

Bay Area Air Quality Management District

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Statement of Basis and Evaluation Report for MINOR REVISION to the Major Facility Review Permit

for
**Air Liquide Large Industries, US LP
Facility #B7419**

Facility Address:

1380 San Pablo Avenue
Rodeo, CA 94572

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April 2020

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Application: 30220

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STATEMENT OF BASIS

This is minor permit revision pursuant to Regulation 2, Rule 6, section 215. The marked-up Title V sections are provided in the Permit Condition Section and Appendix A of the Evaluation Report that follows this Statement of Basis.

Section IV

Table IV-B will be revised to reflect that:

- Part 4 of Condition 23179 is a fuel sulfur content limit.
- Part 14 of Condition 23179 is a requirement for continuous fuel sulfur analyzer.
- Part 16 of Condition 23179 is a SO₂ emission concentration emission calculation procedure.

Section VI

Section VI will be revised to amend Parts 4, 14, 16, 19, 20, of permit conditions 23179 as indicated in the Permit Condition Section of the evaluation report that follows this Statement of Basis.

Section VII

Table VII-B will be revised to reflect that:

- Part 7a.5 of Condition 23179 will be monitored per Part 14 of Condition 23179 for sulfur monitoring and calculation on a continuous basis.
- Part 10e of Condition 23179 will be monitored per Part 14 of Condition 23179 for sulfur monitoring and calculation on a continuous basis.
- Part B.2b of Condition 23181 will be monitored per Part B.4 of Condition 23181 for sulfur monitoring and calculation on a continuous basis.

Section VIII

Table VIII will be revised to reflect that:

- For SO₂ limits that the acceptable test method is EPA Conditional Test Method 013: Method 8A – Determination of Sulfuric Acid Vapor or Mist and Sulfur Dioxide Emissions using Ion Chromatography analysis.
- For District sulfuric acid mist limits that the acceptable test method is EPA Conditional Test Method 013: Method 8A – Determination of Sulfuric Acid Vapor or Mist and Sulfur Dioxide Emissions using Ion Chromatography analysis.

NSR Application 29172
ENGINEERING EVALUATION
Aire Liquide Large Industries US LP
Application: 29172
Plant: 17419

1380 San Pablo Avenue, Rodeo CA 94572

BACKGROUND

Air Liquide Large Industries US LP (Air Liquide) has submitted this application for a Change of Conditions of Condition # 23179 for the following source:

S-2 Hydrogen Plant Furnace

Air Liquide applied to amend Part 5e of the condition to change the sulfur dioxide (SO₂) concentration limit from 0.0012 pounds per million British thermal units (lb/MMBTU) to a fuel sulfur limit of 35 parts per million by volume (ppmv). Currently, Parts 14b and 17 of Condition # 23179 require a Continuous Emissions Monitor (CEM) and annual source testing, respectively, to determine compliance with the SO₂ limit. Air Liquide has requested that they be allowed a limit based on the sulfur content of the fuel which is easier to verify.

Permit History

In 2007, Air Liquide submitted a permit application to build a hydrogen plant at the Phillips 66 (formerly known as ConocoPhillips) refinery in Rodeo, California. It was part of the ConocoPhillips "Clean Fuels Expansion Project" (CFEP). The purpose of the CFEP project was to process heavy gas oil that the Phillips 66 refinery produces. The refinery needed more hydrogen than it could produce to process the heavy gas oil. As a result, Air Liquid would build a new hydrogen plant on site and retain ownership of the plant and operate it. However, the Phillips 66 refinery would use all of Air Liquide's output of hydrogen. Since it was part of the refinery, the two projects (CFEP and the Air Liquide hydrogen plant) were considered one project for the purposes of New Source Review and Major Facility Review. Because the Air Liquide hydrogen plant was to be owned and operated by Air Liquide, it was assigned a separate plant number (#17419) and separate application number (# 13678).

The hydrogen plant furnace was assigned source number, S-2, and was determined to be subject to BACT because it was estimated to emit more than 10 lbs per highest day of NO_x, SO₂, POC, CO, and PM₁₀. The following table lists the BACT limits for S-2. BACT for SO₂ was determined to be a total fuel sulfur content equal to or less than 35 ppmv, which was calculated to be equivalent to an emission factor of 0.0012 lb/MMBTU. The BACT limit for SO₂ was to be achieved through fuel selection, specifically, a fuel mix of up to 70% Pressure Swing Adsorption (PSA) off gas and 30% treated refinery fuel gas (RFG) or natural gas.

Pollutant	Concentration	Emission Factor, lb/MMbtu	Reference for BACT
NOx	5 ppmvd @ 3% O ₂	0.00658	*SCAQMD BACT
SO ₂	35 ppmv total S in RFG/NG	0.0012	BAAQMD BACT (PSA/fuel gas Mix)
PM10	3.8 lb/MMcf (natural gas)	0.0037	AP42 Section 1.4, Natural Gas Combustion (apply 1/2 value since 50% H ₂ in fuel)
POC	2.75 lb/MMcf (natural gas)	0.0027	AP42 Section 1.4, Natural Gas Combustion (apply 1/2 value since 50% H ₂ in fuel)
CO	10 ppmvd @ 3% O ₂	0.0080	SCAQMD BACT

*South Coast Air Quality Management District

The PSA off gas is a byproduct of hydrogen purification from the Hydrogen Plant (S-1). Levels of H₂S in the PSA off gas are negligible because H₂S is removed in the Hydrogen Plant's two scrubbers.

The following are the emission factor calculations for the 0.0012 lb SO₂/MMBTu limit, which is equivalent to the SO₂ BACT limit of 35 ppmv of total sulfur in the fuel fired at S-2:

Emission Factor Equation

$$\text{EF (lb/MMBTU)} = \frac{\text{MW of sulfur (lb/lb-mole)} \times \text{sulfur content (ppm)} \times \text{ratio of SO}_2\text{/S}}{\text{Heat content of fuel (BTU/scf)} \times (1 \text{ MM BTU}/10^6 \text{ BTU}) \times \text{Ideal gas volume (scf/lb-mole)}}$$

Emission Factor for RFG

$$\text{EF for RFG} = \frac{(32 \text{ lb/lb-mole}) \times (35 \times 10^{-6}) \times (64 \text{ lb/lb-mole}/32 \text{ lb/lb-mole})}{(1,340 \text{ BTU/scf}) \times (1 \text{ MM BTU}/10^6 \text{ BTU}) \times (379 \text{ scf/lb-mole})} = 0.004 \text{ lb/MMBTU}$$

