STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DER File No. AC 50-191876
Palm Beach County

Mr. Pablo A. Carreno
Director of Mill and Refinery Operations
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

_____/

Enclosed is Permit Number AC 50-191876 to construct an oil fired steam boiler (No. 16) at your sugar mill located on U.S. Highway 27, 6 miles south of South Bay, Palm Beach County, Florida, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 7-30-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Lynn Deker (Clerk) 7-30-91 (Date)

Copies furnished to:
David Knowles, South Dist.
Isidore Goldman SE Dist.
Jim Stormer, Palm Beach Co.
David Buff, P.E.
Jewell Harper, EPA
C. Shaver, NPS

Final Determination

Okeelanta Corporation
Palm Beach County
South Bay, Florida

Boiler No. 16
Permit No. AC 50-191876
PSD-FL-169

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

July 16, 1991

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct boiler No. 16 at Okeelanta Corporation's sugar mill that is located approximately 6 miles south of South Bay in Palm Beach County, Florida, was distributed on May 17, 1991. The Notice of Intent to Issue was published in Palm Beach Post on May 31, 1991.

Copies of the evaluation were available for public inspection at the Palm Beach County's environmental office in West Palm Beach and the Department's offices in West Palm Beach, Fort Myers, and Tallahassee.

Comments were submitted by the applicant's engineer, Palm Beach County Health Unit, and the National Park Service. The applicant's engineer requested that the NO_x emission standard of 0.18 lbs/MMBtu be a 30-day rolling average, that the boiler be allowed to operate in March (proposed permit restricted its operation to April through October), and that the steam production limit be at a specific steam pressure and temperature. Palm Beach County Health Unit requested they be included in the notification and reporting requirements of the permit for this boiler. The National Park Service requested lower sulfur fuel be required for the boiler, that a cumulative modeling analysis be included in the current review of another application for a major facility in this area, and that the air quality related value (AQRVs) analyses be considered in determining this project's impact on Everglades National Park.

The Department's response to these comments are as follows. Specific condition No. 5 was revised to note the NO_x standard of 0.18 lbs/MMBtu is to be a 30-day rolling average, which is consistent with the new source performance standard. Specific condition No. 6 was reworded to require the permittee to calculate the 30-day rolling average concentration for NO_x. Specific condition No. 10 was changed to allow the boiler to operate from March through October. Modeling showed that the ambient air standards would not be violated with the proposed boiler operating during this period.

The maximum steam pressure and temperature limits were removed from Specific Condition 11. The steam production and fuel input limits given in Specific Condition 9 will provide the Department with reasonable assurance that the permitted heat input rate of 205 MMBtu/hr for this boiler will not be exceeded.

Specific Conditions Nos. 7, 13, and 14 were amended to include the Palm Beach County Health Unit in the notification and reporting requirements.

The Department has required lower sulfur (0.2%) fuel oil to be used in larger, continuously operated sources. However, the use of fuel oil containing 0.3% sulfur in the proposed boiler, which will be

operated during the off season of the sugar industry, is considered appropriate for this situation.

The concurrent review of an application for a major source in the area is being processed separately from this application. Consideration will be given toward requiring a cumulative modeling analysis and an AQRV analysis for this major source. However, the Department does not believe an AQRV analysis is justified for this proposed boiler because of its small predicted impact (0.03 ug/m^3, annual average) on the Everglades National Park Class I area.

The final action of the Department will be to issue construction permit No. AC50-191876 (PSD-FL-169) as proposed in the Technical Evaluation and Preliminary Determination except for the changes discussed above.

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Lawton Chiles, Governor
Carol M. Browner, Secretary

PERMITTEE:

Okeelanta Corporation
P.O. Box 86
South Bay, Florida 33493

Permit Number: AC 50-191876
PSD-FL-169
Expiration Date: March 1, 1993
County: Palm Beach
Latitude/Longitude: 26°35'00" N
80°45'00" W
Project: Oil Fired Steam Boiler
No. 16

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

Construction of a 150,000 lbs steam/hr, No. 2 oil fired, 205 MMBtu/hr heat input Babcock & Wilcox Model FM 120-97 package boiler using Coen's LO-NO_x burners and designed for 12% flue gas recirculation (or equivalent boiler with controls) equipped with a 5 ft. diameter by 75 ft. high stack. The boiler will be located at the permittee's existing sugar mill (SIC 2061) that is approximately 6 miles sought of South Bay, Palm Beach County, Florida off of U.S. Highway 27. The UTM coordinates of this site are Zone 17, 524.9 km E and 2940.1 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received Jan. 29, 1991.
2. KBN letter dated Feb. 19, 1991.
3. BACT Determination.
4. KBN letter dated June 5, 1991.
5. Palm Beach County Health Unit letter dated June 5, 1991.
6. NPS letter dated July 1, 1991.
7. KBN letter dated July 9, 1991.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to the public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve

GENERAL CONDITIONS:

compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend upon the nature of the concern being investigated.

8. If, for any reasons, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitting source arising under the Florida Statues or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

GENERAL CONDITIONS:

Statues. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in the Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes Determination of Prevention of Significant Deterioration (PSD), Determination of Best Available Control Technology (BACT), and Compliance with New Source Performance Standards (NSPS).

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulation by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When request by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

Construction Details

1. The boiler shall be a flue gas recirculation type and equipped with low NO_x distillate oil burners. The design shall be for a heat release rate greater than 70,000 Btu/hr-ft^3.

2. The stack sampling facilities shall comply with F.A.C. Rule 17-2.700(4).

3. The 5 ft. diameter stack shall have a minimum height of 75 ft.

4. The boiler shall be equipped with instruments to measure the opacity of the stack emissions and the steam production, temperature, and pressure.

SPECIFIC CONDITIONS:

Emission Restrictions

5. Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM10	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NO_x	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

Compliance Requirements

6. Particulate matter, visible emissions, and nitrogen oxides emissions tests shall be conducted annually while the boiler is operating between 90-100% of its permitted capacity (135-150,000 lbs steam/hr). The volume and sulfur content of each fuel oil delivery shall be kept in a log for a minimum of 3 years. The continuous emissions monitoring data will be evaluated to determine the highest concentration of NO_x in lbs/MMBtu for any 30-day rolling average during the proceeding year. Tests for other pollutants may be required when the Department has good reason to believe the emission standard is being exceeded.

Federal Requirements

7. Boiler No. 16 shall comply with all applicable requirements of 40 CFR 60, including Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Unit (December 18, 1989).

40 CFR 60.7, Notification and record keeping. Timely notification of the items listed to the Department (South District), Palm Beach County Public Health Unit (PBCPHU), and EPA.

SPECIFIC CONDITIONS:

40 CFR 60.8, Compliance tests. Minimum of 30 days prior notice of the initial compliance tests which must be conducted between 60 to 180 days of initial startup of the source to the Department and EPA.

40 CFR 60.42b, Standard for sulfur dioxide. Sulfur content of the No. 2 distillation oil fuel shall not exceed 0.5%. Annual off-season average shall not exceed 0.3% sulfur. The permittee shall maintain fuel analysis or receipts to confirm compliance with this condition.

40 CFR 60.43b, Standard for particulate matter. Visible emissions shall not exceed 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

40 CFR 60.44b, Standard for nitrogen oxides for high heat release boiler No. 16, expressed as NO_2, is 0.20 lbs/MMBtu.

40 CFR 60.45b, Sulfur dioxide compliance tests, fuel receipts or analysis for sulfur content is required to confirm compliance with this condition.

40 CFR 60.46b, Particulate and nitrogen oxides compliance tests. Method 9 test required to determine compliance with the opacity standard. Method 7, 7A, or 7E test for nitrogen oxides.

40 CFR 60.47b, Sulfur dioxide monitoring. Fuel analysis or receipts required to confirm compliance with this condition.

40 CFR 60.48b, Particulate and nitrogen oxides monitoring. Continuous emissions monitor required to measure opacity.

40 CFR 60.49b, Reporting and record keeping requirements. Permittee required to report date of initial start up, design heat input capacity, fuels used, annual capacity factor, performance test data, plan to monitor NO_x, nitrogen content of the distillate oil, opacity, nitrogen dioxide emissions, monitor down time, "F" factor, exceedances, and other information required by this paragraph.

Operation Requirements

8. Only No. 2 fuel oil containing a maximum of 0.5% sulfur (off-season average of 0.3% sulfur) shall be used as fuel.

SPECIFIC CONDITIONS:

9. Maximum heat input to the boiler shall not exceed 1,463 gallons per hour of No. 2 distillate fuel oil (205 MMBtu/hr).

10. The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

11. Steam production shall not exceed 150,000 lbs/hr.

Administrative Requirements

12. The permittee shall maintain a log that shows the boiler's operation time, steam production, and fuel consumption.

13. The Department's South District and the PBCPHU shall be notified in writing at least 30 days in advance of the initial compliance test and 15 days in advance of any annual compliance tests to be conducted on this boiler.

14. Stack test results shall be submitted to the Department and the PCBPHU within 45 days of the test.

15. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

16. An application for an operation permit must be submitted to the South District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this 29th day
of July, 1991.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Carol M. Browner

Carol M. Browner, Secretary

Best Available Control Technology (BACT) Determination
Okeelanta Corporation
Palm Beach County

The applicant plans to permanently install a 205 MMBtu/hr No. 2 oil-fired steam boiler at their facility 6 miles south of South Bay, Florida. The boiler will be used to supply process steam. The boiler is scheduled to operate during the off-season of April through October (4,200 hours) when the other boilers at this facility are shutdown.

A BACT determination is required for particulates and sulfur dioxide as set forth in the Florida Administrative Code Rule 17-2.600(6) - Emissions Limiting and Performance Standards. In addition, the Department performed a BACT determination for nitrogen oxides (NOx) since those emissions are greater than the PSD significant rate of 40 tons per year.

BACT Determination Request by the Applicant:

Particulate, sulfur dioxide, nitrogen oxides emissions to be controlled by the firing of No. 2 fuel oil with a 0.5% sulfur content.

Date of Receipt of a BACT Application:

January 29, 1991

BACT Determined by DER:

The amount of particulate and sulfur dioxide emissions from the boiler will be limited by the firing of No. 2 fuel oil with a 0.3% off season average and a 0.5% maximum sulfur content.

Nitrogen oxides emissions shall not exceed 0.18 lbs/MMBtu heat input using low NOx burners/flue gas recirculation.

BACT Determination Rationale:

Sulfur in fuel is a primary air pollution concern in that most of the fuel sulfur becomes SO_2 and particulate emissions from fuel burning are related to the sulfur content. The Department has determined that the firing of No. 2 fuel oil with an off-season average of 0.3% sulfur and maximum of 0.5% sulfur content is BACT for particulates and SO_2. These sulfur content limitations are representative of what has been recently established as BACT for oil-fired equipment.

The emission rate of nitrogen oxides proposed by the applicant is equivalent to 0.18 pound per million Btu heat input. A review of other BACT determinations for oil fired boilers indicates that the proposed emission level for nitrogen oxides meets or exceeds several of the determinations on record. In addition, this emission level is equivalent to what has been determined to be BACT for oil-fired turbines. Additional NOx control could be provided by using add on control devices such as selective catalytic reduction (SCR) or selective noncatalytic reduction (SNCR). A review of these control technologies indicates a cost effectiveness ranging from $6802 to $7321 per ton of NOx removed. These costs exceed those which have been previously judged to be representative of BACT, thereby dismissing these technologies as BACT for this facility. In accordance with these criteria, the applicant's proposed NOx emission rate is justified as BACT for this source.

Details of the Analysis May Be Obtained By Contacting:

G. Preston Lewis, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

July 26, 1991
Date

Approved By:

Carol M. Browner, Secretary
Department of Environmental Regulation

July 29, 1991
Date

February 19, 1991

Mr. Willard Hanks
Bureau of Air Regulation
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Okeelanta Corporation
Proposed Oil-Fired Boiler

Dear Mr. Hanks:

At your request, KBN is providing additional information to the Florida Department of Environmental Regulation (FDER) regarding Okeelanta Corporation's proposed oil-fired package boiler. The information relates to additional modeling analysis, the property boundary question, the proposed boiler's operating conditions, and boiler operating conditions that will be monitored in lieu of continuous NO_x monitoring.

Additional Modeling Analysis

It was requested by FDER that additional modeling analysis be performed to address the period of time when the proposed Okeelanta boiler may be operating in conjunction with other nearby sources (i.e., other sugar mills in the area). This analysis is presented in Attachment A.

Property Boundary Definition

Provided in Attachment B are copies of two memos EPA Region IV personnel provided with regard to the property boundary question. Of particular interest is the memo from G.T. Helms to Steve Rothblatt. This memo states that a river forms a sufficient natural boundary/barrier and that fencing is not necessary. However, the riverbank must be clearly posted and patrolled by plant security. Based on the information presented in the application and Okeelanta's description provided in our recent meeting, I believe Okeelanta's property boundaries as depicted in the permit application meet the intent of the ambient air policy.

Boiler No. 16 Operating Conditions

The boiler design operating conditions will be 380 psi at 650°F.

Best Available Copy

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 0169677852

0169677852

Date 2-20-91

RECIPIENT'S COPY

1 From (Your Name) Please Print: David A. Buff
Your Phone Number (Very Important): (904)-331-9000
Company: [illegible] ENG & APPLIED SCIENCES
Department/Floor No.:
Street Address: 1034 NW 57TH ST
City: GAINESVILLE State: FL ZIP Required: [illegible]

2 To (Recipient's Name) Please Print: Willard Hanks
Recipient's Phone Number (Very Important): (904) 488-1344
Company: Bureau of Air Regulation
Department/Floor No.: Fla. Dept. of Environmental Regulation
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip + 4 Codes.): 2600 Blair Stone Road
City: Tallahassee, State: FL ZIP Required: 32399-2400

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): 90121

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		80	[ ] DEFERRED HEAVYWEIGHT **

†Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

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KBN

Proposed Monitoring for NO_x Compliance

Okeelanta is investigating the aspects of continuous NO_x monitoring versus monitoring of boiler operating conditions. Upon determination of the most appropriate method, a monitoring plan will be submitted to FDER. This is an operational monitoring plan, and therefore should not affect the issuance of a construction permit.

Please call if you have any questions concerning this information.

Sincerely,

David A. Buff

David A. Buff, M.E., P.E.
Principal Engineer

DAB/tyf

Attachments

cc: Pablo Carreno
A. Hanks
C. Halladay
B. Andrews

ATTACHMENT A

ADDITIONAL OKEELANTA MODELING FOR INTERACTION WITH OTHER SUGAR MILLS

1.0 GENERAL

Additional air quality modeling was performed to determine the maximum SO_2 prevention of significant deterioration (PSD) increment consumption as a result of Okeelanta's proposed No. 16 boiler and other nearby sources, as well as compliance with the SO_2 ambient air quality standards (AAQS). The proposed boiler will be operating only during the off-season when the other Okeelanta mill sources are not operating. Prior analyses submitted to the Florida Department of Environmental Regulation have assumed that the proposed boiler will operate alone, without other sugar mill sources, based on an off-season period extending from March 1 through October 31. In some years, however, the regular sugar mill season could extend into March.

The present analysis is presented to address the time period during which the proposed source could operate simultaneously with other sugar mills and other sources located within 50 km of Okeelanta. Based on discussions with Okeelanta personnel, concurrent operation with other sugar mills can occur only during the one month period from March 1 to March 31. March 1 is the earliest date that the Okeelanta mill would shut down (end of crop season) and the proposed boiler would begin operating, and March 31 is the latest date that other sugar mills would shut down. Concurrent operation with non-sugar mill sources located within 50 km of Okeelanta can occur any time the proposed boiler is operating (i.e., between March 1 and October 31). However, for the period from April 1 through October 31, the other sugar mill sources are not operating.

2.0 EMISSION INVENTORY

2.1 Okeelanta Mill

Stack and operating parameters and emission rates for the proposed boiler at Okeelanta are the same as presented in Table 5-2 of the previously submitted permit application. The maximum SO_2 emission rate for the boiler is 105.5 lb/hr.

2.2 Other Air Emission Sources

SO_2 is the only pollutant required to be addressed in the impact analysis. Therefore, an emission inventory of PSD increment consuming sources and existing or permitted major sources located within 50 km of the significant impact area of the proposed boiler (i.e., 14.0 + 50.0 = 64.0 km) was developed from available databases. The source parameters for all PSD increment consuming sources used in the Class II analysis is presented in Table 1. It is noted that these sources are all located beyond the significant impact area of the proposed boiler, which was determined to be 14 km in the modeling performed for the permit application.

The PSD Class I SO_2 emission inventory is presented in Table 2. This inventory differs from the Class II inventory because it includes only those sources located within 100 km of the Everglades Class I area.

The sugar mill sources that would only operate concurrently with the proposed boiler during the period March 1 to March 31 are identified in the PSD inventory tables. All other PSD sources potentially would operate for the remaining period when the proposed boiler is operating (i.e., April 1 to October 31).

All major SO_2 sources located within 65 km of Okeelanta are identified in Table 3. This table lists the facility name, coordinates, relative location to Okeelanta, and maximum SO_2 emissions. The emission inventory for determining compliance with ambient air quality standards (AAQS) is presented in Table 4.

3.0 MODELING METHODOLOGY

All modeling techniques and assumptions were the same as in the previously submitted analysis. A PSD modeling analysis was performed in the vicinity of the Okeelanta mill (Class II area) and at the Everglades National Park (ENP), a PSD Class I area. The ISCST was executed only for days in March (Day 60 - Day 90) or when interaction with all other facilities could occur. The model also was executed for the period April 1 to October 31,

when interaction with all non-sugar mill sources could occur. Composite result tables were prepared for March 1 to October 31. The highest, second-highest, short-term maximum concentrations from either the March analysis or the April to October analysis was included in the composite table. A 245-day average concentration, indicative of the combination of the 31-day average in March and the 214-day average from April to October, was determined by inspection of both annual printouts and apportioning the long-term average concentrations as follows:

$$\text{245-day average} = \frac{\text{31-day average} + (7 \times \text{214-day average})}{8}$$

4.0 RESULTS

4.1 PSD Class II Analysis

The screening modeling results for March 1 to March 31 are presented in Table 5. The screening modeling results for April 1 to October 31 are presented in Table 6. Composite screening modeling results for March 1 to October 31 are presented in Table 7. PSD Class II refinement results are presented in Table 8. The maximum annual average, 3-hour, and 24-hour concentrations are 1.8, 91, and 19 $\mu g/m^3$, respectively. The maximum concentrations are significantly below the allowable PSD Class II increments for SO_2, which are 20, 512, and 91 $\mu g/m^3$, respectively, for the three averaging times. It is to be noted that the 3-hour and 24-hour maximum concentrations are on the edge of the significant impact area for the proposed source, extended out to 14.2 km for this analysis.

4.2 PSD Class I Analysis

PSD Class I results for March 1 to March 31 are presented in Table 9. PSD Class I results for April 1 to October 31 are presented in Table 10. Composite screening modeling results for March 1 to October 31 are presented in Table 11. The PSD Class I concentrations for April 1 to October 31 are all above the March concentrations. (Note: The 31-day concentrations, when apportioned, are lower than the 214-day concentrations.) Therefore, the PSD Class I refinements of Table 5-8 of

the original report remain the same. The maximum annual average, 3-hour, and 24-hour concentrations are 0.4, 12.7, and 3.6 $\mu g/m^3$, respectively. The maximum concentrations are below the allowable PSD Class I increments for SO_2, which are 2, 25, and 5 $\mu g/m^3$, respectively, for the three averaging times.

4.3 AAQS Analysis

SO_2 AAQS screening modeling results for March 1 to March 31 are presented in Table 12. AAQS results for April 1 to October 31 are presented in Table 13. Composite screening modeling results for March 1 to October 31 are presented in Table 14. AAQS refinement results are presented in Table 15. The maximum predicted annual average, 3-hour, and 24-hour concentrations are 6.6, 357, and 83 $\mu g/m^3$, respectively. Added to appropriate SO_2 background concentrations of 9, 64, and 19 $\mu g/m^3$, respectively, the total AAQS concentrations become 15.6, 421, and 102 $\mu g/m^3$, respectively, for the annual average, 3-hour, and 24-hour averaging times. These concentrations are significantly below the AAQS for SO_2, which are 60, 1300, and 260 $\mu g/m^3$, respectively. It is to be noted that the annual and 3-hour maximum concentrations are on the edge of the significant impact area for the proposed source, extended out to 14.2 km for this analysis.

Table 1. SO_2 Source Parameters Used in the PSD Class II Modeling Analysis

Facility Name	Emission Rate (g/s)	Relative Coordinates X (m)	Relative Coordinates Y (m)	Stack Parameters Height (m)	Stack Parameters Temp. (°K)	Stack Parameters Velocity (mps)	Stack Parameters Diameter (m)
PROPOSED OKEELANTA BLR	13.29	0	0	22.9	497.0	18.38	1.52
US SUGAR- CLEWISTON PSD[a]	85.7	-18900	17500	45.7	340.0	25.20	2.20
OSCEOLA FARMS PSD[a]	33.4	19200	28600	27.4	341.0	16.90	1.90
SUGAR CANE GROWERS PSD[a]	71.2	9900	13900	47.2	344.0	10.60	3.00
US SUGAR- BRYANT PSD[a]	32.5	13800	28700	30.5	344.0	22.40	2.10
FPL MARTIN COMB TURBS PSD	940.80	17600	52100	64.9	410.9	18.90	6.10
FPL MARTIN AUX BLRS PSD	12.90	17600	52100	18.3	535.4	15.24	1.10
FPL MARTIN DIESL GENS PSD	0.51	17600	52100	7.6	785.9	39.62	0.30
BECHTEL INDIANTOWN PSD	97.17	20600	52100	144.8	328.0	21.30	3.88

[a]Source operates concurrently with proposed boiler only during period March 1 to March 31.

Table 2. SO_2 Source Parameters Used in the PSD Class I Modeling Analysis

Facility Name	Emission Rate (g/s)	Relative Coordinates X (m)	Relative Coordinates Y (m)	Stack Parameters Height (m)	Stack Parameters Temp. (°K)	Velocity (mps)	Diameter (m)
PROPOSED OKEELANTA BLR	13.29	0	0	22.9	497.0	18.38	1.52
US SUGAR - CLEWISTON[a]	85.7	-18900	17500	45.7	340.0	25.20	2.20
OSCEOLA FARMS[a]	33.4	19200	28600	27.4	341.0	16.90	1.90
SUGAR CANE GROWERS[a]	71.2	9900	13900	47.2	344.0	10.60	3.00
US SUGAR- BRYANT[a]	32.5	13800	28700	30.5	344.0	22.40	2.10
TARMAC KILN 2	34.65	37900	-77700	61.0	422.0	9.10	2.44
TARMAC KILN 3	47.64	37900	-77700	61.0	450.0	11.04	4.57
METRO-DADE RES.REC.	86.20	39300	-82000	46.0	472.0	12.20	2.74
FPL LAUDERDALE	270.90	55300	-56100	45.7	411.0	11.04	4.88
FPL LAUDERDALE	-457.38	55300	-56100	46.0	422.0	17.62	4.27
N. BROWARD RES. REC.	35.4	58600	-31800	58.5	381.0	18.00	4.57
S.BROWARD RES. REC.	38.2	54600	-56100	59.4	381.0	18.00	4.57

[a]Sources operate concurrently with proposed source only during period March 1 to March 31.

Table 3. AAQS Sources Within 50 km of the Okeelanta Site

APIS Number	Facility	UTM Coordinates (km) East	UTM Coordinates (km) North	Relative Location (km) To Proposed Site X	Relative Location (km) To Proposed Site Y	Distance From Proposed Site (km)	Direction From Proposed Site (degree)	Maximum SO_2 Emissions (TPY)
50FMB500086	Glades Correctional Institute	523.4	2955.2	-1.6	15.8	15.9	354	485
52FTM500026	Sugar Cane Growers	534.9	2953.3	9.9	13.9	17.1	35	4,269
52FTM260001	Everglades Sugar	509.6	2954.2	-15.4	14.8	21.4	314	1,408
52FTM260003	U.S. Sugar Corp.	506.1	2956.9	-18.9	17.5	25.8	313	5,353
52FTM500016	Atlantic Sugar Association	552.9	2945.2	27.9	5.8	28.5	78	1,484
52FTM500061	U.S. Sugar--Bryant	538.8	2968.1	13.8	28.7	31.8	26	2,364
52FTM500019	Osceola Farms	544.2	2968.0	19.2	28.6	34.4	34	3,122
50WPB430001	Florida Power & Light--Martin Plant	542.6	2991.5	17.6	52.1	55.0	19	93,788
50WPB43????	Bechtel Indiantown Cogen.--Proposed	545.6	2991.5	20.6	52.1	56.0	22	3,378
Okeelanta Mill Site Location (UTM):		525.0	2939.4					

Table 4. SO_2 Source Parameters Used in the AAQS Modeling Analysis (Page 1 of 2)

Facility Name	Emission Rate (g/s)	Relative Coordinates X (m)	Relative Coordinates Y (m)	Stack Parameters Height (m)	Stack Parameters Temp. (°K)	Stack Parameters Velocity (mps)	Stack Parameters Diameter (m)
PROPOSED OKEELANTA BLR	13.29	0	0	22.9	497.0	18.38	1.52
US SUGAR CORP BLRS 1&2	93.17	-18900	17500	22.9	339.0	35.54	1.86
US SUGAR CORP BLR 3	26.33	-18900	17500	27.4	340.0	14.54	2.29
US SUGAR CORP BLR 4	4.41	-18900	17500	45.7	334.0	19.66	2.51
US SUGAR CORP BLR 5&6	19.32	-18900	17500	19.8	340.0	9.78	1.83
US SUGAR CORP PSD	85.7	-18900	17500	45.7	340.0	25.20	2.20
OSCEOLA FARMS BLR 2	18.3	19200	28600	25.0	341.0	18.10	1.52
OSCEOLA FARMS BLR 3	8.42	19200	28600	21.9	341.0	14.50	1.93
OSCEOLA FARMS BLR 4	19.0	19200	28600	25.0	341.0	18.80	1.83
OSCEOLA FARMS BLR 5	21.6	19200	28600	25.0	341.0	14.90	1.52
OSCEOLA FARMS BLR 6	23.5	19200	28600	27.4	341.0	14.90	1.99
OSCEOLA FARMS PSD	33.4	19200	28600	27.4	341.0	16.90	1.90
SUGAR CANE GROWERS BLRS 1&2	24.2	9900	13900	24.4	344.0	11.40	1.40
SUGAR CANE GROWERS BLR 3	4.4	9900	13900	24.4	344.0	15.60	1.60
SUGAR CANE GROWERS BLR 4	24.2	9900	13900	33.5	344.0	11.20	2.82
SUGAR CANE GROWERS BLR 5	16.2	9900	13900	24.4	344.0	15.20	1.40
SUGAR CANE GROWERS BLR 6&7	51.0	9900	13900	12.2	606.0	11.20	2.13
SUGAR CANE GROWERS BLR 8	26.7	9900	13900	47.2	344.0	10.60	3.05
SUGAR CANE GROWERS PSD	71.2	9900	13900	47.2	344.0	10.60	3.00
US SUGAR-BRYANT BLRS 1,2&3	232.3	13800	28700	19.8	342.0	36.40	1.64
US SUGAR-BRYANT BLR 5	102.9	13800	28700	30.5	339.0	31.40	2.21
US SUGAR-BRYANT PSD	32.5	13800	28700	30.5	344.0	22.40	2.10
ATLANTIC SUGAR BLR 1	17.24	27900	5800	18.9	346.0	12.70	1.92
ATLANTIC SUGAR BLR 2	22.50	27900	5800	18.9	342.0	10.90	1.92

Table 4. SO_2 Source Parameters Used in the AAQS Modeling Analysis (Page 2 of 2)

Facility Name	Emission Rate (g/s)	Relative Coordinates X (m)	Relative Coordinates Y (m)	Stack Parameters Height (m)	Stack Parameters Temp. (°K)	Stack Parameters Velocity (mps)	Stack Parameters Diameter (m)
ATLANTIC SUGAR BLR 3	16.88	27900	5800	21.9	341.0	17.50	1.83
ATLANTIC SUGAR BLR 4	16.88	27900	5800	18.3	344.0	15.00	1.83
ATLANTIC SUGAR BLR 5	11.80	27900	5800	27.4	339.0	15.70	1.68
EVERGLADES SUGAR	11.80	-15400	14800	21.9	477.0	10.10	1.10
FPL MARTIN 1&2	1743.79	17600	52100	152.1	420.9	21.03	7.99
FPL MARTIN COMB TURBS PSD	940.80	17600	52100	64.9	410.9	18.90	6.10
FPL MARTIN AUX BLRS PSD	12.90	17600	52100	18.3	535.4	15.24	1.10
FPL MARTIN DIESL GENS PSD	0.51	17600	52100	7.6	785.9	39.62	0.30
BECHTEL INDIANTOWN PSD	97.17	20600	52100	144.8	328.0	21.30	3.88
GLADES CORR. INST	14.81	-1600	15800	9.8	389.0	11.28	0.40

Note: The following sources operate concurrently with the proposed boiler only during the period March 1 through March 31: U.S. Sugar, Osceola Farms, Sugar Cane Growers, and Atlantic Sugar.

Table 5. Maximum Predicted PSD Class II Impacts, March 1 to March 31 - Screening Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)
31-Day-Average	1982	3.6	30	4000
	1983	2.2	150	3027
	1984	3.3	30	14000
	1985	3.1	30	14000
	1986	3.6	30	14000
3-Hour[a]	1982	67	130	3879
	1983	49	150	3027
	1984	85	40	14000
	1985	41	40	14000
	1986	50	30	14000
24-Hour[a]	1982	15	30	14000
	1983	12	150	3027
	1984	15	160	2840
	1985	18	30	14000
	1986	14	30	14000

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 6. Maximum Predicted PSD Class II Impacts, April 1 to October 31 - Screening Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)
31-Day-Average	1982	1.6	310	5086
	1983	1.7	310	5086
	1984	2.0	320	4391
	1985	1.3	320	4391
	1986	1.4	360	3597
3-Hour[a]	1982	75	330	3968
	1983	86	170	2754
	1984	60	340	3724
	1985	67	170	2754
	1986	51	170	2754
24-Hour[a]	1982	17	160	2840
	1983	15	170	2754
	1984	15	320	4391
	1985	11	160	2840
	1986	12	360	3597

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 7. Maximum Predicted PSD Class II Impacts, March 1 - October 31 - Composite Screening Analysis Results

Averaging Time	Year	Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)
245-Day-Average	1982	1.7	310	5086
	1983	1.6	310	5086
	1984	1.9	320	4391
	1985	1.5	320	4391
	1986	1.5	360	3597
3-Hour[a]	1982	75	330	3968
	1983	86	170	2754
	1984	85	40	14000
	1985	67	170	2754
	1986	51	170	2754
24-Hour[a]	1982	17	160	2840
	1983	15	170	2754
	1984	15	320	4391
	1985	18	30	14000
	1986	14	30	14000

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 8. Maximum Predicted Impacts for Okeelanta's Proposed Boiler With Respect to SO_2 PSD Class II Increments - Refined Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)	Day/Pd.	Allowable Increment
Annual	1984	1.8	318	4840	-/-	20
3-Hour[a]	1983	85	170	2786	300/7	512
	1984	91	40	14200	68/6	
24-Hour[a]	1982	18	162	2884	267/-	91
	1985	19	30	14200	85/-	

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 9. Maximum Predicted SO_2 PSD Class I Impacts, March 1 to March 31 - Screening Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Receptor X (m)	Receptor Y (m)
31-Day Average	1982	0.7	8500	-91400
	1983	0.2	5000	-91400
	1984	0.4	8500	-91400
	1985	0.5	8500	-91400
	1986	0.5	8500	-96400
3-Hour[a]	1982	7.8	-50000	-85400
1983	5.4	5000	-91400	
	1984	6.7	8500	-91400
	1985	7.7	8500	-91400
	1986	11.6	8500	-96400
24-Hour[a]	1982	2.2	8500	-91400
	1983	0.8	5000	-91400
	1984	1.6	8500	-91400
	1985	2.1	8500	-91400
	1986	2.7	8500	-96400

[a]All short-term concentrations indicated highest, second-highest concentrations.

Table 10. Maximum Predicted SO_2 PSD Class I Impacts, April 1 to October 31 - Screening Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Receptor X (m)	Receptor Y (m)
214-Day Average	1982	0.3	8500	-91400
	1983	0.3	8500	-91400
	1984	0.3	8500	-91400
	1985	0.4	8500	-91400
	1986	0.4	8500	-91400
3-Hour[a]	1982	9.5	8500	-101400
	1983	12.7	8500	-91400
	1984	10.3	8500	-91400
	1985	10.8	8500	-91400
	1986	11.7	8500	-106400
24-Hour[a]	1982	3.3	8500	-91400
	1983	3.6	8500	-91400
	1984	2.8	8500	-96400
	1985	2.8	8500	-91400
	1986	2.7	8500	-101400

[a]All short-term concentrations indicated highest, second-highest concentrations.

Table 11. Maximum Predicted SO_2 PSD Class I Impacts, March 1 to October 31 - Composite Screening Analysis Results

Averaging Time	Year	Concentration ($\mu g/m^3$)	Receptor X (m)	Receptor Y (m)
245-Day Average	1982	0.3	8500	-91400
	1983	0.3	8500	-91400
	1984	0.3	8500	-91400
	1985	0.4	8500	-91400
	1986	0.4	8500	-91400
3-Hour[a]	1982	9.5	8500	-101400
	1983	12.7	8500	-91400
	1984	10.3	8500	-91400
	1985	10.8	8500	-91400
	1986	11.7	8500	-106400
24-Hour[a]	1982	3.3	8500	-91400
	1983	3.6	8500	-91400
	1984	2.8	8500	-96400
	1985	2.8	8500	-91400
	1986	2.7	8500	-101400

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 12. Maximum Predicted AAQS Impacts for March 1 to March 31 - Screening Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Receptor X (m)	Receptor Y (m)
31-Day-Average	1982	13.4	30	14000
	1983	7.9	360	14000
	1984	14.2	360	14000
	1985	12.8	30	14000
	1986	15.7	30	14000
3-Hour[a]	1982	200	30	14000
	1983	151	40	14000
	1984	314	40	14000
	1985	158	50	11000
	1986	199	320	14000
24-Hour[a]	1982	55	30	14000
	1983	37	40	14000
	1984	48	30	14000
	1985	68	30	14000
	1986	70	30	14000

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 13. Maximum Predicted SO_2 AAQS Impacts, April 1 to October 31 - Screening Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)
214-Day Average	1982	3.3	360	14000
	1983	4.0	360	14000
	1984	2.8	350	14000
	1985	4.2	360	14000
	1986	5.7	360	14000
3-Hour[a]	1982	197	360	14000
	1983	238	360	14000
	1984	207	360	14000
	1985	236	360	14000
	1986	247	360	14000
24-Hour[a]	1982	35	360	14000
	1983	42	360	14000
	1984	44	350	14000
	1985	46	360	14000
	1986	47	360	14000

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 14. Maximum Predicted AAQS SO_2 Impacts, March 1 to October 31 - Composite Screening Analysis Results

Averaging Time	Year	Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)
245-Day-Average	1982	4.0	360	14000
	1983	4.5	360	14000
	1984	4.1	360	14000
	1985	5.1	360	14000
	1986	6.6	360	14000
3-Hour[a]	1982	200	30	14000
	1983	238	360	14000
	1984	314	40	14000
	1985	236	360	14000
	1986	247	360	14000
24-Hour[a]	1982	55	30	14000
	1983	42	360	14000
	1984	48	30	14000
	1985	68	3014000	
	1986	70	30	14000

[a]All short-term concentrations indicate highest, second-highest concentrations.

Table 15. Maximum SO_2 Impacts as Compared With AAQS - Refined Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)			Receptor		Worst Day/Pd.	Florida AAQS ($\mu g/m^3$)
		Total	Modeled	Background	Dir. (deg)	Dist. (m)		
245-Day-Average	1986	15.6	6.6	9	360	14200	-/-	60
3-Hour[a]	1984	421	357	64	40	14200	68/6	1300
24-Hour[a]	1985	93	74	19	30	14200	85/-	260
	1986	102	83	19	32	13900	88/-	

[a]All short-term concentrations indicate highest, second-highest concentrations.

ATTACHMENT B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 10 DEC 1986

SUBJECT: Ambient Air Questions

Michael Koerber

FROM: Michael Koerber
Regional Meteorologist

TO: Dean Wilson
Model Clearinghouse

This memo identifies four controversial ambient air questions that have arisen in Region V in recent months. I am requesting the Model Clearinghouse's comments on the Region V position for each case.

Case 1 (Dakota County, Minnesota)

Background - The Koch Refining Company operates a refinery in Dakota County, Minnesota. Koch owns property (which is fenced) on the west and east sides of US 52 (see Figure 1). The emission sources are all located on the west side.

Issue - Should receptors be located over US 52 and over the fenced Koch property on the east side of US 52.

Region V - Receptors should be located over US 52 because it is a public highway. Koch neither owns nor controls the road. Furthermore, the road does not interfere with the safe and efficient operation of the plant since the emission sources are all located on one side of the road.

Receptors should not be located over the Koch property on the east side of US 52 because it is owned by Koch and public access is precluded by a fence.

Case 2 (Warrick County, Indiana)

Background - The ALCOA-Warrick Power Station and the SIGECO-Culley Generating Station are located in southern Warrick County, Indiana. The companies own a large tract of land surrounding their facilities on both sides of the Ohio River.

Issues - Should receptors be located over ALCOA and SIGECO property and over the Ohio River.

Region V Position - The ALCOA and SIGECO property issue is addressed in Attachment #1. Basically, receptors should be located over the large property area on the north side of the River and over the three individual sections on the south side of the River unless these areas are fenced. Note, we do not believe that fencing is necessary along the land/River boundary.

Receptors should be located over the Ohio River since it is a public waterway. ALCOA and SIGECO neither own nor control the River. Furthermore, the River does not interfere with the safe and efficient operation of the plants since they are both located on one side of the River.

Case 3 (Wayne County, Michigan)

Background - There are several industrial sources located along the Detroit River and Rouge River in Detroit, Michigan (see Figure 2). The Detroit River is used for both industrial and recreational boating activities. Both the Rouge River, which flows along the west and north side of Zug Island, and the Short-cut Canal, which was built by Ford many years ago to ease industrial traffic to its plant farther up on the Rouge River, are used primarily by industrial traffic and, as such, are not conducive to public boating.

Issue - Should receptors be located over the Detroit River, the Rouge River, and the Short-cut Canal.

Region V Position - Receptors should be located over the Detroit River since it is clearly accessible to the public.

Receptors should also be located over the Rouge River and Short-cut Canal since both waterways are accessible to the public. None of the companies own or control these waterways. Furthermore, the waterways do not interfere with the safe and efficient operation of any plant since they are located on only one side of the waterways.

Case 4 (Cuyahoga County, Ohio)

Background - LTV Steel operates an integrated iron and steel mill in Cleveland, Ohio. The mill consists of the former J&L mill on the west side of the Cuyahoga River and the former Republic Steel mill on the east side of the Cuyahoga River (see Figure 3). The majority of recreational activity on the water is north of point A in Figure 3, although a public tour boat does travel as far south as point B twice a day. Traffic beyond point B is primarily industrial and, as such, the River is not conducive to public boating. The only recreational activity on the River south of LTV occurs several miles down river. The mill is surrounded by a fence, except along and over the Cuyahoga River, and over the railroad tracks which run through the mill.

Issue - Should receptors be located over the Cuyahoga River and over the railroad tracks.

Region V Position - Consistency with the Warrick County and Wayne County cases implies that receptors should be located over the Cuyahoga River. There is an important factual difference between LTV and those cases, however, that must be considered (i.e., the River subdivides the main plant). LTV does not own the River, of course, but it does "control" it in the sense that river traffic on this portion of the River is mainly, if not soley, LTV traffic. Furthermore, the River serves as an important link between the east and west side operations. Consequently, we believe that it may be reasonable to exclude receptors from the portion of the River within the general boundaries of the LTV plant.

For similar reasons, receptors should also not be located over the railroad tracks.

ATTACHMENTS

cc: Sharon Reinders, w/o attachments

Keinder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

3 OCT 1987

MEMORANDUM

SUBJECT: Ambient Air

FROM: G. T. Helms, Chief
Control Programs Operations Branch (MD-15)

TO: Steve Rothblatt, Chief
Air Branch, Region V

My staff and I have discussed the five ambient air cases which you submitted for our review on January 16, 1987. The following comments are our interpretation of the ambient air policy . However, this memorandum is not a discussion of the technical issues involved in the placement of receptors for modeling.

Our comments on each of the cases follow:

Case 1 (Dakota County, MN): This case involves two noncontiguous pieces of fenced property owned by the same source, divided by a public road. We agree that the road is clearly ambient air and that both fenced pieces of plant property are not.

Case 2 (Warrick County, IN): This case involves two large sources on both sides of the Ohio River. We agree that receptors should be located over the river since this is a public waterway, not controlled by the sources. We also agree that the river does indeed form a sufficient natural boundary/barrier and that fencing is not necessary, since the policy requires a fence or other physical barrier. However, some conditions must be met. The riverbank must be clearly posted and regularly patrolled by plant security. It must be very clear that the area is not public. Any areas where there is any question--i.e., grassy areas, etc.--should be fenced and marked, even if there is only a very remote possibility that the public would attempt to use this property.

However, we also feel that current policy requires that receptors should be placed in ALCOA and SIGECO property for modeling the contribution of each source's emissions to the other's ambient air. Thus, ALCOA's property--regardless of whether it is fenced--is still "ambient air" in relation to SIGECO's emissions and vice-versa.

Case 3 (Wayne County, MI): This case involves the air over the Detroit River, the Rouge River and the Short-cut Canal. We agree that the air over all three of these is ambient air, since none of the companies owns them or controls public access to them. Note, however, that one source's property--regardless of whether it is fenced--is the "ambient air" relative to another source's emissions.

Case 4 (Cuyahoga County, OH): This case involves LTV Steel's iron and steel mill located on both sides of the Cuyahoga River.

We do not feel that LTV Steel "controls" the river traffic in that area sufficiently to exclude the public from the river, whether it be recreational or industrial traffic. The fact that there is little or no recreational traffic in that area is not sufficient to say that all river traffic there is LTV traffic. The public also includes other industrial users of the river that are not associated with LTV.

It is difficult to tell from the map whether the railroad line is a through line or not. If the railroad yard serves only the plant then it would not be ambient air but the railroad entrance to the plant would have to be clearly marked and patrolled. However, if the line is a through line then that would be ambient air. We would need additional information to make a final determination.

The unfenced river boundaries should meet the same criteria as in Case 2 above.

Case 5 (involves the placement of receptors on another source's fenced property): As mentioned above in Case 2, we feel that present policy does require that receptors be placed over another source's property to measure the contribution of the outside source to its neighbor's ambient air. To reiterate, Plant A's property is considered "ambient air" in relation to Plant B's emissions.

I hope that these comments are helpful to you and your staff. This memorandum was also reviewed by the Office of General Counsel.

cc: S. Schneeberg
P. Wyckoff
R. Rhoads
D. Stonefield
Air Branch Chiefs, Region I-X

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

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3. Article Addressed to:

Mr. P. A. Carreno
Director of Mill & Refinery Ops.
Okeelanta Corporation
P. O. Box 86
South Bay, FL 33493

4. Article Number
P 256 396 202

Type of Service:
☐ Registered ☐ Insured
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X Calvin Briscoe

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

PS Form **3811**, Mar. 1988 * U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 256 396 202

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. P. A. Carreno, Okeelanta Corp.	
Street and No. P. O. Box 86	
P.O., State and ZIP Code South Bay, FL 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 9-26-90 Permit: AO 50-169210	

PS Form 3800, June 1985 * U.S.G.P.O. 1989-234-555

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

September 21, 1990

Mr. P. A. Carreno
Director of Mill & Refinery Operations
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Re: Boiler No. 4 - Permit AO 50-169210

The request in your July 12 letter to delete the permitted production limit on steam could result in an increase in air pollutant emissions which would subject this boiler to new source regulations. Describing the production limit as an average for an "extended period" is also not acceptable because it could allow violations of the emission standards and short term ambient air quality standards. Because of the variability in steam production of the bagasse boiler, it is also not practical to view the steam production restriction as an instantaneous rate.

As the primary regulated air pollutant from this bagasse boiler is particulate matter, we believe the steam production rate should be defined as a 24-hour average so that it can be compared to the daily ambient air quality standard for PM_{10}.

We request the South District amend the permit to operate boiler No. 4 to: "Steam production shall not exceed 90,000 lbs/hr of 350° PSIG and 650°F steam (24-hour average)."

If you have more comments on this issue, please contact the District office or write to me.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/WH/plm

c: Philip Edwards, S. Fl. District
Jim Stormer, Palm Beach County Health Dept.

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-8072

TELEX: 803444

July 12, 1990

Mr. Clair Fancy
Florida Department of
Environmental Regulations
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ref: Okeelanta Corporation
I. D. 52 FTM 50000503
Boiler No. 4 - Permit A050-169210

Dear Mr. Fancy,

This in reference with the latest permitting of the above mentioned boiler.

When this boiler was upgraded to operate at higher steam pressure and temperature for this past 1989/90 crop, we received authorization to do so from your department as per your letter of November 18, 1988, provided that the heat input to the boiler does not exceed the quantity allowed by the latest construction permit. It was necessary to reduce the allowable steam production rate of the boiler to account for the higher heat content of the steam.

The previous permit No. AO-50-92636 of the boiler with the expiration date on September 18, 1989 make reference to the operation of Boiler No. 4 fired with bagasse and number 6 fuel oil with a design capacity of approximately 94,000 lbs./hr of steam.

However, when the new permit No. A050-169210 was issued on September 12, 1989 instead of following the same concept previously expressed to lower the operation of the boiler to a capacity of approximately 90,000 lb/hr of steam, a new specific condition No. 5 was introduced for the first time saying that steam production shall not exceed 90,000 lbs/hr of 350 PSIG and 650° F steam.

We became aware of this change when we received a letter from Mr. Philip R. Edwards dated March 9, 1990 informing us that we were in violation because for seven out of 128 days during this past crop we were operating this boiler above the rated steam production capacity.

After several letters and a couple of meetings with the DER staff in Fort Myers the following agreement was reached:

1) That the permitted maximum steam production is not that of the design (rated) steam capacity as expressed by the boilers manufacturers. The boilers in an hourly or daily basis, could go above or below the design capacity as long as it meets the requirements of the particulate emission test and the total allowable quantity.

2) That the drop in rated capacity of this boiler from 94,000 lbs/hr to 90,000 lbs/hr is obtained on an extended period of time as an average although could vary above or below on an hourly or daily basis as it was also the case when it was rated at 94,000 lbs/hr.

3) Accordingly, to drop the violation charges on boiler No. 4 and No. 5 (that was also cited for the same reason).

4) Any request for the modification to the permit in question has to be addressed to the FDER office in Tallahassee.

These conclusions were reached after lengthy discussion and were based on conclusive data presented by us, gathered from present and previous permits of our boilers.

Thus we are hereby requesting from your offices that the item 5 of the specific conditions of the permits of reference be deleted.

It reads: "Steam production shall not exceed 90,000 lbs/hr of 350° PSIG and 650° F steam."

Sincerely,

F. A. Carreño
Director of Mill &
Refinery Operations

PAC:slc

xc: A. Recio
A. Kirstein, III
P. A. Alvarez
Philip R. Edwards DER Ft. Myers
David Knowels DER Ft. Myers

19876

PREVENTION OF SIGNIFICANT DETERIORATION PERMIT APPLICATION FOR OIL-FIRED BOILER NO. 16 OKEELANTA CORPORATION

Prepared For:

Okeelanta Corporation
P.O. Box 86
South Bay, FL 33493

Prepared By:

KBN Engineering and Applied Sciences, Inc.
1034 NW 57th Street
Gainesville, FL 32605

January 1991
90121B1

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

$5,000 pd. 1-29-91 Recpt #151239

AC50-191876
PSD-FL-169

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Oil-Fired Steam Boiler [X] New[1] [ ] Existing[1]

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

COMPANY NAME: Okeelanta Corporation COUNTY: Palm Beach

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Boiler No. 16

SOURCE LOCATION: Street 6 miles south of South Bay off US 27 City South Bay

UTM: East 17-524.9 North 2940.1

Latitude 26 ° 35 ' 00 "N Longitude 80 ° 45 ' 00 "W

APPLICANT NAME AND TITLE: Pablo A. Carreno, Director of Mill and Refinery Operations

APPLICANT ADDRESS: P.O. Box 86, South Bay, FL 33493

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Okeelanta Corporation

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization Signed:

Pablo A. Carreno, Dir. of Mill and Refinery Operations
Name and Title (Please Type)

Date: 01/29/91 Telephone No. (407) 996-9072

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)
This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgement, that

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

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed David A. Buff

David A. Buff
Name (Please Type)

KBN Engineering and Applied Sciences, Inc.
Company Name (Please Type)

1034 NW 57th Street, Gainesville, FL 32605
Mailing Address (Please Type)

Florida Registration No. 19011 Date: Jan. 28, 1991 Telephone No. (904) 331-9000

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Refer to PSD Report

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

Start of Construction April 1991 Completion of Construction October 1992

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Low NO_x burners and flue gas recirculation - $200,000

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

None issued

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 25 ; If power plant, hrs/yr _____; if seasonal, describe: 175 days/yr; normally April through October.

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

1. Is this source in a non-attainment area for a particular pollutant? Yes
   a. If yes, has "offset" been applied? No
   b. If yes, has "Lowest Achievable Emission Rate" been applied? No
   c. If yes, list non-attainment pollutants. Ozone
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No
3. Does the State "Prevention of Significant Deterioration" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? Yes
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

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

   a. If yes, for what pollutants? _____
   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Not Applicable				

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

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

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

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Sulfur Dioxide	105.5	221.6	17-2.600(6)	BACT	105.5	221.6	Boiler
Particulates	11.0	23.1	17-2.600(6)	BACT	11.0	23.1	Boiler
Nitrogen Oxides	36.9	77.5	N/A	N/A	36.9	77.5	Boiler
Carbon Monoxide	41.0	86.1	N/A	N/A	41.0	86.1	Boiler
Vol. Org. Comp.	18.45	38.7	N/A	N/A	18.45	38.7	Boiler

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

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

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

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Low NO_x burners/flue	NO_x	30 - 60%	N/A	Design
gas recirculation				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Distillate fuel oil	1,083 gal	1,463 gal	205

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

Fuel Analysis: See Table 2-1 of PSD Report

Percent Sulfur:_____ Percent Ash:_____

Density: _____ lbs/gal Typical Percent Nitrogen:_____

Heat Capacity:_____ BTU/lb _____ BTU/gal

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

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

Annual Average 0 Maximum 0

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

Boiler ash will be properly disposed of on-site.

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

Stack Height: 75 ft. Stack Diameter: 5.0 ft.

Gas Flow Rate: 71,000 ACFM 36,860 DSCFM Gas Exit Temperature: 435 °F.

Water Vapor Content: 12 % Velocity: 60.3 FPS

SECTION IV: INCINERATOR INFORMATION
Not Applicable

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

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

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control devices: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify)_____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

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

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
   Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods, 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
   See PSD Report
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
   See PSD Report
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
   See PSD Report
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
   See PSD Report
6. An 8 ½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
   See PSD Report
7. An 8 ½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Examples: Copy of relevant portion of USGS topographic map).
   See PSD Report
8. An 8 ½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.
   See PSD Report

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

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

[X] Yes [ ] No

Contaminant	Rate or Concentration
Sulfer Dioxide	0.5% S fuel oil or 90% reduction
Nitrogen Oxides	0.2 lb/MM Btu

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

[X] Yes [ ] No

Contaminant	Rate or Concentration
See PSD Report	

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

Contaminant	Rate or Concentration
Sulfur Dioxide	0.5% S fuel oil
Nitrogen Oxides	0.18 lb/MM Btu

D. Describe the existing control and treatment technology (if any). Not Applicable

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

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

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

1.

a. Control Devices:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

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

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See PSD Report

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

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

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

Refer to PSD Report

A. Company Monitored Data

1. _____ no. sites _____ TSP _____( ) SO^{2*} _____ Wind spd/dir

Period of Monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

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

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

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

2. Surface data obtained from (location)_____

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

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

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

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

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e, jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

PSD REPORT
OIL-FIRED BOILER NO. 16
OKEELANTA CORPORATION

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LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS
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AAQS	Ambient Air Quality Standards
BACT	best available control technology
Be	beryllium
Btu/hr-ft^2	British thermal units per hour square foot
CCA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
ENP	Everglades National Park
EPA	U.S. Environmental Protection Agency
F.A.C.	Florida Administrative Code
FDER	Florida Department of Environmental Regulation
FSCL	Florida Sugar Cane League
ft	feet
g/s	grams per second
GEP	good engineering practice
HSH	highest, second-highest
ISC	Industrial Source Complex
ISCLT	Industrial Source Complex Long-Term (Model)
ISCST	Industrial Source Complex Short-Term (Model)
km	kilometer
lb/hr	pounds per hour
lb/MMBtu	pounds per million British thermal units
m	meter
MMBtu	million British thermal units
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PM(TSP)	particulate matter (total suspended particulates)
PM10	particulate matter with an aerodynamic diameter less than or equal to 10 micrometers

ACRONYMS AND ABBREVIATIONS
(Page 2 of 2)

PSD	prevention of significant deterioration
SIA	significant impact area
SIP	State Implementation Plan
SO_2	sulfur dioxide
TPY	tons per year
UNAMAP	Users Network for Applied Modeling of Air Pollution
VOC	volatile organic compound
$\mu g/m^3$	micrograms per cubic meter

1.0 INTRODUCTION

Okeelanta Corporation is proposing to add a new, oil-fired package boiler at its existing sugar cane mill in Palm Beach County. The existing mill is located about 6 miles south of South Bay, Florida, and just west of U.S. 27. Figure 1-1 shows the site location map of the existing facility.

The proposed addition at this location consists of a new 150,000 pounds-per-hour (lb/hr) package boiler firing No. 2 fuel oil. The proposed boiler will be used only during the off-season to supply process steam to the existing sugar refinery at Okeelanta. Under current federal and state air quality regulations, the proposed boiler will constitute a major modification at a major stationary source.

This report addresses the requirements of the prevention of significant deterioration (PSD) new source review procedures pursuant to rules and regulations that implement the Clean Air Act (CAA) amendments of 1977. The Florida Department of Environmental Regulation (FDER) has PSD review and approval authority in Florida. Based on the maximum emissions from the proposed boiler, a PSD review is required for sulfur dioxide (SO_2) and nitrogen oxides (NO_x).

The engineering design for the proposed boiler includes the selection of very low sulfur, No. 2 distillate fuel oil (maximum sulfur content not to exceed 0.5 percent), as well as incorporation of low-NO_x burners and flue-gas recirculation for the control of NO_x emissions. These control aspects are proposed as best available control technology (BACT) for the proposed boiler.

This application contains six other sections. Descriptions of the existing operations at Okeelanta and the proposed oil-fired boiler addition are presented in Section 2.0. The air quality review requirements and source applicability for the proposed boiler are discussed in Section 3.0.

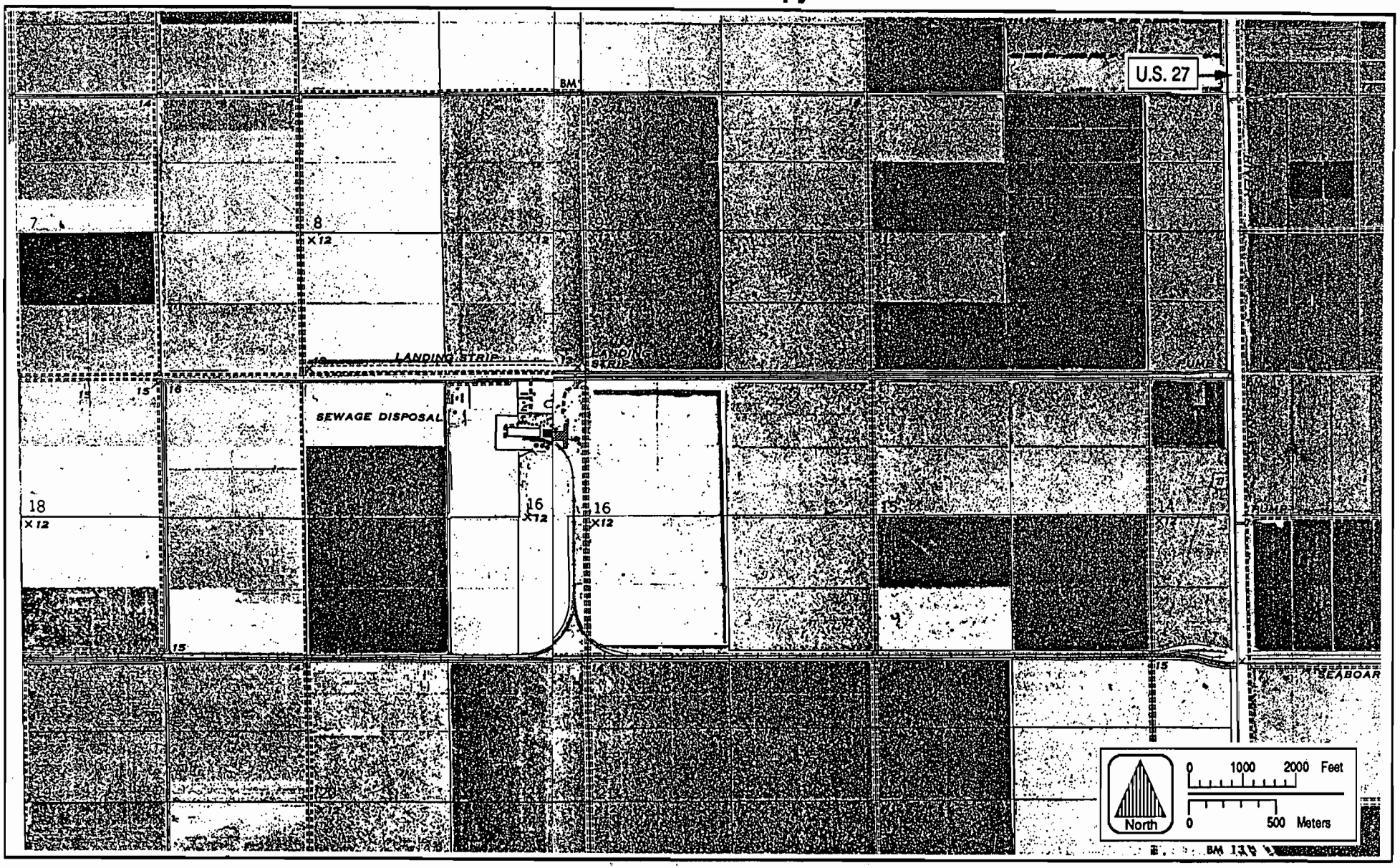

Figure 1-1 LOCATION OF OKEELANTA CORPORATION MILL, SOUTH BAY, FLORIDA

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Presented in Section 4.0 is an analysis of ambient monitoring data in the area of the proposed source. The methodology and results of the air dispersion modeling and air quality impact analysis are presented in Section 5.0. The BACT analysis required as part of the PSD permitting process is presented in Section 6.0. Impacts on soils, vegetation, and visibility are summarized in Section 7.0.

2.0 PROJECT DESCRIPTION

2.1 EXISTING OPERATIONS

Okeelanta currently operates a sugar cane processing facility at its mill located just south of South Bay. The mill's air emission sources consist of eight bagasse-/oil-fired boilers, which operate normally November through March (termed the "crop season"). During this period, the mill is harvesting and processing sugar cane into raw sugar. Currently, a raw sugar refinery is operated that processes a portion of the raw sugar into refined sugar.

The processing of the sugar cane produces a solid fuel byproduct, bagasse, which is burned in the boilers to generate steam for the process. The boilers also burn fuel oil during startup and shutdown and at times when bagasse is not available to meet the total steam demands of the facility.

Based on the current annual air emissions from the facility, the facility is classified as an existing major stationary source as defined in the Florida PSD rules.

A location map of the existing sugar mill indicating the plant property boundaries and the existing boilers is presented in Figure 2-1. As shown, Okeelanta owns extensive sugar cane fields surrounding the mill in all directions. A plot plan of the existing mill indicating the existing boilers, stacks, and buildings is presented in Figure 2-2.

2.2 PROPOSED OIL-FIRED BOILER

The proposed oil-fired boiler will be used to provide steam to the Okeelanta sugar refining operations in the off-season only (i.e., during the non-crop season). The other boilers at the mill are shut down during this period. This period generally will run from April through October. The boiler will operate a maximum of 175 days per year and only when the other boilers at the mill are shut down.

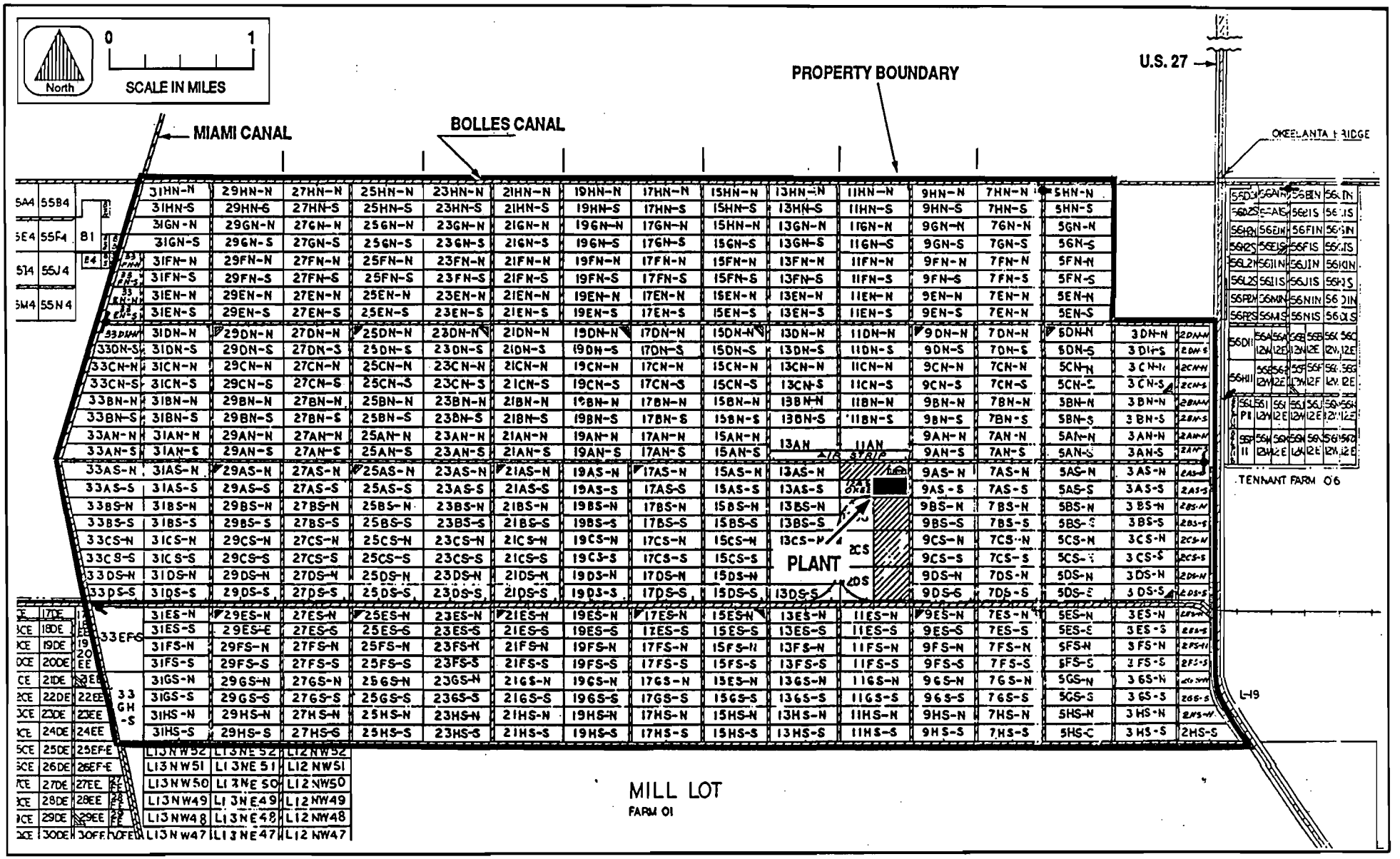

Figure 2-1 OKEELANTA PROPERTY BOUNDARIES

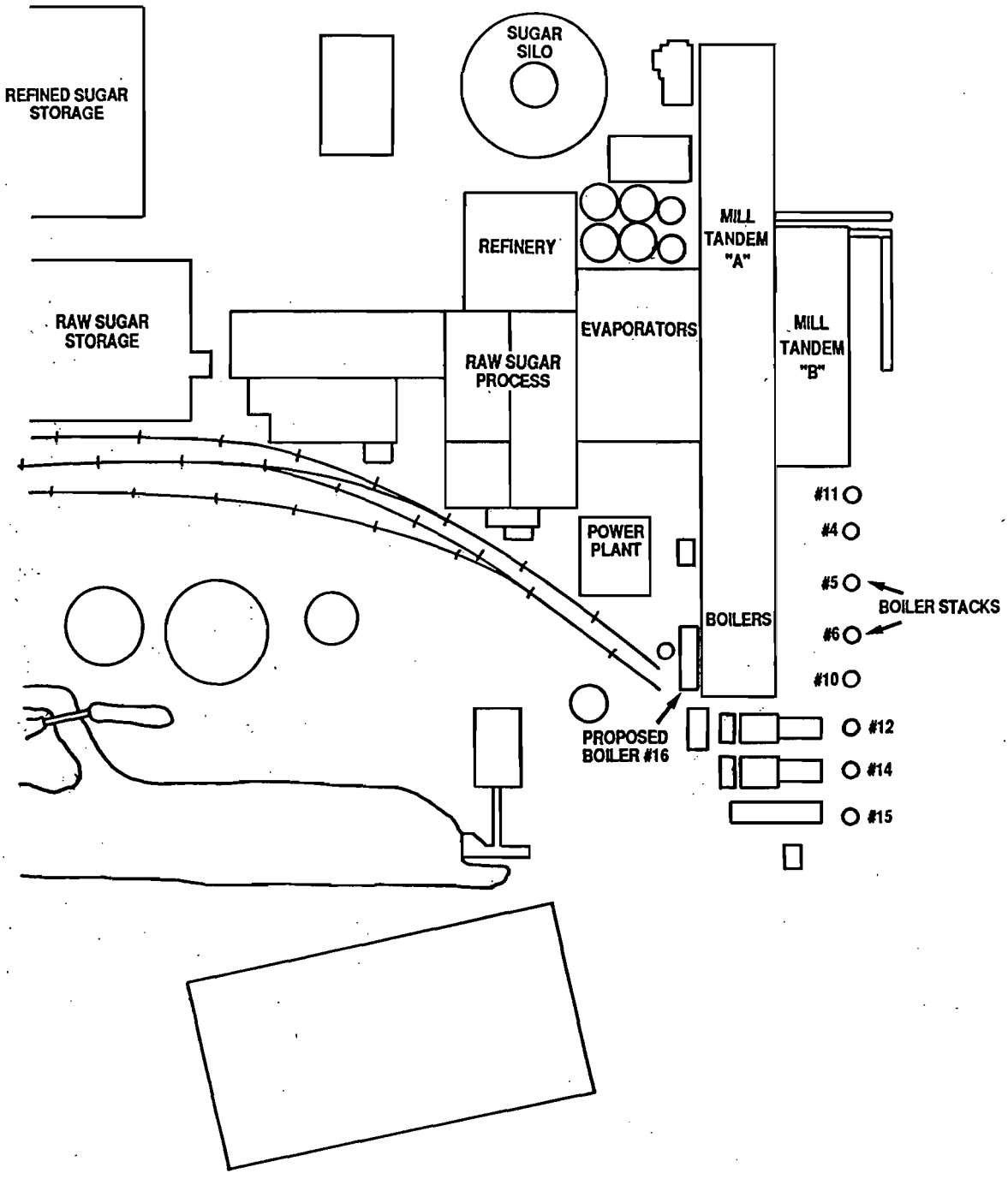

FIGURE 2-2 PLOT PLAN OF OKEELANTA SUGAR MILL

The design rate of the boiler will be 150,000 lb/hr steam (maximum 24-hour average) at a maximum heat input rate of 205 million British thermal units per hour (MMBtu/hr)(maximum 24-hour average). Fuel fired will be very low sulfur, No. 2 distillate fuel oil, with a maximum sulfur content of 0.5 percent. Specifications for No. 2 distillate fuel oil are shown in Table 2-1.

