



ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

APPL. NO. 502401 & 502402	DATE: July 7, 2011
PROCESSED BY S. JIANG	CHECKED BY D. GORDON

EVALUATION REPORT FOR PERMIT TO CONSTRUCT/OPERATE

Applicant's Name: FOAM FABRICATORS Facility ID: 012876

Mailing Address: 1810 SOUTH SANTA FE AVENUE
COMPTON, CALIFORNIA 90221-5319

Equipment Location: SAME

EQUIPMENT DESCRIPTION

Appl. No. 502401 – Administrative Change for an Existing Boiler (P/O F47283 A/N: 339522)

BOILER, CLEAVER ~~CB~~BROOKS, FIRE TUBE TYPE, MODEL NO. CB-17000-300-150, SERIAL NO. OL-097448, 12,247,000 BTU PER HOUR, NATURAL GAS FIRED, WITH A CLEAVER BROOKS, CB-17000-300-150 LOW NOX BURNER, WITH A FLUE GAS RECIRCULATION SYSTEM.

Conditions:

- OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
- THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
- ~~3. THE BOILER SHALL BE FIRED ON NATURAL GAS ONLY.
[RULE 204]~~
- 3. THIS EQUIPMENT SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF RULE 1146.
[RULE 1146]*
- 4. THIS EQUIPMENT SHALL EMIT NO MORE THAN 30 PPM OF OXIDES OF NITROGEN (NOX), CALCULATED AS NO2, AND NO MORE THAN 400 PPM OF CARBON MONOXIDE (CO), ALL MEASURED BY VOLUME ON A DRY BASIS AT 3% O2.
[RULE 1146]*
- 5. EFFECTIVE JANUARY 1, 2013, THE NOX EMISSIONS DISCHARGED FROM THIS EQUIPMENT SHALL NOT EXCEED 9 PPM, CALCULATED AS NO2, BY VOLUME ON A DRY BASIS AT 3% O2.
[RULE 1146]*



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- ~~5. THE MAXIMUM AMOUNT OF FUEL INPUT SHALL NOT EXCEED 6,667 CUBIC FEET OF NATURAL GAS PER HOUR (7,000,000 BTU PER HOUR) AT ANY TIME. [RULE 1303. BACT]~~
6. THE TOTAL AMOUNT OF NATURAL GAS CONSUMED SHALL NOT EXCEED 160,008 STANDARD CUBIC FEET IN ANY ONE DAY. [RULE 1303 (A)(1)-BACT; RULE 1303(B)(2)-OFFSET]
- ~~5. THE TOTAL AMOUNT OF NATURAL GAS CONSUMED SHALL NOT EXCEED 5,000,000 STANDARD CUBIC FEET IN ANY CONTINUOUS 30-DAY PERIOD. [RULE 1303. OFFSET]~~
7. THE OPERATOR SHALL INSTALL AND MAINTAIN IN SERVICE A NON-RESETTING TOTALIZING FUEL METER FOR THE FUEL BEING SUPPLIED TO THIS EQUIPMENT. [RULE 1303 (A)(1)-BACT; RULE 1303(B)(2)-OFFSET]
- ~~6. THE OPERATOR SHALL MAINTAIN A LOG IN A FORMAT ACCEPTABLE TO THE DISTRICT, WHICH SHALL BE RETAINED BY ONSITE FOR A MINIMUM OF TWO YEARS. THE LOG SHALL INCLUDE THE DAILY VOLUME OF NATURAL GAS SUPPLIED TO THE BOILER, TIME AND DATE OF THE GAS READING, THE TOTAL AMOUNT OF NATURAL GAS SUPPLIED ON A 30-DAY PERIOD AND THE NAME OF THE PERSON RECORDING THE DATA. [RULE 1303. OFFSET]~~
- ~~7. THIS BOILER SHALL BE SOURCE TESTED ANNUALLY, ACCORDING TO THE GUIDELINES SPECIFIED IN RULE 1146(D) AT LOW, MID AND HIGH FIRING RANGES. THE TEST REPORT SHALL BE SUBMITTED TO THE DISTRICT UPON COMPLETION. [RULE 1146]~~
- ~~8. A TOTALIZING METER SHALL BE INSTALLED AND MAINTAINED, SO AS TO INDICATE IN STANDARD CUBIC FEET PER HOUR, THE AMOUNT OF FUEL CONSUMED BY THIS BOILER. [RULE 1303. OFFSET]~~
- ~~9. THE OPERATOR SHALL MAINTAIN A LOG IN A FORMAT ACCEPTABLE TO THE DISTRICT, WHICH SHALL BE RETAINED BY ONSITE FOR A MINIMUM OF TWO YEARS. THE LOG SHALL INCLUDE THE DAILY VOLUME OF NATURAL GAS SUPPLIED TO THE BOILER, TIME AND DATE OF THE GAS READING, THE TOTAL AMOUNT OF NATURAL GAS SUPPLIED ON A 30-DAY PERIOD AND THE NAME OF THE PERSON RECORDING THE DATA. [RULE 1303. BACT]~~
8. THE OPERATOR SHALL MAINTAIN ADEQUATE RECORDS TO VERIFY COMPLIANCE WITH CONDITION NO. 6, ABOVE. THE RECORDS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:



