

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

U.S Sugar Corporation
P. O. Drawer 1207
Clewiston, Florida 33440

Permit Number: AC 26-80930
Expiration Date: January 11, 1986
County: Hendry
Latitude/Longitude: 26° 44' 30"N/
80° 56' 15"W

Project: Boiler No. 4

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2, 17-4 and 40 CFR 52.21. 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:

Installation of a used 545.5 million BTU/hr heat input (250,000 lb/hr steam) Foster Wheeler boiler modified to burn bagasse and/or No. 6 residual oil along with a Joy Manufacturing Company designed Turbulaire spray Impingement Scrubber. The modified boiler will be installed at U.S. Sugar Corporation's existing sugar mill that is located near the intersection of W. C. Owens Avenue and Clewiston Street in Clewiston, Hendry County, Florida. The UTM coordinates of this site are 17-506.1 Km E and 2956.9 Km N.

Construction shall be in accordance with the application for a permit to construct a Bagasse/Oil-Fired Boiler that was signed by Mr. A. R. Mayo on February 1, 1984, and the additional information submitted by Hopping Boyd Green and Sams on June 1, 1984, and September 24, 1984, and Mr. A. R. Mayo on July 30, 1984, and September 19, 1984, except for the changes mentioned in the Technical Evaluation and Preliminary Determination and listed as specific conditions in the construction permit.

PERMITTEE:
U.S. Sugar Corporation
P. O. Drawer 1207
Clewiston, Florida 33440

Permit Number: AC 26-80930
Expiration Date: January 11, 1986

SPECIFIC CONDITIONS:

3. During any 12 month period, the maximum quantity of No. 6 residual oil burned in boiler No. 4 shall not exceed 500,000 gallons. ✓

4. During any 24 hour period, not more than 40,800 gallons of fuel oil shall be burned in all stationary fuel oil burning equipment at the plant. All permits to operate other oil burning equipment at this plant shall be revised to include this limitation prior to the issuance of a permit to operate boiler No. 4. ✓

5. During any 3 hour period, not more than 6,300 gallons of fuel oil shall be burned in all stationary fuel oil burning equipment at the plant. All permits to operate other oil burning equipment at this plant shall be revised to include this limitation prior to the issuance of a permit to operate boiler No. 4. ✓

6. All stationary fuel oil burning equipment at the plant shall be equipped with integrating fuel oil flow meters or continuous recorders to measure the amount of fuel oil consumed by the equipment. Oil meter readings on all oil consuming equipment shall be read and logged at least once every three hours unless oil consumption for the equipment is recorded continuously, and these records shall be kept for at least five years for department inspection. Each meter shall be calibrated annually by a method approved by the department. ✓

7. ~~Heat input to Boiler No. 4 from bagasse fuel or a combination of bagasse/oil fuels shall not exceed 545.5 million Btu per hour, six hour average, or an instantaneous rate of 600 million Btu per hour.~~ ✓

8. Prior to the expiration of this construction permit, a test shall be made on Boiler No. 4 to determine its actual thermal efficiency in accordance with the ASME ~~short-form procedure~~. This must be repeated each time the operating permit for this boiler is renewed. The test shall be done while the tubes are clean and within 14 days of the compliance test. A current report on the thermal efficiency test must be included with the application to operate this boiler. ✓

PERMITTEE:
U.S. Sugar Corporation
P. O. Drawer 1207
Clewiston, Florida 33440

Permit Number: AC 26-80930
Expiration Date: January 11, 1986

SPECIFIC CONDITIONS:

13. Sulfur dioxide emissions from boiler No. 4, while it is burning 100 percent bagasse fuel, shall not exceed 0.25 lb/million Btu heat input as determined by EPA Method 6 as described in 40 CFR 60, Appendix A. The compliance test results shall be calculated by assuming the thermal efficiency of Boiler No. 4 is 55 percent, or any new method subsequently adopted by department rule. For informational purposes only, the sulfur dioxide emission rate shall also be calculated by utilizing both the F factor (for each compliance test) and the short term ASME boiler efficiency test results (once every five years). Scrubber parameters listed in Specific Condition No. 9 shall be recorded every 15 minutes or continuously during the compliance test.

All compliance tests shall be conducted while the boiler is operating within 10 percent of its maximum or permitted capacity, whichever is lower. The South Florida District Office shall be notified 15 days prior to any compliance test.

