SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATION	Page 1 of 5 Date: 04/16/12 A/P: See Page 1 PROCESSED BY: MS CHECKED BY:

PERMIT TO CONSTRUCT

(FACILITY ID# 16639)

Applicant Name: Shultz Steel

Mailing Address: 5321 Firestone Blvd.
South Gate, CA 90280

Equipment Location: SAME

EQUIPMENT DESCRIPTIONS:

APPLICATION NO. 534630 D27

ALTERATION TO HEAT TREAT FURNACE PERMIT TO OPERATE F73559 (A/N 433450) DEVICE D27, BY THE REMOVAL OF:

TWO ZEDTEC BURNERS, MODEL HOTWORK EJ06, NATURAL GAS FIRED, EACH 4,100,000 BTU/HR, 8,200,000 BTU/HR TOTAL AND THE ADDITION OF:

EIGHT HOTWORK BURNERS, MODEL HV300, NATURAL GAS FIRED, EACH 1,000,000 BTU/HR, 8,000,000 BTU/HR TOTAL

APPLICATION NO. 534629

TITLE V/RECLAIM REVISION

PERMIT CONDITIONS: (SEE TITLE V PERMIT)

BACKGROUND:

Shultz Steel submitted A/N's 534630 on March 30, 2012 for furnace D27 to replace burners.

The facility submitted A/N 534629 on April 3, 2012 for a Title V/RECLAIM Revision.

PROCESS DESCRIPTION:

Furnaces are retrofitted in order to reduce NOx emissions.

PERMIT CONDITIONS: (SEE PERMIT)

EMISSION CALCULATIONS

A/N 534630

CALCULATIONS:

Given:	Modified		Existing
Maximum Heat Input Rating, MM BTU/hr:	8.0		8.2
Fuel:	Natural gas		
Equipment Operating Load:	100%		
Conversion Factors, ppm @ 3% O_2 to lb/MM BTU			
NOx	0.00121	[lb/MM BTU]/ppm	
CO	0.00074	[lb/MM BTU]/ppm	
Operating Schedule:			
hrs/day	24		
days/wk	7		
weeks/yr	52		
NOx Concentration, ppm @ 3% O_2 (dry)	50		default
Emission Factors, lb/MM BTU: (Default)			
ROG:	0.0067		
SOx :	0.0008		
CO:	0.0333		
PM:	0.0071		
PM_{10} in total PM:	100%		
HHV of natural gas:	1,050	BTU/ft^3	

Computations:

VOC:

lb/hr	0.0067 lb/MM BTU*8 MM BTU =	0.05	lb/hr
lb/day Max.	0.05 lb/hr*24 hrs/day =	1.28	lb/day Max.
lb/day, Avg	0.05 lb/hr*24 hrs/day*1.00 (Load factor) =	1.28	lb/day, Avg
lb/yr	.28 lb/day*7 days/wk*52 wks/yr =	465.92	lb/yr

NOx:

lb/MM BTU	0.00121 lb/MM BTU-ppm*50 ppm =	0.0607	lb/MM BTU
lb/hr	0.0607 lb/MM BTU*8 MM BTU/hr =	0.49	lb/hr
lb/day Max.	0.49 lb/hr*24 hrs/day =	11.65	lb/day Max.
lb/day, Avg	0.49 lb/hr*24 hrs/day*1.00 (Load factor) =	11.65	lb/day, Avg
lb/yr	11.65 lb/day*7 days/wk*52 wks/yr =	4242.39	lb/yr
SOx:			
lb/hr	0.0008 lb/MM BTU*8 MM BTU =	0.006	lb/hr
lb/day Max.	0.006 lb/hr*24 hrs/day =	0.15	lb/day Max.
lb/day, Avg	0.006 lb/hr*24 hrs/day*1.00 (Load factor) =	0.15	lb/day, Avg
lb/yr	0.15 lb/day*7 days/wk*52 wks/yr =	55.24	lb/yr
CO:			
lb/hr	0.0333 lb/MM BTU*8 MM BTU =	0.27	lb/hr
lb/day Max.	0.27 lb/hr*24 hrs/day =	6.40	lb/day Max.
lb/day, Avg	0.27 lb/hr*24 hrs/day*1.00 (Load factor) =	6.40	lb/day, Avg
lb/yr	6.40 lb/day*7 days/wk*52 wks/yr =	2329.60	lb/yr
PM/PM10			
lb/hr	0.0071 lb/MM BTU*8 MM BTU =	0.06	lb/hr
lb/day Max.	0.06 lb/hr*24 hrs/day =	1.37	lb/day Max.
lb/day, Avg	0.06 lb/hr*24 hrs/day*1.00 (Load factor) =	1.37	lb/day, Avg
lb/yr	1.37 lb/day*7 days/wk*52 wks/yr =	499.20	lb/yr