The proposed boiler will incorporate "low-NO_x" burner technology and flue-gas recirculation, which are control methods for minimizing NO_x emissions from oil-fired boilers. These control methods are discussed in greater detail in the BACT analysis presented in Section 7.0.

Maximum hourly and annual emissions of regulated pollutants from the proposed boiler are presented in Table 2-2. Emissions of total suspended particulate matter [PM(TSP)], particulate matter less than 10 microns in diameter (PM10), NO_x, carbon monoxide (CO), and volatile organic compounds (VOC) are based on boiler design information. Emissions of SO_2 are based on the maximum sulfur content of the fuel and the fuel firing rates. Emissions of other regulated pollutants, including trace elements, are based on emission factors for distillate fuel oil combustion. Emission calculations are presented in Appendix A.

The location of the new boiler and its exhaust stack are shown in Figure 2-2.

Table 2-1. Typical Analyses of No. 2 Fuel Oil

Grade of Fuel Oil	No. 2	
Gravity[ac]		
Deg API	32	
Specific	0.865	
lb/gal	7.21	
Viscosity[bc]		
Centistokes @ 100°F	2.5	
SUS @ 100°F	34	
Heating Value		
Btu/gal	140,090	
Btu/lb	19,430	
Ultimate Fuel Analysis		
in weight percent	Vendor[b]	Range[c]
Sulfur	<0.5	0.05-1.0
Hydrogen	12.5	11.8-13.9
Carbon	87.2	86.1-88.2
Nitrogen	0.02	Nil-0.1
Oxygen	Nil	--
Ash	0.001	--
Water, volume %	Nil	0-0.1

[a]Central Oil Company, Inc., Tampa, Florida, 1991.
[b]Perry & Green, Perry's Chemical Engineering Handbook, 6th Ed, 1984.
[c]Babcock & Wilcox, Steam, Its Generation and Use, 1975.

Table 2-2. Maximum Emissions From Okeelanta Corporation's Proposed Boiler No. 16

Pollutant	Emission Factor (lb/MMBtu)	Reference	Maximum Emissions[a] (lb/hr)	(TPY)
Particulate Matter(TSP)	0.054	Design Basis	11.0	23.1
Particulate Matter(PM10)	0.027	AP-42, TB 1.3-4	5.5	11.6
Sulfur Dioxide	0.51	Design Basis	105.5	221.6
Nitrogen Oxides	0.18	Design Basis	36.9	77.5
Carbon Monoxide	0.20	Design Basis	41.0	86.1
VOCs	0.09	Design Basis	18.45	38.7
Trace Metals				
Lead, Pb	8.9×10^{-6}	EPA, 1988[b]	0.0018	0.0038
Mercury, Hg	3.0×10^{-6}	EPA, 1988[b]	0.0006	0.0013
Beryllium, Be	7.9×10^{-7}	EPA, 1989[c]	0.00016	0.00034
Fluoride, F	3.3×10^{-5}	EPA, 1988[b]	0.0082	0.017
Sulfuric Acid Mist	0.013	AP-42, TB 1.3-4	2.6	5.46

[a]Based on 205 MMBtu/hr heat input rate for the proposed boiler operating at full load capacity.
[b]From Toxic Air Pollutant Emission Factors--A Compilation for Selected Air Toxic Compounds and Sources (EPA-450/2-88-006a, 1988).
[c]From Estimating Air Toxics Emission from Coal and Oil Combustion Sources (EPA-450/2-89-001, 1989).

3.0 AIR QUALITY REVIEW REQUIREMENTS AND APPLICABILITY

The following discussion pertains to the federal and state air regulatory requirements and their applicability to Okeelanta's proposed oil-fired boiler. These regulations must be satisfied before construction can begin on the proposed source.

3.1 NATIONAL AND STATE AAQS

The existing applicable national and Florida ambient air quality standards (AAQS) are presented in Table 3-1. National primary AAQS were promulgated to protect the public health, and national secondary AAQS were promulgated to protect the public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the ambient air. Areas of the country in violation of AAQS are designated as nonattainment areas, and new sources to be located in or near these areas may be subject to more stringent air permitting requirements.

3.2 PSD REQUIREMENTS

3.2.1 GENERAL REQUIREMENTS

Federal PSD requirements are contained in the Code of Federal Regulations (CFR), 40, 52.21, Prevention of Significant Deterioration of air quality. The State of Florida has adopted PSD regulations [Chapter 17-2.510, Florida Administrative Code (F.A.C.)] that essentially are identical to the federal regulations. PSD regulations require that all new major stationary sources or major modifications to existing major sources of air pollutants regulated under CAA be reviewed and a construction permit issued. Florida's State Implementation Plan (SIP), which contains PSD regulations, has been approved by the U.S. Environmental Protection Agency (EPA), and, therefore, PSD approval authority in Florida has been granted to FDER.

A "major facility" is defined under PSD regulations as any one of 28 named source categories that has the potential to emit 100 tons per year (TPY) or more of any pollutant regulated under the CAA, or any other stationary

Table 3-1. National and State AAQS, Allowable PSD Increments, and Significance Levels ($\mu g/m^3$)

Pollutant	Averaging Time	AAQS National Primary Standard	AAQS National Secondary Standard	AAQS State of Florida	PSD Increments Class I	PSD Increments Class II	Significant Impact Levels
Particulate Matter (TSP)	Annual Geometric Mean	NA	NA	NA	5	19	1
	24-Hour Maximum[a]	NA	NA	NA	10	37	5
Particulate Matter (PM10)	Annual Arithmetic Mean	50	50	50	4[c]	17[c]	1
	24-Hour Maximum[b]	150	150	150	8[c]	30[c]	5
Sulfur Dioxide	Annual Arithmetic Mean	80	NA	60	2	20	1
	24-Hour Maximum[b]	365	NA	260	5	91	5
	3-Hour Maximum[b]	NA	1,300	1,300	25	512	25
Carbon Monoxide	8-Hour Maximum[b]	10,000	10,000	10,000	NA	NA	500
	1-Hour Maximum[b]	40,000	40,000	40,000	NA	NA	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100	2.5	25	1
Ozone	1-Hour Maximum[d]	235	235	235	NA	NA	NA
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	15	NA	NA	NA

[a]Maximum concentration not to be exceeded more than once per year.
[b]Achieved when the expected number of exceedances per year is less than 1.
[c]Proposed by EPA in the Federal Register on October 5, 1989.
[d]Achieved when the expected number of days per year with concentrations above the standard is less than 1.

Note: Particulate matter (TSP) = total suspended particulate matter.
Particulate matter (PM10) = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.
$\mu g/m^3$ = micrograms per cubic meter.
NA = Not applicable, i.e., no standard exists.

Sources: Federal Register, Vol. 43, No. 118, June 19, 1978.
40 CFR 50.
40 CFR 52.21.
Chapter 17-2.400, F.A.C.

facility that has the potential to emit 250 TPY or more of any pollutant regulated under CAA. A "source" is defined as an identifiable piece of process equipment or emissions unit. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant, considering the application of control equipment and any other federally enforceable limitations on the source's capacity. A "major modification" is defined under PSD regulations as a change at an existing major stationary facility that increases emissions by greater than significant amounts. PSD significant emission rates are shown in Table 3-2.

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Major new facilities and major modifications are required to undergo the following analyses related to PSD for each pollutant emitted in significant amounts:

1. Source information,
2. Control technology review,
3. Source impact analysis,
4. Preconstruction air quality monitoring analysis, and
5. Additional impact analyses.

In addition to these analyses, a new source also must be reviewed with respect to good engineering practices (GEP) stack height regulations. If the proposed new source or modification is located in a nonattainment area for any pollutant, the source may be subject to nonattainment new source review requirements.

Discussions concerning each of these requirements are presented in the following sections.

3.2.2 INCREMENTS/CLASSIFICATIONS

The 1977 CAA amendments address the prevention of significant deterioration of air quality. The law specifies that certain increases in air quality concentrations above the baseline concentration level of SO_2 and PM(TSP)

Table 3-2. PSD Significant Emission Rates and De Minimis Monitoring Concentrations

Pollutant	Regulated Under	Significant Emission Rate (TPY)	De Minimis Monitoring Concentration ($\mu g/m^3$)
Sulfur Dioxide	NAAQS, NSPS	40	13, 24-hour
Particulate Matter (TSP)	NAAQS, NSPS	25	10, 24-hour
Particulate Matter (PM10)	NAAQS	15	10, 24-hour
Nitrogen Oxides	NAAQS, NSPS	40	14, annual
Carbon Monoxide	NAAQS, NSPS	100	575, 8-hour
Volatile Organic Compounds (Ozone)	NAAQS, NSPS	40	100 TPY[a]
Lead	NAAQS	0.6	0.1, 3-month
Sulfuric Acid Mist	NSPS	7	NM
Total Fluorides	NSPS	3	0.25, 24-hour
Total Reduced Sulfur	NSPS	10	10, 1-hour
Reduced Sulfur Compounds	NSPS	10	10, 1-hour
Hydrogen Sulfide	NSPS	10	0.2, 1-hour
Asbestos	NESHAP	0.007	NM
Beryllium	NESHAP	0.0004	0.001, 24-hour
Mercury	NESHAP	0.1	0.25, 24-hour
Vinyl Chloride	NESHAP	1	15, 24-hour

[a]No de minimis concentration; an increase in VOC emissions of 100 TPY or more will require monitoring analysis for ozone.
[b]Any emission rate of these pollutants.

Note: Ambient monitoring requirements for any pollutant may be exempted if the impact of the increase in emissions is below de minimis monitoring concentrations.

NAAQS = National Ambient Air Quality Standards.
NM = No ambient measurement method.
NSPS = New Source Performance Standards.
NESHAP = National Emission Standards for Hazardous Air Pollutants.
$\mu g/m^3$ = micrograms per cubic meter.

Source: F.A.C., Rule 17-2.510, Table 500-2.

would constitute significant deterioration. The magnitude of the allowable increment depends on the classification of the area in which a new source (or modification) will be located or will have an impact. Congress also directed EPA to evaluate PSD increments for other criteria pollutants and, if appropriate, promulgate PSD increments for such pollutants.

Three classifications were designated, based on criteria established in the CAA amendments. Certain types of areas (international parks, national wilderness areas, memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres) were designated as Class I areas. All other areas of the country were designated as Class II. PSD increments for Class III areas were defined, but no areas were designated as Class III. However, Congress made provisions in the law to allow the redesignation of Class II areas to Class III areas.

In 1977, EPA promulgated PSD regulations related to the requirements for classifications, increments, and area designations as set forth by Congress. PSD increments were initially set for only SO_2 and PM(TSP). However, in 1988, EPA promulgated final PSD regulations for NO_x and established PSD increments for nitrogen dioxide (NO_2).

The current federal PSD increments are shown in Table 3-1. As shown, Class I increments are the most stringent, allowing the smallest amount of air quality deterioration, while the Class III increments allow the greatest amount of deterioration. FDER has adopted the EPA class designations and allowable PSD increments for PM(TSP), SO_2, and NO_2. The Florida NO_2 increments were adopted in August 1990.

On October 5, 1989, EPA proposed PSD increments for PM10. Those proposed increments are shown in Table 3-1. The PM10 increments as proposed are somewhat lower in magnitude than the current PM(TSP) increments.

The term "baseline concentration" evolves from federal and state PSD regulations and refers to a fictitious concentration level corresponding to a specified baseline date and certain additional baseline sources. In reference to the baseline concentration, the baseline date actually includes three different dates:

1. The major source baseline date, which is January 6, 1975, in the cases of SO_2 and PM(TSP), and February 8, 1988, in the case of NO_2;
2. The minor source baseline date, which is the earliest date after the trigger date on which a major stationary source or major modification subject to PSD regulations submits a complete PSD application; and
3. The trigger date, which is August 7, 1977, for SO_2 and PM(TSP), and February 8, 1988, for NO_2.

By definition in the PSD regulations, baseline concentration means the ambient concentration level that exists in the baseline area at the time of the applicable baseline date. A baseline concentration is determined for each pollutant for which a baseline date is established and includes:

1. The actual emissions representative of sources in existence on the applicable minor source baseline date; and
2. The allowable emissions of major stationary facilities that began construction before January 6, 1975, for SO_2 and PM(TSP) sources, or February 8, 1988, for NO_x sources, but which were not in operation by the applicable baseline date.

The following emissions are not included in the baseline concentration and, therefore, affect PSD increment consumption:

1. Actual emissions representative of a major stationary source on which construction began after January 6, 1975, for SO_2 and PM(TSP) sources, and after February 8, 1988, for NO_x sources; and
2. Actual emission increases and decreases at any stationary facility occurring after the major source baseline date that result from a

physical change or change in the method of operation of the facility.

The minor source baseline date for SO_2 and PM(TSP) has been set as December 27, 1977, for the entire State of Florida (Chapter 17-2.450, F.A.C.). The minor source baseline date for NO_2 has been set as March 28, 1988, for all of Florida.

3.2.3 CONTROL TECHNOLOGY REVIEW

The control technology review requirements of the federal and state PSD regulations require that all applicable federal and state emission-limiting standards be met, and that BACT be applied to control emissions from the source [Chapter 17-2.500(5)(c), F.A.C]. The BACT requirements are applicable to all regulated pollutants for which the increase in emissions from the facility or modification exceeds the significant emission rate (see Table 3-2).

BACT is defined in Chapter 17-2.100(25), F.A.C. as:

> An emissions limitation, including a visible emission standard, based on the maximum degree of reduction of each pollutant emitted which the department, on a case by case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice, or operation.

The requirements for BACT were promulgated within the framework of PSD in the 1977 amendments of the CAA [Public Law 95-95; Part C, Section

165(a)(4)]. The primary purpose of BACT is to optimize consumption of PSD air quality increments and thereby enlarge the potential for future economic growth without significantly degrading air quality (EPA, 1978; 1980). Guidelines for the evaluation of BACT can be found in EPA's Guidelines for Determining Best Available Control Technology (BACT) (EPA, 1978) and in the PSD Workshop Manual (EPA, 1980). These guidelines were promulgated by EPA to provide a consistent approach to BACT and to ensure that the impacts of alternative emission control systems are measured by the same set of parameters. In addition, through implementation of these guidelines, BACT in one area may not be identical to BACT in another area. According to EPA (1980),

> BACT analyses for the same types of emissions unit and the same pollutants in different locations or situations may determine that different control strategies should be applied to the different sites, depending on site-specific factors. Therefore, BACT analyses must be conducted on a case-by-case basis.

The BACT requirements are intended to ensure that the control systems incorporated in the design of a proposed facility reflect the latest in control technologies used in a particular industry and take into consideration existing and future air quality in the vicinity of the proposed facility. BACT must, as a minimum, demonstrate compliance with New Source Performance Standards (NSPS) for a source (if applicable). An evaluation of the air pollution control techniques and systems, including a cost-benefit analysis of alternative control technologies capable of achieving a higher degree of emission reduction than the proposed control technology, is required. The cost-benefit analysis requires the documentation of the materials, energy, and economic penalties associated with the proposed and alternative control systems, as well as the environmental benefits derived from these systems. A decision on BACT is to be based on sound judgment, balancing environmental benefits with energy, economic, and other impacts (EPA, 1978).

Historically, a "bottom-up" approach consistent with the BACT Guidelines and PSD Workshop Manual has been used. With this approach, an initial control level, which is usually NSPS, is evaluated against successively more stringent controls until a BACT level is selected. However, EPA developed a concern that the bottom-up approach was not providing the level of BACT decisions originally intended. As a result, in December 1987, the EPA Assistant Administrator for Air and Radiation mandated changes in the implementation of the PSD program including the adoption of a new "top-down" approach to BACT decisionmaking.

The top-down BACT approach essentially starts with the most stringent (or top) technology and emissions limits that have been applied elsewhere to the same or a similar source category. The applicant must next provide a basis for rejecting this technology in favor of the next most stringent technology or propose to use it. Rejection of control alternatives may be based on technical or economic infeasibility. Such decisions are made on the basis of physical differences (e.g., fuel type), locational differences (e.g., availability of water), or significant differences that may exist in the environmental, economic, or energy impacts. The differences between the proposed facility and the facility on which the control technique was applied previously must be justified. Recently, EPA issued a draft guidance document on the top-down approach entitled Top-Down Best Available Control Technology Guidance Document (EPA, 1990a).

3.2.4 AIR QUALITY MONITORING REQUIREMENTS

In accordance with requirements of 40 CFR 52.21(m) and Chapter 17-2.500(f), F.A.C, any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a new major facility, the affected pollutants are those that the facility potentially would emit in significant amounts. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate (see Table 3-2).

Ambient air monitoring for a period of up to 1 year is generally appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's Ambient Monitoring Guidelines for Prevention of Significant Deterioration (EPA, 1987a).

Under the exemption rule, FDER may exempt a proposed major stationary facility or major modification from the monitoring requirements with respect to a particular pollutant if the emissions increase of the pollutant from the facility or modification would cause, in any area, air quality impacts less than the de minimis levels presented in Table 3-2 [Chapter 17-2.500(3)(e), F.A.C.].

3.2.5 SOURCE IMPACT ANALYSIS

A source impact analysis must be performed for a proposed major source subject to PSD for each pollutant for which the increase in emissions exceeds the significant emission rate (Table 3-2). The PSD regulations specifically provide for the use of atmospheric dispersion models in performing impact analyses, estimating baseline and future air quality levels, and determining compliance with AAQS and allowable PSD increments. Designated EPA models normally must be used in performing the impact analysis. Specific applications for other than EPA-approved models require EPA's consultation and prior approval. Guidance for the use and application of dispersion models is presented in the EPA publication Guideline on Air Quality Models (EPA, 1987b). The source impact analysis for criteria pollutants can be limited to the new or modified source if the net increase in impacts as a result of the new or modified source is below significance levels, as presented in Table 3-1.

Various lengths of record for meteorological data can be used for impact analyses. A 5-year period can be used with corresponding evaluation of highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The term "highest, second-highest" (HSH) refers to the highest of the second-highest concentrations at all receptors (i.e., the highest concentration at each receptor is discarded). The second-highest concentration is significant because short-term AAQS specify that the standard should not be exceeded at any location more than once a year. If less than 5 years of meteorological data are used in the modeling analysis, the highest concentration at each receptor must normally be used for comparison to air quality standards.

3.2.6 ADDITIONAL IMPACT ANALYSES

In addition to air quality impact analyses, federal and State of Florida PSD regulations require analysis of the impairment to visibility and the impacts on soils and vegetation that would occur as a result of the proposed source [40 CFR 52.21; Chapter 17-2.500(5)(e), F.A.C.]. These analyses are to be conducted primarily for PSD Class I areas. Impacts from general commercial, residential, industrial, and other growth associated with the source also must be addressed. These analyses are required for each pollutant emitted in significant amounts (Table 3-2).

3.2.7 GOOD ENGINEERING PRACTICE STACK HEIGHT

The 1977 CAA amendments require that the degree of emission limitation required for control of any pollutant not be affected by a stack height that exceeds GEP or any other dispersion technique. On July 8, 1985, EPA promulgated final stack height regulations (EPA, 1985). Identical regulations have been adopted by FDER [Chapter 17-2.270, F.A.C.]. GEP stack height is defined as the highest of:

1. 65 meters (m); or
2. A height established by applying the formula:

$$Hg = H + 1.5L$$

where: Hg = GEP stack height,

H = Height of the structure or nearby structure, and

L = Lesser dimension (height or projected width) of nearby structure(s); or

3. A height demonstrated by a fluid model or field study.

"Nearby" is defined as a distance up to five times the lesser of the height or width dimensions of a structure or terrain feature but not greater than 0.8 kilometers (km). Although GEP stack height regulations require that the stack height used in modeling for determining compliance with AAQS and PSD increments not exceed the GEP stack height, the actual stack height may be greater.

The stack height regulations also allow increased GEP stack height beyond that resulting from the formula in cases where plume impaction occurs. Plume impaction is defined as concentrations measured or predicted to occur when the plume interacts with elevated terrain. Elevated terrain is defined as terrain that exceeds the height calculated by the GEP stack height formula. Because the terrain in the vicinity of the Okeelanta sugar mill is flat, plume impaction was not considered in determining the GEP stack height.

3.3 NONATTAINMENT RULES

Based on the current nonattainment provisions (Chapter 17-2.510, F.A.C.), all major new facilities and modifications to existing major facilities located in a nonattainment area must undergo nonattainment review if the proposed pieces of equipment have the potential to emit 100 TPY or more of the nonattainment pollutant, or if the modification results in a significant net emission increase of the nonattainment pollutant.

For major facilities or major modifications that locate in an attainment or unclassifiable area, the nonattainment review procedures apply if the source or modification is located within the area of influence of a nonattainment area. The area of influence is defined as an area that is

outside the boundary of a nonattainment area but within the locus of all points that are 50 km outside the boundary of the nonattainment area. Based on Chapter 17-2.510(2)(a)2.a, F.A.C., all VOC sources that are located within an area of influence are exempt from the provisions of new source review for nonattainment areas. Sources that emit other nonattainment pollutants and are located within the area of influence are subject to nonattainment review unless the maximum allowable emissions from the proposed source do not have a significant impact within the nonattainment area.

3.4 SOURCE APPLICABILITY

3.4.1 PSD REVIEW

3.4.1.1 Pollutant Applicability

The Okeelanta sugar mill is located in Palm Beach County, which has been designated by EPA and FDER as an attainment area for all criteria pollutants except ozone. As such, VOC emissions are not subject to PSD review. Palm Beach County and surrounding counties are designated as PSD Class II areas for SO_2, PM(TSP), and NO_2. The site is located within 100 km of the nearest PSD Class I area, the Everglades National Park, located about 90 km south.

The Okeelanta sugar mill is considered to be an existing major facility because potential emissions of any regulated pollutant exceed 100 TPY. As a result, PSD review is required for the proposed modification for each pollutant for which the net increase in emissions exceeds the PSD significant emission rates presented in Table 3-2 (i.e., a major modification).

The maximum annual emissions from the proposed oil-fired boiler are compared to the PSD significant emission rates in Table 3-3. As shown, potential emissions of SO_2 and NO_x from the boiler will exceed the PSD significant emission rate. Therefore, the proposed expansion project is subject to PSD review for SO_2 and NO_x.

Table 3-3. Maximum Potential Emissions From Proposed Oil-Fired Boiler

Pollutant	Maximum Potential Emissions From Proposed Boiler (TPY)	Significant Emission Rate (TPY)	PSD Review Applies?
Particulate Matter (TSP)	23.1	25	No
Particulate Matter (PM10)	11.6	15	No
Sulfur Dioxide	221.6	40	Yes
Nitrogen Oxides	77.5	40	Yes
Carbon Monoxide	86.1	100	No
Votatile Organic Compounds (non-methane)	38.7	40	No
Lead	0.0038	0.6	No
Sulfuric Acid Mist	5.46	7	No
Total Fluorides	0.017	3	No
Total Reduced Sulfur	0	10	No
Reduced Sulfur Compounds	0	10	No
Hydrogen Sulfide	0	10	No
Asbestos	0	0.007	No
Beryllium	0.00034	0.0004	No
Mercury	0.0013	0.1	No
Vinyl Chloride	0	1	No

3.4.1.2 Ambient Monitoring

Based upon the increase in emissions from Okeelanta's proposed boiler, a PSD preconstruction ambient monitoring analysis is required for SO_2 and NO_x. However, if the increase in impacts of a pollutant is less than the de minimis monitoring concentration, then an exemption from the preconstruction ambient monitoring requirement may be granted for that pollutant. In addition, if an acceptable ambient monitoring method for the pollutant has not been established by EPA, monitoring is not required.

The maximum 24-hour average SO_2 impact associated with the new boiler is predicted to be 18 micrograms per cubic meter ($\mu g/m^3$), and the maximum annual average NO_2 impact is predicted to be 0.33 $\mu g/m^3$. The methodology used to predict these impacts is presented in Section 5.0, along with the impact analysis results. The de minimis concentration level for SO_2 is 13 $\mu g/m^3$, 24-hour average, and the de minimis level for NO_2 is 14 $\mu g/m^3$, annual average.

The maximum 24-hour SO_2 impacts are greater than the de minimis level, and, therefore, an ambient monitoring analysis is required for SO_2. The monitoring analysis is presented in Section 4.0. Since the maximum impact of NO_2 is less than the de minimis concentration level, the proposed project can be exempted from the PSD preconstruction ambient monitoring requirement for NO_x.

3.4.1.3 GEP Stack Height Analysis

The GEP stack height regulations allow any stack to be at least 65 m [213 (ft)] high. The proposed stack for the new boiler will be 75 ft high and therefore does not exceed the GEP stack height. The potential for downwash of the boiler's emissions as a result of nearby structures is discussed in Section 5.0, Source Impact Analysis.

3.4.2 NONATTAINMENT REVIEW

The Okeelanta mill is located in Palm Beach County, which has been designated as a nonattainment area for ozone. As a result, nonattainment review applies if the proposed boiler will emit greater than 40 TPY of VOC. As shown in Table 3-3, the proposed increase in VOC will be less than 40 TPY. As a result, nonattainment new source review does not apply to the proposed project.

3.4.3 NEW SOURCE PERFORMANCE STANDARDS

Based on the maximum heat input to the proposed boiler and the type of fuel burned, the boiler will be subject to the federal NSPS for industrial boilers (40 CFR 60, Subpart Db). The Subpart Db standards are summarized in Table 3-4. The NSPS for SO_2 require that either the boiler meet an emission limit of 0.8 pound per million British thermal units (lb/MMBtu) heat input and achieve 90 percent reduction in SO_2 emissions or burn very low sulfur fuel oil. Very low sulfur fuel oil is defined as distillate fuel with a maximum sulfur content of 0.5 percent by weight, or a fuel oil with an equivalent SO_2 emission rate of 0.5 lb/MMBtu or less. The proposed boiler will comply with the NSPS for SO_2 by burning very low sulfur distillate fuel oil with a maximum sulfur content of 0.5 percent.

The NSPS for NO_x is 0.2 lb/MMBtu heat input for an industrial boiler firing distillate oil and having a high heat release rate [i.e., greater than 70,000 British thermal units per hour per square foot (Btu/hr-ft^2)]. The proposed boiler will fall into this source category. The proposed maximum NO_x emission rate for the boiler is 0.18 lb/MMBtu, which is lower than the NSPS.

There is no particulate matter emission limit for industrial boilers firing very low sulfur fuel oil. There is an opacity limitation of 20 percent, as shown in Table 3-4.

Table 3-4. NSPS for Oil-Fired, Steam-Generating Units With Heat Input Between 100×10^6 Btu/hr and 250×10^6 Btu/hr (40 CFR 60, Subpart Db)

Pollutant	Annual Capacity Factor On Oil (%)	Standard
Sulfur Dioxide	31-100 on oil	0.80 lb/10^6 Btu; 90% reduction[a]
	0-30	0.50 lb/10^6 Btu[b]
Particulate Matter	0-100	Conventional or emerging SO_2 control technology used: 0.10 lb/10^6 Btu; SO_2 control technology not used: No PM limit
	0-100	20% opacity, except 27% for one 6-minute period per hour
Nitrogen Oxides	11-100	Distillate oil only: Low heat release rate --0.10 lb/10^6 Btu High heat release rate--0.20 lb/10^6 Btu Duct burner in combined cycle --0.20 lb/10^6 Btu Residual oil only: Low heat release rate --0.30 lb/10^6 Btu High heat release rate--0.40 lb/10^6 Btu Duct burner in combined cycle --0.40 lb/10^6 Btu
	0-10	Residual oil with %N ≤0.3, distillate oil, or natural gas: - No NO_x standard

[a] Percentage reduction requirement does not apply if burning very low sulfur oil (<0.50 lb/10^6 Btu).

[b] Also applies if oil is fired in a duct burner of a combined cycle unit and 30% or less of the heat input to the steam-generating unit is from oil combustion in the duct burner.

4.0 PRECONSTRUCTION AMBIENT MONITORING ANALYSIS

As discussed in Section 3.3, Source Applicability, a preconstruction ambient monitoring analysis is required for SO_2. The preconstruction monitoring analysis is presented in this section.

Guidelines concerning the requirements for PSD preconstruction monitoring are given in the document entitled "Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)" (EPA, 1987). The guidelines cover the collection of new data to fulfill the requirements, as well as the use of existing representative air quality data. To determine if existing data are "representative", the major considerations are monitor location, quality of the data, and currentness of data.

The Florida Sugar Cane League (FSCL) has operated an ambient monitoring network in the sugar cane growing area for several years. The network contains one continuous ambient SO_2 monitor, located at the Florida Celery Exchange in Belle Glade. This site is about 15 km northeast of the Okeelanta sugar mill. Data collected from the station are summarized in Table 4-1 for the period April 1988 through June 1990.

The first criteria in determining if existing data are representative is monitor location. According to the PSD guidelines, a "regional" monitoring site may be used if the proposed source will be located in an area that is generally free from the impact of other points and area sources associated with human activities. The regional site must be located in an area of similar terrain and represent the air quality across a broad region. The SO_2 monitoring site in Belle Glade meet this criteria since, during the time the proposed boiler will operate (i.e., off-season), there are very few stationary air pollution sources in the sugar cane area that are operating. All of the sugar mills in the area, which have bagasse/oil-fired boilers, are shutdown during the off-season.

Table 4-1. SO_2 Concentrations Measured at the Monitoring Station in Belle Glade

Site Number	Location	Period	Number of Observations	Measured Concentration ($\mu g/m^3$) 3-Hour Highest	3-Hour Second Highest	24-Hour Highest	24-Hour Second-Highest	Annual
3420-017-J02	Belle Glade: Duda Rd, 1 mile south of Old SR 80	Apr - Sept 1988	3,614	17	17	8	7	3
		Jan - Dec 1989	5,974	50	42	19	19	8
		Jan - June 1990	3,895	66	64	24	18	9

The second criteria relates to the quality of the monitoring data (i.e., the data must meet all PSD quality assurance requirements). The FSCL monitoring network has had full PSD approval for several years and meets the PSD requirements.

The third criteria states that the data must be current. Generally, this means the data must not be more than 3 years old. The data presented in Table 4-1 were collected within the past 3 years and therefore meet the PSD criteria.

In summary, the continuous SO_2 data collected at the monitoring site in Belle Glade fulfills the PSD preconstruction monitoring criteria. The data therefore should satisfy the preconstruction monitoring requirements for SO_2.

5.0 AIR QUALITY MODELING APPROACH

5.1 GENERAL MODELING APPROACH

The general modeling approach followed EPA and FDER modeling guidelines for determining compliance with AAQS and PSD increments. In general, when model predictions are used to determine compliance with AAQS and PSD increments, current policies stipulate that the highest annual average and highest, second-highest short-term (i.e., 24 hours or less) concentrations be compared to the applicable standard when 5 years of meteorological data are used. The highest, second-highest concentration (HSH) is calculated for a receptor field by:

1. Eliminating the highest concentration predicted at each receptor,
2. Identifying the second-highest concentration at each receptor, and
3. Selecting the highest concentration among these second-highest concentrations.

This approach is consistent with the air quality standards, which permit a short-term average concentration to be exceeded once per year at each receptor.

To develop the maximum short-term concentrations for the proposed mill, the general modeling approach was divided into screening and refined phases to reduce the computation time required to perform the modeling analysis. The basic difference between the two phases is the receptor grid used when predicting concentrations, the number of emission points, and the number of meteorological periods evaluated. In general, concentrations for the screening phase were predicted using a coarse receptor grid, limited number of major sources, and a 5-year meteorological record.

After a final list of HSH short-term concentrations was developed, the refined phase of the analysis was conducted by predicting concentrations for a refined receptor grid centered on the receptor at which the HSH concentration was produced from the screening phase. The air dispersion

model was executed for the meteorological periods during which both the highest and second-highest concentrations were predicted to occur at that receptor, based on the screening phase results. This approach was used to ensure that valid HSH concentrations were obtained. More detailed descriptions of the emission inventory and receptor grids used in the screening and refined phases of the analysis are presented in the following sections.

5.2 MODEL SELECTION

The selection of an appropriate air dispersion model was based on the model's ability to simulate impacts in areas surrounding the Okeelanta mill. Within 50.0 km of the mill, the terrain can be described as simple, i.e., flat to gently rolling. As defined in the EPA modeling guidelines, simple terrain is considered to be an area where the terrain features are all lower in elevation than the top of the stack(s) under evaluation. Therefore, a simple terrain model was selected to predict maximum ground-level concentrations.

The Industrial Source Complex ISC short-term (ISC) dispersion model (EPA, 1988a) was used to evaluate the pollutant emissions from the Okeelanta mill and other existing major facilities. This model is contained in EPA's User's Network for Applied Modeling of Air Pollution (UNAMAP), Version 6 (EPA, 1988b). The ISC model is applicable to sources located in either flat or rolling terrain where terrain heights do not exceed stack heights.

The ISC model consists of two sets of computer codes which are used to calculate short- and long-term ground level concentrations. The main differences between the two codes are the input format of the meteorological data and the method of estimating the plume's horizontal dispersion.

The first model code, the ISC Short-Term (ISCST) model, is designed to calculate hourly concentrations based on hourly meteorological parameters (i.e., wind direction, wind speed, atmospheric stability, ambient temperature, and mixing heights). The hourly concentrations are processed into non-overlapping, short-term and annual averaging periods. For example, a 24-hour average concentration is based on 24 1-hour averages calculated from midnight to midnight of each day. For each short-term averaging period selected, the highest and second-highest average concentrations are calculated for each receptor. As an option, a table of the 50 highest concentrations over the entire field of receptors can be produced.

The second model code within the ISC model is the ISC Long-Term (ISCLT) model. The ISCLT model uses joint frequencies of wind direction, wind speed, and atmospheric stability to calculate seasonal and/or annual average ground-level concentrations. Because the input wind directions are for 16 sectors, with each sector defined as 22.5 degrees, the model calculates concentrations by assuming that the pollutant is uniformly distributed in the horizontal plane within a 22.5-degree sector.

In this analysis, the ISCST model was used to calculate both short-term and annual average concentrations because these concentrations are readily obtainable from the model output. In general, the ISCST model will produce higher annual average concentrations as compared to the ISCLT model.

Major features of the ISCST model are presented in Table 5-1. Concentrations due to stack and volume sources are calculated by the ISCST model using the steady-state Gaussian plume equation for a continuous source. The area source equation in the ISCST model is based on the equation for a continuous and finite crosswind line source. The ISC model has rural and urban options which affect the wind speed profile exponent law, dispersion rates, and mixing-height formulations used in calculating ground level concentrations. The criteria used to determine when the rural

Table 5-1. Major Features of the ISCLT Model

ISCLT Model Features
• Polar or Cartesian coordinate systems for receptor locations
• Rural or one of three urban options that affect windspeed profile exponent, dispersion rates, and mixing height calculations
• Plume rise as a result of momentum and buoyancy as a function of downwind distance for stack emissions (Briggs)
• Procedures suggested by Huber and Snyder (1976), Huber (1977), Schulmann and Hanna (1986), and Schulmann and Scire (1980) for evaluating building downwash and wake effects
• Procedures suggested by Briggs for evaluating stack-tip downwash
• Separation of multiple point sources
• Consideration of the effects of gravitational settling and dry deposition on ambient particulate concentrations
• Capability of simulating point, line, volume, and area sources
• Capability to calculate dry deposition
• Variation of windspeed with height (windspeed-profile exponent law)
• Concentration estimates for annual average
• Terrain-adjustment procedures for elevated terrain including a terrain truncation algorithm
• Receptors located above local terrain (i.e., "flagpole" receptors)
• Consideration of time-dependent exponential decay of pollutants
• The method of Pasquill (1976) to account for buoyancy-induced dispersion
• A regulatory default option to set various model options and parameters to EPA recommended values (see text for regulatory options used)

Source: EPA, 1988a.

or urban mode is appropriate are based on land use near the proposed plant's surroundings (Auer, 1978). If the land use is classified as heavy industrial, light-moderate industrial, commercial, or compact residential for more than 50 percent of the area within a 3-km radius circle centered on the proposed source, the urban option should be selected. Otherwise, the rural option is more appropriate.

For modeling analyses that will undergo regulatory review, such as PSD permit applications, the following model features are recommended by EPA (1987a) and are referred to as the regulatory options in the ISCST model:

1. Final plume rise at all receptor locations,
2. Stack-tip downwash,
3. Buoyancy-induced dispersion,
4. Default wind speed profile coefficients for rural or urban option,
5. Default vertical potential temperature gradients,
6. Calm wind processing, and
7. Reducing calculated SO_2 concentrations in urban areas by using a decay half-life of 4 hours (i.e., reduce the SO_2 concentration emitted by 50 percent for every 4 hours of plume travel time).

In this analysis, the EPA regulatory options were used to address maximum impacts. Based on a review of the land use around the Okeelanta mill, the rural mode was selected based on the degree of residential, industrial, and commercial development within 3 km of the site.

5.3 METEOROLOGICAL DATA

Meteorological data used in the ISCST model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Palm Beach International Airport. The 5-year period of meteorological data was from 1982 through 1986. The NWS station at West Palm Beach, located approximately 67 km to the east of the

Okeelanta site, was selected for use in the study because it is the closest primary weather station to the study area which is representative of the plant site.

The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling. The wind speed, cloud cover, and cloud ceiling values were used in the ISCST meteorological preprocessor program to determine atmospheric stability using the Turner stability scheme. Based on the temperature measurements at morning and afternoon, mixing heights were calculated with the radiosonde data using the Holzworth (1972) approach. Hourly mixing heights were derived from the morning and afternoon mixing heights using the interpolation method developed by EPA (Holzworth, 1972).

The hourly surface data and mixing heights were used to develop a sequential series of hourly meteorological data (i.e., wind direction, wind speed, temperature, stability, and mixing heights). Because the observed hourly wind directions were classified into one of thirty-six 10-degree sectors, the wind directions were randomized within each sector to account for the expected variability in air flow. These calculations were performed by using the EPA RAMMET meteorological preprocessor program.

In order to simulate the operation of the proposed boiler during the off-season, the 245-day period from March 1 through October 31 (Day 60 through Day 304) was simulated in the ISCST model. The boiler will operate for a maximum of 175 days per year during the off-season. However, the off-season can vary from year to year and can start as early as March 1 and end as late as October 31. As a result, the entire 245-day period was modeled to determine maximum short-term impacts. To determine the annual average impact, the 245-day average concentration was multiplied by the ratio of 245/365, or 0.67.

5.4 EMISSION INVENTORY

5.4.1 PROPOSED OKEELANTA BOILER

Stack and operating parameters and emission rates for the proposed boiler at Okeelanta are presented in Table 5-2. A generic emission rate of 10 grams per second (g/s) [79.37 pounds per hour (lb/hr)] was used for modeling the proposed boiler. The final results were then converted to SO_2 and NO_x concentrations using the proposed emission rates of 105.5 and 36.9, respectively.

5.4.2 OTHER AIR EMISSION SOURCES

The results of the modeling analysis show that maximum NO_2 impacts as a result of the proposed boiler are less than significance levels (see Section 5.8). As a result, SO_2 is the only pollutant requiring further modeling analysis. Therefore, an emission inventory for SO_2 was developed from available databases. All other sugar mill PSD sources do not operate at the same time as the proposed boiler. Based on the modeling analysis results, the significant impact area (SIA) for SO_2 extends out 14 km from the Okeelanta mill (See Section 5.8.1). The proposed boiler is the only SO_2 source within the SIA.

The nearest PSD Class I area to the Okeelanta mill is the Everglades National Park (ENP), located about 90 km south of the mill. The closest edge of the ENP comes within 100 km of the mill directly to the south and also to the southwest at the western edge of the park. All major PSD SO_2 sources located within 100 km of the ENP were included for the modeling analysis. This included only sources on the east coasts of Dade and Broward Counties, since the other increment consuming sugar mill sources will not be operating at the same time as the proposed boiler. The stack, emission and operation data for the east coast PSD sources were obtained from prior PSD applications and modeling analyses conducted for that area (KBN, 1990).

Table 5-2. Summary of Source Parameters Used in the Modeling Analysis

Modeled Source Number	Stack Dimensions (m)		Operating Parameters		Generic Emissions (g/s)
	Height	Diameter	Temperature (K)	Velocity (m/s)	
1	22.90	1.52	497	18.38	10.0

Note: The maximum SO_2 emission rate is 105.5 lb/hr (13.29 g/sec).
The maximum NO_x emission rate is 36.9 lb/hr (4.65 g/sec).
The maximum Be emission rate is 0.00051 lb/hr (0.000064 g/s).

5.5 RECEPTOR LOCATIONS

The plant property boundaries surrounding the Okeelanta mill are shown in Figure 5-1. To the east, U.S. 27 is the nearest public access. This road is bounded by canals that prevent access into the cane fields. There are a few roads leading from U.S. 27 onto Okeelanta property; these roads either have gates or signs posted as no trespassing. To the north, the entire property is bounded by the Bolles canal. There is a public road that is located immediately to the north of the canal; however, there are no roads or bridges across the canal. To the west, the property is bounded by the Miami Canal, with limited roads extending across the canal. Although there are generally only sugar cane fields located to the west of the Miami Canal and the public would not be present in these areas, the roads across the canal will be posted to limit public access across the canal.

To the south, the property is bounded by a public road that runs west off of U.S. 27. The public access to the cane fields to the north of this road will be restricted by posted signs.

In addition to the physical barriers and visual warning signs described above, Okeelanta maintains security patrols of the cane fields on an around-the-clock basis. The security personnel routinely travel the property area. Any unauthorized persons found on the Okeelanta property are promptly removed from the property.

For the screening analysis, a polar grid and discrete receptors were used. The discrete receptor grid consisted of 36 property boundary receptors representing the minimum boundary distance from the proposed boiler within every 10-degree direction interval. These receptor distances are presented in Table 5-3. Additional discrete receptors were entered off of plant property at distances of 5,000, 7,000, and 9,000 meters to fill in gaps between plant property and the receptor grid ring distances of 11,000 and 14,000 meters from the proposed boiler, respectively.

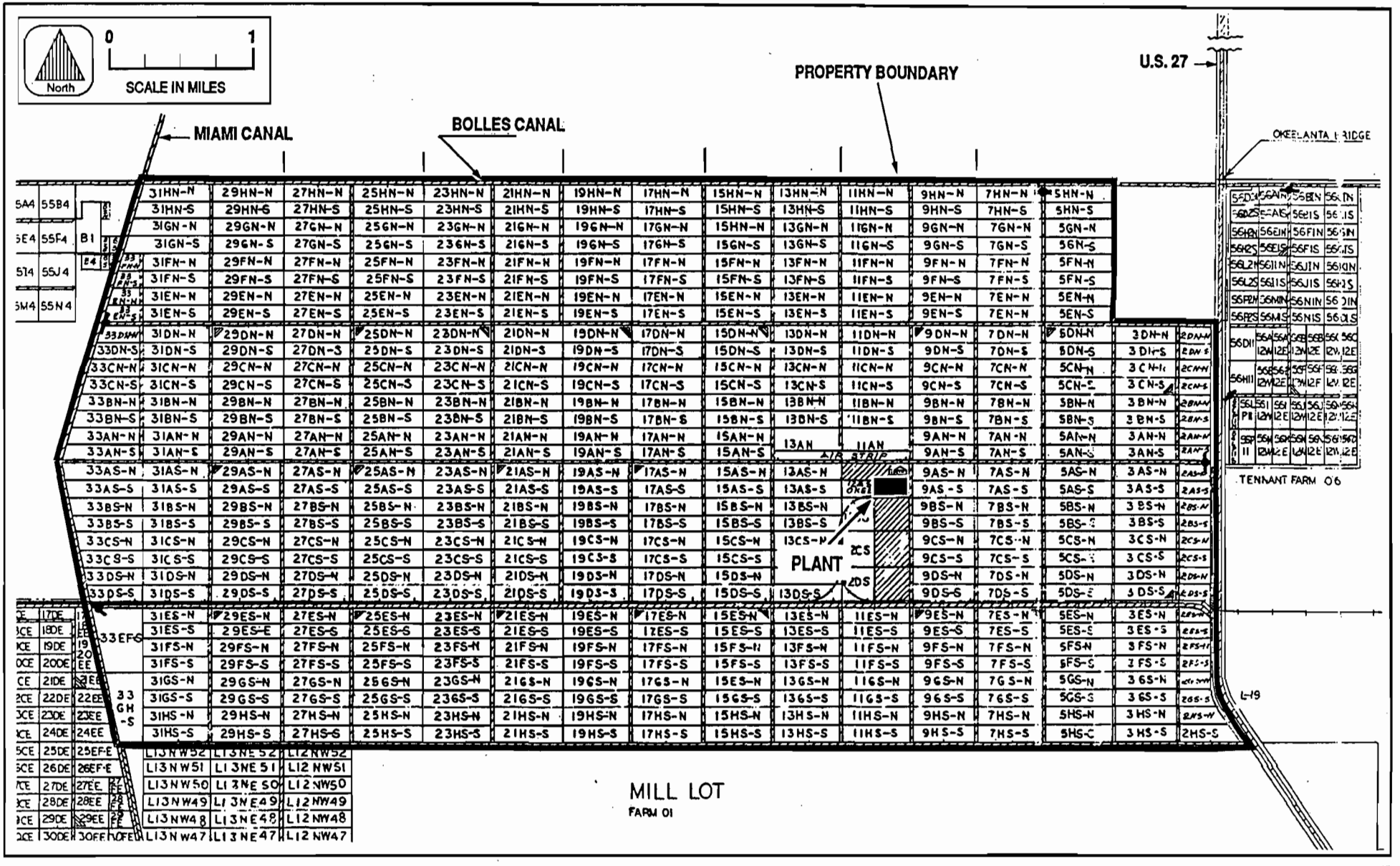

FIGURE 5-1 OKEELANTA PROPERTY BOUNDARIES

KBN

Table 5-3. Discrete Plant Boundary Receptors, Okeelanta Mill

Distance[a] (m)	Direction (°)	Distance[a] (m)	Direction (°)
3,616	10	2,758	190
3,742	20	2,854	200
4,002	30	3,052	210
3,621	40	3,391	220
3,268	50	3,949	230
3,597	60	4,906	240
3,976	70	6,744	250
3,855	80	9,269	260
3,840	90	9,349	270
3,862	100	9,339	280
3,995	110	8,510	290
4,273	120	6,271	300
3,879	130	5,086	310
3,349	140	4,391	320
3,027	150	3,968	330
2,840	160	3,724	340
2,754	170	3,610	350
2,743	180	3,597	360

[a]Relative to the proposed stack located at (0,0) meters.

All modeled concentration maximums occurred at the plant property boundary. The refinement phase of the modeling used all actual plant property distances located every 2 degrees within 10 degrees on either side of the maximum screening receptor. To ensure that the highest, second-highest concentration calculated with the refined grid was correct, concentrations were predicted for the entire year with the refined grid receptors.

5.6 BUILDING DOWNWASH CONSIDERATIONS

The proposed boiler will have a stack height below Good Engineering Practice, and as such, the modeling analysis must address the potential effects of aerodynamic downwash on the proposed stack. To determine the potential for downwash to occur, the following buildings were analyzed from a site layout map of the mill:

	Height(ft)
Mill Tandems A & B	55
South Evaporator Building	75
North Evaporator Building	65
Power Plant Building	46
Tank	80
Refinery Building	90

A plot plan of the mill showing the major buildings is presented in Figure 5-2. Downwash was determined for every 1 degree within each 10-degree direction sector. A tiering analysis was performed for all buildings located within 1L of each other (where L represents the lesser dimension of the height and width of the building). Based on this analysis, direction-specific building heights and widths were determined and included for the proposed boiler. A summary of all building parameters used is presented in Table 5-4.

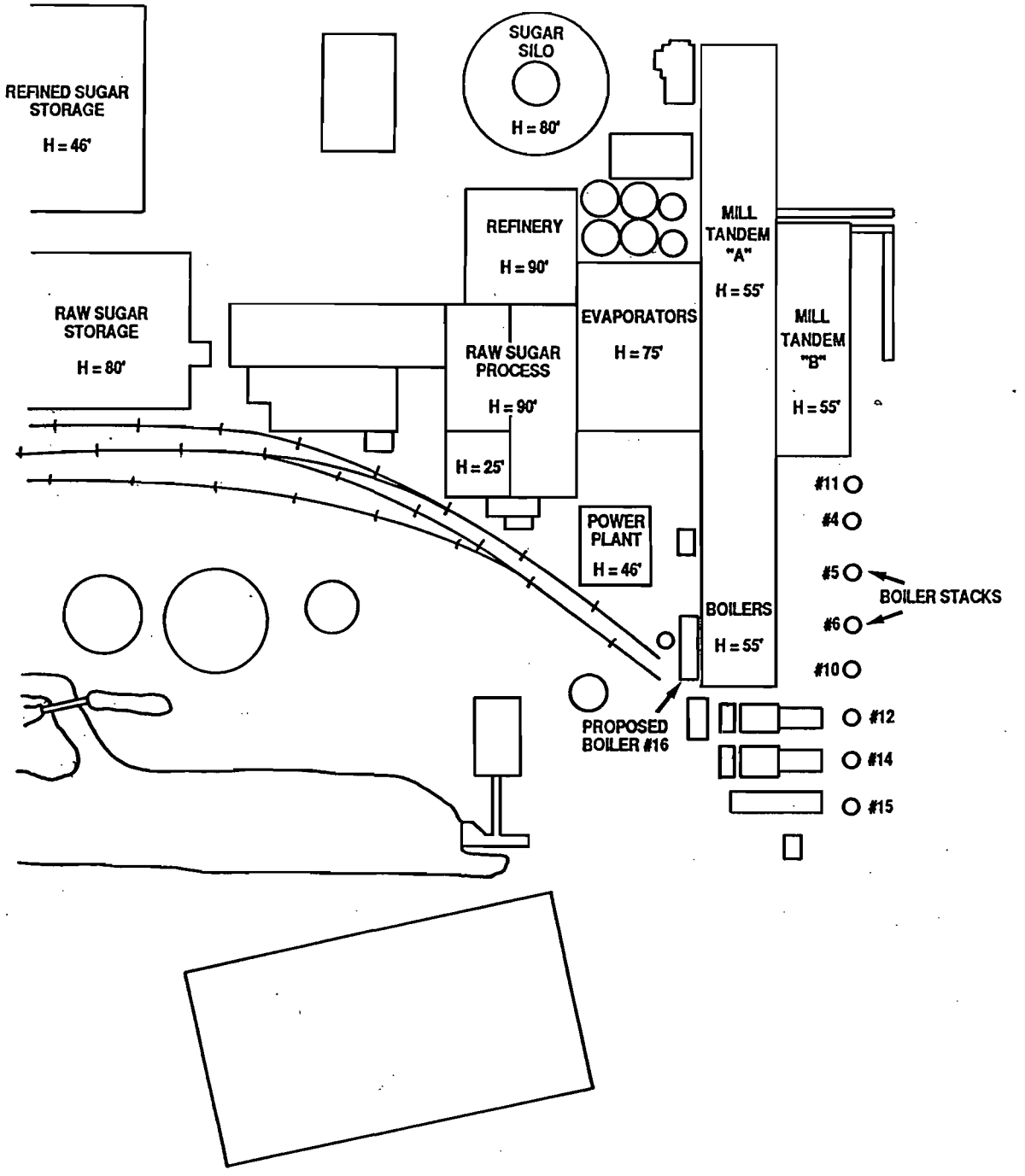

FIGURE 5-2 BUILDING HEIGHTS, OKEELANTA SUGAR MILL

Table 5-4. Building Dimensions Used in the Modeling Analysis

Building	Actual Building Dimensions[a] Height (m)	Length (m)	Width (m)
Mill Tandems A & B	16.85	135.0	42.6
South Evaporators	22.86	22.9	12.2
North Evaporators	19.81	22.9	38.4
Power Plant	14.02	21.3	21.9
Tank	24.38	–	71.8[b]
Refinery	27.43	91.5	36.5

[a] For modeling, all buildings within 1L of each other were combined, where L is the lesser dimension of the building height or width of each building.
[b] Tank diameter.

5.7 BACKGROUND

A background SO_2 concentration (i.e., impacts from sources not modeled in the analysis) must be added to the maximum predicted concentration from modeled sources to produce a total concentration for comparison to the SO_2 AAQS. Background concentrations were developed from ambient monitoring data available from the FSCL, as described in Section 4.0.

As presented in Section 4.0, there is one monitor that measured SO_2 concentrations in Belle Glade during 1988, 1989, and 1990. A summary of the maximum SO_2 concentrations measured at this site was presented in Table 4-1.

During the crop season, when the proposed boiler is not operating, the monitoring site is located close to a major source of SO_2 in Belle Glade (i.e., Sugar Cane Growers Cooperative), and therefore the concentrations would overestimate representative background levels during the off-season. SO_2 concentrations measured during the crop season would be higher based on operation of this SO_2 source. In order to develop a conservative estimate of the SO_2 background for the off-season, the second-highest 3-hour, 24-hour, and highest annual average concentrations measured at the monitor during the entire monitoring period (1988-1990) was used as the background SO_2 concentration. These concentrations are 64 $\mu g/m^3$, 3-hour; 19 $\mu g/m^3$, 24-hour; and 9 $\mu g/m^3$, annual average.

5.8 AIR QUALITY MODELING RESULTS

5.8.1 SIGNIFICANT IMPACT ANALYSIS

The maximum impacts of the proposed boiler are presented in Table 5-5 (screening) and Table 5-6 (refined) based on the generic emission rate of 10 g/s. Based on the actual SO_2 emission rate of 105.5 lb/hr (13.3 g/s), the results indicate that the maximum predicted SO_2 concentrations will be above the significant impact levels for all averaging times. Therefore, further modeling analysis is required for this pollutant to demonstrate compliance with PSD increments and AAQS.

Table 5-5. Maximum Predicted Impacts for Okeelanta's Proposed Boiler: Screening Analysis With an Emission Rate of 10 g/s

Averaging Time	Year	Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)	Significant Impact Level ($\mu g/m^3$)
Annual[a]	1982	1.04	320	4,391	1
	1983	0.92	320	4,391	
	1984	1.10	320	4,391	
	1985	0.84	320	4,391	
	1986	0.74	360	3,597	
3-Hour	1982	56	330	3,968	25
	1983	65	170	2,754	
	1984	53	160	2,840	
	1985	50	170	2,754	
	1986	39	130	3,879	
24-Hour	1982	13	160	2,840	5
	1983	11	170	2,754	
	1984	11	320	4,391	
	1985	10	360	3,597	
	1986	9	360	3,597	

[a]Reflects a 245-day average.

Table 5-6. Maximum Predicted Generic Impacts for Okeelanta's Proposed Boiler: Refined Analysis

Averaging Time		Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)	Day	Period
Annual[a]	1982	0.99	318	4,840	–	–
	1984	1.05	318	4,840	–	–
3-Hour	1982	54	330	4,153	205	8
	1983	64	170	2,786	300	7
24-Hour	1982	13.7	162	2,884	267	–
	1983	13.9	168	2,804	300	–
	1984	10.7	320	4,695	117	–

[a]Reflects 245-day average.

Based on the actual NO_x emission rate of 36.9 lb/hr (4.65 g/s) and the adjustment for the 245-day operation (0.67), the maximum predicted NO_x concentration is 0.33 $\mu g/m^3$, annual average, which is below the significant impact level of 1 $\mu g/m^3$, annual average. Therefore, the proposed modification is not significant for NO_x, and further modeling analysis is not required for that pollutant. For SO_2, the maximum significant impact distance of the proposed boiler is 14 km, which is also the furthest ring distance included in the screening analysis.

5.8.2 PSD CLASS II ANALYSIS

Refined modeling analysis results for the proposed boiler are presented in Table 5-7. The proposed boiler is the only PSD increment consuming source within its significant impact distance. The proposed boiler also operates only in the off-season. The results presented in Table 5-7 are therefore indicative of the total PSD Class II increment consumption to be expected in the vicinity of the mill from the operation of the proposed boiler. The maximum SO_2 annual impact of 0.94 $\mu g/m^3$ is below the allowable PSD Class II increment of 20 $\mu g/m^3$. Similarly, the maximum 3-hour and 24-hour SO_2 impacts of 85 and 18.5 $\mu g/m^3$, respectively, are below the allowable increments of 512 and 91 $\mu g/m^3$ for those averaging times. These maximum impacts are less than 25 percent of the allowable Class II increments.

5.8.3 PSD CLASS I ANALYSIS

The maximum SO_2 PSD Class I screening results are presented in Table 5-8. These results reflect the impacts from all PSD-increment-consuming sources. The maximum PSD Class I refined results are presented in Table 5-9. The maximum annual, 3-hr, and 24-hr concentrations are 0.4, 17.3, and 3.8 $\mu g/m^3$, respectively. These impacts are below the allowable PSD Class I increments of 2, 25, and 5 $\mu g/m^3$, respectively.

The predicted maximum impacts of the proposed boiler only on the Class I area are summarized in Table 5-10. As shown, the impacts are very low, being 0.03 $\mu g/m^3$, annual average; 2.2 $\mu g/m^3$, 3-hour average; and 0.4 $\mu g/m^3$,

Table 5-7. Maximum Predicted Impacts for Okeelanta's Proposed Boiler: Refined Analyis

Averaging Time		Concentration ($\mu g/m^3$)	Dir. (deg)	Dist. (m)	Day	Period
Sulfur Dioxide						
Annual[a]	1984	0.94	318	4,840	–	–
3-Hour	1983	85	170	2,786	300	7
24-Hour	1983	18.5	168	2,804	300	–
Nitrogen Oxides						
Annual[a]	1984	0.33	318	4,840	–	–

[a]Adjusted to 365-day average by multiplying the generic impact times 0.67.

Note: Refined concentrations based on generic concentration times ratio of actual emission rate to generic emission rate for each pollutant.

Table 5-8. Maximum Predicted SO_2 PSD Class I Impacts Due to All Sources: Screening Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Receptor X (m)	Receptor Y (m)
Annual	1982	0.40	8,500	-91,400
	1983	0.40	8,500	-91,400
	1984	0.35	8,500	-91,400
	1985	0.40	8,500	-91,400
	1986	0.37	8,500	-96,400
3-Hour	1982	9.8	8,500	-91,400
	1983	16.8	8,500	-96,400
	1984	10.3	8,500	-91,400
	1985	12.2	8,500	-91,400
	1986	12.1	8,500	-91,400
24-Hour	1982	3.3	8,500	-91,400
	1983	3.7	5,000	-91,400
	1984	3.0	8,500	-91,400
	1985	3.3	8,500	-96,400
	1986	3.6	8,500	-96,400

Table 5-9. Maximum Predicted SO_2 PSD Class I Impacts Due to All Sources: Refined Analysis

Averaging Time	Year	Concentration ($\mu g/m^3$)	Receptor X (m)	Receptor Y (m)	Class I Increment ($\mu g/m^3$)
Annual	1982	0.40	8,500	-91,400	2
	1983	0.40	8,500	-91,400	
	1985	0.40	8,500	-91,400	
3-Hour	1983	17.3	8,500	-97,300	25
24-Hour	1986	3.8	7,600	-91,400	5

Note: The proposed boiler does not contribute to any of the above 3-hour and 24-hour concentrations.

Table 5-10. Maximum Predicted SO_2 PSD Class I Impacts for Proposed Boiler Only

Averaging Time	Year	Concentration ($\mu g/m^3$)	Receptor X (m)	Receptor Y (m)
Annual	1982	0.01	-5,000	-91,400
	1983	0.03	0	-91,400
	1984	0.01	5,000	-91,400
	1985	0.01	0	-91,400
	1986	0.01	-61,000	-79,400
3-Hour	1982	2.2	5,000	-91,400
	1983	2.2	0	-91,400
	1984	1.8	-10,000	-106,400
	1985	1.8	8,500	-91,400
	1986	1.8	-10,000	-106,400
24-Hour	1982	0.3	5,000	-91,400
	1983	0.4	0	-91,400
	1984	0.3	0	-91,400
	1985	0.3	5,000	-91,400
	1986	0.4	10,000	-101,400

24-hour average. These impacts are less than 9 percent of the allowable increments.

5.8.4 AAQS ANALYSIS

Because the proposed boiler will only operate in the off-season, the results presented in Table 5-7 are indicative of the total mill impact, excluding background. With the estimated annual background value of 9 $\mu g/m^3$ (see Section 5.7), the maximum SO_2 annual impact of 10 $\mu g/m^3$ is well below the State of Florida AAQS of 60 $\mu g/m^3$. Similarly, with the maximum 3-hour and 24-hour background values of 64 $\mu g/m^3$ and 19 $\mu g/m^3$, respectively, the maximum total 3-hour and 24-hour SO_2 impacts of 149 $\mu g/m^3$ and 38 $\mu g/m^3$, respectively, are below the AAQS of 1,300 and 260 $\mu g/m^3$ for those averaging times. These maximum impacts are less than 20 percent of the AAQS. Therefore, all AAQS are expected to be met with the addition of the proposed boiler.

6.0 BEST AVAILABLE CONTROL TECHNOLOGY EVALUATION

The potential emissions of SO_2 and NO_x from the proposed boiler will exceed their assigned PSD significant emission rates as shown in Table 3-3; therefore, BACT analyses for these two pollutants are required. A general description of industrial boilers is presented in Section 6.1. Sections 6.2 and 6.3 address BACT determinations for SO_2 and NO_x, respectively. The complete "top-down" BACT evaluation of SO_2 includes the identification of SO_2 control technologies for industrial boilers (Section 6.2.1); the environmental, energy, and economic impact evaluations of all technically feasible methods (Section 6.2.2); and the BACT analysis summary (Section 6.2.3). Similar BACT evaluation of NO_x will be discussed in Sections 6.3.1, 6.3.2, and 6.3.3.

6.1 GENERAL DESCRIPTION OF INDUSTRIAL BOILERS

Okeelanta Corporation's proposed boiler is the No. 16 oil-fired boiler to be constructed at the applicant's sugar manufacturing facility in Palm Beach County. The proposed boiler will be the only boiler fired during the 175-day off-season period to produce 150,000 lb/hr of steam needed for general plant processing. The proposed boiler is intended to be operated during the off-season of the sugar cane crop harvest; therefore, a replacement fuel for bagasse is required to provide the heat input for the boiler. Based on the amount of steam required, the boiler will be a medium-sized industrial boiler rated at 205 MMBtu/hr. Clean fuel oil such as distillate oil will be used as the fuel source as a result of readily available supply and low SO_2 and NO_x emissions.

Typically, standard oil-fired industrial boilers vary in sizes ranging from 50 MMBtu/hr to 300 MMBtu/hr and are available as shop-assembled package boilers to reduce the high cost of field-erected boiler. Modern boiler design uses a watertube type boilers which can generate higher capacity and pressure steam with the advantage of design flexibility. Advanced burner

designs and total internal furnace wall cooling are recent developments that further enhance boiler efficiency while reducing pollutant emission.

The Okeelanta Corporation's proposed boiler will be a watertube type package boiler with high combustion efficiency of above 80 percent. The proposed boiler will include the most advanced boiler modification techniques to minimize potential emissions.

6.2 BACT DETERMINATION FOR SULFUR DIOXIDE (SO_2) EMISSIONS

6.2.1 IDENTIFICATION OF SO_2 EMISSION CONTROL TECHNOLOGIES FOR INDUSTRIAL BOILERS

In this discussion, the available control technologies capable of reducing SO_2 emissions produced from industrial boilers will be evaluated with regard to their potential application as BACT for the proposed 205-MMBtu/hr distillate-oil-fired boiler.

SO_2 emissions are produced in industrial boilers by the fossil fuel combustion process in which complete oxidation of the fuel-bound sulfur occurs. The amount of SO_2 emissions is directly proportional to the sulfur content in the fuel. Therefore, low sulfur oil also is being considered as an available means to control SO_2 emissions. Reducing SO_2 emissions by boiler modification is not considered technically feasible because the firing mechanism does not affect SO_2 emissions. Generally, complete oxidation of sulfur in fuel is readily achieved before the complete combustion of the primary carbon fuel element in fossil fuel. Typically, SO_2 emission reduction is accomplished by treating the flue gas with a variety of flue gas desulfurization (FGD) processes. Standard FGD processes for industrial boilers are add-on SO_2 scrubbers that include wet lime/limestone scrubbers, spray dryer FGD scrubbers, and sodium solution scrubbing processes.

The discussion of each potential SO_2 control technology includes a description of the technology and the potential SO_2 emission reduction if it is concluded that the technology is technically feasible.

6.2.1.1 Low Sulfur Fuel

Any of the standard fossil fuels, such as natural gas and distillate and residual oils derived from petroleum crude and coal, can be used as heat input sources in industrial boilers. The heating values of these fuels range from 20,000 to 23,200 Btu/lb for natural gas; 17,500 to 19,400 Btu/lb for residual oils; 19,200 to 19,900 Btu/lb for distillate oils; and 10,000

to 14,000 Btu/lb for typical coals. The variations in sulfur content in the fuel are inversely proportional to the heating values for each fuel ranging from nil for natural gas, 0.01 to 0.5 percent for distillate oil, 0.20 to 3.5 percent for residual oil, and 0.05 to 3.0 for coal. Since the level of SO_2 emissions is directly related to the amount of sulfur in the fuel, a low sulfur-containing fuel can be used to meet the SO_2 limitation specified by the NSPS regulations for industrial boilers.

Natural gas was first considered as a fuel source for the proposed 205-MMBtu/hr boiler. However, there is currently neither an existing natural gas pipeline nor an expansion plan for a pipeline to the site in the near future. Thus, the option of using natural gas is eliminated because of unavailability.

The fuel with the next lowest sulfur content is distillate oils. The total amount of SO_2 emissions calculated for burning distillate oils is based on the maximum sulfur content of 0.5 percent as determined by the American Petroleum Institute (API) standard. Under current NSPS regulations for industrial boilers (40 CFR Subpart Db), low sulfur fuel oils of up to 0.5 percent sulfur content offer a viable option for reducing SO_2 emissions. Also, No. 2 distillate oil is readily available by tank truck to the site. Therefore, No. 2 fuel oil is considered the best available low sulfur fuel for the proposed boiler. For Okeelanta Corporation's proposed boiler, the equivalent SO_2 emission factor is calculated to be 0.51 lb/MMBtu (refer also to Table 2-1).

