UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

SEP 2 0 1999

4 APT-ARB

Mr. A. A. Linero, P.E.
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: PSD Permit Application for U.S. Sugar Corporation
Clewiston Mill located in Clewiston, Florida

Dear Mr. Linero:

Thank you for sending the PSD permit application for U.S. Sugar Corporation - Clewiston Mill dated July 7, 1999. The application is for the increase in operations of the sugar refinery and Boiler No. 4. This proposed facility modifications include the addition of 3 conditioning silos and a sugar/starch bin, the increase in hours of operation of 3 existing vacuum systems and the VHP dryer, and the increase in operation of Boiler No. 4. The boiler currently combusts bagasse as its primary fuel and fires No. 6 fuel oil as its backup fuel which has a limit of 500,000 gallons/year. U.S. Sugar proposes to increase the operation of Boiler No. 4 from 2.7133×10^{12} Btu/yr (160 days/yr) to 2.88×10^{12} Btu/yr (200 days/yr). Total emissions from the proposed project are above the thresholds requiring Prevention of Significant Deterioration (PSD) review for nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2), volatile organic compounds (VOC) and particulate matter (PM/PM_{10}).

Based on our review of the application and supplemental information (fax from Golder Associates to Jeff Koerner, FDEP dated August 30, 1999) provided to EPA, we have the following comments regarding the BACT analyses. Modeling comments will be provided in a separate letter.

1. According to the information EPA received in the fax from Golder Associates, U.S. Sugar is proposing No. 6 fuel oil with a sulfur content of 0.7 percent as BACT to control SO_2 emissions from Boiler No. 4 (pg. 2 of fax). However, each operating season, U.S. Sugar plans to burn fuel oil from a common tank which normally receives 2.5% sulfur (S) fuel oil and replace the oil burned in Boiler No. 4 with 0.7% S fuel oil. We do not agree with this method of operation. Regardless of what sulfur limit is finally determined to be BACT, U.S. Sugar is required to burn that specific fuel oil in Boiler No. 4 and not some fuel oil mixture with a higher sulfur content. Also in the faxed information, U.S. Sugar provided economic analyses for four different operating scenarios. Following are our comments on each:

a. The first scenario (replacing used oil from common tank with 0.7% S No. 6 fuel oil) is unacceptable to EPA because it does not achieve the requirement of actually burning 0.7% S fuel oil in Boiler No. 4. The economic analysis was based on purchasing only 103,032 gallons/year of 0.7% S No. 6 fuel oil. If this scenario proposal is changed so that all four boilers burn 0.7% S No. 6 fuel oil from the common tank, it would be acceptable to EPA.

b. The second scenario (using 0.7% S No. 6 fuel oil and installing a new tank) is acceptable to EPA, but was declared economically infeasible by U.S. Sugar. There were several items of the cost analysis that were incorrect which, once corrected, will bring the cost effectiveness down to a lower level. First, the use of a 10% interest rate is not consistent with the interest rate of 7% which is used in the *OAQPS Control Cost Manual (fifth edition, 1996)*. It was stated on page 6 of the fax that U.S. Sugar wishes to use the actual cost of borrowing money; however, this is inconsistent with the *OAQPS Control Cost Manual*. On page 2-15 of the *OAQPS Control Cost Manual*, it specifically states that the interest rate (7%) is a pretax marginal rate of return on private investment and is in keeping with current OAQPS guidelines and the Office of Management and Budget recommendation for use in regulatory analysis. If a value of 10% is appropriate for U.S. Sugar, detailed documentation should be provided to EPA. Second, it is unreasonable to assume that the life of a tank is only 10 years. This value should be reconsidered or documentation of a 10-year life span should be provided. Third, the baseline emissions for this economic analysis were based on 1.5% S fuel oil; however, this fuel is not actually burned in Boiler No. 4. The baseline emissions should be based on the maximum sulfur content (2.5%S) of the fuel that is actually burned in Boiler No. 4. Finally, cost effectiveness (dollars per ton removed) is not the only factor that should be considered when determining economic feasibility. The total annualized cost of a project should also be considered. In this case, the annualized cost calculated by U.S. Sugar is only about $39,000 and will decrease when the items listed above are corrected.

c. The third scenario (using 0.5% S No. 2 fuel oil and installing a new tank and replacement burners) is acceptable to EPA, but declared economically infeasible by U.S. Sugar. The incorrect items listed above for the second scenario also apply to the third scenario and should reduce the cost effectiveness and annualized cost.

d. The fourth scenario (using 0.05% S No. 2 fuel oil and installing a new tank and replacement burners) is acceptable to EPA, but declared economically infeasible by U.S. Sugar. The incorrect items listed above for the second scenario also apply to the fourth scenario and should reduce the cost effectiveness and annualized cost.

