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KA 203-92-01

October 22, 1992

RECEIVED
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Bureau of
Air Regulation

Mr. Cleve Holladay
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Seminole Fertilizer Corporation
Proposed Sulfuric Acid Production Increase
Permit File No. AC53-216288, PSD-FL-191

Dear Mr. Holladay:

This is a follow up to our meeting on October 14, 1992, concerning the emission inventory used for evaluating the Class I PSD increment consumption for the above project. The attached source emission information will address the questions raised by you on September 9 and September 11, 1992. The source numbering corresponds to the inventory submitted to FDER on May 4, 1992, and discussed during our meeting (see Attachment 1).

The Class I area visibility analysis (VISCREEN - Level 1) results, previously submitted to FDER, are presented in Attachment 2.

If you have any questions, please do not hesitate to give me a call.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:PAR:wa
Enc.

c: Mr. H. Kerns, FDER, Tampa
Mr. M. Martinasek, Seminole
H. Hanks
C. Holladay / SW Dist
B. Thomas
G. Harper EPA
B. Mitchell, NPS
G. Koval, Polk Co.

ATTACHMENT I

SEMINOLE FERTILIZER CORPORATION
SO_2 PSD INCREMENT EXPANDING SOURCES
BACKGROUND INFORMATION

Background information is provided for sources identified by FDER included in the attached source inventory submitted to FDER on May 4, 1992.

SOURCES 400-450: CF BARTOW

Based on information from FDER's Tampa office files, the following emissions were reported by CF on July 29, 1975. An EPA Consent Order, dated November 14, 1975, required source compliance with emission limits which became effective on July 1, 1975 (after the SO_2 baseline date of January 6, 1975). It should be noted that prior to July 1, 1975, there were no emission limiting standards in Florida for sulfuric acid plants.

The appropriate baseline emissions for the CF Bartow Plant are estimated as follows:

Source No.	Acid Rate (TPD)	Reported Emission (lb/ton)	Emission in Inventory (lb/hr)	(g/s)
400	400	29	483.3	60.90
410	500	42	875.0	110.25
420	600	34	850.0	107.10
430	900	37	1387.5	174.83
440	900	48	1800.0	226.80
450	900	36	1350.0	170.10

Sample Calculation:

SO_2 = 400 tons/day x 29 lbs SO_2/ton acid x day/24 hrs

= 483.3 lbs/hr

x 0.126 g/s / lb/hr

= 60.9 g/s

OK

SOURCE 640: USSAC FT. MEADE ROCK DRYER

This source has not been operated in several years. However, the company intends to keep the operation permit on the source current. As a result, the appropriate emission level in accordance with FDER protocol is zero, as the permit has not been surrendered.

OK

SOURCE 650: USSAC FT. MEADE GTSP

Based on information from the FDER Tampa office files, the SO_2 emissions from the GTSP plant reported by USSAC on January 4, 1979, are as follows:

SO_2 = 72.5 lbs/hr x 2 trains

= 145 lbs/hr

x 0.126 g/s / lb/hr

= 18.27 g/s ✓

SOURCE 730: W.R. GRACE/SEMINOLE DRYER

Based on information from the FDER Tampa office files, the SO_2 emissions reduction from the two rock dryers at Seminole Fertilizer Corporation are based on the source operation for the past five years (and proposed future use) on natural gas. The dryers were previously operated on No. 6 fuel oil with a sulfur content of 2.4 percent. The SO_2 absorption of 40 percent is based on testing on similar units.

Dryer No. 1 - 120 MMBTU/hr

SO_2 = 120 x 10^6 BTU/hr x lb/18,300 BTU x 0.024 lb S/lb oil
x 2 lb SO_2/lb S x (1-0.4) SO_2 sorption
= 188.85 lbs/hr
x 0.126 g/s / lb/hr
= 23.80 g/s

Dryer No. 2 - 80 MMBTU/hr

SO_2 = 80 x 10^6 BTU/hr x lb/18,3000 BTU x 0.024 lb S/lb oil
x 2 lb SO_2/lb S x (1-0.4) SO_2 sorption
= 125.90 lbs/hr
x 0.126 g/s / lb/hr
= 15.86 g/s

As SO_2 emissions from natural gas firing are negligible, total SO_2 reduction from the two dryers combined are:

SO_2 total = (23.80 + 15.86) g/s

= 39.66 g/s

OK

SOURCE 960: AGRICO PIERCE DRYERS 1 AND 2

Based on information from the FDER Tampa office files, the following are the emissions for Dryers 1 and 2. The SO_2 absorption factor of 40 percent is based on testing on similar units. These dryers are no longer in existence.

SO_2 = 64 x 10^6 BTU/hr x 2 units x lb/18,300 BTU

x 0.023 lb S/lb oil x 2 lb SO_2/lb S x (1-0.4) SO_2 sorption

= 193.05 lbs/hr

x 0.126 g/s / lb/hr

= 24.32 g/s

OK

SOURCE 970: AGRICO PIERCE DRYERS 3 AND 4

Based on information from the FDER Tampa office files, the following are the emissions for Dryers 3 and 4 (Permit No. A053-5031). The SO_2 absorption factor of 40 percent is based on testing on similar units. These dryers are no longer is existence.

SO_2 = 19,800 gals/day x day/24 hrs x 8 lb/gal x 0.023 lb S/lb oil x 2 lb SO_2/lb S x (1-0.4) SO_2 sorption

= 182.16 lbs/hr (for two dryers combined) x 0.126 g/s / lb/hr

= 22.95 g/s ~ 23.0 g/s OK

SOURCES 980 AND 990: BORDEN DRYERS

The SO_2 emission rates for Sources 980 and 999 are 5.29 and 6.48 g/s, respectively, based on the emission inventory compiled by Walk-Haydel (Sources 2a and 2b) in support of a permit application for Conserv (AC-53-42397, PSD-FL-076).

SOURCES 1000 AND 1010: DOLIME BOILER AND DRYER

The SO_2 emission rates for Sources 1000 and 1010 are 4.52 and 5.68 g/s, respectively, based on the emission inventory compiled by Walk-Haydel (Sources 4a and 4b) in support of a permit application for Conserv (AC-53-42397, PSD-FL-076).

SOURCE 1020: ESTECH/SWIFT SAP

Based on information from the FDER Tampa office files, the emission rate of this source is calculated from a sulfuric acid production rate of 610 tons/day (Permit No. A053-2103) and an emission rate of 29 lb/ton acid. This plant is no longer in existence.

SO_2 = 610 tons/day x 29 lbs/ton x day/24 hrs

= 737 lbs/hr

x 0.126 g/s / lb/hr

= 92.87 g/s

SOURCE 1030: ESTEC/SWIFT DRYER

Based on information from the FDER Tampa office files, the following is the emission rate of the dryer. The SO_2 absorption factor of 40 percent is based on testing on similar units. This dryer is no longer in existence.

SO_2 = 126 x 10^6 BTU/hr x lb/18,300 BTU x 0.023 lb S/lb oil

x 2 lb SO_2/lb S x (1-0.4) SO_2 sorption

= 190.03 lbs/hr

x 0.126 g/s / lb/hr

= 23.94 g/s

SOURCE 1040: ESTEC/SWIFT DRYER

Based on information from the FDER Tampa office files, the following is the emission rate of the dryer. The SO_2 absorption factor of 40 percent is based on testing on similar units. This dryer is no longer in existence.

SO_2 = 120 x 10^6 BTU/hr x lb/18,300 BTU x 0.023 lb S/lb oil
x 2 lb SO_2/lb S x (1-0.4) SO_2 sorption
= 180.98 lbs/hr
x 0.126 g/s / lb/hr
= 22.8 g/s

SOURCE 1050: USSAC BARTOW SAP

Based on information from the FDER Tampa office files, the following is the SO_2 emission rate from the SAP based on a production rate of 800 tons per day (Permit No. A053-59987) and an emission rate of 10 lbs/ton acid. This plant is no longer in existence.

SO_2 = 800 tons/day x 10 lbs/ton x day/24 hrs
= 333.33 lbs/hr
x 0.126 g/s / lb/hr
= 42.0 g/s

SOURCE 1060: USSAC BARTOW DRYER

Based on the emission inventory compiled by Walk-Haydel (Source 14b, Conserv permit AC53-42397, PSD-FL-076), the emission rate of Source 1060 is 3.41 g/s. This dryer is no longer in existence.

SOURCES 1070 AND 1080: GENERAL PORTLAND CEMENT KILNS 4 AND 5

Based on the emission inventory compiled by Walk-Haydel (Source 24b and c, Conserv permit AC53-42397, PSD-FL-076), the emission rates of Sources 1070 and 1080 are 62.99 and 69.3 g/s, respectively. These kilns are no longer in existence.

SOURCE 1090: ELECTROPHOS 400 HP BOILER

(Note: All Electrophos sources (Sources 1090-1140) are no longer in existence.)

Based on information from the FDER Tampa office files, the following is the emission rate of the boiler.

SO_2 = 135 gals/hr x 8 lbs/gal x 0.024 lb S/lb oil
x 2 lb SO_2/lb S
= 51.84 lbs/hr
x 0.126 g/s / lb/hr
= 6.53 g/s

SOURCE 1100: ELECTROPHOS 600 HP BOILER

Based on information from the FDER Tampa office files, the following is the emission rate of the boiler.

SO_2 = 30.4 x 10^6 BTU/hr x lb/18,300 BTU x 0.024 lb S/lb oil
x 2 lb SO_2/lb S
= 79.7 lbs/hr
x 0.126 g/s / lb/hr
= 10.05 g/s

SOURCE 1110: ELECTROPHOS FEED PREPARATION DRYER

Based on information in the FDER Tampa office files, the following is the emission rate of the feed prep. dryer.

