

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATION

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PERMIT TO CONSTRUCT/OPERATE

(FACILITY ID# 14495)

Applicant Name: VISTA METALS CORPORATION

Mailing Address: 13425 Whittram Ave.
Fontana, CA 92335

Equipment Location: 13425 Whittram Ave.
Fontana, CA 92335

EQUIPMENT DESCRIPTIONS:

APPLICATION NO. 537211

D103: FURNACE, HOMOGENIZING, THORPE TECHNOLOGIES, NATURAL GAS, 12.4 MMBTU/HR, WITH TWO 4.9 MMBTU/HR WINNOX MODEL WX0400 BURNERS, AND A 1.3 MMBTU/HR WINNOX MODEL WX0100 BURNER.

APPLICATION NO. 537213

TITLE V/RECLAIM REVISION

PERMIT CONDITIONS: (SEE TITLE V PERMIT)

BACKGROUND:

The facility submitted A/N 537211 on May 3, 2012, for a 12.4 MMbtu/hr homogenizing furnace.

The facility submitted A/N 537213 on May 3, 2012, for a Title V/RECLAIM Revision.

This facility is subject to Reclaim and Title V requirements.

PROCESS DESCRIPTION:

Vista Metals' operation consists of melting primary aluminum alloys and scrap aluminum and casting into billets and ingots. After the casting process, the billets are directed into the homogenizing furnace for heat treatment.

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The homogenizing furnace maintains a constant temperature during the setting process to maintain uniformity of physical properties throughout the billets. The company is now proposing to construct an additional 12.4 MMbtu/hr homogenizing furnace.

PERMIT CONDITIONS: (SEE PERMIT)

EMISSION CALCULATIONS:

A/N 537211 Homogenizing Furnace – D103

Vista Metals typically operates 10 hrs/day, 6 days/week, 52 weeks per year, however, the company can also operate 24/7 depending on market demand. Emissions from this furnace basically come from natural gas combustion.

The furnace is guaranteed for NO_x concentration of less than 45 ppmv with 3% oxygen. BACT for metal heat treating furnace is 50 ppmv. For other pollutants, the District's default emission factors will be used.

Maximum rating 12.4 MMBtu/hr

Max. fuel usage = 12.4 x 24 hrs/day/1050 Btu/cf
= 0.2834 MMCF/day

Max Daily Emissions:

CALCULATIONS:

Given:

Maximum Heat Input Rating, MM BTU/hr: 12.4 MM BTU/hr

Fuel: Natural gas

Equipment Operating Load: 23%

Conversion Factors, ppm @ 3% O₂ to lb/MM BTU

NO_x 0.00121 [lb/MM BTU]/ppm

CO 0.00074 [lb/MM BTU]/ppm

Operating Schedule:

hrs/day 24

days/wk 7

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weeks/yr 52

NOx Concentration, ppm @ 3% O₂ (dry) 45

Emission Factors, lb/MM BTU: (default)

ROG: 0.0067

SO_x : 0.0008

CO: 0.0333

PM: 0.0071

PM₁₀ in total PM: 100%

HHV of natural gas: 1,050 BTU/ft³

Computations:

VOC:

lb/hr	0.0067 lb/MM BTU*12.4 MM BTU =	0.08 lb/hr
lb/day Max.	0.08 lb/hr*24 hrs/day =	1.98 lb/day Max.
lb/day, Avg	0.08 lb/hr*24 hrs/day*0.23 (Load factor) =	0.46 lb/day, Avg
lb/yr	0.46 lb/day*7 days/wk*52 wks/yr =	166.10 lb/yr

NOx:

lb/MM BTU	0.00121 lb/MM BTU-ppm*45 ppm =	0.0546 lb/MM BTU
lb/hr	0.0546 lb/MM BTU*12.4 MM BTU/hr =	0.68 lb/hr
lb/day Max.	0.68 lb/hr*24 hrs/day =	16.26 lb/day Max.
lb/day, Avg	0.68 lb/hr*24 hrs/day*0.23 (Load factor) =	3.74 lb/day, Avg
lb/yr	3.74 lb/day*7 days/wk*52 wks/yr =	1361.17 lb/yr