2. As indicated on page 2-8 of the permit application, FDEP is proposing to allow excess emissions of the granular carbon regeneration furnace (GCRF) during startup for up to 2 hours in any 24-hour period. It is EPA's policy that BACT applies during all normal operations and that automatic exemptions should not be granted for excess emissions. Startup and shutdown of process equipment are part of the normal operation of a source and should

be accounted for in the planning, design, and implementation of operating procedures for the process and control equipment. Accordingly, it is reasonable to expect that careful and prudent planning and design will eliminate violations of emission limitations during such periods.

3. As indicated on page 5-5 of the permit application, U.S. Sugar cites limited testing of SO_2 emissions from burning bagasse in Boiler No. 4. Test data show emission ranges from 0.006 to 0.014 lb/mmBtu with an average emission rate of 0.008 lb/mmBtu. According to the faxed information provided to EPA, U.S. Sugar is now requesting a limit of 0.1 lb/mmBtu for SO_2 emissions when burning bagasse in Boiler No. 4. This limit is about 7.5 times the maximum emission rate shown from the testing. EPA believes this difference exceeds a reasonable margin for compliance, and we ask U.S. Sugar to reconsider this limit.

Thank you for the opportunity to comment on the U.S. Sugar - Clewiston Mill permit application. If you have any questions regarding these comments, please direct them to either Katy Forney at 404-562-9130 or Jim Little at 404-562-9118.

Sincerely,

Douglas Neeley

R. Douglas Neeley
Chief
Air and Radiation Technology Branch
Air, Pesticides and Toxics
Management Division

CC: J. Koerner, BAR
EPA
NPS
SD

Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

Golder Associates

September 13, 1999

9937515

RECEIVED
SEP 16 1999
BUREAU OF AIR REGULATION

Florida Department of Environmental Protection
New Source Review Section
2600 Blair Stone Road
Tallahassee, FL

Attention: Jeffery Koerner, P.E

RE: UNITED STATES SUGAR CORPORATION (U.S. SUGAR) – PSD PERMIT APPLICATION FOR BOILER NO. 4 AND THE SUGAR REFINERY AT THE CLEWISTON MILL, INFORMATION SUBMITTAL NO. 3

Dear Mr. Koerner:

In follow up to our conversations last week with yourself, Cleve Holladay and Stan Krivo at EPA, this letter presents additional information regarding U.S. Sugar's PSD permit application to modify operation of Boiler No. 4 and expand the sugar refinery operation at their mill located in Clewiston, Florida. Presented in the attached tables are revised air dispersion modeling results for sulfur dioxide (SO_2). The revised modeling results reflect two changes in the SO_2 emissions inventories.

The first change is in the Clewiston mill inventory. In the case of the U.S. Sugar Clewiston mill, maximum SO_2 emissions occur with Boiler Nos. 1 through 4 burning the maximum amount of fuel oil, which is 16,200 gallons in a 3-hour period, and 88,800 gallons in a 24-hour period. For the 3-hour averaging time, Boiler Nos. 1 through 4 were modeled at their maximum fuel oil burning rates, as shown in Table 6-3 of the application. However, for the 24-hour averaging time, since the sum of the maximum individual boiler fuel oil usage rates is higher than these permitted totals, lower individual boiler fuel usage rates must be assumed for modeling purposes.

In order to be most conservative, maximum fuel oil burning in boilers with the lowest stack height and/or plume rise should be assumed, which then results in maximum SO_2 impacts. In the original modeling, fuel oil burning in Boiler Nos. 1 through 4 was prorated approximately equally over the four boilers based on maximum heat input on fuel oil. However, a different fuel oil burning scenario could result in higher SO_2 impacts. The stacks for Boiler Nos. 1, 2 and 3 are now each at 165 feet. Therefore, Boiler No. 4 has the lowest stack height (150 ft). Also, Boiler No. 3 is a smaller capacity boiler than Boiler Nos. 1 and 2, and therefore has a lower plume rise than Boiler Nos. 1 and 2. As a result, the modeling was re-run with Boiler Nos. 3 and 4 burning the maximum fuel oil they are capable of burning, with Boiler Nos. 1 and 2 burning the remainder of the total 88,800 gallons per 24-hour period. A revised Table 6-3 is attached which reflects these changes.

The second change to the SO_2 emissions inventory was in regards to the inventory for other sources. Several large sources of SO_2 emissions located beyond 60 km from U.S. Sugar were not included in the AAQS modeling. The modeling has been revised to include many of these sources, as shown in the revised Table 6-6 and Table 6-8 attached.

Revised AAQS impact results are attached reflecting these changes. Also, based on discussions with Cleve Holladay, higher background SO_2 concentrations were used in the AAQS modeling, based on the second highest 24-hour and 3-hour measured concentrations measured at the South Bay monitoring site in 1997. This site is rural in nature and not located near to any major sources of SO_2. A higher background PM_{10} concentration was also used, based on the second-highest measured PM_{10} concentration from the Clewiston monitoring site. The modeling results show compliance with all AAQS with these changes. Revised model input and output files for SO_2 have already been placed on the internet FTP site for your access.

