South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

April 10, 2014

Mr. Gerardo C. Rios
Chief of Permit Operation
U. S. EPA, Region IX, AIR 3
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Rios:

Carlton Forge Works (ID 22911) needs to revise their Title V Permit as they intend to replace the burners on two of their furnaces with low NOx burners and to increase the monthly fuel usage for these two furnaces and three other furnaces. However, a condition to limit the total fuel usage for all the permitted combustion devices is also being added to limit their actual PM_{10} emissions to 4 tons per year. Carlton Forge Works forges billet from various alloy metals (SIC 3462) and is located at 7743 E. Adams Street, Paramount, CA 90723. This proposed permit revision is considered a "de minimus significant" permit revision to their Title V permit. Attached for your review are the evaluation and permit for the proposed permit revision. With your receipt of the proposed Title V permit revision today, we will note that the EPA 45-day review period will begin today, April 10, 2014.

If you have any questions or need additional information regarding the proposed permit revision, please contact Ms. Monica Fernandez-Neild at 909.396.2202.

Sincerely,

Mohan Balagopalan
Senior Manager
Chemical, Mechanical and Port Permitting

MB:mfn

Attachments

PERMIT TO CONSTRUCT AND CONSTRUCT/OPERATE 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. 560283 - EQUIPMENT MODIFICATION
PROCESS 1: FORGING
D53 FURNACE, NO. AL-4, BOX TYPE, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING WITH ONE NATURAL GAS FIRED ECLIPSE WINNOX BURNER, MODEL NO. 500, LOW NOx BURNER, 5,000,000 BTU PER HOUR TOTAL CAPACITY.

APPLICATION NO. 560284 - PROCESS MODIFICATION
PROCESS 1: FORGING
D109 FURNACE, NO. AL-5, BOX TYPE, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING WITH ONE NATURAL GAS FIRED ECLIPSE BURNER, MODEL NO. WX600, LOW NOx BURNER, 6,000,000 BTU PER HOUR TOTAL CAPACITY.

APPLICATION NO. 560285 - EQUIPMENT MODIFICATION
PROCESS 1: FORGING
D119 FURNACE, NO. AL-6, BOX TYPE, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING WITH ONE NATURAL GAS FIRED ECLIPSE WINNOX BURNER, MODEL NO. 500, LOW NOx BURNER, 5,000,000 BTU PER HOUR TOTAL CAPACITY.

APPLICATION NO. 560286 - PROCESS MODIFICATION
PROCESS 1: FORGING
D182 FURNACE, NO. 432, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, SIX ECLIPSE LOW NOx BURNERS, MODEL NO. FN0100, 6,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 560287 - PROCESS MODIFICATION
PROCESS 1: FORGING
D188 FURNACE, NO. 435, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, SIX ECLIPSE LOW NOx BURNERS, MODEL NO. FN0100, 6,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 560288 - FACILITY PERMIT MODIFICATION

HISTORY

Application Nos. 560283-560286 were filed on February 11, 2014, for Class I Modifications. Application No. 560288 was filed on February 11, 2014, for a Facility Permit Modification.

Complaints

There have been 52 Odor complaints against Carlton Forge Works in the past 2 years. Complaints began September 2012; over 90% of the complaints are directly or indirectly linked to one individual. The SCAQMD investigation is still ongoing.

Notices to Comply

E17636, 4/11/13. 1. To provide maintenance book for baghouses if available (or any information sheet. 2. To provide any records of maintenance conducted on baghouses.
Follow-up conducted 4/23/2013, facility provided requested records.

E22733, 1/3/14, to ensure accuracy in formulas and data entry for NOx emission calculations.
Follow-up by inspector found facility to be in compliance.

Notices of Violation

P55529, 9/18/12, for failure to submit an Annual Permit Emission Program Report for the 2011 compliance year.
No further violations regarding the APEP report.

P57644, 1/2/2014, for operating device, D119 contrary to permit condition C1.3 (exceeding fuel limit.
Above application A/N 560285 is requesting fuel limit increase.

PROCESS DESCRIPTION

Carlton Forge Works (CFW) primarily forges billet from Aluminum Alloys, Low Alloy Steel, Stainless Steel Alloys, Titanium Alloys, and High Temperature Steel Alloys (High Nickel based Alloys) to specific shapes and rolled rings, primarily for the aerospace, gas turbine, industrial, commercial and nuclear industries.