SO_2 = 66.0 x 10^6 BTU/hr x lb/18,300 BTU x 0.024 lb S/lb oil
x 2 lb SO_2/lb S
= 173.11 lbs/hr
x 0.126 g/s / lb/hr
= 21.81 g/s

SOURCE 1120: ELECTROPHOS COKE DRYER

Based on information in the FDER Tampa office files, the following is in the emission rate of the coke dryer.

SO_2 = 9.6 x 10^6 BTU/hr x lb/18,300 BTU x 0.024 lb S/lb oil
x 2 lb SO_2/lb S
= 25.18 lbs/hr
x 0.126 g/s / lb/hr
= 3.17 g/s

SOURCE 1130: ELECTROPHOS CALCINER

Based on information in the FDER Tampa office files, the following is the emission rate of the calciner.

SO_2 = 21.5 x 10^6 BTU/hr x lb/18,300 BTU x 0.024 lb S/lb oil
x 2 lb SO_2/lb S
= 56.39 lbs/hr
x 0.126 g/s / lb/hr
= 7.11 g/s

SOURCE 1140: ELECTROPHOS FURNACE

Based on information from the FDER Tampa office files, the following is the emission rate of the electric furnace which processes 62,500 pounds per hour of phosphate rock containing 0.3 percent sulfur.

SO_2 = 62,500 lbs/hr x 0.003 lb S/lb rock x 2 lb SO_2/lb S
= 375.0 lbs/hr
x 0.126 g/s / lb/hr
= 47.25 g/s

SOURCE 1150: BREWSTER/IMPERIAL DRYER

Based on information from the FDER Tampa office files, the following is the emission rate for the dryer. The SO_2 absorption factor of 40 percent is based on testing on similar units. This dryer is no longer in existence.

SO_2 = 134 x 10^6 BTU/hr x lb/18,300 BTU x 0.0174 lb S/lb oil
x 2 lb SO_2/lb S x (1-0.4) SO_2 sorption
= 152.89 lbs/hr
x 0.126 g/s / lb/hr
= 19.26 g/s

ADDITIONAL SO_2 PSD INCREMENTAL EXPANDING SOURCES

1. Mobil Nichols - Calciner

Based on information from the FDER Tampa office files, the following is the emission rate of the calciner (A053-136222). The permit was surrendered on May 4, 1992.

SO_2 = 110.2 lbs/hr (permit limit)
x 0.126 g/s / lb/hr
= 13.89 g/s

2. Mobil Nichols - 75 HP Boiler

Based on the information from the FDER Tampa office files, the following is the emission rate of the boiler (A053-117006). The permit was surrendered on May 4, 1992.

SO_2 = 75 HP x 3.352 x 10^4 BTU/HP x lb/18,300 BTU
x 0.025 lb S/lb oil x 2 lb SO_2/lb S
= 6.87 lbs/hr
x 0.126 g/s / lb/hr
= 0.87 g/s

3. CF Industries - SAP A and B

These plants have been listed in many past permit application emission inventories, including a 1987 permit application by Central Phosphates, Inc. (now CF). The emission rates of Plant A and B were 52.5 g/s each; or a total of 105.0 g/s for the two plants combined. Prior to May 1988, they operated at 10 lbs/ton, 416.7 lbs/hr and 78 feet stack height. The plants subsequently operated at 8 lbs/ton, 350 lbs/hr and 110 feet stack height (see FDER permits AC29-146176 and 177).

4. IMC New Wales - Rock Dryer

This source has been listed in many past permit applications emission inventories, including a 1987 permit application by Central Phosphates, Inc. (CF). The emission rate of the dryer is 34.27 g/s.

The permit for this dryer was surrendered during the Third Train expansion in about 1980 (see attached).

SO2 PSD SOURCE INVENTORY 5/1/92

SOURCE NO.	EMIS (g/s)	UTM COORDINATES (km) EAST	NORTH	HT (m)	TEMP (K)	VEL (m/s)	DIAM (m)	BUILDING (m) HT	L	W	SOURCE DESCRIPTION
10	466.40	467.500	3197.200	15.24	819.8	56.21	4.21	11.8	17.1	17.1	FPC/DEBARY PROP TURBINES AT 20 DEG F
20	310.90	446.300	3126.000	15.24	819.8	56.21	4.21	11.8	17.1	17.1	FPC/INT. CITY PROP TURBINES/7EA AT 20 DEG F
30	276.10	446.300	3126.000	15.24	880.8	32.07	7.04	11.8	17.1	17.1	FPC/INT. CITY PROP TURBINES/7FA AT 20 DEG F
40	98.40	360.008	3162.398	97.60	442.0	23.23	4.88				FLORIDA CRUSHED STONE KILN 1
50	-50.40	388.000	3116.000	60.35	353.0	16.40	2.44				CF IND. BASELINE C
60	54.60	388.000	3116.000	60.35	353.0	17.77	2.44				CF IND. PROPOSED C
70	-50.40	388.000	3116.000	60.35	353.0	16.40	2.44				CF IND. BASELINE D
80	54.60	388.000	3116.000	60.35	353.0	17.77	2.44				CF IND. PROPOSED D
90	1.45	356.200	3169.900	27.40	470.2	7.48	4.88				FLORIDA MINING & MATERIALS KILN 2
100	654.70	361.900	3075.000	149.40	342.2	19.81	7.32				TECO BIG BEND UNIT 4
110	-2436.00	361.900	3075.000	149.40	422.0	28.65	7.32				TECO BIG BEND UNITS 1&2 (24-HR)
120	-1218.00	361.900	3075.000	149.40	418.0	14.33	7.32				TECO BIG BEND UNIT 3 (24-HR)
130	14.10	347.100	3139.200	83.82	394.3	15.70	3.05				PASCO COUNTY RRF
140	1008.80	334.200	3204.500	182.90	398.0	21.00	6.90				CRYSTAL RIVER 4
150	1008.00	334.200	3204.500	182.90	398.0	21.00	6.90				CRYSTAL RIVER 5
160	-314.00	334.200	3204.500	152.00	422.0	42.10	4.57				CRYSTAL RIVER 1
170	-1859.00	334.200	3204.500	153.00	422.0	42.10	4.88				CRYSTAL RIVER 2
180	105.40	483.500	3150.600	167.60	325.7	21.60	5.80				ORLANDO UTIL STANTON 1
190	242.40	483.500	3150.600	167.60	324.2	23.50	5.80				ORLANDO UTIL STANTON 2 (24-HR)
200	32.10	460.100	3129.300	18.30	422.0	38.00	3.66				KISSIMMEE UTIL EXIST
210	277.60	404.800	3057.400	22.90	389.0	23.90	4.88				HARDEE
220	-4.86	325.600	3116.700	7.32	464.0	3.23	0.91				STAUFFER BOILER
230	-7.36	325.600	3116.700	25.61	306.0	6.97	2.13				STAUFFER KILN
240	-0.45	325.600	3116.700	25.61	322.0	6.97	0.91				STAUFFER ROASTER
250	-1.50	325.600	3116.700	18.29	322.0	22.87	0.70				STAUFFER DRYER
260	-50.93	325.600	3116.700	49.00	335.0	3.60	1.20				STAUFFER FURNACE
270	500.10	408.500	3105.800	76.20	350.0	19.70	4.88				LAKELAND MCINTOSH 3
280	21.40	368.200	3092.700	50.00	491.0	18.30	1.80				HILLS. CO. RESOURCE RECOVERY
290	62.24	335.300	3084.400	49.10	522.0	27.72	2.74				PINELLAS
300	0.20	383.300	3135.800	12.30	466.2	9.20	0.40				EVANS PACKING
310	2.25	361.400	3168.400	8.50	357.4	10.95	1.08				ASPHALT PAVERS 4 (0700-1800)
320	2.25	359.900	3162.400	12.20	377.0	10.58	1.37				ASPHALT PAVERS 3 (0700-1800)
330	29.11	409.185	3102.754	30.48	783.2	28.22	5.79				LAKELAND UTILITIES CT
340	-146.00	396.600	3078.900	61.00	350.0	14.28	2.60				IMC SAP #1,2,3 BASELINE
350	189.00	396.600	3078.900	61.00	350.0	15.31	2.60				IMC SAP #1,2,3 (3 AT 3000 TPD)
360	126.00	396.600	3078.900	60.70	350.0	15.31	2.60				IMC SAP #4,5 (2 AT 3000 TPD)
370	5.54	396.600	3078.900	36.60	319.1	20.15	1.83				IMC DAP
380	5.04	385.600	3139.000	30.48	384.3	17.13	3.35	15.5	39.9	39.9	PASCO CO. COGEN. FACLITY PROPOSED
390	5.04	434.000	3198.800	30.48	384.3	17.13	3.35	15.5	39.9	39.9	LAKE CO. COGEN. FACILITY PROPOSED
400	-60.90	408.500	3082.500	30.49	350.0	12.20	1.37				CF BARTOW H2SO4 1 (400 TPD)
410	-110.25	408.500	3082.500	30.49	350.0	10.37	1.68				CF BARTOW H2SO4 2 (500 TPD)
420	-107.10	408.500	3082.500	30.49	364.0	4.27	2.74				CF BARTOW H2SO4 3 (600 TPD)
430	-174.83	408.500	3082.500	30.49	358.0	7.93	2.13				CF BARTOW H2SO4 4 (900 TPD)
440	-226.80	408.500	3082.500	63.41	358.0	10.67	2.13				CF BARTOW H2SO4 5 (900 TPD)
450	-170.10	408.500	3082.500	63.41	359.0	10.37	2.13				CF BARTOW H2SO4 6 (900 TPD)
460	42.00	408.500	3082.500	67.10	351.0	9.80	2.40				CF BARTOW H2SO4 7 (2000 TPD)
470	50.40	408.500	3082.500	63.41	361.0	10.88	2.13				CF BARTOW H2SO4 5 (2400 TPD)
480	50.40	408.500	3082.500	63.41	370.0	7.28	2.13				CF BARTOW H2SO4 6 (2400 TPD)
490	4.30	408.500	3082.500	9.10	450.0	22.50	0.70				CF BARTOW DAP
500	21.02	361.800	3088.300	30.00	375.0	20.00	0.61				CLM CHL
510	-54.60	398.400	3084.200	30.50	308.0	18.90	1.80				CONSERVE (2 @ 1300 TPD & 4 LB/TON)
520	42.00	398.400	3084.200	45.70	352.0	10.30	2.30				CONSERVE (2000 TPD @ 4 LB/TON)
530	-3.88	398.400	3084.200	24.40	339.0	12.90	1.52				CONSERVE ROCK DRYER
540	-83.98	409.500	3079.500	30.48	311.0	20.18	1.37				FARMLAND 1,2 H2SO4
550	67.16	409.500	3079.500	30.48	355.0	9.27	2.29				FARMALND 3,4 H2SO4