Note that Tables 6-22 and 6-23 have not been revised, since the maximum PSD Class II increment consumption occurs approximately 20 to 30 km from U.S. Sugar Clewiston. Therefore, these tables are not expected to be affected by the changes to the U.S. Sugar SO_2 inventory.

Thank you for consideration of this information. Please call or e-mail me if you have any additional questions.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

David A. Buff, P.E.
Principal Engineer
Florida P.E. #19011

Seal

DB/jkk

Enclosures

cc: Don Griffin
Bill Wehrum
Stan Krivo, EPA Region IV
National Park Service

CC: SD
EPA
NPS
File

\\GATORBAIT\DP\Projects\99\9937\9937515a\02\#02ltr.dot

Table 6-3. U.S. Sugar Clewiston Mill Maximum Fuel Oil Burning And SO_2 Emissions - Future Operation @ 2.5% S Fuel Oil for Modeling Purposes (revised 09/07/99)

Boiler	Total Maximum Heat Input (MMBtu/hr)	Maximum Heat Input From Fuel Oil (MMBtu/hr)	Rates Used For Modeling Purposes: Fuel Oil gal/hr [a]	Fuel Oil MMBtu/hr	Bagasse MMBtu/hr	Bagasse lb/hr(dry)	Modeled SO_2 Emissions: Fuel Oil (lb/hr)	Bagasse [b] (lb/hr)	Total (lb/hr)	Total (g/s)
					MAXIMUM 3-HOUR CASE					
1	495.6 [c]	225.1	1,500	225.0	270.6	37,583	615.0	18.8	633.8	79.86
2	495.6 [c]	225.1	1,500	225.0	270.6	37,583	615.0	18.8	633.8	79.86
3	342.0 [c]	135.1	900	135.0	207.0	28,750	369.0	14.4	383.4	48.31
4	633.0	225.1	1,500	225.0	408.0	56,667	615.0	40.8 [d]	655.8	82.63 [e]
7	812.0	249.0	0	0.0	812.0	112,778	0.0	138.0 [d]	138.0	17.39
Totals	2,778.2		5,400 (16,200 gallons per 3-hour period)	810.0	1,968.2	273,361	2,214.0	230.8	2,444.8	308.0
					MAXIMUM 24-HOUR CASE					
1	495.6	225.1	650	97.5	398.1	55,292	266.5	27.6	294.1	37.06
2	495.6	225.1	650	97.5	398.1	55,292	266.5	27.6	294.1	37.06
3	342.0	135.1	900	135.0	207.0	28,750	369.0	14.4	383.4	48.31
4	600.0	225.1	1,500	225.0	375.0	52,083	615.0	37.5 [d]	652.5	82.22 [e]
7	738.0	249.0	0	0.0	738.0	102,500	0.0	125.5 [d]	125.5	15.81
Totals	2,671.2		3,700 (88,800 gallons per 24-hour period)	555.0	2,116.2	293,917	1,517.0	232.6	1,749.6	220.5

[a] Total fuel usage for all boilers based on current permit limits. Individual boiler rates selected to maximize SO_2 emissions from lowest stacks. Boiler No. 4 has lowset stack @ 150 ft, followed by Boiler Nos. 1, 2 and 3 @ 165 ft each. Boiler No. 3 has lower plume rise than Boiler Nos. 1 and 2 due to lower total heat input.

[b] Assumes 75% removal of SO_2 due to bagasse firing, based on industry test data.

[c] Permit limit for 24-hour average.

[d] Based on proposed permit limit for Boiler No. 4 of 0.1 lb/MMBtu, and current permit limit of 0.17 lb/MMBtu for Boiler No. 7.

[e] For modeling purposes, this SO_2 emission rate is slightly higher than that shown in Table 2-1 for Boiler No. 4. This is due to not accounting for the differences in combustion efficiency between bagasse and fuel oil.

Note: Fuel Oil - 8.2 lb/gal
18,300 Btu/lb; 150,000 Btu/gal
2.5% sulfur
Bagasse - 7,200 Btu/lb (dry); 3,600 Btu/lb (wet)
0.1% sulfur average, dry basis

Table 6-6 . Summary of Competing SO_2 Facilities Considered for Inclusion in the AAQS and PSD Class II Air Modeling Analyses (revised 9/9/99)