The billets are cut in the saw room to a specific weight. Following the saw room the freshly cut pieces are deburred and the edges rounded in the grind room to inhibit the metal from cracking during the forging process. The various grinders are vented to 3 Donaldson Torit Cartridge Dust Collectors.

The forging process begins by placing a batch of metal 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. Each piece goes through several heats and several forging hammer/press operations prior to becoming the final product. At anytime throughout this process, the material may need an additional pass through the grinding room to remove any sharp edges created during the hammering process.

EVALUATION

CFW operates two 10 hour shifts a day and 4 hours dedicated for maintenance. Normally CFW works a 6 day workweek for 50 weeks per year. When needed, they may operate up to 7 days a week and 52 weeks a year.

- 20 hrs/day, 6 days/wk, 50 weeks/yr (Average)
- 24 hrs/day, 7 days/wk, 52 weeks/year (Maximum)

Forging Furnaces D53 & D119 (AL-4 & AL-6) - Burner Replacement

Maximum Heat Input:	5.0 MMBtu/hr (Previously rated 5.6 MMBtu/hr)
Monthly Fuel Limit:	2.8 mmcf each furnace, See Condition C1.6 (For Al-4 previous limit was 2.057 mmcf, for AL-6 previous limit was 1.92 mmcf)
Operating Temperature:	800°F, normal operating temperature
Maximum Temperature:	900°F (See condition C6.2)
NOx Emissions:	50 ppmv (Manufacturer's guarantee, to be verified by conditioned source test. Applicant is also requesting 50 ppmv to be used for emission calculations and reporting purposes as allowed in R2012.

HC, SOx, CO and PM emissions from the 2013 AER Program
PM_{10} = 1.0 PM, based on 1/30/92, Fred Del Rosario memo.

See **Attachments 1-3** for criteria pollutant emission calculations related to AL-4 & AL-6.

Forging Furnace D109 (AL-5) - Fuel Usage Increase

Monthly Fuel Limit:	3.0 mmcf, See Condition C1.8 (Previous limit was ~2.09 mmcf)
Operating Temperature:	800°F, normal operating temperature
Maximum Temperature:	900°F (See condition C6.2)
NOx Emissions:	50 ppmv, NOx concentration limit has been verified by several source tests since the original permit was approved in January 2003.

HC, SOx, CO and PM emissions from the 2013 AER Program
PM_{10} = 1.0 PM, based on 1/30/92, Fred Del Rosario memo.

See **Attachments 4 & 5** for criteria pollutant emission calculations related to AL-5.

ADDENDUM TO FURNACES AL-4, AL-5 AND AL-6

On Friday, March 14, 2014, Ricardo Flores of Associates Environmental, consultant to Carlton Forge Works requested that the monthly fuel limit for AL-4, AL-5 & AL-6 be bubbled together for a total combined monthly limit of 8.6 mmcf (2.8 + 2.8 + 3.0 = 8.6). The individual monthly limits will be replaced with a combined monthly fuel limit. See Condition C1.6 for the combined limit.

Forging Furnaces D182 & D188 (Nos. 432 & 435)- Fuel Usage Increase

Monthly Fuel Limit:	2.30 mmcf each furnace, See Condition C1.9 (Previous limit was ~1.37 mmcf)
Maximum Temperature:	2,105°F (See condition C6.1)
NOx Emissions:	50 ppmv, NOx concentration limit has been verified by several source tests since the original permit was approved in January 2010.

HC, SOx, CO and PM emissions from the 2013 AER Program
PM_{10} = 1.0 PM, based on 1/30/92, Fred Del Rosario memo.

See **Attachments 6 & 7** for criteria pollutant emission calculations related to Furnaces 432 & 435.

ADDENDUM TO FURNACES 432 AND 435

On Friday, March 14, 2014, Ricardo Flores of Associates Environmental, consultant to Carlton Forge Works requested that the monthly fuel limit for Furnace 432 be increased to 2.3 mmcf instead of 2.09 mmcf as requested for this permitting action. Ricardo was reminded that furnace 432 and 435 were submitted as "identical equipment". On March 18, 2014 an e-mail was received requesting to bubble Furnaces 432 and 435 under a combined monthly fuel limit of 4.6 mmcf, in essence increasing the fuel usage to 2.3 mmcf and bubbling the usage together. Condition C1.9 has been adjusted to the combined limit.

