

Clean Air Consulting, Inc.

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**MAY 13 1998**

**BUREAU OF  
AIR REGULATION**

May 11, 1998

Mr. Clair Fancy  
Division of Air Resources Management  
Florida Department of Environmental Regulation  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Coastal Fuels Marketing, Inc. - Port Everglades Terminal  
DRAFT Title V Permit No.: 0110069-003-AV  
Request for a BACT Determination - Existing Boiler

Dear Mr. Fancy:

Coastal Fuels Marketing, Inc is in the process of their review of draft Title V permit for the Port Everglades Terminal. One of the emission units is for an existing boiler which was previously exempted by the existing operating permit. This small boiler, rated at 8.375 MMBTU/hr., has been exempt from permitting since the early eighties. It has been in place at this facility since 1970. The date of manufacture, per the name plate, was July 18, 1966. This exempted boiler was allowed to burn natural gas, No. 2 or No. 6 fuel oil. There has never been a limit on the sulfur content.

Since the terminal is a Title V facility, all sources had to be evaluated to determine whether they needed to be addressed as an emissions unit or could be considered insignificant or trivial. The emission estimates for the boiler resulted in levels above the 5 ton per year criteria for exemption under Rule 62-213. Actual SO<sub>2</sub> emissions for 1997 were 0.04 tpy since it was fired primarily on natural gas (copy attached). Therefore the boiler was included as an emission unit and a request for a BACT determination was made as part of the Title V application. Coastal Fuels Marketing, Inc. requested that the existing No. 2 fuel oil with a maximum sulfur content of 0.5% be considered the BACT. We have been advised by the Broward County that the current BACT for small boilers is 0.05% sulfur and that a BACT determination at this reduced sulfur level could be made locally. If a higher sulfur content is requested, the processing of the BACT request would have to be made by the Division of Air Resources Management.

The unit is currently fired on No. 2 fuel oil with a maximum sulfur content of 0.5%. Coastal Fuels

Mr. Clair Fancy  
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Marketing, Inc. is requesting the BACT determination reflect this sulfur content. The rationale is as follows:

- This is an existing boiler which has been in operation before the state had an active air program or regulations addressing boilers
- It has been specifically exempted by the department in past permit.
- This permit exemption allowed the boiler to be fired by fuel oil without a sulfur content limitation.
- This boiler, if not for its Title V applicability, would be exempted under the categorical exemption for small boilers under Rule 62-210.300(3)(a)1., F.A.C.
- The storage tank which supplies this boiler also supplies fuel to diesel fired pumps. A new tank would have to be installed if the sulfur content is reduced to 0.05%.
- If the department had a concern about the SO<sub>2</sub> emissions from the boiler, it should have required a BACT twenty plus years ago. The BACT done at that time only required a 0.5%.
- Treatment of existing boilers which were previously exempted by the department as "new sources" in a BACT determination unfairly penalizes a facility. It is requested that the agency consider the age of the unit when formulating the BACT and make the BACT consistent with BACT determinations done at the time of installation. The agency should also take into account the fact that the boiler was previously exempted by permit.


If the requested BACT can not be made, it is strongly recommended that the department thoroughly evaluate the ramifications of changing the boiler exemption during the rulemaking activities. It should be made clear to the regulated industries what the department intentions are, and the costs included in the department's decision making. Furthermore, the department should include the BACT rule when rule changes are made.

The Title V emission unit section covering the boiler and emission calculations are attached for your review. Also attached is a copy of the existing operation permit which currently exempts this unit. With this submittal, we formally request a BACT with a higher sulfur content for this emission unit.

Mr. Clair Fancy  
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Should you or your staff have any questions or wish to discuss the matter, please give me a call.

Sincerely,

A handwritten signature in black ink, appearing to read 'JW Estler', with a long horizontal flourish extending to the right.

