Golder Associates Inc.

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

December 15, 1999

9937584Y/F1/WP/2

Florida Department of Environmental Protection
New Source Review Section
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

Attention: Jeffery Koerner, P.E.

RE: Atlantic Sugar Association
PSD Permit Application for Boiler No. 5
DEP File No. 0990016-004-AC/PSD-FL-279
Information Submittal No. 1

Dear Mr. Koerner:

Atlantic Sugar Association (ASA) has received the Department's letter dated November 15, 1999, concerning the above referenced PSD permit application for Boiler No.5. Responses to each of the Department's comments are presented below, in the same order as they appear in the letter.

1. **The following is the Department's summary of the applicant's request. Please comment.**

   Response: The Department has provided a description of the boiler and the proposed project, including proposed BACT emission limits. The description is accurate, with the following changes noted:

   a. ASA now proposes a lower annual fuel oil consumption limitation of 200,000 gal/yr instead of 500,000 gal/yr. This is based on historic operation of Boiler No. 5 and ASA's desire to minimize its fuel oil usage. Refer to revised application form pages attached.

   b. ASA did not propose continuous monitoring and recording of oil flow rate. The fuel oil integrator reading will be recorded periodically (i.e., once per shift) and the actual oil flow in gallons determined by calculation. Also, existing equipment will continue to be used to measure and provide a readout of the scrubber pressure drop, scrubber spray nozzle pressure, scrubber flow rate, and flue gas oxygen content. These will be recorded periodically (i.e., once per shift).

2. **Please provide the oil firing rates (gallons per year) for Boiler No. 5 for the previous two operating seasons. In addition, submit documentation that the last two fuel purchases for the "replacement oil" fired in Boiler No. 5 contained no more than 1.0 percent sulfur by weight. Documentation should include the fuel purchase receipts, the date delivered, the fuel supplier, the sulfur content of the oil delivered, and the quantity of oil delivered. Has Boiler No. 5 ever fired more than 200,000 gallons during any calendar year?**

   Response: As stated on page 3-10 of the application, and shown in Table 3-3, no oil has been fired in Boiler No. 5 for many years, including the last two crop seasons, except for startup in a *de minimis* amount to help initiate combustion. For many years now, ASA has contracted for and purchased only No. 6 fuel oil with a maximum sulfur content of 1.0 percent for the common fuel oil tank. Thus, a maximum of 1.0 percent sulfur has been burned in all boilers for many years. Attached are copies of fuel oil analysis provided by Coastal Fuels for this crop year and one analysis from last year. Boiler No. 5 has never fired more than 200,000 gallons of fuel oil during any calendar year.

3. **The application lists the maximum oil-firing rate at 470 gallons per hour (page 2-2, 2-3). However, the current permit limits oil firing to 25.1 mmBTU per hour (168 gallons per hour). Was this limit the result of a previous PSD permit? Did this limit (168 GPH) form the basis of the SO_2 emissions rate used in the air dispersion modeling analysis for this application?**

   Response: Yes, the 25.1 MMBtu/hr (168 gal/hr) limitation was established in the 1986 PSD permit modification, based on the fuel oil usage during the compliance testing. The 470 gal/hr maximum oil firing rate proposed for Boiler No. 5 is the maximum capability of the burner design (235 gal/hr per burner) as stated in the application. This fuel oil burning rate was the basis of the dispersion modeling, as shown in Table 6-4.

4. **The costs associated with the tank, foundations, pumps, piping, and No. 2 oil burners appear high and are scaled down from a much larger project. Please provide a vendor quote specific to this project and revise the cost analyses accordingly.**

   Response: A quotation was obtained from a supplier of fuel oil burners, and is attached. The quote is a basic price for a single No. 2 fuel oil burner capable of delivering up to 215 gal/hr of fuel oil, and does not include installation. A quote was also obtained for a new 19,000 gallon fuel oil storage tank, and is also attached. The cost analysis has been revised to reflect these quotes, as well as the proposed 200,000 gal/yr fuel oil limitation for Boiler No. 5. The revised cost analysis is attached and shows the cost effectiveness of the two options (0.5 percent fuel oil and 0.05 percent fuel oil) are $14,581/ton and $6,402/ton of SO_2 removed respectively. These costs are very high, and therefore these two options are ruled out as being economically infeasible.

5. **How frequently does this boiler soot blow? What is duration of soot blowing in minutes? What are the particulate matter emissions during soot blowing (lb/MMBtu)? Is the wet scrubber capable of adequately controlling particulate matter below the standard during soot blowing?**

   Response: Soot blowing is conducted on this boiler approximately once per shift. The duration of soot blowing is approximately 20 minutes. The particulate matter (PM) emissions occurring during soot blowing are unknown. There is no test data available or known to exist for any bagasse boiler while soot blowing. However, since the duration of soot blowing is short, longer term (24-hour and annual) emissions are not expected to be significantly increased. Compliance with the lb/MMBtu PM emissions limit is not expected to be significantly affected over the time period for a typical compliance test.

6. **The current permit requires weekly monitoring of the flue gas oxygen content using a portable instrument and manual data recording. The application indicates that recorded data for the last crop season shows flue gas oxygen readings from 5.5 percent to 13 percent. According to the design of the boiler, what is the optimum range for the flue gas oxygen concentration that indicates adequate excess air is being supplied to the combustion process? In other words, what is the parametric range below which would be an indicator of insufficient oxygen for complete combustion, but above which may provide no additional benefit?**

   Response: Design data and the operating and maintenance instruction manual for the boiler provides no discussion of oxygen content of the flue gases. A valid parametric range of O2 cannot be determined without adequate O2 and CO or CO2 concentration data. The proper O2 level is dependent upon several parameters, including the bagasse feed rate, bagasse moisture content, and steam rate of the boiler. The boiler operators attempt to operate the boiler with enough excess air to complete combustion. Higher excess air rates are not desirable because the additional air must be heated in the boiler, resulting in less heat that can be transferred to generate steam.

   As proposed on page 5-8 of the application, ASA will conduct simultaneous CO and O2 testing to determine a proper range of O2 that represents good combustion practices. An O2 process monitor will be installed prior to the testing. CO testing will be conducted on the stack using EPA Method 10. At least twelve (12) 1-hour test runs will be conducted when the boiler is firing only bagasse, and the boiler may be operated below 90 percent of the permitted capacity during the runs. ASA will provide a 15-day advance notice of the proposed test schedule to the FDEP.

   Based on the results of the parametric testing, a range of O2 concentration that represents good combustion practices will be identified. The process O2 monitor will then be configured to trip an alarm whenever the O2 concentration falls outside this range. The boiler operator will then take corrective action to bring the O2 concentration back within the specified range as expeditiously as possible.

7. **As a result of the proposed increase in the operation of Boiler No. 5, will any other processes or emissions units at this facility realize a corresponding increase in process rates or production rates?**

   Response: None of the other boilers at the ASA mill will be affected by the proposed increase since each boiler operates independently to produce steam for the sugar mill. Since the crop season may be increasing in length, overall sugar production at the ASA mill may increase in the future. As a result, total steam production could also increase to support the mill. The additional steam could come from operating Boiler Nos. 1 through 4 for additional hours. However, if Boiler No. 5 operating hours are increased, the other four boilers at the mill will not need to operate as much in order to grind all of the incoming sugar cane. The increase in operating hours for Boiler No. 5 is desirable since Boiler No. 5 has lower emissions than the older Boiler Nos. 1 through 4. This would therefore be a benefit to the environment.