SOx:

lb/hr	0.0008 lb/MM BTU*12.4 MM BTU =	0.010 lb/hr
lb/day Max.	0.010 lb/hr*24 hrs/day =	0.24 lb/day Max.
lb/day, Avg	0.010 lb/hr*24 hrs/day*0.23 (Load factor) =	0.05 lb/day, Avg
lb/yr	0.05 lb/day*7 days/wk*52 wks/yr =	19.69 lb/yr

CO:

lb/hr	0.0333 lb/MM BTU*12.4 MM BTU =	0.41 lb/hr
lb/day Max.	0.41 lb/hr*24 hrs/day =	9.92 lb/day Max.
lb/day, Avg	0.41 lb/hr*24 hrs/day*0.23 (Load factor) =	2.28 lb/day, Avg
lb/yr	2.28 lb/day*7 days/wk*52 wks/yr =	830.50 lb/yr

PM/PM10

lb/hr	0.0071 lb/MM BTU*12.4 MM BTU =	0.09 lb/hr
lb/day Max.	0.09 lb/hr*24 hrs/day =	2.13 lb/day Max.

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lb/day, Avg 0.09 lb/hr*24 hrs/day*0.23 (Load factor) = 0.49 lb/day, Avg
 lb/yr 0.49 lb/day*7 days/wk*52 wks/yr = 177.96 lb/yr

	<i>VOC</i>	<i>NOx</i>	<i>SOx</i>	<i>CO</i>	<i>PM/PM10</i>
Factor (lb/MM BTU)	0.0067	0.0546	0.0008	0.0333	0.0071
lb/hr	0.08	0.68	0.010	0.41	0.09
lb/day					
Max.	1.98	16.26	0.24	9.92	2.13
30 Day Avg.	0.46	3.74	0.05	2.28	0.49
lb/yr	166.10	1,361.17	19.69	830.50	177.96

***30 day average (based on 1,955,600 cf/month limit):**

RULES EVALUATION:

RULE 212: (c) (1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1000 feet from the outer boundary of a school.

The nearest school is approximately 1.3 miles (about 6800 ft) from the boundary of the facility, therefore, public notice is not required.

(c)(2): This section requires a public notice for all new or modified facilities having onsite emission increases exceeding any of the daily maximums specified in Rule 212(g).

Public notice is not necessary under this paragraph.

(c)(3): This section requires a public notice for all new or modified permit unit with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in MICR greater than 1E-6 per permit unit or greater than IOE-6 per facility.

Toxics from combustion are negligible, therefore, public notice is not required.

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(g): Project emissions do not exceed daily max thresholds. Public Notice is not required.

RULE 401: Visible emissions are not expected with proper operation of this equipment.

RULE 402: Nuisance is not expected if equipment is properly operated and maintained.

RULE 403: Fugitive dust is not expected if equipment is properly operated and maintained.

RULE 404: Compliance is expected if equipment is properly operated and maintained.

RULE 1147: Reclaim facilities are exempt per Rule 1147(g)(1)(B).

RULE 1303:

OFFSETS: The addition of the homogenizing furnace will result in an increase less than 0.5 lbs/day for PM10 and ROG. No offsets required.

BACT: The homogenizing furnace (A/N 516522) uses the Winnox Burners (W0400 and W0100). These burners are guaranteed to have NOx concentration of 45 ppmv at 3% O₂, which meets the BACT requirement of 50 ppmv. There is no BACT limit for CO.

MODELING: Modeling for VOC is not required. CO is in attainment. Modeling for CO not required. According to Table A-1 in Rule 1303, allowable PM10 limit is .41 lbs/hr for non-combustion sources. PM10 emission rate for new furnace D103 is .09 lbs/hr. Modeling passes. According to Table A-1 in Rule 1303, allowable NOx limit is .86 lbs/hr. NOx emission rate is 0.68 lb/hr. Modeling for D103 passes.

RULE 2005: Increase in PTE is 1,361 lbs/year for NOx. According to Section B of the Reclaim Facility Permit, Vista Metals has sufficient allocation as required per RECLAIM Rule 2002.

REG XXX: Applications for Title V De Minimis require EPA 45-day review.

RULE 1401: Toxics from natural gas combustion expected to be negligible.

CONCLUSIONS AND RECOMMENDATIONS:

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Based on the evaluation contained herein, the subject equipment will comply with all of the District's rules and regulations; therefore, I recommend a Title V Permit to Construct/Operate be issued to this equipment as described in this report.