	VOC	*NOx*	*SOx*	*CO*	*PM/PM10*
Factor (lb/MM BTU)	0.0067	0.0607	0.0008	0.0333	0.0071
lb/hr	0.05	0.49	0.006	0.27	0.06
lb/day					
Max.	1.28	11.65	0.15	6.40	1.37
Avg.	1.28	11.65	0.15	6.40	1.37
lb/yr	465.92	4,242.39	55.24	2,329.60	499.20

Emission Impact Due to Modification:

	VOC	NOx	SOx	CO	PM10
A/N 433450 (Before)	1.31	24.36	.16	6.56	1.41
A/N 534630 (After)	1.28	11.65	.15	6.40	1.37
After- Before	.03	12.71	.01	.16	.04
Emission Impacts	Decrease	Decrease	Decrease	Decrease	Decrease

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 3,696 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).

This is not a project requiring notification as described in 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.

The proposed project is not expected to result in increased toxic pollutant emissions, therefore, public notice is not required.

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

RULE 1147: Because the equipment is at a RECLAIM facility, it is exempted.

REG XIII – NEW SOURCE REVIEW

There is no emission increase due to the modification, NSR is not applicable.

RULE 2005: The facility is a NOx RECLAIM facility. There is no net increase in NOx. Additional NOx allocation is not needed under RECLAIM Rule 2002. No offset is needed.

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

RULE 1401: There is no emission increase due to the modification. Rule 1401 analysis not applicable.

CONCLUSIONS AND RECOMMENDATIONS:

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 be issued to this equipment as described in this report.

CALCULATIONS:

Given:	(Existing) Pre-Modified
Maximum Heat Input Rating, MM BTU/hr:	8.2
Fuel:	Natural gas
Equipment Operating Load:	100%
Conversion Factors, ppm @ 3% O_2 to lb/MM BTU	
NOx	0.00121 [lb/MM BTU]/ppm
CO	0.00074 [lb/MM BTU]/ppm
Operating Schedule:	
hrs/day	24
days/wk	7
weeks/yr	52
NOx Concentration, ppm @ 3% O_2 (dry)	Default (130 lbs factor mmcf
Emission Factors, lb/MM BTU: (Default)	
ROG:	0.0067
SOx :	0.0008
CO:	0.0333
PM:	0.0071
PM_{10} in total PM:	100%
HHV of natural gas:	1,050 BTU/ft^3

Computations:

VOC:		
lb/hr	0.0067 lb/MM BTU*8.2 MM BTU =	0.05 lb/hr
lb/day Max.	0.05 lb/hr*24 hrs/day =	1.31 lb/day Max.
lb/day, Avg	0.05 lb/hr*24 hrs/day*1.00 (Load factor) =	1.31 lb/day, Avg
lb/yr	1.31 lb/day*7 days/wk*52 wks/yr =	477.57 lb/yr
NOx:		
lb/MM BTU	0.00121 lb/MM BTU-ppm*0 ppm =	0.0000 lb/MM BTU
lb/hr	130 x 8.2 MMBTU/hr / 1050	1.02 lb/hr
lb/day Max.	1.02 lb/hr*24 hrs/day =	24.36 lb/day Max.
lb/day, Avg	1.02 lb/hr*24 hrs/day*1.00 (Load factor) =	24.36 lb/day, Avg
lb/yr	24.36 lb/day*7 days/wk*52 wks/yr =	8868.79 lb/yr
SOx:		
lb/hr	0.0008 lb/MM BTU*8.2 MM BTU =	0.006 lb/hr
lb/day Max.	0.006 lb/hr*24 hrs/day =	0.16 lb/day Max.
lb/day, Avg	0.006 lb/hr*24 hrs/day*1.00 (Load factor) =	0.16 lb/day, Avg
lb/yr	0.16 lb/day*7 days/wk*52 wks/yr =	56.63 lb/yr

CO:

lb/hr	0.0333 lb/MM BTU*8.2 MM BTU =	0.27 lb/hr
lb/day Max.	0.27 lb/hr*24 hrs/day =	6.56 lb/day Max.
lb/day, Avg	0.27 lb/hr*24 hrs/day*1.00 (Load factor) =	6.56 lb/day, Avg
lb/yr	6.56 lb/day*7 days/wk*52 wks/yr =	2387.84 lb/yr