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- A. *DAILY NATURAL GAS METER READING*
- B. *DAILY NATURAL GAS CONSUMPTION IN STANDARD CUBIC FEET (SCF)*
- C. *TIME AND DATE OF THE GAS METER READING*
- D. *THE NAME OF THE PERSON RECORDING THE DATA*

ALL RECORDS SHALL BE MAINTAINED FOR A PERIOD OF FIVE (5) YEARS AND MADE AVAILABLE TO THE EXECUTIVE OFFICER OR HIS REPRESENTATIVE UPON REQUEST.

[RULE 1303 (A)(1)-BACT; RULE 1303(B)(2)-OFFSET; RULE 3004(A)(4)-PERIODIC MONITORING]

- 9. *THE OPERATOR SHALL RECORD AND MAINTAIN RECORDS OF THE AMOUNT OF NATURAL GAS CONSUMED DURING EACH CALENDAR MONTH. ALL RECORDS SHALL BE MAINTAINED FOR A PERIOD FOR TWO (2) YEARS AND MADE AVAILABLE TO THE EXECUTIVE OFFICER OR HIS REPRESENTATIVE UPON REQUEST.*
[40 CFR 60 Subpart DC]

Periodic Monitoring:

- ~~10. THE OPERATOR SHALL DETERMINE COMPLIANCE WITH THE CO EMISSION LIMIT(S) BY CONDUCTING A TEST AT LEAST ONCE EVERY FIVE YEARS USING A PORTABLE ANALYZER AND AQMD-APPROVED TEST METHOD OR, IF NOT AVAILABLE, A NON-AQMD APPROVED TEST METHOD. THE TEST SHALL BE CONDUCTED WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS TO DEMONSTRATE COMPLIANCE WITH RULE 1146 CONCENTRATION LIMIT. THE OPERATOR SHALL COMPLY WITH ALL GENERAL TESTING, REPORTING, AND RECORDKEEPING REQUIREMENTS IN SECTIONS E AND K OF THIS PERMIT. [RULE 3004 (A)(4)]~~
- ~~11. THE OPERATOR SHALL DETERMINE COMPLIANCE WITH THE NOX EMISSION LIMIT(S) BY CONDUCTING A TEST AT LEAST ONCE EVERY FIVE YEARS USING A PORTABLE ANALYZER AND AQMD-APPROVED TEST METHOD OR, IF NOT AVAILABLE, A NON-AQMD APPROVED TEST METHOD. THE TEST SHALL BE CONDUCTED WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS TO DEMONSTRATE COMPLIANCE WITH RULE 1146 CONCENTRATION LIMIT. THE OPERATOR SHALL COMPLY WITH ALL GENERAL TESTING, REPORTING, AND RECORDKEEPING REQUIREMENTS IN SECTIONS E AND K OF THIS PERMIT. [RULE 3004 (A)(4)]~~
- ~~12. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON AN ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE~~



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~~ANNUAL PERIOD. THE ROUTINE ANNUAL INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS. IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED THAT LAST MORE THAN THREE MINUTES IN ANY ONE HOUR, THE OPERATOR SHALL EITHER:~~

