



3708 St. Eimo Avenue  
Chattanooga, TN 37409  
423.822.5000  
423.825.0507 fax

*JLA*

January 5, 2023

Mr. Alan Frazier  
Chattanooga-Hamilton County Air Pollution Control Bureau  
6125 Preservation Drive  
Chattanooga, TN 37416

Re: Rental Boiler Installation Permit

Dear Sir:

Please find enclosed Forms E001, E011, and E110 to initiate the permitting process for a rental boiler to replace a no longer in operation Nebraska boiler listed in our permit No. 47-065-5700.

Please advise if you have additional questions or require clarification.

Sincerely,

  
Michael A. Thompson  
Senior EHS Engineer

RECEIVED  
HAMILTON COUNTY  
JAN 05 2023  
AIR POLLUTION  
CONTROL BUREAU

BASIC APPLICATION FOR EQUIPMENT / AIR POLLUTION PERMIT  
OR CERTIFICATE OF OPERATION

FORM E001  
03/2011

1. Name of Company CHATTEM CHEMICALS 2. NAICS Code: \_\_\_\_\_  
*(If corporation or LLC, name on file with Tennessee Secretary of State Corporate Records Division)*

3. Company Official to Contact: MICHAEL A. THOMPSON 4. Phone No. 423-822-5029

5. Mailing Address: 3708 SAINT ELMO AVE CHATTANOOGA TN 37409  
*Street or P.O. Box City State Zip Code*

6. Physical Location  
(If different from line 5) 1713 W. 38<sup>th</sup> ST. CHATTANOOGA TN 37409  
*Street City State Zip Code*

7. Application for:  
 Installation Permit  Initial Certificate of Operation  Renewal Certificate of Operation

Previous Installation Permit or Certificate of Operation No.: \_\_\_\_\_

8. Type of equipment for which application is made:

- |   |   |                                   |
|---|---|-----------------------------------|
| <input type="checkbox"/> Process Equipment (Form E010 or Form E010A)  | <input type="checkbox"/> Previously Submitted | <input type="checkbox"/> Attached |
| <input checked="" type="checkbox"/> Fuel Burning Equipment (Form E011)  | <input type="checkbox"/> Previously Submitted | <input type="checkbox"/> Attached |
| <input type="checkbox"/> Incineration Equipment (Form E012)   | <input type="checkbox"/> Previously Submitted | <input type="checkbox"/> Attached |
| <input type="checkbox"/> Minor Pollution Source (Form E014)<br><i>(Less than 1000 lbs/yr and less than 10 lbs/day total uncontrolled contaminant emissions)</i> | <input type="checkbox"/> Previously Submitted | <input type="checkbox"/> Attached |

The following forms are filed with this application:

E011, E110

RECEIVED  
CHATT / HAMILTON CO.

9. Equipment Name: YORK-SHIPLEY BOILER

JAN 05 2023

10. If application is for a Certificate of Operation (Initial or Renewal), are there any changes since previous application in the equipment or operation which might:

A. Increase, decrease, or alter process materials, fuel, refuse type, etc.?  Yes  No

B. Increase, decrease, or alter emissions or emission points?  Yes  No

11. Process Weight, lb/hr, (Item 6 on Form E010), Incineration Rate, lb/hr, (Item 3C on Form E012), or Fuel Burning Rate, 1,000 Btu/hr, (Item 7C on Form E011): 25150 MBtu/hr

This is to certify that I am familiar with operations concerning this equipment and the information provided on this application is true and complete to the best of my knowledge:

Mail completed form to:  
CHATTANOOGA-HAMILTON COUNTY  
AIR POLLUTION CONTROL BUREAU  
6125 Preservation Drive, Suite 140  
Chattanooga, TN 37416-3638

MICHAEL A. THOMPSON

Name

SENIOR EHS ENGINEER

Title

05 - JAN - 2023

Date

This form must be completely filled out before it will be processed

**FUEL BURNING EQUIPMENT APPLICATION**

*A separate form must be filed for each stack or emission point.*

FORM E011

01/2001

1. Name of Company: **CHATTEN CHEMICALS**  
*As shown on Line 1 of Form E001*
2. Equipment Name: **YORK-SHIPLEY BOILER**  
*As shown on Line 9 of Form E001*
3. Stack Designation: **20-03**  
*If there is more than one stack at this location, provide a written or numeric designation to identify each stack.*
4. Control Equipment Data:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Emissions Uncontrolled      | <input type="checkbox"/> Electrostatic Precipitator (File Form E104) |
| <input type="checkbox"/> Baghouse (File Form E102)              | <input type="checkbox"/> Inertial Separators (File Form E105)        |
| <input type="checkbox"/> Wet Collecting Device (File Form E103) | <input type="checkbox"/> Other (Specify): _____                      |