8. **Please address the comments and questions submitted by the Palm Beach County Health Department (attached).**

   Response: The Palm Beach County Health Department comments are addressed below.

9. **Please submit diskettes containing all of the air quality impact analysis modeling input/output files. The Department will complete its review of the air quality analysis shortly. Questions and comments regarding this analysis will be sent as soon as possible.**

   Response: Electronic files of the air quality modeling input/output files have been provided to the Department.

10. **The Department will forward any comments or questions received from the National Park Service (NPS) or EPA Region 4 as soon as possible. Please address any concerns of the NPS or EPA.**

    Response: We will respond to EPA and NPS comments when they are received.

<u>Palm Beach County Health Department (Health Department) Comments</u>:

1. **The project reflects the relaxation of the restrictions on the pollutant emitting capacity of the unit and is subject to review in accordance Rule 62-212.400(2)(g), F.A.C. This appears to require the applicant to address the allowable emissions from the unit and not just the net increases as presented within the application. This would include the BACT, Significant Impact, PSD Class I & II, and NAAQS analyses.**

   Response: The purpose of Rule 62-212.400(2)(g) is to prevent sources from circumventing the PSD regulations by taking a restriction on pollutant emitting capacity to avoid PSD review, and then relaxing this restriction at a later time. However, ASA has

previously undergone PSD review for all pollutants based on the initial permitting of the boiler in 1981. This included air modeling analysis and BACT review for all pollutants. Therefore, ASA did not take any restrictions for the purpose of avoiding PSD review. Also, the modification in 1986 merely adjusted the maximum steam rate and operating hours. Boiler No. 5 has operated under the existing PSD permit for 13 years now. Therefore, Rule 62-212.400(2)(g) does not apply. The appropriate increase in emissions for PSD review purposes, as required by Rule 62-212.400(2)(d)4., is the difference between the current actual 2-year average emissions and the future potential emissions.

In addition, the AAQS analysis and PSD Class II and Class I modeling for ASA Boiler No. 5 did utilize the maximum future potential (allowable) emissions. Since Boiler No. 5 was constructed after the major source baseline date of January 1, 1975, the boiler's total emissions consume PSD increment. EPA/FDEP modeling guidelines require that a significant impact analysis be conducted, based on the net increase in emissions due to the proposed modification, to determine if any pollutants subject to PSD review can be exempted from the complete air modeling analysis. For pollutants which have a significant impact, a full modeling analysis addressing compliance with AAQS and PSD increments must be completed using the proposed allowable emissions. ASA has completed the analysis in this manner. The BACT analysis also uses proposed allowable emissions in performing cost effectiveness calculations.

2. **The Health Department's files indicate that the boiler was an existing unit under the NSPS regulations (40 CFR 60 Subpart Db, Applicability Date - 6/19/84) when initially permitted in 1981. The boiler was later modified in 1986 (AC50-107181) authorizing bagasse and fuel oil firing with an associated increase in steam production. Fuel oil firing was limited to 25.1 MMBtu/hr. Annual emissions were capped to avoid PSD applicability. The current application reflects wood firing (listed as a carbonaceous fuel) and an increase in oil firing to 70.5 mmBtu/hr. Fuel oil and wood are regulated fuels under 40 CFR 60 Subpart Db and NSPS applicability based on the 1986 modification as well as the current project needs to be documented.**

   Response: The original boiler as built was permitted to burn fuel oil (reference EPA PSD permit PSD-FL-078, issued December 4, 1981). Although the original PSD permit did not limit fuel oil firing rate, the original burners installed on the boiler were manufactured by Erie City, Model SAOH-21, and were rated at 235 gal/hr each for a total of 470 gal/hr (70.1 MMBtu/hr). The 1986 permit modification imposed a more restrictive fuel oil burning rate on the boiler of 25.1 MMBtu/hr (approximately 168 gal/hr), based on the fuel oil firing rate during compliance testing. This limitation was acceptable to ASA at the time, although the actual burner capacity was greater than this limit. The current permit application does not request any higher oil firing rate than the original burner capacity. NSPS Subpart Db is not triggered since there will be no increase in hourly emissions of any pollutant regulated under the NSPS.

   In regards to wood firing, on October 9, 1991, ASA received from the Department approval to burn wood chips in all of its existing boilers, on the basis that there was no increase in emissions (letter attached). Since there was no increase in hourly emissions, a modification was not triggered under NSPS definitions.

3. **The applicant's BACT analysis for particulate matter (PM & PM10) does not appear to follow the top-down procedure. In conducting the review, the applicant appears to be restricting the evaluation to bagasse fired boilers. In doing so, they have identified the most stringent control technology and emission limitation as an ESP and 0.03 lb/mmBtu, respectively. In 1993 the Department issued the Okeelanta and Osceola Cogeneration Facilities the same BACT determination (ESP @ 0.03 lb/mmBtu) to units firing bagasse, wood, and coal (solid fuels). Since that time BACT determinations for solid fuel fired units have been issued requiring fabric filters and emission limits of 0.011 lb/mmBtu. When originally permitted, the BACT analysis prepared by the applicant included the existing scrubber, a Venturi scrubber, a fabric filter (baghouse), and an ESP. The revised BACT should address theses control strategies. Specifically, the analysis should address the top control technology (fabric filter) for a solid fuel fired boiler and the ability to achieve an emission limit of 0.011 lb/mmBtu. As a minimum, the analysis should examine an upgraded scrubber that can meet the NSPS limit of 0.1 lb/mmBtu for wood fired boilers. For your information, the initial application identified a useful life of 10 years for the existing scrubber.**

   The applicants cost analysis appears wrong in that they use an actual to allowable method when calculating potential reductions. The cost analysis needs to be based on the requested BACT level.

   Response: The BACT analysis conducted by ASA for PM/PM10 emissions did address the existing wet scrubber and an electrostatic precipitator (ESP). A fabric filter (baghouse) was not addressed in the analysis since there are no known baghouse installations on a bagasse-fired boiler anywhere in the world. In addition, baghouse technology would be susceptible to plugging due to the heavy flyash loading from the boiler and the high moisture content of the flue gases due to the high moisture content of bagasse fuel. A fire hazard would also exist due to the carryover of hot flyash particles from the boiler. As a result of these technical difficulties, and the unproven status of baghouses as applied to bagasse boilers, baghouse technology can be eliminated due to technical infeasibility.

   Venturi scrubbers are potentially applicable to bagasse boilers, and in fact were utilized on bagasse boilers at the Talisman sugar mill. However, PM compliance test data indicate no better performance of the Venturi scrubbers compared to wet impingement type scrubbers. This is believed to be due to the characteristics of the flyash from bagasse boilers, which exhibit a significant amount of large particles. In addition, Venturi scrubbers would use much more energy than the spray impingement type scrubbers. For these reasons, Venturi scrubbers can be rules out for further consideration as BACT.

   A scrubber replacement to meet an emission limit of 0.1 lb/MMBtu would not provide any significant benefit, since the existing scrubber already averages 0.12 lb/MMBtu (average of past five years of compliance testing). A scrubber replacement would be costly (approximately $500,000 capital cost alone) and would not provide a significant benefit to the environment.

The project is a modification to an existing source. As such, the "baseline" for cost effectiveness calculations is the existing emissions, and not uncontrolled emissions, which would be the baseline for a new source. ASA has used the actual average measured PM emissions (0.12 lb/MMBtu) for Boiler No. 5 in conjunction with the maximum requested annual heat input rate. This is still conservative for the boiler is not expected to reach this maximum heat input under actual operations. However, to use the current allowable PM emission rate of 0.15 lb/MMBtu would overestimate the PM reductions achievable by the various control options. This would result in an underestimate of the cost effectiveness of the control options.