9937515a/02/tab6-6
9/13/99

APIS Number	Facility	County	UTM Coordinates East (km)	UTM Coordinates North (km)	Relative to USS Clewiston Mill X (km)	Relative to USS Clewiston Mill Y (km)	Relative to USS Clewiston Mill Distance (km)	Relative to USS Clewiston Mill Direction[a] (deg)	Maximum SO_2 Emissions (TPY)	Q, Emission Threshold (Dist -53) x 20
52FTM260001	Everglades Sugar	Hendry	509.6	2954.2	3.5	-2.7	4.4	128	607	SIA
50PMB500086	Glades Correctional Institute	Palm Beach	523.4	2955.2	17.3	-1.7	17.4	96	98	SIA
52FTM260015	Southern Gardens Citrus	Hendry	487.6	2957.6	-18.5	0.7	18.5	272	409	SIA
50PMB500332	Okeelanta	Palm Beach	525.0	2937.4	18.9	-19.5	27.2	136	939	SIA
52FTM500026	Sugar Cane Growers	Palm Beach	534.9	2953.3	28.8	-3.6	29.0	97	2,555	SIA
52FTM500061	U.S. Sugar -Bryant	Palm Beach	538.8	2968.1	32.7	11.2	34.6	71	2,698	SIA
52FTM500016	Osceola Farms	Palm Beach	544.2	2968.0	38.1	11.1	39.7	74	2,023	SIA
52FTM500016	Atlantic Sugar	Palm Beach	552.9	2945.2	46.8	-11.7	48.2	104	954	SIA
50WPB430001	FPL -Martin	Martin	543.1	2992.9	37.0	36.0	51.6	46	93,788	SIA
50WPB430102	Bechtel Indiantown	Martin	545.6	2991.5	39.5	34.6	52.5	49	2,629	SIA
50PMB500021	Pratt & Whitney	Palm Beach	559.2	2978.3	53.1	21.4	57.3	68	504	85.0
50WPB430007	Dickerson	Martin	569.5	2995.9	63.4	39.0	74.4	58	58	428.7
50WPB500234	Palm Beach Resource Recovery	Palm Beach	585.8	2960.2	79.7	3.3	79.8	88	1,533	535.4
52FTM360119	Lee County Resource Recovery	Lee	424.0	2946.0	-82.1	-10.9	82.8	262	490	596.4
52FTM36	FPL - Fort Myers	Lee	422.1	2952.9	-84.0	-4.0	84.1	267	22,702	621.9
50WPB430021	Stuart Contracting	Martin	575.2	3006.8	69.1	49.9	85.2	54	100	644.7
50PMB500045	Lake Worth Utilities	Palm Beach	592.8	2943.7	86.7	-13.2	87.7	99	2,302	694.0
50PMB500042	FPL -Riviera Beach	Palm Beach	594.2	2960.6	88.1	3.7	88.2	88	73,475	703.6
50WPB062120	North Broward Resource Recovery	Broward	583.6	2907.6	77.5	-49.3	91.9	122	896	777.0
50WPB560003	Fort Pierce Utilities	St. Lucie	566.8	3036.3	60.7	79.4	99.9	37	2,708	938.9
50WPB062119	South Broward Resource Recovery	Broward	579.6	2883.3	73.5	-73.6	104.0	135	1,318	1020.3
50BRO060037	FPL -Lauderdale	Broward	580.1	2883.3	74.0	-73.6	104.4	135	47,858	1027.4
50BRO060036	FPL -Port Everglades	Broward	587.4	2885.3	81.3	-71.6	108.3	131	170,215	1106.7
50DAD130020	Tarmac	Dade	562.9	2861.7	56.8	-95.2	110.9	149	2,792	1157.1
50DAD130348	Dade Co. Resource Recovery	Dade	564.3	2857.4	58.2	-99.5	115.3	150	857	1245.4
30ORL310029	Vero Beach Power	St. Lucie	567.1	3056.5	61.0	99.6	116.8	31	18,496	1275.9
US Sugar Clewiston Mill Coordinates:			506.1	2956.9						

Proposed project's 24- and 3-hour emissions are significant to 53 and 60 km, respectively;
Emission imventory is limited to facilities within 103 km but includes major power plants at 104 and 108 km from the proposed project.

Table 6-8. Summary of Competing SO_2 Sources Included in the Air Modeling Analysis (revised 9/9/99)