6.2.1.2 Wet Lime/Limestone Scrubber

The wet lime or limestone FGD process uses either hydrated lime [$(Ca(OH)_2$] or calcium carbonate ($CaCO_3$) to absorb SO_2 compounds from the flue gas. Either $Ca(OH)_2$ or $CaCO_3$ reagent is added to water to make a solution, and then sprayed into the flue gas inside a wet scrubber. Upon contact, the SO_2 compounds react with the reagents to form calcium sulfite ($CaSO_3 \cdot \frac{1}{2}H_2O$) initially, then calcium sulfate ($CaSO_4 \cdot 2H_2O$) with further oxidation.

The calcium sulfite and calcium sulfate precipitate as crystals at the bottom of the wet scrubber or in a holding tank that is downstream from the scrubber and designed to receive the precipitated solids and liquid solution. The solids from the holding tank will be separated from the system by way of a solid-liquid separator. The liquids from the solid-liquid separator are returned to the holding tank where they are combined with the effluent and recycled through the scrubber to absorb additional SO_2.

Both lime and limestone FGD processes are proven technology capable of removing more than 90 percent of the SO_2 from flue gas. Theoretically, higher efficiencies of up to 95 percent may be achievable by adding adipic acid to the liquid scrubbing solution because the reactions between the lime and limestone with SO_2 are more favorable at lower pH conditions.

6.2.1.3 Spray Dryer FGD Scrubber

In a spray drying FGD process, the flue gas entering the scrubber contacts a sprayed slurry of either wet lime or sodium carbonate (Na_2CO_3) sorbent. Sufficient contact is maintained in this scrubber, which is designed with prolonged residence time (5 to 10 seconds), allowing the absorbing reactions and the drying process to be completed. The SO_2 compounds are absorbed by the alkaline slurry to form pseudo liquid-solid phase salts that are dried into crystals by the heat of the flue gas with approximately 1 percent free moisture.

The exact mechanisms for the absorption of SO_2 and formation of alkaline salts are not clear. Overall, the SO_2 reacts with lime or sodium sorbent to form initially either calcium sulfite ($CaSO_3 \cdot \frac{1}{2}H_2O$) or sodium sulfite ($Na_2SO_3$). Upon further oxidation or SO_2 absorption enhanced by the drying process, the sulfite salts will transform into calcium sulfate ($CaSO_4 \cdot 2H_2O$) or sodium sulfate solids. Generally, the spray dry FGD process requires a particulate control device downstream because the byproducts are dry crystalline sulfate salts.

The removal efficiency of the spray dry FGD system varies between 50 to 80 percent average for industrial boilers. Higher removal efficiencies of up to 90 percent can be achieved by maintaining an optimum ratio of either lime- or sodium-based sorbent and SO_2 gas. Furthermore, the type of particulate removal device used may enhance SO_2 removal efficiency. By using a fabric filter instead of an electrostatic precipitator (ESP), the slurry collected on the filter bag surfaces can absorb an additional 5 percent of total SO_2 emissions. A 95 percent SO_2 removal efficiency can be achieved with a lime spray dryer/FGD scrubber and baghouse particulate control combination.

6.2.1.4 Sodium Solution Scrubbing Process

The sodium scrubbing process uses a liquid solution of caustic soda (NaOH) or sodium carbonate (Na_2CO_3) to absorb SO_2 from the flue gas. The overall mechanisms are vapor-liquid reactions in which the flue gas SO_2 reacts with either sodium hydroxide or sodium carbonate solution to form sodium sulfite ($NaSO_3$) droplets. Instantaneously, the sodium sulfite will react with absorbed oxygen from the flue gas to produce a sodium sulfate solution. The final scrubber effluent is a mixture of sodium alkaline salt liquor.

This process is capable of achieving high SO_2 removal efficiencies over a wider range of SO_2 concentrations. Overall, this process can be more effective than both the lime- or sodium-based sorbent in the pseudo liquid-solid phase because the scrubbing liquid can contain higher concentrations of sodium reagent. Also, reactivity is higher between liquid and vapor phases than between the pseudo liquid-solid (i.e., calcium- or sodium-based slurry) and vapor phases. However, the sodium solution scrubbing process consumes a premium chemical (caustic soda or sodium carbonate) to produce a high alkaline waste liquor that requires proper disposal. The sodium solution scrubbing process can achieve an SO_2 removal efficiency of 95 percent.

6.2.2 EVALUATION OF TECHNICALLY FEASIBLE SO_2 CONTROL METHODS

This section examines all the technically feasible SO_2 control methods identified in the previous discussion. A summary of the feasible options is given in Table 6.2-1. All four SO_2 reduction methods are ranked according to their total removal effectiveness. Each alternative is then further examined with regard to its technical issues, environmental effects, energy requirements and impacts, and economic impacts.

The most currently available information on permitting requirements for oil-fired industrial boilers similar to Okeelanta Corporation's proposed boiler was used to derive the baseline SO_2 emission level. Presented in Table 6.2-2 is a summary of all BACT determinations for SO_2 emissions from the oil-fired external combustion stationary sources rated between 10 MMBtu/hr to 250 MMBtu/hr heat input issued since 1980. These sources generally are referred to as oil-fired industrial boilers. This information was obtained from BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse documents by way of the BACT/LAER Informational System (BLIS) database through EPA's National Computer Center located at Research Triangle Park in North Carolina.

6.2.2.1 Ranking of Feasible Control Technologies

The top-down BACT approach requires the ranking of the SO_2 emission control alternatives according to their achievable emission levels applied to the proposed boiler. Of the four alternatives being considered for the project, three alternatives are identified as the add-on FGD processes that can be designed to achieve similar SO_2 removal efficiency of 95 percent. The next highest removal efficiency is therefore the low sulfur oil firing alternative. This alternative can be identified as a process modification by switching to No. 2 distillate oil with 0.5 percent sulfur content.

The design criteria that determine SO_2 removal efficiency for add-on FGD processes are independent of the type of fuels specified for a boiler. The achievable SO_2 emission rates for cases where low sulfur oil (i.e., No. 2

Table 6.2-1. Summary of Technical Feasibility of SO2 Emission Controls for the Proposed Oil-fired Boiler

Control Technology	SO2 Controlled Emission Rate+	Technical Feasibility	Comments
Process Modification			
Low Sulfur Fuel			
(No. 2 Distillate Oil, 0.5% S)	0.51 lb/MMBtu	YES	As specified by NSPS option of using 0.5 % sulfur No. 2 distillate oil.
Add-on FGD Technology*			
Wet Lime/Limestone Scrubber			
No. 6 Residual Oil, 1.0% S	0.05 lb/MMBtu	YES	Minimum 90 percent efficient, up to 95% efficiency may be achieved by addition of adipic acid to maintain the system's pH level.
No. 2 Distillate Oil, 0.5% S	0.03 lb/MMBtu	YES	
Spray Dryer FGD Scrubber			
No. 6 Residual Oil, 1.0% S	0.05 lb/MMBtu	YES	Up to 95% efficiency; requires baghouse installed downstream as particulate control device.
No. 2 Distillate Oil, 0.5% S	0.03 lb/MMBtu	YES	
Sodium Solution Scrubbing Process			
No. 6 Residual Oil, 1.0% S	0.05 lb/MMBtu	YES	Highest SO2 removal efficiency among all FGD processes; 95 percent.
No. 2 Distillate Oil, 0.5% S	0.03 lb/MMBtu	YES	

+ Baseline emission rate was assumed from firing No. 6 residual oil (with 1% sulfur) in conventional industrial boilers. The corresponding emission level is 1.03 lbs of SO2/MMBtu (see emission calculation in Appendix B, Part ID).

* For the proposed boiler, each FGD process can be designed to achieve equal removal efficiency of 95 percent.

Table 6.2-2 Summary of BACT Determinations for SO2 Emissions from Oil-fired External Industrial Boilers

Company Name	State	Permit Number	Permit Issued Date	Boiler Size (MMBtu/hr)	SO2 Emission Limit (lb/MMBtu)	SO2 Emission Limit (lb/hr)	SO2 Emission Limit (TPY)	Control Method	Control Efficiency (%)
Owens-Illinois Inc.	OH	04-367	26-Nov-86	10.3	0.52	5.36	23.5	Nat. Gas & #2 Oil Firing	UD
Exeter Energy Limited Partners	CT	176-0004	28-Aug-89	11.2	0.229	2.56	0.5	Undetermined	UD
Northeast Utilities, NNECO	CT	199-0001	23-Sep-88	28.3	0.22	6.23	2.7	Limit 0.5% S to #2 Oil	UD
Berry Holding Company	CA	4016014A & 015B	02-Oct-85	31.5	0.036	1.12	UD	Caustic Scrubber, Pack Tower	96.5%
same as above	CA	4016022 & 023	02-Oct-85	62.5	0.036	2.23	UD	Caustic Scrubber, Pack Tower	96.5%
Petro-Lewis Corporation	CA	SJ 83-09	07-Aug-84	50.0	0.052	2.60	UD	2-Stage Ventury Scrubber	95.0%
Angus Petrotech	CA	4132002-004	29-Nov-83	62.5	0.04	2.56	11.2	Sodium Based Scrubber	UD
Hopco	CA	4099002-013	04-Dec-84	62.5	0.03	2.10	9.2	Undetermined	UD
Georgia-Pacific Corporation	OH	14-1043	01-Dec-85	118.0	1.06	125.08	547.9	Limit 1.0% S in #6 Oil	NA
Delco Moraine Div., GMC	OH	08-654	01-Jul-85	144.0	1.3	187.20	UD	Undetermined	UD
Wisconsin Tissue Mills, Inc.	WI	88-DLJ-024	10-Oct-88	146.4	1.10	161.04	705.4	Limit 1.0% S in #6 Oil	NA
Houston Lighting & Power	TX	PSD-TX-209	16-Jan-80	185.0	0.50	92.50	405.2	Limit <0.5% S in #2 Oil	UD

UD = Undetermined, indicates that information was either unavailable or insufficient to determine.
NA = Not Applicable
Source: BACT/LAER Clearinghouse information on BACT/LAER Information System (BLIS) database at the EPA National Computer Center, RTP, NC.

distillate oil with 0.5 percent sulfur) is fired in boilers equipped with FGD processes are shown in Table 6.2-1. Therefore, the combination of low sulfur firing together with FGD scrubber also is considered a viable SO_2 reduction method. In term of removal efficiency, this combined option can achieve higher SO_2 reduction than either individual process.

A baseline emission level must be established as the basis for BACT ranking and economic analysis purposes. The baseline is defined as the uncontrolled rate of a process being reviewed. In the BACT determinations of SO_2 emissions from industrial boilers shown in Table 6.2-2, the highest SO_2 emission levels are 1.06 lb/MMBtu and 1.10 lb/MMBtu for two boilers (i.e., Georgia-Pacific Corporation and Wisconsin Tissue Mills, Inc., respectively) permitted with 1.0 percent sulfur oil as the only documented requirement. These SO_2 emission levels that associate with the firing of 1 percent sulfur fuel oil will be used as the baseline emission level. For the proposed boiler, the baseline emission level was calculated as 211.0 lbs/hr of SO_2, determined by multiplying the heat input rate of 205 MMBtu/hr by the equivalent SO_2 emissions of 1.03 lb/MMBtu for 1.0 percent sulfur fuel.

By virtue of their similar design efficiencies, analyzing any one type of the three FGD scrubbers is sufficient for the detailed analysis of the FGD process. Thus, the further analysis based on the top-down BACT approach will combine the sodium solution scrubbing processes, the spray dry scrubbers, and the wet scrubbers into a single section. Therefore, there are only three SO_2 emission control methods overall, and their rankings in BACT top-down hierarchy are as follows: the most effective process is the combination of low sulfur oil firing, together with an FGD scrubber for 97 percent removal efficiency (from the baseline) or an equivalent SO_2 emission level of 0.03 lb/MMBtu SO_2 emission level; the second best control method is a process that uses any one of the three FGD scrubbers to reach overall 95 percent removal efficiency or an equivalent SO_2 emission level of 0.05 lb/MMBtu; and the third best SO_2 control method is firing No. 2

distillate oil with 0.5 percent sulfur content for 50 percent reduction or an equivalent SO_2 emission level of 0.51 lb/MMBtu.

Presented in Table 6.2-3 is the BACT top-down hierarchy of the technically feasible SO_2 reduction methods, their general ranges of control effectiveness, and their designed control efficiencies applied to the proposed boiler. In the following detail analyses, the add-on FGD processes are discussed first, followed by the discussions of the low sulfur oil firing process and the combined process of both SO_2 reduction techniques.

6.2.2.2 Analysis of Add-On FGD Process

Technical Issues--The sodium-based solution scrubbing process is the most effective of the three FGD processes, particularly for oil firing that produces very low particulate concentration. Overall reliability of sodium scrubbing systems applied to industrial boilers is also high. In a well-designed system, sodium scrubbing processes do not present any outstanding technical problems neither in application nor operation limitations. Applicability is only limited by waste liquor disposal issue that will be addressed in later discussions. Operation limitations are mainly caused by erosion and corrosion problems. Other operational issues are the handling of highly alkaline or caustic solutions containing sodium hydroxide and sodium carbonate.

The lime spray dryer FGD process has the least favorable status for application to oil-fired boiler because of the additional particulates control equipment generally required with its application. Since the distillate oil contains a negligible amount of ash content, the particulate control is entirely for the benefit of removing the lime or limestone reagent used in the SO_2 removing process. (Lime spray dryer FGD scrubbers are more frequently applied to coal-fired utility boilers where particulates are a major component in the flue gas.) From the operating standpoint, a narrow operating temperature window has to be strictly

Table 6.2-3. BACT "Top-down" Hierarchy of SO2 Reduction Methods for the Proposed Boiler.

Top-down Ranking	Technology	Range of Control Effectiveness (%)	Control level for BACT Analysis (%)	SO2 Emission Level** (lb/MMBtu)	SO2 Annual Emissions (TPY)
First	Low Sulfur Oil with a FGD Scrubber (0.5% S Distillate Oil with Sodium Scrubber)	97	97	0.03	12.9
Second	FGD Scrubbers (1.0% S No.6 Residual Oil)				
	Sodium Solution Scrubbing Process	80-97	95	0.05	21.5
	Wet Lime/Limestone Scrubber	80-95+	95	0.05	21.5
	Spray Dryer Scrubber	80-95++	95	0.05	21.5
Third	Low Sulfur Oil (0.5% S No.2 Distillate Oil)	50	50	0.51	219.6
Baseline*	1.0% Sulfur No.6 Residual Oil	--	--	1.03	443.4

* SO2 emission level from firing No. 6 residual oil with 1.0 percent sulfur content is considered as the baseline emission level for this analysis. The corresponding emission level for this baseline is 1.03 lb of SO2/MMBtu.

** Calculated based on baseline emission level.

\+ Higher range can be achieved by addition of adipic acid to the process materials.

++ Higher range can be achieved by further SO2 removal by sorbent layer collected on baghouse filter bags.

adhered to in order to avoid either potential excessive heating or condensation in downstream particulates collection equipment. Its long-term reliability is not sufficiently proven for oil-fired industrial boiler applications. However, its mechanical operation is less complex than the wet lime or sodium-based scrubbing systems.

The wet lime or limestone scrubber requires a larger auxiliary system or equipment for various processes such as raw materials preparation, solid and liquid separation, other mixing and aeration operation, and waste handing system. Its applicability is generally limited by plant physical limitation because it is a nonregenerable process that usually associates with high processing volume.

The fatal technical issue for applying the wet scrubber process are stipulated by Okeelanta Corporation's intended schedule of operation for the proposed boiler. The intended 175-day operation occurs during the off-season period. Okeelanta does not operate its bagasse-fired boilers (with scrubbers) during the off-season and currently has no provisions for handling scrubber wastewater during this time. Okeelanta is prohibited from discharging from its wastewater ponds during the off-season. This period is coincidental with the high rain season, and the combination of scrubber wastewater and high rainfall could result in an unauthorized discharge from these ponds. As a result, it is not feasible to handle scrubber wastewater in the off-season without construction of additional wastewater handling facilities.

Environmental Effects--The sodium-based chemicals (Na_2CO_3 and NaOH) used in the sodium scrubbing process are highly water soluble making their waste liquor disposal a difficult problem. Disposal options include treating the waste liquor in the existing wastewater treatment facilities or using it for another process feed stream. Those disposal options are also limited by the timing of the actual operation of the proposed boiler when the other boiler scrubbers are shut down (see discussion under Technical Issues).

Other disposal methods such as deep-well injection and off-site disposal by licensed waste processors are cost prohibitive. Safety of plant operating personnel is also a major concern in handing of caustic solutions.

A wet scrubber also has the disadvantage of requiring a water source. The add-on FGD options would require between 5.4 million and 11.0 million gallons per year. This is a significant environmental effect in south Florida, which is experiencing declining water levels.

There are no major environmental issues concerning the use of the lime spray dryer process, except plant safety procedures for handling particulate solid wastes and the solid waste disposal issue.

The primary environmental concern of the wet lime/limestone system is the process wastewater and solid waste generated. These waste streams would require proper disposal. As discussed above, disposal of wastewater in the off-season is of particular concern.

Energy Requirements and Impacts--In general, all of the wet FGD systems will require electricity to drive various mechanical equipment and pumps. The estimated electricity requirements are 404,400 kilowatt-hours (kW-hr) and 461,400 kW-hr for the sodium-based scrubber and the spray dryer scrubber, respectively. This estimated value is calculated for a total of 175 days of annual operation. Methods of calculation are included in the next section. The wet lime/limestone system would require higher energy than the other two systems.

Economic Analysis--Generally, the sodium based scrubber will have the lowest annual costs of the three add-on FGD systems, while the spray dryer will have the highest. Therefore, these two systems will be analyzed for economic impact to illustrate the range of costs for the add-on FGD system.

This section presents the total capital investment (TCI) and the annualized cost (AC) of both FGD processes for the proposed 205 MMBtu/hr boiler. All analyses were based on an EPA-developed cost algorithm for determining costs of emission control equipment on fossil-fuel-fired industrial boilers (EPA, 1982). The cost estimate for each FGD process is obtained from a separate subroutine. The input values such as boiler flue gas flow rate and SO_2 removal efficiency accounted for the sizing of the equipment. Two subroutines in the cost algorithm are attached in Appendix B. The final cost values are adjusted to reflect the most current 1990 costs by multiplying with an escalation factor obtained from the ratio of the Chemical Engineering (CE) Plant Cost Index in 1990 to that in 1978.

The cost estimates for the sodium-based solution scrubbing process are tabulated in Table 6.2-4. The calculation basis or specific reference for each cost item is also given in the table. The total capital investment (TCI) is $1,190,997. The total direct operating cost (DOC) and indirect operating cost (IOC) are $185,147 and $135,547, respectively. The capital recovery cost (CRC) is $193,775. The calculated annualized cost for the sodium-based scrubber system is $514,470.

The cost estimates for the lime spray dryer FGD scrubbing system are tabulated in Table 6.2-5. The total capital investment (TCI) is $2,985,099. The total direct operating cost (DOC) and indirect operating cost (IOC) are $196,260 and $216,617, respectively. The capital recovery cost (CRC) is $485,676. The calculated annualized cost for the lime spray dryer scrubber is $898,554. The higher annualized cost for the spray dryer system also reflects the additional cost for the particulate control system.

Since all of the FGD processes have a similar SO_2 removal efficiency, the economic comparison in Section 6.2.3.4 will use the lower annualized cost calculated for the sodium-based solution scrubbing process.

Table 6.2–4. Cost Estimates for Sodium Solution Scrubbing Process

Cost Items	Basis	Costs for Caustic FGD
TOTAL CAPITAL INVESTMENT (TCI):		
(1) Direct & Indirect Costs	TDI in NATH Cost Algorithm	$397,133
(2) Turnkey Cost	(1.48 TDI + 112,800) x EF[2]	$1,144,710
(3) Working Capital	25% of total DOC[2]	$46,287
TCI	(2) + (3)	$1,190,997
DIRECT OPERATING COSTS (DOC):		
(4) Operating Labor		
Operator	DL in NATH Cost Algorithm[2]	$82,260
Supervisor[1]	15% of operator cost	$12,339
(5) Maintenance	8% of TDI[2] x EF	$51,913
(6) Replacement Parts[1] (include freight & tax)	Equiv. to oper. cost of 350 hours	$7,770
(7) Chemicals		
(a) Sodium Carbonate	SC in NATH Cost Algorithm[2]	$9,700
(8) Utilities		
(a) Electricity	ELEC in NATH Cost Algorithm[2]	$17,047
(b) Water	WTR in NATH Cost Algorithm[2]	$2,687
(9) Waste Disposal		
(a) Solid Wastes	SW in NATH Cost Algorithm[2]	$938
(b) Liquid Wastes	LW in NATH Cost Algorithm[2]	$494
Total DOC		$185,147
INDIRECT OPERATING COSTS (IOC):		
(10) Overhead[1]	60% of oper. labor & maint.	$87,907
(11) Property Taxes[1]	1% of total capital investment	$11,910
(12) Insurance[1]	1% of total capital investment	$11,910
(13) Administration[1]	2% of total capital investment	$23,820
Total IOC		$135,547
CAPITAL RECOVERY COST (CRC)	CRF of 0.1627 times TCI	$193,775
ANNUALIZED COST (AC):	DOC + IOC + CRC	$514,470

[1] Based on catalytic incinerators, from OAQPS Control Cost Manual, Fourth Edition, 1990.

[2] The EPA's NATH cost algorithm is given in EPA-450/3-82-021, 1978 (see Attachment B). All final cost values are corrected to reflect the most current 1990 cost values by multifying with EF.
EF is the "escalation factor" calculated from the Chemical Engineering Plant Cost Index, the composite annual index.
EF = 1990 CE cost index/1978 CE cost index = 357.5/218.8 = 1.634.

Table 6.2-5. Cost Estimates for Lime Spray Dryer FGD Process

Cost Items	Basis	Costs for Lime Spray Dryer FGD
TOTAL CAPITAL INVESTMENT (TCI):		
(1) Direct & Indirect Costs	TDI in DS Cost Algorithm	$1,123,024
(2) Turnkey Cost	1.60 TDI x EF[2]	$2,936,034
(3) Working Capital	25% of total DOC[2]	$49,065
TCI	(2) + (3)	$2,985,099
DIRECT OPERATING COSTS (DOC):		
(4) Operating Labor		
Operator	DL in DS Cost Algorithm[2]	$82,260
Supervisor[1]	15% of operator cost	$12,339
(5) Maintenance	MANT is DS Cost Algorithm[2]	$67,424
(6) Replacement Parts[1] (include freight & tax)	Equiv. to oper. cost of 350 hours	$7,770
(7) Chemicals		
(a) Lime	Lime in DS Cost Algorithm[2]	$1,556
(8) Utilities		
(a) Electricity	ELEC in DS Cost Algorithm[2]	$19,450
(b) Water	WTR in DS Cost Algorithm[2]	$1,332
(9) Waste Disposal		
(a) Solid Wastes	SW in DS Cost Algorithm[2]	$4,130
Total DOC		$196,260
INDIRECT OPERATING COSTS (IOC):		
(10) Overhead[1]	60% of oper. labor & maint.	$97,214
(11) Property Taxes[1]	1% of total capital investment	$29,851
(12) Insurance[1]	1% of total capital investment	$29,851
(13) Administration[1]	2% of total capital investment	$59,702
Total IOC		$216,617
CAPITAL RECOVERY COST (CRC)	CRF of 0.1627 times TCI	$485,676
ANNUALIZED COST (AC):	DOC + IOC + CRC	$898,554

[1] Based on catalytic incinerators, from OAQPS Control Cost Manual, Fourth Edition, 1990.

[2] The EPA's DS cost algorithm is given in EPA-450/3-82-021, 1978 (see Attachment B). All final cost values are corrected to reflect the most current 1990 cost values by multiplying with EF.
EF is the "escalation factor" calculated from the Chemical Engineering Plant Cost Index, the composite annual index.
EF is the escalation factor = 1990 CE cost index/1978 CE cost index = 357.5/218.8 = 1.634.

6.2.2.3 Analysis of Low Sulfur Fuel Oil

Technical Issues--Firing low sulfur fuel oil does not require any additional change in the standard boiler setup. Since low sulfur oil is considered as "cleaner" fuel because of less ash content and higher heating value per pound of fuel, its use will enhance other mechanical integrities (i.e., the firing mechanism of the boiler, etc.) and reduce the normal maintenance requirements.

Environmental Effects--Low sulfur content oil such as No.2 distillate oil also contains lower amount of nitrogen concentration; therefore, firing low sulfur fuel oil will also reduce the fuel NO_x emission level. The NSPS limitation for NO_x for industrial boilers is reduced from 0.4 lb/MMBtu for residual oil to 0.2 lb/MMBtu for firing distillate oil. Therefore, one of the main reasons for using low sulfur fuel oil is the significant reduction in NO_x emissions. In addition, the trace element concentration of distillate oil is less than that of residual oil, reducing trace element emissions.

Energy Requirements and Impacts--There is no additional energy-related requirement from using a lower sulfur fuel. Theoretically, a better fuel economy is resulted because of the slightly higher heating value per pound of fuel when switching to low sulfur fuel oil. Comparing the average heating value of 18,200 Btu/lb for No. 6 residual oil to 19,430 Btu/lb for the No. 2 distillate oil proposed for the project, an average of 1,230 Btu more heat is produced per pound of fuel. However, because the low sulfur fuel oil has a lower fuel gravity value, it will require approximately an additional 300,000 gal of fuel per year for the proposed boiler.

Economic Analysis--There is significant increase in fuel cost when switching from residual oil to distillate oil. The increase of fuel cost is a result of the higher volume consumption of 298,200 gal/yr and the higher cost of distillate oil. Central Oil Company listed its prices of $33.42 per barrel for 1.0 percent sulfur oil and $40.53 per barrel for 0.5

percent sulfur oil. The total net increase of fuel cost is calculated to be approximately $1,277,600 annually, based on the total fuel requirement of 5,846,400 gal/yr for No. 6 fuel oil, and 6,144,600 gal/yr for No. 2 fuel oil.

6.2.3 SO_2 BACT SUMMARY AND CONCLUSION

The BACT analysis for SO_2 control has identified three feasible control alternatives: the low sulfur oil firing, the addition of an add-on FGD scrubber, and the combination of both alternatives. This section will consider the overall environmental, energy, and economic impacts of each alternative and eliminate the one with the most adverse impacts. The control alternative not eliminated will be selected as BACT.

6.2.3.1 Comparison of Technical Issues

Of the three alternatives, the option of firing low sulfur oil is the simplest option because there is no additional operating procedure requirements, nor any additional equipment is required. Firing low sulfur oil will also mean less frequent maintenance is needed because of better combustion process from using "cleaner" fuel. On the other hand, an addition of any FGD process stipulates that additional operating and maintenance will be required for the boiler on top of the labor requirements for the control device and its auxiliary processes such as raw materials or chemicals preparation, separation processes, and wastes handling processes. The wet SO_2 control methods using sodium-based chemicals are also subjected to corrosion and erosion problems.

The solids and liquor wastes handling aspect is the main technical reason for eliminating all alternatives involving the use of any FGD process. Since the operation of the proposed boiler will take place only during the off-season, applying either the sodium-based solution scrubbing process or the wet lime/limestone scrubber presents severe difficulties because there are no provisions to process the wastewater during the off-season.

Wastewater discharges during the off-season are limited due to site conditions, weather, and permit limitations.

The option of installing a lime spray dryer scrubber also presents difficulties because of the requirement for a particulate control system. The plant is not equipped to handle the lime solid waste. Thus, using low sulfur fuel to reduce SO_2 emission is the best control alternative since it poses the fewest technical concerns.

6.2.3.2 Comparison of Environmental Effects

All of the add-on FGD processes create additional environmental concerns because reagents are required and byproducts are produced in each process. Of all the FGD processes, the most adverse environmental impacts could be from the application of the caustic solution scrubbing process, which produces a sodium-based waste liquor. This waste liquor would have to be disposed of by Okeelanta during the off-season operation, when treatment options are limited. Therefore, the option of using this process is the least favorable in term of environmental effects.

Other lime scrubbing processes (i.e., wet lime scrubber and lime spray dryer scrubber) produce solid/slurry waste and particulate solids, respectively, that require additional processing prior to disposal in landfills.

All the add-on FGD options have an associated water use. This is a negative environmental impact in south Florida where water is becoming scarce.

Using low sulfur fuel will also result in NO_x reduction. Based on the NSPS limits, NO_x emissions would decrease from 155 TPY to 77.5 TPY. The potential amount of NO_x emission will be reduced by up to 50 percent by using a "cleaner" fuel for the proposed boiler. The most favorable aspect of using low sulfur oil is that there is no adverse environmental issues

involved for this SO_2 reduction alternative; therefore, using low sulfur fuel is the best option for the environment.

6.2.3.3 Comparison of Energy Impacts

All of the FGD processes require additional electricity to operate various pumps and mechanical mixers. For example, it requires about 404.4 and 461.4 megawatts-hr annually to operate either the sodium-based solution scrubbing system or the lime spray dryer scrubber, respectively. The best alternative will be the low sulfur oil firing in view of the energy impact analysis because it does not require any additional energy.

6.2.3.4 Comparison of Economic Analysis

The economic analysis is based on the cost effectiveness of the control method. The economic impact is determined by its total and incremental values. Comparing the total cost effectiveness of all three SO_2 control alternatives: the combination of low sulfur oil firing equipped with an additional FGD scrubber has the cost effectiveness value of $4,162 per ton of SO_2 removed; the sodium solution scrubbing process is the lowest with $1,219 per ton of SO_2 removed. The low sulfur fuel firing has a total cost effectiveness value of $5,707 per ton of SO_2 removed.

The incremental cost effectiveness values for the combination SO_2 removal method is $148,371 per ton of SO_2 removed. The low sulfur oil firing shows an incremental cost effectiveness of $5,707 per ton of SO_2 removed; while the incremental cost for the sodium-based solution scrubbing process with 1-percent sulfur fuel oil is -$3,853.

6.2.3.5 Conclusion

The top-down BACT analysis in terms of environmental impacts, energy impacts and economic impacts for Okeelanta Corporation's proposed project is summarized in Table 6.2-6. The combination of low sulfur oil firing equipped with sodium-based (or any of the other two) FGD processes is eliminated primarily based on the technical issues concerning the lack of

Table 6.2-6 Summary of Top-Down BACT Impact Analysis Results for SO2.

Control Alternative	Total Emission Reduction (TPY)*	Incremental Emission Reduction (TPY)**	Environmental Impacts: Potential toxic air impact?	Environmental Impacts: Potential adverse enviromental impacts?	Energy Impacts: Additional Electricity Requirement (kW-hr/yr)	Economic Impacts: Total Annualized Cost ($/yr)	Economic Impacts: Incremental Annualized Cost ($/yr)	Economic Impacts: Total Cost Effectiveness ($/ton)	Economic Impacts: Incremental Cost Effectiveness ($/ton)
Low Sulfur Oil (0.5% S No.2 Oil) with Sodium-based Scrubber	430.5	8.61	Yes	Yes	404,400	$1,791,945	$1,277,475	$4,162	$148,371
Sodium Scrubbing Process (1.0% S No.6 Oil)	421.9	198.0	Yes	Yes	404,400	$514,470	-$763,005	$1,219	-$3,853
Low Sulfur Oil (0.5% S No.2 Oil)	223.9	223.9	No	No	0	$1,277,475	$1,277,475	$5,707	$5,707
Baseline (1.0% S No.6 Oil)	----	----	--	--	----	----	----	----	----

* Total emission reduction, total annualized cost, and total cost effectiveness are calculated based on similar baseline parameter values.

** Incremental values are based on the next lower control technology's parameter values.

wastewater disposal options during the off-season operation of the proposed boiler. Also, the incremental cost effectiveness for using this combination alternative is economically infeasible at $148,371 per ton removal.

The technical issue concerning the lack of wastewater disposal options during the off-season also eliminates the second best removal alternative of using an FGD process to control SO_2 emissions along with high sulfur fuel oil. In addition, add-on FGD control technologies have additional energy and water requirements along with creating potential adverse environmental impacts, such as the disposal of caustic waste liquor. NO_x emissions may double by the use of higher sulfur fuel oil.

By eliminating both FGD-related options, the low sulfur oil firing (0.5 percent distillate oil) is BACT for SO_2 emission for the proposed boiler. This is consistent with current BACT determinations for SO_2 emissions shown in Table 6.2-2 for boiler sizes greater than 100 MMBtu/hr. The Wisconsin Tissue Mills, Inc., was permitted in 1988 for a 146.4-MMBtu/hr boiler with twice the emission level (1.1 lb/MMBtu) as the proposed boiler with much higher annual SO_2 emissions.

Although the incremental cost effectiveness for the chosen SO_2 control alternative is $5,707 per ton of SO_2 removed, the firing of low sulfur oil does not generate any additional wastes or require any additional energy. Best of all, it is the simplest technology to apply. The high incremental cost is justified because of its simplicity and its ability to meet the NSPS for SO_2. The Kern County Air Control Pollution Board in California is currently considering low sulfur oil to be an appropriate SO_2 emission control alternative for industrial boilers rated up to 250 MMBtu/hr when such low sulfur firing process is an essential technique for controlling NO_x emission simultaneously.

Furthermore, the Okeelanta Corporation's proposed boiler has an insignificant SO_2 impact, its modeling result shows a low SO_2 impact of less than 1 $\mu g/m^3$, annual average, to the surrounding rural area. Therefore, firing of No. 2 distillate oil of 0.5 percent sulfur is concluded to be BACT for SO_2 emission control from the proposed 205-MMBtu/hr package boiler.

6.3 BACT DETERMINATION FOR NITROGEN OXIDES (NO_x EMISSIONS)

6.3.1 IDENTIFICATION OF NO_x CONTROL TECHNOLOGIES FOR INDUSTRIAL BOILERS

In this section, the control technologies capable of reducing NO_x emissions produced by industrial boilers will be evaluated relative to their potential application as BACT for the proposed 205-MMBtu/hr boiler.

All potentially applicable control technologies for stationary external combustion boilers are reviewed. The technologies can be separated into two major groups:

1. Reducing pollutant emissions by boiler modification (i.e., low excess air burner design), and
2. Converting NO_x in the exhaust gas by add-on flue gas treatment devices.

The discussion of each potential NO_x control technology includes a description of the technology and the potential NO_x emission reduction if the technology is concluded to be technically feasible.

6.3.1.1 Technologies Involving Boiler Modification

Stationary source NO_x emission control technologies originally were developed for use on large, field-erected electric utility boilers since these boilers are the major stationary source of NO_x emissions. As the NO_x control technologies progress and improve, their applications also are extended to smaller industrial and commercial boilers of less than 500 MMBtu/hr heat input. For the proposed boiler, the following boiler modification techniques for controlling NO_x formation are applicable: low excess air (LEA) combustion process, low nitrogen oxides (NO_x) burner design, and flue gas recirculation.

Low Excess Air Combustion Process--Formation of NO_x in combustion processes is a result of both oxidation of fuel-bound nitrogen and thermal oxidation of molecular nitrogen in the incoming air. The latter oxidation process occurs at a higher temperature condition than the standard fuel-combustion

process. Typically, thermal oxidation accounts for more than 50 percent of NO_x formation in an oil-fired combustion process since the concentration of fuel-bound nitrogen in oil is small. Thus, controlling the amount of excess air will have a significant effect on the NO_x thermal oxidation process.

A standard boiler normally operates at greater than 40 percent excess air at full-load condition. This amount of excess air is equivalent to 3 to 6 percent in stack gas oxygen concentration depending on individual boiler design. Some test results have shown that the NO_x formation can be reduced 10 to 15 percent when the boiler stack gas oxygen concentration is lowered to between 3 to 5 percent from its normal combustion condition [South Coast Air Quality Management District (SCAQMD), 1987]. State-of-the-art low thermal NO_x boiler design limits the amount of excess air to a maximum level of between 15 to 20 percent.

A low excess air (LEA) combustion process can be achieved either by an oxygen sensor and control feedback process or by the burner design. In standard boilers, reduction of the excess air level usually is accomplished by installing a flue gas oxygen sensory unit that provides feedback to an inlet air automatic controller that regulates the excess air at the desired level. The LEA combustion process, by modifying the boiler inlet air condition, can achieve a maximum of 25 percent NO_x reduction.

In modern boilers, the LEA combustion process is engineered as an integral part of the burner design, which allows a minimum air-to-fuel ratio in the thermal combustion zone. The LEA burner design can achieve better excess air reduction than the LEA system with a flue gas oxygen sensor and control feedback mechanism.

Low NO_x Burner Design--Low NO_x burner design can directly incorporate advanced control and higher efficiency combustion techniques that result in

low NO_x formation. There are two standard low NO_x burner designs: LEA (single-staging) burners and multi-staging combustion burners.

The LEA (single-staging) burners are designed to operate at the lowest level of excess air by way of an efficient combustion process supported by an optimal air-to-fuel mixture. Compared to the operation of conventional burners (in the range of 3 to 6 percent of flue gas oxygen concentration), the LEA burners are capable of operating at stack gas oxygen concentrations of 0.5 to 1.5 percent. LEA burners were reported to achieve 45 percent reduction in NO_x formation over the conventional burner when burning distillate oil. LEA burners typically are applied in single-burner systems because of the difficulty in maintaining equal air distribution in multiple-burner systems.

The multi-staging low NO_x burners are designed with advanced staged-combustion principles to reduce both fuel NO_x and thermal NO_x. The staged-combustion process allows the overall combustion to be carried out in two separate combustion zones. In the air staging combustion process, the burner design allows 70 percent of stoichiometric air to burn in a fuel-rich, primary combustion zone. Some heat generated by this incomplete combustion is transferred to the boiler tubes. The combustion process is completed in the secondary burnout zone situated downstream from the primary combustion zone. Because of the heat transfer within the primary combustion zone, the peak combustion temperature is lowered.

The fuel NO_x formation is reduced as a result of the oxygen-starved condition in the fuel-rich primary combustion zone causing the total fixed nitrogen compounds (such as ammonia, hydrogen cyanide, and hydromonoxide) to form inert molecular nitrogen. The thermal NO_x formation also is reduced because the lowered peak temperature in the secondary burnout zone does not provide a sufficient temperature for thermal oxidation of the triple-bond molecular nitrogen. Overall, the multi-staging combustion

burners can achieve 30 to 65 percent of NO_x emission reduction over conventional burners.

Both LEA (single-staging) and multi-staging low NO_x burners usually are designed with flue gas recirculation in order to enhance NO_x emission reduction.

Flue Gas Recirculation--Flue gas recirculation (FGR) involves recycling a portion of the flue gas from the exhaust gas stream to the windbox of the boiler. Usually, the recycled flue gas is mixed with the inlet combustion air at the windbox before being introduced into the combustion chamber. In FGR, the recycled flue gas mainly serves as a dilutant to lower the overall oxygen concentration of the combustion air and as a heat sink to lower the peak combustion temperature. The heat sink effect occurs in FGR because the particulates in the recycled flue gas absorb some heat from the combustion process. These effects result in reductions of thermal NO_x and have negligible change in fuel NO_x. Therefore, FGR is applied only to low nitrogen-content fuels, such as natural gas or distillate oil.

FGR typically can reduce thermal NO_x by 55 to 65 percent based on 10 to 15 percent flue gas recirculation rates, respectively (Coen, 1990). The recirculation rates are limited to below 15 percent for oil-fired boilers because of burner flame instability and emissions of unburned combustibles. An application of FGR usually requires a low NO_x burner that can be either an LEA burner or a multi-stage low NO_x burner. Actual FGR efficiency depends on the boiler type and burner design. For the proposed boiler, FGR can reduce 50 percent of NO_x emissions at a 12.5 percent recirculation rate (McBurney Corporation, 1991).

6.3.1.2 Technologies Involving Exhaust Gas Treatment

In addition to boiler modification technologies, NO_x emissions can be lowered by NO_x reduction reactions by injecting reducing agents (i.e., ammonia or urea) into the flue gas stream. Generally, an add-on device is

inserted into the flue gas duct work to facilitate the NO_x reduction process. A variety of reaction conditions is required depending on the type of reducing agent and catalyst used. For the proposed oil-fired boiler, the following add-on NO_x control devices have been identified: the NO_xOUT process, Exxon's Thermal DeNO_x, and selective catalytic reduction with ammonia injection.

NO_xOUT Process--The NO_xOUT process originated from the initial research by the Electric Power Research Institute (EPRI) in 1976 on the use of urea to reduce NO_x. EPRI licensed the proprietary process to Fuel Tech, Inc., for commercialization. In the NO_xOUT process, aqueous urea is injected into the flue gas stream, ideally within a temperature range of 1,600°F to 1,900°F. In the presence of oxygen, the following reaction occurs:

$$CO(NH_2)_2 + 2NO + 1/2\ O_2 \dashrightarrow 2N_2 + CO_2 + 2H_2O$$

The amount of urea required is most cost-effective when the treatment rate is 0.5 to 2 moles of urea per mole of NO_x. In addition to the original EPRI urea patents, Fuel Tech claims to have a number of proprietary catalysts capable of expanding the effective temperature range of the reaction to between 1,000°F and 1,950°F. Advantages of the system are as follows:

1. Low capital and operating costs as a result of using urea injection, and
2. The proprietary catalysts used are nontoxic and nonhazardous, thus eliminating potential disposal problems.

Disadvantages of the system are as follows:

1. Formation of ammonia from excess urea treatment rates and/or improper use of reagent catalysts, and
2. SO_3, if present, will react with ammonia created from the urea to form ammonium bisulfate, potentially plugging the cold end equipment downstream.

Commercial application of the NO_xOUT system is limited to three reported cases:

1. Trial demonstration on a 62.5-TPH stoker-fired, wood waste boiler with 60 to 65 percent NO_x reduction,
2. A 600-MMBtu/hr gas-fired CO boiler with 60 to 70 percent NO_x reduction, and
3. A 75-MW pulverized-coal-fired boiler with 65 percent NO_x reduction.

The NO_xOUT process is not technically feasible for the proposed lean-burn engine because of the high application temperature of 1,000°F to 1,950°F. The exhaust gas temperature of the proposed boiler is 435°F. Raising the exhaust temperature to the required temperature level essentially would require the installation of an auxiliary duct burner system. This would be economically prohibitive and would result in an increase in fuel consumption, an increase in the volume of gases that must be treated by the control system, and an increase in uncontrolled air emissions, including NO_x.

Thermal DeNO$_x$--Thermal DeNO$_x$ is Exxon Research and Engineering Company's patented process for NO_x reduction. The process is a high temperature selective noncatalytic reduction (SNCR) of NO_x using ammonia as the reducing agent. Thermal DeNO$_x$ requires the exhaust gas temperature to be above 1,800°F. However, use of ammonia plus hydrogen lowers the temperature requirement to about 1,000°F. For some applications, this must be achieved by additional firing in the exhaust stream before ammonia injection.

The only known commercial applications of Thermal DeNO$_x$ are on large utility boilers, large furnaces, and incinerators that consistently produce exhaust gas temperatures above 1,800°F. There was a single recorded application of Thermal DeNO$_x$ in a 62.5-MMBtu/hr boiler for a crude oil production facility in Kern County, California (refer to Section 6.3.2 for

a summary of BACT determinations for NO_x emissions). It was installed as a demonstrated technology; however, the entire operation has been inactive for some time according to a staff engineer of the Kern County Air Pollution Control Board. Therefore, application of Thermal $DeNO_x$ for industrial boilers is still being considered as an unproven technology.

From the application standpoint, temperatures of 1,800°F require alloy construction materials with large size piping and components since the exhaust gas volume would be increased several times. As with the NO_xOUT process, high capital, operating, and maintenance costs are expected because of engineered materials meeting high-temperature construction specifications, the additional duct burner system required, and extra fuel consumption. The overall uncontrolled emissions would increase because of the additional fuel consumed in the auxiliary duct burner system.

Thus, the Thermal $DeNO_x$ process will not be considered for the proposed project because its high application temperature makes it technically infeasible.

Selective Catalytic Reduction with Ammonia Injection--The NO_x abatement technology for oil- and gas-fired combustion sources that is currently receiving considerable attention is the selective catalytic reduction (SCR) process with ammonia injection. Engelhard Corporation's discovery in 1957 that ammonia reacts selectively with NO_x in the presence of a catalyst and excess oxygen has led to the commercialization of SCR technology for industrial boilers of various sizes. The technology has been well developed and applied in Japan, especially for control of emissions from gas-, oil-, and coal-fired utility boilers. It has been applied domestically on combustion sources that generate large quantities of NO_x, such as gas turbines.

SCR catalysts consist of two types: metal oxides and zeolite. In the metal oxides catalytic system, either vanadium or titanium is embedded into

a ceramic matrix structure; the zeolite catalysts are ceramic molecular sieves extruded into modules of honeycomb shape. The all-ceramic zeolite catalysts are durable and less susceptible to catalyst masking or poisoning than the noble metal/ceramic base catalysts. All catalysts exhibit advantages and disadvantages in terms of exhaust gas temperatures, ammonia/NO_x ratio, and optimum exhaust gas oxygen concentrations. A common disadvantage for all catalyst systems is the narrow window of temperature between 600°F and 900°F within which the NO_x reduction process takes place (Schorr, 1989; Steuler, 1990; Engelhard, 1990; Johnson-Matthey, 1990). Operating outside this temperature range results in catastrophic harm to the catalyst system. Chemical poisoning occurs at lower temperature conditions, while thermal degradation occurs at higher temperatures. Reactivity can only be restored through catalyst replacement.

Catalysts are subject to loss of activity over time. Since the catalyst is the most costly component of the SCR system, applications require servicing and cleaning of the catalyst surface every 2,000 to 3,000 hours of operation. The cleaning normally consists of blowing the catalyst surfaces with a compressed air gun or water jet. Most catalyst suppliers guarantee a catalyst life of 3 years, assuming certain operating conditions.

Technically, SCR is potentially applicable to further reduce the already low NO_x emissions (0.18 lb/MMBtu) from the proposed boiler. SCR is capable of achieving 70 to 90 percent NO_x reduction. For the proposed oil-fired boiler, with already low NO_x concentration in the exhaust gases, vendors guarantee a removal rate of 80 percent. This would result in an NO_x emission rate of 0.04 lb/MMBtu.

6.3.1.3 Summary of Technically Feasible NO_x Control Methods

In summary, there are two basic alternatives for reduction of NO_x emissions from the proposed boiler: boiler modification and add-on control technology. Presented in Table 6.3-1 is a summary of the technical

Table 6.3-1. Summary of Technical Feasibility of NOx Emission Controls for the Proposed Oil-fired Boiler

Control Technology	NOx Controlled Emission Rate+	Technical Feasibility	Comments
Boiler Modification Alternatives			
Low Excess Air (LEA) Firing	0.30 lb/MMBtu	YES	Lowest emission rate achievable by modification of boiler inlet air condition, maximum 25% NOx reduction.
Low NOx Burner (LNB) Design	0.22 lb/MMBtu	YES	Approx. 45% of NOx reduction for the proposed boiler
Flue Gas Recirculation (FGR)	0.20 lb/MMBtu	YES	Maximum 50% of NOx reduction for the proposed boiler.
Low NOx Burner with FGR	0.18 lb/MMBtu*	YES	Maximum 55% of NOx reduction for the proposed boiler.
Add-on Control Technology			
NOxOUT Process	Not Applicable	NO	Technically infeasible (1000-1600°F), cost prohibitive for high temperature auxiliary equipment.
THERMAL DeNOx	Not Applicable	NO	Technically infeasible (above 1000°F), cost prohibitive for high temperature auxiliary equipment.
Selective Catalytic Reduction**			
Conventional Boiler	0.08 lb/MMBtu	YES	Technically, SCR can achieve 80 percent NOx reduction from the flue gas from either conventional or modified boiler.
Boiler with LNB and FGR	0.04 lb/MMBtu	YES	

+ Baseline emission rate from conventional industrial boiler firing No.6 residual oil is 0.40 lb/MMBtu (Source: BACT Clearinghouse Information, 1991).

* Guaranteed NOx emission rate from the boiler vendor (Source: The McBurney Corporation, 1991).

** The range of emission rate was calculated from 80 percent reduction based on the conventional boiler and a boiler equipped with low NOx burner and FGR.

evaluation of NO_x emission control methods applicable to industrial boilers.

In the boiler modification category, all three processes (LEA firing, low NO_x burner design, and FGR) are applicable to the proposed boiler. In the add-on control technology category, only the SCR with ammonia injection is considered technically feasible. There are two scenarios that SCR can be applied to: a conventional boiler and a boiler modified with low NO_x burner design and FGR technique. The other two methods, such as NO_xOUT and Thermal DeNO_x, are considered technically infeasible.

6.3.2 EVALUATION OF TECHNICALLY FEASIBLE NO_x CONTROL METHODS

This section examines all the technically feasible NO_x control methods identified in the previous discussion. First, all four remaining control alternatives and the additional scenario of applying SCR to boilers modified with low NO_x burner and FGR are ranked according to their total removal effectiveness. Each alternative is then examined with regard to technical issues, environmental effects, energy requirements and impacts, and economic impacts.

The discussion also reviews current permitting practices for applications similar to Okeelanta Corporation's proposed project. Presented in Table 6.3-2 is a summary of all BACT determinations for NO_x emissions from oil-fired, stationary external combustion boilers issued since 1980. The information was obtained from BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse information stored in the BACT/LAER Information System (BLIS) database via EPA's National Computer Center at Research Triangle Park in North Carolina.

6.3.2.1 Ranking of Feasible Control Technologies

The top-down BACT approach requires the ranking of the NO_x emission control alternatives in terms of achievable emission level. The five options, in order of removal effectiveness, are as follows: first, the application of

Table 6.3-2 Summary of BACT Determinations for NOx Emissions from Oil-fired External Industrial Boilers

Company Name	State	Permit Number	Permit Issued Date	Boiler Size (MMBtu/hr)	NOx Emission Limit (lb/MMBtu)	NOx Emission Limit (lb/hr)	NOx Emission Limit (TPY)	Control Method	Control Efficiency (%)
Owens-Illinois Inc.	OH	04-367	26-Nov-86	10.3	0.15	1.49	6.5	None	UD
Exeter Energy Limited Partners	CT	176-0004	28-Aug-89	11.2	3.43	38.46	7.7	Undetermined	UD
Northeast Utilities, NNECO	CT	199-0001	23-Sep-88	28.3	3.26	92.26	40.0	None	UD
Berry Holding Company	CA	4016014A & 015B	02-Oct-85	31.5	0.20	6.26	UD	Low NOx Burner, FGR	61.8%
same as above	CA	4016022 & 023	02-Oct-85	62.5	0.12	7.50	UD	Low NOx Burner, FGR	70.0%
Angus Petrotech	CA	4132002-004	29-Nov-83	62.5	0.13	8.29	36.3	Low NOx Burner	67.5%
Hopco*	CA	4099002-013	04-Dec-84	62.5	0.12	7.40	32.4	THERMAL DeNOx	70.0%
Georgia-Pacific Corporation	OH	14-1043	01-Dec-85	118.0	0.30	35.40	155.1	LEA Firing	25.0%
Delco Moraine Div., GMC	OH	08-654	01-Jul-85	144.0	UD	UD	UD	Undetermined	UD
Wisconsin Tissue Mills, Inc.	WI	88-DLJ-024	10-Oct-88	146.4	0.38	55.63	243.7	LEA Firing	5.0%
Houston Lighting & Power	TX	PSD-TX-209	16-Jan-80	185.0	0.30	55.50	243.1	Low NOx Burner	25.0%

* Source has been inactive for sometime.

UD = Undetermined, indicates that information was either unavailable or it was insufficient to determine.

SCR to a boiler modified with low NO_x burner and FGR; second, the ceramic-based SCR; third, the low NO_x burner with FGR; fourth, the FGR technology; and, fifth, the LEA firing process. The low NO_x burner was combined with FGR as a single option because this combination is a preferred commercial practice.

A baseline condition must be established for BACT ranking and economic analysis purposes. The baseline is defined as the uncontrolled rate of a process being reviewed. Therefore, the baseline condition for the control technologies involving industrial boilers would be a conventional boiler with an NO_x emission level of 0.40 lb/MMBtu. This emission level was derived from the correlations between the reported NO_x emissions levels and the associated NO_x control efficiency in current BACT determinations (see Table 6.3-2). This is also the highest NO_x emission rate allowed under NSPS.

Presented in Table 6.3-3 is the BACT top-down hierarchy of five technically feasible NO_x emission control scenarios, their corresponding NO_x emission levels in pound per MMBtu heat input, and their control efficiencies calculated from the baseline emission level. In the following analyses, the ceramic-based SCR system is discussed first, followed by discussions of the low NO_x burner (LNB) with FGR, the combined option of applying both SCR and LNB-FGR, the FGR technology, and the LEA firing process.

6.3.2.2 Analysis of Ceramic-Based SCR System

Technical Issues--As the most effective NO_x abatement process in terms of removal efficiency, SCR has been examined closely for NO_x emission sources. However, the reliability of SCR's performance on industrial boilers has not been demonstrated. Data on sustained NO_x reduction performance for both stationary external combustion and internal combustion processes are very limited.

Table 6.3-3. BACT "Top-down" Hierarchy of NOx Reduction Methods for the Proposed Boiler.

Top-down Ranking	Technology	Range of Control Effectiveness (%)	Control level for BACT Analysis (%)	Emission Level** (lb/MMBtu)	Annual Emission (TPY)
First	SCR with LNB/FGR Dual Option	90	90	0.04	17.2
Second	Ceramic-based SCR	70-85	80	0.08	34.4
Third	Low NOx Burner with FGR (a.k.a. LNB/FGR Dual Option)	50-65	55	0.18	77.5
Fourth	Flue Gas Recirculation (FGR)	45-65	50	0.20	86.1
Fifth	Low Excess Air (LEA) Firing	10-25	25	0.30	129.2
Baseline*	Conventional Boiler	--	--	0.40	172.2

* NOx emission level for a conventional industrial boiler is used as the baseline emission level for this analysis. The term "conventional" refers to boilers that have not been modified with either low excess air, low NOx burner (LNB) design, and/or flue gas recirculation. This emission level of 0.40 lb NOx/MMBtu is also the NSPS limit for firing 1% sulfur residual oil.

** Calculated based on baseline emission level and control level.

Technical issues involved in the use of SCR are the narrow operating temperature range, the potential damage to the catalyst and downstream equipment, and the ammonium bisulfate formation. A stack gas reheat system would be required to heat the exhaust gases up to the operating temperature of the SCR (see further discussion under Energy Requirements and Impacts). This further complicates an already complex operation consisting of SCR components and an ammonia handling system. The use of ammonia as a reagent for the NO_x reduction reactions may allow excess ammonia to form ammonium bisulfate compounds under irregular operating conditions. These compounds can serve as catalyst poisoning agents and also cause damage to metal ductwork downstream. Thus, SCR application requires a strict maintenance service schedule. It is expected that the SCR system may require manual cleaning every 2,000 to 2,500 hours of operation (Steuler, 1990). Cleaning consists of blowing the catalyst surfaces with a compressed air gun and vacuuming any soot.

Currently, there is no documented information concerning SCR application on industrial boilers of a similar size and source category as the proposed boiler. Application of SCR systems to much larger utility boilers or smaller internal combustion engines is still being considered as experimental technology. No other oil-fired boilers undergoing BACT review have been required to use SCR (refer to Table 6-3.2).

Environmental Effects--The add-on SCR technology for NO_x control will pose other potential adverse environmental impacts, such as accidental spill and release of ammonia, slippage of ammonia by built-in design, and solid waste disposal for the spent catalyst. These issues are described briefly in the following discussion.

The SCR system requires the use of ammonia as reagent to convert NO_x to molecular nitrogen and water. The main environmental impact centers around the issue of delivery, handling, and storage of ammonia, which poses inherent safety and health risks in the event of accidental releases. In

proposing NO_x abatement regulations for stationary gas turbines, California's South Coast Air Quality Management District (SCAQMD) has performed a risk assessment study on spill handling and storage of ammonia. The study has concluded that this aspect of SCR operation realistically could present serious consequences and recommended further consideration of potential impacts and mitigation measures (SCAQMD, 1979). The current practice is to use an aqueous ammonia system (normally between 25 to 29 percent ammonia concentration) at installations located in populated areas. However, such practice increases the complexity, the size, and the cost of the ammonia system. Furthermore, ammonia slippage is a normal occurrence during operation of SCR control equipment. NO_x abatement system suppliers generally report an ammonia slippage level of 10 ppm.

Energy Requirements and Impacts--The add-on technology of SCR imposes further energy penalties. The additional energy requirements are caused by power loss as a result of additional back pressure from the SCR, electrical requirements for heating the ammonia solution and operating the injection system, and additional energy necessary for reheating the proposed engine exhaust gases from 435°F up to the SCR operating range of 700°F. [SCR manufacturers specify a typical operating temperature window between 600°F to 900°F (Engelhard, 1990; and Steuler, 1990)]. A minimum of 16.19 MMBtu/hr is required for stack gas reheating or 67,998 MMBtu/yr calculated for the total of 4,200 hours of annual operation. Also, an addition of 8.6 megawatt-hours is required for the operation of the ammonia vaporizer and injection system.

Economic Analysis--This section presents the total capital investment (TCI) and the annualized cost (AC) of the SCR NO_x control system for the proposed boiler. Capital and annualized cost estimates were prepared for an SCR system offered by Engelhard Corporation. The Engelhard NO_x abatement system uses an all-ceramic honeycomb catalyst and can achieve an NO_x reduction efficiency of 80 percent on the proposed boiler.

Capital costs for the SCR system are tabulated in Table 6.3-4. The vendor's equipment quote for the Engelhard SCR system is $760,000. The direct capital cost of the system is calculated to be $1,679,652, and the indirect capital cost is calculated to be $924,446. The total capital investment is $2,604,098. The annualized costs for this NO_x abatement systems are given in Table 6.3-5. The calculation basis for cost items also is given in the table. The annualized cost for the Engelhard SCR system is $1,008,477.

6.3.2.3 Analysis of Low NOx Burner Design with FGR Technology

Technical Issues--Of the two types of low NO_x burner (LNB) design, the single-staging LEA burner is more reliable than the multi-staging low NO_x burner because of its simple mechanical design. The term "single-staging" refers to the design of a single air staging process; therefore, the LEA burner requires controlling only one inlet air stream feeding into the single combustion zone in the burner. The term "multi-staging" refers to the design of separating the incoming air into two air staging processes. By design, the multi-staging burner is a more precision controlling equipment that requires "staging" or splitting the total inlet air into two portions for distribution to two internal combustion zones: 70 percent of inlet air for the primary combustion zone and 30 percent for the secondary combustion zone. The main design objective for "staging" the inlet air is to create a fuel-rich combustion process in order to minimize fuel NO_x formation in the primary combustion zone and to lower the flame temperature in the secondary combustion zone to minimize thermal NO_x formation.

The "staging" controls are built into each burner; therefore, either design can be applied to the proposed boiler with similar mechanical or structural requirements. Furthermore, the proposed use of low sulfur fuel oil (with low fuel-bound nitrogen content) technically will reduce the fuel NO_x formation. Thus, both burner designs can achieve equally low NO_x emission levels since the use of a multi-staging burner does not have any advantage over the LEA burner when firing low sulfur distillate oil.

Table 6.3–4 Capital Cost Estimates for a Typical SCR System for NOx Emission Control.

Cost Items	Cost Factors	Ceramic-based SCR System
DIRECT CAPITAL COSTS (DCC):		
(1) Purchased Equipment		
(a) SCR Basic Equipment	Vendor Quote	$760,000
(b) Ammonia System	See Note 1	$20,000
(c) Auxiliary Equipment (Reheat)*	0.10 x (1a)	$76,000
(d) Emission Monitoring	0.15 x (1a)	$114,000
(e) Structure Support	0.10 x (1a-1d)	$97,000
(f) Instrumentation & controls	0.10 x (1a-1d)	$97,000
(g) Freight[1]	0.05 x (1a-1f)	$58,200
(h) Sales Tax (Florida)	0.06 x (1a-1f)	$69,840
(i) Subtotal	(1a-1h)	$1,292,040
(2) Direct Installation[1]	0.30 x (1i)	$387,612
Total DCC:	(1) + (2)	$1,679,652
INDIRECT CAPITAL COSTS (ICC):		
(3) Indirect Installation		
(a) Engineering & Supervision[1]	0.10 x (DCC)	$167,965
(b) Construction & Field Expenses[1]	0.05 x (DCC)	$83,983
(c) Contruction Contractor Fee[1]	0.10 x (DCC)	$167,965
(d) Contigencies[2]	0.25 x (DCC)	$419,913
(4) Other Indirect Costs		
(a) Startup & Testing[1]	0.03 x (DCC)	$50,390
(b) Working Capital	30-day DOC**	$34,231
Total ICC:	(3) + (4)	$924,446
TOTAL CAPITAL INVESTMENT (TCI):	DCC + ICC	$2,604,098

* Duct burner system to reheat the exhaust gas from 435°F up to 700°F.

** 30 days of direct operating costs, calculated from the annualized cost Table 6.3-5 (i.e., total DOC/12 months).

[1] Based on catalytic incinerators, from OAQPS Control Cost Manual, Fourth Edition.

[2] Guaranteed efficiency and operation for the installation of SCR on industrial boilers. Such application is not considered as well-proven technology.

Note 1: Ammonia vendor's quotation from LaRoche Industries, Inc. for a 3,000-gallon anhydrous ammonia tank, an ammonia evaporator, and a dual-valve pressure regulator.

Table 6.3-5 Annualized Cost Estimates for a Typical SCR System for NOx Emission Control.

Cost Items	Basis	Ceramic-based SCR System
DIRECT OPERATING COSTS (DOC):		
(1) Operating Labor		
Operator[2]	2,800 hr/yr @ $20/hr	$56,000
Supervisor[1]	15% of operator cost	$8,400
(2) Maintenance[2]	5% of direct capital cost	$52,033
(3) Replacement Parts (include freight & tax)		
(a) Catalyst	(Part+Labor)xCRF; See Note 1	$53,881
(4) Utilities		
(a) Electricity	0.30 MW-hr/ton NH3; $85/MW-hr	$731
(b) Fuel for stack reheat	$3.42/MMBtu; See Note 2	$232,553
(5) Ammonia	0.37 lb NH3/lb NOx; $250/ton NH3	$7,169
Total DOC		$410,767
INDIRECT OPERATING COSTS (IOC):		
(7) Overhead[1]	60% of operating labor & maintenance	$69,860
(8) Property Taxes[1]	1% of total capital investment	$26,041
(9) Insurance[1]	1% of total capital investment	$26,041
(10) Administration[1]	2% of total capital investment	$52,082
Total IOC		$174,023
CAPITAL RECOVERY COST (CRC)	CRF of 0.1627 times TCI	$423,687
ANNUALIZED COST (AC):	DOC + IOC + CRC	$1,008,477

[1] Based on catalytic incinerators, from OAQPS Control Cost Manual, Fourth Edition.

[2] Based on no existing installation of SCR on industrial boilers: 5.33 hours per shift are devoted to the NOx emission control system operation and maintenance.

Note 1: Ceramic-based catalyst replacement part cost is $120,000 with a service life of 3 years. Combined freight and tax factor is 11%; and CRF for a 3-year recovery period and 10% interest rate is 0.4021. Replacement labor cost is $50 per hour for two 8-hour days. Total cost includes both material and labor costs.

Note 2: Assumed heat transfer efficiency of 80%, heat input required to raise exhaust temperature to 700°F is:
Q = (187,940 lb/hr)(0.26 Btu/lb°F for air)(700°F-435°F)/(0.8) = 16.19 MMBtu/hr.
Annual heat input equals 16.19 MMBtu/hr times 4,200 hr/yr = 67,998 MMBtu/yr.
Fuel cost is $3.42 per MMBtu of low sulfur fuel delivered to site. The $3.42 figure is averaged from estimated low sulfur fuel delivered price for two power plants located in closeby regions in Florida.

In modern burner design, internal FGR usually is integrated into the design of the burner. The FGR option is available to both burner design concepts described above. The combination of LNB design and internal FGR can achieve 55 percent of NO_x emission reduction, which is at least 5 percent better than applying either technology individually.

For the proposed watertube boiler, a single burner system using either an LEA or a multi-staging low NO_x burner along with FGR (subsequently to be referred to as the LNB/FGR dual option) can be assembled as a package boiler to produce the 150,000 lb/hr of required steam. The use of the single burner system will allow greater control of ambient air input in order to maintain the low NO_x combustion process. There is no technical difficulty associated with the use of the LNB/FGR dual option in the proposed boiler.

Environmental Effects--There is no adverse environmental effect in using the combination of LNB design and FGR because there is no waste produced. As mentioned, at least 5 percent of NO_x emission level is reduced by applying this LNB/FGR dual option. Potentially, emissions of particulates and volatile organic compounds (VOC) are reduced by further thermal degradation from being recirculated back through the combustion zone. Assuming equal spatial distribution of all components in the flue gas stream and a recirculation rate of 12 percent, FGR can reduce up to 12 percent of combustible components in the flue gas exhaust from the boiler.

Energy Requirements and Impacts--The LNB/FGR dual option allows for combustion at low excess oxygen levels, in turn resulting in fuel savings. The actual amount of fuel savings is not quantified for this report.

Economic Analysis--This section includes the total capital investment (TCI) and the annualized cost (AC) for all three boiler modifications (i.e., LNB design, FGR, and LEA firing) applied to the proposed 205-MMBtu/hr boiler. All cost values are calculated from standard costing procedure based on the

Office of Air Quality Planning and Standards (OAQPS) Control Cost Manual (OAQPS, 1990).

In this costing procedure, the basic equipment cost is the basis for all itemized costs that are calculated as fractional costs of the basic equipment cost. Tables 6.3-6 and 6.3-7 show the capital cost estimates and the annualized cost estimates for all boiler modifications. The basic equipment costs either were obtained from the vendor (i.e., for the low NO_x burner) or estimated from an EPA-developed cost algorithm (EPA, 1982) for control equipment (i.e., for the FGR and LEA firing systems). The capital cost and annualized cost estimates for the proposed boiler also are given in these tables.

For the individual low NO_x burner design and FGR, the total capital investments (TCI) are $113,740 and $65,244, respectively; the annualized costs (AC) are $28,949 and $16,761, respectively. For the LNB/FGR dual option, the TCI and AC are the sum of their individual cost items or $178,984 and $45,710, respectively.

6.3.2.4 Analysis of SCR System Applied to Boiler Modified with LNB Design and FGR Technology

Technical Issues--The technical issues concerning this NO_x emission control scenario are similar to those already discussed for each individual alternative in Sections 6.3.2.2 and 6.3.2.3. In general, reliability of SCR application remains questionable for the proposed boiler because of its being considered as an unproven technology for an industrial boiler. In addition, a boiler modified with both low NO_x burner design and FGR has lower flue gas temperature than the exhaust gas from the conventional boiler; however, the LNB/FGR dual option does not have any significant technical effects on the overall process.