It is further noted that each year ASA repairs and maintains the existing scrubber on Boiler No. 5. This has prolonged the life of the scrubber and maintained its pollution control effectiveness, as demonstrated by the continued satisfactory compliance tests. ASA also added additional spray nozzles and a demister section to the scrubber to improve its performance.

4. **The applicant's BACT analysis for NO_x is incorrect in that the Osceola and Okeelanta Cogeneration facilities both use SNCR to reduce NO_x emissions to the 0.14 lb/mmBtu level. The applicant should be required to address SNCR based on feasibility and cost effectiveness. The request to increase the current NO_x level from 0.15 lb/mmBtu to 0.25 lb/mmBtu is unacceptable as BACT. The applicant should seek a balance between NO_x, CO, and VOC emissions based on the data presented in Table 1.**

   Response: As noted in a similar BACT determination issued by the Department for United States Sugar Corporation Boiler No. 4, the furnace temperatures for older design bagasse boilers is not sufficient to allow the use of SNCR, which requires furnace temperatures between 1,600 and 2,000°F. Therefore, SNCR is ruled out as technically infeasible. PBCHD, in their comment letter (Table 1), only considered the last 3 years of test data, and did not consider all available test data. Further, ASA cannot accept a limit based on the average actual data; there must be some reasonable margin of safety for compliance. In addition, the ability to achieve higher NO_x emission should be welcomed since this would lead to lower CO and VOC emissions, which are of greater importance. It is also noted that Boiler No. 5 does not operate during the typical ozone season, during the summer months. Therefore, Boiler No. 5 would not contribute to peak ozone levels within Palm Beach County.

5. **The applicant's BACT analysis for VOC and CO is consistent with other solid fuel fired units. As noted for NO_x, the applicant should seek to balance values between NO_x, CO, and VOC based on the data presented in Table 1. For this area, the ozone attainment status is of primary concern with NO_x reduction of major importance. BACT for the unit should be good combustion practices and continuous emissions monitors for CO and O2 (combustion efficiency). The CO and O2 levels can be specified as surrogates for NO_x and VOC.**

   Response: Palm Beach County has been achieving the ozone standards for many years, and is classified for ozone both as an attainment area (i.e., currently meeting ambient standards) and a maintenance area (i.e., once was nonattainment but now is attainment). NO_x emissions from this boiler is not of major importance because the NO_x emissions are

low compared to fossil fuel combustion sources and most other combustion units. The ASA mill is distant from mobile traffic sources on the coast and in West Palm Beach, which are the cause elevated ozone levels in the county. Boiler No. 5 has not operated in the ozone season, which is June through September. In addition, the proposed NO_x and VOC limits for Boiler No. 5 of 0.25 lb/MMBtu and 0.5 lb/MMBtu, respectively, are far below the RACT limitations of 0.9 lb/MMBtu and 5.0 lb/MMBtu contained in Rule 62-296.570 for carbonaceous fuel fired units. It is agreed that BACT should be good combustion practices.

6. **The applicant's BACT analysis identifies the very low emissions associated with bagasse firing. Based on the test data, a limit of 0.01 lb/mmBtu can be achieved with a scrubber and 0.03 with an ESP, which should be specified as BACT for bagasse firing. For wood firing, the 0.05 lb/mmBtu should be specified as BACT based on the Osceola and Okeelanta determinations. For fuel oil firing, the applicant should address the ability and availability of firing Grade 5 fuel oil with a 0.5 percent sulfur content.**

   ASA has provided appropriate analysis to justify its proposed emission limits for SO_2 for bagasse firing. The proposed limit is much lower than the currently permitted limit. Based on our investigation, No. 5 fuel oil with a sulfur content of 0.5 percent is not commercially available.

7. **The applicant's air quality analysis needs to acknowledge the following:**

   * **Existing Okeelanta Boilers are still operational (No expansion).**
   * **Lake Worth Generation is now Permitted with no enforceable shut down of existing units**
   * **Open Burning Activities within the ASA Property Boundary**

   The Okeelanta Power cogeneration boilers are fully operational, but the Okeelanta sugar mill boilers are currently shutdown, and are not expected to operate in the future, except in the event that the cogeneration boilers are shutdown. Thus, the Okeelanta facility was appropriately modeled. However, due to the large distance between Okeelanta and ASA (29 km), the Okeelanta facility does not contribute greatly to predicted concentrations in the vicinity of ASA.

   Lake Worth Utilities was just permitted in November. This facility has been added to Table 6-6, the facilities considered in the SO_2 modeling analysis. The SO_2 emissions used in this table for Lake Worth (429 TPY) reflect the maximum SO_2 emissions for 8,760 hr/yr. Actually, the source is limited to the equivalent of 31.9 TPY of SO_2. Even so, the facility is eliminated from modeling by the screening criteria, as shown in the table.

   Open burning activities are accounted for in the background ambient concentrations used in the air quality analysis (see Section 4.0 of the PSD report). The background concentration accounts for all non-modeled emission sources, including fugitive and natural sources.

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

Enclosures

DB/arz

cc: Hector Cardentey
John Fanjul
Peter Cunningham
Stan Krivo, EPA Region IV
National Park Service
Darrel Graziani - palm Bch Co.

\\GATORBAIT\DP\Projects\99\9937\9937584Y\F1\WP\#02-ltr.doc

CC: File
SD
C. Carlson, BAR

REVISED APPLICATION PAGES

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 3 of 3

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **External combustion boilers, industrial, residual oil, grade 6 oil.**		
2. Source Classification Code (SCC): **1-02-004-01**	3. SCC Units: **Thousand Gallons Burned**	
4. Maximum Hourly Rate: **0.470**	5. Maximum Annual Rate: **200**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.7**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **150**
10. Segment Comment (limit to 200 characters): **Max rates based on 70.5 MMBtu/hr and 0.7% sulfur (max permitted % S content) No. 6 fuel oil.**		

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.1 lb/MMBtu**	4. Equivalent Allowable Emissions: **7.05** lb/hour **1.5** tons/year
5. Method of Compliance (limit to 60 characters): **EPA Method 5**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **PM from No. 6 residual fuel oil heat input up to 70.5 MMBtu/hr and 30,000 MMBtu/yr.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **66.7** lb/hour **52.9** tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.73 lb/MMBtu** Reference: **Permit limit for oil**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

(152.7 MMBtu/hr x 0.10 lb/MMBtu) + (70.5 MMBtu/hr x 0.73 lb/MMBtu) = 66.7 lb/hr.
((0.867 x 10^{12} Btu/yr - 30000 x 10^{6} Btu/yr) x 0.10 lb/MMBtu + (30000 x 10^{6} x 0.73 lb/MMBtu) x tons/2000 lb = 52.9 TPY.

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Max emissions based on carbonaceous fuel and fuel oil firing. Emission factor given is for fuel oil firing.