Emission Factor for Fuel Mix (70% PSA off and 30% refinery fuel gas (RFG))

$$\text{EF for fuel mix} = 70\% \text{ EF for PSA} + 30\% \text{ EF for RFG} = 70\% (0) + 30\% (0.004 \text{ lb/MMBTU}) = 0.0012 \text{ lb/MMBTU}$$

The Authority to Construct for Application # 13678 for S-2 Hydrogen Plant Furnace included Permit Condition # 23179. Part 14a of Condition # 23179, originally required the facility to test the RFG for total sulfur content at least once per 8 hour shift (3 times per calendar day); there was no requirement to test the PSA off gas or the PG&E natural gas. Part 14b of this condition also provided the facility with an option to install a CEM for SO₂ emissions. Part 14b had stated that if the facility elected to install a SO₂ CEM, then the total sulfur testing in Part 14a was not required to be performed. After the facility elected to install a SO₂ CEM, Permit Condition # 23179 was amended to require the use of this CEM for compliance purposes, and the RFG sulfur monitoring requirements were deleted.

Proposed Change of Conditions

The proposed change of conditions of reinstate Part 14 of Condition # 23179 to require Air Liquide to use continuous total sulfur testing to verify compliance with the 35 ppmv sulfur BACT limit. The use of the SO₂ CEM will be deleted. However, annual source testing of the SO₂ 0.0012 lb/MMBTu limit will continue to be required in Part 17 for third party verification of compliance of the SO₂ limit. District source testing staff has indicated that recommended use of EPA's Conditional Test Method (CTM) 013: Method 8A, using ion chromatography analysis will measure with accuracy compliance with the limit of 0.0012 lb/MMBTU.

EMISSIONS SUMMARY

The proposed Change of Conditions will not affect emissions and is an administrative change of conditions. The permit conditions limiting the hourly (Part 7a) and annual emissions (Part 10) of SO₂ will not be changed. The total sulfur content of any refinery fuel to be used as fuel in S2 will be monitored on

a continuous basis to demonstrate compliance with the total sulfur limit (proposed Part 4 of Condition # 23179).

Compliance with the total sulfur limit is expected per the historical and expected continued blending of fuels (refinery fuel gas, natural gas, and pressure swing absorption off gas) and their respective sulfur contents.

Although natural gas and pressure swing absorption (PSA) off gas are also burned in the Hydrogen Plant Furnace, their sulfur content are consistently no more than 17 ppmv and non-detectable, respectively. Pacific Gas & Electric (PG&E) specifies that their natural gas contains no more than 17 ppmv of total sulfur. The PSA off gas is a byproduct of hydrogen purification. Any H₂S in the PSA off gas comes from the hydrogen unit feed. Levels of H₂S in the PSA off gas are negligible because H₂S is removed in the hydrogen unit's two scrubbers. H₂S is a poison to the hydrogen unit's catalyst beds. The scrubbers are maintained to ensure that no detectable amount of H₂S is detected in the PSA off gas.

Air Liquide has adjusted their original application estimation of the heat content of the refinery fuel gas that is burned in the Hydrogen Plant Furnace (S-2). The minimum heat content is 950 BTU/scf.

$$\text{EF for RFG} = \frac{(32 \text{ lb/lb-mole}) \times (35 \times 10^{-6}) \times (64 \text{ lb/lb-mole}/32 \text{ lb/lb-mole})}{(950 \text{ BTU/scf}) \times (1 \text{ MM BTU}/10^6 \text{ BTU}) \times (379 \text{ scf/lb-mole})} = 0.006 \text{ lb/MMBTU}$$

$$\text{EF for fuel mix} = 20\% \text{ EF for RFG} + 80\% \text{ EF for PSA} = 20\%(0.006 \text{ lb/BTU}) + 80\% (0) = 0.0012 \text{ lb/MMBTU}$$

The EPA has determined that PSA off gas, being inherently low in sulfur content meets the exemption requirement of 40 CFR 60.105(a)(4)(iv)(C) from sulfur monitoring. In addition, upon District request, Air Liquide had three samples of PSA off gas taken for sulfur compounds using ASTM D7652 method for analysis. No sulfur compounds were detected. The District agrees with the EPA that the PSA off gas is inherently low in sulfur content and that no further monitoring is required of the PSA off gas. In addition, because the natural gas is only used when RFG is unavailable and because the sulfur content of the natural gas is consistently lower than the RFG at no greater than 17 ppmv that no additional monitoring of the natural gas is required either.

STATEMENT OF COMPLIANCE

S-2 is subject to and in compliance with Regulation 9-10. The BACT requirements that S-2 is currently subject to indicated in the table above are more stringent than those of Regulation 9-10.

Best Available Control Technology (BACT) and Offsets

BACT and offsets are not triggered for this application because there is no change in emissions resulting from this change of conditions application.

New Source Performance Standards (NSPS)

S-2 is subject to and in compliance with 40 CFR 60 Subpart J which limits the H₂S concentration in the fuel gas burned at petroleum refineries (160 ppmv). The proposed 35 ppmv total sulfur limit is less than the limit specified in Subpart J.

California Environmental Quality Review (CEQA)

An Appendix H form has been completed by the applicant. A CEQA Notice of Exemption is being filed with Contra Costa County.

Public Notification, Schools

This facility is not located within 1,000 feet of the nearest school and therefore is not subject to the public notification requirements of Regulation 2-1-412.

Prevention of Significant Deterioration (PSD)

PSD is not triggered because there is no proposed change of emissions resulting from the proposed change of conditions.

PERMIT CONDITIONS

I recommend the following changes to Parts 4, 14, 16, 19, and 20 of Condition # 23719: [underlines indicate additions; strikethroughs indicate deletions]

CONDITION 23179

S2, Hydrogen Plant Furnace

1. S2 shall use only pressure swing adsorption (PSA) off gas, refinery fuel gas and pipeline quality natural gas as fuel. [Cumulative Increase]
2. Total fuel firing at S2 shall not exceed 9,636,000 MMBtu (HHV) over any consecutive 12-month period. [Cumulative Increase]
3. Total fuel firing at S2 shall not exceed 1,072 MMBtu (HHV) during any clock hour. [Cumulative Increase]
4. ~~Deleted Application 14738. The owner/operator shall ensure that the fuel mixture burned in S2 shall not exceed a total sulfur content of 35 parts by million by volume (ppmv).~~ [BACT]
5. The following emission concentration limits from S2 shall not be exceeded. These limits shall not apply during startup periods not exceeding 24 hours (120 hours when drying refractory or during the first startup following catalyst replacement) and shutdown periods not exceeding 24 hours. The District may approve other startup and shutdown durations.
 - a. NOx: 5 ppmv @ 3% oxygen, averaged over any clock hour [BACT]
 - b. CO: 10 ppmv @ 3% oxygen, averaged over any 1 hour period [BACT, 40 CFR 63.52(a)]
 - c. POC: 0.0027 lb/MMbtu, averaged over any 1 hour period [BACT]
 - d. PM10: 0.0037 lb/MMbtu, averaged over any 1 hour period [BACT]
 - e. SO2: 0.0012 lb/MMbtu, averaged over any 1 hour period [BACT]
6. *The following emission concentration limits from S2 shall not be exceeded.