James Wm. Estler, Q.E.P.  
President

Encl:

cc: Bill Hahne with attachments  
Coastal Fuels Marketing, Inc. with attachments

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**FUEL COMBUSTION CALCULATIONS**  
**BOILER NO. 1**  
**NATURAL GAS**

1997 AOR Calculations

UNITS: MM CUBIC FEET PER HOUR OR YEAR

8.00 (must enter this value)

If units are in therms

therms/yr 0.00

MM ft3/yr. 8.00

MM ft3/day 0.0308

Number of hrs/yr

6,240.00

Number of days/yr

260

**EMISSION FACTORS**

lbs/mmft3 tons/yr

TSP 4.50 0.018

SO2 0.60 0.002

NOx 140.00 0.560

CO 35.00 0.140

VOC (non methane) 2.78 0.011

**No. 2 FUEL OIL - ALTERNATE FUEL**

GALLONS/YR

1,680

SULFUR CONTENT (%)

0.3

HOURS PER YEAR

6,240.00

**EMISSION FACTORS**

lbs/1000 gal tons/yr

TSP and PM10 2.00 0.0017

SO2 (142 x % sulfur) 42.60 0.0358

NOx 20.00 0.0168

CO 5.00 0.0042

VOC (as NMTOC) 0.20 0.0002

### III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through L as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application. Some of the subsections comprising the Emissions Unit Information Section of the form are intended for regulated emissions units only. Others are intended for both regulated and unregulated emissions units. Each subsection is appropriately marked.

#### A. TYPE OF EMISSIONS UNIT (Regulated and Unregulated Emissions Units)

##### Type of Emissions Unit Addressed in This Section

1. Regulated or Unregulated Emissions Unit? Check one:

- ☒ [X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- ☐ [ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

2. Single Process, Group of Processes, or Fugitive Only? Check one:

- ☒ [X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- ☐ [ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- ☐ [ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

**B. GENERAL EMISSIONS UNIT INFORMATION**  
**(Regulated and Unregulated Emissions Units)****Emissions Unit Description and Status**

|   |   |   |
|---|---|---|
| 1. Description of Emissions Unit Addressed in This Section (limit to 60 characters):<br><br>Boiler No. 1 - Natural Gas and No. 2 Fuel Oil Fired   |   |   |
| 2. Emissions Unit Identification Number: <input checked="" type="checkbox"/> No Corresponding ID <input type="checkbox"/> Unknown   |   |   |
| 3. Emissions Unit Status<br>Code:    A  | 4. Acid Rain Unit?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5. Emissions Unit Major<br>Group SIC Code: 51 |
| 6. Emissions Unit Comment (limit to 500 characters):<br><br>This boiler was previously exempted from permitting as referenced in the current operating permit. Due to the changes in the exemption language in Rule 62-210, F.A.C., the boiler is now required to have a permit and is thus being identified as an emission unit. |   |   |

**Emissions Unit Control Equipment****A.**

|   |
|---|
| 1. Description (limit to 200 characters):<br><br>NA |
| 2. Control Device or Method Code: NA                |

**B.**

|  |
|--|
| <p>1. Description (limit to 200 characters):</p> <p>NA</p> |
| <p>2. Control Device or Method Code: NA</p>                |

**C.**

|  |
|--|
| <p>1. Description (limit to 200 characters):</p> <p>NA</p> |
| <p>2. Control Device or Method Code: NA</p>                |

**C. EMISSIONS UNIT DETAIL INFORMATION  
(Regulated Emissions Units Only)**

**Emissions Unit Details**

|  |  |                          |  |
|--|--|--------------------------|--|
| 1. Initial Startup Date: NA            |  |                          |  |
| 2. Long-term Reserve Shutdown Date: NA |  |                          |  |
| 3. Package Unit:                       |  |                          |  |
| Manufacturer: Cleaver Brooks           |  | Model Number: CB-655-200 |  |
| 4. Generator Nameplate Rating: NA MW   |  |                          |  |
| 5. Incinerator Information: NA         |  |                          |  |
| Dwell Temperature:                     |  | °F                       |  |
| Dwell Time:                            |  | seconds                  |  |
| Incinerator Afterburner Temperature :  |  | °F                       |  |

**Emissions Unit Operating Capacity**

|   |       |          |
|---|-------|----------|
| 1. Maximum Heat Input Rate:                                 | 8.375 | mmBtu/hr |
| 2. Maximum Incineration Rate: NA                            | lb/hr | tons/day |
| 3. Maximum Process or Throughput Rate: NA                   |       |          |
| 4. Maximum Production Rate: NA                              |       |          |
| 5. Operating Capacity Comment (limit to 200 characters): NA |       |          |

**Emissions Unit Operating Schedule**

|                                       |                  |
|---------------------------------------|------------------|
| Requested Maximum Operating Schedule: |                  |
| 24 hours/day                          | 7 days/week      |
| 52 weeks/year                         | 8,760 hours/year |



**D. EMISSIONS UNIT REGULATIONS**  
**(Regulated Emissions Units Only)**

**Rule Applicability Analysis** (Required for Category II applications and Category III applications involving non Title-V sources. See Instructions.)