Environmental Effects--Similar to the issue discussed in Section 6.3.2.2, potential adverse environmental effects are related to SCR operation, such

ole 6.3–6. Capital Cost Estimates for Boiler and Boiler Modification Systems for NOx Control

Cost Items	Cost Factors	Costs for Proposed Boiler	Costs for Low-NOx Burner	Costs for FGR System (see Note 1)	Costs for LEA System (see Note 2)
DIRECT CAPITAL COSTS (DCC):					
(1) Purchased Equipment					
(a) Basic Equipment	Vendor Quote	$940,000	$50,000	---	---
(b) Boiler Modification	EF = 1.634*	---	---	$28,678	$18,984
(c) Structure Support	0.10 x (1a-1b)	$94,000	$5,000	$2,868	$1,898
(d) Instrumentation & controls[1]	0.10 x (1a-1b)	$94,000	$5,000	$2,868	$1,898
(e) Freight[1]	0.05 x (1a-1d)	$56,400	$3,000	$1,721	$1,139
(f) Sales Tax (Florida)	0.06 x (1a-1d)	$67,680	$3,600	$2,065	$1,367
(g) Subtotal	(1a-1f)	$1,252,080	$66,600	$38,199	$25,286
(2) Direct Installation[1]	0.30 x (1g)	$375,624	$19,980	$11,460	$7,586
Total DCC:	(1) + (2)	$1,627,704	$86,580	$49,658	$32,872
NDIRECT CAPITAL COSTS (ICC):					
(3) Indirect Installation					
(a) Engineering & Supervision[1]	0.10 x (DCC)	$162,770	$8,658	$4,966	$3,287
(b) Construction & Field Expenses[1]	0.05 x (DCC)	$81,385	$4,329	$2,483	$1,644
(c) Contruction Contractor Fee[1]	0.10 x (DCC)	$162,770	$8,658	$4,966	$3,287
(d) Contigencies[1]	0.03 x (DCC)	$48,831	$2,597	$1,490	$986
(4) Other Indirect Costs					
(a) Startup & Testing[1]	0.03 x (DCC)	$48,831	$2,597	$1,490	$986
(b) Working Capital	30-day DOC**	$6,014	$320	$192	$122
Total ICC:	(3) + (4)	$510,602	$27,160	$15,586	$10,312
TOTAL CAPITAL INVESTMENT (TCI):	DCC + ICC	$2,138,306	$113,740	$65,244	$43,184

EF is the escalation factor = 1990 CE cost index/1978 CE cost index = 357.5/218.8 = 1.634. The escalation factor is used to find the most recent 1990 cost value for the FGR and LEA systems.

30 days of direct operating costs, calculated from the annualized cost Table 6.3-7 (i.e., total DOC/12 months).

Based on catalytic incinerators, from OAQPS Control Cost Manual, Fourth Edition.

te 1: From FGR Cost Algorithm in EPA-450/3-82-021, EQUIP = EF x (44.72 Q + 8383) = $28,678

te 2: From LEA Cost Algorithm in EPA-450/3-82-021, EQUIP = EF x (31.38 Q + 5185) = $18,984

e 6.3-7. Annualized Cost Estimates for Boiler and Boiler Modification Systems for NOx Control

Cost Items	Basis	Costs for Proposed Boiler	Costs for Low NOx Burner	Costs for FGR System	Costs for LEA System
RECT OPERATING COSTS (DOC):					
(1) Operating Labor					
Operator[2]	2,800 hr/yr @ $20/hr	$56,000	$2,979	$1,787	$1,132
Supervisor[1]	15% of operator cost	$8,400	$447	$268	$170
(2) Maintenance[1]	Included in (1)	---	---	---	---
(3) Replacement Parts[1]					
(include freight & tax)	Equ. to 350 hours of oper. cost	$7,770	$413	$248	$157
Total DOC		$72,170	$3,839	$2,303	$1,459
IDIRECT OPERATING COSTS (IOC):					
(7) Overhead[1]	60% of oper. labor & maint.	$38,640	$2,055	$1,233	$781
(8) Property Taxes[1]	1% of total capital investment	$21,383	$1,137	$652	$432
(9) Insurance[1]	1% of total capital investment	$21,383	$1,137	$652	$432
(10) Administration[1]	2% of total capital investment	$42,766	$2,275	$1,305	$864
Total IOC		$124,172	$6,605	$3,843	$2,508
APITAL RECOVERY COST (CRC)	CRF of 0.1627 times TCI	$347,902	$18,505	$10,615	$7,026
NNUALIZED COST (AC):	DOC + IOC + CRC	$544,245	$28,949	$16,761	$10,993

ased on catalytic incinerators, from OAQPS Control Cost Manual, Fourth Edition.
ased on off-season operation which will require a worker for two 8-hour shifts to man the equipment.

as: accidental spill and release of ammonia, regular slippage of ammonia by built-in design, and disposal of spent catalyst. The advantages such as lower particulate and VOC emission rates contributed by the boiler modification process are insignificant in conjunction with an SCR application.

Energy Requirements and Impacts--The additional heat input requirement for stack gas reheat is 67,998 MMBtu/yr. Also, the addition of 8.6 megawatt-hours is required for the operation of the ammonia vaporizer and injection system. As mentioned, the boiler modified with low NO_x burner design and FGR has lower flue gas temperature than that coming from a conventional boiler; therefore, the total fuel requirement for duct burner reheat may be higher because of lower flue gas temperature.

Economic Analysis--The cost estimates for the combined SCR option and the LNB/FGR dual option are obtained as a sum of the individual SCR option (from Tables 6.3-4 and 6.3-5) and the LNB/FGR dual option (from Tables 6.3-6 and 6.3-7). Therefore, the total capital cost investment of the combined option is $2,783,082. The annualized cost for this combined option is $1,008,477 from the SCR, plus $28,949 from the LNB design, and $16,761 from the FGR, or a total of $1,054,187.

6.3.2.5 Analysis of FGR Technology

Technical Issues--There are no major technical issues associated with application of FGR.

Environmental Effects--There is no additional waste generated from the boiler by modifying it with FGR. Potentially, emissions of particulates and volatile organic compounds (VOC) are reduced by further thermal degradation from being recirculated back through the combustion zone in the burner. Assuming equal spatial distribution of all components in the flue gas stream and a recirculation rate of up to 15 percent, FGR can reduce up

to the same percentage of combustible components in the flue gas exhaust as that of a similar size conventional boiler.

Energy Requirements and Impacts--There is no additional energy requirement from applying FGR to the boiler. Theoretically, FGR allows for combustion at low excess oxygen levels, thereby resulting in fuel savings. The actual amount of fuel savings is not quantified for this report.

Economic Analysis--The economic analysis for FGR is given in Tables 6.3-6 and 6.3-7. The total direct capital cost (DCC) and indirect capital cost (ICC) are $49,658 and $15,586, respectively. The total capital investment cost (TCI) is $65,244; and annualized cost (AC) for the FGR application is $16,761.

6.3.2.6 Analysis of LEA Firing

Technical Issues--Similar to the FGR application, the main technical concern involves the installation of the flue gas oxygen monitor that automatically provides the control feedback signal to the inlet air flow controller, which maintains the excess air at the desired level. Therefore, maintaining the flue gas oxygen monitor in good operating condition is essential for LEA firing application. For the proposed boiler, the low flue gas temperature at 435°F will not have a detrimental effect on the service life of the oxygen monitoring device.

Environmental Effects--There is no additional waste generated from the boiler associated with LEA firing.

Energy Requirements and Impacts--There is no additional energy requirement associated with using LEA firing in the proposed boiler. Theoretically, LEA firing allows for combustion at low excess oxygen levels, thereby resulting in fuel savings. The actual amount of fuel savings is not quantified for this report.

Economic Analysis--The economic analyses for LEA firing are also given in Tables 6.3-6 and 6.3-7. The total direct capital cost (DCC) and indirect capital cost (ICC) are $32,872 and $10,312, respectively. The total capital investment cost (TCI) is $43,184; and annualized cost (AC) for the FGR application is $10,993.

6.3.3 NO_x BACT SUMMARY AND CONCLUSION

The BACT analysis for NO_x control has identified five feasible control alternatives: the combination of SCR option and LNB/FGR dual option, the ceramic-based SCR, the LNB/FGR dual option, the FGR, and the LEA firing. This section will consider the overall environmental, energy, and economic impacts of each alternative and eliminate those with adverse impacts. The control alternative not eliminated will be selected as BACT.

6.3.3.1 Comparison of Technical Issues

Of the five alternatives, the low NO_x burner (LNB) design with FGR is the most reliable option overall for industrial boiler application and provides the best NO_x emission reduction among the boiler modification techniques. Other boiler modification techniques, such as FGR and LEA firing, also are reliable technically; however, their NO_x reduction capabilities are less effective than the LNB/FGR dual option.

Add-on control technology such as SCR application on either a conventional or modified boiler will further complicate the entire boiler operation. These potential complications are a result of significant routine maintenance and unscheduled downtime because of malfunction or failure of SCR components. Also, the seasonal operating schedule intended for the proposed boiler is not the best operation for an SCR application. Prolonged shutdown period, when the boiler stays inactive during normal plant operation, of an SCR unit will require extensive shutdown and startup operations.

Conversely, the boiler equipped with the LNB/FGR dual option is highly reliable, requiring low maintenance and minimal attention during continuous operation. With the additional advantage of firing "clean" fuel (i.e., low sulfur distillate oil), the startup and shutdown of the boiler is an automatic turnkey procedure. Therefore, the LNB/FGR dual option is the best NO_x control technology for the proposed boiler. Table 6.3-8 contains a summary of the operating parameters for the proposed boiler from Babcock & Wilcox or an equivalent boiler.

6.3.3.2 Comparison of Environmental Effects

Of the five alternatives, the two options using SCR pose the greatest potential for toxic impacts as a result of ammonia handling and storage, and ammonia slip. Comparing potential adverse environmental impacts, the boiler modifications do not contribute any adverse byproducts to the atmosphere.

Comparison among the three modification processes shows that none causes a significantly worse environmental impact than the others. However, the LNB/FGR dual option yields the lowest NO_x emission rate and theoretically can reduce potential particulates and VOC emissions. Therefore, the boiler modification process using the LNB/FGR dual option is the best NO_x control technology for the proposed boiler in regard to the environmental effects. This option results in low NO_x emissions (77.5 TPY) and low air quality impacts (0.33 $\mu g/m^3$, annual average).

6.3.3.3 Comparison of Energy Impacts

The options involving the use of SCR will require 67,998 MMBtu/yr of heat input for the auxiliary duct burner system. In addition, 8.6 MW-hr/yr of electricity is required for the operation of the ammonia vaporizer and injection system. Conversely, all boiler modifications do not require additional fuel or electricity; therefore, boiler modification is the better energy savings alternative. Potentially, the option of using the LNB/FGR dual option is the best fuel savings option because of its lowest

Table 6.3-8. Summary of the Operating Parameters for the Proposed Boiler No. 16.

Parameter	Design Specification*
Make	Babcock & Wilcox
Type	Package Boiler
Model	FM 120-97
Modifications (2)	1) Coen's LO-NOx Burner 2) FGR
Air/Fuel Ratio	16.32
Excess Air Flow	15 percent, maximum
Flue Gas Recirculation Rate	12 percent
Exhaust Flue Gas	
Mass Flow Rate	187,940 lb/hr
Volume Flow Rate	71,300 acfm
Temperature	435°F

* The actual installed boiler may be obtained from a different boiler maker; however, the final boiler design specifications will be equivalent to those listed below.

Source: McBurney Corporation (1991).

excess combustion process by design. Therefore, the boiler modification process using the LNB/FGR dual option is the best NO_x control technology for the proposed boiler with regard to energy requirements and impacts.

6.3.3.4 Comparison of Economic Analysis

Economic analysis is based on the cost effectiveness of the control method. For a typical control device, such economic impact is determined by its total and incremental cost effectiveness values. These values for all five NO_x control options are tabulated in Table 6.3-9.

The two SCR-related options have the first and second highest total cost effectiveness values of $6,802 and $7,321 per ton of NO_x removed for the combination of SCR plus LNB/FGR dual option and the ceramic-based SCR, respectively. Among the boiler modification techniques, the total cost effectiveness values are $483 per ton of NO_x removed for the LNB/FGR dual option, $195 per ton of NO_x removed for the FGR option, and $255 per ton of NO_x removed for the LEA firing option. Comparing the total cost effectiveness of the two add-on SCR options to the three non-SCR boiler modification alternatives, the difference between the SCR group and the non-SCR group is a factor of at least 14.

The incremental cost effectiveness values for the SCR-related options are $2,654 per ton of NO_x removed for the combination of SCR plus LNB/FGR dual option and $22,364 per ton of NO_x removed for the ceramic-based SCR. The incremental cost effectiveness values for the boiler modification techniques are $3,362, $134, and $255 per ton of NO_x removed for the LNB/FGR dual option, the FGR, and the LEA firing, respectively.

Overall, the alternative of using either one of the SCR-related NO_x control methods is economically infeasible. The SCR-related option is at least 14 times more expensive than any boiler modification technique in terms of total cost effectiveness. In addition, the incremental cost between the

Table 6.3-9 Summary of Top-Down BACT Impact Analysis Results for NOx.

Control Alternative	Total Emission Reduction (TPY)*	Incremental Emission Reduction (TPY)**	Environmental Impacts: Potential toxic air impact?	Environmental Impacts: Potential adverse enviromental impacts?	Energy Impacts: Incremental increase over baseline: No. 2 Fuel Oil (MMBtu/yr)	Energy Impacts: Incremental increase over baseline: Electricity (MW-hr/yr)	Economic Impacts: Total Annualized Cost ($/yr)	Economic Impacts: Incremental Annualized Cost ($/yr)	Economic Impacts: Total Cost Effectiveness ($/ton)	Economic Impacts: Incremental Cost Effectiveness ($/ton)
SCR and LNB/FGR Dual Option	155.0	17.2	Yes	Yes	67,998	8.6	$1,054,187	$45,710	$6,802	$2,654
Ceramic-based SCR	137.8	43.1	Yes	Yes	67,998	8.6	$1,008,477	$962,767	$7,321	$22,364
Low NOx Burner with FGR (a.k.a. LNB/FGR Dual Option)	94.7	8.6	No	No	0	0	$45,710	$28,949	$483	$3,362
FGR	86.1	43.1	No	No	0	0	$16,761	$5,768	$195	$134
Low Excess Air (LEA) Firing	43.1	43.1	No	No	0	0	$10,993	$10,993	$255	$255
Baseline (conventional boiler)	----	----	--	--	----	--	----	----	----	----

* Total emission reduction, total annualized cost, and total cost effectiveness are calculated based on similar baseline parameter values.

** Incremental values are based on the next lower control technology's parameter values.

least expensive SCR-related option and the highest cost boiler modification technique is $22,364.

Of the three boiler modification options, the LNB/FGR dual option has the highest total and incremental cost effectiveness. Since these values are within the reasonable cost estimates while providing the best NO_x emission reduction rate, the LNB/FGR dual option is BACT for NO_x emissions from the proposed boiler.

6.3.3.5 Conclusion

The NO_x top-down BACT analysis in terms of environmental impacts, energy impacts, and economic impacts for Okeelanta Corporation's proposed project is summarized in Table 6.2-9. The analysis has considered two SCR-related control options and three boiler modification options. The main reasons for eliminating both SCR-related options are their high cost effectiveness and their being an unproven technology for industrial boilers. The seasonable operation intent for the proposed boiler also is considered an inappropriate operation for any SCR application. This is consistent with current BACT determinations for NO_x emissions from oil-fired industrial boilers. There are no existing oil-fired boilers that have been required to use SCR for NO_x control (see Table 6.3-2).

By eliminating both SCR-related options, one of the boiler modification techniques must be chosen as BACT for NO_x emissions from the proposed boiler. Compared to the NSPS NO_x limitation for industrial boilers burning distillate oil, only the LNB/FGR dual option (of 0.18 lb/MMBtu) and the FGR technology (of 0.20 lb/MMBtu) are able to meet the NSPS limit of 0.20 lb/MMBtu. The LNB/FGR dual option has the highest cost effectiveness values among the three boiler modifications; however, it also is the best option in terms of providing the highest NO_x emission reduction rate.

Although the incremental cost effectiveness of $3,362 per ton of NO_x removed for the LNB/FGR dual option is much higher than the $134 per ton of

NO_x removed for the next applicable technology, Okeelanta Corporation is willing to bear this reasonably higher incremental cost effectiveness in order to achieve the better NO_x emission reduction. Therefore, the LNB/FGR dual option is concluded to be BACT for NO_x emission control from the proposed 205-MMBtu/hr package boiler.

7.0 ADDITIONAL IMPACT ANALYSIS

7.1 IMPACTS ON SOILS AND VEGETATION

As described in the air quality impact analysis (Section 5.0), the maximum predicted SO_2 concentrations in the vicinity of the Okeelanta mill as a result of the proposed boiler are predicted to be well below the AAQS for SO_2 and below the significance level for NO_2. As a result, no detrimental effects on soils or vegetation should occur in this area. The primary crop in the area is sugar cane, which routinely is exposed to higher air concentrations in the crop season with no detrimental effects.

The analysis also demonstrated that PSD increment consumption in the Everglades National Park Class I area will be well below the Class I increments for SO_2. The maximum increment consumption is 76 percent of the allowable increment (predicted for the 24-hour SO_2 increment), primarily as a result of other PSD increment-consuming sources. Annual increment consumption in the Class I area is predicted to be 0.4 $\mu g/m^3$, which is well below the PSD increment of 1.0 $\mu g/m^3$. The maximum SO_2 impacts on the Class I area as a result of the proposed boiler only are 2.2 $\mu g/m^3$, 3-hour; 0.4 $\mu g/m^3$, 24-hour; and 0.03 $\mu g/m^3$, annual average. These maximum impacts are less than 9 percent of any of the Class I increments. As a result, no significant effect on soils or vegetation should occur in the Class I area because of the proposed boiler.

7.2 IMPACTS ON VISIBILITY

The visibility analysis required by PSD regulations is directed primarily toward Class I areas. The CAA amendments of 1977 provide for implementation of guidelines to prevent visibility impairment in mandatory PSD Class I areas. The guidelines are intended to protect the aesthetic quality of these pristine areas from reduction in visual range and atmospheric discoloration caused by various pollutants. The only Class I area within 100 km of the proposed facility is the Everglades National Park, located about 90 km from the Okeelanta facility.

A level-1 visibility screening analysis was performed to determine the potential adverse visibility effects using the approach suggested in the Workbook for Plume Visual Impact Screening and Analysis (EPA, 1988). The level-1 screening analysis is designed to provide a conservative estimate of plume visual impacts (i.e., impacts higher than expected). The EPA model, VISCREEN, was used for this analysis. Model input and output results are presented in Table 7-1. The projected increase in emissions caused by the proposed boiler, as presented in Table 2-2, was used as input to the model. As indicated, the maximum visibility impacts caused by the proposed boiler do not exceed the screening criteria inside or outside the Class I area. As a result, there is no significant impact upon visibility predicted for the Class I areas.

7.3 IMPACTS DUE TO ASSOCIATED POPULATION GROWTH

There will be a small increase in the number of temporary construction workers during construction. There will be a minimal increase in permanent employment at Okeelanta as a result of adding the oil-fired boiler. As a result, there will be no significant impacts on air quality caused by associated population growth.

Table 7-1. Results of Visibility Screening Analysis

Visual Effects Screening Analysis for
Source: OKEELANTA MILL PROPOSED
Class I Area: EVERGLADES NAT. PARK

*** Level-1 Screening ***

Input Emissions for

Particulates	23.10	TON/YR
NOx (as NO2)	77.50	TON/YR
Primary NO2	.00	TON/YR
Soot	.00	TON/YR
Primary SO4	5.50	TON/YR

**** Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	25.00 km
Source-Observer Distance:	91.40 km
Min. Source-Class I Distance:	91.40 km
Max. Source-Class I Distance:	140.00 km
Plume-Source-Observer Angle:	11.25 degrees

Stability: 6
Wind Speed: 1.00 m/s

R E S U L T S

Asterisks (*) indicate plume impacts that exceed screening criteria

Maximum Visual Impacts INSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	84.	91.4	84.	2.00	.008	.05	.000
SKY	140.	84.	91.4	84.	2.00	.002	.05	.000
TERRAIN	10.	84.	91.4	84.	2.00	.001	.05	.000
TERRAIN	140.	84.	91.4	84.	2.00	.000	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area
Screening Criteria ARE NOT Exceeded

					Delta E		Contrast	
Backgrnd	Theta	Azi	Distance	Alpha	Crit	Plume	Crit	Plume
SKY	10.	70.	86.9	99.	2.00	.009	.05	.000
SKY	140.	70.	86.9	99.	2.00	.002	.05	-.000
TERRAIN	10.	65.	85.3	104.	2.00	.002	.05	.000
TERRAIN	140.	65.	85.3	104.	2.00	.000	.05	.000

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APPENDIX A

EMISSION CALCULATIONS
PROPOSED OIL-FIRED BOILER
OKEELANTA CORPORATION

I. BOILER DESIGN DATA

A. HEAT INPUT

Maximum steam rate = 150,000 lb/hr (24-hr average)

Enthalpy change = 1,153.46 Btu/lb steam

Boiler efficiency = 84.4%

Maximum 24-hr average heat input

= 150,000 lb/hr x 1,153.46 Btu/lb + 0.844 = 205×10^6 Btu/hr

Operating time (maximum) = 175 days/yr = 4,200 hr/yr

Annual heat input = 205×10^6 Btu/hr x 4,200 hr/yr

= 8.61×10^{11} Btu/yr

B. FUEL ANALYSIS

No. 2 fuel oil only will be burned in boiler

Density = 7.21 lb/gal

Maximum sulfur content = 0.5% S

Heating value = 140,090 Btu/gal

= 19,430 Btu/lb

C. FUEL USAGE

Maximum hourly = 205×10^6 Btu/hr + 140,090 Btu/gal = 1,463 gal/hr

Maximum annual = 1,463 gal/hr x 4,200 hr/yr = 6,144,600 gal/yr

II. EMISSION CALCULATIONS

A. PARTICULATE MATTER (TSP)

1. Maximum Hourly

   Particulate emissions can be estimated from the AP-42 emission factor (Table 1.3-1) of 2 lb/10^3 gal for distillate oil.

   1,463 gal/hr x 2 lb/10^3 gal = 2.9 lb/hr

   To be conservative, estimate maximum PM(TSP) emissions as 11.0 lb/hr

2. Maximum Annual

   11.0 lb/hr x 4,200 hr/yr + 2,000 lb/ton = 23.1 TPY

B. PARTICULATE MATTER (PM10)

1. Maximum Hourly

AP-42 states that 50% of PM emissions from an uncontrolled industrial boiler firing distillate oil are PM10 (Table 1.3-4).

11.00 lb/hr x 0.50 = 5.50 lb/hr

2. Maximum Annual

5.50 lb/hr x 4,200 ÷ 2,000 = 11.55 TPY

C. SULFUR DIOXIDE (SO_2)

1. Maximum Hourly

Based on 100% conversion of sulfur in fuel oil to SO_2:

1,463 gal/hr x 7.21 lb/gal x 0.005 x 2 lb SO_2/lb S = 105.5 lb/hr

2: Maximum Annual

105.5 lb/hr x 4,200 ÷ 2,000 = 221.6 TPY

D. NITROGEN OXIDES

1. Maximum Hourly

Emissions will be limited to 0.18 lb/10^6 Btu based on burner design.

205x10^6 Btu/hr x 0.18 lb/10^6 Btu = 36.9 lb/hr

2. Maximum Annual

36.9 lb/hr x 4,200 ÷ 2,000 = 77.5 TPY

E. CARBON MONOXIDE

1. Maximum Hourly

Maximum emissions will be 0.20 lb/10^6 Btu based on good combustion practices.

205x10^6 Btu/hr x 0.20 lb/10^6 Btu = 41.0 lb/hr

2. Maximum Annual

41.0 lb/hr x 4,200 ÷ 2,000 = 86.1 TPY

F. VOLATILE ORGANIC COMPOUNDS

1. Maximum Hourly

Maximum emissions will be 0.09 lb/10^6 Btu

205×10^6 Btu/hr x 0.09 lb/10^6 Btu = 18.45 lb/hr

2. Maximum Annual

18.45 lb/hr x 4,200 ÷ 2,000 = 38.7 TPY

G. TRACE METALS

Emission factors obtained from "Toxic Air Pollutant Emission Factors - A Compilation for Selected Air Toxic Compounds and Sources," EPA-450/2-88-006a, unless otherwise noted.

1. Lead

Distillate oil combustion in industrial boilers:

8.9 lb/10^{12} Btu (uncontrolled)

Maximum hourly: 205×10^6 Btu/hr x 8.9 lb/10^{12} Btu

= 0.0018 lb/hr

Annual : 0.0018 lb/hr x 4,200 ÷ 2,000 = 0.0038 TPY

2. Mercury

Distillate oil-fired boiler, uncontrolled: 3.0 lb/10^{12} Btu

Maximum hourly: 205×10^6 Btu/hr x 3.0 lb/10^{12} Btu

= 0.00062 lb/hr

Annual: 0.00062 lb/hr x 4,200 ÷ 2,000 = 0.0013 TPY

3. Beryllium

Based on "Estimating Air Toxics Emission from Coal and Oil Combustion Sources," EPA-450/2-89-001 (1989). Beryllium uncontrolled emission factor for distillate oil-fired boilers is 0.79 lb/10^{12} Btu. This value is an average of 3 stack test results ranging from 0.52 to 1.2 lb/10^{12} Btu.

Maximum hourly: 205×10^6 Btu/hr x 0.79 lb/10^{12} Btu

= 0.00016 lb/hr = 0.00016

Annual: 0.00016 lb/hr x 4,200 ÷ 2,000 = 0.00034 TPY

4. Fluorides

Based on "Emissions Assessment of Conventional Stationary Combustion Systems: Volume V: Industrial Combustion Sources," EPA-600/7-81-003, and "Health Impacts, Emissions and Emission Factors for Noncriteria Pollutants Subject to DeMinimis Guidelines and Emitted from Stationary Conventional Combustion Processes," EPA-450/2-80-074: 14 pg/J (32.7 $lb/10^{12}$ Btu) for distillate oil-fired boilers, uncontrolled

Maximum hourly: 205×10^6 Btu/hr x 32.7 $lb/10^{12}$ Btu = 0.0082 lb/hr

Annual: 0.0082 lb/hr x 4,200 ÷ 2,000 = 0.017 TPY

H. SULFURIC ACID MIST

From AP-42, Table 1.3-1, SO_3 emission factor is 2.9 S $lb/10^3$ gal

Maximum hourly SO_3 = 1,463 gal/hr x [2.9(0.5)] $lb/10^3$ gal
= 2.12 lb/hr

Convert to H_2SO_4: 2.12 lb/hr x 98/80 = 2.60 lb/hr

Annual: 2.60 lb/hr x 4,200 ÷ 2,000 = 5.46 TPY

APPENDIX B

EPA COST ALGORITHM FOR CONTROL EQUIPMENT

EPA-450/3-82-021

Costs of Sulfur Dioxide, Particulate Matter, and Nitrogen Oxide Controls on Fossil Fuel Fired Industrial Boilers

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Contract No.: 68-02-3058

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

August 1982

TECHNICAL REPORT DATA *(Please read Instructions on the reverse before completing)*		
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4. TITLE AND SUBTITLE Costs of Sulfur Dioxide, Particulate Matter, and Nitrogen Oxide Controls on Fossil Fuel Fired Industrial Boilers		5. REPORT DATE August 1982 6. PERFORMING ORGANIZATION CODE
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15. SUPPLEMENTARY NOTES		

16. ABSTRACT

This report is a resource document for the development of Federal standards of performance for control of sulfur dioxide, particulate matter and nitrogen oxides emissions from new industrial boilers. It gives capital and annualized costs for a variety of control technologies that can be applied to gas, oil, and coal fired industrial boilers. In addition to control costs for 30, 75, 150, and 400 million Btu per hour size model boilers, cost algorithms and a computer program are given in detail to allow for automated cost data development.

17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Boilers, Industrial Costs, Capital and Annualized Air Pollution Control Costs		
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TABLE A-21. COST EQUATIONS[4] FOR SODIUM THROWAWAY FGD SYSTEMS[a]

Routine Code: NATH

Capital Costs:[b]

$$TDI = 44{,}000\ (FLW)^{0.62} + 20{,}600\ (S1)^{0.427}$$

$$TK = 1.48\ TDI + 74{,}400 \quad \text{if } Q \leq 58.6$$

$$TK = 1.48\ TDI + 112{,}800 \quad \text{if } Q > 58.6$$

Annual Costs:[b,c]

$$DL = 105{,}000$$

$$SPRV = 21{,}000$$

$$MANT = 0.08\ TDI$$

$$ELEC = 8{,}760\ CF\ ELECR\ [4.26\ (FLW) - 2.56]\ [0.65 + 0.31\ S1]$$

$$WTR = 8{,}760\ CF\ WTRR\ [0.776\ (FLW) - 0.720]\ [0.213 + 0.684\ S1]$$

$$SW = 8{,}760\ CF\ SWDR\ [0.16 + 4.53\ S2]$$

$$SC = 8{,}760\ CF\ SASHR\ [8.03 + 3.5\ S2]$$

$$LW = 8{,}760\ CF\ LWDR\ (0.0860\ S2)$$

[a] FGD algorithms use metric units as noted in Table A-2.

[b] $S1 = S * EFFSO2 * 100/H$

[c] $S2 = S1 * Q/3.6$

TABLE A-22. COST EQUATIONS[5] FOR LIME SPRAY DRYING FGD SYSTEMS WITH PM REMOVAL[a]

Routine Code: DS

Capital Costs:[c]

$$TDI = 55{,}600\ (FLW)^{0.51} + 21{,}600\ (S2)^{0.40} + 33{,}327\ (FLW)^{0.89}$$

$$TK = 1.48\ TDI + 110{,}400 \quad \text{if } Q \leq 58.6$$

$$1.60\ TDI \quad \text{if } Q > 58.6$$

Annual Costs:[b,c]

$$DL = 105{,}000$$

$$SPRV = 21{,}000$$

$$MANT = 0.08\ [55{,}600\ (FLW)^{0.51} + 21{,}600\ (S2)^{0.40}] + 14{,}840 + 1.23\ Q^2 + 578\ (FLW)^{0.997}$$

$$ELEC = 8{,}760\ CF * ELECR\ [6.14\ (FLW)^{0.82}]$$

$$WTR = 8{,}760\ CF * WTRR\ [0.144\ (FLW)]$$

$$SW = 8{,}760\ CF * SWDR\ [(0.035 * EFFSO2 + 3.02)\ (S2) + UNCPM * EFFPM/100]$$

$$LIME = 8{,}760\ CF * ALIMER\ (1.88\ \ln(EFFSO2) - 5.3)\ S2$$

[a] FGD costs use metric units as noted in Table A-2.

[b] $S1 = S1 * EFFSO2 * 100/H$

[c] $S2 = S1 * Q/3.6$

Mutual Funds Brace for Possibility Of a Very Large Muni-Bond Default

By CHARLES GASPARINO
Staff Reporter of THE WALL STREET JOURNAL

Several large mutual-fund companies are bracing for what could rank as one of the largest defaults in municipal-bond market history after two electricity generating plants filed for bankruptcy in Palm Beach County, Fla.

The filing by the Okeelanta Power and Gator Generating Co., both limited partnerships, in the U.S. Bankruptcy Court for the Southern District of Florida, is roiling the $1.3 trillion muni-bond market. Experts say it throws into jeopardy $288 million of high-risk municipal debt that financed the facilities. The bonds are held by funds including Dreyfus Co., Eaton Vance Management Corp. and Franklin Resources Inc.

If the bonds do fall into default, as many market pundits expect, the event will certainly be the largest default of a bond issuer in the state of Florida, and would mark one of the largest municipal-bond defaults since such statistics have been kept. According to data compiled by the Bond Investors Association, the meltdown would be rivaled only by such muni-bond disasters as the default of the Washington Public Power Supply System in 1983, New York City in the mid-1070s, and the 1994 bankruptcy filing of Orange County, Calif. The association has been tracking such issues since 1980.

The bonds in question financed the construction of two plants that produce power by burning waste products from the refining of sugar. On Wednesday, the partnerships that own the plants filed for Chapter 11 bankruptcy protection. The move came after Florida Power & Light Co., which under federal law was required to purchase power from the plants, filed suit in January in state court in Palm Beach County to terminate the arrangement. In May, Florida Power terminated an agreement that had frozen the litigation.

Dennis Coyle, Florida Power & Light's general counsel, said Florida Power & Light acted in the best interests of its customers, who, he said, were paying exorbitant prices to purchase electricity from the facilities. The plants, he said, are plagued with problems; they have had breakdowns and missed a Jan. 1, 1997, deadline to become fully operational. Mr. Coyle said the cost of purchasing electricity from the plants is "80% to 100% more expensive than what we can get" from other power sources or by generating the electricity itself.

But the partnerships, comprising affiliates of PE&G Corp., Bechtel Enterprises and Flo-Sun Inc., said in a statement that the bankruptcy filing was designed to protect bond holders and others from Florida Power's move. Flo-Sun, one of the nation's largest sugar growers, is owned by the Fanjul family.

"Given the uncertainty created by FPL's litigation and its efforts to avoid its contractual obligation, we have reluctantly concluded that our most prudent course of action is a Chapter 11 filing," the statement said.

Dreyfus and Eaton Vance confirmed they own the bonds; Franklin refused to comment, but people close to the matter say the fund company also has holdings in the debt. Nancy Mitchell, a lawyer representing several of the big mutual-fund companies holding the debt, said bondholders "are supportive of the Chapter 11 filing."

While the partnerships haven't missed interest payments, the bankruptcy filing has cast a pall over the securities. Municipal-bond executives says the filing is tantamount to a default in the eyes of market participants, and will hurt the prices of the securities. On Friday, a spokesman for the partnerships wouldn't say if the next interest-rate payments due in July and August will be met. "It's too early in the process" to know, said spokesman John Sullivan. He added: "The plants have met the terms of the contract," and that the partnerships are willing to "go to the mat to defend the plants and the contracts."

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Northern States and Wisconsin Energy Scrap Merger Plan After FERC Ruling

By JAMES P. MILLER
And BENJAMIN A. HOLDEN
Staff Reporters of THE WALL STREET JOURNAL

Northern States Power Co. and Wisconsin Energy Corp. called off their planned merger, citing the unexpected regulatory complications they have encountered.

The two big Midwestern utilities, which have a combined market value of about $6 billion, scrapped the merger plan Friday evening, two days after the Federal Energy Regulatory Commission refused to approve it. The companies said they had spent $29 million apiece in the abortive two-year effort to combine into a company to be called Primergy Corp.

Given "the current regulatory climate," said James Abdoo, Wisconsin Energy's chairman, president and chief executive officer, pushing ahead with the effort "is not in the best interests of our stockholders, customers and employees."

The transaction's collapse jarred the electric-power industry, where, with deregulation looming, an increasing number of companies have come to consider mergers the best way to improve their competitive position. Not surprisingly, industry reaction Friday was almost uniformly critical of FERC.

"This should be a real wake-up call, when two blue-chip companies like this say, 'Hey, it's not worth it,' " said Turner White, a vice president with Kansas City Power & Light. KCP&L is awaiting FERC approval of its $2.1 billion plan to merge with Western Resources of Topeka, Kan. Eight other major utility deals, with a total value of about $22 billion, are also stretched the approval process out another six months or more.

But on their face, FERC's suggestions for mitigating its concerns over market dominance weren't seen as necessarily derailing the merger. Indeed, even though the commission issued guidelines in December aimed at clarifying merger issues, both companies contended that the reason they threw in the towel on Primergy was continuing uncertainty over just what FERC will countenance in a merger and what it won't.

FERC's recent actions make it clear that the commission's policies "are still being developed," asserted James J. Howard, chairman, president and CEO of Northern States, Minneapolis. "There is simply no end to this process in sight."

Northern States and Milwaukee-based Wisconsin Energy still hadn't cleared the scrutiny of regulators in their home states. Nor was state clearance a sure thing: The plan had sparked vociferous opposition from energy consumers and rival Wisconsin utility Madison Gas & Electric Co., which contended that the merger would be anticompetitive.

Analysts and industry insiders agreed that among the deals still pending before FERC, none are burdened with anticompetitive concerns as significant as those in the Primergy transaction. Equipment-related constraints on energy transmission in the region made the Primergy situation unique, said Merrill Lynch & Co. analyst Steven I. Fleishman. "There really isn't another one that's nearly as bad on the wholesale-transmission issue."

Dateline: May 19, 1
drop a memorial wreath over Howland Island
26,640-mile tribute to Earhart's spirit. It celeb
National Geographic World launched a student
entered. Read the winning poems at our Web si

ACE
AIR CONSULTING
& ENGINEERING, INC.

2106 N.W. 67th Place • Suite 4 • Gainesville, Florida • 32606
(904) 335-1889 FAX (904) 335-1891

June 29, 1995

Mr. Al Linero
Florida Department of
Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399

Re: Policy Guideline Request for PM versus PM 10 Compliance Emission Testing

Dear Mr. Linero:

I am enclosing a recent operating permit for the Okeelanta Corporation for your review. As you will note the permit has separate emission values for PM and PM 10. It also has EPA-5 as the stated compliance method for PM and EPA-201 or 201A as the compliance method for PM 10.

My question is "Does the permitee have the option of using only EPA-5 to show compliance with both standards?" In other words, if the EPA-5 test results meet the PM 10 emission limit, is it still necessary to perform EPA-201 or 201A? Use of both methods could add considerable costs to a compliance test and this would be eliminated if the permitee feels comfortable with the lower PM 10 standard. Because more permits are being issued with similar language, I believe a policy guideline is appropriate.

A second issue to this permit concerns Volatile Organic Compound (VOC) testing. The specified test method is EPA 25. My analysis of this specific source reveals that compliance VOC emissions would be around 250 ppm as carbon. We expect actual emissions to be well under 50 ppm. After reviewing FDEP policy memos on this subject, am I correct in assuming the following course of action:

1. Perform Initial Compliance Test with both EPA-25 and EPA-25A.
2. If both test methods reveal results less than 50 ppm carbon, then;
3. Apply for a permit modification allowing use of EPA-25A as the compliance tool.

FedEx
Federal Express

RECIPIENT'S COPY

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL PACKAGE TRACKING NUMBER 4256787231

43647A 4256787231

Date 06/29/95

From (Your Name) Please Print	Your Phone Number (Very Important)	To (Recipient's Name) Please Print	Recipient's Phone Number (Very Important)
Stephen L. Neck	(904) 335-1889	Mr. Al Linero	(904) 488 1344
Company	**Department/Floor No.**	**Company**	**Department/Floor No.**
AIR CONSULTING & ENGINEERING		FDEP Northwest District Office	
Street Address		**Exact Street Address** *(We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)*	
2106 NW 67TH PLACE STE 4		2600 Blair Stone Road	
City / **State** / **ZIP Required**		**City** / **State** / **ZIP Required**	
GAINESVILLE FL 32606		Tallahassee Florida 32399	

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
103 95/01

H *IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here*
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3 *PAYMENT* 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash/Check

4 *SERVICES* (Check only one box)

Priority Overnight (Delivery by next business morning†)	Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
11 [ ] OTHER PACKAGING	51 [ ] OTHER PACKAGING
16 [X] FEDEX LETTER*	56 [ ] FEDEX LETTER*
12 [ ] FEDEX PAK*	52 [ ] FEDEX PAK*
13 [ ] FEDEX BOX	53 [ ] FEDEX BOX
14 [ ] FEDEX TUBE	54 [ ] FEDEX TUBE
Economy Two-Day (Delivery by second business day †)	**Government Overnight** (Restricted for authorized users only)
30 [ ] ECONOMY*	46 [ ] GOV'T LETTER
	41 [ ] GOV'T PACKAGE

*Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Freight Service (for packages over 150 lbs.)
70 [ ] OVERNIGHT FREIGHT** (Confirmed reservation required)
80 [ ] TWO-DAY FREIGHT**
†Delivery commitment may be later in some areas.
*Declared Value Limit $500.
**Call for delivery schedule.

5 *DELIVERY AND SPECIAL HANDLING* (Check services required)

Weekday Service
1 [ ] HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 [X] DELIVER WEEKDAY

Saturday Service
31 [ ] HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 [ ] DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 [ ] SATURDAY PICK-UP (Extra charge)

Special Handling
4 [ ] DANGEROUS GOODS (Extra charge)
6 [ ] DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845, ____ X ____ kg, 904 III
[ ] DESCRIPTION
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total	Total 27	Total

DIM SHIPMENT (Chargeable Weight)
[ ] ____ lbs.
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Received At
1 [ ] Regular Stop 3 [ ] Drop Box
2 [ ] On-Call Stop 4 [ ] B.S.C. 5 [ ] Station

7 Release Signature:

Emp. No. / Date
[ ] Cash Received
[ ] Return Shipment
[ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold
Street Address
City / State / Zip
Received By: X
Date/Time Received / FedEx Employee Number

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REVISION DATE 4/94
PART #145412 FXEM 11/94
FORMAT #160
160

We are scheduling compliance testing on the subject source for July 20, 1995. Please advise me on the Department's posture in these matters.

Respectfully,

AIR CONSULTING AND ENGINEERING, INC.

Stephen L. Neck

Stephen L. Neck, P.E.

PFB/mjd

Enclosures

cc: Matt Capone, Okeelanta Corporation
David Knowles, FDEP Fort Myers
Ajaya Satyal, Palm Beach City Health Department

ACE File: 103 95 01

Mail
F44-15B
cc. A. Archbold

Department of Environmental Protection

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

NOTICE OF PERMIT ISSUANCE

RECEIVED
DEC - 2 1994
OKEELANTA ADMINISTRATION

November 29, 1994

CERTIFIED MAIL #2 054 062 432
RETURN RECEIPT REQUESTED

In the Matter of an Application
for Permit by:

Ricardo Lima
Vice President & General Manager
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

DEP File No. AO50-257065
Palm Beach County - AP

Enclosed is Permit Number AO50-257065 to operate a 150,000 lbs steam/hour, No. 2 oil fired, 205 MMBtu/hr heat input boiler issued pursuant to Section(s) 403.087, Florida Statutes.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this Permit. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S..

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this permit. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code (F.A.C.).

This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 62-103.070, F.A.C.. Upon timely filing of a petition or a request for an extension of time this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the Clerk of the Department.

Executed in Fort Myers, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

P Ware

Peter J. Ware
Director of
District Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were mailed by certified mail before the close of business on November 30, 1994 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Karen L. Mealy (Clerk) 11-30-94 (Date)

PJW/AEL/jw

Enclosures

Copies furnished to:

David A. Buff, P.E.
Palm Beach County Public Health Unit

Department of Environmental Protection

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

PERMITTEE:
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

I.D. No: 52FTM50000514
Permit/Certification
Number: AO50-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999
County: Palm Beach
Latitude: 26° 35' 00" N
Longitude: 80° 45' 00" W
Section/Town/Range: 16/45S/36E
Project: Boiler No. 16

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Rules 62-4, 62-296, and 62-297. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Operation of a 150,000 lbs steam/hr, No. 2 oil fired, 205 MMBtu/hr heat input Babcock & Wilcox Model FM 120-97 package boiler using Coen's LO-NO_x burners and designed for 40% flue gas recirculation.

The boiler is located at the permittee's existing sugar mill that is approximately 6 miles south of South Bay, Palm Beach County, Florida, off of U.S. Highway 27.

Pertinent Documents		Dated
BACT		
PSD	PSD-FL-169	
NSPS	40 CFR Part 60 Subpart Db	
Construction Permit AC50-191876		29 July 1991
Revision of AC50-191876		18 Feb. 1993
DEP Form 62-1.202(3) CoCoC		31 Aug. 1994

Title V Permit
SIC Number 2061
SCC Numbers 1-02-005-01

PERMITTEE:
Okeelanta Corporation

I.D. No.: 52FTM50000514
Permit/Cert. No.: AO50-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5) Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by any order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

PERMITTEE:
Okeelanta Corporation

I.D. No.: 52FTM50000514
Permit/Cert. No.: AOSO-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999

GENERAL CONDITIONS:

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of non-compliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

PERMITTEE:
Okeelanta Corporation

I.D. No.: 52FTM50000514
Permit/Cert. No.: A050-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999

GENERAL CONDITIONS:

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-30.300, F.A.C. as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

(X) Determination of Best Available Control Technology (BACT)
(X) Determination of Prevention of Significant Deterioration (PSD)
(X) Compliance with New Source Performance Standards (NSPS)

14. The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used;
- the results of such analyses.

PERMITTEE:
Okeelanta Corporation

I.D. No.: 52FTM50000514
Permit/Cert. No.: AO50-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999

GENERAL CONDITIONS:

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

Mike Harley

FACILITY OPERATIONS:

1. All fugitive dust generated at this site shall be adequately controlled. [Reference Rule 62-296.310(3), F.A.C.]

2. This facility shall be operated in such a fashion so as to preclude objectionable odors. [Reference Rule 62-296.320(2), F.A.C.]

3. There shall be no discharges of liquid effluents or contaminated runoff from the plant site.

CONDITIONS OF COMPLIANCE:

4. Stack sampling facilities provided by the owner shall be in accordance with the requirements of Chapter 62-297.345, F.A.C.

5. The boiler shall be equipped with instruments to measure the opacity of the stack emissions and the steam production, temperature, and pressure.

6. Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY**	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
Pm10	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NO_X	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10, 5
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_X monitor data.
** Emissions during the period from March 1 to October 31.

PERMITTEE:
Okeelanta Corporation

I.D. No.: 52FTM50000514
Permit/Cert. No.: AO50-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999

SPECIFIC CONDITIONS:

CONDITIONS OF COMPLIANCE:

7. Boiler No. 16 shall comply with all applicable requirements of 40 CFR 60, including Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Unit (December 18, 1989).

40 CFR 60.7, Notification and record keeping. Timely notification of the items listed to the Department (South District), Palm Beach County Public Health Unit (PBCPHU), and EPA.

40 CFR 60.42b, Standard for sulfur dioxide. Sulfur content of the No. 2 distillation oil fuel shall not exceed 0.5%. Annual off-season average shall not exceed 0.3% sulfur. The Permittee shall maintain fuel analysis or receipts to confirm compliance with this condition.

40 CFR 60.43b, Standard for particulate matter. Visible emissions shall not exceed 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

40 CFR 60.44b, Standard for nitrogen oxides for high heat release boiler No. 16, expressed as NO_2, is 0.20 lbs/MMBtu.

40 CFR 60.45b, Sulfur dioxide compliance tests, fuel receipts or analysis for sulfur content is required to confirm compliance with this condition.

40 CFR 60.46b, Particulate and nitrogen oxides compliance tests. Method 9 test required to determine compliance with the opacity standard. Method 7, 7A, or 7E test for nitrogen oxides.

40 CFR 60.47b, Sulfur dioxide monitoring. Fuel analysis or receipts required to confirm compliance with this condition.

40 CFR 60.48b, Particulate and nitrogen oxides monitoring. Continuous emissions monitor required to measure opacity.

40 CFR 60.49b, Reporting and record keeping requirements. Permittee required to report date of initial start up. design heat input capacity, fuels used, annual capacity factor, performance test data, plan to monitor NO_x, nitrogen content of the distillate oil, opacity, nitrogen dioxide emissions, monitor down time, "F" factor, exceedances, and other information required by this paragraph.

8. Only No. 2 fuel oil containing a maximum of 0.5% sulfur (off-season average of 0.3% sulfur) shall be used as fuel.

PERMITTEE:
Okeelanta Corporation

I.D. No.: 52FTM50000514
Permit/Cert. No.: AO50-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999

SPECIFIC CONDITIONS:

CONDITIONS OF COMPLIANCE:

9. Maximum heat input to the boiler shall not exceed 1,463 gallons per hour of No. 2 distillate fuel oil (205 MMBtu/hr). = 7.14 MMBtu

10. The boiler shall not operate more than 175 days (4,200 hours) during the off-season months of March through October. During the crop season (November through February), the heat input to boiler No. 16 is limited to the equivalent reduction in heat input from No. 6 fuel oil for the existing bagasse/No. 6 fuel oil fired boilers at this facility. It is not to be operated as a replacement to a functional bagasse fired boiler when bagasse fuel is available. Total oil consumption (fuel oils No. 2 and No. 6) by all boilers at this facility (boilers Nos. 4,5,6,10,11,12,14,15, and 16) shall not exceed 3.2 million gallons during the crop season (November through February) and total maximum steam production shall not exceed 1.012 million pounds per hour.

11. Steam production shall not exceed 150,000 lbs/hr.

REQUIRED TESTING:

12. Various emission tests are required to show continuing compliance with the standards of the Department. The test results must provide reasonable assurance that the unit is capable of compliance at the permitted maximum operating rate. Test shall be conducted in accordance with the EPA Methods specified in Specific Condition 6 and as published in 40 CFR-60, Appendix A, or State approved equivalent method. Such tests shall be conducted once per year within 60 days prior to August 4th. Results shall be submitted to the Department within 45 days after testing. The Department shall be notified at least 15 days prior to testing to allow witnessing.

13. Particulate matter, visible emissions, and nitrogen oxides emissions tests shall be conducted annually while the boiler is operating between 90-100% of its permitted capacity (135-150,000 lbs steam/hr). The volume and sulfur content of each fuel oil delivery shall be kept in a log for a minimum of 3 years. The continuous emissions monitoring data will be evaluated to determine the highest concentration of NO_x in lbs/MMBtu for any 30-day rolling average during the proceeding year. Tests for other pollutants may be required when the Department has good reason to believe the emission standard is being exceeded.

REPORTS AND RECORDKEEPING:

14. The permittee shall maintain a log that shows the boiler's operation time, steam production, and fuel consumption.

PERMITTEE:
Okeelanta Corporation

I.D. No.: 52FTM50000514
Permit/Cert. No.: AO50-257065
Date of Issue: November 29, 1994
Expiration Date: November 29, 1999

SPECIFIC CONDITIONS:

REPORTS AND RECORDKEEPING:

15. Stack test results shall be submitted to the Department and the PBCPHU within 45 days of the test.

16. An annual operation report (DER Form 62-210.900(4) attached) shall be submitted by March 1st each year. The attached form shall be reproduced by the permittee and used for future annual submittals. [Reference Rule 62-4.070(3), and Rule 62-210.370(2), F.A.C.]

NOTE: In the event of an emergency the permittee shall contact the Department by calling (904) 413-9911 for "call back immediately", or (904) 413-9912 for "call back quickly, but not necessarily immediately". During normal business hours, the permittee shall call (813) 332-6975.

Issued this 29th day of November, 1993.

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Peter J. Ware
Director of
District Management

PJW/AEL/jw

11 Pages Attached

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
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- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
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I also wish to receive the following services (for an extra fee):
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Consult postmaster for fee.

3. Article Addressed to:
Stephen Neck, PE
Air Consulting & Eng.
2106 NW 67th Place, S.4
Gainesville, FL
32606

4a. Article Number
Z 392 979 055

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

5. Signature (Addressee)
Edward Sage

6. Signature (Agent)

7. Date of Delivery
7-14-95

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

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Receipt for Certified Mail
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UNITED STATES POSTAL SERVICE

PS Form **3800**, March 1993

Sent to: Steve Neck	
Street and No. AC+E	
P.O., State and ZIP Code Gainesville FL	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$

Postmark or Date
AC50-191876 7-12-95
PSD-FI-1609

read file

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

July 7, 1995

Mr. Stephen L. Neck, P.E.
Air Consulting & Engineering, Inc.
2106 N. W. 67th Place Suite 4
Gainesville, Florida 32606

RE: Particulate Testing at Okeelanta Boiler #16 and VOC Testing Procedures.
AC50-191876, PSD-FL-169

Dear Mr. Neck,

We have reviewed your letter of June 29, 1995 requesting acceptance of EPA Method 5 to demonstrate compliance with both PM and PM10 limits in the above referenced permit.

Per our discussion with David Knowles, Air Program Administrator for the South District performing only the EPA-5 compliance test is acceptable. The results from that test must show that the PM10 standard, which is lower than the PM standard, has been met.

Pursuant to my discussion with Mike Harley, P.E. Administrator, Emissions Monitoring Section, an Alternative Sampling Procedure (ASP) must be requested prior to initiation of the test program described in your letter.

If you have any questions regarding this matter, please call me at (904)488-1344, Mike Harley at (904)488-6140 or David Knowles at (813)332-6975.

Sincerely,

7/7/95

A. A. Linero, P.E.
Administrator
Bureau of Air Regulation

AAL/kkw

cc: Matt Capone, Okeelanta Corporation
David Knowles, FDEP Fort Meyers
Ajaya Satyal, Palm Beach County Public Health Unit
Mike Harley, P.E.

PS Form 3811, July 1983, 447-845

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1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Pablo Carrero
Okeelanta Corp
PO Box 86
South Bay, Fl 33493

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P062 921 904

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X D. McPhee

7. Date of Delivery
10-19-92

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

DOMESTIC RETURN RECEIPT

P 062 921 904

UNITED STATES POSTAL SERVICE

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Sent to
Pablo Carrero
Street and No.
Okeelanta Corp
P.O., State and ZIP Code
S. Bay, Fl 33493

Postage	$
Certified Fee	
Special Delivery Fee	
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Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	10-15-92 Boiler #16

PS Form 3800, June 1991

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

October 15, 1992

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Pablo Carreno
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Re: Okeelanta Corp., Boiler No. 16

Your September 25, 1992, letter requesting authorization to use boiler No. 16 during the sugar can season when one of the existing bagasse fired boilers is down has been discussed with EPA. There are two ways to process this request.

If your engineer can show that the ambient air increments and standards for sulfur dioxide and nitrogen oxides will not be exceeded when boiler No. 16 is operating during the sugar cane processing season, the Department can amend your permits to remove the seasonal limitation on the operation of this boiler. Boiler No. 16 will still be restricted to 175 days (4200 hours) operation during any 12 month period.

To authorize an increase in the hours per year operation of this boiler, the Department will require a new application. Rule applicability would be based on the difference in emissions of sulfur dioxide and nitrogen oxides from the burning of No. 2 fuel oil in boiler No. 16 when compared to the burning of bagasse in the bagasse/oil fired boilers. Both the modeling and the Best Available Control Technology determination would need to be revised if the relaxation of this restriction results in an increase in emissions of any pollutant.

Please review these options and let the Department know if you plan to pursue a modification to the operation restrictions in the construction permit for boiler No. 16. If you have any questions on this matter, write to me or call Willard Hanks at (904)488-1344.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/WH/plm

cc: David Knowles, SD
Gregg Worley, EPA
David Buff, KBN

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072 TELEX: 803444

September 25, 1992

Mr. Willard Hanks
Department of Environmental Regulations
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ref: Boiler No. 16
Permit No. AC-50-191876

Dear Mr. Hanks,

This is in reference to our telephone conversation of this past Tuesday, September 22, concerning the matter of subject, about our intentions to use this boiler during the crop days.

As per attached information, by working this boiler that burns No. 2 diesel fuel in lieu of the No. 6 (Bunker "C") that we are presently burning in our bagasse burning boiler we are diminishing the SO2 emissions. In addition if one of our bagasse burning boilers gets out of line and is substituted by this No. 16 boiler the particulate emissions for the corresponding bagasse will also go down.

If you need any additional data please call me or Mr. Roger King.

Waiting to hear from you, we remain,

Sincerely,

Pablo Carreño
Director of Mill &
Refinery Operations

PAC:slc

xc: Mr. David Knowls, DER Ft. Myers
Mr. Ricardo Lima
Mr. Roger King

FILE:BOI16USE

OKEELANTA CORPORATION
P.O. BOX 86
SOUTH BAY, FLORIDA 33493

Fold at line over top of envelope to the right of the return address

CERTIFIED

P 258 613 690

MAIL

MR. WILLARD HANKS
DEPARTMENT OF ENVIRONMENTAL REGULATIONS
2600 BLAIR STONE ROAD
TALLAHASSEE, FL 32399-2400

COMPARISON OF SO2 EMISSIONS

9/23/92

	1990/91	1991/92	Average
Oil used (gals)	3,160,529	2,937,979	3,049,254
Crop days	166	162	164
Average/day	19,039	18,136	18,593
Steam @ 55% effic	1,416,337	1,349,161	1,383,158
Avg steam/hr	59,014	56,215	57,632
SO2 crop (tons)	248	230	239
#2 fuel equiv/day	13,348	12,715	13,035
#2 fuel/crop gals	2,215,768	2,059,830	2,137,740
SO2 equiv (tons)	87	81	84

Notes on the above

1) Oil used figures are actuals from crop year.
2) Calorific value of #6 oil, 2.5% sulfur is 150,000 BTU/gal.
3) Wet scrubbers are assumed to remove 60% of SO2 from flue gases of existing bagasse/#6 oil boilers.
4) Existing boilers are assumed to burn #6 oil at 55% efficiency.
5) Calorific value of #2 fuel is assumed to be 140,090 BTU/gal.
6) For calculation purposes maximum sulfur content (0.5%) of #2 fuel has been used, with no removal.
7) Above assumes total replacement of #6 oil by #2 oil.
8) #2 fuel is burned in #16 boiler with 84% efficiency.

POSSIBLE SCENARIOS REQUIRING #16 BOILER 09/23/92

#6 vs #2 Fuel Oil - Differing Ratios

The table on the attached sheet assumes no #6 oil is used and all supplementary fuel oil used is #2 oil. Since #6 oil will be burned in the old boilers as supplementary fuel the table below shows SO2 emissions for various ratios of #6 and #2 oil usage based on the average usage '90/'91 and '91/'92.

	RATIO #6/#2 FUEL OIL			
	25/75	40/60	60/40	75/25
#6 fuel oil (gals)	762,314	1,219,702	1,829,552	2,286,941
#2 fuel oil (gals)	1,603,305	1,282,644	855,096	534,435
SO2 from #6 (tons)	60	96	144	179
SO2 from #2 (tons)	63	50	34	21
Total SO2 (tons)	123	146	178	200
Avg SO2 '90/'91/'92			239 tons	

Loss of one (1) boiler - substitution with #16 boiler

In the event it is necessary to shut down one of the old boilers for repairs during the crop the load is normally shared by the remaining seven (7) bagasse burning boilers until the unit can be returned to service. Under this situation, and with bagasse of variable quality, it is usually necessary to fire #6 oil in some of the seven boilers which are operating at loads nearer to their MCR than normal.

It is proposed that, under these conditions, the package boiler (#16) be put into operation, using #2 oil. It is estimated that this will provide more stability to the operation (by reducing the average load per boiler) while reducing SO2 emissions.

For both of the above scenarios it must be remembered that there is a financial incentive for Okeelanta to operate as in the past, that is supplementing bagasse with #6 oil. This is illustrated by the calculation following.

	#6 oil	#2 oil
Calorif value BTU/gal	150,000	140,090
Combustion efficiency	55%	84%
Heat added/# water BTU	1,109	1,109
Cost per gal ($)	0.40	0.60
# steam per $ fuel	186	177

Conclusion

Any substitution of #2 fuel oil in #16 boiler for #6 oil in the other boilers thus reduces the total SO2 emissions from Okeelanta.

PARTICULATE EMISSIONS

While no calculations have been prepared for particulate emissions it is logical that particulate emissions from #16 boiler must be less than those from the other boilers due to permit restrictions and fuel used.

Clair
Willard

HRS STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

April 7, 1992

Mr. David Knowles, P.E.
District Air Program Administrator
South Florida District Office
Florida Department of Environmental Regulation
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901

Subject: Notice of Permit Issuance, File No. AO-50-207415

Dear Mr. Knowles:

This is to bring to your attention a matter which we are very concerned about. Recently, we received a copy of the referenced notice issued to the Okeelanta Corporation for boilers No. 12 and 14 to allow the use of wood chips as a supplemental fuel. In reviewing our files it appears that we had not received a copy of this permit request, and therefore, we did not have an opportunity to provide comments.

As with other air pollution sources, we are very concerned with the operations and permitting of sugar mills located in Palm Beach County. It is our policy to submit written comments, or a statement of no comment, in all instances for the permitting of these facilities. In the absence of such comments we hope that your staff would be aware of this policy and contact our office. Such coordination is essential if we are to jointly regulate the sugar industry in an effective manner.

With regards to the referenced permit to Okeelanta Corporation, we are concerned that the conditions do not specifically prohibit wood chips that contain paint or derived from creosote and pressure treated lumber. Additionally, we would like to have for our files copies of the permit request and any related DER correspondence.

We would appreciate hearing from you on how to avoid future instances of this nature, and any other suggestions you may have on how to better coordinate activities between our offices in regulating the sugar industry.

Please feel free to call me at Suncom 273-2070 if you wish to discuss these matters.

Sincerely,

For the Division Director
Environmental Science and Engineering

James E. Stormer, Administrator
Air Pollution Control Section

FJG/JES/lh

cc: Steve Smallwood, Director, DARM, DER

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

fil

September 26, 1994

Certified Mail—Return Receipt Requested

Mr. Matthew Capone
Environmental Engineer
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

RE: Request for Alternate Monitoring Plan for NO_x and Opacity
Boiler No. 16 - Permit #: AC 50-191876/PSD-FL-169

Dear Mr. Capone:

The above referenced request has been reviewed by the Department and the Region IV Office of EPA. A copy of EPA's response is attached for your review. However, there is still a question as to whether the request was submitted within the 360-day time frame required by the federal rule. We have sent an additional letter asking EPA to clarify whether the time frame is based on calendar days or operating days. If EPA determines that the request was submitted within the 360-day time frame, the following information will be needed to evaluate your request:

1. A copy of each of the test reports for the 12/4/92, 7/14/94, and 8/4/94 emission tests. Each of the reports should include all of the information required by Rule 62-297.570(3), F.A.C., a certified ultimate analysis of the fuel burned during each test, the high heating value of the fuel burned during each test, a description of the quality assurance procedures, and supporting documentation.

2. The identities of the Department personnel that were present during the tests.

3. A description of the company's acceptance sampling program for fuel shipments and the analytical procedures used.

4. The sampling frequency and the analytical procedures used to test the fuels being burned.

5. The gravimetric percentage of carbon, hydrogen, sulfur, nitrogen, oxygen, and ash contained in; and the high heating value of each oil shipment burned in the boiler during the last two years.

6. The oxygen concentrations to which the concentrations (ppmv) of NO_x and CO (ppmv) in Table 6-1 of the submission entitled 'Plan for Predicting Nitrogen Oxide Emissions and

Opacity by Monitoring Boiler Operating Conditions' have been corrected. Also, explain whether the NO_X and CO concentrations in Table 6-1 are expressed on a wet or a dry basis.

7. A copy of the visible emission reader's certification showing the smoke reader was qualified to perform the EPA Method 9 test in Florida on 7/14/94.

8. A copy of the visible emission evaluations that were conducted during the 12/4/92 and 8/4/94 emission tests. The copies should be accompanied by a copy of the observer's certification credentials as they existed on the dates of the tests.

9. A copy of the initial compliance test report.

10. A copy of the test report for the maximum heat input capacity tests required pursuant to 40 CFR 60.46b(g).

11. A description of the qualifications of the individuals who would perform the EPA Method 9 visible emission evaluation and the procedure for selecting the time periods during which the evaluations would be performed.

12. An explanation of how visible emissions will be evaluated between the hours of sunset and sunrise, and during periods of inclement weather.

13. A copy of the COEN paper which is referred to on page 11 of the 'Plan for Predicting Nitrogen Oxide Emissions and Opacity by Monitoring Boiler Operating Conditions.'

14. The procedure that will be used to conduct the quarterly relative accuracy audits and the annual relative accuracy test audit in accordance with the requirements of 40 CFR 60 Appendix F.

15. The quantity of data that was provided is inadequate to support the request so additional simultaneous emission test and alternate parameter data is needed. The data must be sufficient to demonstrate a consistent relationship between variations in alternate parameters and actual emissions. A full gravimetric analysis of the fuel being burned during each additional test run, the high heating value of the fuel being burned during each additional test run, and the actual measured fuel flow during the run will be needed. Also, the company needs to demonstrate that the proposed alternate monitoring system will meet the same relative accuracy standards as a NO_X CEM. The demonstration of comparable relative accuracy standards must be achieved by conducting a relative accuracy test audit (RATA) in accordance with Performance Specification 2 described in Appendix B of 40 CFR Part 60 (Specifications and Test Procedures for SO_2 and NO_X Continuous Emission Monitoring Systems in Stationary Sources).

16. The equation that the company proposes to use to calculate the NOx concentrations, the records that the company proposes to maintain, and the format of the proposed records.

You will also need to address each of the issues contained in the attached letter from the Region IV Office of EPA. The Department's review will continue upon receipt of the requested information and the $250 permit amendment fee required by Rule 62-4.050(4)(q)5., F.A.C. If you have any questions, please call Ramesh Menon at (904) 488-1344 or write to me.

Sincerely,

Michael D. Harley

Michael D. Harley, P.E., DEE
P. E. Administrator
Emissions Monitoring Section

Enclosure

cc: C.Fancy
J. Brown
J. Pennington
D. Knowles

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

September 26, 1994

Mr. Brian L. Beals, Chief
Source Evaluation Unit
Air Enforcement Branch
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365

RE: Okeelanta Corporation—Permit # AC 50-191876/PSD-FL-169
Request for Approval of Alternate Monitoring Plan for NO_x and Opacity Measurement

Dear Mr. Beals:

Thank you for reponding to our request for comments about the above referenced request so quickly.

There is one additional issue associated with the the compny's request for approval of an alternate monitoring approach. The provisions of 40 CFR 60.49b(c) state, "...This plan shall be submitted to the Administrator for approval within 360 days of initial stratup of the affected facility." The Department has traditionally interpreted the phrase "within 'x' days of initial startup" to mean calendar days. This interpretation has been applied in previous enforcement cases where the Department has prevailed.

The company would like the 360-day window for submission of a request for approval of an alternate monitoring plan to be interpreted to mean "steam generating unit operating days." The construction of the language in the subpart would appear to support the Department's traditional interpretation because the terms "steam generating unit operating days" and "within 'x' days of initial startup" do not appear to be used interchangeably.

Please provide guidance concerning the correct interpretation of the term "within 'x' days of initial startup" as it is used in Subparts 51, 52, 60, and 61 in Title 40. We would appreciate a response by October 26, 1994. If you have any questions about the above please call me at (904) 488-1344.

Sincerely,

Michael D. Harley

Michael D. Harley, P.E., DEE
P. E. Administrator
Emissions Monitoring Section

cc: C. Fancy
J. Pennington
J. Brown
D. McNeal

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072 TELEX: 803444

September 1, 1994

Mr. Ronald D. Blackburn
Acting Director of District Management
Department of Environmental Protection
South District
2295 Victoria Avenue, Suite 364
Fort Myers, FL 33901

Re: Okeelanta Corporation Boiler No. 16
DEP permit #: AC50-191876; PSD-FL-169

Dear Mr. Blackburn:

Please find enclosed the Certificate of Completion of Construction for the above referenced source at Okeelanta Corporation. A copy of the initial stack test report and the existing construction permit is also enclosed. Since the initial stack test was not performed within ninety percent of the rated capacity of the boiler, a second compliance test was performed at higher operating rates on August 4, 1994. That test report will be forwarded as soon as it is available.

Please consider the enclosed documents to serve as our application for a permit to operate. Since Okeelanta pays annual fees as a major source and is subject to Title V of the Clean Air Act, it is our understanding that additional fees are not required for this application. Please contact us if further information is required.