NH3: 10 ppmv @ 3% oxygen (1 hr average) [Regulation 2, Rule 5]
- 7a. The following hourly mass emission limits from S2 shall not be exceeded. These limits shall not apply during startup periods not exceeding 24 hours (120 hours when drying refractory or during the first startup following catalyst replacement) and shutdown periods not exceeding 24 hours. The District may approve other startup and shutdown durations.
 1. NOx: 7.5 lb per clock hour [BACT]

2. CO: 9.1 lb per clock hour [BACT]
 3. POC: 3.5 lb per clock hour [BACT]
 4. PM10: 4.8 lb per clock hour [BACT]
 5. SO2: 1.5 lb per clock hour [BACT]
- 7b. The following hourly mass emission limit from S2 shall not be exceeded.
1. NOx: 50 lb per clock hour [BACT]
8. *The following hourly mass emission limit from S2 shall not be exceeded.
- a. NH3: 6.5 lb per clock hour
[Regulation 2, Rule 5]
9. The following hourly mass emission limit from S2 shall not be exceeded.
- a. Sulfuric acid mist: 0.098 lb per clock hour
[Regulation 2, Rule 5, PSD]
10. The following annual mass emission limits from S2 shall not be exceeded including periods of startup, shutdown, upset and malfunction:
- a. NOx: 28.1 tons per any consecutive 12 months [BACT, Cumulative Increase]
 - b. CO: 34.2 tons per any consecutive 12 months [BACT, Cumulative Increase]
 - c. POC: 11.5 tons per any consecutive 12 months [BACT, Cumulative Increase]
 - d. PM10: 13.8 tons per any consecutive 12 months [BACT, Cumulative Increase]
 - e. SO2: 5.0 tons per any consecutive 12 months [BACT, Cumulative Increase]
11. *The following annual mass emission limits from S2 shall not be exceeded including periods of startup, shutdown, upset and malfunction.
- a. NH3: 48,200 lb per any consecutive 12 months
[Regulation 2, Rule 5]
12. The following annual mass emission limits from S2 shall not be exceeded including periods of startup, shutdown, upset and malfunction.
- a. Sulfuric acid mist: 860 lb per any consecutive 12 months
[2-1-305, Regulation 2, Rule 5, PSD]
13. A1, SCR unit, shall abate the S2, Hydrogen Plant Furnace, at all times, with the following exceptions. Operation of A1 is not required for limited periods during startup and shutdown. S2 may operate without SCR abatement on a temporary basis for periods of planned or emergency maintenance. A District-approved NOx CEM shall monitor and record the S2 NOx emission rate whenever S2 operates without abatement. All emission limits applicable to S2 shall remain in effect even if it is not operated with SCR abatement. [BACT, Cumulative Increase]

~~14a. Deleted Application 14738.~~

- 14b. The owner/operator shall install a ~~CEM for SO2-District-approved continuous analyzer for total sulfur in the refinery fuel gas to be combusted~~ at the S2, Hydrogen Plant Furnace ~~to determine compliance with~~, stack. ~~The monitor shall comply with BAAQMD Manual of Procedures, Volume V, and 40 CFR 60.107a(a)(1). The monitor shall be used to determine compliance with any SO2 limits in 40 CFR 60, Subpart Ja, the lb/MMBtu limit in part 5e the~~

total sulfur limit in part 4, the hourly limit in part 7a, and the annual limits in part 10 and Condition 23181, part B.2. [BACT]

15. Deleted Application 14738.

16. ~~Deleted~~ To verify compliance with Part 5e, the owner/operator shall estimate the SO₂ emission concentration in lb/MMbtu on an hourly basis using the following information:

a. Sulfur content of refinery fuel gas (required in Part 14)

b. Sulfur content of natural gas

c. Sulfur content of PSA off gas

d. Heat Content of refinery fuel gas

e. Heat Content of natural gas

f. Heat Content of PSA off gas

g. Percentage of Refinery Fuel or natural gas in fuel mixture

h. Percentage of PSA off gas in fuel mixture

i. Estimated SO₂ emission concentration (using following equation)

$$\text{EF for fuel} = \frac{[(32 \text{ lb/lb-mole})(S)(64 \text{ lb/lb-mole}/32 \text{ lb/lb-mole})]}{[(\text{HHV})(1 \text{ MM BTU}/1\text{E}6 \text{ BTU})(379 \text{ scf/lb-mole})]}$$

$$\text{EF for fuel mix} = R \times (\text{EF for RFG or natural gas}) + T \times (\text{EF for PSA off gas})$$

Where S = sulfur content of gas (refinery fuel, natural gas, or PSA)

HHV = heat content of gas (refinery fuel, natural gas, or PSA)

R = percentage of refinery fuel gas or natural gas/total fuel

T = percentage of PSA off gas/total fuel

[BACT]

~~16a. Deleted~~

17. On an annual basis, the owner/operator shall conduct District-approved source tests to determine compliance with the limits in Parts 5c, 5d, 5e, 7a.3, 7a.4, 7a.5, and 9 for POC, PM10, SO₂, and sulfuric acid mist. The owner/operator shall conduct the source tests in accordance with Part 18. The owner/operator shall submit the source test results to the District source test manager and the District Director of Compliance and Enforcement no later than 60 days after the source test. [BACT, Cumulative Increase, PSD, Regulation 2, Rule 5]

*17a. On an annual basis, the owner/operator shall conduct District-approved source tests to determine compliance with the limits in Parts 6, 8, and 21 for NH₃. The owner/operator shall conduct the source tests in accordance with Part 18. The owner/operator shall submit the source test results to the District source test manager and the District Director of Compliance and Enforcement no later than 60 days after the source test. [Regulation 2, Rule 5]

18. The owner/operator shall submit protocols for all source test procedures to the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emissions monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. [BACT, Cumulative Increase, PSD, Regulation 2, Rule 5]

19. The following instruments shall be installed and maintained to demonstrate compliance with Parts 5a, 5b, 7a, 7b, ~~9a and 9b~~, BAAQMD Regulation 1-520 and 40 CFR 63.52:

- continuous NO_x analyzer/recorder

- b. continuous CO analyzer/recorder
- c. continuous O2 or CO2 analyzer/recorder
- d. continuous ~~SO2 analyzer/recorder~~ total sulfur analyzer

The instruments shall operate at all times of operation of S2 including start-up, shutdown, upset, and malfunction, except as allowed by BAAQMD Regulation 1-522, BAAQMD Manual of Procedures, Volume V. If necessary to comply with this requirement, the owner/operator shall install dual-span monitors.