560	41.96	409.500	3079.500	45.72	355.0	9.65	2.44	FARMLAND 5 H2SO4
570	0.00	389.550	3067.930	38.10	339.0	10.13	2.90	IMC LONESOME MINE DRY 1 (SHUTDOWN 5/26/88)
580	0.00	389.550	3067.930	38.10	346.0	18.40	2.44	IMC LONESOME MINE DRY 2 (SHUTDOWN 5/26/88)
590	-152.71	406.700	3085.200	51.00	356.0	9.90	2.13	ROYSTER (1003 TPD @ 29 LB/TON)
600	35.70	406.700	3085.200	61.00	360.0	12.20	2.13	ROYSTER (1700 TPD @ 4 LB/TON)
610	63.00	416.120	3068.620	53.40	355.0	15.91	2.59	USSAC FT MEADE H2SO4 1
620	63.00	416.120	3068.620	53.40	355.0	15.91	2.59	USSAC FT MEADE H2SO4 2
630	-78.80	416.210	3068.740	29.00	314.0	6.77	3.02	USSAC FT MEADE H2SO4 (1500 TPD @ 10 LB/TON)
640	-15.79	416.000	3069.000	25.60	332.0	16.26	1.52	USSAC FT MEADE ROCK DRYER
650	-18.27	416.000	3069.000	28.35	330.0	17.60	1.52	USSAC FT MEADE GTSP
660	-108.00	409.770	3086.990	45.72	352.0	16.50	1.37	W.R. GRACE/SEMINOLE SAP #1
670	-108.00	409.770	3086.990	45.72	352.0	16.50	1.37	W.R. GRACE/SEMINOLE SAP #2
680	-52.50	409.770	3086.990	45.72	311.0	16.70	1.52	W.R. GRACE/SEMINOLE SAP #3
690	42.87	409.770	3086.990	45.72	311.0	16.70	1.52	W.R. GRACE/SEMINOLE SAP #3
700	40.32	409.770	3086.990	60.96	347.0	25.10	1.52	W.R. GRACE/SEMINOLE SAP #4
710	40.32	409.770	3086.990	60.96	347.0	25.10	1.52	W.R. GRACE/SEMINOLE SAP #5
720	40.32	409.770	3086.990	60.96	347.0	25.10	1.52	W.R. GRACE/SEMINOLE SAP #6
730	-39.41	409.770	3086.990	15.24	327.0	17.32	2.04	W.R. GRACE/SEMINOLE DRYER
740	52.50	363.400	3082.400	45.72	355.0	8.63	2.44	GARDINIER/CARGILL SAP #8
750	46.20	363.400	3082.400	45.72	355.0	9.20	2.29	GARDINIER/CARGILL SAP #7
760	-28.89	363.400	3082.400	20.73	310.0	13.12	1.07	GARDINIER/CARGILL DRYER
770	54.60	363.400	3082.400	45.72	344.0	12.50	2.74	GARDINIER/CARGILL SAP #9
780	-196.30	363.400	3082.400	22.60	322.0	19.51	1.52	GARDINIER/CARGILL SAP #4,5,6
790	-50.71	363.400	3082.400	45.72	355.0	9.20	2.29	GARDINIER/CARGILL SAP #7
800	0.60	394.800	3067.720	8.20	505.0	7.57	0.41	MOBIL BIG-4 BOILER
810	1.90	394.850	3069.770	30.50	334.0	7.26	1.82	MOBIL BIG-4 DRYER
820	2.44	398.290	3084.290	25.90	339.0	15.20	2.29	MOBIL NICHOLS #4 DRYER
830	2.99	382.200	3166.100	9.14	478.0	4.57	0.61	FDOC BOILER #3
840	0.82	386.700	3155.800	10.67	327.0	8.99	1.83	ER JAHNA (LIME DRYER)
850	2.09	359.800	3164.900	7.62	347.0	6.29	1.83	OMAN CONST (ASPHALT)
860	0.23	340.600	3119.200	12.20	339.0	6.47	3.05	DRIS PAVING (ASPHALT)
870	3.67	355.900	3143.700	9.14	408.0	16.00	1.30	OVERSTREET PAV. (ASPHALT)
880	0.06	331.200	3124.500	10.98	544.0	3.88	0.31	NEW PORT RICHEY HOSP BLR#1
890	0.03	331.200	3124.500	10.98	544.0	3.88	0.31	NEW PORT RICHEY HOSP BLR#2
900	0.08	333.400	3141.000	10.98	533.0	4.00	0.31	HOSP CORP OF AM BOILER #1
910	0.08	333.400	3141.000	10.98	533.0	4.00	0.31	HOSP CORP OF AM BOILER #2
920	7.25	340.700	3119.500	9.14	436.0	22.30	1.40	COUCH CONST-ODESSA (ASPHALT)
930	3.54	390.300	3129.400	6.10	422.0	21.00	1.38	COUCH CONST-ZEPHYRHILLS (ASPHALT)
940	-75.60	407.500	3071.300	45.73	350.0	26.40	1.60	AGRICO H2SO4 (2 @1800 TPD)
950	113.50	407.500	3071.300	45.73	350.0	39.06	1.60	AGRICO H2SO4 (2 @ 2700 TPD)
960	-24.32	404.100	3078.950	24.38	339.0	12.94	1.52	AGRICO PIERCE DRYERS 1,2
970	-23.00	404.100	3078.950	24.38	339.0	18.82	2.43	AGRICO PIERCE DRYERS 3,4
980	-5.29	414.500	3109.000	17.07	333.0	8.26	2.34	BORDEN DRYER
990	-6.48	394.800	3069.600	30.48	344.0	14.79	1.82	BORDEN DRYER
1000	-4.52	404.813	3069.548	27.43	494.1	7.25	0.61	DOLIME BOILER
1010	-5.68	404.813	3069.548	27.43	333.0	20.67	1.52	DOLIME DRYER
1020	-92.87	411.500	3074.200	30.79	358.0	3.90	2.13	ESTECH/SWIFT SAP (610 TPD & 29 LB/TON)
1030	-23.94	411.500	3074.200	18.29	339.0	8.47	2.95	ESTECH/SWIFT DRYER
1040	-22.80	411.500	3074.200	18.75	340.0	5.06	2.95	ESTECH/SWIFT DRYER
1050	-41.90	413.200	3086.300	28.96	305.0	7.50	2.12	USS AGRI-CHEM BARTOW SAP (800 TPD & 10 LB/TON)
1060	-4.99	413.200	3086.300	15.80	332.0	10.01	1.83	USS AGRI-CHEM BARTOW DRYER
1070	-62.99	358.000	3090.600	35.97	505.2	17.61	2.74	GEN. PORT. CEMENT KILN 4
1080	-69.30	358.000	3090.600	45.42	494.1	5.80	3.81	GEN. PORT. CEMENT KILN 5
1090	-6.53	405.600	3079.400	7.32	464.0	3.23	0.91	ELECTROPHOS 400HP BOILER
1100	-10.00	405.600	3079.400	6.10	464.0	7.71	0.91	ELECTROPHOS 600HP BOILER
1110	-20.90	405.600	3079.400	18.29	350.0	6.79	1.83	ELECTROPHOS ROCK DRYER
1120	-2.97	405.600	3079.400	18.29	322.0	22.87	0.70	ELECTROPHOS COKE DRYER
1130	-7.11	405.600	3079.400	25.61	306.0	6.97	2.13	ELECTROPHOS CALCINER
1140	-47.25	405.600	3079.400	29.27	314.0	8.52	2.13	ELECTROPHOS FURNACE (31.25 TPH ROCK @ 0.3% S)
1150	-19.60	404.800	3069.500	27.44	339.0	15.25	2.29	BREWSTER/IMPERIAL DRYER

PRADEEP:

SEMINOLE FERTILIZER PSD PERMIT

1. Please verify negative emission rates for Sources: 400 thru 430
   730
   960 thru 1150
   and the reduced emission rates for 440 and 450

2. Please verify that the permits have been surrendered or will be surrendered for the following sources:
   640, ~~650~~
   ~~960~~, ~~970~~
   730 — N Gas only used.
   ~~1030~~, ~~1040~~

- 400 -
- 410
- 420
- 430
- 440
- 450
- 640
- 650
- 730
- 960
- 970
- 980
- 990
- 1000
- 1010
- 1020
- 1030
- 1040 - 1100
- 1050 - 1110
- 1060 - 1120
- 1070 - 1130
- 1080 - 1140
- 1090 - 1150

These source numbers refer to letter to Tom Rogers / Cleve Holladay from John B. Koogler dated May 4, 1992 with subject of PSD Sulfur Dioxide Increment Consuming / Expanding Sources in West Central Florida

3. Also I need a copy of the inventory developed by Walk, Haydel & Associates (WHA 1034)

PREVENTION OF SIGNIFICANT DETERIORATION REVIEW APPLICATION

AND

APPLICATION TO CONSTRUCT

PROPOSED SULFURIC ACID PLANT
POLK COUNTY, FLORIDA

CONSERV
NICHOLS, FLORIDA

VOLUME I

W.H.&A. Job No. 2171
April 1981

WALK, HAYDEL & ASSOCIATES, INC.