Sincerely,

R.A.L. by Matthew Capone
Ricardo Lima
Vice President
General Manager

enclosures

cc: David Buff, KBN w/o enclosure
Matt Capone, Okeelanta
C.H. Fancy, DEP
Roger King, Okeelanta
David Knowles, DEP w/o enclosure
Ajaya Satyal, HRS PBCPHU

Hillard 9/6

FYI - If you think Mike Harley should see this, please pass it on to him. Otherwise, return to me for the file

Thanks
Patty

9-7-94.
File. District will review and request Mike to check this if they have any questions on it.
wmk

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC50-191876; PSD-FL-169 DATE: August 26, 1994

Company Name: Okeelanta Corporation County: Palm Beach

Source Identification(s): Boiler No. 16

Actual costs of serving pollution control purpose: $ 200,000

Operating Rates: 125-205 MMBtu/hr Design Capacity: 150,000 lb/hr steam; 205 MMBtu/hr

Expected Normal 130,000 lb/hr steam; 180 MMBtu/hr During Compliance Test 120,000 - 140,000 lb/hr steam

Date of Compliance Tests July 14, 1994; August 4, 1994 (Attach detailed test report)

Test Results:

Pollutant	Actual Discharge	Allowed Discharge
PM	0.008 lb/MMBtu; 1.4 lb/hr	0.054 lb/MMBtu; 11.0 lb/hr
PM10	<0.008 lb/MMBtu;<1.4 lb/hr	0.027 lb/MMBtu; 5.5 lb/hr
NO_x	0.161 lb/MMBtu; 28.1 lb/hr	0.18 lb/MMBtu; 36.9 lb/hr
Visible emissions	0% Opacity	20% Opacity

Date plant placed in operation: July 23, 1992

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC50-191876; PSD-FL-169 dated July 30, 1991.

A. Applicant:

Ricardo Lima, Vice President-General Manager
Name of Person Signing (Type)

R. A. L. by Mitchell Capone
Signature of Owner or Authorized Representative and Title

Date: 9/1/94 Telephone: (407) 996-9072

B: Professional Engineer:

David A. Buff
Name of Person Signing (Type)

David A. Buff
Signature of Professional Engineer

KBN Engineering and Applied Sciences, Inc.
Company Name

Florida Registration No. 19011

Date: August 31, 1994

1034 NW 57th Street, Gainesville, FL 32605
Mailing Address

(Seal)

(904) 331-9000
Telephone Number

*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

**As built, if not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

DEVIATIONS FROM CONSTRUCTION PERMIT

The description of the source as contained on Page 1 of the construction permit states that the boiler is "designed for 12% flue gas recirculation." The boiler FGR system is actually capable of up to 40% flue gas recirculation. It is requested that the operating permit be written to reflect this change.

File copy

Florida Department of
Environmental Protection

Memorandum

To: Clair Fancy, Bureau of Air Regulation
Isidore Goldman, Southeast District
David Knowles, South District
Jim Stormer, Palm Beach County Health Department

From: Willard Hanks wmh

Date: February 15, 1994

Subject: Okeelanta/Osceola Power Limited Partnership

The construction permits for Okeelanta/Osceola Power L.P. were processed by the Bureau of Air Regulation. The APIS data was entered under the Southeast District code. A question has been raised on whether this is the appropriate District to track these operations.

As the facilities are in Palm Beach County, the Palm Beach County Health Department will be involved in monitoring their operations. They will also monitor the sugar mills in Palm Beach County. By Department policy, sugar mills are handled by the South District. Thus the County will have to coordinate their activities with both Districts (sugar mills with the South District and other sources with the Southeast District).

The cogeneration facilities, although not technically part of the sugar mills, are associated with them because of the bagasse fuel they burn. As the South District staff inspects the sugar mills, it seems more logical for them to observe the cogeneration facility operations. Otherwise, someone from the Southeast District office may have to drive over to look at only the cogeneration facilities.

We would like your comments and suggestions by March 1, 1994, on which District office should be assigned these facilities. If desirable, the facilities can be reassigned to the South District.

c: Preston Lewis
Tom Tittle

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072

TELEX: 803444

February 10, 1994

Mr. C.H. Fancy
Dept. of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL

Ref: AC 50-191876

Dear Mr. Fancy:

In reference to your letter dated February 2, 1994, please find enclosed our check in the amount of $50.00 for processing fees.

Should you require any further information please feel free to contact myself or Roger King at 407-996-9072.

Sincerely,

Ricardo Lima by pc

Ricardo A. Lima
Vice President -
General Manager

RAL:slc

xc: Roger King

FILE:PROCFEE

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:

Mr. Ricardo A. Lima
Vice President - General Manager
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

4a. Article Number
P 872 562 588

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

7. Date of Delivery
2-7-94

5. Signature (Addressee)

6. Signature (Agent)
D. McRae

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

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

P 872 562 588

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Mr. Ricardo A. Lima	
Street and No. P. O. Box 86	
P.O., State and ZIP Code South Bay, Florida 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 2/2/94 AC 50-191876, Request for Permit Extension	

PS Form **3800**, JUNE 1991

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

February 2, 1994

CERTIFIED MAIL-RETURN RECEIPT

Mr. Ricardo A. Lima
Vice President - General Manager
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Dear Mr. Lima:

RE: AC 50-191876, Request for Permit Extension

The Bureau of Air Regulation received your December 21, 1993, request for the above referenced project. On October 30, 1991, Rule 17-4.050(4)(o), F.A.C., was changed to require a $50 processing fee for a permit extension; therefore, we will not be able to take action on your request until the fee is received. If you have any questions, please call Patty Adams at (904)488-1344.

Sincerely,

Patricia B Adams

for C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/pa

cc: Willard Hanks

ORIGINAL TO CLAIR
xc: HCK 12/28

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072 TELEX: 803444

December 21, 1993

RECEIVED
DEC 28 1993
Division of Air
Resources Management

Mr Howard Rhodes
Director, Division of Air
Resources Management
FDER
2600 Blair Stone Road
Tallahassee, FL 32399

Re: Permit No. AC50-191876

Dear Mr Rhodes:

By letter to Mr Pablo Carreño dated March 19, 1993 the above permit was extended to Dec 31st this year to allow additional time for stack testing.

We operated this boiler from late July to end of September for the summer ('93) operation of our sugar refinery. The atomization of fuel using steam (as designed) was unsuccessful despite various visits by technical representatives of the manufacturers. We were able to operate satisfactorily with air atomization.

The difficulty experienced tuning the burner system (for steam atomization) requires the boiler to operate at various steam loads between 0 and 100% MCR. During the summer we are not able to do this as this is the only boiler in operation. Since the sugar crop has settled down we are currently trying to arrange a visit by the manufacturer's technician since we are now able to vary the load as necessary.

Due to the above we are kindly requesting a further extension of this permit to October 30th 1994. By this means the stack testing will be arranged during the summer ('94) operation of our refinery.

Please contact the writer or Roger King at 407-996-9072 if you need any further information.

Sincerely,

Ricardo A. Lima
Vice President -
General Manager

RAL:slc

FILE:SLTRADD
cc: H. Hanks
D. Knowles, SDist
J. Wagner, PBCHD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
Mr. Ricardo A. Lima
Vice President - General Manager
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

4a. Article Number
P 872 563 628

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

7. Date of Delivery
3-19-94

5. Signature (Addressee)

6. Signature (Agent)
D. M[illegible]

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 563 628

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Mr. Ricardo A. Lima	
Street and No.: P. O. Box 86	
P.O., State and ZIP Code: South Bay, Florida 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 3/15/94 AC 50-191876	

PS Form **3800**, JUNE 1991

Florida Department of
Environmental Protection

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

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

March 7, 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ricardo A. Lima
Vice President - General Manager
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Dear Mr. Lima:

Re: Amendment of Permit No. AC 50-191876
Boiler No. 16

The Department is in receipt of your letter requesting that the referenced permit to construct the No. 2 fuel oil fired boiler No. 16 be extended. The extension is needed to adjust the burner system, conduct the compliance tests, and submit the application for permit to operate. This request is acceptable and the expiration date of permit No. AC 50-191976 is extended from December 31, 1993, to October 30, 1994.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action;
(g) A statement of the relief sought by petitioner, stating precisely the action the petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the request/application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this amendment in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

A copy of this letter must be filed with the referenced construction permit and shall become a condition of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/bjb

Attachment: Okeelanta's December 21, 1993, letter

cc: David Knowles, SD
David Buff, KBN
Jim Stormer, PBCHD

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this AMENDMENT and all copies were mailed by certified mail before the close of business on 3/15/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to 120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Barbara J. Boutwell 3/15/94
Clerk Date

Florida Department of
Environmental Protection

Memorandum

PATTY

TO: Howard L. Rhodes

FROM: Clair H. Fancy

DATE: March 7, 1994

SUBJ: Amendment of Permit
Okeelanta Corporation

Attached for your approval and signature is a letter that will extend the construction permit for a No. 2 oil fired boiler at a sugar mill in Palm Beach County. The additional time is needed for the permittee to adjust the burners on this boiler and conduct the compliance tests.

I recommend your approval and signature.

CHF/WH/bjb

Attachment

ENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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 Fee will provide you the signature of the person delivered to and the date of delivery.

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:

Pablo Carreno
Okeelanta Corp.
PO Box 86
S. Bay, Fl 33493

4a. Article Number P 062 921 980

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

7. Date of Delivery 3-24-93

5. Signature (Addressee)

6. Signature (Agent) [signature]

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

PS Form **3811**, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

P 062 921 980

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to Pablo Carreno	
Street and No. Okeelanta Corp	
P.O., State and ZIP Code S. Bay, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date AC 50-191876	

PS Form **3800**, June 1991

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

March 19, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Pablo Carreño
Director of Mill Operations
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreño:

Re: Amendment of Permit
Boiler No. 16, Permit No. **AC**50-191876

The Department is in receipt of your February 24, 1993, letter requesting that the referenced permit be extended to allow additional time for the compliance tests and that you be allowed to substitute annual stack tests for the continuous monitoring of opacity and nitrogen oxides.

The request for additional time to complete the compliance tests is acceptable. The expiration date for Permit No. **AC**50-191876 is hereby extended from March 1, 1993, to December 31, 1993.

The Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db, requires the installation, calculation, maintenance, and operation of a continuous emissions monitor for opacity (40 CFR 60.48b). Boiler No. 16 is subject to these regulations. A continuous emissions monitor for opacity must be installed on boiler No. 16.

These regulations, 40 CFR 60, Subpart Db, also require the continuous monitoring of nitrogen oxides (NO_X) emissions by either an instrument or by monitoring boiler operation conditions under an approved plan described in 40 CFR 60.49b(c). The nitrogen oxide emissions from boiler No. 16 must be monitored by one of these methods. Nitrogen oxides monitoring data collected by either method will satisfy the monitoring requirements of Specific Condition No. 5 of the referenced permit.

A copy of this letter shall be filed with the referenced construction permit and shall become a part of that permit.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of receipt of this amendment. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this amendment in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a

waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

CF/WH/w

Attach: Okeelanta Comp., February 24, 1993, letter

cc: David Knowles, SFD
Isidore Goldman, SED
James Stormer, PBC

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Howard L. Rhodes

FROM: Clair H. Fancy

DATE: March 19, 1993

SUBJ: Amendment of Permit No. AC50-191876
Okeelanta Corporation

Attached for your approval and signature is a letter that will extend the expiration date of a construction permit issued to Okeelanta Corporation for a No. 2 fuel oil fired boiler. In response to the permittee's request to delete the continuous emissions monitoring requirements in the permit, the letter says continuous monitoring is required by the new source performance standards.

I recommend your approval and signature.

HR/CF/wh

Attachments

OK
GDL HB
3/19/93

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072

TELEX: 803444

February 24, 1993

Mr. Willard Hanks
Florida Dept of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Permit #AC 50-191876 (Okeelanta Boiler #16)
PSD-FL-169

Dear Mr. Hanks,

The construction permit referenced above is due to expire on March 1st 1993.

1. After experiencing numerous delays and difficulties with the start up of this boiler, consistent operation was finally achieved on August 30th 1992. The boiler was shut down in early October 1992 when the summer refinery operation was terminated prior to the start of the 1992/93 sugar crop. It was therefore not practical to schedule stack testing of the boiler in the short period of consistent operation and to afford yourselves and other governmental agencies the 30 day notice specified in the permit.

   We expect the refinery to be in operation during summer 1993 but the exact dates have not been determined as yet. We trust that when scheduling has been completed stack testing may be arranged. In the event this is not possible during the summer it could be arranged in the early part of the 1993/94 crop. Based on the above we hereby request extension of the construction permit to December 1st 1993.

2. In reference to the continuous monitoring equipment, the permit specifies that an opacity monitor is required - please refer to Specific Condition # 4. With the firing of #2 fuel there is, in our limited experience, no opacity to monitor. It would therefore seem to be an unreasonable burden for such monitoring equipment to be installed and maintained. We therefore respectfully request that this specific condition be deleted from the permit.

   We have sought bids from three (3) suppliers of suitable equipment for continuous monitoring of NOx and opacity. Quotations received have been outrageously expensive:-

Continuous Monitoring Equipment (continued)

Supplier #1 - $138,800 + various services at start up, with total being about $150,000 + tax.

Supplier #2 - $ 81,000 + installation and provision of various facilities, or $130,000 total.

Supplier #3 - $100,000 + various services at start up, with total being about $115,000 + tax.

For NOx monitoring we are hereby requesting that this be determined in annual stack tests while other procedures are taking place.

No objection to the permit conditions (concerning continuous monitoring) was registered when originally issued as we had no idea of the exorbitant cost of this equipment. Now that pricing has been obtained the costs involved in purchase, installation and maintenance of this equipment places us at a disadvantage vis-a-vis our competition.

We trust you will consider our request favorably and withdraw the requirement for continuous monitoring equipment.

Sincerely,

Pablo Carreño
Director of Mill
Operations

PAC:slc

xc: Mr. Ricardo Lima
Mr. David Buff - KBN
Mr. Roger King

FILE:BLR16DER

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
Pablo A Carreno
Director of Mill & Ref. Operations
OKeelanta Corp
PO Box 86
South Bay, Fl 33493

4a. Article Number
P 360 185 705

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

7. Date of Delivery
2/25/93

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 360 185 705

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Pablo Carreno
Street and No.: OKeelanta Corp
P.O., State and ZIP Code: S. Bay, Fl

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	2-23-93

AC 50-191876
PSD-FI-169

PS Form **3800**, June 1991

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072
TELEX: 803444

January 25, 1993

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

Subject: DER File No. AC50-191876
PSD - FL - 169
Palm Beach County

Dear Mr. Fancy,

Please find attached a copy of the proof of publication for the intent to issue a permit revision for our package boiler No. 16 as per the file on subject.

Sincerely,

P.A. Carreño
Director of Mill
Operations

PAC:slc

xc: Ricardo Lima
Roger King
David Knowls - DER
Gregg Worley - EPA
Jim Stormer - PBC
H. Homlsa
S. Brooks, SE Dist.
FILE:PRPUB J. Bunyak, NPS

RECEIVED

JAN 28 1993

Division of Air
Resources Management

PALM BEACH NEWSPAPERS, INC.
The Palm Beach post
Legal Advertising Invoice

Phone: 407-820-4384
Fax: 407-820-4340

2751 S. Dixie Hwy.
West Palm Beach, FL 33405

Account # 441672 Ad # 601881 Description not: intent to issue permit revision

Size 14 1/2" Amount $255.34 Publish Date 1/13/93

Okeelanta Corp.
PO Box 86
ATTN: Rosalia
South Bay, FL 33493

Legal Advertising Deadlines

Publish Date	Deadline
Monday	Friday 3PM
Tuesday	Friday 3PM
Wednesday	Monday 3PM
Thursday	Tuesday 3PM
Friday	Wednesday 3PM
Saturday	Thursday 3PM
Sunday	Thursday 3PM

For Legal Holidays add one extra business day to deadline.

THE PALM BEACH POST
Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA

COUNTY OF PALM BEACH

Before the undersigned authority personally appeared Chris Bull who on oath says that she/he is Class. Sales Mgr. of The Palm Beach Post, a daily and Sunday newspaper published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising, being a Notice in the matter of intent to issue permit revision in the --- Court, was published in said newspaper in the issues of January 13, 1993

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Chris Bull

Sworn to and subscribed before me this 13 day of January A.D. 19 93

OFFICIAL NOTARY SEAL
KAREN M MCLINTON
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC240850
MY COMMISSION EXP. NOV. 15,1996

Karen M McLinton

REGULATION
NOTICE OF INTENT
TO ISSUE PERMIT REVISION

The Department of Environmental Regulation gives notice of its intent to revise permit No. AC50-191879/PSD-FL-109 for boiler No. 16 at Okeelanta Corporation's sugar mill located in Palm Beach County, 6 miles south of South Bay. The revision will allow No. 2 oil fired boiler No. 16 to operate as a replacement to the other existing bagasse/No. 6 fuel oil fired boilers at this plant during the crop season (prohibited by present permit). As the burning of the same quantity of No. 2 fuel oil in the new boiler No. 16 emits less air pollutants than the burning of No. 6 fuel oil in the older bagasse/No. 6 fuel oil fired boilers at this facility, the net air pollutant emissions will be reduced by an undetermined amount. The proposed revision does not alter the Best Available control Technology (BACT) determination that boiler No. 16 is subject to or any other restriction on the other air pollution sources at this facility. The Department is issuing this Intent to Issue Permit Revision to satisfy the federal enforceability requirements.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information: (a) The name, address, and telephone number of each petitioner; the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to be a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of
Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Department of
Environmental Regulation
South District
2295 Victoria Ave., Suite 364
Ft. Myers, Florida 33901

Department of
Environmental Regulation
Southeast District
1900 S. Congress Ave., Suite A
West Palm Beach, Florida 33406

Palm Beach County Health Dept.
Division of Environmental Science and Engineering
901 E. Evernie Street
West Palm Beach, Florida 33406

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments re-

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Pabeo Carrero
OKeefenta Corp
P.O. Box 86
South Bay, Fl 33493

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P062 921 945

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X Nathaniel Smith

7. Date of Delivery
1-8-93

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

P 062 921 945

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Pabeo Carrero	
Street and No. OKeefenta Corp	
P.O. State and ZIP Code S Bay, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 1-6-93	

AC 50-191876
PSD-FI-169

PS Form 3800, June 1991

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

3

January 6, 1992

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Pablo Carreno
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Attached is one copy of the proposed amendment to the permit for boiler No. 16 which is located at your sugar mill near South Bay, Palm Beach County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Preston Lewis of the Bureau of Air Regulation.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/WH/plm

Attachments

cc: David Knowles, SD
Stephanie Brooks, SED
Gregg Worley, EPA
Jim Stormer, PBC
David Buff, P.E.
Brian Mitchell, NPS

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

CERTIFIED MAIL

In the Matter of a
Revision for Permit by:

DER File No. AC50-191876
PSD-FL-169
Palm Beach County

Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

_____/

INTENT TO ISSUE

The Department of Environmental Regulation gives notice of its intent to revise the above referenced permit (copy attached) for the proposed project as detailed in the request.

The applicant, Okeelanta Corporation, applied on September 25, 1992, to the Department of Environmental Regulation for a revision to the referenced permit for boiler No. 16 at the sugar mill located in Palm Beach County, 6 miles south of South Bay, Florida. The revision would allow boiler No. 16 to operate during the crop season while firing No. 2 fuel oil as a replacement to firing No. 6 fuel oil in any of the existing bagasse/No. 6 fuel oil fired boilers. This will result in an undetermined reduction in emissions of all criteria pollutants because burning the same quantity of No. 2 fuel oil in the new boiler No. 16 emits less air pollutants than the burning of No. 6 fuel oil in the other older boilers.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that a construction permit is required for the proposed work.

Pursuant to Section 403.815, Florida Statutes and Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Revision to Permit. The notice shall be published one time only within 30 days in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the revision to the permit.

The Department will issue the revision to the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of their receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a

waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this INTENT TO ISSUE PERMIT REVISION and all copies were mailed by certified mail before the close of business on 1-6-93 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

1-6-93
Date

Copies furnished to:
David Knowles, SD
Stephanie Brooks, SED
Gregg Worley, EPA
Jim Stormer, PBC
David Buff, P.E.
Brian Mitchell, NPS

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF INTENT TO ISSUE PERMIT REVISION

The Department of Environmental Regulation gives notice of its intent to revise permit No. **AC**50-191876/PSD-FL-169 for boiler No. 16 at Okeelanta Corporation's sugar mill located in Palm Beach County, 6 miles south of South Bay. The revision will allow No. 2 oil fired boiler No. 16 to operate as a replacement to the other existing bagasse/No. 6 fuel oil fired boilers at this plant during the crop season (prohibited by present permit). As the burning of the same quantity of No. 2 fuel oil in the new boiler No. 16 emits less air pollutants than the burning of No. 6 fuel oil in the older bagasse/No. 6 fuel oil fired boilers at this facility, the net air pollutant emissions will be reduced by an undetermined amount. The proposed revision does not alter the Best Available control Technology (BACT) determination that boiler No. 16 is subject to or any other restriction on the other air pollution sources at this facility. The Department is issuing this Intent to Issue Permit Revision to satisfy the federal enforceability requirements.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
South District
2295 Victoria Ave., Suite 364
Ft. Myers, Florida 33901

Department of Environmental Regulation
Southeast District
1900 S. Congress Ave., Suite A
West Palm Beach, Florida 33406

Palm Beach County Health Dept.
Division of Environmental Science
and Engineering
901 E. Evernia Street
West Palm Beach, Florida 33406

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

January 6, 1992 DRAFT

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Pablo A. Carreno
Director of Mill & Refinery Operation
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Re: Revision to Construction Permit No. AC50-191876
(PSD-FL-169)

The Department is in receipt of your request and supporting data to operate No. 2 fuel oil fired boiler No. 16 during the sugar cane crop season (November through February) in lieu of firing No. 6 fuel oil in the other boilers at the Okeelanta Corporation mill which is located in Palm Beach County, 6 miles south of South Bay. This request is acceptable, with conditions, and the referenced permit is amended:

FROM

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

DRAFT

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

TO:

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	TPY**	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

**** Emissions during the period from March 1 to October 31.**

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during the off-season months (March through October). **During the crop season (November through February), boiler No. 16 shall only operate at a heat input rate that will replace the No. 6 fuel oil burned in the mill's other existing bagasse/steam fired boilers. It shall not be operated as a replacement to a functional bagasse fired boiler when bagasse fuel is available. Total oil consumption (fuel oils No. 2 and No. 6) by all boilers at this facility (boilers Nos. 4, 5, 6, 10, 11, 12, 14, 15, and 16) shall not exceed 3.2×10^6 gallons during the crop season (November through February) and total maximum steam production shall not exceed 1,012,000 lbs/hr.**

DRAFT

A copy of this letter shall be attached to the referenced permit and shall become a part of that permit.

Sincerely,

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/plm

Attach: Okeelanta's September 25, 1992, letter
DER's October 15, 1992, letter
Okeelanta's November 13, 1992, letter

cc: David Knowles, SD
Stephanie Brooks, SED
Gregg Worley, EPA
Jim Stormer, PBC
David Buff, P.E.
Brian Mitchell, NPS

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

Interoffice Memorandum

TO: Howard Rhodes

FROM: Clair Fancy

DATE: February 17, 1993

SUBJ: Amendment of Permit
Okeelanta Corporation

Attached for your approval and signature is a letter that will amend the permit for Okeelanta Corporation's No. 2 fuel oil fired boiler No. 16 that is located at their sugar mill in Palm Beach County. The amendment will allow boiler No. 16 to be operated during the sugar cane crop season (prohibited by current permit) as a replacement to firing No. 6 fuel oil in an existing bagasse/No. 6 fuel oil fired boiler.

No comments were received in response to the January 13, 1993, public notice that the Department required for this amendment.

I recommend your approval and signature of the amendment.

CF/WH/plm

Attachment

1777

OK
GPL
2/5/93

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

February 18, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Pablo A. Carreno
Director of Mill & Refinery Operation
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Re: Revision to Construction Permit No. **AC**50-191876
(PSD-FL-169)

The Department is in receipt of your request and supporting data to operate No. 2 fuel oil fired boiler No. 16 during the sugar cane crop season (November through February) in lieu of firing No. 6 fuel oil in the other boilers at the Okeelanta Corporation mill which is located in Palm Beach County, 6 miles south of South Bay. This request is acceptable, with conditions, and the referenced permit is amended:

FROM

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

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PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

TO:

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY**	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

**** Emissions during the period from March 1 to October 31.**

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during the off-season months (March through October). **During the crop season (November through February), the heat input to boiler No. 16 is limited to the equivalent reduction in heat input from No. 6 fuel oil for the existing bagasse/No. 6 fuel oil fired boilers at this sugar mill. It shall not be operated as a replacement to a functional bagasse fired boiler when bagasse fuel is available. Total oil consumption (fuel oils No. 2 and No. 6) by all boilers at this facility (boilers Nos. 4, 5, 6, 10, 11, 12, 14, 15, and 16) shall not exceed 3.2 x 10^6 gallons during the crop season (November through February) and total maximum steam production shall not exceed 1,012,000 lbs/hr.**

A copy of this letter shall be attached to the referenced permit and shall become a part of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/plm

Attach: Okeelanta's September 25, 1992, letter
DER's October 15, 1992, letter
Okeelanta's November 13, 1992, letter
Okeelanta's January 25, 1993, letter

cc: David Knowles, SD
Stephanie Brooks, SED
Gregg Worley, EPA
Jim Stormer, PBC
David Buff, P.E.
Brian Mitchell, NPS

KBN

December 4, 1992

RECEIVED

DEC 0 8 1992

Division of Air
Resources Management

Mr. Willard Hanks
Bureau of Air Regulation
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Okeelanta Boiler No. 16
Permit No. AC50-191876

Dear Mr. Hanks:

This correspondence is in follow-up to my conversation with Mr. Greg Worley of EPA Region IV concerning the above referenced source. AS you know, Okeelanta has requested that it be allowed to operate Boiler No. 16 during the crop season, when other boilers at the sugar mill are also operating. As explained to you and EPA, Boiler No. 16 operation will only replace No. 6 fuel oil burning in one of the existing boilers. It will not replace bagasse burning, nor will it result in increased steam production either on a maximum hourly basis or an annual basis.

Operation of the boilers during the crop season is directly related to the amount of sugar cane processed at the mill, which in turn generates a proportionate amount of bagasse which is available for combustion in the boilers. Okeelanta will always burn as much as possible of the bagasse generated in the sugar mill, since it is a by-product material and a "free" fuel. Fuel oil, either No. 6 or No. 2, would never be used as a replacement for bagasse. It is only used when bagasse is not available to the boilers. Therefore, Okeelanta would only burn No. 2 oil in Boiler No. 16 as a replacement for No. 6 oil burned in one of the other boilers.

In speaking with Greg Worley, EPA's concern is over increased ambient air quality impacts if Boiler No. 16 is operated during the crop season, and all other boilers at the mill were operating simultaneously at their maximum operating rates. This theoretically could increase air quality impacts and PSD increment consumption (primarily for SO_2) over impacts based on what the facility is now permitted to emit. The following facts relate to this aspect and support the conclusion that no increase in impacts above present conditions will occur when operating Boiler No. 16 in the crop season:

* The total steam generating capacity of all boilers now permitted to operate during the crop season at Okeelanta, i.e., Boilers 4, 5, 6, 10, 11, 12, 14 and 15, is 1,012,000 lb/hr. This maximum hourly steam generating rate will not be exceeded in the future with Boiler No. 16 operating during the crop season.

* SO_2, particulate and emissions of most other pollutants due to No. 2 oil firing are much less than those due to No. 6 fuel oil firing. Mr. Carreno has addressed this aspect in his letter to you dated September 25, 1992. No. 2 oil results in 0.5 lb/MM Btu SO_2 whereas No. 6 oil results in 2.5 lb/MM Btu SO_2.

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

KBN

* Although the stack for Boiler No. 16 (75 ft) is slightly lower than the stacks for the other boilers (all at 90 ft), Boiler No. 16 has no wet scrubber for particulate control and therefore its exhaust gas temperature (435 °F) is much higher than the other boilers (150 °F). Thus the plume rise for Boiler No. 16 will be greater than for the other boilers, resulting in comparatively lower air impacts.

Mr. Worley indicated to me that if these circumstances existed, EPA's concerns would be addressed, and it would be up to DER to determine if any further would need to be addressed. Please consider these comments in your decision. Since I will be out of the office for the next several weeks, please contact Ken Kosky in my office if you have any further questions.

Sincerely,

David A. Buff

David A. Buff, M.E., P.E.
Principal Engineer

cc: P. Carreno
G. Worley
W. Hanks

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072 TELEX: 803444

November 13, 1992

11-20

Mr. C. H. Fancy, P.E.
Chief Bureau of Air Regulation
Florida Dept. of Environmental Regulations
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ref: Okeelanta Corporation, Boiler No. 16

Dear Mr. Fancy:

I am sorry for the delay in answering your letter of October the 15th 1992 about the matter of subject.

In conversation between myself and Mr. Willard Hank and our Mr. Gus Cepero and Mr. Gregg Worley in Atlanta it became apparent that my letter of September 25 was misinterpreted.

We are not to substitute bagasse for No. 2 fuel oil (Diesel) but to substitute No. 6 fuel oil presently used as a supplemental fuel in our bagasse burning boilers by No. 2 fuel oil that is more efficiently burned in Boiler No. 16.

By copy of this letter I am asking Mr. David Buff from KBN to arrange for a meeting with you and/or Mr. Gregg Worley to clarify this matter and explain all pertinent data.

Sincerely,

P.A. Carreño
Director of Mill &
Refinery Operations

PAC:slc

xc: Gregg Worley, EPA Atlanta
David Knowls, DER - Ft. Myers
Willard Hanks, DER - Tallahassee
David Buff, KBN

FILE:BNO16

RECEIVED
NOV 19 1992
Division of Air
Resources Management

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION) Clair Fancy	Initial	
	Date	
2. DEP - Tally	Initial	
	Date	
3. Air -	Initial	
	Date	
4. Wil Ward	Initial	
	Date	

REMARKS:

INFORMATION

- [ ] Review & Return
- [ ] Review & File
- [ ] Initial & Forward
- [ ]

DISPOSITION

- [ ] Review & Respond
- [ ] Prepare Response
- [ ] For My Signature
- [ ] For Your Signature
- [ ] Let's Discuss
- [ ] Set Up Meeting
- [ ] Investigate & Report
- [ ] Initial & Forward
- [ ] Distribute
- [ ] Concurrence
- [ ] For Processing
- [ ] Initial & Return

FROM: So. District

DATE 12-13-91

PHONE

Willard

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072 TELEX: 803444

RECEIVED
NOV 27 1991
Division of Air
Resources Management

November 25, 1991

Mr. Philip R. Edwards
Deputy Assistant Secretary
Florida Dept. of Environmental Regulation
South District
2269 Bay Street
Fort Myers, FL 33901-2896

Subject: Upgrading Boiler No. 6
Permit Number A050-175414

Dear Mr. Edwards:

This is to inform you of our intentions to up-grade the above mentioned boiler from 250 psig operating pressure and 550°F up to 350 psig and 650°F. This is to proceed with the energy saving program that we have in progress.

This modification is similar to the upgrading done to our boilers No. 4 (Permit No. A050-169210) and No. 5 (Permit No. A050-190690) in 1988.

In accordance, we are providing you with the heat balance calculations showing that in order to account for the higher heat content of the new conditions, the quantity of steam to be produced by boiler No. 6 has to be reduced from 125,000 lbs/hr to 120,000 lbs/hr. The cost of the changes to be made, $787,522 is much less than half the cost of $2,850,000 for a new equivalent boiler, not including the foundation as well as scrubber and any other air pollution equipment.

Although it has nothing to do with the steam upgrading of this boiler we want to let you know that we are taking this opportunity to replace the old and inefficient horse-shoe type furnaces for an inclined grate at a cost of $401,850.

12-2-91
PHONE CONVERSATION BETWEEN DAVID KNOWLES, S FL DIST, AND W. HANKS, BAR. AGREED THAT S FL DIST WOULD PROCESS REQUEST.

wmh

Back up papers are attached to this letter. Please let us know if you need additional information.

We have to start this modification by the end of this crop on March 15, 1991 in order to have it ready for the next crop.

Your prompt attention to this matter is appreciated.

Sincerely,

Pablo Carreño
Director of Mill &
Refinery Operations

PAC:slc

xc: Mr. Claire Fancy, DER - Tallahassee - W/attachments
Mr. David Knowls, DER - Ft. Myers - " "
Mr. Arthur Kirstein, III
Mr. Frank Fernandez
Mr. Roger King

FILE:derupboil6

ENERGY SAVINGS - UPGRADE OF BOILER #6

PERMIT # A050-175414

MAX CONTINUOUS RATING - 125,000 #/HR

	EXISTING	PROPOSED
Steam Pressure psig	250	350
Steam Temp deg F TT	550	650
Enthalpy BTU/#	1,290	1,337.5
Feedwater temp	260	260
Feedwater enthalpy	228.5	228.5
Heat to feedwater	1,061.5	1,109
Heat Input BTU/HR	125,000 x 1061.5	
	= 132.69 x 10^6	
Equiv steam rate		132.69 x 10^6/1109
		= 119,646 #/HR

MAXIMUM CONTINUOUS RATING REQUESTED - 120,000 #/HR

780 N.W. LaJeune Road, Suite 417 • Miami, FL 33126
Tel. (305) 442-2233 • Fax (305) 445-9125

TO: OKEELANTA CORP. DATE: 11-22-91

ATTN: PABLO CARRENO PAGE: 1/1

FROM: MIGUEL ANDUX FAX REF. NO.: 003163F

REF: REVAMP OF BOILER NO. 6 ALPHA 91106-A

MESSAGE:

As per your request, please find below the breakdown cost for the revamp of the pressure parts for Boiler No. 6 and installation cost for a new Alpha inclined grate system.

Revamping pressure parts	$787,522.00
New Alpha inclined grate	$401,850.00
	1,189,372.00

If you need further assistance please do not hesitate to contact us.

Sincerely,
ALPHA BOILERS, INC.

Miguel Andux
President

REQUISITIONER	DELIVER TO	APPROVED BY	APPROVED BY	APPROVED BY	REQUISITION DATE
R. KING	OKEELANTA CORP.				11/19/91

ACCOUNT NUMBER	EST. VALUE	DATE REQUIRED	SUGGESTED SUPPLIER	ADDRESS
3861	$1.300,000.	10/5/92	ALPHA BOILERS INC.	

REQUISITION NUMBER

OKEELANTA CORPORATION

SOUTH BAY, FLORIDA 33493

FM - 01167
PURCHASE ORDER NO.

This P.O. No. must appear on all invoices, packages and shipping papers.

FLA. STATE SALES TAX _____ YES _____ NO EXEMPTION NUMBER

INVOICE AND SHIP TO:

☐ OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY ON U.S. 27
P.O. BOX 86
SOUTH BAY, FLA. 33493 • TEL.: (407) 996-9072

ACKNOWLEDGMENTS AND INQUIRIES TO:

☐ AMERICA'S EXPORT CORP.
626 NORTH DIXIE HWY.
WEST PALM BEACH, FL. 33401
TEL.: (407) 659-6449

No substitution of any kind will be accepted if not previously authorized by us.

DATE	SHIP VIA	TERMS:	DELIVERY PROMISED	F.O.B.
				☐ DELIVERY POINT ☐ SHIPPING POINT

ITEM	STOCK NO.	ACCT. NO.	QUANTITY AND UNIT	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
				UPRATE OF BOILER #6		
				To provide materials, equipment, labor and		
				supervision to undertake the project as described		
				in the specifications attached (3 pages)		
				Reference:		
				ALPHA Proposal #91106-A, dated 9/13/91		
				ALPHA letter dated 10/4/91		
				Material & Equipment per original $879,826.00		
				Labor " " 298,781.00		
				Non return valve " " 13,583.00		
				8 extra clean out doors per 10/4 2,875.00		
				Steel support for grate per 10/4 13,000.00		
				3/16" casing instead of 10 gauge 9,347.00		
				TOTAL $1,217,412.00		
				Deduct for omission of feeders 28,040.00		
				TOTAL ORDER $1.189,372.00		
				NOTE: Type of feeders are to be decided during		
	F44-13A			the early part of crop 1991/92		

INSTRUCTIONS — Acknowledge receipt of this order at once. — Notify us at once with a definite or reliable projected shipping date. — When projected shipping dates are furnished it will be necessary that we be advised a definite date as soon as it can be determined. — Send original Bill of Lading or original signed Express Receipt and Shipping Memorandum/Packing list same date shipment is made. — Place our Order Number on all invoices, memoranda and packages. Send your INVOICE IN DUPLICATE, together with one copy of Shipping Memorandum/ Packing list to COMPTROLLER DEPARTMENT. — We will not be responsible for anything furnished without a written order. — No price increase will be accepted

OKEELANTA CORPORATION

By _____
AUTHORIZED SIGNATURE

ACKNOWLEDGED AND ACCEPTED

By _____
FOR SUPPLIER

UPRATE OF BOILER #6 TO 350psig/650 deg F FM-01167

1.0 Scope of Supply

1.1 To supply fabricated components to replace existing presssure parts of the above boiler.
1.2 To supply boiler trim and associated piping required to work with new pressure parts.
1.3 To supply/modify supports to suit new pressure parts.
1.4 To supply inclined, water cooled grate with steam assisted ash removal and front ash chamber.
1.5 To supply chutes to feed above grate system along with necessary supports, access platforms, stairs etc. NOTE - FEEDERS ARE SPECIFICALLY EXCLUDED AT THIS TIME.
1.6 To strip down existing walls, pressure parts, furnaces etc from above boiler and install new components, refractory and casing.
1.7 To pressure test and chemically clean all new pressure parts.
1.8 To supply/replace insulation and cladding as necessary.
1.9 To recommission uprated boiler.

2.0 Specifications

2.1 Boiler #6 is a Bigelow F-48 3-drum, 125,000#/hr unit with a design pressure of 300 psig and an operating pressure of 200 psig. Steam produced has 60 degF superheat. Heating surface is approximately 18,000 sq ft. It is equipped with five (5) Bigelow-Liptak moist fuel furnaces and an air heater of approximately 15,360 sq ft HS. The boiler currently burns bagasse and/or wood chips and/or #6 fuel oil and is supplied with feedwater at 260 deg F.
2.2 Above boiler shall be uprated to produce steam at 350 psig and 650 deg F with a design pressure of 450 psig. Heat input restrictions will limit MCR of boiler to approximately 119,700 #/hr.
2.3 All new components shall be designed, fabricated and installed in accordance with the applicable codes, latest revisions.
2.4 In order to undertake the above work it may be necessary for ALPHA BOILERS INC. ("Contractor") to temporarily remove sections of the boiler building and/or platforms as well as piping. **Any facilities disrupted must be restored to full working condition by the Contractor unless agreement to the contrary is obtained from Okeelanta Corporation ("Owner").**
2.5 Terminal points shall, in general, be valves for the various duties. Valves shall be located in positions to be agreed with Owner.
2.6 Furnace width shall be 24 ft and stoker width 20'-8".
2.7 Grate height to be lowered 12" from that shown on ALPHA proposal drawing to facilitate cleaning.
2.8 Existing windboxes and oil burners shall be modified/relocated and reused to suit the new arrangement.

2.0 continued

2.6 Contractor shall advise Owner whether any changes are required to the existing fans for the revised duty.
2.7 Casing shall be 3/16" steel plate in place of the 10 ga material originally proposed by Contractor.
2.8 Eight additional cleanout doors shall be provided in order that the ash chamber may be cleaned from the front and that the undergrate area may be accessible for cleaning.
2.9 The grate shall be provided with steel supports in place of the concrete originally specified by the Contractor.
2.10 The shut-off/non return valve offered by hte Contractor shall be included in this supply.

3.0 <u>To be provided by Owner</u>

3.1 All consumables for completion of the work exept as specified in section 5.5.
3.2 Utilities - note, no 230V power available.
3.3 Craneage and other assistance with, e.g. forklift truck. It is Owner's understanding that a crane shall be required for an aggregate total of 12 days. Any requirement for craneage over and above this time shall be for the account of Contractor at commercial rates.
3.4 Information to assist in execution of the work.
3.5 Steam, water and other piping to and from terminal points.

4.0 <u>To be provided by Contractor</u>

4.1 All cutting and welding equipment including torches, hoses, welding plants, leads, holders, etc.
4.2 Lifting tackle, tools etc as required to undertake the work.
4.3 Labor and supervision - welders shall be certified and proof of certification shall be presented before any welder is permitted to start work.
4.4 Material as specified in section 5.5.
4.5 Craneage over and above an aggregate total of 15 days.

5.0 <u>General</u>

5.1 Owner's authorised representative with whom Contractor shall liase during the course of the work shall be Mr Frank Fernandez, Mill Superintendent.
5.2 Prior to commencement of work Contractor shall provide Owner with proof of adequate workmen's compensation coverage for persons to be employed by Contractor during the course of this work.

5.0 continued

5.3 Contractor shall indemnify Owner from liability against damage caused by any incident(s) which may occur during the course of this work.
5.4 Owner reserves the right of approval of any employee of Contractor.
5.5 Any components damaged by Contractor shall be properly repaired or replaced by Contractor at no cost to Owner.
5.6 No vehicles shall be allowed to park in areas other than those designated for parking unless fitted with, e.g. fixed welding plant, required for use in undertaking the work specified.
5.7 For further general conditions please refer to Addendum "A".

6.0 Timing

6.1 All major components must be delivered before March 31st 1992.
6.2 The uprated boiler must be ready to be placed in service no later than October 5th 1992.

ALPHA BOILERS, INC.

2655 Le Jeune Road, Suite 800 · Coral Gables, Florida 33134 · USA
tel. 305-442-2223 · telex: 6811278 PBNC · fax: 305-445-9125

September 15, 1988

OKEELANTA CORPORATION
P.O. Box 86
South Bay, FL.
33493

Att: Pablo Carreno

Re: Proposal 88100-M

Dear Sir:

In accordance with your request, we are pleased to offer one complete new stoker fired boiler installation as follows.

ONE ALPHA STEAM GENERATING UNIT CONSISTING OF:

Item I - One ALPHA Boiler,110,000 lbs. per hour, 475 p.s.i.g. design pressure, 650 F total steam temperature.

Item II - One Burner Assembly.

Item III - One Detroit Rotograte Stoker and Sluice Assembly.

Item IV - One Setting and Insulation Assembly.

Item V - One Forced Draft Fan Assembly.

Item VI - One Induced Draft Fan Assembly.

Item VII - Dust Collector.

Item VIII - Ductwork and Stack.

Item IX - Piping and Wiring.

Item X - One Set of Instruments and Controls and Motor Control Center.

Item XI - Erection.

Dismantling of existing equipment and foundation as well as scrubber and air pollution equipment not included.

The price of this equipment F.O.B. Okeelanta Factory will be .....$ 2,375,000.00

Shipment could be started eight months after your approval of our engineering drawings and completed 12 months thereafter.

We thank you for the opportunity of quoting.

Very truly yours,
ALPHA BOILERS, INC.

Miguel Andux
Exec. Vice-President

MA/mo

1988
$ 2,375,000

Escalation
5%/yr
1.20

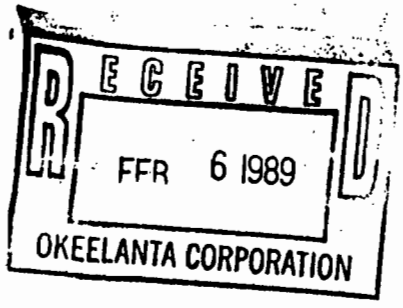
1991
$ 2,850,000

Florida Department of Environmental Regulation

South District • 2269 Bay Street • Fort Myers, Florida 33901-2896 • 813-332-2667

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary
Philip Edwards, Deputy Assistant Secretary

February 3, 1989



Mr. P. A. Carreno
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Re: Palm Beach County - AP
Okeelanta Corporation
Boilers 4 and 5
AO50-92636 and AO50-115245

Dear Mr. Carreno:

We have received your letter of January 4, 1989 requesting amendments to the permits for boilers 4 and 5 and the letter from Clair Fancy dated November 18, 1988, with his analysis of the proposed changes.

You are hereby authorized to change tubes, headers, drums, etc. as required to increase steam pressure and temperature to 350 PSIG and 650° F, in boilers 4 and 5. The design steam capacity of boiler No. 4 is changed to 90,000 lbs/hr and the design steam capacity of boiler No. 5 is changed to 116,800 lbs/hr.

All other permit conditions remain unchanged.

Sincerely,

Philip R. Edwards
Deputy Assistant Secretary

PRE/DMK/jsw

cc: Clair Fancy
A. J. Satyal

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

November 18, 1988

Mr. P. A. Carreno
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Re: Increase Steam Pressure and Temperature for Boilers Numbers 4 and 5

We have reviewed your correspondence showing the affect the increase in steam pressure and temperature for boilers Nos. 4 and 5 will have on the emissions from the sugar mill. It is our conclusion that the actual emissions are a direct function of the heat input to the boilers. Therefore, the construction and operation permits for these two boilers can be amended to authorize the production of steam with a higher temperature and pressure provided the heat input to each boiler does not exceed the quantity allowed by the latest construction permit for each boiler. It will be necessary to reduce the allowable steam production rate of these boilers to account for the higher heat content of the steam. If you wish to proceed with this amendment, please provide Mr. David Knowles at the Department's South Florida District office with heat balance calculations that show the quantity of higher heat content steam that can be produced by boilers Nos. 4 and 5 at their current allowable heat input. You will be limited to this new rate by permit condition.

If you have any questions on this matter, please call Willard Hanks at (904)488-1344 or write to me at the above address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/WH/s

cc: D. Knowles, SF District

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

August 25, 1988

Mr. P. A. Carreno
Director Mill & Refinery Operation
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

We have reviewed your request to increase the steam pressure and temperature of the boilers at your sugar mill. To operate at the new steam conditions will require your existing permits be amended or new permits to construct be obtained. More information will be needed to determine how to handle the proposed change in steam conditions.

If the change can be made to each boiler for less than half the cost of a new equivalent boiler, all current permit restrictions (other than steam temperature and pressure) will continue to be complied with, and there will be no increase in heat input and actual emissions of any regulated and unregulated pollutant, then the existing permit for the boiler can be amended to authorize operation at the new steam conditions. The Department will require cost data for the change along with a heat and material balance that shows the actual emissions do not increase for any pollutant. The amendment of the permit may establish new allowable emission standards for the boiler equal to the actual emissions from them and require pre and post construction tests to confirm the actual emissions are not increased.

If the cost of tubes, headers, and drum exceed 50 percent of the cost of a new equivalent boiler or the emissions of any pollutant from the boiler increases, the change will require a new permit to construct. The regulations that the boiler modification would be subject to are determined by the magnitude of the increase in emissions.

Also, any federal permit issued by EPA for these boilers would have to be amended prior to operating at the new steam conditions. Their policy for amending permits and requiring new permits to construct are similar to the guidelines described in this letter.

I you have any questions on this matter, please call Willard Hanks at (904)488-1344 or write to me at the Department's Tallahassee address.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/plm

cc: David Knowles, SF Dist.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

4APT-AEB

AUG 13 1991

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

RE: Okeelanta Corporation (PSD-FL-169)

Dear Mr. Fancy:

This is to acknowledge receipt of your final determination and permit for the above referenced facility's proposed modification by your letter dated July 30, 1991. The modification consists of adding a steam boiler (No. 16) to be operated only during the off-season which will be fired with No. 2 fuel oil. Your determination proposes to limit SO_2 emissions through limiting the sulfur content of the fuel and to limit NO_x emissions through requiring flue gas recirculation along with low-NO_x burners.

We have reviewed the package as submitted and have no adverse comments. Thank you for the opportunity to review and comment on the package. If you have any questions or comments, please contact Mr. Gregg Worley of my staff at (404) 347-5014.

Sincerely yours,

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: W. Hanks
C. Holladay
R. Lewis
D. Knowles
Q. Stamer, PBCHD
D. Buff, KBN
CHF/BA

RECEIVED
AUG 15 1991
Division of Air
Resources Management

KBN

July 9, 1991

RECEIVED

JUL 10 1991

Division of Air
Resources Management

Mr. Willard Hanks
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL

Re: Okeelanta Corp. Draft Permit- Boiler 16
PSD-FL-169

Dear Willard:

Please find below my comments concerning the National Park Service's comments dated July 1, 1991, on the draft permit for Okeelanta.

1. BACT for SO_2

While it is true that for some recently permitted gas turbines in Florida BACT has been established as 0.20% sulfur oil (maximum), the Okeelanta boiler should be evaluated on its own merits and site-specific considerations. DER has limited some facilities to very low sulfur oil based on significant operating time on oil and resulting significant SO_2 emissions.

Okeelanta will be limited to 0.3% sulfur on an annual basis, and since the boiler will operate no more than 4,200 hr/yr, maximum SO_2 emissions will only be 133 tons per year. This is a very small SO_2 source compared to power plants such as the City of Lakeland, and therefore a lower sulfur oil is not warranted as BACT.

2. Modeling Analysis

NPS's main comment is that an AQRV analysis and cumulative air modeling analysis of all sources in the area were not performed for the Everglades National Park (ENP). Although it is agreed there may be a necessity to perform a total ambient impact assessment on the ENP, a small project such as Okeelanta's does not warrant such an effort. As presented in the permit application, Okeelanta's maximum annual average impact upon the ENP Class I area is 0.03 $\mu g/m^3$. This is indeed a very small impact, reflecting the very low SO_2 emissions of 133 TPY.

Please call if you have any questions concerning these comments.

Sincerely,

David A. Buff

David A. Buff, M.E., P.E.
Principal Engineer

cc: Mr. Carreno
Mr. Cunningham

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

File Copy

United States Department of the Interior

NATIONAL PARK SERVICE
SOUTHEAST REGIONAL OFFICE
75 Spring Street, S.W.
Atlanta, Georgia 30303

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

N3615 (SER-ODN)

RECEIVED
JUL 03 1991
JUL 12 1991
Division of Air
Resources Management

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

Dear Mr. Fancy:

We have reviewed your Technical Evaluation and Preliminary Determination Document regarding Okeelanta Corporation's proposal to construct an oil-fired steam boiler at their South Bay sugar mill. The Okeelanta facility is located approximately 91 km north of Everglades National Park (EVER), a class I air quality area administered by the National Park Service. Our comments on the best available control technology (BACT), air quality, and air quality related values (AQRVs) analyses with respect to the proposed project's potential impacts on EVER are discussed below. We ask that you consider these comments before making a final determination regarding the proposed project.

With respect to your BACT analysis, we do not agree that the proposed 0.5 percent maximum sulfur content oil is consistent with what has been established as BACT for other oil-fired units. The Florida Department of Environmental Regulation (FDER) recently determined that BACT for a combustion turbine proposed by the City of Lakeland is burning a fuel oil with a maximum sulfur content of 0.20 percent. Also, we have reviewed other projects that were permitted to burn No. 2 fuel oil with a maximum sulfur content of 0.20 percent. Therefore, we recommend that the FDER lower the maximum sulfur content for the Okeelanta boiler from 0.5 percent to 0.2 percent. By lowering the maximum sulfur content of the oil to 0.2 percent, potential impacts on EVER would be minimized.

Regarding the air quality modeling analysis, Okeelanta modeled its impacts, combined with other PSD increment-consuming sources within 100 km of EVER. You may recall that in our recent comments on Florida Power and Light's (FPL) Martin facility, we expressed concern about limiting the class I increment analysis to sources within 100 km. In response to our comments, in your May 31, 1991, final determination regarding the FPL project, you state that a long range transport class I analysis will be

required for Phase II of the Martin facility. The FPL analysis will provide a more complete assessment of the class I sulfur dioxide (SO_2) and nitrogen dioxide (NO_x) increment consumed at EVER. Considering the relatively small amount of SO_2 and NO_x emissions from the Okeelanta boiler compared to the FPL emissions, and the fact that FPL has several other facilities in South Florida, we believe it is reasonable for you to require FPL to perform the cumulative modeling analysis. The incremental impacts, when added to the impacts from all other background sources, should then be used to evaluate the effects on the sensitive air quality related values in EVER.

Regarding potential impacts on AQRVs at EVER, the FDER concludes that since the proposed project would not cause any exceedances of the secondary National Ambient Air Quality Standards (NAAQS), which were designed to protect vegetation from the adverse impacts of air pollutants, there would not be any effect on vegetation. We wish to again clarify that there are documented effects below the NAAQS, and that compliance with the NAAQS does not ensure that there will be no negative impacts. There may be instances, and ongoing studies are confirming this, where adverse effects to AQRVs can occur at levels below the NAAQS.

It is important to note that AQRVs are affected not only by the incremental impacts of a proposed source, but by the total pollutant concentrations that they will experience. Therefore, to perform a proper AQRV analysis, permit applicants should perform a cumulative air quality modeling analysis of all sources in the area, which incorporates any measured ambient levels. Okeelanta prepared no such analysis.

We appreciate the opportunity to comment on the Okeelanta application. If you have any questions regarding this matter, please call John Notar of our Air Quality Division in Denver at (303) 969-2071.

Sincerely,

C. W. Ogle

FOR Robert M. Baker
Regional Director
Southeast Region

FAX rcd 7-1-91 and distributed RAM

FAX TELECOMMUNICATION
FROM THE SOUTHEAST REGIONAL OFFICE
Office of the Regional Chief Scientist

National Park Service
75 Spring Street SW
Atlanta, GA 30303

DESTINATION (phone #) 904 922 6979

TO: MR. C. H. FANCY

ORGANIZATION: Bureau of Air Quality Mgmt. FL Dept of Env Regulation

FROM: Robert M. Baker

ORGANIZATION: National Park Service

SUBJECT: Okeelanta Permit

NUMBER OF PAGES TO FOLLOW: 2

REMARKS OR INSTRUCTIONS: Original mailed 7/1/91

FAX Phone: 404/331-4943
FTS 841-4943

For assistance with the FAX
Call 404/331-4916

FAX operator, complete the following before returning form to originator:

Date & time transmitted: 3:45 PM 7-1-91

Transmitted by: Julie Thomas

United States Department of the Interior
NATIONAL PARK SERVICE
SOUTHEAST REGIONAL OFFICE
75 Spring Street, S.W.
Atlanta, Georgia 30303

IN REPLY REFER TO:

N3615 (SER-ODN)

JUL 10 1991

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

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required for Phase II of the Martin facility. The FPL analysis will provide a more complete assessment of the class I sulfur dioxide (SO_2) and nitrogen dioxide (NO_x) increment consumed at EVER. Considering the relatively small amount of SO_2 and NO_x emissions from the Okeelanta boiler compared to the FPL emissions, and the fact that FPL has several other facilities in South Florida, we believe it is reasonable for you to require FPL to perform the cumulative modeling analysis. The incremental impacts, when added to the impacts from all other background sources, should then be used to evaluate the effects on the sensitive air quality related values in EVER.

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Sincerely,

C. W. Ogle

FOR Robert M. Baker
Regional Director
Southeast Region

cc:
BA/CHF
Preston Lewis
Willard Hanks
Steve Holladay
David Knowles, SF Dist.

7-1-91 RA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

4APT-AEB

JUN 17 1991

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

RE: Okeelanta Corporation (PSD-FL-169)

Dear Mr. Fancy:

This is to acknowledge receipt of your preliminary determination and draft permit for the above referenced facility's proposed modification by your letter dated May 17, 1991. The modification consists of adding a steam boiler (No. 16) to be operated only during the off-season which will be fired with No. 2 fuel oil. Your determination proposes to limit SO_2 emissions through limiting the sulfur content of the fuel and to limit NO_x emissions through requiring flue gas recirculation along with low-NO_x burners.

We have reviewed the package as submitted and have no adverse comments. Thank you for the opportunity to review and comment on the package. If you have any questions or comments, please contact Mr. Gregg Worley of my staff at (404) 347-5014.

Sincerely yours,

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

cc: A. Hanks
C. Holladay
P. Lewis
Q. Stumner PBCHU
D. Knowles SFDist
D. Duff, AE.

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

PBCPHU-ESE
Air Pollution Conrtol Section

June 5, 1991

Barry Andrews
Bureau of Air Regulation
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32301-8241

Re: Okeelanta Corporation (PSD-FL-169) Boiler No. 16

Dear Mr. Fancy:

The Palm Beach County Public Health Unit received the above referenced application on May 21, 1991, and offers the following comments:

We would appreciate the inclusion of a specific condition stating that notification and reporting requirements of this permit shall also be sent to the Palm Beach County Public Health Unit.

Specific condition #6 requires annual stack testing conducted while the boiler is operating at least within 90% of the permitted capacity. If a stack test is not conducted within at least 90% of capacity (average production rate during test period), does this automatically void the stack test? No other comments.

Sincerely,

For the Division Director
Environmental Science and Engineering

Jeffery F. Koerner
Engineer II, PBCPHU

FJG/JES/JFK/lh
cc: H. Hanks

File Copy

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

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DOUGLAS S. ROBERTS
[illegible] C. SMITH

OF COUNSEL
W. ROBERT FOKES

June 7, 1991

BY HAND DELIVERY

Patty Adams
Florida Department of Environmental
Regulation
2600 Blair Stone Road, Room 338
Tallahassee, Florida 32399-2400

Re: Okeelanta Corporation
New Package Boiler

Dear Patty:

Enclosed please find the affidavit of proof of publication from The Palm Beach Post acknowledging publication of DER's Notice of Intent to Issue in the May 31st issue of that newspaper.

Sincerely,

Peter C. Cunningham

/gbb

Enclosure

cc'd:
Willard Hanks
Clem Holladay
Barry Andrews
Jewell Harper, EPA
Chris Shaver, NPS

} 6-11-91 pm

THE PALM BEACH POST

Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA

COUNTY OF PALM BEACH

Before the undersigned authority personally appeared Chris Bull who on oath says that she/he is Class. SAles Mgr. of The Palm Beach Post, a daily and Sunday newspaper published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising, being a Notice in the matter of intent to issue in the --- Court, was published in said newspaper in the issues of May 31, 1991

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

[signature]

Sworn to and subscribed before me this 31 day of May A.D. 19 91

[signature]

[illegible] STATE OF FLORIDA
[illegible] 1992
[illegible]

NO. 376421
State of Florida
Department of
Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue an air pollution construction permit to Okeelenta Corporation, P. O. Box 86, South Bay, Florida 33493. The permit will authorize the construction of a new 205 MMBtu/hr No. 2 oil fired steam boiler (No. 16) at their existing sugar mill that is located off from U.S. Highway 27, 6 miles south of South Bay in Palm Beach County, Florida. Boiler No. 16 will emit: 105.5 lbs/hr (221.6 TPY) sulfur dioxide; 11.0 lbs/hr (23.1 TPY) particulate; 36.9 lbs/hr (77.5 TPY) nitrogen oxides; 41.0 lbs/hr (66.1 TYP) carbon monoxide; and 18.5 lbs/hr (36.7 TPY) volatile organic compounds. The boiler is subject to the Prevention of Significant Deterioration (PSD) regulations for nitrogen oxides and sulfur dioxide. Best Available Control Technology (BACT) determinations wer required for particulates, sulfur dioxide and nitrogen oxides. For sulfur dioxide, the maximum predicted concentrations due to this new source and other increment-consuming sources are below the PSD Class I and II increments. The maximum Everglades National Park Class I increment consumption is 17.3 vs 25.0 ug/m3 allowable 3-hr average (68% of the Class I increment), .6 vs 5.0 ug/m3 allowable 24-hr average (78% of increment), and 0.4 vs 2 allowable annual average (20% of increment). The maximum PSD Class II increment consumption is 91 vs 512 ug/m3 allowable 3-hr average (18% of the Class II increment), 19 vs 91 ug/m3 allowable 24-hr average (21% of increment), and 1.6 vs 20 ug/m3 allowable annual average (9% of increment). The maximum predicted annual ambient air quality impact for nitrogen oxides (0.33 ug/m3) is below the significant impact level. These impacts will not cause a violation of the ambient air quality standards. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statment of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to be a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Regulation offices located at:

2600 Blair Stone Road, Tallahassee, FL 32399-2400
2289 Bay Street, Fort Myers, FL 33901-2896
1900 S. Congress Avenue, Suite A, West Palm Beach, FL 33406

and Palm Beach County environmental office located at:

901 E. Evernia Street, West Palm Beach, FL 33402

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination. Furthermore, a public hearing can be requested by any person. Such request must be submitted within 30 days of this notice.

PUB: Palm Beach Post
May 31, 1991

KBN

RECEIVED

JUN 0 6 1991

Division of Air
Resources Management

June 5, 1991

Mr. Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Okeelanta Corporation
Oil-Fired Boiler
AC50-191876
PSD-FL-169

Dear Mr. Fancy:

On behalf of Okeelanta Corporation, I have reviewed the Technical Evaluation and Preliminary Determination for the above referenced construction permit and offer the following comments:

1. In Specific Condition 5 of the draft permit, the maximum allowable air emission rates are presented. In the case of NO_x, it is requested that the limit of 0.18 lb/MM Btu be based upon a 30-day rolling average, which is consistent with the New Source Performance Standards, 40 CFR 60, Subpart Db. Since a continuous NO_x monitor will be used for compliance, a 30-day rolling average can be readily determined.

2. In Specific Condition 10, it is stated that the boiler shall only operate during the off-season months (April through October). This should be corrected to "(March through October)". The permit application and modeling analysis addressed the situation that the boiler may start up as early as March 1, depending on the length of the crop season.

3. In Specific Condition 11, the word "at" should be inserted before the words "380 psig".

Thank you for consideration of these comments.

Sincerely,

David A. Buff

David A. Buff, M.E., P.E.
Principal Engineer

cc: Pablo Carreno
Peter Cunningham
T. Hanks
P. Ellis
C. Holladay
E. Andrews

90121A1/8

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

KBN

90121

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street
Gainesville, Florida 32605

Mr. Clair H. Fancy, P.E.
Florida Depart. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:	4. Article Number
Mr. Pablo A. Carreno Director of Mill & Refinery Ops. Okeelanta Corporation P. O. Box 86 South Bay, FL 33493	P 407 852 693
	Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Addressee X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X Calvin Bristoe	
7. Date of Delivery 5-20-91	

PS Form **3811**, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

P 407 852 693

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. Pablo A. Cerreno Okeelanta Corp	
Street and No. P. O. Box 86	
P.O., State and ZIP Code South Bay, FL 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 5-17-91 Permit: AC 50-191876	

PS Form 3800, June 1985 U.S.G.P.O. 1989-234-555

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

May 17, 1991

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Pablo A. Carreno
Director of Mill and Refinery Operations
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit to construct an oil fired steam boiler (No. 16) at your sugar mill located on U.S. Highway 27, 6 miles south of South Bay, Palm Beach County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,

Barry D. Andrews

for C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/WH/plm

Attachments

c: David Knowles, South Dist.
Isidore Goldman SE Dist.
Jim Stormer, Palm Beach Co.
David Buff, P.E.
Jewell Harper, EPA
C. Shaver, NPS

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

DER File No. AC 50-191876
PSD-FL-169

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue an air construction permit (copy attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Okeelanta Corporation, applied on January 29, 1991, to the Department of Environmental Regulation for a permit to construct a new 205 MMBtu/hr No. 2 oil fired steam boiler (No. 16) at their existing sugar mill located off of U.S. Highway 27, 6 miles south of South Bay in Palm Beach County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department, at the address specified within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

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(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

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constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Barry D. Andrews
for C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copies furnished to:

David Knowles, South Dist.
Isidore Goldman SE Dist.
Jim Stormer, Palm Beach Co.
David Buff, P.E.
Jewell Harper, EPA
C. Shaver, NPS

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 5-17-91.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statuts, with the designated Department Clerk, receipt of which is hereby acknowledged.

Kim Dober 5-17-91
Clerk Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue an air pollution construction permit to Okeelanta Corporation, P. O. Box 86, South Bay, Florida 33493. The permit will authorize the construction of a new 205 MMBtu/hr No. 2 oil fired steam boiler (No. 16) at their existing sugar mill that is located off from U.S. Highway 27, 6 miles south of South Bay in Palm Beach County, Florida. Boiler No. 16 will emit: 105.5 lbs/hr (221.6 TPY) sulfur dioxide; 11.0 lbs/hr (23.1 TPY) particulate; 36.9 lbs/hr (77.5 TPY) nitrogen oxides; 41.0 lbs/hr (86.1 TPY) carbon monoxide; and 18.5 lbs/hr (38.7 TPY) volatile organic compounds. The boiler is subject to the Prevention of Significant Deterioration (PSD) regulations for nitrogen oxides and sulfur dioxide. Best Available Control Technology (BACT) determinations were required for particulates, sulfur dioxide and nitrogen oxides. For sulfur dioxide, the maximum predicted concentrations due to this new source and other increment-consuming sources are below the PSD Class I and II increments. The maximum Everglades National Park Class I increment consumption is 17.3 vs 25.0 ug/m^3 allowable 3-hr average (68% of the Class I increment), 3.8 vs 5.0 ug/m^3 allowable 24-hr average (76% of increment), and 0.4 vs 2 allowable annual average (20% of increment). The maximum PSD Class II increment consumption is 91 vs 512 ug/m^3 allowable 3-hr average (18% of the Class II increment), 19 vs 91 ug/m^3 allowable 24-hr average (21% of increment), and 1.8 vs 20 ug/m^3 allowable annual average (9% of increment). The maximum predicted annual ambient air quality impact for nitrogen oxides (0.33 ug/m^3) is below the significant impact level. These impacts will not cause a violation of the ambient air quality standards. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

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(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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The application is available for public inspection during business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Regulation offices located at:

2600 Blair Stone Road, Tallahassee, FL 32399-2400
2269 Bay Street, Fort Myers, FL 33901-2896
1900 S. Congress Avenue, Suite A, West Palm Beach, FL 33406

and Palm Beach County environmental office located at:

901 E. Everia Street, West Palm Beach, FL 33402

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination. Furthermore, a public hearing can be requested by any person. Such request must be submitted within 30 days of this notice.

Technical Evaluation
and
Preliminary Determination

Okeelanta Corporation
Palm Beach County
South Bay, Florida

Boiler No. 16

File No. AC 50-191876
PSD-FL-169

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

May 17, 1991

I. General Information

A. Applicant

Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

B. Request

On January 29, 1991, Okeelanta Corporation submitted an application for permit to construct a 205 MMBtu/hr No. 2 oil fired steam boiler (No. 16) at their existing sugar mill (SIC 2061) that is located off of U.S. Highway 27, 6 miles south of South Bay in Palm Beach County, Florida. The UTM coordinates of this plant are Zone 17, 524.9 km E and 2940.1 km N. The application was considered complete on February 21, 1991.

C. Project

The applicant is proposing to construct a 150,000 lbs/hr steam boiler (No. 16) to supply heat for refining sugar during a 175 day per year period between April and October. Because of the seasonal operation of the sugar business, the sugar mills will not be processing sugar cane during this period. During the other part of the year when the sugar cane is being processed, boiler No. 16 will not be in operation.

D. Air Pollution Control

Air pollution from boiler No. 16 will be controlled by limiting it to clean fuel (No. 2 oil with a maximum of 0.5% sulfur, and an off-season average sulfur content of 0.3%), by boiler design (low NOx burners and flue gas recirculation), and by restricting it to a maximum of 175 days per year operation.

The maximum emissions from boiler No. 16 are shown in the following table:

	Emissions	
Pollutant	lbs/hr	TPY*
Sulfur Dioxide	105.5	132.9
Particulate	11.0	23.1
Nitrogen Oxides	36.9	77.5
Carbon Monoxide	41.0	86.1
Volatile Organic Compounds	18.45	38.7

*Based on 4,200 hrs/yr operation

II. Rule Applicability

The proposed project, construction of an oil fired steam boiler (No. 16), is subject to preconstruction review under the provisions of Chapter 403, FS, and F.A.C. Chapter 17-2.

The plant is in an area designated nonattainment for ozone (F.A.C. Rule 17-2.410) and attainment for the other criteria pollutants (F.A.C. Rule 17-2.420).