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 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 0.0049 gr/dscf is well below the allowable limit of 0.187 gr/dscf (see Table 404(a)) for a furnace discharge of 1,009 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_2.

RULE 431.1: Compliance is expected. The furnace will be fired on natural gas with sulfur compounds (as H_2S) less than 15 ppm.

REG XIII/XX: BACT for a forging furnace is 50 ppmv @ 3% O_2 for NOx and natural gas combustion for SOx. As requested by the applicant, 50 ppmv shall be conditioned to this furnace as both its NOx BACT limit and for RECLAIM reporting purposes. NOx 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)	NOx (lb/hr)	CO (lb/hr)	PM (lb/hr)
>2 ≤5	**0.31**	**17.1**	**1.9**
D53 & D119	0.3025	0.1667	0.0357
>5≤10	**0.47**	**25.9**	**2.8**
D109, D182 & D188	0.3630	0.200	0.0429

Carlton Forge Works is a NOx RECLAIM facility. On January 30, 2014, Carlton purchased 19,000 **NOx RTCs** (Trade Registration number 12316).

	Current Yearly NOx	**Proposed Yearly NOx**	**Difference, Δ**
AL-4	**3253**	**2150**	**-1,103***
AL-5	**1580**	**2304**	**+724**
AL-6	**1769**	**2150**	**+381**
432	**1053**	**1766**	**+713**
435	**1053**	**1766†**	**+713**

* AL-4 will not need an I298 condition, this permitting action results in a decrease in NOx emissions.

† Condition I298.2 is currently tagged to Furnace 435 with a NOx RTC requirement of 1053 lbs. Per RECLAIM Admin, the I298.2 condition will remain tagged to Furnace 435, with a NOx RTC hold requirement of 1766 lbs (1,053 + 713).

Offsets are not required. All non-RECLAIM pollutants are below SCAQMD's offset threshold.

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.

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 Nos. 560283 & 560285 as described in this report and in the Facility Permit.

Issue Permits to Construct/Operate to Application Nos. 560284, 560286, & 560287

Approve Facility Permit Modification for Application No. 560288

APPLICATION NO. 560283 - PERMIT TO CONSTRUCT

D53 FURNACE, NO. AL-4, BOX TYPE, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING WITH ONE NATURAL GAS FIRED ECLIPSE WINNOX BURNER, MODEL NO. 500, LOW NOx BURNER, 5,000,000 BTU PER HOUR TOTAL CAPACITY.

APPLICATION NO. 560285 - PERMIT TO CONSTRUCT

D119 FURNACE, NO. AL-6, BOX TYPE, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING WITH ONE NATURAL GAS FIRED ECLIPSE WINNOX BURNER, MODEL NO. 500, LOW NOx BURNER, 5,000,000 BTU PER HOUR TOTAL CAPACITY.

Conditions:

B59.1 THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE:

Metal contaminated with rubber, plastics, paper, rags, oil, grease, or similar smoke-producing material.

C1.6 THE OPERATOR SHALL LIMIT THE FUEL USAGE TO NO MORE THAN 8.6 MM CUBIC FEET IN ANY ONE CALENDAR MONTH.

For the purpose of this condition, fuel usage shall be defined as natural gas usage.

To comply with this condition, the operator shall install and maintain a(n) non-resettable totalizing fuel flow meter to accurately indicate the fuel usage in the equipment.

The fuel flow meter must read gaseous fuels in standard cubic feet. Standard temperature is 68 Deg F and standard pressure is 1 atmosphere. In lieu of a self-correcting meter, SCAQMD allows manual corrections of meter readings based on contemporaneous readings from pressure and/or temperature gauges installed at fuel flow meters that are not corrected for standard temperature and/or pressure. All emission calculations must be based on fuel usage at standard conditions of 68 Deg F and 1 atmosphere.

This limit shall be based on the total combined limit for equipment D53, D109 and D119.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

C6.2 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE TEMPERATURE BEING MONITORED, AS INDICATED BELOW, DOES NOT EXCEED 900 DEG F.

To comply with this condition, the operator shall install and maintain a(n) temperature reading device to accurately indicate the temperature in the equipment.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

D28.4 THE OPERATOR SHALL CONDUCT SOURCE TEST(S) IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

The test shall be conducted within 12 months of the approval of the concentration limit.