Allowable Emissions Allowable Emissions 1 of 3

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.10 lb/MMBtu**	4. Equivalent Allowable Emissions: **25.5** lb/hour **43.4** tons/year

5. Method of Compliance (limit to 60 characters):

EPA Method 6, 6A, 6B

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

SO_2 from carbonaceous heat input up to 255.3 MMBtu/hr and 0.867 x 10^{12} Btu/yr.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.73 lb/MMBtu**	4. Equivalent Allowable Emissions: **51.5** lb/hour **11.0** tons/year
5. Method of Compliance (limit to 60 characters): **Fuel oil analysis**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **SO_2 from No. 6 fuel oil heat input up to 255.3 MMBtu/hr and 30,000 MMBtu/yr(200,000 gal/yr).**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions 3 of 3

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: **66.7** lb/hour **52.9** tons/year
5. Method of Compliance (limit to 60 characters): **Fuel oil analysis and stack testing**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): **Combination of bagasse and fuel oil burning.**	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **NO_X**	2. Total Percent Efficiency of Control:

3. Potential Emissions: **63.8** lb/hour **109.4** tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.31 lb/MMBtu** Reference: **AP-42 factor**	7. Emissions Method Code: **0**

8. Calculation of Emissions (limit to 600 characters):

255.3 MMBtu/hr x 0.25 lb/MMBtu = 63.8 lb/hr
((0.867 x 10^{12} Btu/yr - 30000 x 10^{6} Btu/yr) x 0.25 lb/MMBtu) + (30000 x 10^{6} Btu/hr x 0.31 lb/MMBtu) x ton/2000 lb = 109.4 TPY.

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Max emissions based on carbonaceous fuel and fuel oil firing. Emission factor given is for fuel oil firing.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: **0.25 lb/MMBtu**	4. Equivalent Allowable Emissions: **63.8** lb/hour **108.4** tons/year

5. Method of Compliance (limit to 60 characters):

EPA Method 7, 7A, 7E

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

NO_X from carbonaceous heat input up to 255.3 MMBtu/hr and 0.867 x 10^{12} Btu/yr.

Table 1-1. Net Emissions Increase for Belle Glade Atlantic Sugar Boiler No. 5

Pollutant	PSD Baseline Emissions (TPY)	Future Maximum Emissions (TPY)	Net Increase in Emissions (TPY)	PSD Significant Rate (TPY)	PSD Review Applies?
Particulate Matter (PM)	29.0	65.0	36.0	25	Yes
PM10	26.6	60.7	34.1	15	Yes
Sulfur Dioxide	0.5	52.9	52.4	40	Yes
Nitrogen Oxides	34.9	109.4	74.5	40	Yes
Carbon Monoxide	777.0	2,818.7	2,041.7	100	Yes
Volatile Organic Compounds	36.3	216.8	180.5	40	Yes
Sulfuric Acid Mist	0.03	3.3	3.3	7.0	No
Lead	0.11	0.19	0.09	0.60	No
Mercury	9.20E-03	1.65E-02	7.28E-03	0.10	No
Beryllium	0	2.78E-06	2.78E-06	4.00E-04	No

Table 2-2. Maximum Annual Emissions Proposed for Atlantic Sugar Boiler No. 5

Pollutant	Bagasse Firing			Fuel Oil Firing			TOTAL
	Emission Factor	Heat Input (a) (MMBtu/yr)	Emissions (TPY)	Emission Factor	Heat Input (a) (MMBtu/yr)	Emissions (TPY)	Emissions (TPY)
Particulate Matter (PM)	0.15 lb/MMBtu	867,302	65.0	0.1 lb/MMBtu	0	0	65.0
PM10	0.14 lb/MMBtu	867,302	60.7	0.1 lb/MMBtu	0	0	60.7
Sulfur Dioxide	0.10 lb/MMBtu	837,302	41.9	0.73 lb/MMBtu	30,000	11.0	52.8
Nitrogen Oxides	0.25 lb/MMBtu	837,302	104.7	0.31 lb/MMBtu	30,000	4.7	109.3
Carbon Monoxide	6.50 lb/MMBtu	867,302	2,818.7	0.033 lb/MMBtu	0	0	2,818.7
Volatile Organic Compounds	0.50 lb/MMBtu	867,302	216.8	0.0019 lb/MMBtu	0	0	216.8
Sulfuric Acid Mist	6.13E-03 lb/MMBtu	837,302	2.6	0.045 lb/MMBtu	30,000	0.7	3.2
Lead	4.45E-04 lb/MMBtu	867,302	0.19	1.01E-05 lb/MMBtu	0	0	0.19
Mercury	3.80E-05 lb/MMBtu	867,302	0.016	7.53E-07 lb/MMBtu	0	0	0.016
Beryllium	--	837,302	--	1.85E-07 lb/MMBtu	30,000	2.78E-06	2.78E-06

(a) Total heat input based on steam production of 441.6 x 10 ^ 6 lb/yr and 1,964 Btu/lb steam.
Fuel oil considered where worst case emission factor is due to oil burning at 200,000 gal/yr.

Table 3-4. Net Emissions Increase for Belle Glade Atlantic Sugar Boiler No. 5

Pollutant	PSD Baseline Emissions (TPY)	Future Maximum Emissions (TPY)	Net Increase in Emissions (TPY)	PSD Significant Rate (TPY)	PSD Review Applies?
Particulate Matter (PM)	29.0	65.0	36.0	25	Yes
PM10	26.6	60.7	34.1	15	Yes
Sulfur Dioxide	0.5	52.9	52.4	40	Yes
Nitrogen Oxides	34.9	109.4	74.5	40	Yes
Carbon Monoxide	777.0	2,818.7	2,041.7	100	Yes
Volatile Organic Compounds	36.3	216.8	180.5	40	Yes
Sulfuric Acid Mist	0.03	3.3	3.3	7.0	No
Lead	0.11	0.19	0.09	0.60	No
Mercury	9.20E-03	1.65E-02	7.28E-03	0.10	No
Beryllium	0	2.78E-06	2.78E-06	4.00E-04	No

SUPPLEMENTAL INFORMATION

TAMPA TANK, INC.
5205 ADAMO DRIVE ⊡ ⊡ TAMPA, FLORIDA 33619
PHONE (813) 623-2675 ⊡ FAX (813) 626-1541
Ext. 46

FAX

To: JUAN CAMERO
Company: ATLANTIC SUGAR
Subject: QUOTE

From: Cor van Donk
Date: 12-7-99
No. of pages including cover sheet 1

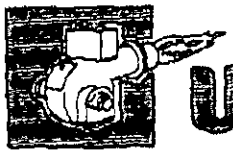
Message:

QTY - 1 TANK 10'-5" DIA x 29'-9" STR. SHELL
PER YOUR SKETCH. MADE FROM ½" A 36. C.S.
PRICE F.O.B. OUR SHOP TAMPA, FL. $ 25,900.=
ADD FOR FRT. F.O.B. TRUCK BELLE GLADE, FL. $ 500.=

QTY - 1 TANK 10' DIA x 21' STR. SHELL.
PER YOUR SKETCH. MADE FROM ½" A 36 C.S.
PRICE F.O.B. OUR SHOP TAMPA, FL. $ 19,800.=
ADD FOR FRT. F.O.B. TRUCK BELLE GLADE, FL. $ 500.=

DEL. 12 WEEKS
NO FLORIDA SALES TAX INCLUDED.
WE HAVE EXTERIOR SAND BLAST AND PRIMER INCLUDED.

FROM : WEBSTER ENGINEERING PHONE NO. : 3162217464 Dec. 10 1999 12:01PM P1



WEBSTER™ ENGINEERING & MANUFACTURING CO., INC.
610 INDUSTRIAL ROAD ◻ WINFIELD, KANSAS 67156 USA ◻ PHONE (316) 221-7464

December 10, 1999

Mr. Juan Camero
Atlantic Sugar Assoc., Inc.