The facility (SIC 2061) is a major source of particulate matter, sulfur dioxide, nitrogen oxides, and carbon monoxide because the permitted emissions of each of these pollutants exceeds 100 TPY (F.A.C. Rule 17-2.100). The new installation is subject to the Prevention of Significant Deterioration (PSD) regulations (F.A.C. Rule 17-2.500) because the increases in emissions of sulfur dioxide and nitrogen oxides from the proposed boiler exceed the Significant Emission Rates listed in Table 500-2 of F.A.C. Rule 17-2.500(2)(d)2. Therefore, the project is subject to the Preconstruction Review Requirements of F.A.C. Rule 17-2.500(5). The allowable emissions of sulfur dioxide and nitrogen oxides are established by a Best Available Control Technology (BACT) determination (F.A.C. Rule 17-2.500(5)(c)). In addition, BACT is required for particulates (F.A.C. Rule 17-2.600(6)). The proposed boiler is also subject to the federal regulation, 40 CFR 60, Subpart Db, Standards of Performance for Industrial-Commercial--Institutional Steam Generating Units.

III. Technical Evaluation

The allowable emissions of sulfur dioxide and nitrogen oxides are established by a BACT determination. The applicant proposed and the Department accepted the use of No. 2 distillate fuel with a maximum of 0.5% sulfur as BACT for sulfur dioxide, provided that the off-season average does not exceed 0.3%. The sulfur dioxide emissions at maximum fuel consumption for boiler No. 16, 1,463 gallons per hour for a heat input of 205 MMBtu/hr, are estimated to be 105.5 lbs/hr (132.9 TPY) for 175 days/year operation. These emissions will not violate any ambient air quality increment or standard on public accessible property.

The applicant proposed and the Department accepted the use of boiler design, low NOx burners, and flue gas recirculation as BACT for the control of nitrogen oxides. This equipment will reduce nitrogen oxides emissions to a maximum of 36.9 lbs/hr and 77.5 TPY.

The emissions of particulate (PM and PM_{10}), carbon monoxide, and volatile organic compounds requested are based on boiler design information. As a small increase in emissions of any of these pollutants would trigger PSD (NSR for VOC), the design emissions of these pollutants will be accepted as the emission standards for boiler No. 16.

The proposed emission limits are summarized in Table 2-2 of the application. These limits comply with the new source performance standards for industrial boilers. The federal

regulations also limit visible emissions to 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

IV. Air Quality Report

A. Introduction

The operation of the new steam boiler will result in emissions increases which are projected to be greater than the PSD significant emission rates for the following pollutants: NOx and SO_2. Therefore, the project is subject to the PSD review requirements contained in F.A.C. Rule 17-2.500 for these pollutants. Part of these requirements is an air quality impact analysis for these pollutants, which includes:

- An analysis of existing air quality;
- A PSD increment analysis (for SO_2 and NOx);
- An ambient Air Quality Standards analysis (AAQS);
- An analysis of impacts on soils, vegetation, visibility and growth-related air quality impacts; and
- A Good Engineering Practice (GEP) stack height determination.

The analysis of existing air quality generally relies on preconstruction monitoring data collected in accordance with EPA-approved methods. The PSD increment and AAQS analyses are based on air quality dispersion modeling completed in accordance with EPA guidelines.

Based on these required analyses, the Department has reasonable assurance that the projected emissions increases, as described in this report and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any PSD increment or ambient air quality standard. A brief description of the modeling methods used and results of the required analyses follow. A more complete description is contained in the permit application on file.

B. Analysis of the Existing Air Quality

Preconstruction ambient air quality monitoring may be required for pollutants subject to PSD review. However, an exemption to the monitoring requirement can be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined through air quality modeling, is less than a pollutant-specific de minimus concentration. The predicted maximum concentration increase for each pollutant subject to PSD review is given below:

	SO_2	NOx
PSD de minimus Concentration (ug/m^3)	13	14
Averaging Time	24-hr	Annual
Maximum Predicted Impact (ug/m^3)	18	0.33

As shown above, the predicted impact for NOx is less than the corresponding de minimus concentration; therefore, no preconstruction monitoring is required for NOx. However, since the predicted SO_2 impact is greater than the de minimus concentration, a preconstruction ambient monitoring analysis is required for SO_2. The Florida Sugar Cane League (FSCL) has operated an ambient monitoring network in the sugar cane growing area for several years. The network contains one continuous ambient SO_2 monitor, located at the Florida Celery Exchange in Belle Glade about 15 km northeast of the Okeelanta Mill. According to PSD guidelines, a "regional" monitoring site may be used if the proposed source will be located in an area that is generally free from the impact of other points and area sources associated with human activities. The regional site must be located in an area of similar terrain and represent the air quality across a broad region. The SO_2 monitoring site in Belle Glade meets this criteria, since, during the time the proposed boiler will operate (i.e., off-season), there are very few stationary air pollution sources in the sugar cane area that are operating. The FSCL SO_2 monitor has had full PSD approval for several years and meets all PSD requirements including quality assurance requirements. Values of 64 ug/m^3, 3-hr average; 19 ug/m^3, 24-hr average; and 9 ug/m^3, annual average; were based on data collected bwtween April 1988 and June 1990.

C. Modeling Method

The EPA-approved Industrial Source Complex Short-Term (ISCST) dispersion model was used by the applicant to predict the impact of the proposed project on the surrounding ambient air. All recommended EPA default options were used. Direction-specific downwash parameters were used because the stacks were less than the good engineering practice (GEP) stack height. Five years of sequential hourly surface and mixing depth data from the West Palm Beach, Florida National Weather Service (NWS) station collected during 1982 through 1986 were used in the model. Since five years of data were used, the highest-second-high (HSH) short-term predicted concentrations are compared with the appropriate ambient air quality standards or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards.

D. Modeling Results

The applicant first evaluated the potential increase in ambient ground-level concentrations associated with the project to determine if these predicted ambient concentration increases would be greater than specified PSD significant impact levels for SO_2 and NOx. For this analysis, dispersion modeling was performed using both polar grid and discrete receptors. Since the boiler will operate in the off-season, the ISCST model was executed for 245 days each year (March 1 - October 31) to determine maximum impacts. The discrete receptor grid consisted of 36 property boundary receptors representing the minimum boundary distance from the proposed boiler within every 10-degree direction interval from 0 to 360°. Additional discrete receptors were located off of plant property at distances of 5.0 km, 7.0 km, and 9.0 km to fill in gaps between plant property boundaries and the full polar receptor grid ring distances of 11.0 and 14.0 km from the proposed boiler. The results of this modeling presented below show that the increases in ambient ground-level concentrations for all averaging times are greater than the PSD significant impact levels for SO_2, thus requiring the applicant to do a full impact analysis for SO_2 to demonstrate compliance with AAQS and PSD increments. The increase for NOx is less than the PSD significant impact level, thus no further dispersion modeling for comparison with AAQS and PSD increment consumption is required for NOx.

Pollutant	Averaging Time	PSD Significance Level (ug/m3)	Ambient Concentration Increase (ug/m3)
SO_2	Annual	1.0	1.1
	3-hour	25.0	65
	24-hour	5.0	13.9
NOx	Annual	1.0	0.33

The significant impact area (SIA) for SO_2 extends out 14 km from the mill; therefore, all sources within 50 km of the SIA were evaluated by the applicant for use in the PSD Class II and AAQS analyses. The PSD Class I emission inventory included only those sources with 100 km of the Everglades Class I area. Concurrent operation of the proposed off-season boiler with other sugar mills can occur only during the one month period from March 1 to March 31. Concurrent operation with non sugar mill sources located within 50 km of Okeelanta can occur any time the proposed boiler is operating (i.e., between March 1 and October 31). Because of this difference in operation, source interaction is based on the time of year. Therefore, two sets of analyses were done for comparison with the AAQS and PSD increments. One set was based on modeling only during the period March 1 to March 31 while the other set was based on the period April 1 to October 31. Screening analyses were performed for predicting maximum SO_2 concentrations for comparison to the PSD Class I and Class II increments and the AAQS using the same receptor grid described above. Refined AAQS and PSD increment

analyses were based on modeling the years during which the overall HSH 3-hr, HSH 24-hr, and highest annual concentrations were predicted in the screening analysis. The refined grid was centered on the receptor with the HSH short-term concentrations or the highest annual concentration determined from the screening analyses. The composite results of these refined analyses are presented in the following tables:

SO_2 AAQS Analysis (all values in ug/m^3)

Avg. Time	3-hr	24-hr	Annual
Max. Predicted Concentration	421	102	15.6
Includes Background Value	64	19	9
AAQS	1300	260	60

PSD Increment Analyses (all values in ug/m^3)

Avg. Time	3-hr	24-hr	Annual
Max. Predicted Consumption Concentration	91	19	1.8
Increment	512	91	20

Class I Area

Avg. Time	3-hr	24-hr	Annual
Max. Predicted Consumption Concentration	17.3	3.8	0.4
Increment	25	5	2

As shown in these tables, the maximum predicted SO_2 concentrations are all less than the appropriate AAQS and PSD increments.

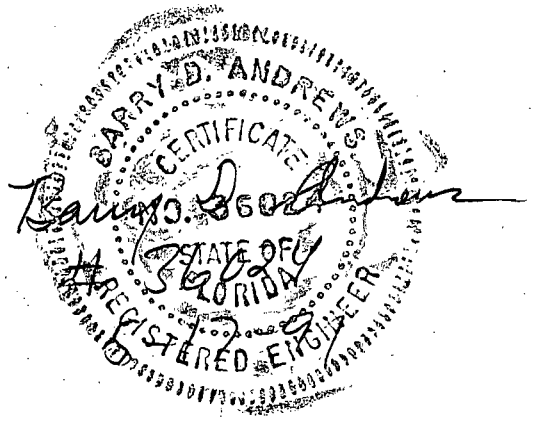
E. Additional Impacts Analysis

A Level-1 screening analysis using the EPA model, VISCREEN was used to determine any potential adverse visibility impacts on the Class I Everglades National Park located about 90 km away. Based on this analysis, the maximum predicted visual impacts due to the proposed project are less than the screening criteria both

inside and outside the Class I area. The maximum predicted NOx and SO_2 emissions are less than the AAQS and the PSD increments. As such no harmful effects on soils and vegetation is expected. In addition, the proposed modification will not significantly change employment, population, housing, or commercial/industrial development in the area to the extent that a significant air quality impact will result.

V. Conclusion

Based on the information provided by Okeelanta Corpiration, the Department has reasonable assurance that the proposed construction and operation of boiler No. 16, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Permit Number: AC 50-191876
PSD-FL-169
Expiration Date: March 1, 1993
County: Palm Beach
Latitude/Longitude: 26°35'00"N
80°45'00"W
Project: Oil Fired Steam Boiler No. 16

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

Construction of a 150,000 lbs steam/hr, No. 2 oil fired, 205 MMBtu/hr heat input Babcock & Wilcox Model FM 120-97 package boiler using Coen's LO-NOx burners and designed for 12% flue gas recirculation (or equivalent boiler with controls) equipped with a 5 ft. diameter by 75 ft. high stack. The boiler will be located at the permittee's existing sugar mill (SIC 2061) that is approximately 6 miles south of South Bay, Palm Beach County, Florida off of U.S. Highway 27. The UTM coordinates of this site are Zone 17, 524.9 km E and 2940.1 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received Jan. 29, 1991.
2. KBN letter dated Feb. 19, 1991.
3. BACT Determination.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes Determination of Prevention of Significant Deterioration (PSD), Determination of Best Available Control Technology (BACT), and Compliance with New Source Performance Standards (NSPS).

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance

GENERAL CONDITIONS:

records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

Construction Details

1. The boiler shall be a flue gas recirculation type and equipped with low NOx distillate oil burners. The design shall be for a heat release rate greater than 70,000 Btu/hr-ft^3.

2. The stack sampling facilities must comply with F.A.C. Rule 17-2.700(4).

3. The 5 ft. diameter stack shall have a minimum height of 75 ft.

4. The boiler shall be equipped with instruments to measure the opacity of the stack emissions and the steam production, temperature, and pressure.

SPECIFIC CONDITIONS:

Emission Restrictions

5. Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Anaysis
NOx	0.18	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

Compliance Requirements

6. Particulate matter, visible emissions, and nitrogen oxides emissions tests shall be conducted annually while the boiler is operating between 90-100% of its permitted capacity (135-150,000 lbs steam/hr). The volume and sulfur content of each fuel oil delivery shall be kept in a log for a minimum of 3 years. Tests for other pollutants may be required when the Department has good reason to believe the emission standard is being exceeded.

Federal Requirements

7. Boiler No. 16 shall comply with all applicable requirements of 40 CFR 60, including Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Unit (December 18, 1989).

40 CFR 60.7, Notification and record keeping. Timely notification of the items listed to the Department (South District) and EPA.

40 CFR 60.8, Compliance tests. Minimum of 30 days prior notice of the initial compliance tests which must be conducted between 60 to 180 days of initial startup of the source to the Department and EPA.

40 CFR 60.42b, Standard for sulfur dioxide. Sulfur content of the No. 2 distillation oil fuel shall not exceed 0.5%. Annual off-season average shall not exceed 0.3% sulfur. The permittee shall maintain fuel analysis or receipts to confirm compliance with this condition.

SPECIFIC CONDITIONS:

40 CFR 60.43b, Standard for particulate matter. Visible emissions shall not exceed 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

40 CFR 60.44b, Standard for nitrogen oxides for high heat release boiler No. 16, expressed as NO_2, is 0.20 lbs/MMBtu.

40 CFR 60.45b, Sulfur dioxide compliance tests, fuel receipts or analysis for sulfur content is required to confirm compliance with this condition.

40 CFR 60.46b, Particulate and nitrogen oxides compliance tests. Method 9 test required to determine compliance with the opacity standard. Method 7, 7A, or 7E test for nitrogen oxides.

40 CFR 60.47b, Sulfur dioxide monitoring. Fuel analysis or receipts required to confirm compliance with this condition.

40 CFR 60.48b, Particulate and nitrogen oxides monitoring. Continuous emissions monitor required to measure opacity.

40 CFR 60.49b, Reporting and record keeping requirements. Permittee required to report date of initial start up, design heat input capacity, fuels used, annual capacity factor, performance test data, plan to monitor NOx, nitrogen content of the distillate oil, opacity, nitrogen dioxide emissions, monitor down time, "F" factor, exceedances, and other information required by this paragraph.

Operation Requirements

8. Only No. 2 fuel oil containing a maximum of 0.5% sulfur (off-season average 0.3% sulfur) shall be used as fuel.

9. Maximum heat input to the boiler shall not exceed 1,463 gallons per hour of No. 2 distillate fuel oil (205 MMBtu/hr).

10. The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (April through October).

11. Steam production shall not exceed 150,000 lbs/hr, 380 psig, and 650°F.

SPECIFIC CONDITIONS:

Administrative Requirements

12. The permittee shall maintain a log that shows the boiler's operation time, steam production, and fuel consumption.

13. The Department's South District shall be notified in writing at least 30 days in advance of the initial compliance test and 15 days in advance of any annual compliance tests to be conducted on this boiler.

14. Stack test results shall be submitted to the Department within 45 days of the test.

15. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

16. An application for an operation permit must be submitted to the South District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this _____ day
of _____, 1991

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
Carol M. Browner, Secretary

Best Available Control Technology (BACT) Determination
Okeelanta Corporation
Palm Beach County

The applicant plans to permanently install a 205 MMBtu/hr No. 2 oil-fired steam boiler at their facility 6 miles south of South Bay, Florida. The boiler will be used to supply process steam. The boiler is scheduled to operate during the off-season of April through October (4,200 hours) when the other boilers at this facility are shutdown.

A BACT determination is required for particulates and sulfur dioxide as set forth in the Florida Administrative Code Rule 17-2.600(6) - Emissions Limiting and Performance Standards. In addition, the Department performed a BACT determination for nitrogen oxides (NOx) since those emissions are greater than the PSD significant rate of 40 tons per year.

BACT Determination Request by the Applicant:

Particulate, sulfur dioxide, nitrogen oxides emissions to be controlled by the firing of No. 2 fuel oil with a 0.5% sulfur content.

Date of Receipt of a BACT Application:

January 29, 1991

BACT Determined by DER:

The amount of particulate and sulfur dioxide emissions from the boiler will be limited by the firing of No. 2 fuel oil with a 0.3% off season average and a 0.5% maximum sulfur content.

Nitrogen oxides emissions shall not exceed 0.18 lbs/MMBtu heat input using low NOx burners/flue gas recirculation.

BACT Determination Rationale:

Sulfur in fuel is a primary air pollution concern in that most of the fuel sulfur becomes SO_2 and particulate emissions from fuel burning are related to the sulfur content. The Department has determined that the firing of No. 2 fuel oil with an off-season average of 0.3% sulfur and maximum of 0.5% sulfur content is BACT for particulates and SO_2. These sulfur content limitations are representative of what has been recently established as BACT for oil-fired equipment.

The emission rate of nitrogen oxides proposed by the applicant is equivalent to 0.18 pound per million Btu heat input. A review of other BACT determinations for oil fired boilers indicates that the proposed emission level for nitrogen oxides meets or exceeds several of the determinations on record. In addition, this emission level is equivalent to what has been determined to be BACT for oil-fired turbines. Additional NOx control could be provided by using add on control devices such as selective catalytic reduction (SCR) or selective noncatalytic reduction (SNCR). A review of these control technologies indicates a cost effectiveness ranging from $6802 to $7321 per ton of NOx removed. These costs exceed those which have been previously judged to be representative of BACT, thereby dismissing these technologies as BACT for this facility. In accordance with these criteria, the applicant's proposed NOx emission rate is justified as BACT for this source.

Details of the Analysis May Be Obtained By Contacting:

G. Preston Lewis, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

_____ _____
C. H. Fancy, P.E., Chief Date
Bureau of Air Regulation

Approved By:

_____ _____
Carol M. Browner, Secretary Date
Department of Environmental Regulation

Department of Environmental Regulation

Routing and Transmittal Slip

To: (Name, Office, Location)

1. Patty
2.
3.
4.

Remarks:

David Buff, KBN, is distributing copies of the application and his latest response on Okeelanta Comp to:

Palm Beach Co.
Park Service
S FL District
EPA

From:

Date 2-27-91

Phone

SOURCE TEST REPORT
for
PARTICULATE, OXIDES OF NITROGEN
AND VISIBLE EMISSIONS

PACKAGE BOILER OUTLET
BOILER NUMBER 16
OKEELANTA CORPORATION
SOUTH BAY, FLORIDA

FDEP PERMIT NUMBER AC50-191876
PSD-FL-169

JULY 14, 1994

Prepared for:

OKEELANTA CORPORATION
6 MILES S. OF SOUTH BAY
SOUTH BAY, FLORIDA 33493

Prepared by:

AIR CONSULTING AND ENGINEERING, INC.
2106 N.W. 67TH PLACE, SUITE 4
GAINESVILLE, FLORIDA 32606
(904) 335-1889

345-94-19

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ACE
AIR CONSULTING
& ENGINEERING, INC.

2106 N.W. 67th Place • Suite 4 • Gainesville, Florida • 32606
(904) 335-1889 FAX (904) 335-1891

REPORT CERTIFICATION

To the best of my knowledge, all applicable field and analytical procedures comply with Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

Dagmar Fick

Date 7/7/94

1.0 INTRODUCTION

On July 14, 1994, Air Consulting and Engineering, Inc. (ACE), conducted particulate, Oxides of Nitrogen (NO_X), and visible emission testing on the Outlet Stack of Boiler 16 at Okeelanta Corporation (Okeelanta) in South Bay, Florida.

The following United States Environmental Protection Agency (EPA) Methods were utilized; EPA Method 5 (particulate), EPA Method 7E (NO_X), and EPA Method 9 (visible emissions).

A Thermo Electron Model 10AR chemiluminescent NO_X analyzer, analyzer was used for the testing.

Mr. Angelo Archbold of Okeelanta coordinated testing and provided production data.

Mr. Sterling Jordan of the Florida Department of Environmental Protection (FDEP) in Ft. Myers witnessed the compliance test.

2.0 SUMMARY AND DISCUSSION OF RESULTS

Table 1 summarizes the emission results and flue gas parameters.

Test results reported in pounds per million BTU were calculated using the Fuel Factor for oil (9190 dscf/MMBTU) and also using the boiler operating parameters.

Particulate emissions averaged 1.38 pounds per hour (lbs/Hr), 0.0084 pounds per million BTU (lbs/MMBTU)(heat input based on steam rate) and 0.0082 lbs/MMBTU (F-Factor). Permitted emissions are 11.0 lbs/Hr and 0.054 lbs/MMBTU.

Oxides of Nitrogen emissions averaged 28.10 lbs/Hr, 0.169 lbs/MMBTU (heat input based on steam rate) and 0.161 lbs/MMBTU (F-Factor). Permitted standards are 36.9 lbs/Hr and 0.18 lbs/MMBTU.

Boiler 16 was tested while firing Number 2 Diesel oil.

Production rate summaries and boiler operation parameters are provided in Appendix F. These data were obtained from control room recordings of steam flow, temperature, and pressure as well as feed water temperature and pressure. Steam integrator and oil meter readings were recorded at the beginning and at the end of each particulate run.

Visible emissions averaged 0.0 percent opacity for the highest six minute period, which is within the permitted standard of 20 percent and 27 percent for one 6-minute period per hour (see Appendix E for visible emission data).

Computer printouts, field data sheets, laboratory data, and strip chart copies are presented in Appendices A, B, C, and D, respectively.

Table 1 Emission Summary
Boiler 16 - Package Boiler
Okeelanta Corporation
South Bay, Florida
July 14, 1994

Run Number	Time	Flow Rate SCFMD	Oxygen %	Particulate Emissions				NOx Emissions				
				lbs/Hr	lbs/MMBTU F-Factor	lbs/MMBTU Heat Input steam	lbs/MMBTU* Heat Input oil	ppm	lbs/Hr	lbs/MMBTU F-Factor	lbs/MMBTU Heat Input steam	lbs/MMBTU* Heat Input oil
1	0934-1040	34727	6.28	1.53	0.0096	0.0103	0.0095	111.9	27.83	0.175	0.187	0.174
2	1202-1305	38617	6.27	1.62	0.0092	0.0097	0.0091	102.6	28.38	0.161	0.170	0.159
3	1350-1452	40461	5.93	0.99	0.0052	0.0053	0.0051	96.9	28.08	0.148	0.150	0.144
AVERAGE	---	37935	6.16	1.38	0.0082	0.0084	0.0079	103.8	28.10	0.161	0.169	0.159

*The oil heat input is based on 150,000 BTU/gallon and initial and final oil meter reading.

F-Factor for oil = 9190 DSCF/MMBTU

$$\text{lbs/MMBTU} = \frac{\text{Emissions (lbs/Hr)}}{\text{Heat Input (MMBTU/Hr)}} \quad \text{or} \quad \text{lbs/MMBTU} = F\ (\text{lbs/DSCF}) \left(\frac{20.9}{20.9 - \%\ O2} \right)$$

Allowable Emissions:
PM = 11.0 lbs/Hr 0.054 lbs/MMBTU
NO_x = 36.9 lbs/Hr 0.18 lbs/MMBTU

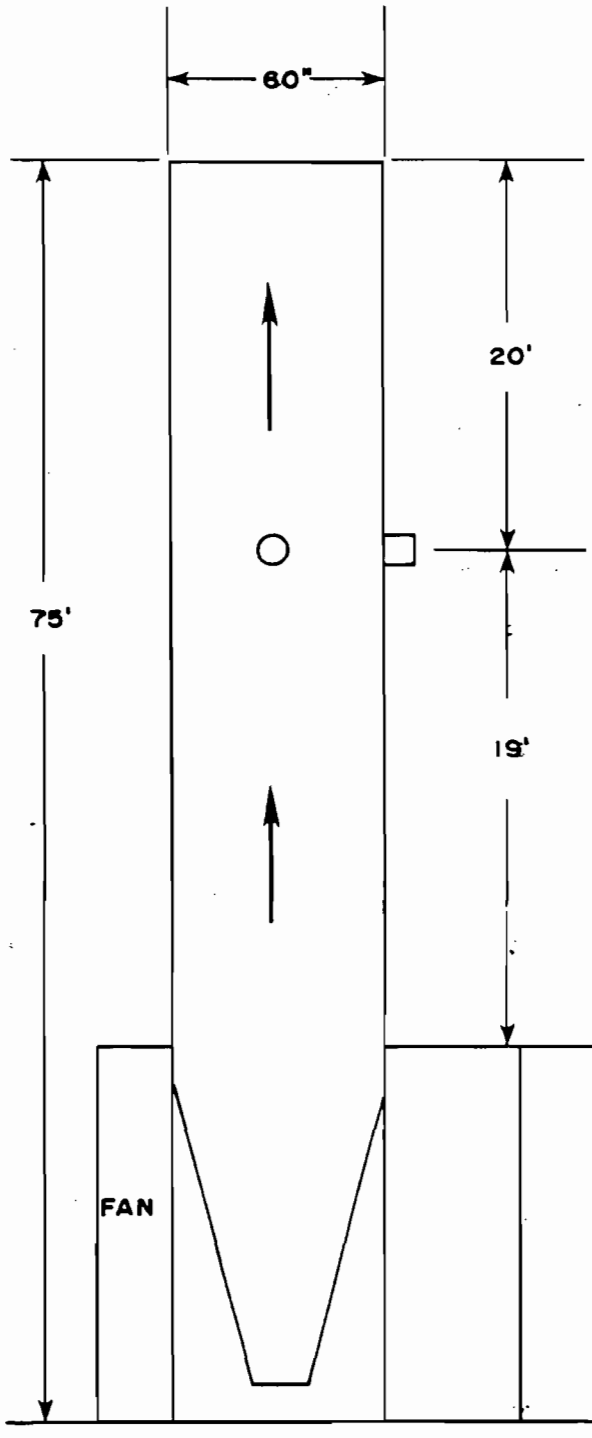
3.0 PROCESS DESCRIPTION AND OPERATION

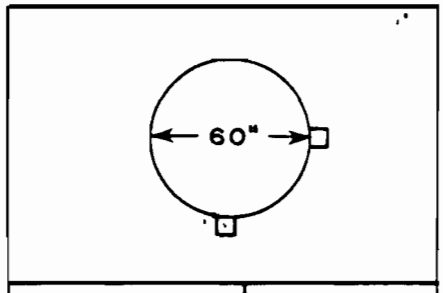
Boiler Number 16 at Okeelanta Corporation is a Babcock and Wilcox Model FM 120-97 package boiler using Coen's LO-NOx burners and is designed for up to 40% flue gas recirculation (FGR). The FGR rate is varied automatically according to steam load and air to fuel ratio by means of a mechanical linkage. The boiler is fired with Number 2 diesel oil. It's maximum permitted steam production is 150,000 lbs/Hr. During the compliance test, an average of 119,643 lbs/Hr of steam was achieved.

Boiler operating parameters and steam flow chart are presented in Appendix F.

4.0 SAMPLING POINT LOCATION

Figure 1 is a schematic of the exhaust stack with sampling locations.





TRAVERSE POINT NUMBER	INCHES INSIDE STACK WALL
1	1.26
2	4.02
3	7.08
4	10.62
5	15.00
6	21.48
7	38.64
8	45.00
9	49.38
10	52.92
11	55.98
12	58.74

NOTE: NOT TO SCALE

FIGURE 1.
SAMPLING POINT LOCATION
BOILER NO. 16
OKEELANTA SUGAR CORPORATION
SOUTH BAY, FLORIDA

AIR CONSULTING and ENGINEERING

5.0 FIELD AND ANALYTICAL PROCEDURES

5.1 Particulate Matter Sampling and Analysis--EPA Method 5 (Glass Probe)

Particulate matter samples were collected by the particulate matter emission measurement method specified by the United States Environmental Protection Agency. A schematic diagram of the sampling train used is shown in Figure 2. All particulate matter captured from the nozzle to, and including, the filter was included in the calculation of the emission rate of particulate matter.

PREPARATION OF EQUIPMENT

1. FILTERS - Gelman type "A" filters were placed in a drying oven for two hours at 105 degrees C, removed and placed in a standard desiccator containing indicating silica gel, allowed to cool for two hours, and weighed to the nearest 0.1 mg. The filters were then re-desiccated for a minimum of six hours and weighed to a constant weight (less than 0.5 mg change from previous weighing). The average of the two constant weights was used as the tare weight.

2. NOZZLE, FILTER HOLDER, AND SAMPLING PROBE - The nozzle, filter holder, and sampling probe were washed vigorously with soapy water and brushes, rinsed with distilled water and acetone, and dried prior to the test program. All openings on the sampling equipment were sealed while in transit to the test site.

3. IMPINGERS - The Greenburg-Smith impingers were cleaned with a warm soapy water solution and brushes, rinsed with distilled water and acetone, and dried. The impingers were sealed tightly during transit.

TEST PROCEDURE

Prior to performing the actual particulate matter sample runs, certain stack and stack gas parameters were measured. These preliminary measurements

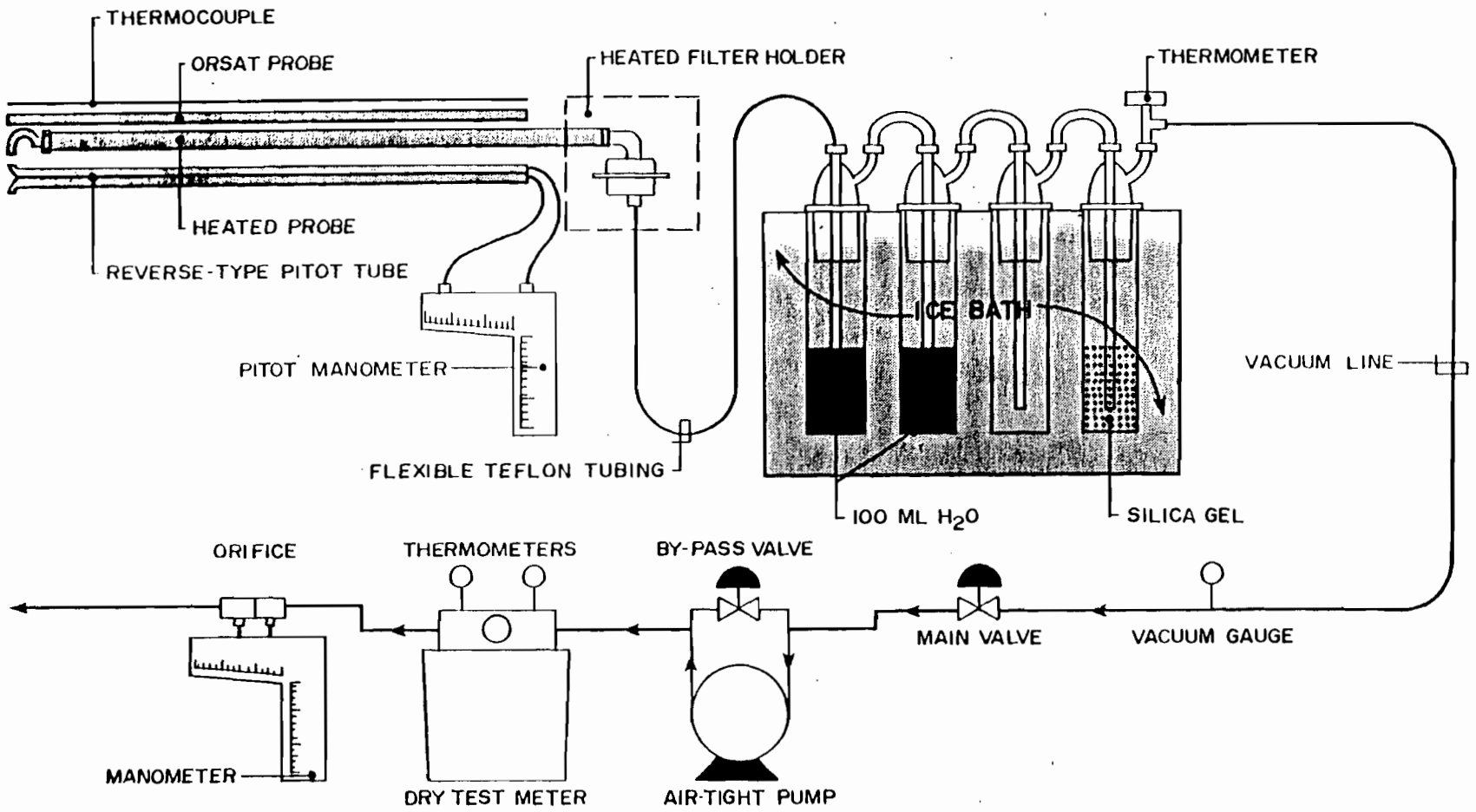


FIGURE 2
EPA METHOD 5 SAMPLING TRAIN

AIR CONSULTING and ENGINEERING

included the average gas temperature, the stack gas velocity head, the stack gas moisture content, and the stack dimensions at the point where the tests were being performed. The stack gas temperature was determined by using a bi-metallic thermocouple and calibrated pyrometer. Velocity head measurements were made with calibrated type "S" pitot tube and an inclined manometer. Velocity head measurements of 0.05 inches H_2O or less were measured utilizing a micromanometer.

The sampling traverse points were selected so that a representative sample could be extracted from the gas stream. The traverse points were located in the center of equal areas, the number of which were dependent upon the distance upstream and downstream from flow disturbances.

Each particulate matter test run consisted of sampling for a specific amount of time at each traverse point. The type "S" pitot tube was connected to the sampling probe so that an instantaneous velocity head measurement could be made at each traverse point while making the test run. The stack gas temperature was also measured at each traverse point. Nomographs were used to calculate the isokinetic sampling rate at each traverse point during each test run.

The gases sampled passed through the following components: a stainless steel nozzle and glass probe; a glass fiber filter; two impingers each with 100 ml

of distilled deionized water; one impinger dry; one impinger with 200 grams of silica gel; a flexible sample line; an air-tight pump; a dry test meter; and a calibrated orifice. The second impinger had a standard tip, while the first, third, and fourth impingers had modified tips with a 0.5 inch I.D. opening.

Sample recovery was accomplished by the following procedures:

1. The pre-tared filter was removed from its holder and placed in Container 1 and sealed. (This is usually performed in the lab.)
2. All sample-exposed surfaces prior to the filter were washed with acetone and placed in Container 2, sealed and the liquid level marked.
3. The volume of water from the first three impingers was measured for the purpose of calculating the moisture in the stack gas and then discarded.
4. The used silica gel from the fourth impinger was transferred to the original tared container and sealed.

LABORATORY ANALYSIS

The three sample containers from each sample run were analyzed according to the following procedures:

1. The filter was dried at 105 degrees C for three hours, desiccated for a minimum of one hour, and weighed to the nearest 0.1 mg. A minimum of two such weighings six hours apart was made to determine constant weight.
2. The acetone from Container 2 was transferred to a tared beaker and evaporated to dryness at ambient temperature and pressure, desiccated for 24 hours, and weighed to the nearest 0.1 mg. A minimum of two such weighings six hours apart were made to determine constant weight.
3. The used silica gel in its tared container was weighed to the nearest 0.1 gram.

The total sample weight included the weight of material collected on the filter plus the weight of material collected in the nozzle, sampling probe, and front half of the filter holder.

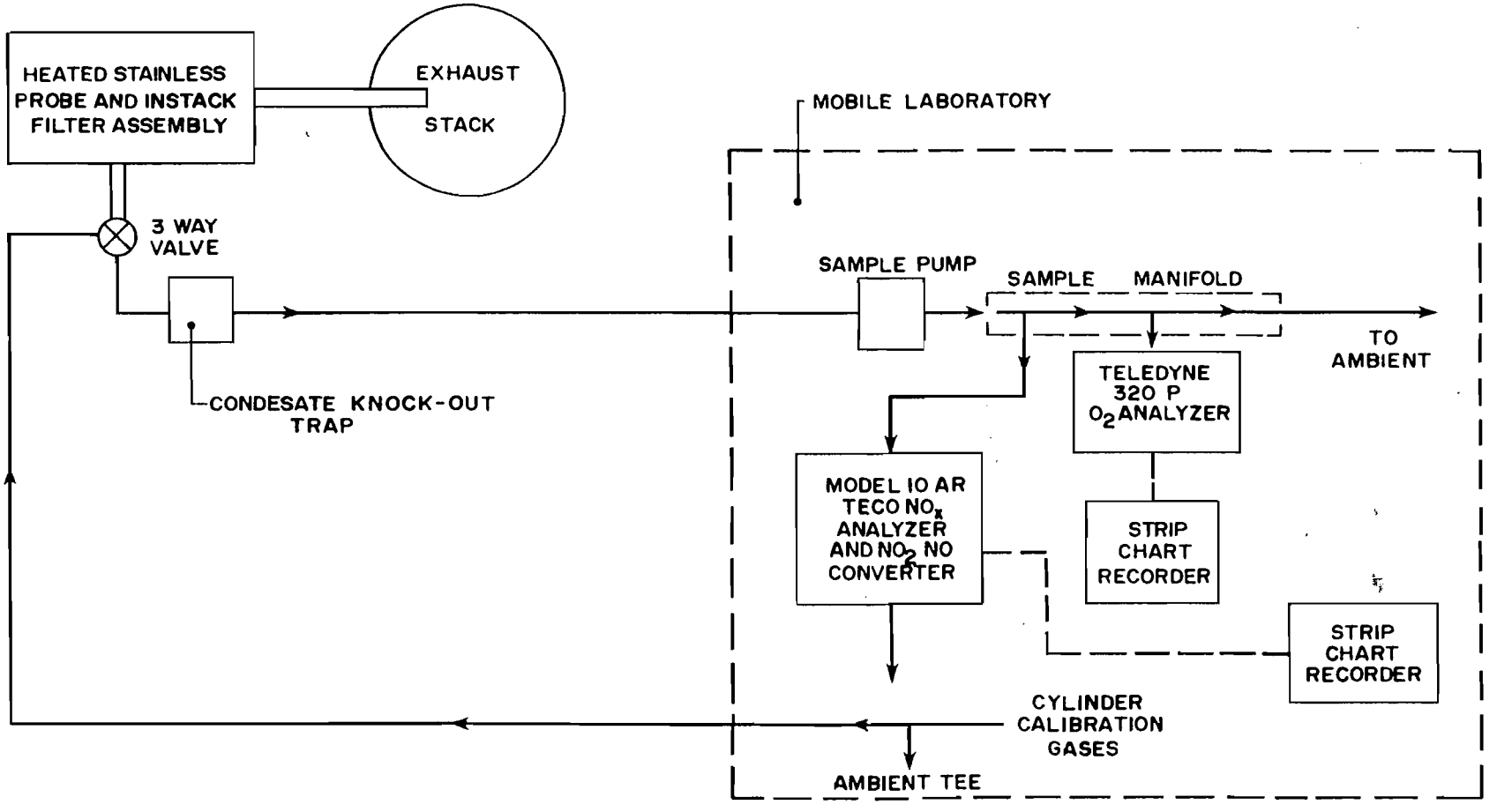
DATA

The field data sheets, calculation sheets, and nomenclature definitions are included in the appendices of this report.

5.2 Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Procedure)--EPA Method 7E

The sampling system is shown in Figure 3. A sample was drawn from the stack at a rate of approximately 2 SCFH. A stainless steel probe and filter assembly was followed by a three-way stainless steel valve. The sample was pumped through a non-heated 1/4" O.D. TEFLON sampling line and condensate trap housed in an ice bath. Calibration gases were introduced at the sampling interface (the three way valve) through another 1/4" O.D. TEFLON line that was not heated. The sample pump delivered gases to a manifold system where one stream was sent to a Thermo Electron Model 10 AR Chemiluminescent Analyzer, converted to nitric oxide, reacted with ozone, and a chemiluminescent response measured by a photomultiplier. A second stream was delivered to a Teledyne 320P O_2 analyzer. A third stream was dumped to the ambient air. All instrument responses were recorded on strip chart recorders. The sampling system yields NO_x and O_2 concentrations on a dry gas basis.

All calibration gases were certified NBS traceable.



SOURCE: ACE, Inc.

FIGURE 3
EPA METHOD 7E SAMPLING SCHEMATIC

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5.3 Visible Emissions Testing--EPA Method 9

The visible emission tests were performed in accordance with EPA Method 9. The observers maintain semi-annual FDER certification for the performance of visible emission tests.

All procedures listed in Method 9 were followed including observer's position relative to the sun, distance from the stack, and line of sight. These items are noted on the visible emission data sheet. Observations were made at 15-second intervals and recorded to the nearest five percent. The final opacity was determined by calculating the highest consecutive six minute average during the observation period.

APPENDIX A

COMPLETE EMISSION DATA WITH SAMPLE CALCULATIONS

AIR CONSULTING AND ENGINEERING, INC.
PARTICULATE EMISSION RESULTS

PLANT:	OKEELANTA CORPORATION
SOURCE:	BOILER 16
LOCATION:	SOUTH BAY, FLORIDA
DATE:	JULY 14,1994
RUN:	1
TIME:	0934-1040

TOTAL TIME	60	MIN.	PROBE WASH	8.9	MG
BAROMETRIC PRESS.	30.2	IN.HG	FILTER	7.5	MG
STACK PRESS.	30.2	IN.HG	TOTAL	16.4	MG
STACK AREA	19.635	SQFT			
STACK TEMP.	376	F			
Y FACTOR	1.0105		OXYGEN	6.28	%
NOZZLE DIAMETER	0.3	IN	CARBON DIOXIDE	9.60	%
NOZZLE AREA	0.000491	SQFT	NITROGEN	84.12	%
AVG.VEL.HEAD	0.764	IN.H2O	EXCESS AIR	39.42821	%
ORIFICE DIFF.	2.963	IN.H2O			
METER TEMP.	87.42	F			
METER VOLUME	49.676	CUBFT			
CONDENSATE VOL	188.5	ML			

VOLUME WATER VAPOR	8.886	SCF
VOLUME STD. DRY GAS	49.223	SCF
TOTAL SAMPLE VOLUME	58.108	SCF
PERCENT MOISTURE	15.292	
PERCENT DRY AIR	84.708	
MOLECULAR WGT.DRY FLUE GAS	29.787	
MOLECULAR WGT. WET FLUE GAS	27.985	
SPECIFIC GRAVITY FLUE GAS	0.970	
CP	0.84	

VELOCITY FLUE GAS	54.58743	FPS
ACTUAL VOLUMETRIC FLOW RATE	64309.45	ACFM
ACTUAL VOLUMETRIC FLOW RATE DRY	54475.30	ACFMD
STD. VOLUMETRIC FLOW RATE DRY	34727.43	SCFMD
EMISSION CONCENTRATION	0.0051	GR/DSCF
EMISSION RATE	1.527	LB/HR
PERCENT ISOKINETIC	94.5	%
F FACTOR	9190	SCF/MMBTU
EMISSION CONC.	0.0096	LB/MMBTU

AIR CONSULTING AND ENGINEERING, INC.
PARTICULATE EMISSION DATA

PLANT: OKEELANTA CORPORATION
SOURCE: BOILER 16
LOCATION: SOUTH BAY, FLORIDA
DATE: JULY 14,1994
RUN: 1

TRAVERS POINT NUMBER	VEL. HEAD IN.H2O	SQRT VEL. HEAD	STACK TEMP. F	ORIFICE PRES.DIFF IN.H2O	METER TEMP. F
1-1	0.980	0.990	393	4.90	80
1-2	0.980	0.990	392	4.90	81
1-3	0.720	0.849	378	3.60	81
1-4	0.550	0.742	371	2.75	82
1-5	0.580	0.762	373	2.90	83
1-6	0.800	0.894	394	4.00	83
1-7	0.660	0.812	402	3.30	84
1-8	0.640	0.800	399	3.20	84
1-9	0.490	0.700	385	2.45	85
1-10	0.420	0.648	368	2.10	86
1-11	0.500	0.707	372	2.50	87
1-12	0.480	0.693	372	2.40	88
2-1	0.490	0.700	366	2.45	88
2-2	0.500	0.707	367	2.50	89
2-3	0.510	0.714	367	2.55	90
2-4	0.480	0.693	368	2.40	90
2-5	0.440	0.663	367	2.20	90
2-6	0.450	0.671	369	2.25	91
2-7	0.510	0.714	369	2.55	91
2-8	0.560	0.748	371	2.80	92
2-9	0.660	0.812	373	3.30	92
2-10	0.650	0.806	370	3.25	93
2-11	0.610	0.781	370	3.05	94
2-12	0.560	0.748	368	2.80	94
AVERAGES		0.764	376	2.963	87.42

AIR CONSULTING AND ENGINEERING, INC.
PARTICULATE EMISSION RESULTS

PLANT:	OKEELANTA CORPORATION
SOURCE:	BOILER 16
LOCATION:	SOUTH BAY, FLORIDA
DATE:	JULY 14,1994
RUN:	2
TIME:	1202-1305

TOTAL TIME	60	MIN.	PROBE WASH	10.3	MG
BAROMETRIC PRESS.	30.2	IN.HG	FILTER	6.5	MG
STACK PRESS.	30.2	IN.HG	TOTAL	16.8	MG
STACK AREA	19.635	SQFT			
STACK TEMP.	390	F			
Y FACTOR	1.0105		OXYGEN	6.27	%
NOZZLE DIAMETER	0.3	IN	CARBON DIOXIDE	10.00	%
NOZZLE AREA	0.000491	SQFT	NITROGEN	83.73	%
AVG.VEL.HEAD	0.823	IN.H2O	EXCESS AIR	39.59653	%
ORIFICE DIFF.	3.429	IN.H2O			
METER TEMP.	92.29	F			
METER VOLUME	53.907	CUBFT			
CONDENSATE VOL	137	ML			

VOLUME WATER VAPOR	6.458	SCF
VOLUME STD. DRY GAS	53.003	SCF
TOTAL SAMPLE VOLUME	59.461	SCF
PERCENT MOISTURE	10.861	
PERCENT DRY AIR	89.139	
MOLECULAR WGT.DRY FLUE GAS	29.851	
MOLECULAR WGT. WET FLUE GAS	28.564	
SPECIFIC GRAVITY FLUE GAS	0.990	
CP	0.84	

VELOCITY FLUE GAS	58.64148	FPS
ACTUAL VOLUMETRIC FLOW RATE	69085.53	ACFM
ACTUAL VOLUMETRIC FLOW RATE DRY	61582.05	ACFMD
STD. VOLUMETRIC FLOW RATE DRY	38616.99	SCFMD
EMISSION CONCENTRATION	0.0049	GR/DSCF
EMISSION RATE	1.616	LB/HR
PERCENT ISOKINETIC	91.5	%
F FACTOR	9190	SCF/MMBTU
EMISSION CONC.	0.0092	LB/MMBTU

AIR CONSULTING AND ENGINEERING, INC.
PARTICULATE EMISSION DATA

PLANT: OKEELANTA CORPORATION
SOURCE: BOILER 16
LOCATION: SOUTH BAY, FLORIDA
DATE: JULY 14,1994
RUN: 2

TRAVERS POINT NUMBER	VEL. HEAD IN.H2O	SQRT VEL. HEAD	STACK TEMP. F	ORIFICE PRES.DIFF IN.H2O	METER TEMP. F
1-1	0.720	0.849	399	3.60	86
1-2	0.640	0.800	389	3.20	86
1-3	0.560	0.748	380	2.80	86
1-4	0.550	0.742	379	2.75	87
1-5	0.520	0.721	376	2.60	87
1-6	0.460	0.678	373	2.30	88
1-7	0.380	0.616	369	1.90	87
1-8	0.510	0.714	369	2.55	88
1-9	0.520	0.721	380	2.60	90
1-10	0.720	0.849	381	3.60	90
1-11	0.720	0.849	377	3.60	92
1-12	0.670	0.819	372	3.35	92
2-1	0.660	0.812	371	3.30	93
2-2	0.960	0.980	392	4.80	93
2-3	1.000	1.000	396	5.00	94
2-4	0.940	0.970	398	4.70	95
2-5	0.870	0.933	399	4.35	95
2-6	0.820	0.906	402	4.10	96
2-7	0.720	0.849	407	3.60	97
2-8	0.730	0.854	407	3.65	98
2-9	0.680	0.825	411	3.40	98
2-10	0.680	0.825	413	3.40	98
2-11	0.770	0.877	414	3.85	99
2-12	0.660	0.812	403	3.30	100
AVERAGES		0.823	390	3.429	92.29

AIR CONSULTING AND ENGINEERING, INC.
PARTICULATE EMISSION RESULTS

PLANT:	OKEELANTA CORPORATION
SOURCE:	BOILER 16
LOCATION:	SOUTH BAY, FLORIDA
DATE:	JULY 14,1994
RUN:	3
TIME:	1350-1452

TOTAL TIME	60	MIN.	PROBE WASH	5.7	MG
BAROMETRIC PRESS.	30.2	IN.HG	FILTER	4.7	MG
STACK PRESS.	30.2	IN.HG	TOTAL	10.4	MG
STACK AREA	19.635	SQFT			
STACK TEMP.	398	F			
Y FACTOR	1.0105		OXYGEN	5.90	%
NOZZLE DIAMETER	0.3	IN	CARBON DIOXIDE	10.00	%
NOZZLE AREA	0.000491	SQFT	NITROGEN	84.10	%
AVG.VEL.HEAD	0.887	IN.H2O	EXCESS AIR	36.19099	%
ORIFICE DIFF.	4.146	IN.H2O			
METER TEMP.	108.21	F			
METER VOLUME	58.846	CUBFT			
CONDENSATE VOL	184.8	ML			

VOLUME WATER VAPOR	8.711	SCF
VOLUME STD. DRY GAS	56.336	SCF
TOTAL SAMPLE VOLUME	65.047	SCF
PERCENT MOISTURE	13.392	
PERCENT DRY AIR	86.608	
MOLECULAR WGT.DRY FLUE GAS	29.836	
MOLECULAR WGT. WET FLUE GAS	28.251	
SPECIFIC GRAVITY FLUE GAS	0.980	
CP	0.84	

VELOCITY FLUE GAS	63.85830	FPS
ACTUAL VOLUMETRIC FLOW RATE	75231.47	ACFM
ACTUAL VOLUMETRIC FLOW RATE DRY	65156.10	ACFMD
STD. VOLUMETRIC FLOW RATE DRY	40461.47	SCFMD
EMISSION CONCENTRATION	0.0028	GR/DSCF
EMISSION RATE	0.986	LB/HR
PERCENT ISOKINETIC	92.8	%
F FACTOR	9190	SCF/MMBTU
EMISSION CONC.	0.0052	LB/MMBTU

AIR CONSULTING AND ENGINEERING, INC.
PARTICULATE EMISSION DATA

PLANT: OKEELANTA CORPORATION
SOURCE: BOILER 16
LOCATION: SOUTH BAY, FLORIDA
DATE: JULY 14,1994
RUN: 3

TRAVERS POINT NUMBER	VEL. HEAD IN.H2O	SQRT VEL. HEAD	STACK TEMP. F	ORIFICE PRES.DIFF IN.H2O	METER TEMP. F
1-1	1.000	1.000	398	5.00	95
1-2	1.000	1.000	401	5.00	95
1-3	0.960	0.980	402	4.80	95
1-4	0.970	0.985	404	4.85	96
1-5	0.860	0.927	403	4.30	96
1-6	0.840	0.917	401	4.20	97
1-7	0.700	0.837	398	3.50	98
1-8	0.670	0.819	401	3.35	98
1-9	0.680	0.825	401	3.40	99
1-10	0.700	0.837	401	3.50	99
1-11	0.660	0.812	400	3.30	99
1-12	0.720	0.849	399	3.60	100
2-1	0.760	0.872	389	4.18	100
2-2	0.740	0.860	393	4.07	100
2-3	0.720	0.849	392	3.96	100
2-4	0.700	0.837	394	3.85	110
2-5	0.660	0.812	394	3.63	110
2-6	0.610	0.781	391	3.36	110
2-7	0.680	0.825	398	3.74	120
2-8	0.830	0.911	399	4.57	130
2-9	0.850	0.922	404	4.68	130
2-10	1.000	1.000	404	5.50	140
2-11	0.840	0.917	397	4.62	140
2-12	0.830	0.911	393	4.57	140
AVERAGES		0.887	398	4.146	108.21

	SAMPLE CALCULATIONS - RUN 1	
NOZZLE AREA (FT2)	(Dn/12)^2x3.141604	0.000490
VOLUME H2O (FT3)	0.04707xVm	8.88589
STD. VOLUME (FT3)	17.64xVmxYx (PB+ORIFICE/13.6)/Tm	49.22254
PERCENT H2O	Vwv/(Vwv+Vs)x100	15.29191
Mw DRY	((%O2x0.32)+(%CO2x0.44) +(100-(%O2+%CO2)x0.28	29.7872
Mw WET	(MwDRYx(1-%H2O/100)+%H2Ox0.18	27.98471
%EXCESS AIR	O2/(0.264xN2)-O2))x100	39.42821
STACK VEL. (FPS)	85.49x0.84x(AVG.SQRT.VEL.HD) xTs/(PsxMwWET))^0.5	54.58743
% ISOKINETIC	xAnxPsx60x(1-%H2O/100))	94.48681
VOL. FLOW (ACFM)	FPSx60xAs	24849949
STD. FLOW (SCFMD)	ACFMx(528/Ts)x(1-%H2O/100)x (Ps/29.92)	34727.43
PM (LB/HR)	PROBE+FILTER mg/453600x(SCFMD/ SCF)x60	1.527307
PM (LB/SCF)	PROBE+FILTER mg/453600/SCF	
GRAINS/SCF	LB/SCF x 7000	0.005130

APPENDIX B

FIELD DATA SHEETS

STACK SAMPLING FIELD DATA SHEET

ACE AIR CONSULTING & ENGINEERING, INC.
2106 N. W. 67th PLACE · Suites 9&10
GAINESVILLE, FLORIDA · 32606

TEST ID R-1
PAGE 1 OF 2

PLANT Okeelanta Corporation
SOURCE Boiler 1c
PLANT LOCATION South Bay, Florida
TYPE OF SAMPLING TRAIN EPA 5/6
TYPE OF SAMPLES PM /SO2
DATE 7/14/94 RUN NO. 1
TIME START 0934 TIME END 094 1040
SAMPLE TIME 2.5 / (min/pt)= 60 Total min
ASSUMED MOISTURE ____ % FDA ____
NOMOGRAPH C_f 5.0 PITOT CORR. .84
P_b 30.20 "Hg P_s 30.20 "Hg
WEATHER ____ TEMP. ____ °F
METER BOX NO. 6 H 2.048 Y 1.0105
NOZZLE CAL. .300 .300 .300 = .300
STACK DIMENSIONS 60" DIA
STACK AREA 19.635 ft² EFFECTIVE ____ ft²
STACK HEIGHT 75 ft.
STACK DIAMETER: UPSTRM. ____ DNSTRM. ____
PORT SIZE 4 In. NIPPLE LENGTH 4.5 In.
U CORD LENGTH 200'
REMARKS:
Sterling Jordon FDEP Ft. Myers

#2 Diesel

MAT'L PROCESSING RATE ____
GAS METER READINGS: FINAL 477.394 ft³
INITIAL 427.718 ft³
NET 49.676 ft³
FILTER NO. 5553 IMP. VOL. GAIN 174 ml.
SIL GEL NO. 38 WT. GAIN 14.5 ml.
TOTAL CONDENSATE 188.5 ml.

ORSAT

	1	2	3	4	AVG.
% CO_2					9.6
% O_2					6.28
% CO					
% N_2					

F_O = ____ F_O RANGE = ____
ORSAT ANALYZER ____

LEAK CHECKS
PRE 0.002 cfm 15 "Hg POST 0.002 cfm 15 "Hg
METER BOX/PUMP OK GAS SAMPLE SYST. OK
ORSAT BAG OK
PITOT TUBE NO. 73 PRE-TEST OK
POST-TEST(+) .00@4" / ____ H_2O/Sec
POST-TEST(−) .00@4" / ____ H_2O/Sec
PYROMETER NO. Atk-3
BOX OPERATOR F.C. PROBE HOLDER Bowman

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (FT.³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H_2O) CALC.	METER ORIFICE PRESS. DIFF. ("H_2O) ACTUAL	STACK GAS TEMP. (°F)	SAMPLE BOX TEMP. (°F)	LAST IMPINGER TEMP. F	DRY GAS METER TEMP. (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
1-1		0934	430.01	0.98	4.90	4.90	393	278	54.6	80	4.0
2			432.31	0.98	4.90	4.90	392	281	55.9	81	6.0
3			434.78	0.72	3.40	3.60	378	281	58.8	81	5.0
4			436.81	0.55	2.75	2.75	371	281	59.4	82	4.0
5			438.82	0.58	2.90	2.90	373	280	59.6	83	4.0
6		1040	441.19	0.80	4.00	4.00	394	281	59.8	83	5.0

& ENGINEERING, INC.

TEST NO. _____

PAGE 2 OF 2

Run 1

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING ($ft.^3$)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H_2O)		STACK GAS TEMP. (°F)	SAMPLE BOX TEMP. (°F)	LAST IMPINGER TEMP. (°F)	DRY GAS METER TEMP. (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
					CALC.	ACTUAL					
7			443.46	0.66	3.30	330	402	283	60.2	84	4.0
8			445.58	0.64	3.20	3.20	399	282	60.1	84	4.0
9			447.58	0.49	2.45	2.45	385	275	60.2	85	4.0
10			449.45	0.42	2.10	2.10	368	281	60.0	86	3.0
11			451.90	0.50	2.50	2.50	372	280	59.8	87	4.0
12			453.74	0.48	2.40	2.40	372	277	59.6	88	3.0
2-1			455.12	0.49	2.45	2.45	366	275	59.4	88	4.0
2			457.20	0.50	2.50	2.50	367	273	59.1	89	4.0
3			459.00	0.51	2.55	2.55	367	271	59.4	90	4.0
4			460.80	0.48	2.40	2.40	368	272	59.4	90	4.0
5			462.77	0.44	2.20	2.20	367	274	59.2	90	4.0
6			464.71	0.45	2.25	2.25	369	276	59.3	91	4.0
7			466.58	0.51	2.55	2.55	369	276	58.7	91	4.0
8			468.75	0.56	2.80	2.80	371	270	59.2	92	4.0
9			470.81	0.66	3.30	3.30	373	267	59.0	92	4.0
10			473.13	0.65	3.25	3.25	370	271	58.7	93	4.0
11			475.17	0.61	3.05	3.05	370	272	59.6	94	4.0
12			477.39	0.56	2.80	2.80	368	272	60.1	94	4.0

STACK SAMPLING FIELD DATA SHEET

ACE AIR CONSULTING & ENGINEERING, INC.
2106 N. W. 67th PLACE · Suites 9 & 10
GAINESVILLE, FLORIDA · 32606

TEST ID K-2
PAGE ____ OF ____

PLANT Okeelanta Corporation
SOURCE Boiler 16
PLANT LOCATION South Bay, Florida
TYPE OF SAMPLING TRAIN PM EPA 5/6
TYPE OF SAMPLES PM/SO2
DATE 7/14/94 RUN NO. 2
TIME START 1202 TIME END 1305
SAMPLE TIME 2.5 / (min/pt)= 60 Total min
ASSUMED MOISTURE ____ % FDA ____
NOMOGRAPH C_f 5.0 PITOT CORR. .84
P_b 30.20 "Hg P_s 30.20 "Hg
WEATHER ____ TEMP. ____ °F
METER BOX NO. 6 H 2.048 Y 1.0105
NOZZLE CAL. .300 .300 .300 = .300
STACK DIMENSIONS 60" DIA
STACK AREA 19.635 ft^2 EFFECTIVE ____ ft^2
STACK HEIGHT 75 ft
STACK DIAMETER: UPSTRM. ____ DNSTRM. ____
PORT SIZE 4 in. NIPPLE LENGTH 4.5 in.
U CORD LENGTH 200'
REMARKS: ____

MAT'L PROCESSING RATE ____
GAS METER READINGS: FINAL 531.422 ft^3
INITIAL 477.515 ft^3
NET 53.907 ft^3
FILTER NO. 5356 IMP. VOL. GAIN 135 ml.
SIL GEL NO. 23 WT. GAIN 2.0 ml.
TOTAL CONDENSATE 137.0 ml.

ORSAT

	1	2	3	4	AVG.
% CO_2					10.0
% O_2					6.27
% CO					
% N_2					

F_O = ____ F_O RANGE = ____
ORSAT ANALYZER ____

LEAK CHECKS

PRE 0.001 cfm 15 "Hg POST 0.001 cfm 14 "Hg
METER BOX/PUMP Ok GAS SAMPLE SYST. ok
ORSAT BAG ok
PITOT TUBE NO. 73 PRE-TEST Ok
POST-TEST(+) 0.0064" / / H_2O/Sec
POST-TEST(−) 0.0064" / H_2O/Sec
PYROMETER NO. Alk 3
BOX OPERATOR Fick PROBE HOLDER Bauman

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (FT^3)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H_2O) CALC.	METER ORIFICE PRESS. DIFF. ("H_2O) ACTUAL	STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP F	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
1-1		1202	479.80	.72	3.60	3.60	399	285	63.3	86	4.0
2		[illegible]	482.09	.64	3.20	3.20	389	284	62.0	86	4.0
3		[illegible]	484.02	.56	2.80	2.80	380	288	58.9	86	4.0
4		[illegible]	486.19	.55	2.75	2.75	379	284	59.2	87	4.0
5		[illegible]	488.15	.52	2.60	2.60	376	280	56.7	87	3.0
6		[illegible]	489.95	.46	2.30	2.3	[illegible]	282	56.3	88	3.0

& ENGINEERING, INC.

Run 2

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (ft^3)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H_2O)		STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP (°F)	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
					CALC.	ACTUAL					
7			491,56	0.38	1.90	1.90	369	284	56,0	87	3.0
8			493.50	0.51	2.55	2.55	369	282	55.1	88	3.0
9			495.4	0.52	2.60	2.60	380	284	55.2	90	4.0
10			497.65	0.72	3.60	3.60	381	282	54.6	90	4.0
11			499,89	0.72	3.60	3.60	377	273	54.8	92	4.0
12			502.16	0.67	3.35	3.35	372	269	54.7	92	4.0
2-1			504.4	.66	3.30	3.30	371	262	59.1	93	4.0
2			506.85	.96	4.80	4.80	392	260	55.5	93	5.0
3			509.59	1.00	5.00	5.00	396	266	55.6	94	6.0
4			512.28	0.94	4.70	4.70	398	268	55.8	95	6.0
5			514.78	0.87	4.35	4.35	399	271	56.1	95	5.0
6			517.57	0.82	4.10	4.10	402	274	57.2	96	5.0
7			519.78	0.72	3.60	3.60	407	272	57.2	97	5.0
8			522.10	0.73	3.65	3.65	407	272	57.3	98	4.0
9			524.54	0.68	3.40	3.40	411	269	57.2	98	4.0
10			526.70	0.68	3.40	3.40	413	268	57.2	98	4.0
11			529.13	0.77	3.85	3.85	414	275	57.5	99	4.0
12			531.422	0.66	3.30	3.30	403	276	57.9	100	4.0

STACK SAMPLING FIELD DATA SHEET

ACE AIR CONSULTING & ENGINEERING, INC.
2106 N. W. 67th PLACE · Suites 9 & 10
GAINESVILLE, FLORIDA · 32606

TEST ID K-3
PAGE 1 OF 2

PLANT Okeelanta Corporation
SOURCE Boiler #16
PLANT LOCATION South Bay, Florida
TYPE OF SAMPLING TRAIN EPA 5/6
TYPE OF SAMPLES PM/SO2
DATE 7/14/94 RUN NO. 3
TIME START 1350 TIME END 60 1452
SAMPLE TIME 2.5 / (min/pt)= 60 Total min
ASSUMED MOISTURE ____ % FDA ____
NOMOGRAPH C_f 5.0 PITOT CORR. .84
P_b 30.20 "Hg P_g 30.20 "Hg
WEATHER ____ TEMP. ____ °F
METER BOX NO. 6 H 2.048 Y 1.0105
NOZZLE CAL. .300 .300 .300 = .300
STACK DIMENSIONS 60" DIA
STACK AREA 19.635 ft² EFFECTIVE ____ ft²
STACK HEIGHT 75 ft.
STACK DIAMETER: UPSTRM. ____ DNSTRM. ____
PORT SIZE 4 in. NIPPLE LENGTH 4.5 in.
U CORD LENGTH 200 /
REMARKS: ____

MAT'L PROCESSING RATE ____
GAS METER READINGS: FINAL 590.488 ft³
INITIAL 531.642 ft³
NET 58.846 ft³
FILTER NO. 5357 IMP. VOL. GAIN 176 ml.
SIL. GEL NO. 4 WT. GAIN 8.8 ml.
TOTAL CONDENSATE 184.8 ml.

ORSAT

	1	2	3	4	AVG.
% CO_2					10.0
% O_2					5.9
% CO					
% N_2					

F_O = ____ F_O RANGE = ____
ORSAT ANALYZER ____

LEAK CHECKS
PRE 0.002 cfm 15 "Hg POST 0.002 cfm 16 "Hg
METER BOX/PUMP OK GAS SAMPLE SYST. OK
ORSAT BAG OK
PITOT TUBE NO. 73 PRE-TEST OK
POST-TEST(+) 0.006 4" / H_2O/Sec
POST-TEST(−) 0.008 4" / H_2O/Sec
PYROMETER NO. A1K-3
BOX OPERATOR Fick PROBE HOLDER Bauman

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (FT.³)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H_2O) CALC.	METER ORIFICE PRESS. DIFF. ("H_2O) ACTUAL	STACK GAS TEMP (°F)	SAMPLE BOX TEMP (°F)	LAST IMPINGER TEMP F	DRY GAS METER TEMP (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
1-1		1350	534.32	1.00	5.00	5.00	398	281	63.6	95	5.0
2			537.02	1.00	5.00	5.00	401	278	63.5	95	5.0
3			539.61	0.96	4.80	4.80	402	276	63.3	95	5.0
4			542.51	0.97	4.85	4.85	404	276	62.1	96	6.0
5			544.99	0.86	4.30	4.30	403	279	63.0	96	5.0
6			547.51	0.84	4.20	4.20	401	280	62.1	97	5.0

& ENGINEERING, INC.

Best Available Copy

TEST ID K-3

PAGE 2 OF 2

PORT AND TRAVERSE POINT NUMBER	DISTANCE FROM INSIDE STACK WALL /COMMENTS	CLOCK TIME	GAS METER READING (ft^3)	STACK VELOCITY HEAD	METER ORIFICE PRESS. DIFF. ("H_2O)		STACK GAS TEMP. (°F)	SAMPLE BOX TEMP. (°F)	LAST IMPINGER TEMP. (°F)	DRY GAS METER TEMP. (°F)	VACUUM ON SAMPLE TRAIN ("Hg)
					CALC.	ACTUAL					
7			550.06	0.70	3.50	3.50	398	285	61.9	98	4.0
8			552.15	0.67	3.35	3.35	401	290	62.5	98	4.0
9			554.43	0.68	3.40	3.40	401	295	62.8	99	4.0
10			556.70	0.70	3.50	3.50	401	295	63.3	99	4.0
11			559.21	0.66	3.30	3.30	400	298	64.1	99	4.0
12			561.38	0.72	3.60	3.60	399	292	62.9	100	4.0
	$y = 5.5$										
2-1			563.05	0.76	4.18	4.18	389	302	63.9	100	4.0
2			565.19	0.74	4.07	4.07	393	293	61.9	100	5.0
3			567.49	0.72	3.96	3.96	392	294	61.9	100	4.0
4			569.95	0.70	3.85	3.85	394	295	61.6	110	4.0
5			572.30	0.66	3.63	3.63	394	292	61.6	110	4.0
6			574.65	0.61	3.36	3.36	391	293	61.6	110	4.0
7			577.01	0.68	3.74	3.74	398	295	62.1	120	4.0
8			579.65	0.83	4.565	4.565	399	290	61.3	130	5.0
9			582.30	0.85	4.675	4.675	404	288	61.4	130	5.0
10			584.97	1.00	5.50	5.50	404	290	61.5	140	6.0
11			587.73	0.84	4.62	4.62	397	286	61.8	140	6.0
12			590.488	0.83	4.565	4.565	393	287	62.3	140	5.0

APPENDIX C

LABORATORY ANALYSIS

SOURCE: Okeelanta Boiler 16

ACE AIR CONSULTING & ENGINEERING, INC.

