

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE 1	PAGES 4
	APPL. NO. PC 500361 D204	DATE 12/15/2009
	PROCESSOR MFN	REVIEWER DR/HW

## PERMIT TO CONSTRUCT ANALYSIS

### FACILITY MAILING ADDRESS

CARLTON FORGE WORKS  
7743 E. ADAMS STREET  
PARAMOUNT, CA 90723

(ID: 022911      NOx RECLAIM Cycle 2      -      TITLE V)

### EQUIPMENT LOCATION

SAME AS ABOVE

### EQUIPMENT DESCRIPTION

**APPLICATION NO.      500361      -      PERMIT TO CONSTRUCT**  
PROCESS 1: HEAT TREATING  
D204 FURNACE, NO. 802, CARLTON FORGE WORKS, CUSTOM BUILT, METAL  
FORGING, WITH TWO ECLIPSE LOW NO<sub>x</sub> BURNERS, MODEL NO. FN0150,  
3,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

**APPLICATION NO.      500362      -      FACILITY PERMIT MODIFICATION**

### HISTORY

Application No. 500361 was filed on July 8, 2009, for Class I Permit to Construct. Application No. 500362 was filed on July 8, 2009, for a RECLAIM/Title V Facility permit modification.

There were no Complaints or Notices of Violation found in District records (CLASS computer database) for the past 2 years for Carlton Forge Works.

### **Notice to Comply**

D14141, 10/20/09, to provide written documentation showing how device D119 will maintain compliance with Condition C1.3.

Applicant provided documentation by 10/28/09 and is now in compliance.

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**PROCESS DESCRIPTION**

Carlton Forge Works (CFW) primarily forges billet from exotic metals to specific shapes and rolled rings, primarily for the aerospace industry.

The proposed furnace will be used to heat ferrous and non-ferrous metals and will enable CFW to process materials efficiently while reducing overall emissions. This furnace has a maximum heat input of 3.0 mmbtu/hr, whereas the typical furnace at CFW is 6.0 mmbtu/hr; 80% of the total furnaces owned by CFW are rated 6.0 mmbtu/hr or above.

The metal may be loaded into either a cold or hot furnace. After the heat is completely soaked through, the metal is removed from the furnace for the forging process. There may be more than one heating cycle per day depending on the materials being forged, quantity of pieces and forging temperature.

**EVALUATION**

Operating Schedule – 20 hrs/day, 6 days/wk, 50 weeks/yr (Average)

24 hrs/day, 7 days/wk, 52 weeks/year (Maximum)

Heat rating – 3.0 MMBTU/hr

Monthly Fuel limit – 1.71429 mmcf (applicant request)

Load factor – Average Load = 100%

Maximum Load = 100%

Operating Temperature – 1800°F (Average)

2150°F (Maximum)

NOx emissions – 50 ppmv @ 3% O<sub>2</sub> (To be verified with a conditioned source test)

Consultant is requesting 50 ppmv be used for emission calculations and reporting purposes as allowed in R2012.

- HC, SOx, CO and PM emissions from the 2006-2007 AER Program

- PM<sub>10</sub> = 1.0 PM, based on 1/30/92, Fred Del Rosario memo.

See attached sheet for criteria pollutant emission calculations.

**RULES COMPLIANCE**

**RULE 212:** Public Notification

**Paragraph 212 (c)(1)** Requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. According to the website geodistance.com the closest school, Lincoln Elementary School is beyond a 1200 feet from Carlton Forge

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Work's property line. A 30-Day Public Notice is not required under this paragraph.

**Paragraph 212(c)(2)** The equipment will not result in on-site emission increase exceeding the daily maximums as specified in the table in Rule 212(g). Therefore, a 30-day public notice period will not be required under this paragraph.

**Paragraph 212(c)(3)** Public notice will not be required under this paragraph. See Rule 1401 evaluation section.

- RULE 401:** Compliance is expected. Visible emissions are not expected from the proper operation of this equipment. There has been no visible emission citations associated with the operation of similar furnaces at this facility.
- RULE 402:** Compliance is expected. Nuisance is not expected with the proper operation and maintenance of this furnace. There is no record of any nuisance complaints or citations associated with forging furnaces at this facility.
- RULE 404:** The equipment is in compliance with this rule. Natural gas combustion is the only source of PM contaminants. The maximum expected PM concentration of 0.0019 gr/dscf is well below the allowable limit of 0.17 gr/dscf (see Table 404(a)) for a furnace discharge of 1,300 dscfm.
- RULE 407:** Compliance is expected. CO is expected to be below 2000 ppm. Company has source test results on record for similar equipment with CO emissions averaging less than 50 ppm @ 3% O<sub>2</sub>.
- RULE 431.1:** Compliance is expected. The furnace will be fired on natural gas with sulfur compounds (as H<sub>2</sub>S) less than 16 ppm.
- REG XIII/XX: BACT** for a forging furnace is 50 ppmv @ 3% O<sub>2</sub> for NO<sub>x</sub> and natural gas combustion for SO<sub>x</sub>. As requested by the applicant, 50 ppmv shall be conditioned to this furnace as both its NO<sub>x</sub> BACT limit and for RECLAIM reporting purposes. NO<sub>x</sub> compliance shall be verified with required source test of furnace once constructed. See device condition D28.4

**Modeling** is met. Emission rates for the furnaces are below the screening level of Table A-1 in Rule 1303.

Heat Input (mmBtu/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	PM (lb/hr)
>2 <5	0.31	17.1	1.9
D204	0.18	0.10	0.02

Carlton Forge Works is a NO<sub>x</sub> RECLAIM facility. On April 16, 2009, they purchased 3,400 pounds of **NO<sub>x</sub> RTCs**. At most 1,317 pounds will be used by the proposed forging furnace, device ID D204.

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**Offsets** are not required. The 30-Day Average for CO is 2.0 lbs., EPA has re-designated the South Coast Air Basin in attainment with CO National Ambient Air Quality Standards. CO offsets are not required. All other non-RECLAIM pollutants are below 0.50 pound and Table A of Rule 1304 (d).

**Rule 1401:** The Application Screening Index (ASI) for both Cancer/Chronic and Acute is below 1 (0.913 and 0.0367, respectively). An ASI of less than 1.0 is determined to be in compliance of requirements of Rule 1401(d). Further analysis is not required.

See attached calculations sheets. District default toxic emission factors used as published in the 2006-2007 General Instruction Book for the Annual Emission Report Program.

**REG XXX:** This is a De Minimis Significant Permit Revision to the Title V permit. EPA 45-day review period is required.

**RECOMMENDATION**

Issue a Permit to Construct to Application No. 500361 as described in this report and in the Facility Permit.