NA

**List of Applicable Regulations** (Required for Category I applications and Category III applications involving Title-V sources. See Instructions.)

| Title V Core List                  | Effective 3/25/96   |
|------------------------------------|---|
| 62-296.460                         | Fossil Fuel Fired Steam Generators with less than 250 Million Btu per Hour Heat Input.  |
| 62-212.410                         | Best Available Control Technology (BACT)<br>Requested BACT limit are as follows:<br>Fired on natural gas with new No. 2 fuel oil as backup. Sulfur content of the fuel oil not to exceed 0.5 % by weight. |
| Broward County Code Section 27-179 | Adoption of Rule 62-296.600 series by reference   |
|                                    |   |
|                                    |   |
|                                    |   |
|                                    |   |
|                                    |   |
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|                                    |   |

E. EMISSION POINT (STACK/VENT) INFORMATION  
(Regulated Emissions Units Only)**Emission Point Description and Type**

|   |           |
|---|-----------|
| 1. Identification of Point on Plot Plan or Flow Diagram: Boiler No. 1   |           |
| 2. Emission Point Type Code:<br><input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4  |           |
| 3. Descriptions of Emissions Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):   |           |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:   |           |
| 5. Discharge Type Code:<br><input type="checkbox"/> D <input type="checkbox"/> F <input type="checkbox"/> H <input type="checkbox"/> P<br><input type="checkbox"/> R <input type="checkbox"/> V <input checked="" type="checkbox"/> W |           |
| 6. Stack Height:  | 30 feet   |
| 7. Exit Diameter:   | 1.25 feet |
| 8. Exit Temperature:  | 410 °F    |

|  |            |
|--|------------|
| 9. Actual Volumetric Flow Rate:  | 2,620 acfm |
| 10. Percent Water Vapor :  | Varies %   |
| 11. Maximum Dry Standard Flow Rate: NA                                 | dscfm      |
| 12. Nonstack Emission Point Height: NA                                 | feet       |
| 13. Emission Point UTM Coordinates: NA<br>Zone: East (km): North (km): |            |
| 14. Emission Point Comment (limit to 200 characters):                  |            |

**F. SEGMENT (PROCESS/FUEL) INFORMATION**  
**(Regulated and Unregulated Emissions Units)****Segment Description and Rate:** Segment 1 of 2

|   |                               |
|---|-------------------------------|
| 1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode)<br>(limit to 500 characters):<br><br>Natural Gas Fired Boiler |                               |
| 2. Source Classification Code (SCC): 1-02-006-02  |                               |
| 3. SCC Units: Million Cubic Feet Burned (all gaseous fuels)   |                               |
| 4. Maximum Hourly Rate: 0.008   | 5. Maximum Annual Rate: 73.37 |
| 6. Estimated Annual Activity Factor: NA   |                               |
| 7. Maximum Percent Sulfur: NA   | 8. Maximum Percent Ash: NA    |
| 9. Million Btu per SCC Unit: 1,000  |                               |
| 10. Segment Comment (limit to 200 characters): Natural gas is the primary fuel. Design heat input rate is: 8.375 MMBTU/hr.                    |                               |

**Segment Description and Rate:** Segment 2 of 2

|  |                               |
|--|-------------------------------|
| 1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode)<br>(limit to 500 characters):<br><br>No. 2 fuel Oil Fired Boiler |                               |
| 2. Source Classification Code (SCC): 1-03-005-01   |                               |
| 3. SCC Units: 1,000 Gallons Burned (all liquid fuels)  |                               |
| 4. Maximum Hourly Rate: .06  | 5. Maximum Annual Rate: 525.6 |
| 6. Estimated Annual Activity Factor: NA  |                               |
| 7. Maximum Percent Sulfur: 0.05  | 8. Maximum Percent Ash: NA    |
| 9. Million Btu per SCC Unit: 140   |                               |
| 10. Segment Comment (limit to 200 characters): : Design heat input rate is: 8.375<br>MMBTU/hr.   |                               |

**G. EMISSIONS UNIT POLLUTANTS**  
**(Regulated and Unregulated Emissions Units)**

| 1. Pollutant Emitted | 2. Primary Control Device Code | 3. Secondary Control Device Code | 4. Pollutant Regulatory Code |
|----------------------|--------------------------------|----------------------------------|------------------------------|
| SO <sub>2</sub>      | NA                             | NA                               | EL                           |
| NO <sub>X</sub>      | NA                             | NA                               | NS                           |
|                      |                                |                                  |                              |
|                      |                                |                                  |                              |
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|                      |                                |                                  |                              |