Subject: Burner Replacement

Gentlemen:

The following is our proposal for one (1) Webster Model FDRD-SR-OH-30-300-NFPA85 Forced Draft Package Burner for installation on a Alpha Heater. We have designed this burner for use with No.2 Oil. We are using the Honeywell RM7800L system for the flame safeguard duty. Following is the design data we used for our system:

DESIGN DATA

Boiler Type:	Heater
Boiler Output:	100,000 Lbs./ Hr.
Feedwater Temperature:	Unknown
Operating Steam Pressure:	250 ~~2500~~ PSIG.
Boiler Draft Loss:	negative
Fuel:	No.2 Oil
Required Fuel Supply to Burner	Oil Pressure 125 Psig
Burner Fuel Input:	Oil 215 GPH
Pilot Fuel:	Propane
Paint:	Webster Standard Blue
Voltage:	460 Volt/ 60 Hz. / 3 PH.
Elevation:	1000 Ft.
Design Temperature:	100 Degrees F.
Control Enclosure:	Nema 12
Turn-Down	Oil 8:1
Approvals:	NFPA-8501

Two(2) Factory assembled and mounted (on the burner front) Pilot Train, 1/2" NPT size nominal, with the following components:

PILOT SYSTEMS

2- Manual Ball Valves, Maxitrol 1/2" NPT
1- Pilot Pressure Regulator, 1/2" 64-25 Fisher
2- Normally Closed Pilot Solenoid Valves, 1/2" Asco
1- Normally Open Pilot Solenoid Valves, 1/2" Asco
1- Flexible Hose, 1/2"x 24"
1- Ignition Transformer, 120/6000V, Webster

Two(2) Factory assembled and mounted (on the burner front) Main Oil Train, 1/2" NPT size nominal, with the following components:

FUEL OIL TRAIN

1- Low Oil Pressure Limit	Honeywell- L404
1- Supply Oil Pressure Gauge	Marshalltown
1- Oil Gun Pressure Gauge	Marshalltown
2- Oil Safety Shutoff Valves	Asco, cast iron body
1- Flexible Burner Hose	1/2" x 24"
1- Ball Valve	Maxitrol

One(1) Factory assembled atomizing steam train, size 1" NPT. Mounted on the piping frame at the burner front. The following components are included:

ATOMIZING TRAIN

1- Atomizing Steam Control Valve	1000 HP 1+8(Cashco)
1- Differential Pressure Limit	Ashcroft
1- Flexible Hose	1"X 24"
1- Burner Pressure Gauge	Marshalltown
1- Safety Shutoff Valve	Magnitrol
1- Low Steam Pressure Switch	Honeywell

One(1) Electric Single Point positioning type combustion control. The system will modulate in accordance to the steam demand and will maintain the boiler steam prossure /water temperature by means of an electronic master controller. The system shall include the following components:

COMBUSTION CONTROLS

1- Fuel/Air Actuator	Honeywell
1- Set Drive Linkage	Webster
1- Low Fire Start Switch	Honeywell
1- Gas Flow Control Valve	Maxon
1- Oil Flow Control Valve	Maxon

All linkage to the fuel control valves and air control damper are linked with heavy duty linkage, rigidly held to the jackshaft by case hardened set screws, and supplied with aircraft rod ends to eliminate hysteresis.

One(1) Flame Safeguard System, to be mounted in the master logic cabinet of NEMA 12 construction, approximately 36"X 24"X 10"deep, and mounted on the side of the windbox. The control cabinet will house the following equipment in addition to all circuit breakers, power supplies, fuses, isolation relays and all other equipment as required by the scope of the project. The field wiring to the field installed valves, limits, pressure or temperature switches will be via terminals located inside the cabinet.

1- Program Control System - Honeywell RM7800L
1- UV Flame Detector - C7012E1104
1- On-Off Switch
1- Alarm Horn
1- Forced Draft Pressure Switch
5- Signal Lights for:

Power On	Low Water
Ignition	Flame Failure
Oil Valve	

BURNER ASSEMBLY

Model FDRD-SR-OL-30-300 NFPA8501 Register Packaged Burner for firing No.2 Fuel Oil including windbox assembly approximately 102-inches wide x 50-inches high x 40-inches deep, complete with two(2) single zone air register venturi, gas-electric pilots, throat tile, and observation ports.

BLOWER ASSEMBLY

One size 300 type BC adjusted width forced draft blower assembly, direct connected to a 30 HP, 1800 RPM, 480v/60/3ph. motor. The motor starter is included.

Your Budget Cost for each of the above equipment --------- $75,134.00
Freight: F.O.B. Winfield, Kansas USA.

Total Estimated Weight: 4500 Pounds.

Delivery Estimate: 14-16 weeks following receipt of approved Drawings and release for production.

Sincerely Yours,
WEBSTER ENGINEERING & MANUFACTURING CO., INC.

Ron Trask

Ron Trask
Industrial Application Leader

Table 5-2. Fuel Sulfur Content, Fuel Cost and SO_2 Emission Rates (revised 12/12/99)

Fuel Type/ Sulfur Content	Unit Cost ($/gal)	Usage (gal/yr)	Annual Cost ($/yr)	Cost Increase ($/yr)	SO_2 Emission Rate[a] (TPY)
No. 6 Fuel Oil					
0.7% Sulfur	0.6179	200,000	123,571	--	11.1
No. 2 Fuel Oil					
0.5% Sulfur	0.6607	214,286 [b]	141,582	18,010	7.3
0.05% Sulfur	0.6845	222,222 [b]	152,116	28,545	0.8

Notes:
1. All prices based on Coastal Fuels Marketing, Inc.'s current prices (FOB)

Footnotes:

[a] Based on the following information:

Fuel Type	Sulfur Content (% by wt.)	Heat Content (Btu/gal)	Density (lb/gal)
No. 2 Fuel Oil	0.05	135,000	6.83
	0.5	140,000	6.83
No. 6 Fuel Oil	0.7	150,000	7.94

[b] Gallons needed for equivalent heat input to No. 6 fuel oil with a sulfur content of 0.7%.

Table 5-3. Cost Effectiveness of 0.5% Sulfur No. 2 Fuel Oil With New Tank and Burners for ASA Boiler No. 5 (revised 12/12/99)

Cost Items	Cost Factors	Cost ($)
DIRECT CAPITAL COSTS (DCC):		
Purchased Equipment Cost		
1) Tank	Vendor quote	26,000
2) Foundations	Based on actual costs of installation of a similar tank	50,000
3) Pumps, piping, etc.	Based on actual costs of installation of a similar tank	25,000
4) No. 2 Fuel Oil Burners (2)	Vendor quote	150,000
Total PEC:		251,000
INDIRECT CAPITAL COSTS (ICC):		Included Above
TOTAL CAPITAL INVESTMENT (TCI):	DCC + ICC	251,000
DIRECT OPERATING COSTS (DOC):		
(1) Operating Labor		
Operator		0
Supervisor	15% of operator cost	0
(2) Maintenance		
Labor	Equivalent to Operating Labor	0
Materials	Equivalent to Maintenance Labor	0
(3) Utilities		
(4) Fuels		
No. 2 Fuel (0.5% Sulfur Content)	See Footnote "a"	18,010
Total DOC:		18,010
INDIRECT OPERATING COSTS (IOC):[b]		
Overhead	60% of oper. labor & maintenance	0
Property Taxes	1% of total capital investment	2,510
Insurance	1% of total capital investment	2,510
Administration	2% of total capital investment	5,020
Total IOC:		10,040
CAPITAL RECOVERY COSTS (CRC):	CRF of 0.109 times TCI (20 yrs @ 9%)	27,359
ANNUALIZED COSTS (AC):	DOC + IOC + CRF	55,409
BASELINE SO_2 EMISSIONS (TPY) :	200,000 gallons No. 6 Fuel Oil with a sulfur content of 0.7% by weight	11.1
MAXIMUM SO_2 EMISSIONS (TPY):	214,286 gallons No. 2 Fuel Oil with a sulfur content of 0.5% by weight	7.3
REDUCTION IN SO_2 EMISSONS (TPY):		3.8
COST EFFECTIVENESS:	$ per ton of SO_2 removed	14,581

Footnotes:

[a] Increase in fuel cost associated with buying No. 2 fuel oil with a sulfur content of 0.5% ($0.6607/gal) instead of No. 6 fuel oil with a sulfur content 0.7% ($0.6179/gal) based on purchasing 200,000 gallons per year.