The test shall be conducted to determine the NOx emissions at the outlet.

The test shall be conducted every five period, with the first five year period ending June 30, 2005.

D29.2 THE OPERATOR SHALL CONDUCT SOURCE TEST(S) FOR THE POLLUTANT(S) IDENTIFIED BELOW.

POLLUTANT(S) TO BE TESTED	REQUIRED TEST METHOD(S)	AVERAGING TIME	TEST LOCATION
NOX EMISSIONS	APPROVED DISTRICT METHOD	15 MINUTES	OUTLET
CO EMISSIONS	APPROVED DISTRICT METHOD	15 MINUTES	OUTLET

In addition to the source test requirements of Section E of this facility permit, the facility permit holder shall submit the protocol to the AQMD no later than 45 days prior to the proposed test date, and notify the District of the date and time of the test at least 10 days prior to the test.

The test(s) shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up.

The test shall be conducted to demonstrate compliance with the BACT limit of 50 ppmv at 3 percent oxygen for NOx.

Notwithstanding the requirements of Section E conditions, the source test results shall be submitted to the District no later than 30 days after the source test was conducted.

Mail completed source test report to SCAQMD, P.O. Box 4941, Diamond Bar, CA 91765.

D323.1 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 A SEMI-ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE

ENTIRE SEMI-ANNUAL PERIOD. THE ROUTINE SEMI-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 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, AND EITHER:

1). 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

2). 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:

1). STACK OR EMISSION POINT IDENTIFICATION;

2). DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;

3). DATE AND TIME VISIBLE EMISSION WAS ABATED; AND

4). ALL VISIBLE EMISSION OBSERVATION RECORDS BY OPERATOR OR A CERTIFIED SMOKE READER.

E71.1 THE OPERATOR SHALL NOT CONDUCT METAL MELTING OPERATIONS IN THIS EQUIPMENT DURING USE.

E147.1 THE OPERATOR SHALL NOT CONDUCT FLUXING IN THIS EQUIPMENT.

E147.2 THE OPERATOR SHALL NOT CONDUCT REFINING IN THIS EQUIPMENT.

I298.7 THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE FACILITY HOLDS 381 POUNDS OF NOX RTCS IN ITS ALLOCATION ACCOUNT TO OFFSET THE ANNUAL EMISSIONS INCREASE FOR THE FIRST YEAR OF OPERATION. THE RTCS HELD TO SATISFY THE FIRST YEAR OF OPERATION PORTION OF THIS CONDITION MAY BE TRANSFERRED ONLY AFTER ONE YEAR FROM THE INITIAL START OF OPERATION. IN ADDITION, THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE OPERATOR DEMONSTRATES TO THE EXECUTIVE OFFICER THAT, AT THE COMMENCEMENT OF EACH COMPLIANCE YEAR AFTER THE START OF OPERATION, THE FACILITY HOLDS 381 POUNDS OF NOX RTCS VALID DURING THAT COMPLIANCE YEAR. RTCS HELD TO SATISFY THE COMPLIANCE YEAR PORTION OF THIS CONDITION MAY BE TRANSFERRED ONLY AFTER THE COMPLIANCE YEAR FOR WHICH THE RTCS ARE HELD. IF THE INITIAL OR ANNUAL HOLD AMOUNT IS PARTIALLY SATISFIED BY HOLDING RTCS THAT EXPIRE MIDWAY THROUGH THE HOLD PERIOD, THOSE RTCS MAY BE TRANSFERRED UPON THEIR RESPECTIVE EXPIRATION DATES. THIS HOLD AMOUNT IS IN ADDITION TO ANY OTHER AMOUNT OF RTCS REQUIRED TO BE HELD UNDER OTHER CONDITION(S) STATED IN THIS PERMIT. **I298.7 is only for D119**

K171.3 THE OPERATOR SHALL PROVIDE TO THE DISTRICT THE FOLLOWING ITEMS:

A written notification within 15 days of the initial start-up date of the equipment.

APPLICATION NO. 560284 - PERMIT TO CONSTRUCT/OPERATE

D109 FURNACE, NO. AL-5, BOX TYPE, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING WITH ONE NATURAL GAS FIRED ECLIPSE BURNER, MODEL NO. WX600, LOW NOx BURNER, 6,000,000 BTU PER HOUR TOTAL CAPACITY.