[1-520, BACT, Cumulative Increase, 40 CFR 63.52(a)]

20. The owner/operator shall equip S2 with District-approved continuous fuel flow monitors and recorders on each fuel in order to determine fuel consumption. The owner/operator shall install, operate, maintain, and calibrate heating value analyzers and recorders for each fuel, except natural gas, to accurately measure the HHV of each fuel. ~~The deadline for installation and calibration of the heating value analyzer for the PSA gas shall be 9 months after the date of issuance of the Major Facility Review permit pursuant to Application-14738. Parametric monitors as defined in Regulation 1-238 are not acceptable.~~ The fuel flow monitors and heating value analyzers shall be operated, maintained, and calibrated in accordance with the manufacturer's specifications. The owner/operator shall keep continuous fuel flow records for at least five years from the date of the record and shall make these records available to the District upon request. [Cumulative Increase]

- *21. Ammonia (NH3) emission concentrations at the hydrogen plant stack shall not exceed 10 ppmv, on a dry basis, corrected to 3% O2, on a clock hour basis. This ammonia emission concentration shall be verified by annual source test required in part 17a of this condition. If the APCO determines that a reliable ammonia concentration monitor has become available, the APCO may require installation of an ammonia CEM at S2, Hydrogen Plant Furnace. (Regulation 2, Rule 5)

- *22. The owner/operator shall operate and maintain a continuous flow monitor (during all hours of operation including start-up and shutdown periods) for the ammonia solution injection rate. The owner/operator shall record the ammonia solution injection rate every 15 minutes (excluding normal calibration periods) and shall summarize the ammonia solution injection rate for each clock hour. (Regulation 2, Rule 5)

- *23. Compliance with annual ammonia limit: Within 60 days of start-up of the hydrogen plant furnace, the owner/operator shall conduct a District-approved source test on at the hydrogen plant stack to determine the corrected ammonia emission concentration to determine compliance with part 21. Source testing shall be repeated on an annual basis thereafter. Compliance with the annual limit in part 11 shall be determined by multiplying the hourly rate determined in the annual source test by the clock hours of operation. Compliance shall be determined for each 12-month period within 30 days of the end of each calendar month.

The owner/operator shall also calculate the emissions for each consecutive 3-month period within 30 days of the end of each calendar month. If the calculation determines that emissions of ammonia are greater than 12,050 lb for any 3-month period, the owner/operator shall perform a source test every quarter. In this case, the owner/operator shall use the hourly rate determined in the source test for calculation of the emissions starting on the date of the source test until the date of the next source test. The owner/operator may lower the frequency to annually after 4 consecutive tests below 5.5 lb ammonia per hour or after 4

consecutive quarters under 12,050 lb ammonia per quarter. Source test results shall be submitted to the District within 45 days of conducting the tests. (Regulation 2, Rule 5)

TITLE V PERMIT

This facility is a Major Facility with a Title V permit. The changes to the Title V permit to incorporate the Change of Conditions of Condition # 23179 are included in Appendix A of this evaluation.

RECOMMENDATION

I recommend the Change of Conditions of Condition # 23179 indicated in the prior section.

Carol Lee
Supervising Air Quality Engineer

Date

Appendix A

In addition to the Change of Condition of Condition # 23179 indicated in Permit Conditions Section of Evaluation Report to be made in Section VI, the proposed changes to Tables IV, VII, and VIII of the Title V permit for Air Liquide (Plant # B7419) are provided below.

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 1	General Provisions and Definitions (5/04/11)		
1-501	Sampling Facilities	Y	
1-520	Continuous Emission Monitoring	Y	
1-520.1	NOx, O2 monitors for steam generators with capacity of 250 MMBtu/hr or more	Y	
1-521	Monitoring May Be Required	Y	
1-522	Continuous Emission Monitoring and Recordkeeping Procedures		
1-522.4	reporting of inoperative CEMs	Y	
1-522.5	CEM calibration requirements	Y	
1-522.6	CEM accuracy requirements	Y	
1-522.7	emission limit exceedance reporting requirements	N	
1-522.8	monitoring data submittal requirements	Y	
1-522.9	recordkeeping requirements	Y	
1-522.10	Regulation 1-521 monitors shall meet requirements specified by District	Y	
1-523	Parametric Monitoring and Recordkeeping Procedures	N	
1-523.1	Parametric monitor periods of inoperation	Y	
1-523.2	Limits on periods of inoperation	Y	
1-523.3	Reports of Violations	N	
1-523.4	Records	Y	
1-523.5	Maintenance and calibration	N	
1-602	Area and Continuous Monitoring Requirements	N	
SIP Regulation 1	PROVISIONS NO LONGER IN CURRENT RULE General Provisions and Definitions (6/28/99)		
1-522	Continuous Emission Monitoring and Recordkeeping Procedures	Y	
1-522.7	emission limit exceedance reporting requirements	Y	
1-523	Parametric Monitoring and Recordkeeping Procedures	Y	
1-523.3	Reports of Violations	Y	
BAAQMD	Particulate Matter, General Requirements (12/5/07)		