ENGINEERS

NEW ORLEANS - MOBILE - BATON ROUGE

2) these angles were then used to obtain worst case days (high and second high) for major sectors in the desired directions for each year,

3) worst case days for each year for a particular case were then tabulated,

4) the critical direction (chosen by selecting the source complex closest to Conserv with the largest emissions output) in the interval of angles for a case was selected,

5) this critical angle was then used to compare the highest and second high concentrations for each of the five years of data - the higest concentration indicated the worst case meteorology for this direction out of the five years of data. This year of data and its high and second high days for all necessary angles was then selected for input to the ISC program.

8.3 Emissions Inventory

An inventory of emissions for all SO_2 sources (phosphate and non-phosphate) was compiled from records in the Tampa office of the Florida DER. Sources within 50 kilometers of Conserv were included in the inventory, and particularly large sources outside of 50 kilometers were included (e.g., Florida Power, Bartow plant).

The final inventory, Table 2 Appendix A, consists of sources whose emissions approached or exceeded a rate of 5.0 grams/second for sources greater than approximately 15 kilometers in distance from Conserv. For facilities that were close to Conserv (Mobil , Kaiser) all documented sources of SO_2 were included.

8.4 PSD Regulations

For the purpose of modeling (inclusion or exclusion of sources for a particular case), Federal PSD rules were followed per instructions of

TABLE 2
SOURCES AND PARAMETERS USED IN DISPERSION MODELING

	Name	I.D.	Emission Rate (g/s)	UTM Coordinates East	UTM Coordinates North	Height (m)	Temp. (°F)	Exit Velocity	Diameter (m)
1)	AGRICO CHEM.								
	a) Sulfuric Acid #10	01010	37.8	407.9	3071.0	45.72	360.	8.71	1.58
	b) SAP #11	01020	37.8	407.9	3071.0	45.72	57.	10.21	1.58
	c) R. Dryer 1	01030	11.09	407.9	3071.0	24.38	339.	12.94	1.52
	d) Dryers 3 & 4	01040	17.47	407.9	3071.0	24.38	339.	17.92	2.9
	e) SAP (New)	01050	42.0	407.6	3071.3	45.72	350.	9.54	2.9
	f) DAP (New)	01060	12.41	407.6	3071.3	38.1	327.	14.55	3.05
2)	BORDEN								
	a) Ph. Rock Dryer	02010	5.29	414.5	3109.0	17.07	333.	8.26	2.34
	b) Ph. Rock Dryer	02020	6.48	394.8	3069.6	30.48	344.	14.79	1.82
3)	C.F. CHEMICALS								
	a) SPA Plt. 1	03010	4.31	408.198	3082.678	9.14	355.	15.78	.433
	b) SAP No. 7	03020	41.99	408.198	3082.678	61.57	350.8	9.77	2.44
	c) SAP No. 2	03030	-110.6	408.198	3082.678	30.48	350.	4.6	1.68
	d) SAP No. 1	03040	114.66	408.198	3082.678	30.48	347.	7.27	1.68
	e) SAP No. 6	03050	25.19	408.198	3082.678	63.4	370.	7.28	2.13
	f) SAP No. 3	03060	42.0	408.198	3082.678	34.31	305.	18.9	1.24
	g) SAP No. 4	03070	55.18	408.198	3082.678	30.48	308.	20.2	1.22

TABLE 2
Continued

	h) SAP No. 5	03080	63.0	408.198	3082.678	63.4	361.	10.88	2.13
4)	DOLIME								
	a) Boiler	04010	4.52	404.813	3069.548	27.43	494.1	7.25	.61
	b) Dryer	04020	5.68	404.813	3069.548	27.43	333.	20.67	1.52
5)	ELECTROPHOS								
	a) Calciner	05010	6.24	405.6	3079.4	25.6	322.	8.01	2.13
6)	FARMLAND INDUSTRIES								
	a) SAP No. 4	06010	57.74	409.5	3079.5	30.48	305.	23.9	1.37
	b) SAP No. 2	06020	41.99	409.5	3079.5	30.48	311.	22.3	1.37
	c) SAP No. 1	06030	41.99	409.5	3079.5	30.48	311.	19.9	1.37
	d) SAP No. 3	06040	63.0	409.5	3079.5	30.48	301.	24.1	1.37
	e) Boiler	06050	4.58	409.5	3079.5	14.17	444.	12.66	1.22
7)	GARDINIER								
	a) R.Dryer	07010	17.6	415.3	3063.3	19.2	344.	8.96	2.89
	b) SAP No. 8	07020	91.87	363.4	3082.4	45.72	355.	8.63	2.44
	c) GTSP	07030	9.6	363.4	3082.4	38.4	328.	11.56	2.44
	d) SAP No. 7	07040	36.75	363.4	3082.4	45.72	355.	9.20	2.29
	e) Dryer	07050	28.89	363.4	3082.4	20.73	310.	13.12	1.07
	f) Boiler	07060	10.08	363.4	3082.4	18.29	589.	6.99	2.54
	g) Ph.A. Conc	07070	7.56	363.4	3082.4	23.77	345.	6.19	1.83
	h) No. 7 PAC	07080	6.56	363.4	3082.4	23.77	343.	6.8	1.83
	i) No. 8 PAC	07090	6.35	363.4	3082.4	23.77	343.	6.8	1.83
	j) SAP No.9	07100	54.6	363.4	3082.4	45.72	344.	12.5	2.74
	k) SAP 4,5,6	07110	-196.3	363.4	3082.4	22.6	322.	19.51	1.52
	l) SAP No. 7	07041	-50.71	363.4	3082.4	45.72	355.	9.2	2.29
	m) DAP P24	07120	4.29	363.4	3082.4	60.39	320	13.38	2.13

TABLE 2
Continued

10) KAISER								
a) Dryer	10010	1.23	401.5	3086.5	18.29	333.	11.9	.27
b) Dryer	10020	1.41	401.5	3086.5	21.34	311.	28.4	.46
11) MOBIL								
a) Calciner	11010	13.48	398.0	3085.3	30.48	366.	18.0	1.37
b) No. 3 Dryer	11020	7.35	398.0	3085.3	30.48	355.	7.74	1.46
c) No. 2 Dryer	11030	19.78	398.0	3085.3	25.9	346.	8.75	2.29
d) No. 1 Dryer	11040	15.9	398.0	3085.3	25.9	346.	12.86	2.29
e) No. 4 Dryer	11050	2.44	398.29	3084.29	25.9	339	16.05	2.29
12) ROYSTER								
a) SAP 1	12010	63.5	406.7	3085.2	60.96	366.	9.93	2.13
b) SAP 1	12011	-257.25	406.7	3085.2	60.96	366.	9.93	2.13
c) DAP Plt	12020	4.01	406.7	3085.2	31.09	316.	10.58	2.68
13) SWIFT-AGRI CHEM.								
a) SAP 1	13010	32.2	411.5	3074.2	30.79	358.	3.9	2.13
b) Dryer	13020	18.1	411.5	3074.2	18.29	339.	8.47	2.95
c) Dryer	13030	33.4	411.5	3074.2	18.75	340.	5.06	2.95
14) USS AGRI-CHEM.								
a) SAP 1	14010	41.9	413.2	3086.3	28.96	305.	7.5	2.12
b) R. Dryer	14020	3.41	413.2	3086.3	15.8	332.	10.01	1.83
c) DAP Plt	14030	3.93	413.2	3086.3	40.54	305.	12.69	2.13
d) R. Dryer	14040	9.20	416.0	3069.0	25.6	332.	16.26	1.52
e) R. Dryer	14050	9.20	416.0	3069.0	25.6	332.	16.26	1.52
f) GTSP	14060	28.35	416.0	3069.0	28.35	330.	17.6	1.52
g) SAP 2	14070	-73.5	416.0	3069.0	60.96	304	6.5	30.5
h) New SAP	14080	92.40	416.0	3069.0	53.34	355	9.4	2.59

TABLE 2
Continued

20)	CAMDEN GRAIN								
	a) Furnace	20010	29.8	360.2	3102.5	30.18	344.	18.62	.66
	b) Furance	20020	10.48	360.2	3102.5	30.18	344.	18.1	.66
21)	CHLORIDE METALS								
	a) Furnace	21010	12.98	361.8	3088.3	30.17	397.4	22.86	.61
	b) Furnace	21020	8.04	361.8	3088.3	29.87	354.	17.2	.61
22)	CONCRETE PRODUCTS								
	a) Boiler	22010	5.9	362.8	3097.9	9.14	455.	5.39	.406
23)	DELMONTE	23010	4.22	359.6	3093.05	11.89	494.1	3.0	1.36
24)	GEN. PORT. CEMENT								
	a) Kiln No. 6	24010	100.8	358.0	3090.6	44.35	473.	6.6	4.72
	b) Kiln No. 4	24020	62.99	358.0	3090.6	35.97	505.2	17.61	2.74
	c) Kiln No. 5	24030	69.3	358.0	3090.6	45.42	494.1	5.8	3.81
25)	GULF COAST LEAD								
	a) Furance	25010	22.0	363.9	3093.85	30.48	350.	22.4	.61
26)	MACASPHALT								
	a) Heater	26010	17.83	363.5	3066.8	7.62	408.	15.06	1.52
	b) Plant	26020	11.05	423.13	3101.53	12.19	327.	2.26	3.05
27)	FLORIDA POWER & LIGHT								
	a) Station 1	27010	732.9	367.1	3053.8	152.1	425.	20.67	7.925
	b) Station 2	27020	732.9	367.1	3053.8	152.1	425.	20.67	7.925
28)	ADAMS PACKING								
	a) Dryer	28010	2.89	421.70	3104.2	28.04	347.	22.93	1.43

emission limitations on the basis of all similar units at a plant is recommended in order to avoid unequal application of this type of limitation to plants with the same total emission potential but different size units. Upon establishing the total mass limitation, individual source emissions will be determined by prorating the mass emission total on the basis of the percentage weight input to each source process.