Sulfur dioxide emissions from Boiler No. 4, while it is burning a mixture of oil and bagasse, shall not exceed 680 lb/hr.

14. Emissions of carbon monoxide and volatile organic compounds shall be maintained at the lowest possible level through the implementation of an Operation and Maintenance plan that is approved by the department. Emissions of carbon monoxide shall not exceed 0.25 lb/million Btu as determined by EPA Method 10. Emissions of volatile organic compounds shall not exceed 1.7 lb/ton of wet bagasse as determined by EPA Method 25. These test methods are described in 40 CFR 60, Appendix A. After the initial compliance tests, compliance tests for these pollutants will not be required if the visible emissions from Boiler No. 4 are below 20 percent opacity and the initial VOC Method 25 tests and initial CO method 10 tests show compliance.

15. Visible emissions from the bagasse handling systems shall not exceed 10 percent opacity over any 6 minute period as measured by DER Method 9. Water spray or other effective means will be used to minimize fugitive emissions when reclaiming dry bagasse for the boiler.

16. Nitrogen oxides emissions, expressed as NO₂, shall not exceed 136.8 lb/hr as determined by EPA Reference Method 7 described in 40 CFR 60, Appendix A. After the initial compliance test, the Company may substitute an Operation and Maintenance plan that is approved by the department that optimized the NO_x emissions for the compliance tests specified in this specific condition if the initial Method 7 test show compliance.

NO_x

136.8 lb/hr

CO

136.4 lb/hr

A Spray impingement scrubber similar in design to a Joy type D, size 200, "Turbulaire" spray impingement scrubber will be constructed and installed to control particulate emissions. Sulfur dioxide emissions will be limited by the minimization of the use of fuel oil containing a maximum sulfur content of 2.5 percent. Good firing and operational practices will be followed to minimize NO_x, ozone, (VOC), and CO emissions.

Date of Receipt of a BACT application:
January 14, 1984

Date of Publication in the Florida Administrative Weekly:
February 10, 1984

Review Group Members:

The determination was based upon comments received from the New Source Review Section, the Air Modeling Section and the South Florida District.

BACT Determined by DER:

<u>Pollutant</u>	<u>Emission Limit</u>
Particulates	
100% Bagasse	0.150 lb/million Btu heat input
100% No. 6 oil	0.10 lb/million Btu heat input
Sulfur Dioxide	No. 6 new ^[1] fuel oil with a sulfur content not to exceed 1.5 percent by weight
NO _x , CO, Ozone (VOC)	O&M plan
Visible Emissions	Maximum 20% opacity except that 40% opacity is permissible for not more than 2 minutes in any one hour.

[1] The "new" oil means an oil which has been refined from crude oil and has not been used, and which may or may not contain additives.

Best Available Control Technology (BACT) Determination
U.S. Sugar Corporation
Hendry County

The applicant plans to install a 545.5 million Btu per hour heat input bagasse-fired steam generator. The unit will be capable of firing No. 6 residual oil to be limited to a heat input of 225 million Btu per hour, since bagasse will be the primary fuel. The unit will be operated during the sugar cane season which is October 15 through April 15. The source designated identification will be Boiler No. 4.

Boiler No. 4-applicant's summary of air pollutant emissions is as follows:

<u>Pollutant</u>	<u>Emissions Tons/Year</u>	<u>Significant Rate</u>
Particulates	238	25
SO ₂	382	40
NO _x	206	40
CO	298	100
Ozone (VOC)	281	40

Rule 17-2.500 (5) requires a Best Available Control Technology (BACT) review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in Table 500-2, Regulated Air Pollutants-Significant Emission Rates. The effected pollutants in this case are particulates, ozone (VOC), sulfur dioxide, nitrogen oxides and carbon monoxide. The source is to be located in an area classified as attainment for all regulated air pollutants.

