSAL
STPD. FEEDS		500	63	489	24	156	96	682	739	3	358	84	79	
STPD. TOTAL		1222	99	1160	160	680	409	1242	3360	141	1555	266	2626	
STPD. SOLIDS		06	1	4	06	4	41	06	234	157	9	9	160	284
GPM		131	13	127	-	89	50	153	612	26	24	202	-	430
% FEEDS		48.9	5.0	48.2	26.7	23.0	28.2	28.5	22.6	1.42	23.0	9.0	3.00	
% SOLIDS		7.0	8.5	8.5	50.0	8.5	10.0	18.0	18.0	0.0	0.5	60.0	18.0	
SPERAVITY (APPROX)		1567	1276	1520	-	1276	1360	1360	1360	182	1276	-	107	

LEGEND
 ORIGINAL DESIGN
 NEW RECOVERY SYSTEM

FLOW DIAGRAM "B"



PROCESS FLOW DIAGRAM
ACID CLARIFICATION - NORTH
SUWANNEE RIVER CHEMICAL COMPLEX
WHITE SPRINGS, FLORIDA