(3) Fugitive Particulate – No person shall cause, let, permit, suffer or allow the emissions of particulate matter, from any source whatsoever, including but not limited to vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially related activities such as loading, unloading, storing or handling, without taking reasonable precautions to prevent such emission, except particulate matter emitted in accordance with the weight process table (Table I), the visible emissions standards or specific source limiting standards specified in this chapter.

(4) Objectionable Odor Prohibited – No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

(5) Volatile organic compounds emissions or organic solvents emissions.

(a) No person shall store, pump, handle, process, load, unload or use in any process or installation volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department.

(b) All persons shall use reasonable care to avoid discharging, leaking, spilling, seeping, pouring, or dumping volatile organic compounds or organic solvents.

(6) Stationary sources – No person shall cause, let, permit, suffer, or allow to be discharged into the atmosphere emission from the following listed sources greater than any emission limiting standard given.

(a) Incinerators

1. The emission limiting standards for new incinerators with a charging rate of fifty or more tons per day are:

a. Particulate matter – 0.08 grains per standard cubic foot dry gas corrected to 50 percent excess air.

b. Odor – there shall be no objectionable odor.

2. The emission limiting standards for new incinerators with a charging rate of less than fifty tons per day are:

a. Visible emissions – no visible emissions except, visible emissions are allowable for up to three minutes in any hour at densities up to but not more than, a density of Ringelmann Number 1. (Opacity of 20 percent)

b. Odor – there shall be no objectionable odor.

3. As soon as possible, but not later than July 1, 1975, existing incinerators shall comply with the standards for new incinerators except that the particulate matter emission limiting standard for existing incinerators with a charging rate of fifty or more tons per day shall be 0.1 grains per standard cubic foot of dry gas corrected to 50 percent excess air.

(b) Sulfuric Acid Plants – the emission limiting standards for sulfuric acid plants are:

1. Existing Plants

a. Sulfur dioxide (SO_2) – ten pounds of SO_2 per ton of 100 percent H_2SO_4 produced, as expeditiously as possible but not later than July 1, 1975; in the Florida portion of the Jacksonville, Florida – Brunswick, Georgia, Interstate Air Quality Control Region as defined in 40 C.F.R. Section 81.91, twenty-nine pounds of SO_2 per ton of 100 percent H_2SO_4 produced as expeditiously as possible but not later than July 1, 1975.

b. A plume with visibility of no greater than 10 percent opacity.

2. New Plants

a. Sulfur dioxide – four pounds of SO_2 per ton of 100 percent H_2SO_4 produced.

b. Acid Mist – 0.15 pounds per ton of 100 percent acid produced.

c. A plume with visibility of no greater than 10 percent opacity.

(c) Phosphate Processing – the emission limiting standards for phosphate processing are:

1. Fluorides (water soluble or gaseous-atomic weight 19) the following quantities expressed as pounds of fluoride per ton of phosphatic materials input to the system, expressed as tons of P_2O_5 for:

a. New plants or plant sections:

a 1. Wet process phosphoric acid production, and auxiliary equipment – 0.02 pounds of F per ton of P_2O_5.

a 2. Run of pile triple super phosphate mixing belt and den and auxiliary equipment – 0.05 pounds of F per ton of P_2O_5.

a 3. Run of pile triple super phosphate curing or storage process and auxiliary equipment – 0.12 pounds of F per ton of P_2O_5.

a 4. Granular triple super phosphate production and auxiliary equipment.

i. Granular triple super phosphate made by granulating run-of-pile triple super phosphate 0.06 pounds of F per ton of P_2O_5.

ii. Granular triple super phosphate made from phosphoric acid and phosphate rock slurry – 0.15 pounds of F per ton of P_2O_5.

a 5. Granular triple super phosphate storage and auxiliary equipment – 0.05 pounds of F per ton of P_2O_5.

a 6. Di ammonium phosphate production and auxiliary equipment – 0.06 pounds of F per ton of P_2O_5.

a 7. Calcining or other thermal phosphate rock processing and auxiliary equipment excepting phosphate rock drying and defluorinating – 0.05 pounds of F per ton of P_2O_5.

a 8. Defluorinating phosphate rock by thermal processing and auxiliary equipment – 0.37 pounds of F per ton of P_2O_5.

a 9. All plants, plant sections or unit operations and auxiliary equipment not listed in a.1 to a.8 will comply with best technology pursuant to Section 2.03(1) of this rule.

b. Existing plants or plant sections. Emissions shall comply with above section, 17-2.04(6)(c) 1.a., for existing plants as expeditiously as possible but not later than July 1, 1975 or

b 1. Where a plant complex exists with an operating wet process phosphoric acid section (including any items 17-2.04(6) 1., a., a.1. through a.6. above) and other plant sections processing or handling phosphoric acid or products or phosphoric acid processing, the total emission of the entire complex may not exceed 0.4 pounds of F

PEER file - 1987

TABLE 5-1

AIR POLLUTION SOURCES INCLUDED IN AIR QUALITY MODELING

CENTRAL PHOSPHATES, INC.
HILLSBOROUGH COUNTY, FLORIDA

Description		ID	SO2 (g/s)	X-Coord (km)	Y-Coord (km)	Ht. (m)	Temp. (°K)	Vel. (m/s)	Dia. (m)
CPI	C H2SO4 (Exist)	623	37.80	388.155	3116.034	60.52	352.0	13.00	2.44
CPI	D H2SO4 (Exist)	624	37.80	388.211	3116.047	60.52	352.0	13.00	2.44
CPI	A H2SO4 (Exist)	611	-52.50	388.076	3116.011	18.75	316.0	18.75	1.52
CPI	B H2SO4 (Exist)	612	-52.50	388.085	3115.976	18.75	316.0	18.75	1.52
CPI	A H2SO4 (Prop)	621	35.83	388.076	3116.011	27.44	316.0	19.69	1.52
CPI	B H2SO4 (Prop)	622	35.83	388.085	3115.976	27.44	316.0	19.69	1.52
CPI	C H2SO4 (Exist)	633	-37.80	388.155	3116.034	60.52	352.0	13.00	2.44
CPI	D H2SO4 (Exist)	634	-37.80	388.211	3116.047	60.52	352.0	13.00	2.44
CPI	C H2SO4 (Prop)	643	50.40	388.155	3116.034	60.52	352.0	16.40	2.44
CPI	D H2SO4 (Prop)	644	50.40	388.211	3116.047	60.52	352.0	16.40	2.44
AGRICO	DAP	301	7.36	407.380	3071.700	38.10	328.0	14.60	3.10
AGRICO	#12 H2SO4	302	42.00	407.580	3071.340	45.70	350.0	9.50	2.90
AMAX	Big 4 - Rock Dryer	402	16.35	394.850	3069.770	30.50	334.0	7.26	1.82
BPI	Brewster (Composite)	501	13.40	389.500	3068.000	38.10	339.0	15.20	2.44
CF.Bartow	Ret. H2SO4	601	-110.60	408.500	3083.000	30.50	350.0	4.60	1.68
CF.Bartow	DAP	602	4.30	408.500	3083.000	9.10	450.0	22.50	0.70
CF.Bartow	#7 H2SO4	603	52.90	408.500	3083.000	67.10	351.0	9.80	2.40
CLM	Chloride Metals	701	21.02	361.800	3088.300	30.00	375.0	20.00	0.61
CONSERVE	Conserve	801	-15.20	398.400	3084.200	30.50	308.0	18.90	1.80
CONSERVE	Conserve	802	42.00	398.400	3084.200	45.70	352.0	10.30	2.30
EVANS	Dryer	1101	9.37	383.300	3135.800	25.90	346.0	17.30	1.00
FARMLAND	2 53 26 Farmland	1201	2.30	409.500	3079.500	14.00	444.0	12.70	1.20
FCS	Kiln and Power Plant	1301	98.41	360.008	3162.392	91.50	389.0	14.66	4.88
FPC	Crystal River	1401	2017.60	334.400	3204.510	182.90	398.0	27.40	6.90
FPC	Crystal River	1402	-2173.00	334.400	3204.510	152.40	420.0	45.60	4.60
FPC	Higgins Peak	1414	-121.84	336.500	3098.300	16.80	727.0	61.00	4.60
FPL	FPL Manatee (Comp)	1501	824.82	367.100	3053.800	152.10	425.0	14.90	7.90
GARDINIE	7/8 H2SO4	1602	5.81	363.200	3082.300	45.60	339.0	12.20	2.35
IMC	IMC Noralyn	1901	30.64	414.700	3080.300	13.70	330.0	40.40	1.22
LAKELAND	Lakeland Utilities	2001	393.60	408.500	3105.800	76.20	354.0	19.70	4.90
LAKELAND	Lakeland Utilities	2002	21.20	408.500	3105.800	47.70	389.0	11.70	3.10
MOBIL	Mobil	2201	2.40	398.000	3085.300	25.90	339.0	16.00	2.30
NEWWALES	#4 H2SO4	2301	63.00	396.560	3078.640	60.70	349.7	15.55	2.60
NEWWALES	AFI	2302	3.78	396.750	3079.350	52.40	321.9	13.00	2.40
NEWWALES	MULTIPHOS	2303	5.36	396.830	3079.430	52.40	319.1	7.10	2.40
NEWWALES	#2 DAP	2304	5.54	396.450	3079.150	36.60	319.1	20.80	1.80
NEWWALES	#5 H2SO4	2305	63.00	396.490	3078.640	60.70	349.7	15.55	2.60
NEWWALES	Rock Dryer	2306	-34.27	396.680	3078.860	21.04	347.0	18.56	2.13
NEWWALES	#1-3 H2SO4 Exist	2316	-146.00	396.530	3078.750	61.00	350.2	11.14	2.50
NEWWALES	#1-3 H2SO4 Mod	2318	189.00	396.530	3078.750	61.00	350.2	16.71	2.50

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary | Dr. Richard Garrity, Deputy Assistant Secretary

PERMITTEE:
Seminole Fertilizer Corporation
Bartow Plant
Post Office Box 471
Bartow, Florida 33830

PERMIT/CERTIFICATION
Permit No.: A053-176564
County: Polk
Expiration Date: 04-23-95
Project: Two Phosphate Rock Dryers

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

For the operation of two phosphate rock dryers, one rotary and one fluid bed. The dryers are fired on natural gas or fuel oil with a maximum of 2.4% sulfur. Particulate emissions are controlled by a series of dry cyclones for each dryer followed by one wet impingement scrubber for the fluid bed dryer and two wet impingement scrubbers for the rotary dryer. The exhaust from the wet scrubbers of each dryer is vented to a two unit MikroPul Division "Elekrofil" Wet Electrostatic Precipitator equipped with two stacks, R-1 (east), and R-2 (west).