9937515a/02/tab6-8
9/14/99

APIS Number	Facility	Units	Modeling ID Name	Stack Parameters: Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s): 3-Hour	24-Hour	PSD Source? (EXP/CON)	Modeled in: AAQS	Class II	Class I
52FTM500016	Atlantic Sugar^a												
		Unit 1	ATLSUG1	27.4	1.83	346.0	17.97	10.85	10.85	CON	Yes	Yes	Yes
		Unit 2	ATLSUG2	27.4	1.83	350.0	23.36	10.85	10.85	CON	Yes	Yes	Yes
		Unit 3	ATLSUG3	27.4	1.83	350.0	21.56	10.50	10.50	CON	Yes	Yes	Yes
		Unit 4	ATLSUG4	27.4	1.83	344.0	25.16	10.76	10.76	CON	Yes	Yes	Yes
		Unit 5 PSD	ATLSUG5	27.4	1.68	339.0	19.24	11.84	11.84	CON	Yes	Yes	Yes
		Unit 1 PSD Baseline	ATLSUG1B	18.9	1.92	506.0	12.70	-17.24	-17.24	EXP	No	Yes	Yes
		Unit 2 PSD Baseline	ATLSUG2B	18.9	1.92	511.0	10.90	-22.50	-22.50	EXP	No	Yes	Yes
		Unit 3 PSD Baseline	ATLSUG3B	21.9	1.83	522.0	17.50	-16.88	-16.88	EXP	No	Yes	Yes
		Unit 4 PSD Baseline	ATLSUG4B	18.3	1.83	344.0	15.00	-10.76	-10.76	EXP	No	Yes	Yes
50WPB430102	Bechtel Indiantown PSD		BECHTIND	150.9	4.88	333.2	30.50	75.64	75.64	CON	Yes	Yes	Yes
50DAD130348	Dade County RRF PSD												
		Units 1&2	DCRRF12	76.2	3.66	405.4	15.86	26.41	12.32	CON	No	No	Yes
		Units 3&4	DCRRF34	76.2	3.66	405.4	15.86	26.41	12.32	CON	No	No	Yes
52FTM260001	Everglades Sugar^a Main Boiler		EVERGLAD	21.9	1.10	477.0	10.10	34.90	34.90	NO	Yes	No	No
50BRO060037	FPL - Lauderdale												
		CTs 1-4 PSD	LAUDU45	45.7	5.49	438 7	14.60	271.15	271.15	CON	Yes	No	Yes
		GT 1-12 (0 5% fuel oil)	LDGT1_12	13 7	2.37	733.2	114.31	552.80	552 80	NO	Yes	No	No
		GT 13-24 (0.5% fuel oil)	LDGT1324	13.4	4.75	733.2	28 43	552.80	552.80	NO	Yes	No	No
		4&5 PSD Baseline	FTLAU45B	46.0	4.27	422.0	14.63	-457.00	-457.00	EXP	No	No	Yes
50WPB430001	FPL Martin												
		Units 1&2	MART12	152.1	7.99	420.9	21.03	1743.79	1743.79		Yes	No	No
		Aux Blr PSD	MARTAUX	18.3	1.10	535.4	15.24	12.90	12 90	CON	Yes	Yes	Yes
		Diesl Gens PSD	MARTGEN	7.6	0.30	785.9	39.62	0.51	0.51	CON	Yes	Yes	Yes
		Units 3&4 PSD	MART34	64.9	6.10	410 9	18.90	470.40	470.40	CON	Yes	Yes	Yes
50PMB500086	Glades Corr Institute		GLADCORR	9.8	0.40	389.0	11.28	2.82	2 82	NO	No	No	No
50WPB560003	Fort Pierce Utilities												
		Units 6&7	FTPIER67	45.7	2.19	408.2	12.50	77.87	77.87	NO	Yes	No	No
52FTM360002	FPL Fort Myers												
		Unit 1	FPLFMYU1	91.8	2.90	422.0	29.90	-585.50	-585.50	EXP	No	No	No
		Unit 2	FPLFMYU2	121.2	5.52	408 0	19.20	1334.0	-1334.0	EXP	No	No	No
		GT 1-12	FPLFMGTS	9 75	4.42	797.0	35.70	5152.4	51 52.4	NO	Yes	No	No
		6 CTs, PSD	FPLFM6CT	38.1	5.79	377.6	21.43	3.86	3.86	CON	Yes	No	Yes
50PMB500045	Lake Worth Utilities												
		Unit 3	LAKWTHU3	38.1	2.13	408.2	7 71	103.95	103.95	NO	Yes	No	No
		Unit 5	LAKWTHU5	22.9	0.94	450.4	18.29	11.59	11.59	NO	Yes	No	No

Table 6-8. Summary of Competing SO_2 Sources Included in the Air Modeling Analysis (revised 9/9/99)