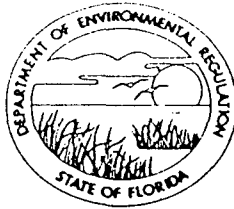
BACT Determination Requested by the Applicant

<u>Pollutant</u>	<u>Emission Limit</u>
Particulate (Bagasse)	0.20 lb/million Btu, heat input,
(oil)	0.10 lb/million Btu heat input
SO ₂ (Bagasse)	0.25 lb/million Btu, heat input
(oil)	2.5% sulfur content oil and annual consumption not to exceed 500,000 gallons

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

PERMITTEE:

U.S. Sugar Corporation
P. O. Drawer 1207
Clewiston, Florida 33440

Permit Number: AC 26-126965

Expiration Date: July 1, 1987

County: Hendry

Latitude/Longitude: 26° 44' 30"N
80° 56' 15"W

Project: Boiler No. 4 Modification

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 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:

Authorization to increase the heat input and steam production of the Foster Wheeler boiler No. 4 at U.S. Sugar Corporation's existing sugar mill that is located near the intersection of W. C. Owens Avenue and Clewiston Street in Clewiston, Hendry County, Florida. The UTM coordinates of this site are zone 17, 506.1 km E and 2956.9 km N.

The modification shall be in accordance with the application (cover letter dated October 28, 1986) received November 3, 1986, and the additional information submitted in the Mr. Mayo's letter dated December 4, 1986, except for the changes mentioned in the Technical Evaluation and Preliminary Determination and listed as Specific Conditions in this permit to construct.

Attachments:

1. U.S. Sugar Application received November 3, 1986.
2. U.S. Sugar letter dated December 4, 1986.

PERMITTEE:
U.S. Sugar Corporation

Permit Number: AC 26-126965
Expiration Date: July 1, 1987

GENERAL CONDITIONS:

- b. The permittee shall retain 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), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be 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 date(s) 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 submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Steam production, steam pressure, steam temperature, heat input, and bagasse consumption shall not exceed the following:

Steam press.	Steam temp. °F	Avging. time *	Steam Prod. lb/hr	Heat input 10 ⁶ Btu/hr	Bagasse Consum. lbs/hr-wet
850	900	Max.	346,231	777.2	215,889
		6-hr avg	314,757	706.6	196,264
600	750	Max.	368,500	777.2	215,889
		6-hr avg	335,000	706.6	196,264

*Maximum is a 1 hour average.

PERMITTEE:
U.S. Sugar Corporation

Permit Number: AC 26-126965
Expiration Date: July 1, 1987

SPECIFIC CONDITIONS:

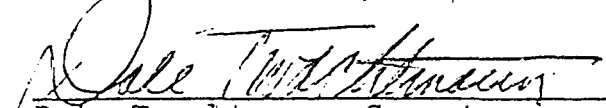
15. Nitrogen oxides emissions, expressed as NO₂, shall not exceed 192.4 lb/hr (max.) and 180.7 lb/hr (6 hr avg.) as determined by EPA Reference Method 7 described in 40 CFR 60, Appendix A. After the initial compliance test, the Company may substitute an Operation and Maintenance plan that is approved by the department that optimized the NO_x emissions for the compliance tests specified in this specific condition if the initial Method 7 test show compliance.

16. Compliance with all emission standards for boiler No. 4, except particulate matter and visible emissions, may be based on emission factors established by previous EPA reference method tests on this boiler. As a condition of this permit, particulate matter and visible emissions tests shall be conducted concurrently on the boiler while it is operating at its average steam production rate of approximately 315,000 lbs/hr of 850 psig steam or 335,000 lbs/hr of 600 psig steam (approximately 707 MMBtu/hr). The applicant will demonstrate compliance with the conditions of the construction permit and submit a complete application for a permit to operate to the South Florida District Office 90 days prior to the expiration date of this construction permit. The applicant may continue to operate in compliance with all terms of this construction permit until its expiration date.

now taking readings every 4 hours - won't record 1-hour pressure drop.
17. Any permit to operate issued for Boiler No. 4 will limit operation to 160 days per season; require the scrubber to be operated at a six hour average pressure drop not less than 90 percent of the six hour average pressure drop that existed during the particulate matter test that showed compliance or not less than 75 percent of the average six hour pressure drop at any time; require, as a minimum, annual particulate matter and visible emission tests; an annual operation report which will include the amount of oil burned at the plant to determine compliance with the limits on oil usage in this permit, and the sulfur content of the residual oil purchased for the season; and a monthly summary of the scrubber parameters listed in Specific Condition No. 8.

Issued this 16 day of Feb., 1987

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION


Dale Twachtmann, Secretary

____ pages attached.