Location: 3/4 mile north of State Road 60, 4 miles west of Bartow, Polk County

UTM: 17-409.8 E 3086.8 N Neds No.: 0046 Point ID:
R-1 - 31
R-2 - 39

Replaces Permit No.: A053-99819

PERMITTEE:
Seminole Fertilizer Corporation
P.O. Box 471
Bartow, FL 33830

PERMIT/CERTIFICATION
Permit No: AO53-176431
County: Polk
Expiration Date: 04/11/93
Project: Sulfuric Acid Plant #3

SPECIFIC CONDITIONS:

1. A part of this permit is the attached 15 General Conditions.

2. Visible Emissions shall not exceed 10% opacity. [Rule 17-2.600(2)(a)2.a., F.A.C.].

3. Sulfur Dioxide emissions shall not exceed the lesser of
A. 10 pounds per ton of 100% acid produced, or
B. 460 pounds per hour.
[Rule 17-2.600(2)(a)2.b., F.A.C.].

During any time that Sulfuric Acid Plant #4, #5, or #6 exceeds a production rate of 70 tons per hour of 100% H_2SO_4, the sulfur dioxide emissions from Sulfuric Acid Plant #3 shall not exceed the lesser of
C. 7.4 pounds per ton of 100% acid produced, or
D. 340 pounds per hour.
[Reference previous permit and 1985 correspondence].

4. Acid Mist emissions shall not exceed the lesser of
A. 0.3 pounds per ton of 100% acid produced, or
B. 13.8 pounds per hour.
[Rule 17-2.600(2)(a)2.c., F.A.C.].

5. The maximum permitted production rate is 46 tons per hour of 100% H_2SO_4.

6. Test the emissions for the following pollutant(s) within 30 days of startup, and annually thereafter, and submit a copy of the test data to the Air Section of the Southwest District Office of the Department within 45 days of such testing [Rule 17-2.700(2), F.A.C.]:

(X) Opacity
(X) Sulfur Dioxide
(X) Acid Mist

7. Testing of emissions must be accomplished within ±10% of the permitted maximum production rate of 46 tons per hour of 100% H_2SO_4. The actual production rate shall be specified in each test result. A compliance test submitted at a production rate less than 90% of the permitted maximum production rate will automatically constitute an amended permit at the lesser rate until another test showing compliance at a higher rate is submitted. Failure to submit the actual production rate and actual operating conditions may invalidate the test data and fail to provide reasonable assurance of compliance. [Rule 17-4.070(3), F.A.C.].

Mobil Mining and Minerals Company

P.O. BOX 311
NICHOLS, FLORIDA 33863-0311
TELEPHONE (813) 425-6200

CERTIFIED MAIL #P-426-330-819
RETURN RECEIPT REQUESTED

May 4, 1992

Mr. Scott Sheplak
Florida Department of Environmental Regulation
4520 Oak Fair Blvd.
Tampa, FL 33610-7347

Re: Non-Renewal of Air Emission
Sources for Mobil
Nichols Preparation Complex

Dear Mr. Sheplak:

Below is a list of the sources which Mobil will no longer use at Mobil's Nichols complex. They are or will be dismantled.

The sources which will not be renewed are outlined below:

(1) Raymond Mills 1 and 2	AO-53-136223 ✓
(2) Raymond Mills 3 and 4	AO-53-136224 ✓
(3) Calciner Heat Recovery	AO-53-149844 ✓
(4) Bin 35-A Baghouse *	AO-53-162166
(5) Calciner	AO-53-136222 ✓
(6) 75 HP Titusville Boiler	AO-53-117006 ✓

-13.899 #/hr
see attached

* The 35-A bin permit will be allowed to lapse as that bin is being incorporated into the Dry Rock Storage Building dust control system through a construction permit modification.

If you have any questions, please advise.

75 HP x (3.352 x 10⁴) BTU/HP-hr x 1/18300 BTU/lb x (0.025 x 2) lb SO₂/lb x 0.176 = 0.869 #/hr

Sincerely,

T. L. Snyder,
Environmental Engineer

mal/AIR-EMIS
encl.

A053-57099
PAID JUN 18 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

D.E.R.

JUN 18 1982
SOUTHWEST DISTRICT
TAMPA

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Phosphate Rock Calciner [ ] New[1] [ ] Existing[1]

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

COMPANY NAME: Mobil Chemical Company COUNTY: Polk

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) No. 6 oil/natural gas fired, phosphate rock calciner with Venturi scrubber

SOURCE LOCATION: Street Highway 676 City Nichols, FL 33863

UTM: East 17-398.4 North 3085.3

Latitude ____ ° ____ ' ____ "N Longitude ____ ° ____ ' ____ "W

APPLICANT NAME AND TITLE: K. D. Fetrow, Manager of Manufacturing

APPLICANT ADDRESS: P. O. Box 311, Nichols, Florida 33863

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of MOBIL CHEMICAL COMPANY

I certify that the statements made in this application for a Operating - Renewal 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: R. E. Schulz for
K. D. Fetrow, Manager of Manufacturing
Name and Title (Please Type)

Date: 6/18/82 Telephone No. (813) 425-3011

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.

Signed:
Robert W. McMaster
Name (Please Type)

(Affix Seal)

Mobil Chemical Company
Company Name (Please Type)

P. O. Box 311, Nichols, Florida 33863
Mailing Address (Please Type)

Florida Registration No. 17260 Date: 5/14/82 Telephone No. (813) 425-3011

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

MOBIL CHEMICAL COMPANY

PHOSPHATE ROCK CALCINER

PROCESS INPUT RATE:

Production from the Calciner is weighed by belt scales as it passes to storage. The output tons are approximately equal to input tons (Neglecting loss of weight in calcining and dusting).

EFFICIENCY ESTIMATION:

PARTICULATE: Past data shows what average particulate loading to the scrubber is 0.26 grains per ACFM.

$$\text{INLET} = \frac{0.26 \times 38.119 \times 60}{7000} = 85 \text{ lbs./hr.}$$

OUTLET = 10.68 lbs./hr.

$$\text{EFFICIENCY} = 100 \times \frac{85.0 - 10.63}{85.} = 87.5\ \%$$

FLUORINE: Past data shows that average fluorine loading to the scrubber is 0.056 grains per ACFM

$$\text{INLET} = \frac{0.056 \times 38.119 \times 60}{7000} = 18.3 \text{ lbs./hr.}$$

OUTLET = 0.203 lbs./hr.

$$\text{EFFICIENCY} = 100 \times \frac{18.3 - 0.203}{18.3} = 98.9\ \%$$

SO_2:

on oil

$$\text{INLET} = 0.025 \times 4000 \times \frac{64}{32} = 200 \text{ lbs./hr.}$$

OUTLET = 110.2 lbs./hr.

$$\text{EFFICIENCY} = 100 \times \frac{200 - 110.2}{200} = 44.9\ \%$$

September 24, 1980

USS Agri-Chemicals
Post Office Box 150
Bartow, Florida 33830

Attention: Mr. Basil Powell

Re: Evaluation of Ambient
Sulfur Dioxide Concentrations
Attributable to All
USSAC Emission Sources
After Proposed Modifications
Are Completed

Gentlemen:

As requested by the Florida Department of Environmental Regulation, attached is a modeling evaluation of ambient sulufur dioxide concentrations resulting from simultaneous operation of the propoed new sulfuric acid plant and existing emission sources. Concentrations predicted are shown in comparison with applicable ambient air quality standards.

Please call if there are any questions regarding this report.

Yours very truly,

DAMES & MOORE

James W. Little

James W. Little
Senior Air Quality Analyst

JWL:ht

125.3 lb/h. Therefore, approximately 31 percent of the original sulfur present in the fuel was removed.

The rock drying rate during the test was 235 ton/h compared to the allowable rate of 250 ton/h. For modeling purposes, the measured SO_2 emission rate and the measured volumetric flow were scaled upward to reflect the amount of fuel oil which would be used at the allowable drying rate. Resulting emission characteristics are shown in Table 1. (It should be noted that 24-hour and annual modeling results based on allowable hourly drying rates are probably conservative because actual average drying rates are less than allowable and the dryer does not run 24 hours per day.)

Existing GTSP Plant

The existing GTSP plant includes dryers which use natural gas as a fuel when available and fuel oil otherwise. SO_2 emissions during fuel oil combustion can be calculated based on fuel sulfur content; but, as is the case with the rock dryer, this is not the most accurate method because sulfur removal is possible before combustion products are released to the atmosphere. Removal can occur through retention on the product being dryed and through absorption in the scrubber used for control of other emissions.