9937515a/02/tab6-8
9/14/99

APIS Number	Facility	Units	Modeling ID Name	Stack Parameters: Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s): 3-Hour	24-Hour	PSD Source? (EXP/CON)	Modeled in: AAQS	Class II	Class I
52FTM360119	Lee County RRF PSD		LEECORRF	83.8	1 88	388.5	19.81	14.00	14.00	CON	No	No	Yes
50WPB062120	North Broward RRF PSD		NBCRRF	58.5	3 96	381.0	18.01	35.40	35.40	CON	No	No	Yes
50PMB500332	Okeelanta^a												
		Boiler 4 PSD Baseline	OKBLR4B	22.9	2.29	333.0	7.36	-10.95	-10.95	EXP	No	Yes	Yes
		Boiler 5 PSD Baseline	OKBLR5B	22.9	2.29	333.0	12.07	-15.64	-15.64	EXP	No	Yes	Yes
		Boiler 6 PSD Baseline	OKBLR6B	22.9	2.29	334.0	8.74	-15.64	-15.64	EXP	No	Yes	Yes
		Boiler 10 PSD Baseline	OKBLR10B	22.9	2.29	334.0	10.35	-17.15	-17.15	EXP	No	Yes	Yes
		Boiler 11 PSD Baseline	OKBLR11B	22.9	2.29	342.0	9.89	-16.79	-16.79	EXP	No	Yes	Yes
		Boiler 12 PSD Baseline	OKBLR12B	22 9	2.29	330.0	8.16	-20.58	-20.58	EXP	No	Yes	Yes
		Boiler 14 PSD Baseline	OKBLR14B	22.9	2.29	333.0	8.28	-20.03	-20.03	EXP	No	Yes	Yes
		Boiler 15 PSD Baseline	OKBLR15B	22.9	2.29	332.0	10.23	-16.79	-16.79	EXP	No	Yes	Yes
		Okeelanta Power Blrs 1,2,3^b	OKCOGEN	68 6	3 05	438.7	17.46	27.0	27.0	CON	Yes	Yes	Yes
52FTM500019	Osceola Farms^a												
		Unit 2	OSBLR2	27.4	1.52	339.0	18.63	17.12	17 12	CON	Yes	Yes	Yes
		Unit 3	OSBLR3	27.4	1.92	344.0	14.34	30.74	30.74	CON	Yes	Yes	Yes
		Unit 4	OSBLR4	27.4	1 83	344.0	16.53	17.12	17.12	CON	Yes	Yes	Yes
		Unit 5	OSBLR5	27.4	1.52	344.0	17.85	18.00	18.00	CON	Yes	Yes	Yes
		Unit 6	OSBLR6	27.4	1 92	339.0	18.25	33.39	33.39	CON	Yes	Yes	Yes
		Unit 1 PSD Baseline	OSBLR1B	22.0	1.52	342.0	8 18	-5 07	-5.07	EXP	No	Yes	Yes
		Unit 2 PSD Baseline	OSBLR2B	22.0	1 52	341.0	18.10	-16.32	-16 32	EXP	No	Yes	Yes
		Unit 3 PSD Baseline	OSBLR3B	22 0	1.93	341.0	14.50	-7.26	-7.26	EXP	No	Yes	Yes
		Unit 4 PSD Baseline	OSBLR4B	22.0	1.83	341.0	18.80	-13.61	-13.61	EXP	No	Yes	Yes
		Unit 5 PSD Baseline	OSBLR5B	22 0	1.52	342.0	12.12	-16.32	-16.32	EXP	No	Yes	Yes
50WPB500234	Palm Beach Co. Resource Recovery												
		1&2 PSD	PBCRRF	76.2	2.04	505 2	24 90	85 05	85 05	CON	No	No	Yes
50BR0060036	FPL Port Everglades												
		Units 1&2 at 2.5%s fuel oil	PTEVU12	104 5	4.27	415.9	26.72	1593.90	1593.90	NO	Yes	No	No
		Units 3&4 at 2.5%s fuel oil	PTEVU34	104.5	5.52	414.8	23.88	2772.00	2772.00	NO	Yes	No	No
		GT 1-12 (0.5% fuel oil)	PTEVGTS	13.4	4.75	733.2	28.43	530.70	530 70	NO	Yes	No	No
50WPB500234	Pratt & Whitney												
		Heater	PRATARCH	15.2	0.91	810.9	143.73	13.99	13.99	CON	No	No	Yes
		Boiler BO-12	PRATBO12	4.6	0.76	533.2	6.92	0.51	0.51	CON	No	No	Yes
50PMB500042	FPL Riviera												
		Units 3&4 at 2 5%s fuel oil	RIVU34	90 8	4.88	401.5	18.90	2113.65	2113.65	NO	Yes	No	No
50WPB062116	South Broward RRF PSD		SBCRRF	59 4	3.96	381.0	18.01	37.91	37 91	CON	No	No	Yes

Table 6-8. Summary of Competing SO_2 Sources Included in the Air Modeling Analysis (revised 9/9/99)