- ~~A. VERIFY AND CERTIFY WITHIN 24 HOURS THAT THE EQUIPMENT CAUSING THE EMISSION AND ANY ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT ARE OPERATING NORMALLY ACCORDING TO THEIR DESIGN AND STANDARD PROCEDURES AND UNDER THE SAME CONDITIONS UNDER WHICH COMPLIANCE WAS ACHIEVED IN THE PAST;~~
- ~~B. TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT; OR~~
- ~~C. HAVE A CARB-CERTIFIED SMOKE READER DETERMINE COMPLIANCE WITH THE OPACITY STANDARD, USING EPA METHOD 9 OR THE PROCEDURES IN THE CARB MANUAL "VISIBLE EMISSION EVALUATION", WITHIN THREE BUSINESS DAYS AND REPORT ANY DEVIATIONS TO AQMD.~~

~~THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:~~

- ~~A. STACK OR EMISSION POINT IDENTIFICATION;~~
- ~~B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;~~
- ~~C. DATE AND TIME VISIBLE EMISSION WAS ABATED; AND~~
- ~~D. VISIBLE EMISSION OBSERVATION RECORDED BY A CERTIFIED SMOKE READER.~~

~~[RULE 3004 (A)(4)]~~

Emissions And Requirements:

10. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

- CO: 2000 PPM, RULE 407
- CO: 400 PPM, RULE 1146
- NOX: 30 PPM, RULE 1146
- PM: 0.1 gr/scf, RULE 409
- PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS.

Appl. No. 502402 – Minor Title V Facility Permit Revision

Revision of Title V Facility Permit per Rule 301(m)(7).



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BACKGROUND/HISTORY

Foam Fabricators manufactures expanded polystyrene (EPS) foam products at its facility in Compton, California. Foam Fabricators currently operates polystyrene foam expansion/molding systems and one boiler. The VOC emissions from the polystyrene foam expansion/molding systems are controlled by a regenerative thermal oxidizer.

Foam Fabricators facility type:

<u>RECLAIM</u>		<u>Title V</u>
SO _x	NO _x	
No	No	Yes

Foam Fabricators is a Title V facility. The initial Title V Permit for the facility was issued on August 1, 2002 and expired on July 31, 2007. A Title V Permit Renewal application (A/N: 464970) was submitted on January 25, 2007, and the proposed renewal permit will be submitted to EPA for review simultaneously with the subject permit revision.

On September 15, 2009, Foam Fabricators submitted the following permit applications:

<u>Appl. No.</u>	<u>Type</u>	<u>Previous P/O</u>	<u>Equipment</u>	<u>Fee Sch.</u>	<u>Expedited?</u>
502401	Admin. Change	F47283	12.247 MMBtu/hr Boiler	Sch. C	No
502402	Plan	N/A	N/A	Title V Rev.	N/A

Appl. No. 502401 is submitted as an administrative change of condition application to reflect the amendments made to Rule 1146 on September 5, 2008. No emission increase is expected.

Appl. No. 502402 is submitted as a plan application for the minor revision of the Title V permit as specified in Rule 301.

PROCESS DESCRIPTION

This boiler is used to generate steam/heat for the EPS shape molding process. The boiler is equipped with one Cleaver Brooks gas burner and a flue gas recirculation system.

EMISSION CALCULATIONS

No calculation necessary for the proposed administrative change. However, the current NSR data is incorrect and needs to be updated.

Data

Operating Schedule: 24 hrs/day, 7 days/week, 52 weeks/yr
 Fuel used: Natural Gas
 Natural Gas F-factor: 8,710 dscf/MMBtu @ 68°F and 29.92 in Hg
 Natural Gas Higher Heating Value: 1,050 Btu/scf (Regulation XX, Rule 2012, Table 3-D)



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Boiler Rating: 12.247 MMBtu/hr
 Natural Gas Usage Limit: 160,008 scf/day

Emission Factors

$$\text{Emission}_{\text{ROG,SOX,PM10}} (\text{lb/MMBtu}) = EF_{\text{ROG,SOX,PM10}} \left(\frac{\text{lb}}{\text{MMscf}} \right) \times \frac{1\text{MMscf}}{1050\text{MMBtu}}$$

$$\text{Emission}_{\text{NOX, CO}} (\text{lb/MMBtu}) = \frac{MW \times N_{@3\%O_2} \times \text{ppm}}{H}$$