BALANCE CHECK:

1st GROSS WT. - 0.0 ——— 0.5 .5001 10.0 10.0001 100.0 99.9999

DATE 7/18/94 TIME 1445 XRH 49 BY: (INIT.) CPS

Temp = 74°

2nd GROSS WT. - 0.0 ——— 0.5 .5004 10.0 10.0000 100.0 99.9999

3rd " ——— ——— ——— 99.9997

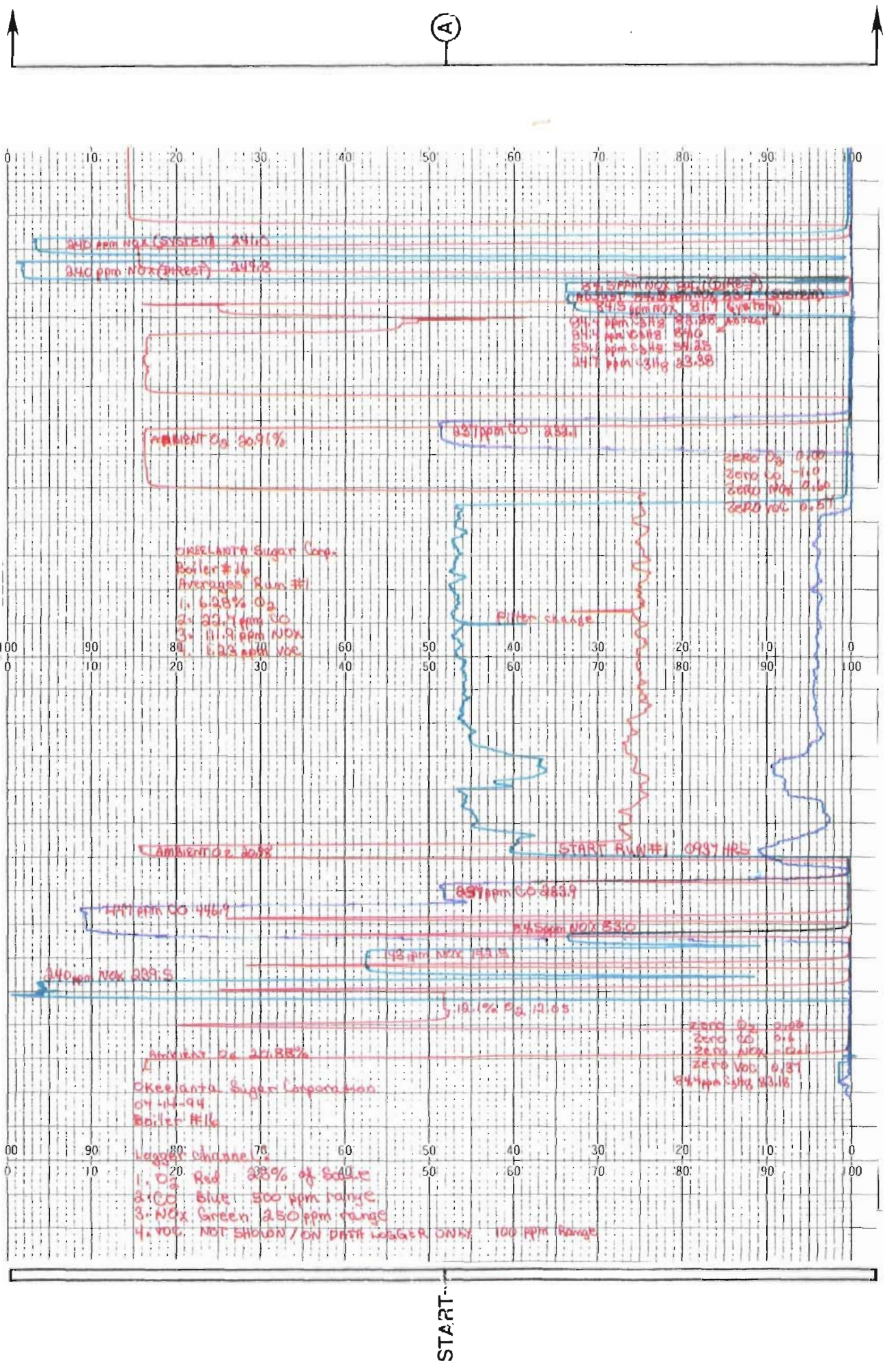
DATE 7-19-94 TIME 0800 XRH 48 BY: (INIT.) SLN

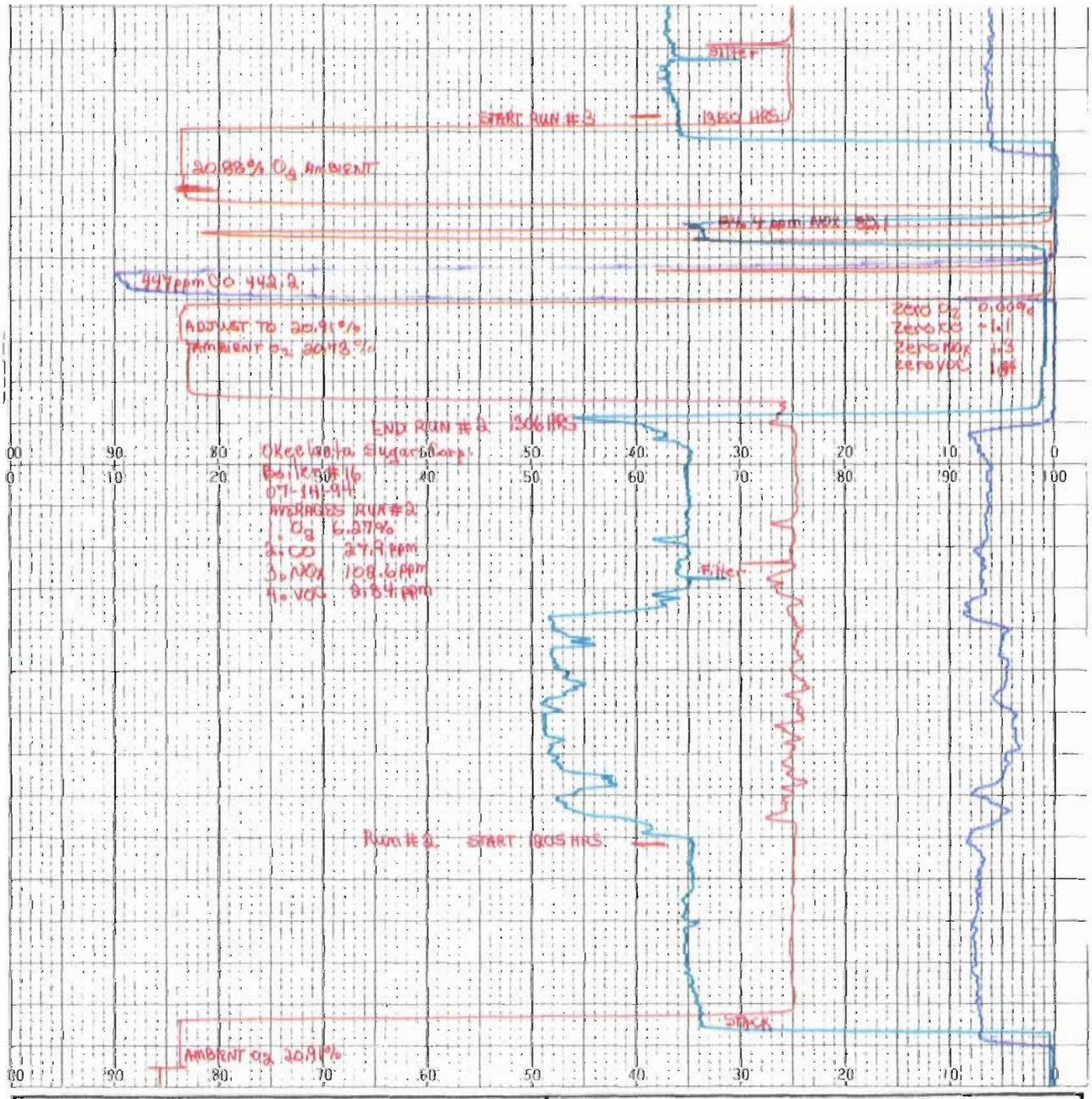
7-19-94 1630 48.78° SLN

RUN I.D.	FILTER/ CONT. NO.	~~VOLUME (ml)~~	1st GROSS WT. (g)	2nd GROSS WT. (g)	AVG GROSS WT. (g)	TARE WT. (g)	SUB NET WT. (g)	BLANK (g)	NET WT. (mg)
Filters									
1	5553	NA	.4030	.4035	.4033	.3958	.0075		7.5
2	5356	↓	.4032	.4037	.4034	.3969	.0065		6.5
3	5357		.4048	.4047	.4048	.4001	.0047		4.7
BLANK	4798		.4023	.4023	.4023	.4018	0.0005		0.5
Washes		Wash Mass (g)							
1	162	105.3	107.4964	107.4941	107.4943	107.4854	0.0089		8.9
2	164	116.6	108.8808	108.8787	108.8789	108.8686	0.0103		10.3
3	166	117.6	104.0657	104.0637	104.0638	104.0581	0.0057		5.7
BLANK	98	125.5	101.0504	101.0488	101.0490	101.0504	—		
				3rd WT					
WASHES									
1	162			107.4944					
2	164			108.8791					
3	166			104.0639					
B	98			101.0492					

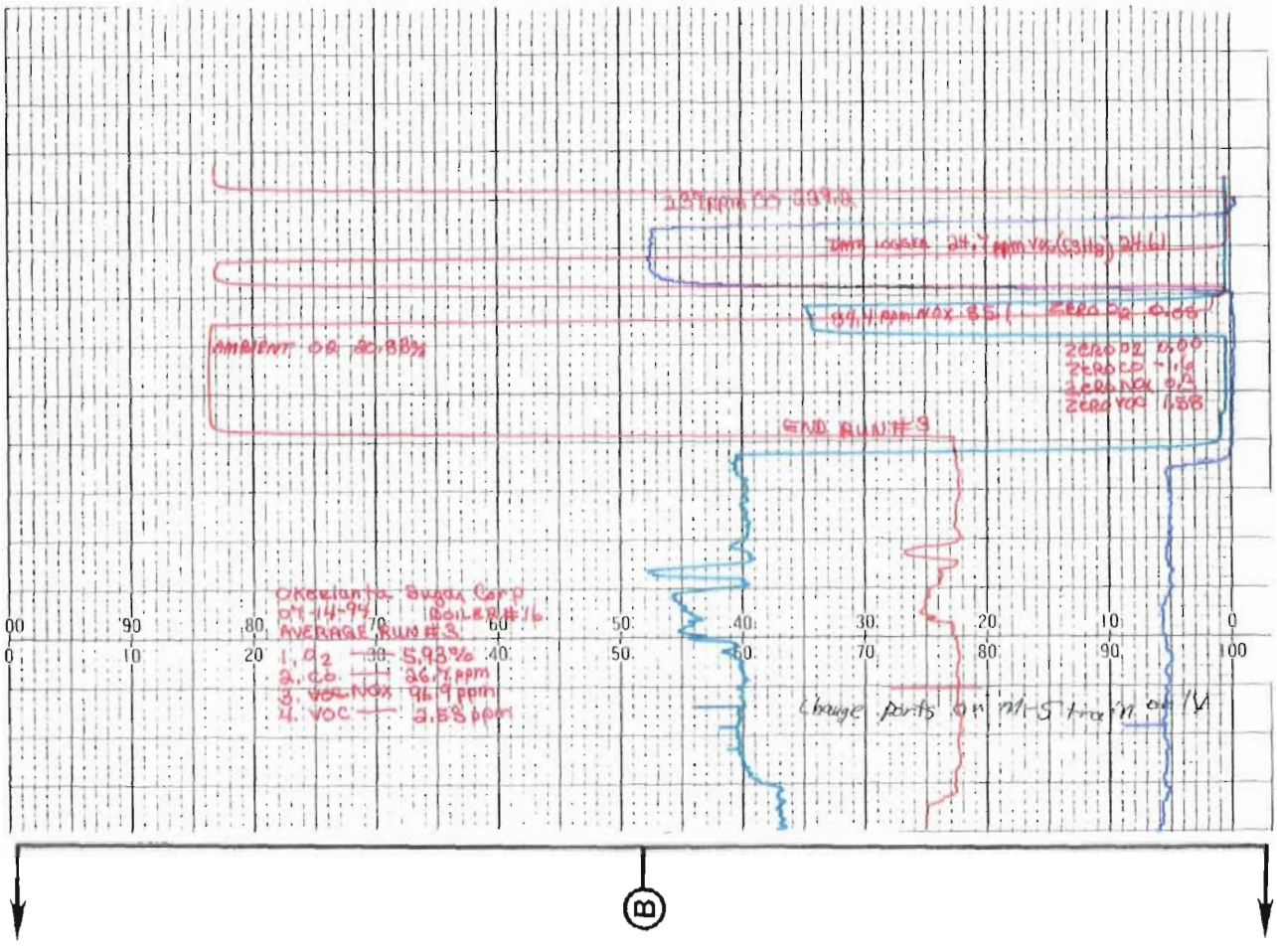
APPENDIX D

STRIP CHART COPIES


A
AIR CONSULTING & ENGINEERING, INC.
START
OKEELANTA Sugar Corp.
Boiler #1&
Averages Run #1
1. 6.28% O2
2. 32.4 ppm CO
3. 111.9 ppm NOx
4. 1.23 ppm VOC
Filter change
START RUN #1 0937 HRS
Okeelanta Sugar Corporation
04-14-94
Boiler #1&
Logger Channels
1. O2 Red 25% O2 Scale
2. CO Blue 500 ppm range
3. NOx Green 250 ppm range
4. VOC NOT SHOWN / ON DATA LOGGER ONLY 100 ppm Range


START RUN #3
1350 HRS.
20.88% O2 AMBIENT
447ppm CO 442 ppm
ADJUST TO: 20.91%
AMBIENT O2 20.93%
Zero O2 0.00%
Zero CO +1.1
Zero NOx +.3
END RUN #3 1506 HRS
Okeelanta Sugar Corp.
Boiler #16
07-14-94
AVERAGES RUN #3:
1. O2 6.27%
2. CO 27.9 ppm
3. NOx 108.6 ppm
4. VOC 3164 ppm
Run #4 START: 1605 HRS.
AMBIENT O2 20.91%
90 80 70 60 50 40 30 20 10 0

END



B

AIR CONSULTING & ENGINEERING, INC.

APPENDIX E

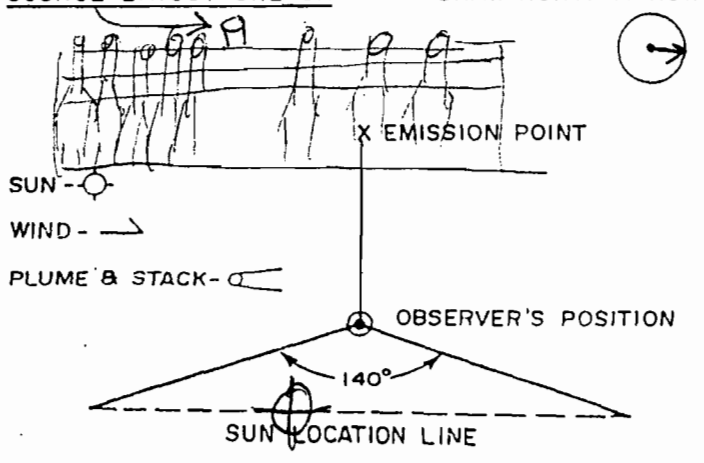
VISIBLE EMISSION DATA

Air Consulting and Engineering

VISIBLE EMISSION OBSERVATION FORM

SOURCE NAME	Okeelanta Sugar Corp.
ADDRESS	US-27 (South of South Bay)
CITY	South Bay
STATE	FL
ZIP	33493
PHONE	
SOURCE I.D. NUMBER	Boiler No. 16
PROCESS EQUIPMENT	Power boiler
OPERATING MODE	100% #2 Diesel ~~Full capacity~~ 106/135 mmBTU/H
CONTROL EQUIPMENT	(None) N/A
OPERATING MODE	N/A
DESCRIBE EMISSION POINT	60" dia.
START	Vert. Stack exit
STOP	Same
HEIGHT ABOVE GROUND LEVEL START	70'
HEIGHT ABOVE GROUND LEVEL STOP	70'
HEIGHT REL. TO OBSERVER START	70'
HEIGHT REL. TO OBSERVER STOP	70'
DISTANCE FROM OBSERVER START	300'
DISTANCE FROM OBSERVER STOP	same
DIRECTION FROM OBSERVER START	West 275°
DIRECTION FROM OBSERVER STOP	west
DESCRIBE EMISSIONS START	not visible
DESCRIBE EMISSIONS STOP	same
EMISSION COLOR START	clear
EMISSION COLOR STOP	clear
PLUME TYPE	CONT. ☐ not vis; bo FUGITIVE ☐ INTER. ☐
WATER DROPLETS PRESENT	NO ☒ YES ☐
IF WATER DROPLET PLUME	ATTACHED ☐ DETACHED ☐ NA
POINT IN PLUME AT WHICH OPACITY WAS DETERMINED START	3' above outlet
POINT IN PLUME AT WHICH OPACITY WAS DETERMINED STOP	Same
DESCRIBE BACKGROUND START	Blue Sky
DESCRIBE BACKGROUND STOP	Same
BACKGROUND COLOR START	Blue
BACKGROUND COLOR STOP	Blue
SKY CONDITIONS START	clear
SKY CONDITIONS STOP	scattered clear
WIND SPEED START	3-5
WIND SPEED STOP	5-8
WIND DIRECTION START	~east
WIND DIRECTION STOP	~east
AMBIENT TEMP START	~85° F
AMBIENT TEMP STOP	Same
WET BULB TEMP.	not recorded.
RH %	~70

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



OBSERVATION DATE	START TIME	STOP TIME
7/14/94	0935	1035

SEC / MIN	0	15	30	45	SEC / MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 5 WERE: 0

RANGE OF OPACITY READINGS MINIMUM: 0 MAXIMUM: 0

OBSERVER'S NAME (PRINT): Charles G. Simon

OBSERVER'S SIGNATURE: Charles G. Simon — DATE: 7/14/94

ORGANIZATION: Air Consulting & Engineering

CERTIFIED BY: Eastern Tech. Assoc. — DATE: 7/13/94

VERIFIED BY: — DATE:

COMMENTS: No other sources operating

No visible emissions

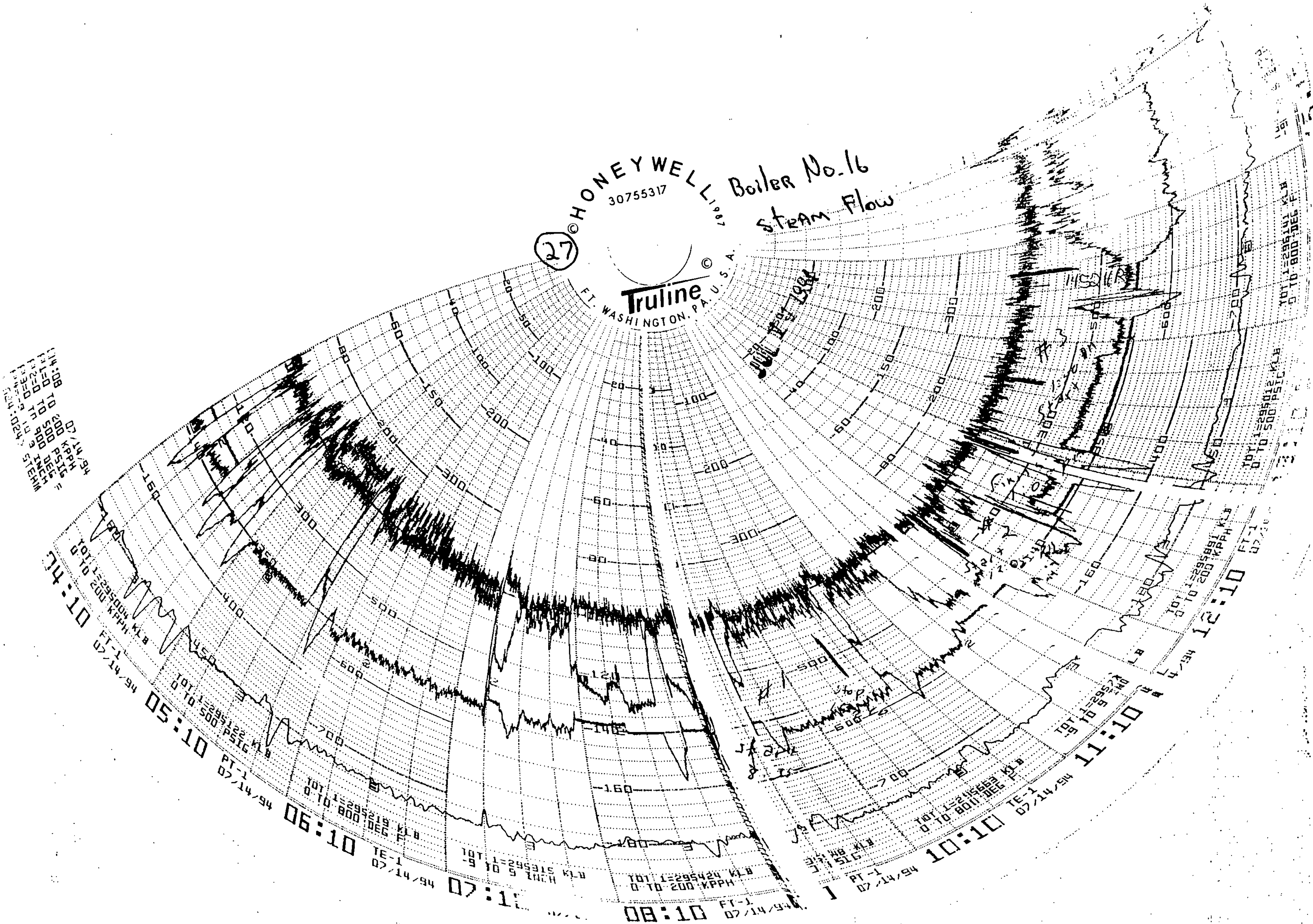
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS

SIGNATURE: Sterling L. Gordon FDEP

TITLE: PE — DATE: 7/14/94

APPENDIX F

BOILER PARAMETERS


HONEYWELL
30755317
1987
Truline
FT. WASHINGTON, PA. U.S.A.
27
Boiler No. 16
Steam Flow
07/14/94
04:10
FT-1
07/14/94
05:10
PT-1
07/14/94
06:10
TE-1
07/14/94
08:10
FT-1
PT-1
07/14/94
10:10
TE-1
07/14/94
11:10
12:10
FT-1
TOT 1=295122 KLB
0 TO 500 PSIG
TOT 1=295219 KLB
0 TO 800 DEG F
TOT 1=295315 KLB
-9 TO 9 INCH
TOT 1=295424 KLB
0 TO 200 KPPH
TOT 1=295663 KLB
TOT 1=295012 KLB
0 TO 500 PSIG
TOT 1=296141 KLB
0 TO 800 DEG F

AIR CONSULTING AND ENGINEERING, INC.

BOILER OPERATION PARAMETERS

PLANT:	OKEELANTA CORPORATION	DATE:	7/14/94
LOCATION:	SOUTH BAY, FLORIDA	RUN:	1
SOURCE:	BOILER NUMBER 16	TIME:	0938-1039

	TIME INTERVAL	61	MIN
OIL:			
	FINAL OIL	3099132	
	INITIAL OIL	3098045	
	FACTOR	1	
STEAM:			
	FINAL STEAM	295709	
	INITIAL STEAM	295601	
	FACTOR	1000	
	TEMPERATURE	729	F
	PRESSURE	370	PSIG
		385	PSIA
FEEDWATER:			
	TEMPERATURE	217	F
	PRESSURE	605	PSIG
		620	PSIA
HEAT INPUT:			
	STEAM	1379.8	BTU/LB
	FEEDWATER	186.1	BTU/LB
	NET STEAM	1193.7	BTU/LB
	STEAM RATE	106230	LB/HR
	BOILER EFFICIENCY	85	%
	TOTAL FUEL HEAT INPUT	149.18	MMBTU/HR
	STEAM CALIBRATION FACTOR	1	
	OIL	1069.18	GPH
	OIL	150000	BTU/GAL
	TOTAL HEAT INPUT (OIL)	160.38	MMBTU/HR

AIR CONSULTING AND ENGINEERING, INC.

BOILER OPERATION PARAMETERS

PLANT:	OKEELANTA CORPORATION	DATE:	7/14/94
LOCATION:	SOUTH BAY, FLORIDA	RUN:	2
SOURCE:	BOILER NUMBER 16	TIME:	1205-1306

	TIME INTERVAL	61	MIN
OIL:			
	FINAL OIL	3102000	
	INITIAL OIL	3100791	
	FACTOR	1	
STEAM:			
	FINAL STEAM	295998	
	INITIAL STEAM	295877	
	FACTOR	1000	
	TEMPERATURE	723	F
	PRESSURE	361	PSIG
		376	PSIA
FEEDWATER:			
	TEMPERATURE	218	F
	PRESSURE	606	PSIG
		621	PSIA
HEAT INPUT:			
	STEAM	1376	BTU/LB
	FEEDWATER	187.1	BTU/LB
	NET STEAM	1188.9	BTU/LB
	STEAM RATE	119016	LB/HR
	BOILER EFFICIENCY	85	%
	TOTAL FUEL HEAT INPUT	166.47	MMBTU/HR
	STEAM CALIBRATION FACTOR	1	
	OIL	1189.18	GPH
	OIL	150000	BTU/GAL
	TOTAL HEAT INPUT (OIL)	178.38	MMBTU/HR

AIR CONSULTING AND ENGINEERING, INC.

BOILER OPERATION PARAMETERS

PLANT:	OKEELANTA CORPORATION	DATE:	7/14/94
LOCATION:	SOUTH BAY, FLORIDA	RUN:	3
SOURCE:	BOILER NUMBER 16	TIME:	1349-1452

TIME INTERVAL	63	MIN
OIL:		
FINAL OIL	3104287	
INITIAL OIL	3102924	
FACTOR	1	
STEAM:		
FINAL STEAM	296218	
INITIAL STEAM	296091	
FACTOR	1000	
TEMPERATURE	708	F
PRESSURE	347	PSIG
	362	PSIA
FEEDWATER:		
TEMPERATURE	213	F
PRESSURE	609	PSIG
	624	PSIA
HEAT INPUT:		
STEAM	1369.2	BTU/LB
FEEDWATER	181.07	BTU/LB
NET STEAM	1188.13	BTU/LB
STEAM RATE	133684	LB/HR
BOILER EFFICIENCY	85	%
TOTAL FUEL HEAT INPUT	186.86	MMBTU/HR
STEAM CALIBRATION FACTOR	1	
OIL	1298.10	GPH
OIL	150000	BTU/GAL
TOTAL HEAT INPUT (OIL)	194.71	MMBTU/HR

BOILER OPERATION PARAMETERS

PLANT Okeelanta Sugar Corp. BOILER NUMBER 16

DATE 07-13-94 RUN NUMBER 1 OIL METER FACTOR 1

STEAM INTEGRATOR FACTOR 1000 SCRUBBER(S) PRESS.DROP ___, ___

SCRUBBER(S) GPM ___, ___

OPERATOR SIGNATURE ___ SCRUBBER(S)H2O LEVEL ___, ___

PH(if applicable) ___, ___

INITIAL INTEGRATOR 295601 FINAL INTEGRATOR 295709

0938 1039

TIME	OIL	STEAM			FEEDWATER	
	METER READING	LBS.FLOW	TEMP.	PRESSURE	TEMP.	PRESSURE
~~0937~~						
0937	3098045	107000	733	375	215	600
0951	3098312	110000	733	383	215	605
1008	3098610	108000	728	364	217	605
1021	3098840	108000	727	361	218	610
1038	3099132	107000	725	368	218	605
		AV.	729	370	217	605
				+15		+15
				385		620
				1379.8 BTU		1861

~~EMISSION SUMMARY~~ Boiler Operating Parameters

ACE AIR CONSULTING & ENGINEERING, INC.
2106 N.W. 67th PLACE · Suites 9&10
GAINESVILLE, FLORIDA · 32606
(904) 335-1889

PLANT: Okeelanta Sugar Corp.
SOURCE: Boiler # 16
DATE: 07-13-94 Run #2
PAGE 1 OF 1

1205 Initial Integrator 295877 1306 Final Integrator 295998

Time	OIL		STEAM			Feedwater	
	meter Reading	LBS Flow	Temp.	Pressure		Temp.	Pressure
1204	3100791	112000	724	376		218	610
1220	3101086	100000	724	359		218	610
1224	3101342	104000	736	378		218	610
1248	3101636	129000	708	345		217	600
1305	3102000	130000	725	345		217	600
		Av.	723	361		218	606
				+ 15			+ 15
				376			621
				1376 BTU		182.1	

steam Integrator factor: 1000
oil meter factor: 1

~~EMISSION SUMMARY~~ Boiler Operating Parameters

PLANT: OKeelanta Sugar Corp.

SOURCE: Boiler #16 Run #3

DATE: 07-14-94

PAGE 1 OF 1

ACE AIR CONSULTING & ENGINEERING, INC.
2106 N.W. 67th PLACE · Suites 9&10
GAINESVILLE, FLORIDA · 32606
(904) 335-1889

144

Initial Integrator 296091 1350 HRS Final Integrator 296218

Time	OIL meter reading	LBS Flow	STEAM Temp.	Press.		Feedwater Temp	Press.
1349	3102924	130000	705	346		218	608
1404	3103256	130000	708	345		213	610
1419	3103574	135000	708	346		212	605
1437	3103965	138000	706	343		211	610
1452	3104287	132000	712	353		212	615
		AV.	708	347		213	609
				+ 15			+ 15
				362			624
	STEAM Integrator factor				1000		
	Oil Integrator factor				1		
					1369.2 BTU		181.07 BTU

APPENDIX G

QUALITY ASSURANCE AND CHAIN OF CUSTODY

STANDARD METER CALIBRATION
Meter Number 1040616 - S

Air Consulting and Engineering, Inc. (ACE) uses a dry gas meter for the calibration standard. This meter has been calibrated against a wet test meter in triplicate. This data was used to generate a standard meter calibration curve (see next page). Field meter calibrations are corrected to this curve using the following formula:

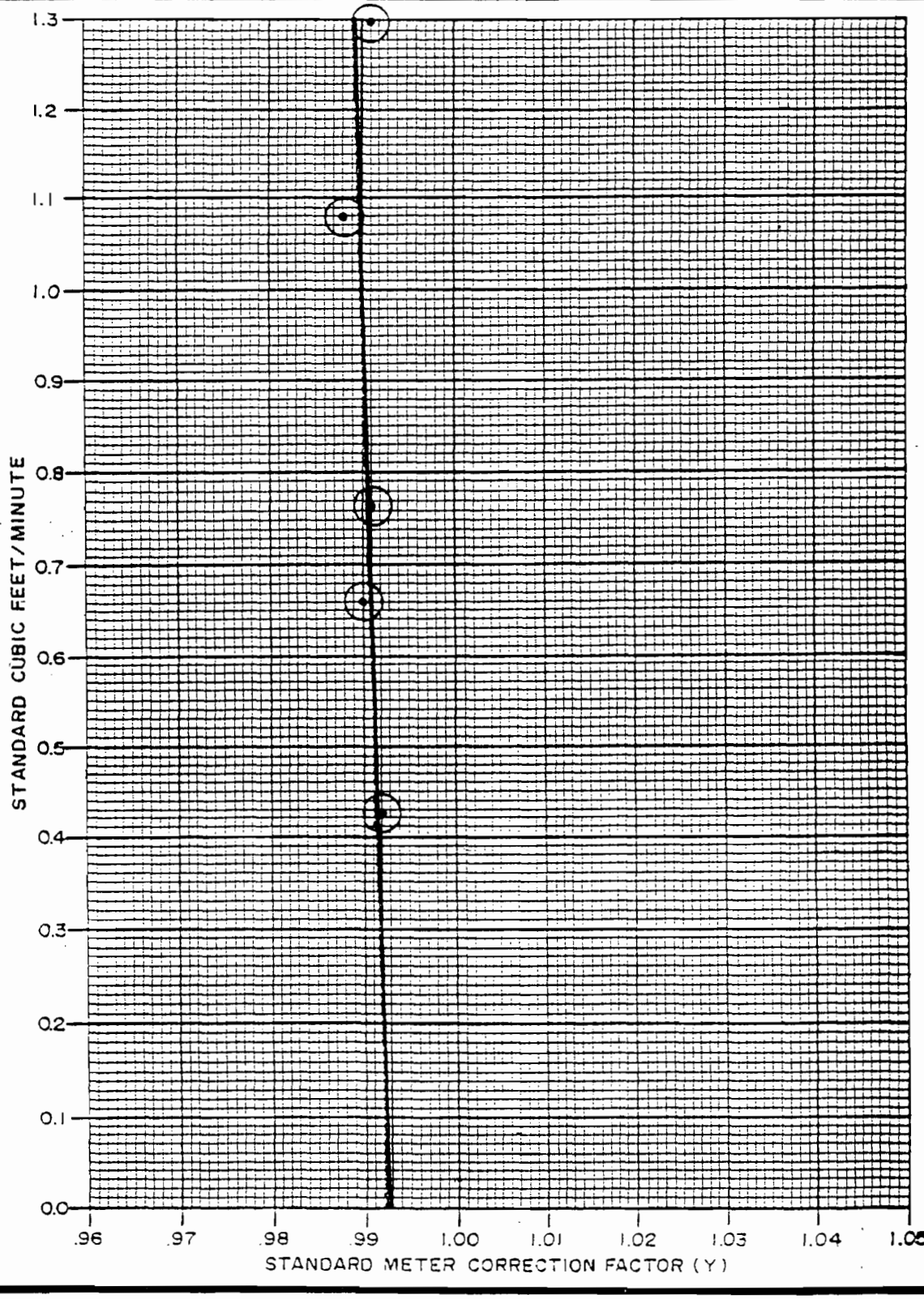
$$Y_a \times Y_s = Y$$

Y_a = actual ratio of field meter to standard meter

Y_s = ratio of standard meter to wet test meter at a given flow rate (from Calibration Curve)

Y = corrected ratio of field meter

The dry standard meter was calibrated on July 12, 1993, and is checked and/or recalibrated at least annually.



STANDARD METER CALIBRATION CURVE

JULY 12, 1993 - SERIAL NO. 1040616 (SOUTH)

NOTE: CALIBRATED AGAINST 1 FT / REV. WET TEST METER AT ESE, INC.

AIR CONSULTING and ENGINEERING

AIR CONSULTING & ENGINEERING — STANDARD METER CALIBRATION

DATE 7-12-93 LEAK CHECK 0.000 CFM at 12 In. Hg.

METER SERIAL NUMBER 1040616 (SOUTH) BAROMETRIC PRESSURE 30.16 In. Hg.

STD GAS METER TEMPERATURE 76 °F/ ASTM GLASS THERMOMETER TEMPERATURE 76 °F

WET ΔH	STD ΔH	GAS VOLUME, WET TEST METER			GAS VOLUME, STD GAS METER			TEMP WET TEST METER (°F)	TEMP OF STD METER (°F)	TIME (Minutes)
		INITIAL	FINAL	ACTUAL ft^3	INITIAL	FINAL	ACTUAL ft^3			
-.3	-.63	0.000	5.100	5.100	761.399	766.552	5.153	75	78	12
-.3	-.63	0.000	5.110	5.110	766.552	771.718	5.166	75	76	12
-.3	-.63	0.000	5.093	5.093	771.718	776.873	5.155	75	76	12
-.4	-1.2	0.000	5.298	5.298	777.783	783.158	5.375	75	76	8
-.4	-1.2	0.000	5.299	5.299	783.158	788.538	5.380	75	76	8
-.4	-1.2	0.000	5.297	5.297	788.538	793.914	5.376	75	76	8
-.5	-1.5	0.000	5.002	5.002	719.913	725.008	5.095	74	76	6.50
-.5	-1.5	0.000	7.001	7.001	725.009	735.113	7.104	74	76	9.05
-.5	-1.5	0.000	5.012	5.012	732.113	737.203	5.090	75	76	6.62
-.7	-2.4	0.000	6.517	6.517	796.774	803.417	6.643	75	76	6
-.7	-2.4	0.000	5.424	5.424	803.417	808.959	5.543	75	76	5
-.7	-2.4	0.000	5.422	5.422	808.959	814.492	5.533	75	76	5
-.95	-2.7	0.000	5.710	5.710	740.453	746.259	5.796	75	76	5
-.95	-2.7	0.000	5.694	5.694	746.259	752.053	5.794	75	76	5
-.95	-2.7	0.000	5.690	5.690	753.647	759.444	5.797	75	75	6

CALIBRATED BY: Greg R. Thom

	Y	SCFMD	Y	SCFMD	Y	SCFMD	Y	SCFMD	Y	SCFMD
1	0.993	0.423	0.990	0.659	0.989	0.767	0.989	1.081	0.994	1.136
2	0.993	0.424	0.990	0.659	0.993	0.771	0.986	1.079	0.991	1.133
3	0.991	0.422	0.990	0.659	0.990	0.753	0.988	1.079	0.988	1.132
AVG	0.992	0.424	0.990	0.659	0.991	0.764	0.988	1.080	0.991	1.134

air consulting and engineering

NOTE: CALIBRATED AGAINST 1 FT³/REV. WET TEST METER AT ESE

AIR CONSULTING & ENGINEERING — ANNUAL METER CALIBRATION

DATE 04-01-94 LEAK CHECK 0.000 CFM at 15 In. Hg.

METER BOX NUMBER 6 BAROMETRIC PRESSURE 30.18 In. Hg.

DRY GAS METER TEMPERATURE 79 °F/ASTM GLASS THERMOMETER TEMPERATURE 79 °F

ΔHS	AVERAGE ΔHD	GAS VOLUME, STANDARD METER			GAS VOLUME, DRY GAS METER			TEMP STD METER	TEMP OF DRY METER	TIME (Minutes)	TIMER
		INITIAL	FINAL	ACTUAL ft^3	INITIAL	FINAL	ACTUAL ft^3				
-.33	.50	771.100	781.100	10.000	406.142	416.269	10.127	79	90	27.73	
-.48	1.00	760.400	770.400	10.000	395.415	405.430	10.015	79	90	19.09	
-.65	1.50	739.100	749.100	10.000	374.110	384.080	9.970	79	90	15.41	
-.78	2.00	728.400	738.400	10.000	363.500	373.407	9.907	79	90	13.69	
-1.10	3.00	717.700	727.700	10.000	352.931	362.797	9.866	79	90	11.00	
-1.30	4.00	694.200	704.200	10.000	340.448	350.265	9.817	79	88	9.60	

	DELTA H	Ya	SCFM	Ys	Y
	2.133	1.006	0.356	0.992	0.998
	2.029	1.015	0.517	0.991	1.005
	1.976	1.020	0.641	0.991	1.011
	2.080	1.025	0.722	0.991	1.016
	2.014	1.027	0.898	0.991	1.018
	2.053	1.026	1.029	0.990	1.015
MEAN:	2.048	1.020		0.991	1.010

CALIBRATED BY: Gerard P Gauthreaux

AIR CONSULTING & ENGINEERING, inc. — POST TEST CALIBRATION

DATE 07-18-94 METER BOX NUMBER 6 LEAK CHECK 0.00 CFM at 15 in. Hg.

CLIENT Okeelanta Sugar Corp. SOURCE #16 Boiler THERMOCOUPLE NUMBER 73 PYROMETER NUMBER ATK-3

FLIGHT SERVICE Pb — in. Hg. ACE BAROMETER Pb 30.21 in. Hg.

ASTM GLASS THERMOMETER 374 °F / THERMOCOUPLE 377 °F ASTM GLASS THERMOMETER 86 °F / METER TEMP 86 °F

ΔHS	AVERAGE ΔHD	GAS VOLUME, STANDARD METER			GAS VOLUME, DRY GAS METER			TEMP STANDARD METER	TEMP OF DRY METER	TIME (Minutes)	MAX. VACUUM In. Hg.
		INITIAL	FINAL	ACTUAL ft^3	INITIAL	FINAL	ACTUAL ft^3				
-1.1	3.50	242.900	252.900	10.000	649.722	659.460	9.738	86 ~~99~~	99	10.19	6.0
-1.1	3.50	252.900	262.900	10.000	659.460	669.400	9.740	86	99	10.20	6.0
-1.1	3.50	263.200	273.200	10.000	669.490	679.	9.735	87	100	10.20	6.0

CALIBRATED BY: Gerard P Gautreaux

	DELTA H	Ya	SCFM	Ys	Y
	2.034	1.042	0.958	0.991	1.033
	2.038	1.042	0.957	0.991	1.032
	2.042	1.043	0.956	0.991	1.033
MEAN:	2.038	1.042		0.991	1.033

ace air consulting and engineering

AIR CONSULTING & ENGINEERING, INC. — PITOT TUBE CALIBRATION

DATE CALIBRATED 5-17-93 PITOT TUBE 73

IS PITOT TUBE ASSEMBLY LEVEL Yes ARE PITOT TUBE OPENINGS DAMAGED NO

α_1 = 0 °(<10°), α_2 = 1 °(<10°), β_1 = 4 °(<5°), β_2 = 0 °(<5°)

γ = 1 ° θ = 2 ° A = 0.9999 in. = (Pa + Pb)

z = A sin γ = 0.017 in.; <0.32/<1/8 In.

w = A sin θ = 0.035 in.; <0.08/<1/32 In.

P_a 0.4990 in. P_b 0.5009 in. D_t .400

WAS CALIBRATION REQUIRED Yes

THERMOCOUPLE CALIBRATION

SOURCE (SPECIFY)	ASTM GLASS THERMOMETER WITH MERCURY (°F)	PYROMETER (°F)	DEGREE DIFFERENCE	PERCENT DIFFERENCE
ICE BATH	35	35	0	0.0
AMBIENT	87	89	2	0.4
HOT OVEN	327	329	2	0.4

CALIBRATED BY: Gerald P Gauthreaux

FDER - MAXIMUM 5° DIFFERENCE

EPA $\left[\frac{(\text{REF. TEMP. °F} + 460°) - (\text{PYROMETER TEMP. °F} + 460°)}{\text{REF. TEMP. °F} + 460°}\right] 100 \leq 1.5\%$

AIR CONSULTING & ENGINEERING, INC. PYROMETER CALIBRATION

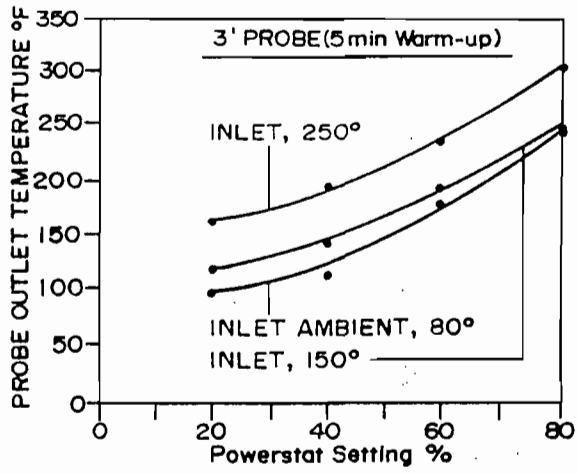
DATE 6/22/94 PYROMETER NUMBER Atkins #3

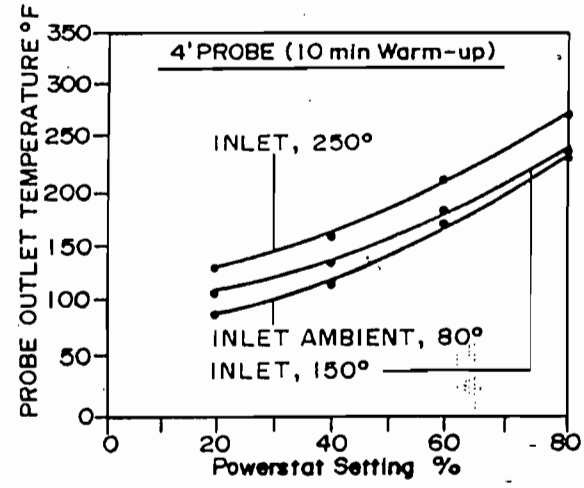
SOURCE (SPECIFY)	GLASS THERMOMETER WITH NBS MERCURY (°F)	PYROMETER (°F)	DEGREE DIFFERENCE	PERCENT DIFFERENCE
ICE BATH	32	32	0	0
AMBIENT	82	83	1	0.2
HOT OVEN	400	404	4	0.8

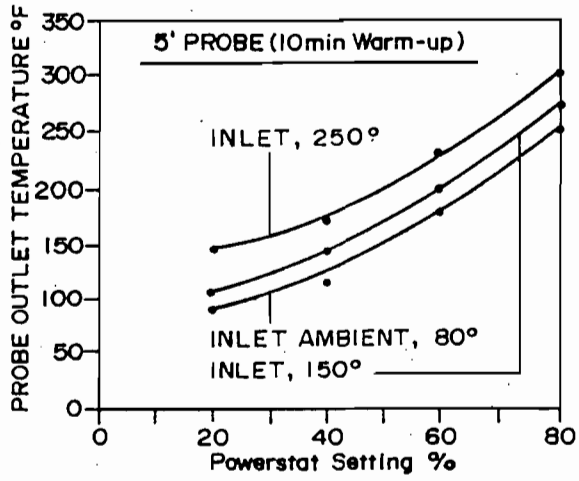
FDER - MAXIMUM 5° DIFFERENCE

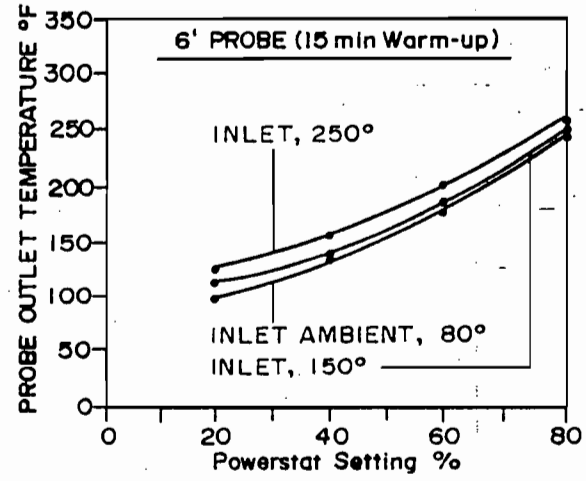
EPA $\left[\frac{(\text{REF. TEMP. °F} + 460°) - (\text{PYROMETER TEMP. °F} + 460°)}{\text{REF. TEMP. °F} + 460°}\right] 100 \leq 1.5\%$

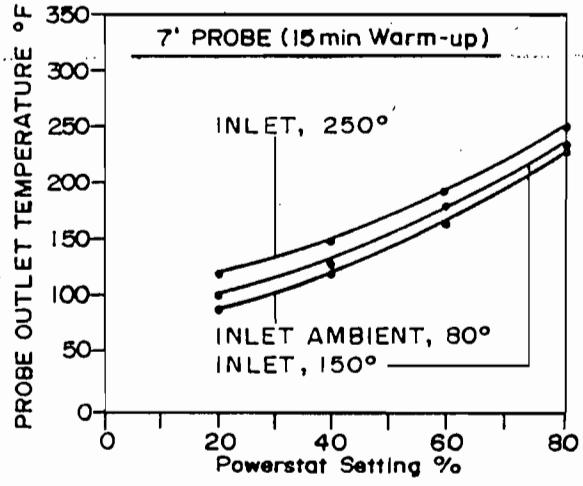
CALIBRATED BY: Gerard Gantbrecht











NOTE: Flow rate held constant at 0.75; 50% change in flow rate has little effect on probe temperature.

PROBE GRAPH

AIR CONSULTING and ENGINEERING

AIR CONSULTING AND ENGINEERING, Inc.

SAMPLE RECOVERY AND CHAIN OF CUSTODY

PLANT NAME Okeelanta Corporation TEST DATE 7/14/94

SOURCE NAME Boiler 16 SAMPLE RECOVERED BY Fick

TYPE OF SAMPLE particulate PARTICULATE ANALYSES BY Swearingen

SAMPLE RECOVERY

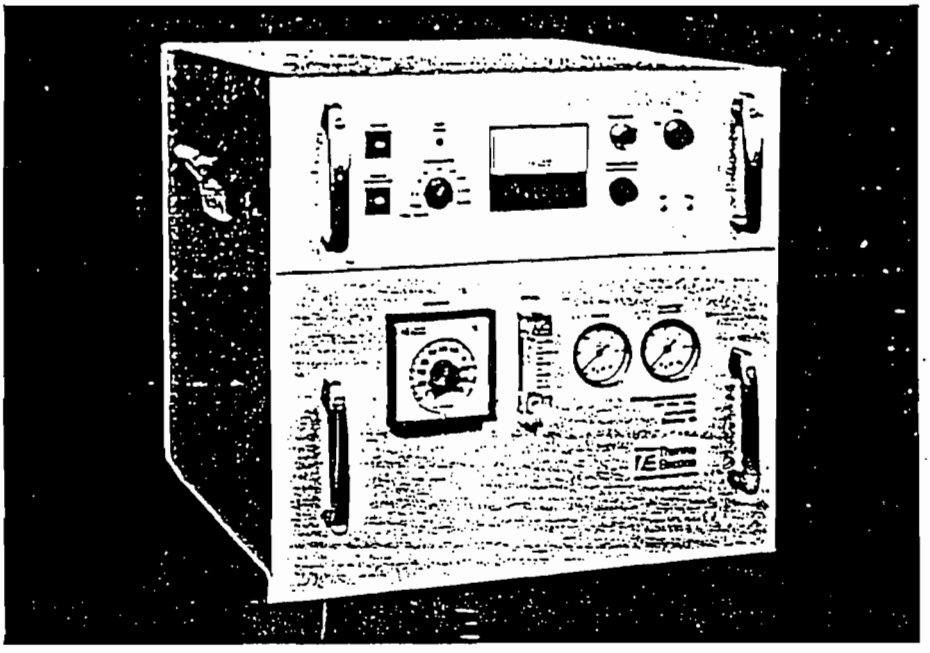
RUN NO.	CONTAINER NO.	LIQUID LEVEL MARKED	COLOR	COMMENTS
R-1	1	–	clear	
R-2	2	–	↓	
R-3	3	–	↓	
R-1	5553		beige	
R-2	9356		↓	
R-3	5357		↓	
(ACETONE) / WATER BLANK (CIRCLE)	98			
FILTER BLANK	4798			

SILICA GEL

RUN NO.	CONTAINER NO.	FINAL WT. (g)	INIT. WT. (g)	NET WT. (g)	COLOR
1	38	214.5	200.0	14.5	pink / blue
2	23	202.0	200.0	2.0	↓
3	4	208.8	200.0	8.8	↓
			200.0		
			200.0		
			200.0		
			200.0		
			200.0		

Thermo Electron
CORPORATION
Environmental Instruments Division

Chemiluminescent NO/NO_x Analyzer



Model 10

For Continuous Source Gas Monitoring

Thermo Electron's Model 10 NO/NO_x Analyzer is based on the chemiluminescent reaction between nitric oxide (NO) and ozone (O_3) according to the reaction:

$$NO + O_3 \rightarrow NO_2 + O_2 + h\nu$$

Light emission results when the electronically excited NO_2 molecules revert to their ground state.

A front panel mode switch provides for either a direct readout of the NO concentration in the sample being analyzed ("NO" mode) or the total NO_x concentration ("NO_x" mode). When the Model 10 is placed in the "NO_x" mode, the sample stream passes through a NO_x-to-NO converter prior to entering the reaction chamber for subsequent analysis.

Key Features

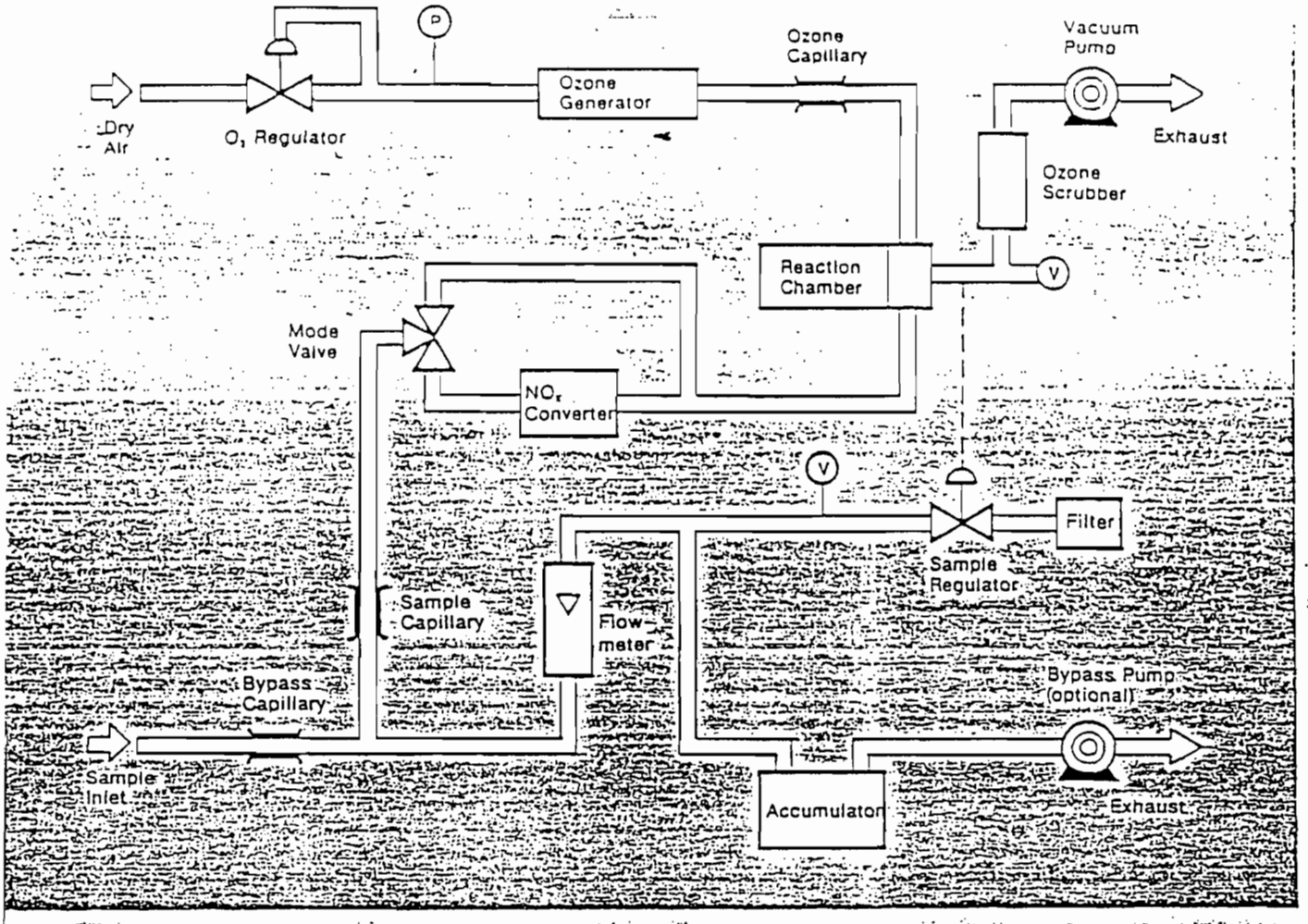
- Selective detection of NO or NO_x
- Eight ranges, from 2.5 to 10,000 ppm FS
- Continuous monitoring with rapid response
- Linear on all ranges
- Field proven reliability
- Insensitive to changes in sample flow

Model 10 Specifications*

Ranges	0–2.5 ppm 0–250 ppm 0–10 ppm 0–1000 ppm 0–25 ppm 0–2500 ppm 0–100 ppm 0–10,000 ppm
Minimum Detectable Concentration	.05 ppm
Noise	Less than 1% of FS
Reproducibility	1% of FS
Operating Temperature Extremes	0–40°C
Response Time (0–90%)	~1.5 second NO mode ~1.7 second NO_x mode
Zero Stability	± 1 ppm in 24 hours
Span Stability	± 1% in 24 hours
Linearity	± 1% from 0.05 to 10,000 ppm**
Power Requirements	1000 watts, 115 ± 10 volts, 60 Hz standard. Also available in 115V 50 Hz, and 210 ± 15 volts, 50 Hz versions
Physical Dimensions	19" wide × 17" high × 20" deep
Instrument Weight	75 lbs. (including pump)
Outputs	Two standard outputs supplied: 1) 0–10V; 2) Field selectable from 0–10V, 5V, 1V, 100mV or 10mV. (ma options available.)

*Specifications are typical and subject to change without notice.

**With O_2 Feed; With dry air, linearity to 2000 ppm.



As illustrated in the above diagram, sample gas enters the Model 10, flows through the bypass capillary, and divides. Most of the sample flows through the flowmeter, accumulator, bypass pump, and exhausts. Only a small amount of sample flows through the sample capillary for analysis. The bypass pump in conjunction with the sample regulator maintain a constant pressure differential across the sample capillary, thus maintaining constant sample flow for analysis. This plumbing network makes the analyzer insensitive to pressure fluctuation in the sample inlet.

From the sample capillary, the sample to be analyzed is either directed through the NO_x to NO converter or around it, depending on the choice of the operator. In the reaction chamber the sample reacts with ozone to produce the light emission and is exhausted. The ozone is produced internally from dry air entering through the oxygen regulator and ozonator. The light emission is sensed by the photomultiplier tube and amplified.

Options

10-001 Bypass pump assembly includes pump, shock tray, accumulator, tubing, and fittings.

Accessory Instruments

Model 700 Heated Capillary Module
Model 606H Heated Particulate Filter
Model 800 Sample Gas Conditioner
Model 900 Sample Gas Conditioner

Thermo Electron
CORPORATION
Environmental Instruments Division
108 South Street
Hopkinton, MA 01748
Telephone (617) 435-5321
Telex 948025

Printed in USA 3/84 5M

QUALITY ASSURANCE MEASUREMENTS

Determination of Response Time

With the probe positioned at a suitable location in the stack, the analyzers were stabilized with a zero calibration gas (ambient air for NO_x and high level NO_x/N_2 for the O_2 monitor). The three way valve was then switched to the sample position and the time necessary for the monitoring system to reach stable response was measured. The system was then stabilized with the high level calibration gas for O_2 (ambient air), and a similar test performed. After three repetitions of this test, all six responses for each monitor were evaluated and the slowest response time recorded became the documented response time. All subsequent testing was performed at 1-minute per test point plus the documented response time.

Calibration Check

NBS calibration gases were utilized for testing. The span range for this test was 1500 ppm. Three NO_x/NO calibration gases were used. One 11.8 O_2/N_2 gas was utilized. Ambient air was used for the O_2 span gas and for the NO_x zero gas. One of the NO/N_2 calibration gases was used as the O_2 analyzer zero gas. With these gases, monitor accuracy was demonstrated by calibrating the instruments using zero and high level calibration gases. Each of the other gases were then inserted. Acceptable responses for these gases are ≤2% of span (30 ppm).

NO_2-NO Converter

Before arriving at the test site, NO_2-NO converter test was conducted by filling a Tedlar bag approximately 50% with the high level NO/N_2 gas. The remainder of the bag was then filled with ambient air and immediately attached to the NO_x analyzer while in the NO_x mode. The analyzer output was recorded for 30 minutes during which time the stable response must not drift over 2% of span to be considered acceptable.

Interference Test

Manufacturer's certification of interference response to SO_2, CO, CO_2, and O_2 is submitted with the test report.

SPECIFICATION
FOR
TELEDYNE ANALYTICAL INSTRUMENTS
MODEL 320P-4
PORTABLE OXYGEN ANALYZER
(WITH BUILT-IN PUMP)

Ranges:	0—5, 0—10, 0—25% O_2
Sensitivity:	0—5% of Full Scale
Accuracy:	±1% of full scale at constant temperature; ±5% of reading or ±1% of full scale, whichever is greater, throughout the operating temperature range.
Operating Temperature:	30—125° F.
Response Time:	Class B-1, 90% in less than 5 seconds.
Signal Output:	Internal, high resolution meter External, 0—100 mv DC full Scale
Micro-Fuel Cell:	Class B-1, Life is dependent upon duty cycle (e.g. 2.5 years, assuming 10% duty cycle in air). continuous duty in air 6 months.
Power Requirements:	2 NiCad rechargeable batteries. Batteries fully charged provide 1 month's continuous operation. Charging time overnight (14 hours). Charger built-in requires 115VAC, 50-60 Hz, power.

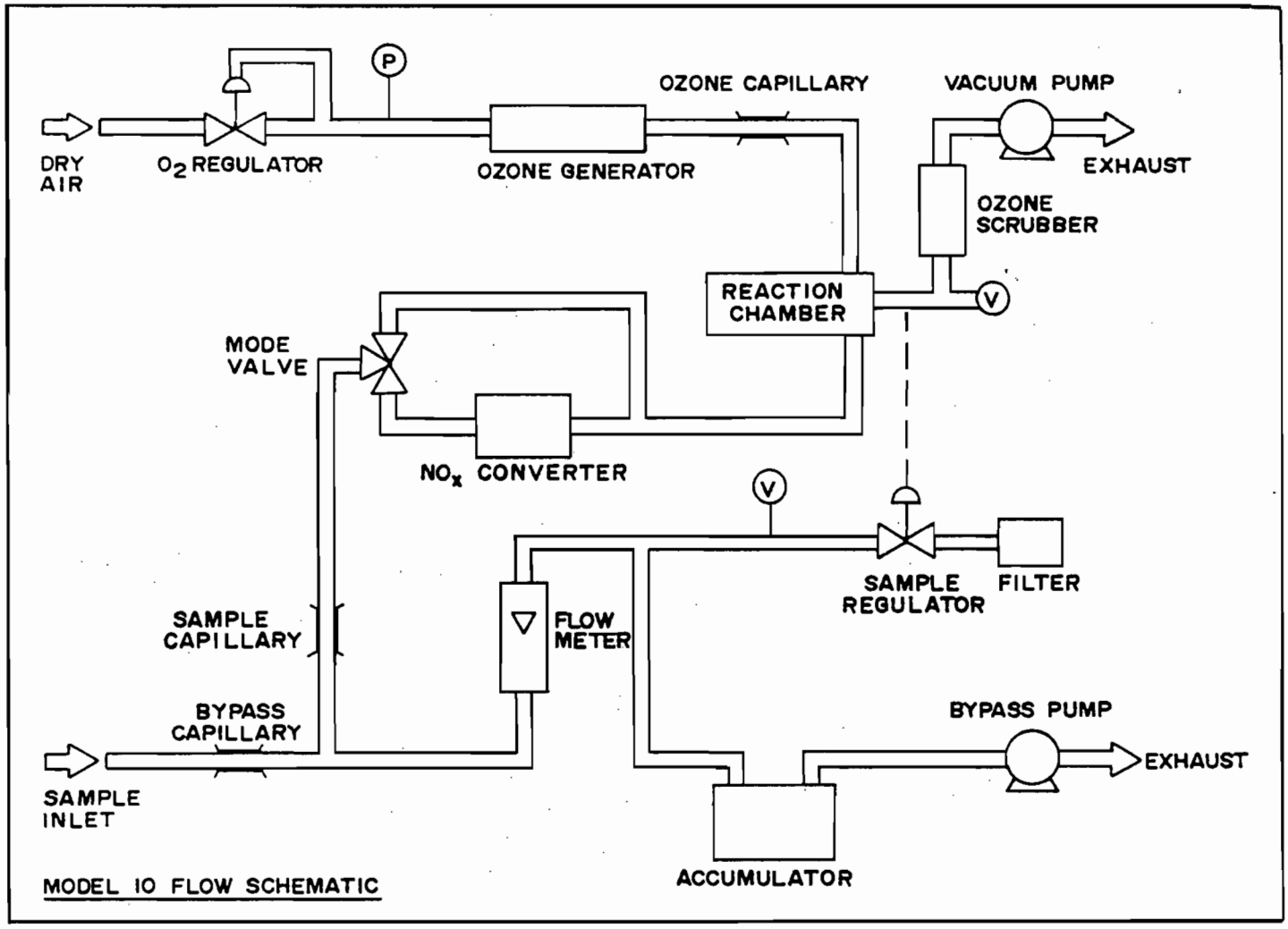
PUMP SPECIFICATION

Type:	Diaphragm
Duty:	Designed for Intermittant use.
Flow Rate:	3 to 4 scfh (about 1500 - 2000 cc/min) 5 VDC supplied by Amplifier batteries. (30 - 40 hrs. per charge)
Max. Vacuum:	60" water column

NOTE: TELEDYNE DOES NOT PUBLISH INTEFERENCE DATA BUT ACCORDING TO MR. JEFF BURKS OF COARPORATE ENGINEERING, THE B-1 FUEL CELL HAS NO INTEFERENCES, SO_2, NO_x, CO_2, AND CO EFFECT ONLY CELL LIFE, NOT ACCURACY

NO_x – NO

CONVERTER CHECK



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From the sample capillary, the sample to be analyzed is either directed through the NO_x to NO converter or around it, depending on the choice of the operator. In the reaction chamber the sample reacts with ozone to produce the light emission and is exhausted. The ozone is produced internally from dry air entering through the oxygen regulator and ozonator. The light emission is sensed by the photomultiplier tube and amplified.

Options
10-001 Bypass pump assembly includes pump, shock tray, accumulator, tubing, and fittings.

Accessory Instruments
Model 700 Heated Capillary Module
Model 606H Heated Particulate Filter
Model 800 Sample Gas Conditioner
Model 900 Sample Gas Conditioner

Scott Specialty Gases, Inc.