**H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION**  
**(Regulated Emissions Units Only - Emissions Limited Pollutants Only)**

**Pollutant Detail Information:**

|   |      |         |       |           |
|---|------|---------|-------|-----------|
| 1. Pollutant Emitted: SO2   |      |         |       |           |
| 2. Total Percent Efficiency of Control:   | NA   |         | %     |           |
| 3. Potential Emissions:   | 4.25 | lb/hour | 18.60 | tons/year |
| 4. Synthetically Limited?<br>[ ] Yes [X] No   |      |         |       |           |
| 5. Range of Estimated Fugitive/Other Emissions: NA<br>[ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year            |      |         |       |           |
| 6. Emission Factor: 71 lbs./1,000 gallons<br>Reference: AP-42 Section 1.3                                   |      |         |       |           |
| 7. Emissions Method Code:<br>[ ] 0 [ ] 1 [ ] 2 [x] 3 [ ] 4 [ ] 5  |      |         |       |           |
| 8. Calculation of Emissions (limit to 600 characters):<br><br>See attached spreadsheet - Document ID: EU3-2 |      |         |       |           |
| 9. Pollutant Potential/Estimated Emissions Comment (limit to 200 characters): NA                            |      |         |       |           |



**Allowable Emissions** (Pollutant identified on front of page) NA

**A.**

|   |
|---|
| 1. Basis for Allowable Emissions Code: NA   |
| 2. Future Effective Date of Allowable Emissions:  |
| 3. Requested Allowable Emissions and Units:   |
| 4. Equivalent Allowable Emissions: NA lb/hour tons/year   |
| 5. Method of Compliance (limit to 60 characters):   |
| 6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode)<br>(limit to 200 characters): |

**B.**

|   |
|---|
| 1. Basis for Allowable Emissions Code: NA   |
| 2. Future Effective Date of Allowable Emissions:  |
| 3. Requested Allowable Emissions and Units:   |
| 4. Equivalent Allowable Emissions: lb/hr tons/year  |
| 5. Method of Compliance (limit to 60 characters):   |
| 6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode)<br>(limit to 200 characters): |

**I. VISIBLE EMISSIONS INFORMATION**  
(Regulated Emissions Units Only)**Visible Emissions Limitation:** Visible Emissions Limitation 1 of 1

|  |      |  |                                |
|--|------|--|--------------------------------|
| 1. Visible Emissions Subtype: VE20   |      |  |                                |
| 2. Basis for Allowable Opacity:  |      | <input checked="" type="checkbox"/> Rule | <input type="checkbox"/> Other |
| 3. Requested Allowable Opacity:  |      |  |                                |
| Normal Conditions:   | 20 % | Exceptional Conditions:                  | 27 %                           |
| Maximum Period of Excess Opacity Allowed:  |      | 6  | min/hour                       |
| 4. Method of Compliance: EPA Method 9  |      |  |                                |
| 5. Visible Emissions Comment (limit to 200 characters): Rule 62-296.406(1), F.A.C. |      |  |                                |

**Visible Emissions Limitation:** Visible Emissions Limitation \_\_\_\_\_ of \_\_\_\_\_ NA

|   |   |                               |                                |
|---|---|-------------------------------|--------------------------------|
| 1. Visible Emissions Subtype:                           |   |                               |                                |
| 2. Basis for Allowable Opacity:                         |   | <input type="checkbox"/> Rule | <input type="checkbox"/> Other |
| 3. Requested Allowable Opacity:                         |   |                               |                                |
| Normal Conditions:                                      | % | Exceptional Conditions:       | %                              |
| Maximum Period of Excess Opacity Allowed:               |   |                               | min/hour                       |
| 4. Method of Compliance:                                |   |                               |                                |
| 5. Visible Emissions Comment (limit to 200 characters): |   |                               |                                |

**J. CONTINUOUS MONITOR INFORMATION**  
**(Regulated Emissions Units Only)****Continuous Monitoring System:** Continuous Monitor \_\_\_\_\_ of \_\_\_\_\_ NA

|  |                  |
|--|------------------|
| 1. Parameter Code:   | 2. Pollutant(s): |
| 3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other |                  |
| 4. Monitor Information:<br>Manufacturer:<br>Model Number: Serial Number:         |                  |
| 5. Installation Date:  |                  |
| 6. Performance Specification Test Date:  |                  |
| 7. Continuous Monitor Comment (limit to 200 characters):                         |                  |