Conditions:

B59.1 Same as above

C1.6 Same as above

C6.2 Same as above

D28.4 Same as above

D323.1 Same as above

E71.1 Same as above

E147.1 Same as above

E147.2 Same as above

I298.6 Similar to above, except NOx RTC holding requirement is 724 lbs

APPLICATION NO. 560286 - PERMIT TO CONSTRUCT/OPERATE

D182 FURNACE, NO. 432, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, SIX ECLIPSE LOW NOx BURNERS, MODEL NO. FN0100, 6,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

APPLICATION NO. 560287 - PERMIT TO CONSTRUCT/OPERATE

D188 FURNACE, NO. 435, CARLTON FORGE WORKS, CUSTOM BUILT, METAL FORGING, SIX ECLIPSE LOW NOx BURNERS, MODEL NO. FN0100, 6,000,000 BTU PER HOUR TOTAL, NATURAL GAS FIRED.

Conditions:

B59.1 Same as above

C1.9 THE OPERATOR SHALL LIMIT THE FUEL USAGE TO NO MORE THAN 4.6 MM CUBIC FEET IN ANY ONE CALENDAR MONTH.

For the purpose of this condition, fuel usage shall be defined as natural gas.

To comply with this condition, the operator shall install and maintain a(n) non-resettable totalizing fuel flow meter to accurately indicate the fuel usage in the equipment.

The fuel flow meter must read gaseous fuels in standard cubic feet. Standard temperature is 68 Deg F and standard pressure is 1 atmosphere. In lieu of a self-correcting meter, SCAQMD allows manual corrections of meter readings based on contemporaneous readings from pressure and/or temperature gauges installed at fuel flow meters that are not corrected for standard temperature and/or pressure. All emission calculations must be based on fuel usage at standard conditions of 68 Deg F and 1 atmosphere.

This limit shall be based on the total combined limit for equipment D182 and D188.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

C6.1 THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE TEMPERATURE BEING MONITORED, AS INDICATED BELOW, DOES NOT EXCEED 2,150 DEG F.

To comply with this condition, the operator shall install and maintain a(n) temperature reading device to accurately indicate the temperature in the equipment.

The operator shall maintain records in a manner approved by the District, to demonstrate compliance with this condition.

D28.4 Same as above

D323.1 Same as above

E71.1 Same as above

E147.1 Same as above

E147.2 Same as above

I298.8 For device D182 similar to above, except NOx RTC holding requirement is 713 lbs.

I298.2 For device D188 similar to above, except NOx RTC holding requirement is 1,766 lbs.

Carlton Forge Works

Forging Furnace AL-4 (D53)
As originally permitted

ATTACHMENT 1

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	5,600,000	BTU/hr
Max conditioned fuel usage =	2,057,145	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	101.2	ppm
Average Loading=	65.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0243	lb/hr	0.5824	lb/day
NOx =	0.4457	lb/hr	10.6974	lb/day
SO2 =	0.0021	lb/hr	0.0499	lb/day
CO =	0.1213	lb/hr	2.9120	lb/day
PART =	0.0260	lb/hr	0.6240	lb/day

MAXIMUM EMISSIONS

RHC =	0.0373	lb/hr	0.8960	lb/day
NOx =	0.6857	lb/hr	16.4575	lb/day
SO2 =	0.0032	lb/hr	0.0768	lb/day
CO =	0.1867	lb/hr	4.4800	lb/day
PART =	0.0400	lb/hr	0.9600	lb/day

Thirty day average emissions

RHC =	0.48	lb/dy	173	lb/yr
NOx =	8.88	lb/dy	3198	lb/yr
SO2 =	0.04	lb/dy	15	lb/yr
CO =	2.40	lb/dy	864	lb/yr
PART =	0.51	lb/dy	185	lb/yr

Monthly Emissions

RHC =	14.40	lb/mo
NOx =	266.47	lb/mo
SO2 =	1.23	lb/mo
CO =	72.00	lb/mo
PART =	15.43	lb/mo