Where: H= Heating value of fuel (Btu/lb) (for natural gas= 23,440 btu/lb)
 N@3%O2= 0.618 mole of dry gas per lb of natural gas.
 MW= Molecular weight (lb/lb-mole)

Emission Factor Summary - Natural Gas

Pollutant	Emission Factor (from manufacturer) ppmV @ 3% O2	Emission Factor (AQMD Default) lb/mmscf	Emission Factor (for this report) lb/mmscf
VOC	-	5.5	5.50
SOx	-	0.6	0.60
PM10	-	7.6	7.60
NOx	30	-	38.20
CO	-	84	84.00

AQMD Default emission factors for a natural gas fired boiler were taken from “General Instruction Book for the AQMD 2006-2007 Annual Emission Reporting Program”, Appendix A- Table 1):

Operating Schedule: 24 hrs/day; 7 days/week; 52 weeks/yr

Emission Summary

A/N 502401		Hourly (lbs/hr)	Daily (lbs/day)	Annually (lbs/yr)	30 day ave. (lbs/day)	30 day NSR (lbs/day)
R1=R2	VOC	0.0367	0.88	320.34	0.88	1
R1=R2	SOx	0.0040	0.10	34.95	0.10	0
R1=R2	PM10	0.0507	1.22	442.65	1.22	1
R1=R2	NOX	0.2547	6.11	2,225.06	6.11	6
R1=R2	CO	0.5600	13.44	4,892.40	13.44	13

Daily (lbs/day) = (Emission Factor, lbs/MMscf) (160,008 scf/day) / (1,000,000 scf/MMscf)

Hourly (lbs/hr) = (Daily, lbs/day) / (24 hrs/day)

Annually (lbs/yr) = (daily lbs/day) (7 days/wk) (52 wks/yr)



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RULES AND REGULATIONS EVALUATION

40 CFR **Standards of Performance for Small Industrial-Commercial-Institutional Steam
Subpart Dc: **Generating Units****

§ 60.40c Applicability and delegation of authority.

The subject boiler is rated at 12.247 MMBtu/hr (between 10 and 100 MMBtu/hr) and first applied for a permit on 3/24/1998 (after June 9, 1989); thus, this boiler is subject to this rule.

§ 60.48c Reporting and recordkeeping requirements.

(g)(2) – The operator shall record and maintain records of the amount of fuel combusted during each calendar month. Condition No. 9 is added to the permit, compliance is achieved.

(i) – All records required under this rule shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. Condition No. 9 is added to the permit, compliance is achieved.

Rule 212: **Standards for Approving Permits – The facility is not located within 1,000 feet of a K-12 school (a map is attached). In addition, no emission increase is associated with the administrative change application. A Public Notice is not required.**

Rule 401: **Visible Emissions – Compliance is expected from well maintained and properly operated equipment.**

Rule 402: **Public Nuisance – With proper operation and maintenance, the equipment is not likely to create a public nuisance.**

Rule 1146: **Emissions of NO_x from Industrial, Institutional, and Commercial Boilers:**

This application is to change conditions to reflect the amendments made to Rule 1146 on September 5, 2008. No violation has been filed for this boiler. Compliance with this rule is expected.

REG XIII: **New Source Review - There is no emission increase associated with the administrative change. No emission offset is required for this application.**

Reg XXX: **Title V Permit**

Foam Fabricators (Facility ID: 12876) is a Title V facility. The initial Title V Permit for the facility was issued on August 1, 2002 and expired on July 31, 2007. A Title V Permit Renewal application (A/N: 464970) was submitted on January 25 2007, but it has not been processed.

Application no. 502401 is to change conditions to reflect the amendments made to Rule 1146 on September 5, 2008. No emission increase is expected for this application. Therefore, application no. 502401 is considered Minor Permit Revisions of Title V Facility Permit and it is subject to a 45-day EPA review prior to final revision of the Title V Facility Permit (Application No. 502402).



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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CONCLUSION AND RECOMMENDATIONS

Based on this evaluation, it is expected that the subject equipment will be operated in compliance with all applicable District Rules and Regulations. The Permit to Operate/Construct is recommended to be issued.