**Continuous Monitoring System:** Continuous Monitor \_\_\_\_\_ of \_\_\_\_\_

|  |                  |
|--|------------------|
| 1. Parameter Code:   | 2. Pollutant(s): |
| 3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other |                  |
| 4. Monitor Information:<br>Manufacturer:<br>Model Number: Serial Number:         |                  |
| 5. Installation Date:  |                  |
| 6. Performance Specification Test Date:  |                  |
| 7. Continuous Monitor Comment (limit to 200 characters):                         |                  |

**K. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) INCREMENT  
TRACKING INFORMATION  
(Regulated and Unregulated Emissions Units)**

**PSD Increment Consumption Determination**

**1. Increment Consuming for Particulate Matter or Sulfur Dioxide?**

If the emissions unit addressed in this section emits particulate matter or sulfur dioxide, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for particulate matter or sulfur dioxide. Check the first statement, if any, that applies and skip remaining statements.

- ☐ The emissions unit is undergoing PSD review as part of this application, or has undergone PSD review previously, for particulate matter or sulfur dioxide. If so, emissions unit consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after January 6, 1975. If so, baseline emissions are zero, and emissions unit consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after January 6, 1975, but before December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.
- ☐ For any facility, the emissions unit began (or will begin) initial operation after December 27, 1977. If so, baseline emissions are zero, and emissions unit consumes increment.
- ☒ None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

## 2. Increment Consuming for Nitrogen Dioxide?

If the emissions unit addressed in this section emits nitrogen oxides, answer the following series of questions to make a preliminary determination as to whether or not the emissions unit consumes PSD increment for nitrogen dioxide. Check first statement, if any, that applies and skip remaining statements.

- ☐ The emissions unit addressed in this section is undergoing PSD review as part of this application, or has undergone PSD review previously, for nitrogen dioxide. If so, emissions unit consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source pursuant to paragraph (c) of the definition of "major source of air pollution" in Chapter 62-213, F.A.C., and the emissions unit addressed in this section commenced (or will commence) construction after February 8, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.
- ☐ The facility addressed in this application is classified as an EPA major source, and the emissions unit began initial operation after February 8, 1988, but before March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.
- ☐ For any facility, the emissions unit began (or will begin) initial operation after March 28, 1988. If so, baseline emissions are zero, and emissions unit consumes increment.
- ☒ None of the above apply. If so, the baseline emissions of the emissions unit are nonzero. In such case, additional analysis, beyond the scope of this application, is needed to determine whether changes in emissions have occurred (or will occur) after the baseline date that may consume or expand increment.

|   |                            |                            |   |
|---|----------------------------|----------------------------|---|
| 3. Increment Consuming/Expanding Code:    |                            |                            |   |
| PM  | <input type="checkbox"/> C | <input type="checkbox"/> E | <input checked="" type="checkbox"/> Unknown |
| SO2                                       | <input type="checkbox"/> C | <input type="checkbox"/> E | <input checked="" type="checkbox"/> Unknown |
| NO2                                       | <input type="checkbox"/> C | <input type="checkbox"/> E | <input checked="" type="checkbox"/> Unknown |
| 4. Baseline Emissions:                    |                            |                            |   |
| PM  | lb/hour                    | tons/year                  |   |
| SO2                                       | lb/hour                    | tons/year                  |   |
| NO2                                       |                            | tons/year                  |   |
| 5. PSD Comment (limit to 200 characters): |                            |                            |   |
|   |                            |                            |   |

**L. EMISSIONS UNIT SUPPLEMENTAL INFORMATION**  
**(Regulated Emissions Units Only)**

**Supplemental Requirements for All Applications**

|  |
|--|
| 1. Process Flow Diagram<br><input checked="" type="checkbox"/> Attached, Document ID: EU3-1 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                                  |
| 2. Fuel Analysis or Specification<br><input checked="" type="checkbox"/> Attached, Document ID: EU3-2 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested                        |
| 3. Detailed Description of Control Equipment<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested             |
| 4. Description of Stack Sampling Facilities<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested              |
| 5. Compliance Test Report<br><input type="checkbox"/> Attached, Document ID: _____<br><br><input type="checkbox"/> Previously submitted, Date: _____<br><br><input checked="" type="checkbox"/> Not Applicable |
| 6. Procedures for Startup and Shutdown<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable   |
| 7. Operation and Maintenance Plan<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable  |
| 8. Supplemental Information for Construction Permit Application<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable                                    |
| 9. Other Information Required by Rule or Statute<br><input checked="" type="checkbox"/> Attached, Document ID: EU3-3 <input type="checkbox"/> Not Applicable   |