RHC, SOx, CO and PM per 2013 AER

Carlton Forge Works

Forging Furnace AL-6 (D119)
As originally permitted

ATTACHMENT 2

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	5,600,000	BTU/hr
Max conditioned fuel usage =	1,920,000	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	60	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0187	lb/hr	0.4480	lb/day
NOx =	0.2033	lb/hr	4.8787	lb/day
SO2 =	0.0016	lb/hr	0.0384	lb/day
CO =	0.0933	lb/hr	2.2400	lb/day
PART =	0.0200	lb/hr	0.4800	lb/day

MAXIMUM EMISSIONS

RHC =	0.0373	lb/hr	0.8960	lb/day
NOx =	0.4066	lb/hr	9.7574	lb/day
SO2 =	0.0032	lb/hr	0.0768	lb/day
CO =	0.1867	lb/hr	4.4800	lb/day
PART =	0.0400	lb/hr	0.9600	lb/day

Thirty day average emissions

RHC =	0.45	lb/dy	161	lb/yr
NOx =	4.92	lb/dy	1769	lb/yr
SO2 =	0.04	lb/dy	14	lb/yr
CO =	2.24	lb/dy	806	lb/yr
PART =	0.48	lb/dy	173	lb/yr

Monthly Emissions

RHC =	13.44	lb/mo
NOx =	147.46	lb/mo
SO2 =	1.15	lb/mo
CO =	67.20	lb/mo
PART =	14.40	lb/mo

RHC, SOx, CO and PM per 2013 AER

Carlton Forge Works

Forging Furnaces D53 & D119
A/Ns 560283 & 560285
ATTACHMENT 3

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	5,000,000	BTU/hr
Max conditioned fuel usage =	2,800,000	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	50	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0167	lb/hr	0.4000	lb/day
NOx =	0.1513	lb/hr	3.6300	lb/day
SO2 =	0.0014	lb/hr	0.0343	lb/day
CO =	0.0833	lb/hr	2.0000	lb/day
PART =	0.0179	lb/hr	0.4286	lb/day

MAXIMUM EMISSIONS

RHC =	0.0333	lb/hr	0.8000	lb/day
NOx =	0.3025	lb/hr	7.2600	lb/day
SO2 =	0.0029	lb/hr	0.0686	lb/day
CO =	0.1667	lb/hr	4.0000	lb/day
PART =	0.0357	lb/hr	0.8571	lb/day

Thirty day average emissions

RHC =	0.65	lb/dy	235.2	lb/yr
NOx =	5.97	lb/dy	2150.4	lb/yr
SO2 =	0.06	lb/dy	20.2	lb/yr
CO =	3.27	lb/dy	1176.0	lb/yr
PART =	0.70	lb/dy	252.0	lb/yr

Monthly Emissions

RHC =	19.60	lb/mo
NOx =	179.20	lb/mo
SO2 =	1.68	lb/mo
CO =	98.00	lb/mo
PART =	21.00	lb/mo

RHC, SOx, CO and PM per 2013 AER

Carlton Forge Works

Forging Furnace AL-5 (D109)
As originally permitted

ATTACHMENT 4

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	6,000,000	BTU/hr
Max conditioned fuel usage =	2,080,000	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	50	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0200	lb/hr	0.4800	lb/day
NOx =	0.1815	lb/hr	4.3560	lb/day
SO2 =	0.0017	lb/hr	0.0411	lb/day
CO =	0.1000	lb/hr	2.4000	lb/day
PART =	0.0214	lb/hr	0.5143	lb/day

MAXIMUM EMISSIONS

RHC =	0.0400	lb/hr	0.9600	lb/day
NOx =	0.3630	lb/hr	8.7120	lb/day
SO2 =	0.0034	lb/hr	0.0823	lb/day
CO =	0.2000	lb/hr	4.8000	lb/day
PART =	0.0429	lb/hr	1.0286	lb/day

Thirty day average emissions

RHC =	0.49	lb/dy	175	lb/yr
NOx =	4.44	lb/dy	1597	lb/yr
SO2 =	0.04	lb/dy	15	lb/yr
CO =	2.43	lb/dy	874	lb/yr
PART =	0.52	lb/dy	187	lb/yr

Monthly Emissions

RHC =	14.56	lb/mo
NOx =	133.12	lb/mo
SO2 =	1.25	lb/mo
CO =	72.80	lb/mo
PART =	15.60	lb/mo