[b] Factors and cost estimates reflect OAQPS Cost Manual, Section 3.

Table 5-4. Cost Effectiveness of 0.05% Sulfur No. 2 Fuel Oil With New Tank and Burners for ASA Boiler No. 5 (revised 12/12/99)

Cost Items	Cost Factors	Cost ($)
DIRECT CAPITAL COSTS (DCC):		
Purchased Equipment Cost		
1) Tank	Vendor quote	26,000
2) Foundations	Based on actual costs of installation of a similar tank	50,000
3) Pumps, piping, etc.	Based on actual costs of installation of a similar tank	25,000
4) No. 2 Fuel Oil Burners (2)	Vendor quote	150,000
Total PEC:		251,000
INDIRECT CAPITAL COSTS (ICC):		Included Above
TOTAL CAPITAL INVESTMENT (TCI):	DCC + ICC	251,000
DIRECT OPERATING COSTS (DOC):		
(1) Operating Labor		
Operator		0
Supervisor	15% of operator cost	0
(2) Maintenance		
Labor	Equivalent to Operating Labor	0
Materials	Equivalent to Maintenance Labor	0
(3) Utilities		
(4) Fuels		
No. 2 Fuel (0.05% Sulfur Content)	See Footnote "a"	28,545
Total DOC:		28,545
INDIRECT OPERATING COSTS (IOC):[b]		
Overhead	60% of oper. labor & maintenance	0
Property Taxes	1% of total capital investment	2,510
Insurance	1% of total capital investment	2,510
Administration	2% of total capital investment	5,020
Total IOC:		10,040
CAPITAL RECOVERY COSTS (CRC):	CRF of 0.109 times TCI (20 yrs @ 9%)	27,359
ANNUALIZED COSTS (AC):	DOC + IOC + CRF	65,944
BASELINE SO_2 EMISSIONS (TPY) :	200,000 gallons No. 6 Fuel Oil with a sulfur content of 0.7% by weight	11.1
MAXIMUM SO_2 EMISSIONS (TPY):	222,222 gallons No. 2 Fuel Oil with a sulfur content of 0.05% by weight	0.8
REDUCTION IN SO_2 EMISSONS (TPY):		10.3
COST EFFECTIVENESS:	$ per ton of SO_2 Removed	6,402

Footnotes:

[a] Increase in fuel cost associated with buying No. 2 fuel oil with a sulfur content of 0.05% ($0.6845/gal) instead of No. 6 fuel oil with a sulfur content 0.7% ($0.6179/gal) based on purchasing 200,000 gallons per year.

[b] Factors and cost estimates reflect OAQPS Cost Manual, Section 3.

Table 5-5. Summary of the Cost Effectiveness of SO_2 Control Options (revised 12/12/99)

Description of Control Option	Annualized Cost ($/yr)	Maximum SO_2 Emission Rate (TPY)	Reduction in SO_2 Emission Rate[a] (TPY)	Cost Effectiveness ($/ton removed)
No. 6 Fuel Oil (0.7% S) Stored in a New Storage Tank	--	11.1	--	--
Replace No. 6 Fuel Oil (0.7% S) with No. 2 Fuel Oil (0.5% S) Stored in a New Storage Tank and Replacement of Burners to Accommodate the New Fuel	55,409	7.3	3.8	14,581
Replace No. 6 Fuel Oil (0.7% S) with No. 2 Fuel Oil (0.05% S) Stored in a New Storage Tank and Replacement of Burners to Accommodate the New Fuel	65,944	0.8	10.3	6,402

Footnote:

[a] Based on a baseline SO_2 emission rate of 11.1 TPY.

Florida Department of Environmental Regulation
South District • 2269 Bay Street • Fort Myers, Florida 33901-2896
Lawton Chiles, Governor
Carol M. Browner, Secretary

October 9, 1991

Hector J. Cardentey
Assistant Vice President and
Environmental Director
Atlantic Sugar Association, Inc.
Post Office Box 1570
Belle Glade, Florida 33430

Re: Palm Beach County - AP
Atlantic Sugar Association, Inc.

Dear Mr. Cardentey:

Thank you for your letter of October 2, regarding wood chip burning. We agree that burning untreated wood chips in your boilers will probably not increase emissions.

This letter authorizes you to burn untreated wood chips in your existing boilers.

Thank you for consulting us about this matter.

Sincerely,

Philip R. Edwards
Director of
District Management

PRE/DMK/jw

cc: Palm Beach County Public Health Unit

CC: Diego - WJC.
Dria - Lee

Table 6-6. Summary of SO_2 Facilities Considered for Inclusion in the AAQS and PSD Class II Air Modeling Analyses (revised 12/14/99)

AIRS Number	Facility	County	UTM Coordinates East (km)	UTM Coordinates North (km)	Relative to ASA [a] X (km)	Relative to ASA [a] Y (km)	Relative to ASA [a] Distance (km)	Relative to ASA [a] Direction (deg)	Maximum SO_2 Emissions (TPY)	Q, (TPY) Emission Threshold [b] (Dist -12.5) x 20	Include in Modeling Analysis ?
990026	Sugar Cane Growers	Palm Beach	534.9	2953.3	-18.0	8.1	19.7	294	2,555	144.8	YES
990016	Osceola Farms	Palm Beach	544.2	2968.0	-8.7	22.8	24.4	339	2,023	238.1	YES
990061	U.S. Sugar -Bryant	Palm Beach	538.8	2968.1	-14.1	22.9	26.9	328	2,698	287.9	YES
990332	Okeelanta	Palm Beach	525.0	2937.4	-27.9	-7.8	29.0	254	939	329.4	YES
990086	Glades Correctional Institute	Palm Beach	523.4	2955.2	-29.5	10.0	31.1	289	98	373.0	NO
990021	Pratt & Whitney	Palm Beach	559.2	2978.3	6.3	33.1	33.7	11	504	423.9	YES
990234	Palm Beach Resource Recovery	Palm Beach	585.8	2960.2	32.9	15.0	36.2	65	1,533	473.2	YES
990045	Lake Worth Utilities	Palm Beach	592.8	2943.7	39.9	-1.5	39.9	92	5,031	548.6	YES
990568	Lake Worth Generating	Palm Beach	592.8	2943.7	39.9	15.0	39.9	92	429	548.6	NO
990042	FPL -Riviera Beach	Palm Beach	594.2	2960.6	41.3	15.4	44.1	70	73,475	631.6	YES
510001	Everglades Sugar	Hendry	509.6	2954.2	-43.3	9.0	44.2	282	607	634.5	NO
850102	Bechtel Indiantown	Martin	545.6	2991.5	-7.3	46.3	46.9	351	2,629	687.4	YES
510003	US Sugar Clewiston	Hendry	506.1	2956.9	-46.8	11.7	48.2	284	7,806	714.8	YES
110120	North Broward Resource Recovery	Broward	583.6	2907.6	30.7	-37.6	48.5	141	896	720.8	YES
850001	FPL -Martin	Martin	543.1	2992.9	-9.8	47.7	48.7	348	93,788	723.9	YES
850007	Dickerson	Martin	569.5	2995.9	16.6	50.7	53.3	18	58	817.0	NO
850021	Stuart Contracting	Martin	575.2	3006.8	22.3	61.6	65.5	20	100	1060.2	NO
510015	Southern Gardens Citrus	Hendry	487.6	2957.6	-65.3	12.4	66.5	281	267	1079.3	NO

[a] Atlantic Sugar Association East and North Coordinates (km) 552.9 2945.2

[b] Proposed project's 24- and 3-hour emissions are significant to 12.5 km.
Emission inventory is limited to facilities within 62.5 km.