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Regulation 6, Rule 1			
6-1-301	Ringelmann #1 Limitation	N	
6-1-305	Visible Particles	N	
6-1-310	Particulate Weight Limitation	N	
6-1-310.3	Particulate Weight Limitation	N	
6-1-501	Sampling Facilities and Instruments Required	N	
SIP Regulation 6	Particulate Matter and Visible Emissions (9/4/98)		
6-301	Ringelmann #1 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-310.3	Particulate Weight Limitation	Y	
6-501	Sampling Facilities and Instruments Required	Y	
BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)		
9-1-110	Conditional Exemption, Area Monitoring	Y	
9-1-110.1	comply with monitoring, records and reporting requirements of 1-510, 1-1-530, 1-1-540, 1-1-542, 1-1-543, 1-1-544	Y	
9-1-110.2	comply with 9-1-301 ground level SO2 concentration limits	Y	
9-1-301	Limitations on Ground level Concentrations	Y	
9-1-501	Area Monitoring Requirements (Regulations 1-510, 1-530, 1-540, 1-542, 1-543, 1-544)	Y	
9-1-604	Ground Level Monitoring	Y	
BAAQMD Regulation 9, Rule 3	Inorganic Gaseous Pollutants, Nitrogen Oxides From Heat Transfer Operations (3/17/82)		
9-3-303	New or Modified Heat Transfer Operation Limits	Y	
BAAQMD Manual of Procedures, Volume V	Continuous Emission Monitoring Policy and Procedures (1/20/82)	Y	
40 CFR 60 Subpart A	General Provisions (03/16/1994)		

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.1	Applicability	Y	
60.2	Definitions	Y	
60.3	Units and abbreviations	Y	
60.5	Determination of construction or modification	Y	
60.6	Review of plans	Y	
60.7	Notification and record keeping	Y	
60.8	Performance tests	Y	
60.9	Availability of information	Y	
60.10	State authority	Y	
60.11	Compliance with standards and maintenance requirements	Y	
60.12	Circumvention	Y	
60.13	Monitoring requirements	Y	
60.13(a)	Applicability of monitoring section	Y	
60.13(b)	Installation of monitoring system prior to tests	Y	
60.13(c)	Performance evaluation of CEMs	Y	
60.13(d)(1)	Daily Calibration Checks	Y	
60.13(e)	Continuous operation	Y	
60.13(f)	Representative measurements	Y	
60.13(g)	Combined effluents	Y	
60.13(h)	Reduction of data	Y	
60.14	Modifications	Y	
60.15	Reconstruction	Y	
60.19	General notification and reporting requirements	Y	
NSPS 40 CFR 60 Subpart Ja	Standards of Performance for Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After May 14, 2007 (6/24/08)		
60.100a	Applicability, designation of affected facility, and reconstruction	Y	
60.100a(a)	Provisions of this subpart apply to fuel gas combustion devices (including process heaters).	Y	
60.100a(b)	Applicability to affected facilities which construction, modification, or reconstruction commenced after 5/14/07	Y	
60.101a	Definitions	Y	
60.102a	Emissions limitations	Y	
60.102a(a)	Compliance within 60 days of achieving maximum production rate or 180 days after initial startup	Y	

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.102a(g)	Fuel gas combustion device emissions limitations	Y	
60.102a(g)(1)(i)	SO ₂ limitation of 20 ppmv@0%O ₂ 3-hour average SO ₂ limitation of 8 ppmv@0% O ₂ 365 successive calendar day rolling average	Y	
60.102a(g)(2)(ii)	Forced Draft Process Heater NO _x limitation of 60 ppmv@0% O ₂ 30-day rolling average; or NO _x limitation of 0.060 lb/MMBtu 30-day rolling average	Y	
60.103a	Work Practice Standards	Y	
60.103a(c) (2)	Root cause analysis and corrective action analysis required for a fuel gas combustion device, for each exceedance of an applicable short-term emissions limit in §60.102a(g)(1) if the SO ₂ discharge to the atmosphere is 227 kg (500 lb) greater than the amount that would have been emitted if the emissions limits had been met during one or more consecutive periods of excess emissions or any 24-hour period, whichever is shorter.	Y	
60.103a(d)	Requirement to complete root cause analysis and corrective action analysis as soon as possible, but no later than 45 days after the event. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in (d)(1) through (5) of this section.	Y	
60.103a(e)	Implementation of identified corrective actions.	Y	
60.104a	Performance tests	Y	
60.104a(a)	Initial performance test	Y	
60.104a(c)	Allowable performance tests	Y	
60.104a(i)	Test methods for combustion devices	Y	
60.107a	Monitoring of emissions and operations for fuel gas combustion devices and flares	Y	
60.107a(a)	Fuel gas combustion devices subject to SO ₂ or H ₂ S limit		
60.107a(a)(1)	Requirement for SO ₂ Continuous Emission Monitor for fuel gas combustion devices electing to comply with SO ₂ limit in 60.102a(g)(1)(i).	Y	
60.107a(c)	Requirement for NO _x Continuous Emission Monitor for process heaters complying with NO _x concentration based limit in 60.102a(g)(2).	Y	
60.107a(i)	Excess emissions	Y	
60.107a(i)(1)	Excess SO ₂ emissions	Y	
60.107a(i)(3)	Excess NO _x emissions	Y	

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.108a	Recordkeeping and reporting requirements.	Y	
60.108a(a)	Compliance with notification, recordkeeping, and reporting requirements in §60.7 and other requirements as specified in this section.	Y	
60.108a(b)	Notification to Administrator of monitoring option	Y	
60.108a(c)	Required Records	Y	
60.108a(c)(6)	Records of discharges greater than 500 lb SO ₂ in excess of the allowable limits from a fuel gas combustion device.	Y	
60.108a(d)	Excess emissions reports	Y	
40 CFR 63 Subpart A	NESHAPs for Source Categories - General Provisions (8/11/2011)		
63.1	Applicability	Y	
63.2	Definitions	Y	
63.3	Units and abbreviations	Y	
63.4	Prohibited activities and circumvention	Y	
63.5	Preconstruction review and notification requirements	Y	
63.6	Compliance with standards and maintenance requirements	Y	
63.7	Performance test requirements	Y	
63.8	Monitoring requirements	Y	
63.9	Notification requirements	Y	
63.10	Recordkeeping and reporting requirements	Y	
63.12	State Authority and Delegations	Y	
63.13	Addresses of EPA Regional Offices	Y	
63.14	Incorporation by Reference	Y	
63.15	Availability of Information and confidentiality	Y	
63.16	Performance Track Provisions	Y	
40 CFR 63, Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters		
63.7480	Purpose of subpart	Y	
63.7485	Am I subject to this subpart?	Y	
63.7490	What is the affected source of this subpart?	Y	
63.7499	What are the subcategories of boilers and process heaters?	Y	
63.7495	When do I have to comply with this subpart?	Y	