5. Control Equipment Efficiency:  
*Enter the control equipment efficiency for each pollutant emitted by this equipment as determined on the appropriate Form E102, E103, E104, E105, E107, or enter zeros if "A" is checked in Item 4.*

Pollutant	% Efficiency
Particulates	0
PM <sub>10</sub>	0
SO <sub>x</sub>	0
NO <sub>x</sub>	0
CO	0
VOC	0
Other:	

RECEIVED  
CHATT / 1407  
JAN 05 2013  
AIR POLLUTION  
CONTROL BUREAU

6. Emissions Estimation: *File Form E110 for each fuel used*

		Fuel No.1	Fuel No.2	Fuel No.3
Particulate Matter (Form E110, Item 6)	Uncontrolled	0.191	Lbs/hr	Lbs/hr
	Actual <sup>1</sup>		Lbs/hr	Lbs/hr
	Estimated <sup>2</sup>	0.191	Lbs/hr	Lbs/hr
SO <sub>x</sub> (Form E110, Item 7)	Uncontrolled	0.015	Lbs/hr	Lbs/hr
	Actual <sup>1</sup>		Lbs/hr	Lbs/hr
	Estimated <sup>2</sup>	0.015	Lbs/hr	Lbs/hr
PM <sub>10</sub>	Uncontrolled		Lbs/hr	Lbs/hr
	Actual <sup>1</sup>		Lbs/hr	Lbs/hr
	Estimated <sup>2</sup>		Lbs/hr	Lbs/hr
NO <sub>x</sub> (Form E110, Item 9E)	Uncontrolled	2.515	ppm	ppm
	Actual <sup>1</sup>		ppm	ppm
	Estimated <sup>2</sup>	2.515	ppm	ppm
Other Air Contaminants (Specify)	Uncontrolled		Lbs/hr	Lbs/hr
	Actual <sup>1</sup>		Lbs/hr	Lbs/hr
	Estimated <sup>2</sup>		Lbs/hr	Lbs/hr

1. *Submit stack test report with full details.*
2. *Estimate the emissions using the formula below*

$$\text{Estimated Emissions (lbs/hr, ppm)} = \frac{100\% - \text{Control Efficiency (\%)}}{100\%} \times \text{Uncontrolled Emissions}$$

Company Name: CHATTEM CHEMICALS Equipment Name: YORK-SHIPLEY BOILER

Equipment Data:  
 Manufacturer of Equipment: YORK-SHIPLEY Date of Installation: 2023  
 Date of Manufacture: 2010

Boiler No.	Fuel Type	Rated Capacity 10 <sup>6</sup> BTU/hr. Input	Type of Firing	Fuel Consumption			Percent Content		Heating Content of Fuel	(% Excess Air
				Ave.	Max.	Annual	Sulfur	Ash		
	NG	25.150	GAS		25150 CFH		0.55 / 100 ss		1000 Btu/ft <sup>3</sup>	

a. If more than one boiler per stack, list a separate code number to represent each individual boiler.  
 b. List all fuels used.  
 c. Give rated or maximum input capacity, whichever is greater.  
 d. Specify the type of firing for each fuel used.  
 e. Indicate consumption of each fuel used in tons/hr, gal/hr, or ft<sup>3</sup>/hr.  
 f. Indicate annual consumption of each fuel used in tons/yr, gal/yr, or ft<sup>3</sup>/yr.  
 g. The average sulfur and ash content of each fuel must be included - This information may be obtained from the fuel supplier.  
 h. Indicate the heating content of each fuel in BTU/ton, BTU/gal, or BTU/ft<sup>3</sup> - This information may be obtained from the fuel supplier.

Space Heating	Process Heating	Other (Describe)
5	95	

Percent (%) of Load Used

**POLLUTION ESTIMATION FORM**  
(Fuel Burning Equipment)

FORM E110  
01/2002

1. Name of Company: CHATTEM CHEMICALS  
(As shown on Line 1 of Form E001)

2. Equipment Name: YORK-SHIPLEY BOILER  
(As shown on Line 10 of Form E001)

3. Percent excess air used in fuel burning (make allowances for leaks around doors and other openings): \_\_\_\_\_

4. Type of Fuel (file Form E110 for each fuel used): NATURAL GAS

5. Source of Emission Factors: AP-42 EMISSION FACTORS

6. Uncontrolled Particulate Emission Rate:

$$\frac{\text{Particulate Emission Factor: } 7.6 \text{ lbs}/10^6 \text{ ft}^3}{(\text{lbs/ton; lbs}/10^3 \text{ gal; lbs}/10^6 \text{ ft}^3)} \times \frac{\text{Maximum Fuel Consumption Rate: } 25,150 \text{ ft}^3/\text{hr}}{(\text{tons/hr; gal/hr; ft}^3/\text{hr})} = \frac{0.191}{\text{Uncontrolled Particulate Emission Rate}} \text{ Lbs/hr}$$