To determine sulfur removal efficiency, a recent test was run on one of the GTSP production trains. (The two trains are identical, so it is assumed that a test run on one train will be valid for both.) No. 6 fuel oil was burned at a rate of 3.1 gal/min during the test. This fuel contained 2.48 percent sulfur by weight and had a density of 8.155 lb/gal. If all the sulfur in the fuel had been emitted as SO_2, the resultant emission rate would have been 75.2 lb/h. The actual measured emission rate, however, was 72.5 lb/h, representing a sulfur removal efficiency of a little more than 3 percent. The large difference in sulfur removal efficiency between the GTSP plant and the rock dryer can be attributed primarily to differences in the pH of scrubber water. The GTSP plant scrubber uses recycled acid pond water with a pH of 4 or less, whereas the pH of rock dryer scrubber water is about 7.

3 GTSP × 2 plants

ATTACHMENT 2

FAXED TO CLEVE & JOHN WATSON on 9/11/92 PR

VISCREEN - LEVEL 1 OUTPUT

SUMMARY OF ALL EMISSIONS AND METEOROLOGICAL INPUT

Emissions for acid plants: in G /S : Total emissions of 4,526 H_2SO_4 Plants (not just the incremental)

Particulate	=	0.000000E+00
NOx	=	4.210000
Priaary NO2	=	0.000000E+00
Soot	=	0.000000E+00
Priaary SO4	=	5.390000 (Sulfuric Acid Mist)

Meteorological and Ambient Data for chass

Wind speed (m/s)	=	1.000000
Stability Index	=	6
Visual Range (km)	=	25.000000
Ozone Conc. (ppm)	=	4.000000E-02
Plume Offset Angle	=	11.250000 degrees

Distances Between acid plants and chass

Source-Observer	=	105.000000 km
Min. Source-Class I	=	105.000000 km
Max. Source-Class I	=	119.000000 km

Are these input values ready for execution (y/n)?

OVERALL RESULTS OF PLUME VISIBILITY SCREENING

SOURCE: acid plants
CLASS I AREA: chass

INSIDE class I area --
Plume delta E DOES NOT EXCEED screening criterion for SKY background
Plume delta E DOES NOT EXCEED screening criterion for TERRAIN background
Plume contrast DOES NOT EXCEED screening criterion for SKY background
Plume contrast DOES NOT EXCEED screening criterion for TERRAIN background

OUTSIDE class I area --
Plume delta E DOES NOT EXCEED screening criterion for SKY background
Plume delta E DOES NOT EXCEED screening criterion for TERRAIN background
Plume contrast DOES NOT EXCEED screening criterion for SKY background
Plume contrast DOES NOT EXCEED screening criterion for TERRAIN background

SCREENING CRITERIA: DELTA E = 2.0
GREEN CONTRAST = .050

Do you want to see calculated results for lines of
sight with maxiaum delta E (y/n)?

KOOGLER & ASSOCIATES
ENVIRONMENTAL SERVICES
4014 NW THIRTEENTH STREET
GAINESVILLE, FLORIDA 32609
904/377-5822 • FAX 377-7158

KA 203-92-01

October 22, 1992

Mr. Cleve Holladay
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Seminole Fertilizer Corporation
Proposed Sulfuric Acid Production Increases
Permit File No. AC53-216288, PSD-FL-191

Dear Mr. Holladay:

This is a follow up to our conversation yesterday on the Class I area sulfur dioxide PSD increment consumption associated with the above project.

To determine the Class I area SO_2 PSD increment consumption resulting from the proposed project, the following Seminole sources (numbered in accordance with the emission inventory submitted to FDER on May 4, 1992) were modeled using ISC-ST2 dispersion model.

1. Sulfuric Acid Plants 1 and 2 (Source No. 660 and 670)

2. Sulfuric Acid Plant 3 (Source No. 680)

3. Sulfuric Acid Plants 4, 5, and 6 (Source Nos. 700, 710, 720)

4. Rock Dryer (Source No. 730)

Seminole proposes to surrender the existing permit for Sulfuric Acid Plant 3 (A052-176431) in order to expand the PSD increment available. In view of the substantial PSD increment expansion offered by this source, it was decided with FDER concurrence to evaluate the impacts of Seminole alone on the Class I area.

The dispersion modeling utilized the Seminole source inventory data supplied to FDER under separate cover. The 1986 Tampa meteorological data were used in the modeling to be consistent with the initial modeling submitted to FDER.

The ISC-ST2 modeling results indicate 24-hour SO_2 impacts at the 13 discrete Class I area receptors to be zero or less. The modeling output is attached.

It is our understanding that with this information all the issues raised by FDER and National Park Service concerning this project have been satisfied. Your prompt review of the project will be greatly appreciated as Seminole is under a restrictive time frame regarding this project.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

KOOGLER & ASSOCIATES

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

JBK:PAR:wa
Enc.

c: Mr. M. Martinasek, Seminole
M. Hanks
C. Holladay
B. Thomas, SW Dist
J. Harple, EPA
B. Mitchell, NPS
L. Novak, Polk Co.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.
8. "Upper Bound" Values for Supersquat Buildings.
9. No Exponential Decay for RURAL Mode

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 24-HR
and Calculates PERIOD Averages

**This Run Includes: 4 Source(s); 1 Source Group(s); and 13 Receptor(s)

**The Model Assumes A Pollutant Type of: SO2

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = 0.10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: SEMF.INP ; **Output Print File: SEMF.OUT
**Detailed Error/Message File: ERRORS.OUT

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	1 , 2 , 3 , 4 ,

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
1	0	-.21600E+03	409770.0	3086990.0	0.0	45.72	352.00	16.50	1.37	NO	
2	0	-.52500E+02	409770.0	3086990.0	0.0	45.72	311.00	16.70	1.52	NO	
3	0	0.14377E+03	409770.0	3086990.0	0.0	61.00	347.00	14.20	2.06	NO	
4	0	-.39660E+02	409770.0	3086990.0	0.0	15.24	327.00	17.32	2.04	NO	

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(340300.0,	3165700.0,	0.0,	0.0);	(340300.0,	3167700.0,	0.0,	0.0);
(340300.0,	3169800.0,	0.0,	0.0);	(340700.0,	3171900.0,	0.0,	0.0);
(342000.0,	3174000.0,	0.0,	0.0);	(343000.0,	3176200.0,	0.0,	0.0);
(343700.0,	3178300.0,	0.0,	0.0);	(342400.0,	3180600.0,	0.0,	0.0);
(341100.0,	3183400.0,	0.0,	0.0);	(339000.0,	3183400.0,	0.0,	0.0);
(336500.0,	3183400.0,	0.0,	0.0);	(334000.0,	3183400.0,	0.0,	0.0);
(331500.0,	3183400.0,	0.0,	0.0);				

*** MODELING OPTIONS USED: CONC   RURAL FLAT   DFAULT

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54,   3.09,   5.14,   8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\MET\TPA\TPAPRE86.ASC FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1)
SURFACE STATION NO.: 12842 UPPER AIR STATION NO.: 12842
NAME: TAMPA, NAME: TAMPA,
YEAR: 1986 YEAR: 1986

YEAR	MONTH	DAY	HOUR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN
86	1	1	1	351.0	4.12	291.5	4	416.0	416.0
86	1	1	2	348.0	3.60	292.6	4	416.0	416.0
86	1	1	3	174.0	4.63	291.5	4	416.0	416.0
86	1	1	4	293.0	3.09	289.8	4	416.0	416.0
86	1	1	5	3.0	1.54	289.8	4	416.0	416.0
86	1	1	6	322.0	2.57	289.8	4	416.0	416.0
86	1	1	7	345.0	3.60	289.8	4	416.0	416.0
86	1	1	8	343.0	2.57	290.4	4	416.0	416.0
86	1	1	9	337.0	3.09	290.9	4	416.0	416.0
86	1	1	10	341.0	3.09	292.6	3	416.0	416.0
86	1	1	11	4.0	2.57	294.3	3	416.0	416.0
86	1	1	12	356.0	3.09	294.8	2	416.0	416.0
86	1	1	13	23.0	2.57	295.9	2	416.0	416.0
86	1	1	14	59.0	2.57	294.8	3	416.0	416.0
86	1	1	15	42.0	3.09	293.2	4	416.0	416.0
86	1	1	16	54.0	1.54	293.7	4	416.0	416.0
86	1	1	17	51.0	2.06	293.2	4	416.0	416.0
86	1	1	18	47.0	0.00	293.2	5	419.0	418.0
86	1	1	19	134.0	2.06	291.5	6	428.0	424.0
86	1	1	20	127.0	0.00	290.9	6	437.0	430.0
86	1	1	21	130.0	0.00	290.9	6	447.0	435.0
86	1	1	22	132.0	0.00	289.8	6	456.0	441.0
86	1	1	23	270.0	1.54	290.9	6	465.0	447.0
86	1	1	24	290.0	2.06	290.4	6	474.0	453.0

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
340300.00	3165700.00	-0.25868	340300.00	3167700.00	-0.23643
340300.00	3169800.00	-0.21329	340700.00	3171900.00	-0.19613
342000.00	3174000.00	-0.18585	343000.00	3176200.00	-0.17513
343700.00	3178300.00	-0.17144	342400.00	3180600.00	-0.16776
341100.00	3183400.00	-0.16530	339000.00	3183400.00	-0.15920
336500.00	3183400.00	-0.16199	334000.00	3183400.00	-0.16597
331500.00	3183400.00	-0.16876			