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
63.7495(b)	Existing process heater must comply with this subpart no later than January 31, 2016.	Y	
63.7500	What emission limitations, work practice standards, and operating limits must I meet?	Y	
63.7500(e)	Process Heaters designed to burn gas 1 fuels subcategory are not subject to the emissions limits in Tables 1 and 2 or 11 through 13 to this subpart, or operating limits in Table 4 to this subpart.	Y	
63.7510	What are my initial compliance requirements and by what date must I conduct them?	Y	
63.7510(e)	Initial tune-up following procedures in 63.7540(a)(10)(i) through (vi) must be completed by compliance date in 63.7495. One-time energy assessment specified in Table 3 to this subpart must be completed no later than compliance date in 63.7495.	Y	
63.7521	What fuel analyses, fuel specification, and procedures must I use?	Y	
63.7530	How do I demonstrate initial compliance with the emission limitations, fuel specifications, and work practice standards?	Y	
63.7530(e)	Notification of Compliance Status must include a signed certification that either the energy assessment was completed according to Table 3 to this subpart, or that the maximum number of on-site technical hours specified in the definition of energy assessment applicable to the facility has been expended.	Y	
63.7540	How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?	Y	
63.7540(a)(10)	Annual tune-up requirement for process heater with a capacity of 10 million Btu per hour or greater. Tune-up must follow procedure as specified in paragraphs (a)(10)(i) through (vi) of this section.	Y	
63.7545	What notifications must I submit and when?	Y	
63.7550	What reports must I submit and when?	Y	
63.7555	What records must I keep?	Y	
63.7560	In what form and how long must I keep my records?	Y	
63.7565	What parts of the General Provisions apply to me?	Y	
63.7575	What definitions apply to this subpart?	Y	
Table 3	Work Practice Standards	Y	
Table 6	Fuel Analysis Requirements	Y	

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Table 9	Reporting Requirements	Y	
Table 10	Applicability of General Provisions to Subpart DDDDD	Y	
BAAQMD Condition 23179			
Part 1	Limits on fuel types [Cumulative increase]	Y	
Part 2	Annual heat input limit [Cumulative increase]	Y	
Part 3	Hourly heat input limit [Cumulative increase]	Y	
Part 4	Deleted Application 14738 Fuel sulfur limits [BACT]	Y	
Part 5	Concentration and mass emission limits	Y	
Part 5a	NOx concentration limit [BACT]	Y	
Part 5b	CO concentration limit [BACT, 40 CFR 63.52(a)]	Y	
Part 5c	POC mass emission limit [BACT]	Y	
Part 5d	PM10 mass emission limit [BACT]	Y	
Part 5e	SO2 mass emission limit [BACT]	Y	
Part 6	NH3 concentration limit [Regulation 2, Rule 5]	N	
Part 7a	Hourly mass emission limits [BACT]	Y	
Part 7a.1	Hourly NOx limit [BACT]	Y	
Part 7a.2	Hourly CO limit [BACT]	Y	
Part 7a.3	Hourly POC limit [BACT]	Y	
Part 7a.4	Hourly PM10 limit [BACT]	Y	
Part 7a.5	Hourly SO2 limit [BACT]	Y	
Part 7b.1	Hourly NOx limit during startup, shutdown, drying refractory, or following catalyst replacement [BACT]	Y	
Part 8	Hourly ammonia limit [Regulation 2, Rule 5]	N	
Part 9	Hourly sulfuric acid mist limit [Regulation 2, Rule 5, PSD]	Y	
Part 10	Annual mass emission limits [BACT]	Y	
Part 10a	Annual NOx mass emission limit [BACT]	Y	
Part 10b	Annual CO mass emission limit [BACT]	Y	
Part 10c	Annual POC mass emission limit [BACT]	Y	
Part 10d	Annual PM10 mass emission limit [BACT]	Y	
Part 10e	Annual SO2 mass emission limit [BACT]	Y	
Part 11	Annual NH3 mass emission limit [Regulation 2, Rule 5]	N	
Part 12	Annual sulfuric acid mist limit [2-1-305, Regulation 2, Rule 5, PSD]	Y	

Table IV - B
Source-specific Applicable Requirements
S2 – HYDROGEN PLANT FURNACE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Part 13	Requirement for abatement with SCR [BACT, Cumulative increase]	Y	
Part 14b	Alternative monitoring with SO₂ CEM [40 CFR 60.107(a)(1)-Cumulative Increase] Requirement for continuous fuel sulfur analyzer [BACT]	Y	
Part 15	Deleted Application 14738		
Part 16	SO ₂ emission concentration emission calculation procedure [BACT]	Y	
Part 17	Annual source tests [BACT, Cumulative Increase, PSD, Regulation 2, Rule 5]	Y	
Part 17a	Annual source tests for ammonia [Regulation 2, Rule 5]	N	
Part 18	Submittal of source test protocols [BACT, Cumulative Increase, PSD, Regulation 2, Rule 5]	Y	
Part 19	Requirements for NO _x , CO, and O ₂ or CO ₂ CEMS [1-520, BACT, Cumulative Increase, 40 CFR 63.52(a)]	Y	
Part 20	Fuel flow monitoring [Cumulative increase]	Y	
Part 21	Concentration limit and monitoring for ammonia [Regulation 2, Rule 5]	N	
Part 22	Monitoring of ammonia injection [Regulation 2, Rule 5]	N	
Part 23	Compliance with annual ammonia limit [Regulation 2, Rule 5]	N	
BAAQMD Condition 23181			
Part B.1	Applicability of mass emission limits	Y	
Part B.2	Annual Mass Emission Limits		
Part B.2a	Annual NO _x limit [Cumulative Increase, 2-1-403]	Y	
Part B.2b	Annual SO ₂ limit [Cumulative Increase, 2-1-403]	Y	
Part B.2c	Annual PM ₁₀ limit [Cumulative Increase, 2-1-403]	Y	
Part B.2d	Annual POC limit [Cumulative Increase, 2-1-403]	Y	
Part B.2e	Annual CO limit [Cumulative Increase, 2-1-403]	Y	
Part B.2f	Annual Sulfuric acid mist limit [PSD]	Y	
Part B.2g	Annual Ammonia limit [Regulation 2, Rule 5]	N	
Part B.3	Daily limit for sulfuric acid mist	Y	
Part B.4	Calculation procedures for mass emission limits	Y	
Part B.5	Contingency for exceedances of mass emission limits	Y	
Part B.6	PM ₁₀ limit for sources S45, S434, and S1010 at Facility A0016 and sources S2 and S3 at Facility B7419.	Y	