7. Uncontrolled Sulfur Oxide (SO<sub>x</sub>) Emission Rate:

$$\frac{\text{SO}_x \text{ Emission Factor: } 0.6 \text{ lbs}/10^6 \text{ ft}^3}{\text{Lbs/ton; lbs}/10^3 \text{ gal; lbs}/10^6 \text{ ft}^3} \times \frac{\text{Maximum Fuel Consumption Rate: } 25,150 \text{ ft}^3/\text{hr}}{(\text{tons/hr; gal/hr; ft}^3/\text{hr})} = \frac{0.015}{\text{Uncontrolled SO}_x \text{ Emission Rate}} \text{ Lbs/hr}$$

8. Uncontrolled Hydrocarbon (HC) Emission Rate:

$$\frac{\text{HC Emission Factor: } 5.5 \text{ lbs}/10^6 \text{ ft}^3}{\text{Lbs/ton; lbs}/10^3 \text{ gal; lbs}/10^6 \text{ ft}^3} \times \frac{\text{Maximum Fuel Consumption Rate: } 25,150 \text{ ft}^3/\text{hr}}{(\text{tons/hr; gal/hr; ft}^3/\text{hr})} = \frac{0.138}{\text{Uncontrolled HC Emission Rate}} \text{ Lbs/hr}$$

RECEIVED  
CHATTEM / HAMILTON CO.  
JAN 05 2002  
AIR POLLUTION CONTROL BUREAU

9. Uncontrolled Nitrogen Oxides (NO<sub>x</sub>) Emission Rate:

A. NO<sub>x</sub> Emission Factor: 100 lbs}/10<sup>6</sup> ft<sup>3</sup>  
Lbs/ton; lbs}/10<sup>3</sup> gal; lbs}/10<sup>6</sup> ft<sup>3</sup>

B. 
$$\frac{\text{Maximum Fuel Consumption Rate: } 25,150 \text{ ft}^3/\text{hr}}{(\text{tons/hr; gal/hr; ft}^3/\text{hr})} \times \frac{\text{NO}_x \text{ Emission Factor: } 100 \text{ lbs}/10^6 \text{ ft}^3}{\text{NO}_x \text{ Emission Factor}} = \frac{2.515}{\text{Uncontrolled NO}_x \text{ Emission Rate}} \text{ Lbs/hr}$$

10. NO<sub>x</sub> Emission Rate in PPM by Volume at STP:

Cubic feet per hour (CFH) of Exhaust Gases at 15% Excess Air:

A. 
$$\frac{V}{\text{See Table A}} \times \frac{25,150 \times 10^6 \text{ Btu/hr}}{\text{Maximum Fuel Consumption Rate } 10^6 \text{ BTU/hr}} = \frac{281680}{\text{Exhaust Rate}} \text{ CFH}$$

B. 
$$\frac{2.515 \text{ Lbs/hr}}{\text{Uncontrolled NO}_x \text{ (Item 9B)}} \div \frac{281680}{\text{CFH of Exhaust Gas (Item 10A)}} = \frac{8.929 \times 10^{-6}}{\text{Lb/ft}^3 \text{ NO}_x}$$

C. 
$$\text{PPM} = (8.37 \times 10^6) \times \frac{8.929 \times 10^{-6}}{\text{Lb/ft}^3 \text{ NO}_x \text{ (Item 10B)}} = \frac{75 \text{ ppm}}{\text{PPM at STP and 15\% Excess Air (NO}_x \text{ calculated as NO}_2\text{)}}$$

Table A	
Fuel	V
Bituminous Coal	11700
Fuel Oil	11400
Natural Gas	11200
Wood	12800

This is to certify that I am familiar with the operations concerning this equipment and that the information provided on this application is true and complete to the best of my knowledge. This form must be completely filled out before it will be acceptable.

Mail to:  
**CHATTANOOGA-HAMILTON COUNTY**  
**AIR POLLUTION CONTROL BUREAU**  
 6125 Preservation Drive  
 Chattanooga, TN 37416

*Michael A. Thompson*  
 MICHAEL A. THOMPSON  
 Company Official  
 SENIOR EHS ENGINEER  
 Title

05-JAN-2023  
 Date

Do Not Write Below This Line

*JAT*  
 Engineer Approval

This form corresponds to permit number: \_\_\_\_\_

Special Notations: \_\_\_\_\_  
 \_\_\_\_\_