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
340300.00	3165700.00	0.00000	(0)	340300.00	3167700.00	0.00000	(0)
340300.00	3169800.00	0.00000	(0)	340700.00	3171900.00	0.00000	(0)
342000.00	3174000.00	0.00000	(0)	343000.00	3176200.00	0.00000	(0)
343700.00	3178300.00	0.00000	(0)	342400.00	3180600.00	0.00000	(0)
341100.00	3183400.00	0.00000	(0)	339000.00	3183400.00	0.00000	(0)
336500.00	3183400.00	0.00000	(0)	334000.00	3183400.00	0.00000	(0)
331500.00	3183400.00	0.00000	(0)				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE 2ND HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
340300.00	3165700.00	0.00000	(0)	340300.00	3167700.00	0.00000	(0)
340300.00	3169800.00	0.00000	(0)	340700.00	3171900.00	0.00000	(0)
342000.00	3174000.00	0.00000	(0)	343000.00	3176200.00	0.00000	(0)
343700.00	3178300.00	0.00000	(0)	342400.00	3180600.00	0.00000	(0)
341100.00	3183400.00	0.00000	(0)	339000.00	3183400.00	0.00000	(0)
336500.00	3183400.00	0.00000	(0)	334000.00	3183400.00	0.00000	(0)
331500.00	3183400.00	0.00000	(0)				

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE MAXIMUM 50 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,YR) OF TYPE	RANK	CONC	(YYMMDDHH) AT	RECEPTOR (XR,YR) OF TYPE
1.	0.00000	(0) AT	(0.00, 0.00)	26.	0.00000	(0) AT	(0.00, 0.00)
2.	0.00000	(0) AT	(0.00, 0.00)	27.	0.00000	(0) AT	(0.00, 0.00)
3.	0.00000	(0) AT	(0.00, 0.00)	28.	0.00000	(0) AT	(0.00, 0.00)
4.	0.00000	(0) AT	(0.00, 0.00)	29.	0.00000	(0) AT	(0.00, 0.00)
5.	0.00000	(0) AT	(0.00, 0.00)	30.	0.00000	(0) AT	(0.00, 0.00)
6.	0.00000	(0) AT	(0.00, 0.00)	31.	0.00000	(0) AT	(0.00, 0.00)
7.	0.00000	(0) AT	(0.00, 0.00)	32.	0.00000	(0) AT	(0.00, 0.00)
8.	0.00000	(0) AT	(0.00, 0.00)	33.	0.00000	(0) AT	(0.00, 0.00)
9.	0.00000	(0) AT	(0.00, 0.00)	34.	0.00000	(0) AT	(0.00, 0.00)
10.	0.00000	(0) AT	(0.00, 0.00)	35.	0.00000	(0) AT	(0.00, 0.00)
11.	0.00000	(0) AT	(0.00, 0.00)	36.	0.00000	(0) AT	(0.00, 0.00)
12.	0.00000	(0) AT	(0.00, 0.00)	37.	0.00000	(0) AT	(0.00, 0.00)
13.	0.00000	(0) AT	(0.00, 0.00)	38.	0.00000	(0) AT	(0.00, 0.00)
14.	0.00000	(0) AT	(0.00, 0.00)	39.	0.00000	(0) AT	(0.00, 0.00)
15.	0.00000	(0) AT	(0.00, 0.00)	40.	0.00000	(0) AT	(0.00, 0.00)
16.	0.00000	(0) AT	(0.00, 0.00)	41.	0.00000	(0) AT	(0.00, 0.00)
17.	0.00000	(0) AT	(0.00, 0.00)	42.	0.00000	(0) AT	(0.00, 0.00)
18.	0.00000	(0) AT	(0.00, 0.00)	43.	0.00000	(0) AT	(0.00, 0.00)
19.	0.00000	(0) AT	(0.00, 0.00)	44.	0.00000	(0) AT	(0.00, 0.00)
20.	0.00000	(0) AT	(0.00, 0.00)	45.	0.00000	(0) AT	(0.00, 0.00)
21.	0.00000	(0) AT	(0.00, 0.00)	46.	0.00000	(0) AT	(0.00, 0.00)
22.	0.00000	(0) AT	(0.00, 0.00)	47.	0.00000	(0) AT	(0.00, 0.00)
23.	0.00000	(0) AT	(0.00, 0.00)	48.	0.00000	(0) AT	(0.00, 0.00)
24.	0.00000	(0) AT	(0.00, 0.00)	49.	0.00000	(0) AT	(0.00, 0.00)
25.	0.00000	(0) AT	(0.00, 0.00)	50.	0.00000	(0) AT	(0.00, 0.00)

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00000 AT (	0.00,	0.00,	0.00,	0.00)		
	2ND HIGHEST VALUE IS	0.00000 AT (	0.00,	0.00,	0.00,	0.00)		
	3RD HIGHEST VALUE IS	0.00000 AT (	0.00,	0.00,	0.00,	0.00)		
	4TH HIGHEST VALUE IS	0.00000 AT (	0.00,	0.00,	0.00,	0.00)		
	5TH HIGHEST VALUE IS	0.00000 AT (	0.00,	0.00,	0.00,	0.00)		
	6TH HIGHEST VALUE IS	0.00000 AT (	0.00,	0.00,	0.00,	0.00)		

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF SO2 IN (MICROGRAMS/CUBIC-METER) **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	0.00000	ON 0:	AT (0.00,	0.00,	0.00,	0.00)		
	HIGH 2ND HIGH VALUE IS	0.00000	ON 0:	AT (0.00,	0.00,	0.00,	0.00)		

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** MODELING OPTIONS USED: CONC RURAL FLAT DFAULT

*** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 816 Informational Message(s)

A Total of 816 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** ISCST2 Finishes Successfully ***
****

United States Department of the Interior
FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA
30303

October 8, 1992

Mr. C. H. Fancy
Chief, Bureau of Air Regulation
Florida Department of
Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

We have completed our review of Seminole Fertilizer Corporation's permit application regarding their proposal to increase the production rates of sulfuric acid plants 4, 5, and 6 at their Polk County facility. The Seminole facility is located 120km southeast of the Chassahowitzka Wilderness Area (WA), a Class I air quality area administered by the Fish and Wildlife Service. Seminole performed a dispersion modeling analysis which shows that while there are numerous modeled violations of the 24-hour Class I SO_2 increment at Chassahowitzka, the proposed project does not significantly contribute to an increment violation at the wilderness area.

Regarding control technology, we agree that Seminole's proposal to use double absorption to control sulfur dioxide (SO_2) emissions and fiber mist eliminators to control sulfuric acid mist (H_2SO_4) emissions represents best available control technology. While in other cases we have recommended that applicants be required to meet SO_2 and H_2SO_4 emission limits lower than the New Source Performance Standards (NSPS) for these pollutants, the actual emissions data submitted by Seminole indicate that emission rates vary greatly at the Polk County facility. Therefore, we agree that Seminole's proposal to meet NSPS is appropriate in this instance.

Seminole sufficiently addressed potential impacts to vegetation, soils, terrestrial wildlife, and visibility in the wilderness area from the proposed emissions. However, Seminole failed to assess the potential effects on freshwater creeks and related wildlife in the Chassahowitzka WA from acid deposition.

Nevertheless, based on the dispersion modeling results, we do not anticipate that Class I area resources will be adversely affected by emissions from the proposed project.

If you have any questions regarding this matter, please contact Ms. Tonnie Maniero of our Air Quality Branch in Denver at 303/969-2071.

Sincerely yours,

John R. Eadie

John R. Eadie
Acting Regional Director

cc:
Jewell Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxic Management Division
U.S. EPA, Region 4
345 Courtland Street, NE.
Atlanta, Georgia 30365

cc: M. Hanks
C. Holladay, SW Dist
B. Thomas, KYA
G. Kooger, Polk Co.
J. Noval,
CHF/JB/PL

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL # of pages ▶ 2

To CLEVE HOLLADAY	From JOHN NOTAR
Dept./Agency FDER	Phone #
Fax # 904-922-6979	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

DRAFT

SEP 10 1992

Mr. C.H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

We have reviewed for completeness the Seminole Fertilizer Corporation's permit application and related information regarding a proposed major modification to its facility in Polk County, Florida. The Seminole facility is located approximately 112 km southeast of the Chassahowitzka Wilderness Area (WA), a Class I air quality area administered by the U.S. Fish and Wildlife Service. In general, we consider the Seminole permit application complete with respect to the Class I air quality dispersion modeling analysis. However, we have the following comments regarding the absence of a visibility analysis in air quality related values analyses contained in the permit application.

The applicant incorrectly states that sulfuric acid mist should not be considered in a visibility analysis by quoting from page 23 of EPA's "Workbook for Plume Visual Impact Screening and Analysis" EPA-450/4-88-015, September, 1988. The applicant correctly states that sulfur dioxide (SO_2) emissions are not required input for a VISCREEN visibility analysis, unless the source is greater than 200 km from the Class I area. The sulfuric acid mist emissions should be included into the VISCREEN modeling input data as "Primary Sulfate" emissions. Research indicates that the sulfuric acid emissions will convert rapidly to sulfate particles, which have an impact on visibility. The visibility analysis should include all particulate, nitrogen oxide, and sulfuric acid emissions which are subject to Prevention of Significant Deterioration, this includes existing as well as the proposed increased emissions.

We appreciate the opportunity to be involved in the completeness review of the Seminole application, and we hope that you find the above comments useful. We also reserve the right to submit additional comments during the official public comment period for this project. If you have any questions regarding these comments, please contact Tonnie Maniero of our Air Quality Branch in Denver at (303) 969-2071.

Sincerely,

James W. Pulliam, Jr.
Regional Director

cc: Jellell Harper, Chief
Air Enforcement Branch
Air, Pesticides and Toxic Management Division
U.S. EPA, Region 4
345 Courtland Street, NE
Atlanta, Georgia 30365

bcc:
FWS-REG. 4: AQC
FWS-REG. 6: Ty Berry
CHAS: Refuge Manager
AQD-DEN: John Notar, Maniero, Bunyak, Mitchell, Morse, Porter, Rolofson