Department of
Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

November 15, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John A. Fanjul, Vice President and General Manager
Atlantic Sugar Association, Inc.
P.O. Box 1570
Belle Glade, FL 33440

Re: Request for Additional Information
DEP File No. 0990016-004-AC (PSD-FL-279)
Increased Operation of Boiler No. 5

Dear Mr. Fanjul:

On October 26, 1999, the Department received your application and sufficient fee for a PSD air construction permit for the above referenced project. The application is incomplete and additional information is needed in order to continue processing your application. Initial review of the proposed emissions standards and control equipment is complete and review of the air quality analysis should be finished within the next few days. In order to complete the review of your application as quickly as possible, the Department is providing questions regarding the proposed emissions standards and control equipment in advance and requests the following additional information. Questions and comments regarding the air quality analysis will follow shortly. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. The following is the Department's summary of the applicant's request. Please comment.

   Emissions Unit Description: Boiler No. 5 is a traveling grate boiler with economizer fired with bagasse (35.5 TPH), wood chips (25.5 TPH), rice hulls (5.0 TPH), and No. 6 fuel oil (168 GPH). The maximum heat input is 253 mmBTU per hour. The maximum steam production is limited to 130,000 pounds per hour based on a 1-hour average of steam at 250 psi and 550°F. The maximum steam production is limited to 115,000 pounds per hour based on a 24-hour average of steam at 250 psi and 550°F. Particulate matter emissions are controlled by a Type D Joy Turbulaire wet impingement scrubber. Pollutant emissions exit the 5.5 feet diameter scrubber stack 90 feet above ground level at 150°F with a volumetric flow rate of 90,000 acfm.

   Project: The applicant requests an increase in the allowable heat input for Boiler No. 5 from 678,000 mmBTU per year to 867,302 mmBTU per year. This is approximately a 28% increase in operation. In addition, the applicant requests removal of the restriction on hours of operation (3000 hour per year) and any reference to "seasonal" operation. Modeling impacts from "future operation" considered operation in any of the 12 calendar months. The requested changes result in a modification of the permits and significant emissions of CO, NOx, PM/PM_{10}, SO_2, and VOC, which require determinations for Best Available Control Technology. Further, due to restrictions used for

the modeling analysis, the heat input will also be limited to 226 mmBTU per hour based on a 24-hour average of steam at 250 psi and 550°F.

CO Standard: Applicant requests retaining the current limit of 6.5 lb/mmBTU based on "good combustion practices". Applicant proposes a series of three CO emissions tests during this crop season to establish a flue gas oxygen content that represents adherence to "good combustion practices". A permanent flue gas oxygen meter would be installed with an alarm.

NOx Standard: Applicant requests increasing the current limit from 0.16 to 0.25 lb/mmBTU based on "good combustion practices" to provide additional "margin of safety".

PM/PM10 Standard: Applicant requests retaining the current PM limit of 0.15 lb/mmBTU based on the existing wet impingement scrubber. Visible emissions shall not exceed 30% opacity except for up to 40% opacity for two minutes per hour. The following parameters will be monitored to ensure effective particulate matter control:

- Pressure drop, optimum range: 6 to 11 inches of water column
- Spray nozzle water pressure, minimum: 35 psig on upper 14 spray nozzles, 60 psig on lower 24 spray nozzles
- Scrubber flow rate, minimum: 550 gpm (with alarm system)

SO2 Standard: Applicant requests decreasing the current SO2 limit from 0.3 lb/mmBTU to 0.10 lb/mmBTU when firing bagasse based on tests showing inherent control by adsorption onto fly ash particulate and removal in the wet scrubber. Applicant requests lowering sulfur content of fuel oil from 1.0% to 0.7% for any fuel fired in Boiler No. 5 that is replaced in the common fuel storage tank.

VOC Standard: Applicant requests increasing the current limit from 0.25 to 0.50 lb/mmBTU based on "good combustion practices" to provide additional "margin of safety". The flue gas oxygen meter identified for "good combustion practices" to minimize CO emissions would also serve for VOC emissions.

Continuous Monitors: The following parameters will be continuously monitored: oil flow rate scrubber pressure drop, scrubber spray nozzle pressure, scrubber flow rate, steam production, steam temperature, steam pressure, and flue gas oxygen content. In addition, the steam parameters and oil flow rate shall be continuously recorded.

2. Please provide the oil firing rates (gallons per year) for Boiler No. 5 for the previous two operating seasons. In addition, submit documentation that the last two fuel purchases for the "replacement oil" fired in Boiler No. 5 contained no more than 1.0% sulfur by weight. Documentation should include the fuel purchase receipts, the date delivered, the fuel supplier, the sulfur content of the oil delivered, and the quantity of oil delivered. Has Boiler No. 5 ever fired more than 200,000 gallons during any calendar year?

3. The application lists the maximum oil-firing rate at 470 gallons per hour (page 2-2, 2-3). However, the current permit limits oil firing to 25.1 mmBTU per hour (168 gallons per hour). Was this limit the result of a previous PSD permit? Did this limit (168 GPH) form the basis of the SO2 emissions rate used in the air dispersion modeling analysis for this application?

4. The costs associated with the tank, foundations, pumps, piping, and No. 2 oil burners appear high and are scaled down from a much larger project. Please provide a vendor quote specific to this project and revise the cost analyses accordingly.

5. How frequently does this boiler soot blow? What is duration of soot blowing in minutes? What are the particulate matter emissions during soot blowing (lb/mmBTU)? Is the wet scrubber capable of adequately controlling particulate matter below the standard during soot blowing?

6. The current permit requires weekly monitoring of the flue gas oxygen content using a portable instrument and manual data recording. The application indicates that recorded data for the last crop season shows flue gas oxygen readings from 5.5% to 13%. According to the design of the boiler, what is the optimum range for the flue gas oxygen concentration that indicates adequate excess air is being supplied to the combustion process? In other words, what is the parametric range below which would be an indicator of insufficient oxygen for complete combustion, but above which may provide no additional benefit?

7. As a result of the proposed increase in the operation of Boiler No. 5, will any other processes or emissions units at this facility realize a corresponding increase in process rates or production rates?

8. Please address the comments and questions submitted by the Palm Beach County Health Department (attached).

9. Please submit diskettes containing all of the air quality impact analysis modeling input/output files. The Department will complete its review of the air quality analysis shortly. Questions and comments regarding this analysis will be sent as soon as possible.