Table VII - B
Applicable Limits and Compliance Monitoring Requirements
S2 – HYDROGEN PLANT FURNACE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Heat input	BAAQMD Cond# 23179, part 2	Y		9,636,000 MMBtu (HHV) in any 12 months	BAAQMD Cond# 23179, part 20	C	Fuel meters, fuel analyzers, and records
Heat input	BAAQMD Cond# 23179, part 3	Y		1,072 MMBtu (HHV) during any clock hour	BAAQMD Cond# 23179, part 20	C	Fuel meters, fuel analyzers, and records
NOx	BAAQMD 9-3-303	Y		125 ppmv	BAAQMD Cond# 23179, part 13	C	CEM
NOx	BAAQMD Cond# 23179, part 5a	Y		5 ppmv @ 3% O2 on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 13	C	CEM
NOx	BAAQMD Cond# 23179, part 7a.1	Y		7.5 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 13	C	CEM
NOx	BAAQMD Cond# 23179, part 7b.1	Y		50 lb per clock hour	BAAQMD Cond# 23179, part 13	C	CEM
NOx	BAAQMD Cond# 23179, part 10a	Y		28.1 tons per any consecutive 12 months	BAAQMD Cond# 23179, part 13	C	CEM and calculations
NOx	BAAQMD Cond# 23181, part B.2a	Y		30.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A	CEM, annual source tests, and calculations

Table VII - B
Applicable Limits and Compliance Monitoring Requirements
S2 – HYDROGEN PLANT FURNACE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NOx	40 CFR 60.102a(g)(2)(ii)	Y		60 ppmv, dry, @ 0% O2 on a 30-day rolling average basis	40 CFR 60.107a(c)	C	CEM
CO	BAAQMD Cond# 23179, part 5b			10 ppmv @ 3% O2 on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 19b	C	CEM
CO	BAAQMD Cond# 23179, part 7a.2	Y		9.1 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 19b	C	CEM
CO	BAAQMD Cond# 23179, part 10b	Y		34.2 tons per any consecutive 12 months	BAAQMD Cond# 23179, part 19b	C	CEM and calculations
CO	BAAQMD Cond# 23181, part B.2e	Y		46.2 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A	CO CEM, annual source tests, and calculations
SO2	BAAQMD Cond# 23179, part 5e	Y		0.0012 lb/MMbtu on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 17	P/A	Source test
SO2	BAAQMD Cond# 23179, part 7a.5	Y		1.5 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 17 14	P/A C	Source test , <u>Sulfur monitoring and calculations</u>
SO2	BAAQMD Cond# 23179, part 10e	E		5.0 tons per any consecutive 12 months	BAAQMD Cond# 23179, part 17 14	P/A C	Source test , <u>Sulfur monitoring and calculations</u>

Table VII - B
Applicable Limits and Compliance Monitoring Requirements
S2 – HYDROGEN PLANT FURNACE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO ₂	BAAQMD Cond# 23181, part B.2b	Y		5.0 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A C	Sulfur monitoring or CEM and calculations
SO ₂	40 CFR 60.102a(g) (1)(i)	Y		20 ppm _v @ 0% O ₂ on a rolling 3 clock hour basis; 8 ppm _v @ 0% O ₂ on a rolling 365 calendar day basis	40 CFR 60.107a(a)(1)	C	CEM Sulfur monitoring and calculations
Sulfuric acid mist	BAAQMD Cond# 23179, part 9	Y		0.098 lb/clock hour	BAAQMD Cond# 23179, part 17	P/A	Source test
Sulfuric acid mist	BAAQMD Cond# 23179, part 12	Y		860 lb per any consecutive 12 months	BAAQMD Cond# 23179, part 17	P/A	annual source tests, and calculations
Sulfuric acid mist	BAAQMD Cond# 23181, part B.2f	Y		0.43 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A	annual source tests, and calculations
Sulfuric acid mist	BAAQMD Cond# 23181, part B.3	Y		2.35 lb/day for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A	annual source tests and calculations
POC	BAAQMD Cond# 23179, part 5c	Y		0.0027 lb/MMbtu on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 17	P/A	Source test
POC	BAAQMD Cond# 23179, part 7a.3	Y		3.5 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 17	P/A	Source test

Table VII - B
Applicable Limits and Compliance Monitoring Requirements
S2 – HYDROGEN PLANT FURNACE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
POC	BAAQMD Cond# 23179, part 10c	Y		11.5 tons per any consecutive 12 months	BAAQMD Cond# 23179, part 17 and 28181, part B.4.f	P/A	Source test
POC	BAAQMD Cond# 23181, part B.2d	Y		13.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A	Annual source tests, inspection data, and calculations
NH3	BAAQMD Cond# 23179, parts 6 and 21	N		10 ppmv @ 3% O2, 1-hr average	BAAQMD Cond# 23179, part 17a	P/A	Source test
NH3		N		None	BAAQMD Cond# 23179, part 22	C	Monitoring of ammonia injection rates
NH3	BAAQMD Cond# 23179, part 8	N		6.5 lb/clock hour	BAAQMD Cond# 23179, part 17a	P/A	Source test
NH3	BAAQMD Cond# 23179, part 11	N		48,200 lb per any consecutive 12 months	BAAQMD Cond# 23179, part 23	P/A or 4 times per year	annual or quarterly source tests and calculations
NH3	BAAQMD Cond# 23181, part B.2g	N		26.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A	Source tests and calculations
O2		Y		No limit	BAAQMD 1-520.1	C	O2 Monitor

Table VII - B
Applicable Limits and Compliance Monitoring Requirements
S2 – HYDROGEN PLANT FURNACE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD 6-1-301	N		Ringelmann 1 for no more than 3 minutes in any hour	None	N	None
Opacity	SIP 6-301	Y		Ringelmann 1 for no more than 3 minutes in any hour	None	N	None
FP	BAAQMD 6-1-305	N		Prohibition of nuisance	None	N	None
FP	SIP 6-305	Y		Prohibition of nuisance	None	N	None
FP	BAAQMD 6-1-310.3	N		0.15 grain/dscf @ 6% O2	None for gaseous fired sources	N	None
FP	SIP 6-310.3	Y		0.15 grain/dscf @ 6% O2	None for gaseous fired sources	N	None
PM10	BAAQMD Cond# 23179, part 5d			0.037 lb/MMbtu on a clock hour basis except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 17	P/A	Source test
PM10	BAAQMD Cond# 23179, part 7a.4	Y		4.8 lb/clock hour except during startup, shutdown, or drying of refractory	BAAQMD Cond# 23179, part 17	P/A	Source test
PM10	BAAQMD Cond# 23179, part 10d	Y		13.8 tons per any consecutive 12 months	BAAQMD Cond# 23179, part 17, and part 28181, part B.4.f	P/A	Source test and calculations
PM10	BAAQMD Cond# 23181, part B.2c	Y		13.8 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part B.4	P/A	Annual source test at S2 and calculations