PM/PM10

lb/hr	0.0071 lb/MM BTU*8.2 MM BTU =	0.06 lb/hr
lb/day Max.	0.06 lb/hr*24 hrs/day =	1.41 lb/day Max.
lb/day, Avg	0.06 lb/hr*24 hrs/day*1.00 (Load factor) =	1.41 lb/day, Avg
lb/yr	1.41 lb/day*7 days/wk*52 wks/yr =	511.68 lb/yr

	VOC	*NOx*	*SOx*	*CO*	*PM/PM10*
Factor (lb/MM BTU)	0.0067	-	0.0008	0.0333	0.0071
lb/hr	0.05	1.02	0.006	0.27	0.06
lb/day					
Max.	1.31	24.36	0.16	6.56	1.41
Avg.	1.31	24.36	0.16	6.56	1.41
lb/yr	477.57	8,868.79	56.63	2,387.84	511.68

CALCULATIONS:

Given:	Modified	Existing (Pre-Mod)
Maximum Heat Input Rating, MM BTU/hr:	8.0	8.2
Fuel:	Natural gas	
Equipment Operating Load:	100%	
Conversion Factors, ppm @ 3% O_2 to lb/MM BTU		
NOx	0.00121 [lb/MM BTU]/ppm	
CO	0.00074 [lb/MM BTU]/ppm	
Operating Schedule:		
hrs/day	24	
days/wk	7	
weeks/yr	52	
NOx Concentration, ppm @ 3% O_2 (dry)	50	

130 lbs/mmcf Default ~~85~~

Emission Factors, lb/MM BTU: (Default)	
ROG:	0.0067
SOx :	0.0008
CO:	0.0333
PM:	0.0071
PM_{10} in total PM:	100%
HHV of natural gas:	1,050 BTU/ft^3

Computations:

VOC:		
lb/hr	0.0067 lb/MM BTU*8 MM BTU =	0.05 lb/hr
lb/day Max.	0.05 lb/hr*24 hrs/day =	1.28 lb/day Max.
lb/day, Avg	0.05 lb/hr*24 hrs/day*1.00 (Load factor) =	1.28 lb/day, Avg
lb/yr	1.28 lb/day*7 days/wk*52 wks/yr =	465.92 lb/yr
NOx:		
lb/MM BTU	0.00121 lb/MM BTU-ppm*50 ppm =	0.0607 lb/MM BTU
lb/hr	0.0607 lb/MM BTU*8 MM BTU/hr =	0.49 lb/hr
lb/day Max.	0.49 lb/hr*24 hrs/day =	11.65 lb/day Max.
lb/day, Avg	0.49 lb/hr*24 hrs/day*1.00 (Load factor) =	11.65 lb/day, Avg
lb/yr	11.65 lb/day*7 days/wk*52 wks/yr =	4242.39 lb/yr
SOx:		
lb/hr	0.0008 lb/MM BTU*8 MM BTU =	0.006 lb/hr
lb/day Max.	0.006 lb/hr*24 hrs/day =	0.15 lb/day Max.
lb/day, Avg	0.006 lb/hr*24 hrs/day*1.00 (Load factor) =	0.15 lb/day, Avg
lb/yr	0.15 lb/day*7 days/wk*52 wks/yr =	55.24 lb/yr

CO:

lb/hr	0.0333 lb/MM BTU*8 MM BTU =	0.27 lb/hr
lb/day Max.	0.27 lb/hr*24 hrs/day =	6.40 lb/day Max.
lb/day, Avg	0.27 lb/hr*24 hrs/day*1.00 (Load factor) =	6.40 lb/day, Avg
lb/yr	6.40 lb/day*7 days/wk*52 wks/yr =	2329.60 lb/yr

PM/PM10

lb/hr	0.0071 lb/MM BTU*8 MM BTU =	0.06 lb/hr
lb/day Max.	0.06 lb/hr*24 hrs/day =	1.37 lb/day Max.
lb/day, Avg	0.06 lb/hr*24 hrs/day*1.00 (Load factor) =	1.37 lb/day, Avg
lb/yr	1.37 lb/day*7 days/wk*52 wks/yr =	499.20 lb/yr

	VOC	*NOx*	*SOx*	*CO*	*PM/PM10*
Factor (lb/MM BTU)	0.0067	0.0607	0.0008	0.0333	0.0071
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Max.	1.28	11.65	0.15	6.40	1.37
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