10. The Department will forward any comments or questions received from the National Park Service (NPS) or EPA Region 4 as soon as possible. Please address any concerns of the NPS or EPA.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. A new certification statement by the authorized representative or responsible official must accompany any material changes to the application. Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days. If there are any questions, please call me at 850/414-7268. Matters regarding modeling issues should be directed to Cleve Holladay (meteorologist) at 850/921-8986.

Sincerely,

Jeffery F. Koerner, P.E.
New Source Review Section

JFK/jfk

cc: Mr. Hector Cardentey, ASA
Mr. David Buff, P.E., Golder Associates
Mr. Gregg Worley, EPA
Mr. John Bunyak, NPS
Mr. Phil Barbaccia, South Florida District DEP
Mr. Jim Stormer, PBCHD

INTEROFFICE MEMORANDUM

Date: 09-Nov-1999 04:08pm
From: Darrel_Graziani
Darrel_Graziani@doh.state.fl.us
Dept:
Tel No:

To: KOERNER_J (KOERNER_J@dep.state.fl.us)
CC: Jim_Stormer (Jim_Stormer@doh.state.fl.us)

Subject: ASA - PSD application

Jeff,

Please be advised that the Palm Beach County Health Department (Health Department) has completed its review of the above application and offers the following comments:

1. The project reflects the relaxation of the restrictions on the pollutant emitting capacity of the unit and is subject to review in accordance Rule 62-212.400(2)(g), F.A.C. This appears to require the applicant to address the allowable emissions from the unit and not just the net increases as presented within the application. This would include the BACT, Significant Impact, PSD Class I & II, and NAAQS analyses.

2. The Health Department's files indicate that the boiler was an existing unit under the NSPS regulations (40 CFR 60 Subpart Db, Applicability Date - 6/19/84) when initially permitted in 1981. The boiler was later modified in 1986 (AC50-107181) authorizing bagasse and fuel oil firing with an associated increase in steam production. Fuel oil firing was limited to 25.1 mmBtu/hr. Annual emissions were capped to avoid PSD applicability. The current application reflects wood firing (listed as a carbonaceous fuel) and an increase in oil firing to 70.5 mmBtu/hr. Fuel oil and wood are regulated fuels under 40 CFR 60 Subpart Db and NSPS applicability based on the 1986 modification as well as the current project needs to be documented.

3. The applicant's BACT analysis for particulate matter (PM & PM10) does not appear to follow the top-down procedure. In conducting the review, the applicant appears to be restricting the evaluation to bagasse fired boilers. In doing so, they have identified the most stringent control technology and emission limitation as an ESP and 0.03 lb/mmBtu, respectively. In 1993 the Department issued the Okeelanta ans Osceola Cogeneration Facilities the same BACT determination (ESP @ 0.03 lb/mmBtu) to units firing bagasse, wood, and coal (solid fuels). Since that time BACT determinations for solid fuel fired units have been issued requiring fabric filters and emission limits of 0.011 lb/mmBtu. When originally permitted, the BACT analysis prepared by the applicant included the existing scrubber, a venturi scrubber, a fabric filter (baghouse), and an ESP. The revised BACT should address theses control strategies. Specifically, the analysis should address the top control technology (fabric filter) for a solid fuel fired boiler and the ability to achieve an emission limit of 0.011 lb/mmBtu. As a minimum, the analysis should examine an upgraded scrubber that can meet the NSPS limit of 0.1 lb/mmBtu for wood fired boilers. For your information, the initial application identified a useful life of 10 years for the existing scrubber.

The applicants cost analysis appears wrong in that they use an actual to allowable method when calculating potential reductions. The cost analysis needs to be based on the requested BACT level.

4. The applicant's BACT analysis for NOx is in correct in that the Osceola and Okeelanta Cogeneration facilities both use SNCR to reduce NOx emissions to the 0.14 lb/mmBtu level. The applicant should be required to address SNCR based on feasibility and cost effectiveness. The request to increase the current NOx level from 0.15 lb/mmBtu to 0.25 lb/mmBtu is unacceptable as BACT. The applicant should seek a balance between NOx, CO, and VOC emissions based on the data presented in Table 1.

5. The applicant's BACT analysis for VOC and CO is consistent with other solid fuel fired units. As noted for NOx, the applicant should seek to balance values between NOx, CO, and VOC based on the data presented in Table 1. For this area, the ozone attainment status is of primary concern with NOx reduction of major importance. BACT for the unit should be good combustion practices and continuous emissions monitors for CO and O2 (combustion efficiency). The CO and O2 levels can be specified as surrogates for NOx and VOC.

6. The applicant's BACT analysis identifies the very low emissions associated with bagasse firing. Based on the test data, a limit of 0.01 lb/mmBtu can be achieved with a scrubber and 0.03 with an ESP, which should be specified as BACT for bagasse firing. For wood firing, the 0.05 lb/mmBtu should be specified as BACT based on the Osceola and Okeelanta determinations. For fuel oil firing, the applicant should address the ability and availability of firing Grade 5 fuel oil with a 0.5 percent sulfur content.

7. The applicant's air quality analysis needs to acknowledge the following:

* Existing Okeelanta Boilers are still operational (No expansion).
* Lake Worth Generation is now Permitted with no enforceable shut down of existing units
* Open Burning Activities within the ASA Property Boundary

Table 1

Test Date		Stack Test Results (lb/mmBtu) - Bagasse					
Year	Run	PM	NOx	VOC	CO	SO2	O2
1999	Run 1	0.143	0.15	0.011	5.54	0.005	5.22
	Run 2	0.096	0.12	0.013	3.40	0.006	6.22
	Run 3	0.105	0.1	0.013	5.79	0.005	5.35
1998	Run 1	0.12	0.13	0.22	2.25	0.002	6.43
	Run 2	0.123	0.14	0.2	1.94	0.005	6.58
	Run 3	0.115	0.14	0.2	2.00	0.001	6.49
1997	Run 1	0.084	0.088	0.223	6.54	0.001	5.73
	Run 2	0.093	0.094	0.223	6.10	0.001	5.37
	Run 3	0.093	0.08	0.245	6.02	0.001	5.37
1999	Averages		0.115	0.123	0.012	4.910	0.005	5.60
1998	Averages		0.119	0.137	0.207	2.063	0.003	6.50
1997	Averages		0.09	0.087	0.230	6.22	0.001	5.49

If you have any questions please call me at 561-355-3136, ext. 1142

Thanks

Darrel

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
John Fanjul, VP + GM
Atlantic Sugar Assoc
PO Box 9570
Belle Glade, Fl
33440

4a. Article Number
Z 031 392 006

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 102595-98-B-0229 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 031 392 006

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to John Fanjul	
Street & Number Atlantic Sugar	
Post Office, State, & ZIP Code Belle Glade Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 090006-004-AC PSO-FL-279	11-15-99

PS Form **3800**, April 1995

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

October 28, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
P.O. Box 25287
Denver, CO 80225

Re: Atlantic Sugar Association
Boiler No. 5: Increase in Operation
Project No. 0990016-004-AC (PSD-FL-279)
Facility ID No. 0990016

Dear Mr. Bunyak:

Enclosed for your review and comment is an application for the above referenced project. The applicant proposes to increase the annual heat input of bagasse Boiler No. 5 and remove existing restrictions on the hours of operation. The application includes a PSD applicability review, BACT analysis, and air quality analysis.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/922-6979. If you have any questions, please contact the project engineer, Jeff Koerner, at 850/414-7268.

Sincerely,

Kani Tober for

Al Linero, P.E.
Administrator
New Source Review Section

AAL/jfk

Enclosures