**Table VIII
Test Methods**

Applicable Requirement	Description of Requirement	Acceptable Test Methods
BAAQMD 6-1-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions, EPA Method 9 (40 CFR Part 60 Appendix A)
SIP 6-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions, EPA Method 9 (40 CFR Part 60 Appendix A)
BAAQMD 6-1-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulates Sampling, EPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources, or ARB Method 5, Determination of Particulate Matter from Stationary Sources
SIP 6-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulates Sampling, EPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources, or ARB Method 5, Determination of Particulate Matter from Stationary Sources
BAAQMD 6-1-310.3	Particulate Weight Limitation for Heat Transfer Operations	Manual of Procedures, Volume IV, ST-15, Particulates Sampling, or EPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources, or ARB Method 5, Determination of Particulate Matter from Stationary Sources
SIP 6-310.3	Particulate Weight Limitation for Heat Transfer Operations	Manual of Procedures, Volume IV, ST-15, Particulates Sampling, EPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources, or ARB Method 5, Determination of Particulate Matter from Stationary Sources
BAAQMD 6-1-311	General Operations	Manual of Procedures, Volume IV, ST-15, Particulates Sampling, USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources, or ARB Method 5, Determination of Particulate Matter from Stationary Sources
SIP 6-311	General Operations	Manual of Procedures, Volume IV, ST-15, Particulates Sampling, USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources, or ARB Method 5, Determination of Particulate Matter from Stationary Sources
BAAQMD Regulation 8-2-301	Miscellaneous Operation Emission Limit	Manual of Procedures, Volume IV, ST-7 or ST-32; or EPA Method 25 or 25A

**Table VIII
Test Methods**

Applicable Requirement	Description of Requirement	Acceptable Test Methods
BAAQMD Regulation 8-18-301, 8-18-302, 8-18-303, 8-18-304, 8-18-305	Leak inspection procedures	EPA reference method 21 (40 CFR Part 60, Appendix A), Determination of Volatile Organic Compound Leaks
9-1-301	Ground Level Monitoring	Manual of Procedures, Volume VI, Section 1, Area Monitoring
9-2-301	Ground Level Monitoring	Manual of Procedures, Volume VI, Section 1, Area Monitoring
BAAQMD 9-3-303	New or Modified Heat Transfer Operation Limits	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling, ARB Method 100, Procedures for Continuous Gaseous Emission Stack Sampling, or EPA Method 7E (40 CFR Part 60 Appendix A)
NSPS 40 CFR 60 Subpart Ja	Standards of Performance for Petroleum Refineries (6/24/08)	
NOx limits		EPA Method 7E (40 CFR Part 60 Appendix A), and/or Performance Specification 2 – Specifications and Test Procedures for SO ₂ and NO _x Continuous Emission Monitoring Systems in Stationary Sources
SO ₂ limits		<u>EPA Conditional Test Method 013: Method 8A – Determination of Sulfuric Acid Vapor or Mist and Sulfur Dioxide Emission, using Ion chromatography analysis.</u> <u>EPA Method 6C (40 CFR Part 60 Appendix A), and/or Performance Specification 2— Specifications and Test Procedures for SO₂ and NO_x Continuous Emission Monitoring Systems in Stationary Sources</u>
H ₂ S limits		Method 11, Determination of Hydrogen Sulfide Content of Fuel Gas Streams in Petroleum Refineries
NSPS Part 60 Subpart VV	Standards of Performance for Equipment Leaks (Fugitive Emission Sources) (10/18/83)	

**Table VIII
Test Methods**

Applicable Requirement	Description of Requirement	Acceptable Test Methods
Subpart VV 40 CFR 60.482-2(b)(1), 60.482-7(b), 60.482-8(b), 60.482-10(g),	Leak inspection procedures	60 Subpart VV, 60.485(b): EPA reference method 21 (40 CFR Part 60, Appendix A), Determination of Volatile Organic Compound Leaks
Subpart VV 40 CFR 60.482-2(b)(2), 60.482-8(a),	Visual inspection	60 Subpart VV, 60.485(b)
Subpart VV 40 CFR 60.482-2(e), 60.482-4(a), 60.482-4(b), 60.482-7(f),	Leak inspection procedures	60 Subpart VV, 60.485(c): EPA reference method 21 (40 CFR Part 60, Appendix A), Determination of Volatile Organic Compound Leaks
Subpart VV 40 CFR 60.483 and BAAQMD 8-18-404.1	Leak inspection procedures	60 Subpart VV, 60.485(b): EPA reference method 21 (40 CFR Part 60, Appendix A), Determination of Volatile Organic Compound Leaks
District NOx Limits		Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling, ARB Method 100, Procedures for Continuous Gaseous Emission Stack Sampling, or EPA Method 7E (40 CFR Part 60 Appendix A)
District CO Limits		Manual of Procedures, Volume IV, ST-6, Carbon Monoxide, Continuous Sampling, ARB Method 100, Procedures for Continuous Gaseous Emission Stack Sampling, or EPA Method 10 (40 CFR Part 60 Appendix A)
District POC Limits		Manual of Procedures, Volume IV, ST-7, Non-Methane Organic Carbon Sampling, EPA Method 25 (40 CFR Part 60 Appendix A), EPA Method 25A (40 CFR Part 60, Appendix A)

**Table VIII
Test Methods**

Applicable Requirement	Description of Requirement	Acceptable Test Methods
District PM10 Limits		EPA Method 201A, Determination of PM10 and PM2.5 Emissions from Stationary Sources, plus EPA Method 202, Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources, or EPA Method 5, Determination of Particulate Matter from Stationary Sources, plus EPA Method 202 (subject to District approval)
District SO2 Limits		Manual of Procedures, Volume IV, ST-19A, Sulfur Dioxide, Continuous Sampling, ARB Method 100, Procedures for Continuous Gaseous Emission Stack Sampling, or EPA Method 6C (40 CFR Part 60 Appendix A)
<u>District Sulfuric Acid Mist Limits</u>		<u>EPA Conditional Test Method 013: Method 8A – Determination of Sulfuric Acid Vapor or Mist and Sulfur Dioxide Emission, using Ion chromatography analysis.</u>