**Additional Supplemental Requirements for Category I Applications Only**

|  |
|--|
| 10. Alternative Methods of Operation<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable   |
| 11. Alternative Modes of Operation (Emissions Trading)<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable   |
| 12. Identification of Additional Applicable Requirements<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable   |
| 13. Compliance Assurance Monitoring Plan<br><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable   |
| 14. Acid Rain Application (Hard-copy Required)<br><br><input type="checkbox"/> Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))<br>Attached, Document ID: _____<br><br><input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)<br>Attached, Document ID: _____<br><br><input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.)<br>Attached, Document ID: _____<br><br><input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)<br>Attached, Document ID: _____<br><br><input checked="" type="checkbox"/> Not Applicable |

# **FUEL COMBUSTION CALCULATIONS BOILER NO. 1**

## **NATURAL GAS**

UNIT SIZE IN MM BTU PER HOUR

8.38 MMBTU/hr

Maximum firing rate in ft<sup>3</sup>/hr.

8,375 ft<sup>3</sup>/hr.

Maximum firing rate in MM ft<sup>3</sup>/hr.

0.008375 MM ft<sup>3</sup>/hr.

Number of hrs/yr

8,760 hrs/yr

EMISSION FACTORS PER UNIT

|                   | lbs/mmft <sup>3</sup> | lbs/hr. | tons/yr |
|-------------------|-----------------------|---------|---------|
| TSP               | 4.50                  | 0.04    | 0.17    |
| SO <sub>2</sub>   | 0.60                  | 0.01    | 0.02    |
| NO <sub>x</sub>   | 100.00                | 0.84    | 3.67    |
| CO                | 21.00                 | 0.18    | 0.77    |
| VOC (non methane) | 2.78                  | 0.02    | 0.10    |

## **No. 2 FUEL OIL - ALTERNATE FUEL**

UNIT SIZE IN MM BTU PER HOUR

8.38 MMBTU/hr

BTU per gallon

140000

GALLONS/HR

60

SULFUR CONTENT (%)

0.5

HOURS PER YEAR

8760

EMISSION FACTORS

|                                  | lbs/1000 gal | lbs/hr | tons/yr |
|----------------------------------|--------------|--------|---------|
| TSP and PM <sub>10</sub>         | 2.00         | 0.12   | 0.52    |
| SO <sub>2</sub> (142 x % sulfur) | 71.00        | 4.25   | 18.60   |
| NO <sub>x</sub>                  | 20.00        | 1.20   | 5.24    |
| CO                               | 5.00         | 0.30   | 1.31    |
| VOC (as NMTOC)                   | 0.34         | 0.02   | 0.09    |
| Polycyclic Organic Matter (ave)  | 0.0033       | 0.00   | 0.00    |
| Formaldehyde                     | 0.048        | 0.00   | 0.01    |

Emission Factors From AP-42 Tables 1.3-1, 1.3-2 & 1.3-7 for commercial combustors dated 10/96

|                      |      |          |          |
|----------------------|------|----------|----------|
| Antimony - Sb (ave)  | NA   | 0.00E+00 | 0.00E+00 |
| Arsenic - As (ave)   | 4.2  | 3.52E-05 | 1.54E-04 |
| Beryllium - Be (ave) | 2.5  | 2.09E-05 | 9.17E-05 |
| Cadmium - Cd (ave)   | 11   | 9.21E-05 | 4.04E-04 |
| Chromium - Cr (ave)  | 57.5 | 4.82E-04 | 2.11E-03 |
| Cobalt - Co (ave)    | NA   | 0.00E+00 | 0.00E+00 |
| Lead - Pb (ave)      | 8.9  | 7.45E-05 | 3.26E-04 |
| Manganese - Mn (ave) | 14   | 1.17E-04 | 5.14E-04 |
| Mercury - Hg (ave)   | 3    | 2.51E-05 | 1.10E-04 |
| Nickel - Ni (ave)    | 18   | 1.51E-04 | 6.60E-04 |
| Selenium - Se (ave)  | NA   | 0.00E+00 | 0.00E+00 |