APIS Number	Facility	Units	Modeling ID Name	Stack Parameters: Height (m)	Diameter (m)	Temper. (K)	Velocity (m/s)	Emission Rate (g/s): 3-Hour	24-Hour	PSD Source? (EXP/CON)	Modeled in: AAQS	Class II	Class I
50FTM260015	Southern Gardens Citrus - PSD												
		Peel Dryer	SGARDDRY	38.1	1.16	338.7	9.41	5.29	5.29	CON	Yes	Yes	Yes
		Boilers 1-3	SGARDBLR	16.8	1.22	477.6	14.23	6.48	6.48	CON	Yes	Yes	Yes
52FTM500026	Sugar Cane Growers^a												
		Unit 1&2	SUGCN12	45.7	1.87	339.0	21.75	41.20	41.20	CON	Yes	Yes	Yes
		Unit 3	SUGCN3	27.4	1.52	339.0	22.25	16.20	16.20	CON	Yes	Yes	Yes
		Unit 4 PSD	SUGCN4	54.9	2.44	339.0	21.73	38.20	38.20	CON	Yes	Yes	Yes
		Unit 5	SUGCN5	45.7	2.30	339.0	15.94	27.90	27.90	CON	Yes	Yes	Yes
		Unit 8 PSD	SUGCN8	47.2	2.90	339.0	13.62	23.50	23.50	CON	Yes	Yes	Yes
		Unit 1&2 PSD Baseline	SUGCN12B	24.4	1.40	344.0	11.40	-24.20	-24.20	EXP	No	Yes	Yes
		Unit 3 PSD Baseline	SUGCN3B	24.4	1.60	344 0	15.60	-4.40	-4.40	EXP	No	Yes	Yes
		Unit 4 PSD Baseline	SUGCN4B	25.9	1.63	344.0	11.20	-24.20	-24.20	EXP	No	Yes	Yes
		Unit 5 PSD Baseline	SUGCN5B	24.4	1.40	344.0	15.20	-16.20	-16.20	EXP	No	Yes	Yes
		Unit 6&7 PSD Baseline	SUGCN67B	12.2	1.52	606.0	11.20	-51.00	-51.00	EXP	No	Yes	Yes
50DAD130020	Tarmac												
		Kiln 1	TARMC1	61.0	2.44	465.0	12.80	5.67	5.67		No	No	No
		Kiln 2 PSD Baseline	TARMC2B	61.0	2.44	465.0	12.84	-5.71	-5.71	EXP	No	No	Yes
		Kiln 3 PSD Baseline	TARMC3B	61.0	4.57	472.0	10.78	-2.76	-2.76	EXP	No	No	Yes
		Kiln 2 PSD	TABMC2P	61 0	2.44	422.0	9.10	24.57	24 57	CON	No	No	Yes
		Kiln 3 PSD	TARMC3P	61.0	4.57	450.0	11.04	51.43	51.43	CON	No	No	Yes
52FTM500061	US Sugar-Bryant^a												
		Unit 5 PSD	USSBRY5	42.7	2.90	345.0	11.49	45.70	45.70	CON	Yes	Yes	Yes
		Unit 1,2&3	USBRY123	19.8	1.64	342.0	36.40	109.50	109.50	CON	Yes	Yes	Yes
		Unit 1 PSD Baseline	USSBRY1B	19.8	1.68	494.0	44 30	-36.50	-36.50	EXP	No	Yes	Yes
		Unit 2&3 PSD Baseline	USBRY23B	19.8	1.68	344.0	37 90	-73 00	-73.00	EXP	No	Yes	Yes
	US Sugar - Clewiston - PSD Baseline												
		Unit 1 PSD Baseline	BRL1B	23.1	1.86	344.0	30.20	-79.86	-58.21	EXP	No	Yes	Yes
		Unit 2 PSD Baseline	BLR2B	23.1	1.86	343.0	35.70	-79.86	-58.21	EXP	No	Yes	Yes
		Unit 3 PSD Baseline	BLR3B	27 4	2.29	342.0	14.70	-48.30	-33.20	EXP	No	Yes	Yes
		East Pellet Plant PSD Baseline	EPELLET	12.2	1.52	347.0	8 54	-10.30	-10.30	EXP	No	Yes	Yes
		West Pellet Plant PSD Baseline	WPELLET	15.7	1.52	347.0	8.54	-10.30	-10.30	EXP	No	Yes	Yes

a Facilities or sources within facilities that operate only during the November 1 through May 31 crop season

b.Sugar mill sources that operate all year

Note: EXP = PSD expanding source.

Table 6-19. Maximum Predicted Pollutant Impacts Due to All Future Sources, AAQS Screening Analyses (Revised 9/13/99)

Averaging Time	Concentration[a] ($\mu g/m^3$)	Receptor Location[b]		Time Period (YYMMDDHH)
		Direction (degree)	Distance (m)	
SO_2				
Annual				
	30.9	300	1200	87123124
	32.5	270	1200	88123124
	34.7	310	1200	89123124
	36.9	270	1200	90123124
	34.4	300	1200	91123124
H2H 24-Hour				
	237	310	1200	87080724
	243	310	1200	88040324
	223	320	900	89060424
	227	250	900	90042024
	224	260	1200	91102424
H2H 3-Hour				
	710	310	1200	87061415
	806	310	900	88090912
	740	310	900	89061212
	714	310	900	90061815
	911	310	900	91072412
PM_{10}				
Annual				
	7.9	270	900	87123124
	8.6	270	900	88123124
	9.0	310	900	89123124
	9.9	270	900	90123124
	8.6	300	900	91123124
H2H 24-Hour				
	75	270	900	87123124
	70	310	1200	88112024
	66	320	900	89060424
	68	250	900	90042024
	69	260	900	91102424
CO				
H2H 8-Hour				
	4,183	310	900	87061416
	4,501	280	1200	88032408
	4,389	310	900	89041416
	4,239	250	900	90022708
	4,742	310	900	91043016
H2H 1-Hour				
	8,533	320	600	87090213
	8,679	320	600	88090413
	8,901	320	600	89061511
	9,236	330	527	90080511
	9,726	40	595	91061812

[a] Based on 5-year meteorological record, West Palm Beach, 1987-91

[b] Relative to Boiler No. 4 Stack Location

Notes

YYMMDDHH = Year, Month, Day, Hour Ending

H2H = Highest, 2nd-Highest Concentration in 5 years.