RHC, SOx, CO and PM per 2013 AER

Carlton Forge Works

Forging Furnace AL-5 (D109)
A/N 560284

ATTACHMENT 5

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	6,000,000	BTU/hr
Max conditioned fuel usage =	3,000,000	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	50	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0200	lb/hr	0.4800	lb/day
NOx =	0.1815	lb/hr	4.3560	lb/day
SO2 =	0.0017	lb/hr	0.0411	lb/day
CO =	0.1000	lb/hr	2.4000	lb/day
PART =	0.0214	lb/hr	0.5143	lb/day

MAXIMUM EMISSIONS

RHC =	0.0400	lb/hr	0.9600	lb/day
NOx =	0.3630	lb/hr	8.7120	lb/day
SO2 =	0.0034	lb/hr	0.0823	lb/day
CO =	0.2000	lb/hr	4.8000	lb/day
PART =	0.0429	lb/hr	1.0286	lb/day

Thirty day average emissions

RHC =	0.70	lb/dy	252	lb/yr
NOx =	6.40	lb/dy	2304	lb/yr
SO2 =	0.06	lb/dy	22	lb/yr
CO =	3.50	lb/dy	1260	lb/yr
PART =	0.75	lb/dy	270	lb/yr

Monthly Emissions

RHC =	21.00	lb/mo
NOx =	192.00	lb/mo
SO2 =	1.80	lb/mo
CO =	105.00	lb/mo
PART =	22.50	lb/mo

RHC, SOx, CO and PM per 2013 AER

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	6,000,000	BTU/hr
Max conditioned fuel usage =	1,371,430	CF/mo
Previously conditioned fuel usage =	0	CF/mo
Average Operating Schedule =	16	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	50	ppm
Average Loading=	100.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0400	lb/hr	0.6400	lb/day
NOx =	0.3630	lb/hr	5.8080	lb/day
SO2 =	0.0034	lb/hr	0.0549	lb/day
CO =	0.2000	lb/hr	3.2000	lb/day
PART =	0.0429	lb/hr	0.6857	lb/day

MAXIMUM EMISSIONS

RHC =	0.0400	lb/hr	0.9600	lb/day
NOx =	0.3630	lb/hr	8.7120	lb/day
SO2 =	0.0034	lb/hr	0.0823	lb/day
CO =	0.2000	lb/hr	4.8000	lb/day
PART =	0.0429	lb/hr	1.0286	lb/day

Thirty day average emissions

RHC =	0.32	lb/dy	115	lb/yr
NOx =	2.93	lb/dy	1053	lb/yr
SO2 =	0.03	lb/dy	10	lb/yr
CO =	1.60	lb/dy	576	lb/yr
PART =	0.34	lb/dy	123	lb/yr

Monthly Emissions

RHC =	9.60	lb/mo
NOx =	87.77	lb/mo
SO2 =	0.82	lb/mo
CO =	48.00	lb/mo
PART =	10.29	lb/mo

RHC, SOx, CO and PM per 2013 AER

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	6,000,000	BTU/hr
Max conditioned fuel usage =	2,300,000	CF/mo
Previously conditioned fuel usage =	2,090,000	CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	50	ppm
Average Loading=	50.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0200	lb/hr	0.4800	lb/day
NOx =	0.1815	lb/hr	4.3560	lb/day
SO2 =	0.0017	lb/hr	0.0411	lb/day
CO =	0.1000	lb/hr	2.4000	lb/day
PART =	0.0214	lb/hr	0.5143	lb/day

MAXIMUM EMISSIONS

RHC =	0.0400	lb/hr	0.9600	lb/day
NOx =	0.3630	lb/hr	8.7120	lb/day
SO2 =	0.0034	lb/hr	0.0823	lb/day
CO =	0.2000	lb/hr	4.8000	lb/day
PART =	0.0429	lb/hr	1.0286	lb/day

Thirty day average emissions

RHC =	0.54	lb/dy	193	lb/yr
NOx =	4.91	lb/dy	1766	lb/yr
SO2 =	0.05	lb/dy	17	lb/yr
CO =	2.68	lb/dy	966	lb/yr
PART =	0.58	lb/dy	207	lb/yr

Emission increase

RHC =	0	lb/dy	18	lb/yr
NOx =	0	lb/dy	161	lb/yr
SO2 =	0	lb/dy	2	lb/yr
CO =	0	lb/dy	88	lb/yr
PART =	0	lb/dy	19	lb/yr

RHC, SOx, CO and PM per 2013 AER