6141 EASTON ROAD, P.O. BOX 310, PLUMSTEADVILLE, PA 18949-0310 (215) 766-8861 FAX: (215) 766-0320

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
Air Consulting & Eng.
Suite #4
2106 Nw 67Th Place
Gainesville, FL 32606

Assay Laboratory
Scott Specialty Gases, Inc.
6141 Easton Road
P.O. Box 310
Plumsteadville, PA 18949-0310

Purchase Order 1077
Scott Project # 01-50245-004

ANALYTICAL INFORMATION

Certified to exceed the minimum specifications of EPA Protocol 1 Procedure #G1, Section Number 3.0.4

Cylinder Number AAL21478
Cylinder Pressure 2000 psig
Certification Date 09-09-93
Previous Certification Dates None
Expiration Date 09-09-95

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Nitric Oxide	84.5 ppm	±1% NIST Directly Traceable
Total Oxides of Nitrogen	84.6 ppm	Reference Value Only
Balance Gas: Nitrogen		

*Analytical uncertainty is inclusive of usual known error sources which at least includes reference standard error & precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
GMIS	11-19-93	ALM017849	74.9 ppm NO in N_2

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
NO: Teco/10/9741111S	08-19-93	Chemiluminescent

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components	First Triad Analysis	Second Triad Analysis	Calibration Curve
Nitric Oxide	Date: 09-01-93 Response Units: Volts Z1=0.0031 R1=6.6653 T1=7.5116 R2=6.6835 Z2=0.0044 T2=7.5233 Z3=0.0054 T3=7.5267 R3=6.6849 Avg. Conc. of Cust. Cyl. 84.3 ppm	Date: 09-09-93 Response Units: Volts Z1=0.0002 R1=6.6280 T1=7.5060 R2=6.6452 Z2=0.0066 T2=7.4933 Z3=0.0072 T3=7.4776 R3=6.6280 Avg. Conc. of Cust. Cyl. 84.6 ppm	Concentration= $A+Bx+Cx^2+Dx^3+Ex^4$ r=0.99999 NTRM1684 Constants: A=5.5323E-02 B=1.1135E+01 C=0.0000E+00 D=0.0000E+00 E=0.0000E+00

Special Notes

Analyst Wesley Bleiler

NATIONAL SPECIALTY GASES
630 UNITED DRIVE
DURHAM, NC 27713
(919) 544-3772

CERTIFICATE OF ANALYSIS-EPA PROTOCOL MIXTURES

REFERENCE #: 88-29297 CYLINDER #:CC38923 CYL. PRESSURE:2000PSIG
EXPIRATION DATE: 2/1/96 LAST ANALYSIS DATE:2/1/94
CUSTOMER: CRYOTECH P.O.#
METHOD: ANALYZED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS-SEPTEMBER 1993:G-1

STANDARD:
SRM #:1685B

CYL #:CLM4908

CONC.:244.4PPM

INSTRUMENT:

COMPONENT: BECKMAN CHEMILUMINESCENT

MODEL #: 951A

SERIAL #: 010572

LAST CAL.: 1/3/94

COMPONENT:	NO	REPLICATE CONC.	
MEAN CONC:	143PPM	DATE: 1/25/94	DATE: 2/1/94
		142PPM	141PPM
		143PPM	143PPM
		144PPM	142PPM

COMPONENT:	NO2	REPLICATE CONC.	
MEAN CONC:	LESS THAN 0.1PPM	DATE:	DATE:

COMPONENT:	REPLICATE CONC.	
MEAN CONC:	DATE:	DATE:

BALANCE GAS:N2

NATIONAL SPECIALTY GASES
630 UNITED DRIVE
DURHAM, NC 27713
(919) 544-3772

CERTIFICATE OF ANALYSIS-EPA PROTOCOL MIXTURES

REFERENCE #: 88-29173 CYLINDER #:CC117215 CYL. PRESSURE:2000PSIG
EXPIRATION DATE1/27/96 LAST ANALYSIS DATE:1/27/94
CUSTOMER: CRYOTECH P.O.#
METHOD: ANALYZED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS-SEPTEMBER 1993:G-1

STANDARD:
SRM #:1685B

CYL #:CLM4908

CONC.:244.4PPM

INSTRUMENT:

COMPONENT: BECKMAN CHEMILUMINESCENT

MODEL #: 951A

SERIAL #: 0101572

LAST CAL.: 1/3/94

COMPONENT:	NO	REPLICATE CONC.	
MEAN CONC:	240PPM	DATE: 1/20/94	DATE: 1/27/94
		239PPM	240PPM
		240PPM	238PPM
		241PPM	239PPM

COMPONENT:	NO2	REPLICATE CONC.	
MEAN CONC:	2.04PPM	DATE:	DATE:

COMPONENT:	REPLICATE CONC.	
MEAN CONC:	DATE:	DATE:

BALANCE GAS:N2

PLANT: Chellenta Corporation

SOURCE: Boiler CC

DATE: 7/14/94

PAGE _____ OF _____

2106 N.W. 67th PLACE·Suites 9&10
GAINESVILLE, FLORIDA·32606
(904)335·1889

NO_x CALIBRATION GAS	MONITOR VALUE ppm	DIFFERENCE ppm	% SPAN
240	239.5	0.5	
143	142.5	0.5	
84.5	85.0	1.5	

O_2 CALIBRATION GAS	MONITOR VALUE ppm	DIFFERENCE ppm	% SPAN

CO CALIBRATION GAS	MONITOR VALUE ppm	DIFFERENCE ppm	% SPAN

APPENDIX H

FDEP PERMIT NUMBER AC50-191876
PSD-FL-169

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

February 18, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Pablo A. Carreno
Director of Mill & Refinery Operation
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Re: Revision to Construction Permit No. AC50-191876
(PSD-FL-169)

The Department is in receipt of your request and supporting data to operate No. 2 fuel oil fired boiler No. 16 during the sugar cane crop season (November through February) in lieu of firing No. 6 fuel oil in the other boilers at the Okeelanta Corporation mill which is located in Palm Beach County, 6 miles south of South Bay. This request is acceptable, with conditions, and the referenced permit is amended:

FROM

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

TO:

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY**	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

**** Emissions during the period from March 1 to October 31.**

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during the off-season months (March through October). **During the crop season (November through February), the heat input to boiler No. 16 is limited to the equivalent reduction in heat input from No. 6 fuel oil for the existing bagasse/No. 6 fuel oil fired boilers at this sugar mill. It shall not be operated as a replacement to a functional bagasse fired boiler when bagasse fuel is available. Total oil consumption (fuel oils No. 2 and No. 6) by all boilers at this facility (boilers Nos. 4, 5, 6, 10, 11, 12, 14, 15, and 16) shall not exceed 3.2 x 10^6 gallons during the crop season (November through February) and total maximum steam production shall not exceed 1,012,000 lbs/hr.**

A copy of this letter shall be attached to the referenced permit and shall become a part of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/plm

Attach: Okeelanta's September 25, 1992, letter
DER's October 15, 1992, letter
Okeelanta's November 13, 1992, letter
Okeelanta's January 25, 1993, letter

cc: David Knowles, SD
Stephanie Brooks, SED
Gregg Worley, EPA
Jim Stormer, PBC
David Buff, P.E.
Brian Mitchell, NPS

Attachments Available Upon Request

PERMIT # 16

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DER File No. AC 50-191876
Palm Beach County

Mr. Pablo A. Carreno
Director of Mill and Refinery Operations
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

/

Enclosed is Permit Number AC 50-191876 to construct an oil fired steam boiler (No. 16) at your sugar mill located on U.S. Highway 27, 6 miles south of South Bay, Palm Beach County, Florida, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 7-30-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.

Kyra Deber (Clerk) 7-30-91 (Date)

Copies furnished to:
David Knowles, South Dist.
Isidore Goldman SE Dist.
Jim Stormer, Palm Beach Co.
David Buff, P.E.
Jewell Harper, EPA
C. Shaver, NPS

Florida Department of Environmental Regulatio

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-24(

Lawton Chiles, Governor

Carol M. Browner, Secreta

PERMITTEE:

Okeelanta Corporation
P.O. Box 86
South Bay, Florida 33493

Permit Number: AC 50-191876
PSD-FL-169
Expiration Date: March 1, 1993
County: Palm Beach
Latitude/Longitude: 26°35'00" N
80°45'00" W
Project: Oil Fired Steam Boiler
No. 16

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

Construction of a 150,000 lbs steam/hr, No. 2 oil fired, 205 MMBtu/hr heat input Babcock & Wilcox Model FM 120-97 package boiler using Coen's LO-NO_x burners and designed for 12% flue gas recirculation (or equivalent boiler with controls) equipped with a 5 ft. diameter by 75 ft. high stack. The boiler will be located at the permittee's existing sugar mill (SIC 2061) that is approximately 6 miles sought of South Bay, Palm Beach County, Florida off of U.S. Highway 27. The UTM coordinates of this site are Zone 17, 524.9 km E and 2940.1 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received Jan. 29, 1991.
2. KBN letter dated Feb. 19, 1991.
3. BACT Determination.
4. KBN letter dated June 5, 1991.
5. Palm Beach County Health Unit letter dated June 5, 1991.
6. NPS letter dated July 1, 1991.
7. KBN letter dated July 9, 1991.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to the public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve

GENERAL CONDITIONS:

compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend upon the nature of the concern being investigated.

8. If, for any reasons, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitting source arising under the Florida Statues or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

GENERAL CONDITIONS:

Statues. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in the Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes Determination of Prevention of Significant Deterioration (PSD), Determination of Best Available Control Technology (BACT), and Compliance with New Source Performance Standards (NSPS).

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulation by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When request by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

Construction Details

1. The boiler shall be a flue gas recirculation type and equipped with low NO_x distillate oil burners. The design shall be for a heat release rate greater than 70,000 Btu/hr-ft^3.

2. The stack sampling facilities shall comply with F.A.C. Rule 17-2.700(4).

3. The 5 ft. diameter stack shall have a minimum height of 75 ft.

4. The boiler shall be equipped with instruments to measure the opacity of the stack emissions and the steam production, temperature, and pressure.

SPECIFIC CONDITIONS:

Emission Restrictions

5. Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM10	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NO_x	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

Compliance Requirements

6. Particulate matter, visible emissions, and nitrogen oxides emissions tests shall be conducted annually while the boiler is operating between 90-100% of its permitted capacity (135-150,000 lbs steam/hr). The volume and sulfur content of each fuel oil delivery shall be kept in a log for a minimum of 3 years. The continuous emissions monitoring data will be evaluated to determine the highest concentration of NO_x in lbs/MMBtu for any 30-day rolling average during the proceeding year. Tests for other pollutants may be required when the Department has good reason to believe the emission standard is being exceeded.

Federal Requirements

7. Boiler No. 16 shall comply with all applicable requirements of 40 CFR 60, including Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Unit (December 18, 1989).

40 CFR 60.7, Notification and record keeping. Timely notification of the items listed to the Department (South District), Palm Beach County Public Health Unit (PBCPHU), and EPA.

SPECIFIC CONDITIONS:

40 CFR 60.8, Compliance tests. Minimum of 30 days prior notice of the initial compliance tests which must be conducted between 60 to 180 days of initial startup of the source to the Department and EPA.

40 CFR 60.42b, Standard for sulfur dioxide. Sulfur content of the No. 2 distillation oil fuel shall not exceed 0.5%. Annual off-season average shall not exceed 0.3% sulfur. The permittee shall maintain fuel analysis or receipts to confirm compliance with this condition.

40 CFR 60.43b, Standard for particulate matter. Visible emissions shall not exceed 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

40 CFR 60.44b, Standard for nitrogen oxides for high heat release boiler No. 16, expressed as NO_2, is 0.20 lbs/MMBtu.

40 CFR 60.45b, Sulfur dioxide compliance tests, fuel receipts or analysis for sulfur content is required to confirm compliance with this condition.

40 CFR 60.46b, Particulate and nitrogen oxides compliance tests. Method 9 test required to determine compliance with the opacity standard. Method 7, 7A, or 7E test for nitrogen oxides.

40 CFR 60.47b, Sulfur dioxide monitoring. Fuel analysis or receipts required to confirm compliance with this condition.

40 CFR 60.48b, Particulate and nitrogen oxides monitoring. Continuous emissions monitor required to measure opacity.

40 CFR 60.49b, Reporting and record keeping requirements. Permittee required to report date of initial start up, design heat input capacity, fuels used, annual capacity factor, performance test data, plan to monitor NO_x, nitrogen content of the distillate oil, opacity, nitrogen dioxide emissions, monitor down time, "F" factor, exceedances, and other information required by this paragraph.

Operation Requirements

8. Only No. 2 fuel oil containing a maximum of 0.5% sulfur (off-season average of 0.3% sulfur) shall be used as fuel.

SPECIFIC CONDITIONS:

9. Maximum heat input to the boiler shall not exceed 1,463 gallons per hour of No. 2 distillate fuel oil (205 MMBtu/hr).

10. The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

11. Steam production shall not exceed 150,000 lbs/hr.

Administrative Requirements

12. The permittee shall maintain a log that shows the boiler's operation time, steam production, and fuel consumption.

13. The Department's South District and the PBCPHU shall be notified in writing at least 30 days in advance of the initial compliance test and 15 days in advance of any annual compliance tests to be conducted on this boiler.

14. Stack test results shall be submitted to the Department and the PCBPHU within 45 days of the test.

15. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

16. An application for an operation permit must be submitted to the South District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this 29th day
of July, 1991.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Carol M. Browner

Carol M. Browner, Secretary

Best Available Control Technology (BACT) Determination
Okeelanta Corporation
Palm Beach County

The applicant plans to permanently install a 205 MMBtu/hr No. 2 oil-fired steam boiler at their facility 6 miles south of South Bay, Florida. The boiler will be used to supply process steam. The boiler is scheduled to operate during the off-season of April through October (4,200 hours) when the other boilers at this facility are shutdown.

A BACT determination is required for particulates and sulfur dioxide as set forth in the Florida Administrative Code Rule 17-2.600(6) - Emissions Limiting and Performance Standards. In addition, the Department performed a BACT determination for nitrogen oxides (NOx) since those emissions are greater than the PSD significant rate of 40 tons per year.

BACT Determination Request by the Applicant:

Particulate, sulfur dioxide, nitrogen oxides emissions to be controlled by the firing of No. 2 fuel oil with a 0.5% sulfur content.

Date of Receipt of a BACT Application:

January 29, 1991

BACT Determined by DER:

The amount of particulate and sulfur dioxide emissions from the boiler will be limited by the firing of No. 2 fuel oil with a 0.3% off season average and a 0.5% maximum sulfur content.

Nitrogen oxides emissions shall not exceed 0.18 lbs/MMBtu heat input using low NOx burners/flue gas recirculation.

BACT Determination Rationale:

Sulfur in fuel is a primary air pollution concern in that most of the fuel sulfur becomes SO_2 and particulate emissions from fuel burning are related to the sulfur content. The Department has determined that the firing of No. 2 fuel oil with an off-season average of 0.3% sulfur and maximum of 0.5% sulfur content is BACT for particulates and SO_2. These sulfur content limitations are representative of what has been recently established as BACT for oil-fired equipment.

APPENDIX I

PROJECT PARTICIPANTS

PROJECT PARTICIPANTS

AIR CONSULTING AND ENGINEERING, INC.

Gerard Gauthreaux
Field Testing
Post Test Calibration

Fred R. Bauman
Field Testing

Charles G. Simon, Ph.D.
Visible Emissions Observer

Stephen L. Neck, P.E.
Laboratory Analysis

Dagmar Fick
Field Testing
Computer Analysis
Report Preparation

Candace V. Taylor
Document Production

OKEELANTA CORPORATION

Angelo Archbold
Test Coordinator

FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION

Sterling Jordan
Test Observer

PERMIT # 16

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DER File No. AC 50-191876
Palm Beach County

Mr. Pablo A. Carreno
Director of Mill and Refinery Operations
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Enclosed is Permit Number AC 50-191876 to construct an oil fired steam boiler (No. 16) at your sugar mill located on U.S. Highway 27, 6 miles south of South Bay, Palm Beach County, Florida, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 7-30-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Lynn Deker (Clerk) 7-30-91 (Date)

Copies furnished to:
David Knowles, South Dist.
Isidore Goldman SE Dist.
Jim Stormer, Palm Beach Co.
David Buff, P.E.
Jewell Harper, EPA
C. Shaver, NPS

Final Determination

Okeelanta Corporation
Palm Beach County
South Bay, Florida

Boiler No. 16
Permit No. AC 50-191876
PSD-FL-169

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

July 16, 1991

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct boiler No. 16 at Okeelanta Corporation's sugar mill that is located approximately 6 miles south of South Bay in Palm Beach County, Florida, was distributed on May 17, 1991. The Notice of Intent to Issue was published in Palm Beach Post on May 31, 1991.

Copies of the evaluation were available for public inspection at the Palm Beach County's environmental office in West Palm Beach and the Department's offices in West Palm Beach, Fort Myers, and Tallahassee.

Comments were submitted by the applicant's engineer, Palm Beach County Health Unit, and the National Park Service. The applicant's engineer requested that the NO_x emission standard of 0.18 lbs/MMBtu be a 30-day rolling average, that the boiler be allowed to operate in March (proposed permit restricted its operation to April through October), and that the steam production limit be at a specific steam pressure and temperature. Palm Beach County Health Unit requested they be included in the notification and reporting requirements of the permit for this boiler. The National Park Service requested lower sulfur fuel be required for the boiler, that a cumulative modeling analysis be included in the current review of another application for a major facility in this area, and that the air quality related value (AQRVs) analyses be considered in determining this project's impact on Everglades National Park.

The Department's response to these comments are as follows. Specific condition No. 5 was revised to note the NO_x standard of 0.18 lbs/MMBtu is to be a 30-day rolling average, which is consistent with the new source performance standard. Specific condition No. 6 was reworded to require the permittee to calculate the 30-day rolling average concentration for NO_x. Specific condition No. 10 was changed to allow the boiler to operate from March through October. Modeling showed that the ambient air standards would not be violated with the proposed boiler operating during this period.

The maximum steam pressure and temperature limits were removed from Specific Condition 11. The steam production and fuel input limits given in Specific Condition 9 will provide the Department with reasonable assurance that the permitted heat input rate of 205 MMBtu/hr for this boiler will not be exceeded.

Specific Conditions Nos. 7, 13, and 14 were amended to include the Palm Beach County Health Unit in the notification and reporting requirements.

The Department has required lower sulfur (0.2%) fuel oil to be used in larger, continuously operated sources. However, the use of fuel oil containing 0.3% sulfur in the proposed boiler, which will be

operated during the off season of the sugar industry, is considered appropriate for this situation.

The concurrent review of an application for a major source in the area is being processed separately from this application. Consideration will be given toward requiring a cumulative modeling analysis and an AQRV analysis for this major source. However, the Department does not believe an AQRV analysis is justified for this proposed boiler because of its small predicted impact (0.03 ug/m^3, annual average) on the Everglades National Park Class I area.

The final action of the Department will be to issue construction permit No. AC50-191876 (PSD-FL-169) as proposed in the Technical Evaluation and Preliminary Determination except for the changes discussed above.

Best Available Control Technology (BACT) Determination
Okeelanta Corporation
Palm Beach County

The applicant plans to permanently install a 205 MMBtu/hr No. 2 oil-fired steam boiler at their facility 6 miles south of South Bay, Florida. The boiler will be used to supply process steam. The boiler is scheduled to operate during the off-season of April through October (4,200 hours) when the other boilers at this facility are shutdown.

A BACT determination is required for particulates and sulfur dioxide as set forth in the Florida Administrative Code Rule 17-2.600(6) - Emissions Limiting and Performance Standards. In addition, the Department performed a BACT determination for nitrogen oxides (NOx) since those emissions are greater than the PSD significant rate of 40 tons per year.

BACT Determination Request by the Applicant:

Particulate, sulfur dioxide, nitrogen oxides emissions to be controlled by the firing of No. 2 fuel oil with a 0.5% sulfur content.

Date of Receipt of a BACT Application:

January 29, 1991

BACT Determined by DER:

The amount of particulate and sulfur dioxide emissions from the boiler will be limited by the firing of No. 2 fuel oil with a 0.3% off season average and a 0.5% maximum sulfur content.

Nitrogen oxides emissions shall not exceed 0.18 lbs/MMBtu heat input using low NOx burners/flue gas recirculation.

BACT Determination Rationale:

Sulfur in fuel is a primary air pollution concern in that most of the fuel sulfur becomes SO_2 and particulate emissions from fuel burning are related to the sulfur content. The Department has determined that the firing of No. 2 fuel oil with an off-season average of 0.3% sulfur and maximum of 0.5% sulfur content is BACT for particulates and SO_2. These sulfur content limitations are representative of what has been recently established as BACT for oil-fired equipment.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor — Carol M. Browner, Secretary

PERMITTEE:

Okeelanta Corporation
P.O. Box 86
South Bay, Florida 33493

Permit Number: AC 50-191876
PSD-FL-169
Expiration Date: March 1, 1993
County: Palm Beach
Latitude/Longitude: 26°35'00" N
80°45'00" W
Project: Oil Fired Steam Boiler
No. 16

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

Construction of a 150,000 lbs steam/hr, No. 2 oil fired, 205 MMBtu/hr heat input Babcock & Wilcox Model FM 120-97 package boiler using Coen's LO-NO_x burners and designed for 12% flue gas recirculation (or equivalent boiler with controls) equipped with a 5 ft. diameter by 75 ft. high stack. The boiler will be located at the permittee's existing sugar mill (SIC 2061) that is approximately 6 miles sought of South Bay, Palm Beach County, Florida off of U.S. Highway 27. The UTM coordinates of this site are Zone 17, 524.9 km E and 2940.1 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received Jan. 29, 1991.
2. KBN letter dated Feb. 19, 1991.
3. BACT Determination.
4. KBN letter dated June 5, 1991.
5. Palm Beach County Health Unit letter dated June 5, 1991.
6. NPS letter dated July 1, 1991.
7. KBN letter dated July 9, 1991.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to the public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve

GENERAL CONDITIONS:

compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend upon the nature of the concern being investigated.

8. If, for any reasons, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitting source arising under the Florida Statues or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

GENERAL CONDITIONS:

Statues. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in the Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes Determination of Prevention of Significant Deterioration (PSD), Determination of Best Available Control Technology (BACT), and Compliance with New Source Performance Standards (NSPS).

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulation by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When request by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

Construction Details

1. The boiler shall be a flue gas recirculation type and equipped with low NO_x distillate oil burners. The design shall be for a heat release rate greater than 70,000 Btu/hr-ft^3.

2. The stack sampling facilities shall comply with F.A.C. Rule 17-2.700(4).

3. The 5 ft. diameter stack shall have a minimum height of 75 ft.

4. The boiler shall be equipped with instruments to measure the opacity of the stack emissions and the steam production, temperature, and pressure.

SPECIFIC CONDITIONS:

Emission Restrictions

5. Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM10	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NO_x	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

Compliance Requirements

6. Particulate matter, visible emissions, and nitrogen oxides emissions tests shall be conducted annually while the boiler is operating between 90-100% of its permitted capacity (135-150,000 lbs steam/hr). The volume and sulfur content of each fuel oil delivery shall be kept in a log for a minimum of 3 years. The continuous emissions monitoring data will be evaluated to determine the highest concentration of NO_x in lbs/MMBtu for any 30-day rolling average during the proceeding year. Tests for other pollutants may be required when the Department has good reason to believe the emission standard is being exceeded.

Federal Requirements

7. Boiler No. 16 shall comply with all applicable requirements of 40 CFR 60, including Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Unit (December 18, 1989).

40 CFR 60.7, Notification and record keeping. Timely notification of the items listed to the Department (South District), Palm Beach County Public Health Unit (PBCPHU), and EPA.

SPECIFIC CONDITIONS:

40 CFR 60.8, Compliance tests. Minimum of 30 days prior notice of the initial compliance tests which must be conducted between 60 to 180 days of initial startup of the source to the Department and EPA.

40 CFR 60.42b, Standard for sulfur dioxide. Sulfur content of the No. 2 distillation oil fuel shall not exceed 0.5%. Annual off-season average shall not exceed 0.3% sulfur. The permittee shall maintain fuel analysis or receipts to confirm compliance with this condition.

40 CFR 60.43b, Standard for particulate matter. Visible emissions shall not exceed 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

40 CFR 60.44b, Standard for nitrogen oxides for high heat release boiler No. 16, expressed as NO_2, is 0.20 lbs/MMBtu.

40 CFR 60.45b, Sulfur dioxide compliance tests, fuel receipts or analysis for sulfur content is required to confirm compliance with this condition.

40 CFR 60.46b, Particulate and nitrogen oxides compliance tests. Method 9 test required to determine compliance with the opacity standard. Method 7, 7A, or 7E test for nitrogen oxides.

40 CFR 60.47b, Sulfur dioxide monitoring. Fuel analysis or receipts required to confirm compliance with this condition.

40 CFR 60.48b, Particulate and nitrogen oxides monitoring. Continuous emissions monitor required to measure opacity.

40 CFR 60.49b, Reporting and record keeping requirements. Permittee required to report date of initial start up, design heat input capacity, fuels used, annual capacity factor, performance test data, plan to monitor NO_x, nitrogen content of the distillate oil, opacity, nitrogen dioxide emissions, monitor down time, "F" factor, exceedances, and other information required by this paragraph.

Operation Requirements

8. Only No. 2 fuel oil containing a maximum of 0.5% sulfur (off-season average of 0.3% sulfur) shall be used as fuel.

SPECIFIC CONDITIONS:

9. Maximum heat input to the boiler shall not exceed 1,463 gallons per hour of No. 2 distillate fuel oil (205 MMBtu/hr).

10. The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

11. Steam production shall not exceed 150,000 lbs/hr.

Administrative Requirements

12. The permittee shall maintain a log that shows the boiler's operation time, steam production, and fuel consumption.

13. The Department's South District and the PBCPHU shall be notified in writing at least 30 days in advance of the initial compliance test and 15 days in advance of any annual compliance tests to be conducted on this boiler.

14. Stack test results shall be submitted to the Department and the PCBPHU within 45 days of the test.

15. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

16. An application for an operation permit must be submitted to the South District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this 29th day
of July, 1991.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Carol M. Browner

Carol M. Browner, Secretary

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

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2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

Mr. P. A. Carreno
Director of Mill & Refinery Ops.
Okeelanta Corporation
P. O. Box 86
South Bay, FL 33493

4. Article Number
P 256 396 202

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X

6. Signature — Agent
X Calvin Briscoe

7. Date of Delivery
10-1-90

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

PS Form **3811**, Mar. 1988 ★ U.S.G.P.O. 1988-212-885 **DOMESTIC RETURN RECEIPT**

P 256 396 202

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Sent to Mr. P. A. Carreno, Okeelanta Corp.	
Street and No. P. O. Box 86	
P.O., State and ZIP Code South Bay, FL 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
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Return Receipt showing to whom and Date Delivered	
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TOTAL Postage and Fees	$
Postmark or Date Mailed: 9-26-90 Permit: AO 50-169210	

PS Form 3800, June 1985

KBN

February 19, 1991

Mr. Willard Hanks
Bureau of Air Regulation
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
FEB 21 1991
DER-BAQM

Re: Okeelanta Corporation
Proposed Oil-Fired Boiler

Dear Mr. Hanks:

At your request, KBN is providing additional information to the Florida Department of Environmental Regulation (FDER) regarding Okeelanta Corporation's proposed oil-fired package boiler. The information relates to additional modeling analysis, the property boundary question, the proposed boiler's operating conditions, and boiler operating conditions that will be monitored in lieu of continuous NO_x monitoring.

Additional Modeling Analysis

It was requested by FDER that additional modeling analysis be performed to address the period of time when the proposed Okeelanta boiler may be operating in conjunction with other nearby sources (i.e., other sugar mills in the area). This analysis is presented in Attachment A.

Property Boundary Definition

Provided in Attachment B are copies of two memos EPA Region IV personnel provided with regard to the property boundary question. Of particular interest is the memo from G.T. Helms to Steve Rothblatt. This memo states that a river forms a sufficient natural boundary/barrier and that fencing is not necessary. However, the riverbank must be clearly posted and patrolled by plant security. Based on the information presented in the application and Okeelanta's description provided in our recent meeting, I believe Okeelanta's property boundaries as depicted in the permit application meet the intent of the ambient air policy.

Boiler No. 16 Operating Conditions

The boiler design operating conditions will be 380 psi at 650°F.

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

FEDERAL EXPRESS

[redacted]

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE
TRACKING NUMBER 0169677852

1011M 0169677852

RECIPIENT'S COPY

[redacted]

Date 2-20-91

1 From (Your Name) Please Print	Your Phone Number (Very Important)	**2** To (Recipient's Name) Please Print	Recipient's Phone Number (Very Important)
David A. Buff	904-331-9000	Willard Hanks	(904) 488-1344

Company	Department/Floor No.	Company	Department/Floor No.
KRN. ENG & APPLIED SCIENCES		Bureau of Air Regulation Fla. Dept. of Environmental Regulation	

Street Address	Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip® Codes.)
1034 NW 57TH ST	2600 Blair Stone Road

City	State	ZIP Required	City	State	ZIP Required
GAINESVILLE	FL	32605	Tallahassee,	FL	32399-2400

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.)
90121

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Street Address
City State ZIP Required

3 PAYMENT 1 ☒ Bill Sender 2 ☐ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card 5 ☐ Cash/Check [redacted]

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Standard Overnight Service (Delivery by next business afternoon†)

- 11 ☐ YOUR PACKAGING — 51 ☐
- 16 ☐ FEDEX LETTER * — 56 ☐ FEDEX LETTER *
- 12 ☐ FEDEX PAK * — 52 ☒ FEDEX PAK *
- 13 ☐ FEDEX BOX — 53 ☐ FEDEX BOX
- 14 ☐ FEDEX TUBE — 54 ☐ FEDEX TUBE

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Heavyweight Service (for Extra Large or any package over 150 lbs.)

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- 70 ☐ HEAVYWEIGHT **

† Delivery commitment may be later in some areas.
*Declared Value Limit $100.
**Call for delivery schedule.

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2. ☒ DELIVER WEEKDAY
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5. ☐
6. ☐ DRY ICE ______ Lbs
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8. ☐
9. ☐ SATURDAY PICK-UP (Extra charge)
10. ☐
11. ☐ DESCRIPTION
12. ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

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Total 1	Total 5	Total

DIM SHIPMENT (Chargeable Weight) ☐ ______ lbs.

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FedEx Emp. No.

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Date/Time Received FedEx Employee Number

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Date/Time

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Total Charges

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041

KBN

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JUN 0 6 1991

Division of Air
Resources Management

June 5, 1991

Mr. Clair H. Fancy, P.E.
Chief
Bureau of Air Regulation
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Okeelanta Corporation
Oil-Fired Boiler
AC50-191876
PSD-FL-169

Dear Mr. Fancy:

On behalf of Okeelanta Corporation, I have reviewed the Technical Evaluation and Preliminary Determination for the above referenced construction permit and offer the following comments:

1. In Specific Condition 5 of the draft permit, the maximum allowable air emission rates are presented. In the case of NO_x, it is requested that the limit of 0.18 lb/MM Btu be based upon a 30-day rolling average, which is consistent with the New Source Performance Standards, 40 CFR 60, Subpart Db. Since a continuous NO_x monitor will be used for compliance, a 30-day rolling average can be readily determined.

2. In Specific Condition 10, it is stated that the boiler shall only operate during the off-season months (April through October). This should be corrected to "(March through October)". The permit application and modeling analysis addressed the situation that the boiler may start up as early as March 1, depending on the length of the crop season.

3. In Specific Condition 11, the word "at" should be inserted before the words "380 psig".

Thank you for consideration of these comments.

Sincerely,

David A. Buff

David A. Buff, M.E., P.E.
Principal Engineer

cc: Pablo Carreno
Peter Cunningham
T. Hanks
P. Lewis
C. Holladay
B. Andrews

90121A1/8

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street Gainesville, Florida 32605 904/331-9000 FAX: 904/332-4189

KBN

90121

KBN ENGINEERING AND APPLIED SCIENCES, INC.
1034 Northwest 57th Street
Gainesville, Florida 32605

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JUN-5'91
FL

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Mr. Clair H. Fancy, P.E.
Florida Depart. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

THE PALM BEACH POST

Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA

COUNTY OF PALM BEACH

Before the undersigned authority personally appeared Chris Bull who on oath says that she/he is Class. SAles Mgr. of The Palm Beach Post, a daily and Sunday newspaper published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising, being a Notice in the matter of intent to issue in the --- Court, was published in said newspaper in the issues of May 31, 1991

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Chris Bull

Sworn to and subscribed before me this 31 day of May A.D. 19 91

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP. NOV. 15, 1992
BONDED THRU GENERAL INS. UND.

NO. 376421
State of Florida
Department of
Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue an air pollution construction permit to Okeelanta Corporation, P. O. Box 86, South Bay, Florida 33493. The permit will authorize the construction of a new 205 MMBtu/hr No. 2 oil fired steam boiler (No. 16) at their existing sugar mill that is located off from U.S. Highway 27, 6 miles south of South Bay in Palm Beach County, Florida. Boiler No. 16 will emit: 105.5 lbs/hr (221.6 TPY) sulfur dioxide; 11.0 lbs/hr (23.1 TPY) particulate; 36.9 lbs/hr (77.5 TPY) nitrogen oxides; 41.0 lbs/hr (86.1 TYP) carbon monoxide; and 18.5 lbs/hr (38.7 TPY) volatile organic compounds. The boiler is subject to the Prevention of Significant Deterioration (PSD) regulations for nitrogen oxides and sulfur dioxide. Best Available Control Technology (BACT) determinations wer required for particulates, sulfur dioxide and nitrogen oxides. For sulfur dioxide, the maximum predicted concentrations due to this new source and other increment-consuming sources are below the PSD Class I and II increments. The maximum Everglades National Park Class I increment consumption is 17.3 vs 25.0 ug/m3 allowable 3-hr average (68% of the Class I increment), .8 vs 5.0 ug/m3 allowable 24-hr average (76% of increment), and 0.4 vs 2 allowable annual average (20% of increment). The maximum PSD Class II increment consumption is 91 vs 512 ug/m3 allowable 3-hr average (18% of the Class II increment), 19 vs 91 ug/m3 allowable 24-hr average (21% of increment), and 1.8 vs 20 ug/m3 allowable annual average (9% of increment). The maximum predicted annual ambient air quality impact for nitrogen oxides (0.33 ug/m3) is below the significant impact level. These impacts will not cause a violation of the ambient air quality standards. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statment of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to be a party to the proceading. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Regulation offices located at:
2600 Blair Stone Road, Tallahassee, FL 32399-2400
2269 Bay Street, Fort Myers, FL 33901-2896
1900 S. Congress Avenue, Suite A, West Palm Beach, FL 33406
and Palm Beach County environmental office located at:
901 E. Evernia Street, West Palm Beach, FL 33402

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination. Furthermore, a public hearing can be requested by any person. Such request must be submitted within 30 days of this notice.

PUB: Palm Beach Post
May 31, 1991

Florida Department of Environmental Regulation

South District • 2269 Bay Street • Fort Myers, Florida 33901-2896

Lawton Chiles, Governor — Carol M. Browner, Secretary

December 13, 1991

CERTIFIED MAIL P 642 323 526
RETURN RECEIPT REQUESTED

Pablo A. Carreño
Director of Mill & Refinery Operations
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

re: Palm Beach County - AP
Okeelanta Corporation
Boiler No. 6
AO50-175414

Dear Mr. Carreño:

We have received your letter of November 25, 1991 requesting an amendment to permit No. AO50-175414 to upgrade boiler No. 6 from 250 psig operating pressure at 550° F to 350 psig and 650° F. The steam output is to be reduced from 125,000 lbs/hr to 120,000 lbs/hr to keep the the same heat input to the boiler

We have reviewed the information furnished in your letter, and you are hereby authorized to make the changes. Please notify the Department when the upgrade is completed so that the permit file can be updated.

If you have any questions, please contact Arthur E. Lyall of this office, (813) 332-6975.

Sincerely,

Philip R. Edwards
Director of
District Management

PRE/AEL/ael

cc: Clair Fancy
Ajaya Satyal

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION)	Initial / Date
Alan Haney	
2. DEP - Tally	Initial / Date
3. Air -	Initial / Date
4. Wil Ward	Initial / Date

REMARKS:

INFORMATION	
	Review & Return
	Review & File
	Initial & Forward

DISPOSITION	
	Review & Respond
	Prepare Response
	For My Signature
	For Your Signature
	Let's Discuss
	Set Up Meeting
	Investigate & Report
	Initial & Forward
	Distribute
	Concurrence
	For Processing
	Initial & Return

FROM: SO. District

DATE 12-13-91

PHONE

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Pablo Carrero
OKeelanta Corp
P.O. Box 86
South Bay, Fl 33493

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P062 921 945

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X Nathaniel Smith

7. Date of Delivery
1-8-93

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

DOMESTIC RETURN RECEIPT

P 062 921 945

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Pablo Carrero	
Street and No. OKeelanta Corp	
P.O., State and ZIP Code S Bay, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date 1-6-93	

AC 50-191876
P30-FI-169

PS Form 3800, June 1991

THE PALM BEACH POST
Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

Best Available Copy

PROOF OF PUBLICATION

STATE OF FLORIDA

COUNTY OF PALM BEACH

Before the undersigned authority personally appeared Chris Bull who on oath says that she/he is Class. Sales Mgr. of The Palm Beach Post, a daily and Sunday newspaper published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising, being a Notice in the matter of intent to issue permit revision in the --- Court, was published in said newspaper in the issues of January 13, 1993

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Chris Bull

Sworn to and subscribed before me this 13 day of January A.D. 19 93

OFFICIAL NOTARY SEAL
KAREN M MCLINTON
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC240480
MY COMMISSION EXP. NOV. 13,1996

Karen M McLinton

REGULATION
NOTICE OF INTENT
TO ISSUE PERMIT REVISION

The Department of Environmental Regulation gives notice of its intent to revise permit No. AC50-191576/PSD-FL-169 for boiler No. 16 at Okeelanta Corporation's sugar mill located in Palm Beach County, 6 miles south of South Bay. The revision will allow No. 2 oil fired boiler No. 16 to operate as a replacement to the other existing bagasse/No. 6 fuel oil fired boilers at this plant during the crop season (prohibited by present permit). As the burning of the same quantity of No. 2 fuel oil in the new boiler No. 16 emits less air pollutants than the burning of No. 6 fuel oil in the older bagasse/No. 6 fuel oil fired boilers at this facility, the net air pollutant emissions will be reduced by an undetermined amount. The proposed revision does not alter the Best Available control Technology (BACT) determination that boiler No. 16 is subject to or any other restriction on the other air pollution sources at this facility. The Department is issuing this intent to issue Permit Revision to setisfy the federal enforceability requirements.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statment of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to be a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of
Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Department of
Environmental Regulation
South District
2295 Victoria Ave., Suite 364
Ft. Myers, Florida 33901

Department of
Environmental Regulation
Southeast District
1900 S. Congress Ave., Suite A
West Palm Beech, Florida 33406

Palm Beach County Health Dept.
Division of Environmental Science and Engineering
901 E. Evernia Street
West Palm Beach, Florida 33406

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments re-

ENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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 Fee will provide you the signature of the person delivered to and the date of delivery.

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:

Pablo Carreno
Okeelanta Corp.
PO Box 86
S. Bay, Fl 33493

4a. Article Number P 062 921 980

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

7. Date of Delivery 3-24-93

5. Signature (Addressee)

6. Signature (Agent) [signature]

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

PS Form **3811**, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

P 062 921 980

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Pablo Carreno	
Street and No. Okeelanta Corp	
P.O., State and ZIP Code S. Bay, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date AC 50-191876	

PS Form **3800**, June 1991

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
Pablo A Carreno
Director of Mill & Ref. Operations
OKeelanta Corp
PO Box 86
South Bay, Fl 33493

4a. Article Number
P 360 185 705

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

7. Date of Delivery
2/25/93

5. Signature (Addressee)

6. Signature (Agent)
B. [illegible]

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

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 360 185 705

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to
Pablo Carreno
Street and No.
OKeelanta Corp
P.O., State and ZIP Code
S. Bay, Fl

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	2-23-93

AC 50-191876
PSD-FI-169

PS Form **3800**, June 1991

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:

Mr. Ricardo A. Lima
Vice President - General Manager
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

4a. Article Number

P 872 563 628

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

3-19-94

5. Signature (Addressee)

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

6. Signature (Agent)

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

P 872 563 628

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to: Mr. Ricardo A. Lima	
Street and No.: P. O. Box 86	
P.O., State and ZIP Code: South Bay, Florida 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date: Mailed: 3/15/94 AC 50-191876	

PS Form **3800**, JUNE 1991

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:

Mr. Ricardo A. Lima
Vice President - General Manager
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

4a. Article Number
P 872 562 588

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

7. Date of Delivery
2-7-94

5. Signature (Addressee)

6. Signature (Agent)
D. McRae

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

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆U.S. GPO: 1992—323-402 **DOMESTIC RETURN RECEIPT**

P 872 562 588

UNITED STATES POSTAL SERVICE

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Mr. Ricardo A. Lima	
Street and No. P. O. Box 86	
P.O., State and ZIP Code South Bay, Florida 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date Mailed: 2/2/94 AC 50-191876, Request for Permit Extension	

PS Form **3800**, JUNE 1991

OKEELANTA CORPORATION

6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072 TELEX: 803444

September 1, 1994

Mr. Ronald D. Blackburn
Acting Director of District Management
Department of Environmental Protection
South District
2295 Victoria Avenue, Suite 364
Fort Myers, FL 33901

Re: Okeelanta Corporation Boiler No. 16
DEP permit #: AC50-191876; PSD-FL-169

Dear Mr. Blackburn:

Please find enclosed the Certificate of Completion of Construction for the above referenced source at Okeelanta Corporation. A copy of the initial stack test report and the existing construction permit is also enclosed. Since the initial stack test was not performed within ninety percent of the rated capacity of the boiler, a second compliance test was performed at higher operating rates on August 4, 1994. That test report will be forwarded as soon as it is available.

Please consider the enclosed documents to serve as our application for a permit to operate. Since Okeelanta pays annual fees as a major source and is subject to Title V of the Clean Air Act, it is our understanding that additional fees are not required for this application. Please contact us if further information is required.

Sincerely,

R.A.L. by Matthew Capone
Ricardo Lima
Vice President
General Manager

enclosures

cc: David Buff, KBN w/o enclosure
Matt Capone, Okeelanta
C.H. Fancy, DEP
Roger King, Okeelanta
David Knowles, DEP w/o enclosure
Ajaya Satyal, HRS PBCPHU
J. Harper, EPA

Hillard 9/6

FYI - If you think Mike Harley should see this, please pass it on to him. Otherwise, return to me for the file

9-7-94.
File. District will review and request Mike to check back if they have any questions on it.

Thanks
Patty

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072

TELEX: 803444

September 25, 1992

Mr. Willard Hanks
Department of Environmental Regulations
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ref: Boiler No. 16
Permit No. AC-50-191876

Dear Mr. Hanks,

This is in reference to our telephone conversation of this past Tuesday, September 22, concerning the matter of subject, about our intentions to use this boiler during the crop days.

As per attached information, by working this boiler that burns No. 2 diesel fuel in lieu of the No. 6 (Bunker "C") that we are presently burning in our bagasse burning boiler we are diminishing the SO2 emissions. In addition if one of our bagasse burning boilers gets out of line and is substituted by this No. 16 boiler the particulate emissions for the corresponding bagasse will also go down.

If you need any additional data please call me or Mr. Roger King.

Waiting to hear from you, we remain,

Sincerely,

Pablo Carreño
Director of Mill &
Refinery Operations

PAC:slc

xc: Mr. David Knowls, DER Ft. Myers
Mr. Ricardo Lima
Mr. Roger King

FILE:BOI16USE

RECEIVED
SEP 30 1992
Division of Air
Resources Management

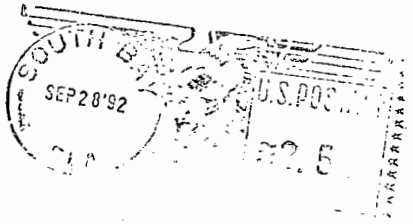
OKEELANTA CORPORATION
P.O. BOX 86
SOUTH BAY, FLORIDA 33493

Fold at line over top of envelope to the right of the return address

CERTIFIED

P 258 613 690

MAIL



MR. WILLARD HANKS
DEPARTMENT OF ENVIRONMENTAL REGULATIONS
2600 BLAIR STONE ROAD
TALLAHASSEE, FL 32399-2400

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. ☐ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Pablo Carrero
Okeelanta Corp
PO Box 86
South Bay, Fl 33493

4. Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Article Number
P062 921 904

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature – Addressee
X

6. Signature – Agent
X D. McPhee

7. Date of Delivery
10-19-92

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

DOMESTIC RETURN RECEIPT

P 062 921 904

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to	Pablo Carrero
Street and No.	Okeelanta Corp
P.O. State and ZIP Code	S. Bay, Fl 33493
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	10-15-92 Boiler #16

PS Form 3800, June 1991

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- 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:
Stephen Neck, PE
Air Consulting & Eng.
2106 NW 67th Place, S.4
Gainesville, FL
32606

4a. Article Number
Z 392 979 055

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

7. Date of Delivery
1-14-95

5. Signature (Addressee)
Edward Gagle

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

6. Signature (Agent)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Z 392 979 055

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

PS Form **3800**, March 1993

Sent to: Steve Neck	
Street and No. AC+E	
P.O., State and ZIP Code Gainesville FL	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date AC50-191876 1-12-95 PSD-FL-1109	

Department of Environmental Regulation

Routing and Transmittal Slip

To: (Name, Office, Location)

1. Patty
2.
3.
4.

Remarks:

David Buff, KBN, is distributing copies of the application and his latest response on Okeelanta Comp to:

Palm Beach Co.
Park Service
S FL District
EPA

From: mnl

Date 2-27-91

Phone

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:	4. Article Number
Mr. Pablo A. Carreno Director of Mill & Refinery Ops. Okeelanta Corporation P. O. Box 86 South Bay, FL 33493	P 407 852 693 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express-Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature – Addressee X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature – Agent X Calvin Bristoe	
7. Date of Delivery 5-20-91	

PS Form **3811**, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

P 407 852 693

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. Pablo A. Cerreno Okeelanta Corp	
Street and No. P. O. Box 86	
P.O., State and ZIP Code South Bay, FL 33493	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 5-17-91 Permit: AC 50-191876	

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

XC: Matt Capone
Roger King
3/17/94
AC

Florida Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

March 7, 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ricardo A. Lima
Vice President - General Manager
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

Dear Mr. Lima:

Re: Amendment of Permit No. AC 50-191876
Boiler No. 16

The Department is in receipt of your letter requesting that the referenced permit to construct the No. 2 fuel oil fired boiler No. 16 be extended. The extension is needed to adjust the burner system, conduct the compliance tests, and submit the application for permit to operate. This request is acceptable and the expiration date of permit No. AC 50-191976 is extended from December 31, 1993, to October 30, 1994.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the applicant of the amendment request/application and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of the amendment issuance or within 14 days of their receipt of this amendment, whichever occurs first. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action;
(g) A statement of the relief sought by petitioner, stating precisely the action the petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the request/application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this amendment in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

A copy of this letter must be filed with the referenced construction permit and shall become a condition of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/bjb

Attachment: Okeelanta's December 21, 1993, letter

cc: David Knowles, SD
David Buff, KBN
Jim Stormer, PBCHD

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this AMENDMENT and all copies were mailed by certified mail before the close of business on 3/15/94 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to 120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Barbara J. Pourwell 3/15/94
Clerk Date

OKEELANTA CORPORATION
6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072

TELEX: 803444

February 10, 1994

Mr. C.H. Fancy
Dept. of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL

Ref: AC 50-191876

Dear Mr. Fancy:

In reference to your letter dated February 2, 1994, please find enclosed our check in the amount of $50.00 for processing fees.

Should you require any further information please feel free to contact myself or Roger King at 407-996-9072.

Sincerely,

Ricardo A. Lima
Vice President -
General Manager

RAL:slc

xc: Roger King

FILE:PROCFEE

Your Copy

OKEELANTA CORPORATION

6 MILES SOUTH OF SOUTH BAY
POST OFFICE BOX 86
SOUTH BAY, FLORIDA 33493

TELEPHONE: (407) 996-9072 TELEX: 803444

April 5, 1993

Mr. Howard L. Rhodes, Director
Division of Air Resources Management
Florida Dept of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Revision to Construction Permit
No. AC 50-191876 (PSD-FL-169)

Dear Mr. Rhodes:

This is in reference to your letter of February 18, 1993 concerning the matter of subject.

We would like to clarify some statements in specific condition No. 10 as follows:

- Our crop season does not go from November thru February, but rather from the middle of October to the middle of March approximately because its total length depend on many factors. This year we have lost more than 21 days due to abnormal rainfalls and we are to finish this season around April the 18th.

- As very well expressed in your letter, Boiler No. 16 shall not be operated as a replacement to a functional bagasse fired boiler when bagasse fuel is available but as a substitute for No. 6 fuel oil that is burnt at the existing bagasse/No. 6 fuel oil fired boilers. However, the total amount of No. 6 fuel oil burnt in a season depends on the amount of bagasse available and other grinding conditions, and because of that reason it has not been restricted as an auxiliary fuel in our existing bagasse burning boilers. Thus the restriction of the total oil consumption for the combined No. 6 and No. 2 fuel oil by all boilers at this facility (3.2×10^6 gallons during crop season) should be construed as the total maximum steam production that shall not exceed the 1,012,000 lbs/hr.

Sincerely,

Pablo Carreño
Director Of Mill

PAC:slc

xc: David Knowls - DER Ft. Myers
Gregg Worley, EPA
Jim Stormer, PBC
David Buff, KBN
Ricardo Lima
Roger King

FILE:DERFUEL

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

March 19, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Pablo Carreño
Director of Mill Operations
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreño:

Re: Amendment of Permit
Boiler No. 16, Permit No. AC50-191876

The Department is in receipt of your February 24, 1993, letter requesting that the referenced permit be extended to allow additional time for the compliance tests and that you be allowed to substitute annual stack tests for the continuous monitoring of opacity and nitrogen oxides.

The request for additional time to complete the compliance tests is acceptable. The expiration date for Permit No. AC50-191876 is hereby extended from March 1, 1993, to December 31, 1993.

The Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db, requires the installation, calculation, maintenance, and operation of a continuous emissions monitor for opacity (40 CFR 60.48b). Boiler No. 16 is subject to these regulations. A continuous emissions monitor for opacity must be installed on boiler No. 16.

These regulations, 40 CFR 60, Subpart Db, also require the continuous monitoring of nitrogen oxides (NO_x) emissions by either an instrument or by monitoring boiler operation conditions under an approved plan described in 40 CFR 60.49b(c). The nitrogen oxide emissions from boiler No. 16 must be monitored by one of these methods. Nitrogen oxides monitoring data collected by either method will satisfy the monitoring requirements of Specific Condition No. 5 of the referenced permit.

A copy of this letter shall be filed with the referenced construction permit and shall become a part of that permit.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this amendment. Petitions filed by other persons must be filed within 14 days of receipt of this amendment. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this amendment. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this amendment in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a

waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Sincerely,

Howard L. Rhodes
Director
Division of Air Resources
Management

CF/WH/w

Attach: Okeelanta Comp., February 24, 1993, letter

cc: David Knowles, SFD
Isidore Goldman, SED
James Stormer, PBC

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

February 18, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Pablo A. Carreno
Director of Mill & Refinery Operation
Okeelanta Corporation
Post Office Box 86
South Bay, Florida 33493

Dear Mr. Carreno:

Re: Revision to Construction Permit No. AC50-191876
(PSD-FL-169)

The Department is in receipt of your request and supporting data to operate No. 2 fuel oil fired boiler No. 16 during the sugar cane crop season (November through February) in lieu of firing No. 6 fuel oil in the other boilers at the Okeelanta Corporation mill which is located in Palm Beach County, 6 miles south of South Bay. This request is acceptable, with conditions, and the referenced permit is amended:

FROM

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

TO:

Specific Condition No. 5:

Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY**	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM_{10}	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NOx	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

**** Emissions during the period from March 1 to October 31.**

Specific Condition No. 10:

The boiler shall not operate for more than 175 days (4,200 hours) during the off-season months (March through October). **During the crop season (November through February), the heat input to boiler No. 16 is limited to the equivalent reduction in heat input from No. 6 fuel oil for the existing bagasse/No. 6 fuel oil fired boilers at this sugar mill. It shall not be operated as a replacement to a functional bagasse fired boiler when bagasse fuel is available. Total oil consumption (fuel oils No. 2 and No. 6) by all boilers at this facility (boilers Nos. 4, 5, 6, 10, 11, 12, 14, 15, and 16) shall not exceed 3.2 x 10^6 gallons during the crop season (November through February) and total maximum steam production shall not exceed 1,012,000 lbs/hr.**

A copy of this letter shall be attached to the referenced permit and shall become a part of that permit.

Sincerely,

Howard L. Rhodes

Howard L. Rhodes
Director
Division of Air Resources
Management

HLR/WH/plm

Attach: Okeelanta's September 25, 1992, letter
DER's October 15, 1992, letter
Okeelanta's November 13, 1992, letter
Okeelanta's January 25, 1993, letter

cc: David Knowles, SD
Stephanie Brooks, SED
Gregg Worley, EPA
Jim Stormer, PBC
David Buff, P.E.
Brian Mitchell, NPS

Attachments Available Upon Request

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

In the matter of an
Application for Permit by:

DER File No. AC 50-191876
Palm Beach County

Mr. Pablo A. Carreno
Director of Mill and Refinery Operations
Okeelanta Corporation
P. O. Box 86
South Bay, Florida 33493

_____/

Enclosed is Permit Number AC 50-191876 to construct an oil fired steam boiler (No. 16) at your sugar mill located on U.S. Highway 27, 6 miles south of South Bay, Palm Beach County, Florida, issued pursuant to Section(s) 403, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-1344

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 7-30-91 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to
§120.52(11), Florida Statutes,
with the designated Department
Clerk, receipt of which is hereby
acknowledged.

Kim Doker (Clerk) 7-30-91 (Date)

Copies furnished to:
David Knowles, South Dist.
Isidore Goldman SE Dist.
Jim Stormer, Palm Beach Co.
David Buff, P.E.
Jewell Harper, EPA
C. Shaver, NPS

Final Determination

Okeelanta Corporation
Palm Beach County
South Bay, Florida

Boiler No. 16
Permit No. AC 50-191876
PSD-FL-169

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

July 16, 1991

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct boiler No. 16 at Okeelanta Corporation's sugar mill that is located approximately 6 miles south of South Bay in Palm Beach County, Florida, was distributed on May 17, 1991. The Notice of Intent to Issue was published in Palm Beach Post on May 31, 1991.

Copies of the evaluation were available for public inspection at the Palm Beach County's environmental office in West Palm Beach and the Department's offices in West Palm Beach, Fort Myers, and Tallahassee.

Comments were submitted by the applicant's engineer, Palm Beach County Health Unit, and the National Park Service. The applicant's engineer requested that the NO_x emission standard of 0.18 lbs/MMBtu be a 30-day rolling average, that the boiler be allowed to operate in March (proposed permit restricted its operation to April through October), and that the steam production limit be at a specific steam pressure and temperature. Palm Beach County Health Unit requested they be included in the notification and reporting requirements of the permit for this boiler. The National Park Service requested lower sulfur fuel be required for the boiler, that a cumulative modeling analysis be included in the current review of another application for a major facility in this area, and that the air quality related value (AQRVs) analyses be considered in determining this project's impact on Everglades National Park.

The Department's response to these comments are as follows. Specific condition No. 5 was revised to note the NO_x standard of 0.18 lbs/MMBtu is to be a 30-day rolling average, which is consistent with the new source performance standard. Specific condition No. 6 was reworded to require the permittee to calculate the 30-day rolling average concentration for NO_x. Specific condition No. 10 was changed to allow the boiler to operate from March through October. Modeling showed that the ambient air standards would not be violated with the proposed boiler operating during this period.

The maximum steam pressure and temperature limits were removed from Specific Condition 11. The steam production and fuel input limits given in Specific Condition 9 will provide the Department with reasonable assurance that the permitted heat input rate of 205 MMBtu/hr for this boiler will not be exceeded.

Specific Conditions Nos. 7, 13, and 14 were amended to include the Palm Beach County Health Unit in the notification and reporting requirements.

The Department has required lower sulfur (0.2%) fuel oil to be used in larger, continuously operated sources. However, the use of fuel oil containing 0.3% sulfur in the proposed boiler, which will be

operated during the off season of the sugar industry, is considered appropriate for this situation.

The concurrent review of an application for a major source in the area is being processed separately from this application. Consideration will be given toward requiring a cumulative modeling analysis and an AQRV analysis for this major source. However, the Department does not believe an AQRV analysis is justified for this proposed boiler because of its small predicted impact (0.03 ug/m^3, annual average) on the Everglades National Park Class I area.

The final action of the Department will be to issue construction permit No. AC50-191876 (PSD-FL-169) as proposed in the Technical Evaluation and Preliminary Determination except for the changes discussed above.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

PERMITTEE:

Okeelanta Corporation
P.O. Box 86
South Bay, Florida 33493

Permit Number: AC 50-191876
PSD-FL-169
Expiration Date: March 1, 1993
County: Palm Beach
Latitude/Longitude: 26°35'00" N
80°45'00" W
Project: Oil Fired Steam Boiler
No. 16

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

Construction of a 150,000 lbs steam/hr, No. 2 oil fired, 205 MMBtu/hr heat input Babcock & Wilcox Model FM 120-97 package boiler using Coen's LO-NO_x burners and designed for 12% flue gas recirculation (or equivalent boiler with controls) equipped with a 5 ft. diameter by 75 ft. high stack. The boiler will be located at the permittee's existing sugar mill (SIC 2061) that is approximately 6 miles sought of South Bay, Palm Beach County, Florida off of U.S. Highway 27. The UTM coordinates of this site are Zone 17, 524.9 km E and 2940.1 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received Jan. 29, 1991.
2. KBN letter dated Feb. 19, 1991.
3. BACT Determination.
4. KBN letter dated June 5, 1991.
5. Palm Beach County Health Unit letter dated June 5, 1991.
6. NPS letter dated July 1, 1991.
7. KBN letter dated July 9, 1991.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to the public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve

GENERAL CONDITIONS:

compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

a. Have access to and copy any records that must be kept under the conditions of the permit;

b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend upon the nature of the concern being investigated.

8. If, for any reasons, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitting source arising under the Florida Statues or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

GENERAL CONDITIONS:

Statues. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in the Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes Determination of Prevention of Significant Deterioration (PSD), Determination of Best Available Control Technology (BACT), and Compliance with New Source Performance Standards (NSPS).

14. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulation by the Department.

b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

GENERAL CONDITIONS:

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When request by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

Construction Details

1. The boiler shall be a flue gas recirculation type and equipped with low NO_x distillate oil burners. The design shall be for a heat release rate greater than 70,000 Btu/hr-ft^3.

2. The stack sampling facilities shall comply with F.A.C. Rule 17-2.700(4).

3. The 5 ft. diameter stack shall have a minimum height of 75 ft.

4. The boiler shall be equipped with instruments to measure the opacity of the stack emissions and the steam production, temperature, and pressure.

SPECIFIC CONDITIONS:

Emission Restrictions

5. Air pollutant emissions shall not exceed any of the quantities listed below:

Pollutant	lbs/MMBtu	Emissions lbs/hr	Emissions TPY	Compliance Test Method EPA Test Methods (July 1, 1990)
PM	0.054	11.0	23.1	5
PM10	0.027	5.5	11.6	201 or 201A
SO_2	0.51	105.5	132.9	Certified Fuel Analysis
NO_x	0.18*	36.9	77.5	7, 7A, 7E
CO	0.20	41.0	86.1	10
VOC	0.09	18.5	38.7	25
VE	20% opacity (6-minute average) except 27% (max.) for 1 6-minute period/hr.			9

* 30-day rolling average as determined from the NO_x monitor data.

Compliance Requirements

6. Particulate matter, visible emissions, and nitrogen oxides emissions tests shall be conducted annually while the boiler is operating between 90-100% of its permitted capacity (135-150,000 lbs steam/hr). The volume and sulfur content of each fuel oil delivery shall be kept in a log for a minimum of 3 years. The continuous emissions monitoring data will be evaluated to determine the highest concentration of NO_x in lbs/MMBtu for any 30-day rolling average during the proceeding year. Tests for other pollutants may be required when the Department has good reason to believe the emission standard is being exceeded.

Federal Requirements

7. Boiler No. 16 shall comply with all applicable requirements of 40 CFR 60, including Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Unit (December 18, 1989).

40 CFR 60.7, Notification and record keeping. Timely notification of the items listed to the Department (South District), Palm Beach County Public Health Unit (PBCPHU), and EPA.

SPECIFIC CONDITIONS:

40 CFR 60.8, Compliance tests. Minimum of 30 days prior notice of the initial compliance tests which must be conducted between 60 to 180 days of initial startup of the source to the Department and EPA.

40 CFR 60.42b, Standard for sulfur dioxide. Sulfur content of the No. 2 distillation oil fuel shall not exceed 0.5%. Annual off-season average shall not exceed 0.3% sulfur. The permittee shall maintain fuel analysis or receipts to confirm compliance with this condition.

40 CFR 60.43b, Standard for particulate matter. Visible emissions shall not exceed 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity.

40 CFR 60.44b, Standard for nitrogen oxides for high heat release boiler No. 16, expressed as NO_2, is 0.20 lbs/MMBtu.

40 CFR 60.45b, Sulfur dioxide compliance tests, fuel receipts or analysis for sulfur content is required to confirm compliance with this condition.

40 CFR 60.46b, Particulate and nitrogen oxides compliance tests. Method 9 test required to determine compliance with the opacity standard. Method 7, 7A, or 7E test for nitrogen oxides.

40 CFR 60.47b, Sulfur dioxide monitoring. Fuel analysis or receipts required to confirm compliance with this condition.

40 CFR 60.48b, Particulate and nitrogen oxides monitoring. Continuous emissions monitor required to measure opacity.

40 CFR 60.49b, Reporting and record keeping requirements. Permittee required to report date of initial start up, design heat input capacity, fuels used, annual capacity factor, performance test data, plan to monitor NO_x, nitrogen content of the distillate oil, opacity, nitrogen dioxide emissions, monitor down time, "F" factor, exceedances, and other information required by this paragraph.

Operation Requirements

8. Only No. 2 fuel oil containing a maximum of 0.5% sulfur (off-season average of 0.3% sulfur) shall be used as fuel.

SPECIFIC CONDITIONS:

9. Maximum heat input to the boiler shall not exceed 1,463 gallons per hour of No. 2 distillate fuel oil (205 MMBtu/hr).

10. The boiler shall not operate for more than 175 days (4,200 hours) during any 12 month period. The boiler shall only operate during the off-season months (March through October).

11. Steam production shall not exceed 150,000 lbs/hr.

Administrative Requirements

12. The permittee shall maintain a log that shows the boiler's operation time, steam production, and fuel consumption.

13. The Department's South District and the PBCPHU shall be notified in writing at least 30 days in advance of the initial compliance test and 15 days in advance of any annual compliance tests to be conducted on this boiler.

14. Stack test results shall be submitted to the Department and the PCBPHU within 45 days of the test.

15. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

16. An application for an operation permit must be submitted to the South District office at least 90 days prior to the expiration date of this construction permit. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rules 17-4.055 and 17-4.220).

Issued this 29th day
of July, 1991.

**STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION**

Carol M. Browner

Carol M. Browner, Secretary

Best Available Control Technology (BACT) Determination
Okeelanta Corporation
Palm Beach County

The applicant plans to permanently install a 205 MMBtu/hr No. 2 oil-fired steam boiler at their facility 6 miles south of South Bay, Florida. The boiler will be used to supply process steam. The boiler is scheduled to operate during the off-season of April through October (4,200 hours) when the other boilers at this facility are shutdown.

A BACT determination is required for particulates and sulfur dioxide as set forth in the Florida Administrative Code Rule 17-2.600(6) - Emissions Limiting and Performance Standards. In addition, the Department performed a BACT determination for nitrogen oxides (NOx) since those emissions are greater than the PSD significant rate of 40 tons per year.

BACT Determination Request by the Applicant:

Particulate, sulfur dioxide, nitrogen oxides emissions to be controlled by the firing of No. 2 fuel oil with a 0.5% sulfur content.

Date of Receipt of a BACT Application:

January 29, 1991

BACT Determined by DER:

The amount of particulate and sulfur dioxide emissions from the boiler will be limited by the firing of No. 2 fuel oil with a 0.3% off season average and a 0.5% maximum sulfur content.

Nitrogen oxides emissions shall not exceed 0.18 lbs/MMBtu heat input using low NOx burners/flue gas recirculation.

BACT Determination Rationale:

Sulfur in fuel is a primary air pollution concern in that most of the fuel sulfur becomes SO_2 and particulate emissions from fuel burning are related to the sulfur content. The Department has determined that the firing of No. 2 fuel oil with an off-season average of 0.3% sulfur and maximum of 0.5% sulfur content is BACT for particulates and SO_2. These sulfur content limitations are representative of what has been recently established as BACT for oil-fired equipment.

The emission rate of nitrogen oxides proposed by the applicant is equivalent to 0.18 pound per million Btu heat input. A review of other BACT determinations for oil fired boilers indicates that the proposed emission level for nitrogen oxides meets or exceeds several of the determinations on record. In addition, this emission level is equivalent to what has been determined to be BACT for oil-fired turbines. Additional NOx control could be provided by using add on control devices such as selective catalytic reduction (SCR) or selective noncatalytic reduction (SNCR). A review of these control technologies indicates a cost effectiveness ranging from $6802 to $7321 per ton of NOx removed. These costs exceed those which have been previously judged to be representative of BACT, thereby dismissing these technologies as BACT for this facility. In accordance with these criteria, the applicant's proposed NOx emission rate is justified as BACT for this source.

Details of the Analysis May Be Obtained By Contacting:

G. Preston Lewis, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

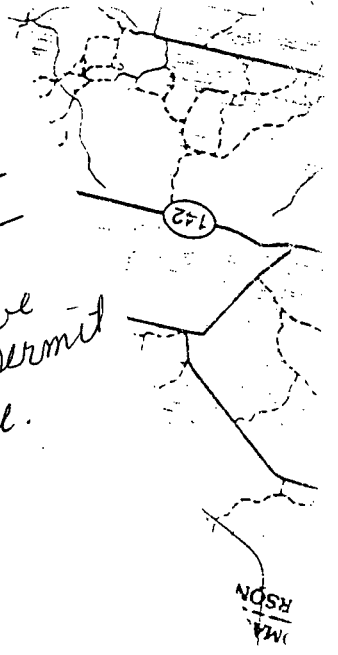
C. H. Fancy, P.E., Chief
Bureau of Air Regulation

July 26, 1991
Date

Approved By:

Carol M. Browner, Secretary
Department of Environmental Regulation

July 29, 1991
Date



Check Sheet

Company Name: Okeelanta Power Limited Partnership
Permit Number: AC50-191876 - Tele-Energy
PSD Number: PSD FL-169
Permit Engineer:

This file contains a letter about A050-169210 along with the above referenced permit correspondence.

Cross References:
- ☐
- ☐
- ☐

Application:
- ☑ Initial Application
- ☐ Incompleteness Letters
- ☑ Responses
- ☐ Waiver of Department Action
- ☐ Department Response
- ☐ Other

Intent:
- ☐ Intent to Issue
- ☑ Notice of Intent to Issue
- ☑ Technical Evaluation
- ☑ BACT or LAER Determination
- ☑ Unsigned Permit
- ☑ Correspondence with:
  - ☐ EPA
  - ☐ Park Services
  - ☐ Other
- ☑ Proof of Publication
- ☐ Petitions - (Related to extensions, hearings, etc.)
- ☐ Waiver of Department Action
- ☐ Other

Certified Mail Receipt is not attached.

Final Determination:
- ☑ Final Determination
- ☑ Signed Permit
- ☑ BACT or LAER Determination
- ☐ Other

Post Permit Correspondence:
- ☐ Extensions/Amendments/Modifications
- ☐ Other

Revision #5