Table 6-20. Maximum Predicted Pollutant Impacts Due to All Future Sources For Comparison to AAQS, Refined Analysis (Revised 9/13/99)

Averaging Time	Concentration ($\mu g/m^3$)			Receptor Location[b]		Time Period (YYMMDDHH)	Florida AAQS ($\mu g/m^3$)
	Total	Modeled	Background	Direction (degree)	Distance (m)		
SO_2							
Annual	40	35	5	314	1000	89123124	60
	42	37	5	270	1100	90123124	
	40	35	5	300	1100	91123124	
H2H 24-Hour	257	244	13	310	1100	88040324	260
	239	226	13	260	1300	91102524	
H2H 3-Hour	856	809	47	310	800	88090912	1300
	959	912	47	310	800	91070618	
PM_{10}							
Annual	32	9	23	316	900	89123124	50
	33	10	23	272	900	90123124	
H2H 24-Hour	117	78	39	272	800	87123124	150
	109	70	39	310	1300	88112024	
	109	70	39	260	1000	91102424	
CO							
H2H 8-Hour	7,962	4,532	3,430	280	1100	88032408	10000
	8,310	4,880	3,430	312	700	91043016	
H2H 1-Hour	15,441	9,726	5,715	40	595	91061812	40000

[a] Based on 5-year meteorological record, West Palm Beach, 1987-91
[b] Relative to Boiler No. 4 Stack Location

Notes
YYMMDDHH = Year, Month, Day, Hour Ending
H2H = Highest, 2nd-Highest Concentration in 5 years.

Table 6-21 . Maximum Predicted Pollutant PSD Class II Increment, Screening Analysis
(Revised 9/13/99)

Averaging Time	Concentration[a] ($\mu g/m^3$)	Receptor Location[b] Direction (degree)	Receptor Location[b] Distance (m)	Time Period (YYMMDDHH)
SO_2				
Annual				
	1.8	270	20000	87123124
	2.4	270	20000	88123124
	1.4	270	20000	89123124
	2.7	70	30000	90123124
	1.9	270	20000	91123124
H2H 24-Hour				
	30	70	30000	87112324
	28	70	30000	88013024
	23	70	30000	89021624
	31	70	30000	90031024
	28	70	30000	91120724
H2H 3-Hour				
	70	70	30000	87050318
	79	70	30000	88050324
	69	70	30000	89021718
	73	70	30000	90011821
	84	70	30000	91020509
PM_{10}				
Annual				
	<0	0	0	87123124
	0.03	340	1200	88123124
	<0	0	0	89123124
	0.03	330	1500	90123124
	0.03	340	1200	91123124
H2H 24-Hour				
	6.5	360	1200	87071924
	8.6	330	900	88062824
	7.0	320	900	89070224
	7.7	310	900	90082724
	10.4	310	900	91072424

[a] Based on 5-year meteorological record, West Palm Beach, 1987-91
[b] Relative to Boiler No. 4 Stack Location

Notes:
YYMMDDHH = Year, Month, Day, Hour Ending
H2H = Highest, 2nd-Highest Concentration in 5 years.
PSD = Prevention of Significant Deterioration

Table 6-24. Maximum Predicted SO_2 PSD Increment at the Everglades National Park PSD Class I Area

Averaging Time	Concentration[a] ($\mu g/m^3$)	Receptor Location (UTM) (m)	(m)	Time Period (YYMMDDHH)	Allowable PSD Class I Increment ($\mu g/m^3$)
Annual					
	0.18	545000	2848600	87123124	2
	0.19	535000	2848600	88123124	
	0.15	550300	2848600	89123124	
	0.23	545000	2848600	90123124	
	0.14	540000	2848600	91123124	
H2H 24-Hour					
	2.1	550300	2848600	87102324	5
	3.0	545000	2848600	88022824	
	2.1	545000	2848600	89041724	
	2.6	540000	2848600	90111624	
	2.5	550300	2848600	91100924	
H2H 3-Hour					
	14.0	545000	2848600	87031421	25
	15.7	535000	2848600	88021621	
	15.8	543500	2824600	89011003	
	18.0	540000	2848600	90012224	
	14.5	553000	2796500	91100915	

[a] Based on 5-year meteorological record, West Palm Beach, 1987-91

Legend:

PSD = Prevention of Significant Deterioration

YYMMDDHH = Year, Month, Day, Hour Ending

UTM = Universal Transverse Mercator

H2H = Highest, 2nd-Highest