Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Final

MAJOR FACILITY REVIEW PERMIT

Issued to:

Air Liquide Large Industries, US LP
Facility #B7419

Facility Address:
1391 San Pablo Avenue
Rodeo, CA 94572

Mailing Address:
1391 San Pablo Avenue
Rodeo, CA 94572

Responsible Official	**Facility Contact**
James J. Stonecipher	James J. Stonecipher
(510) 779-7852	(510) 779-7852

Type of Facility: Hydrogen Manufacture

Primary SIC: 2813

Product: Hydrogen

BAAQMD Engineering Division Contact:
Brenda Cabral

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Signed by Jim Karas for Jack P. Broadbent — March 9, 2012

Jack P. Broadbent, Executive Officer/Air Pollution Control Officer — Date

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I. STANDARD CONDITIONS

A. Administrative Requirements

The permit holder shall comply with all applicable requirements in the following regulations:

BAAQMD Regulation 1 - General Provisions and Definitions (as amended by the District Board on 7/9/08);

SIP Regulation 1 - General Provisions and Definitions (as approved by EPA through 6/28/99);

BAAQMD Regulation 2, Rule 1 - Permits, General Requirements (as amended by the District Board on 11/19/08);

SIP Regulation 2, Rule 1 - Permits, General Requirements (as approved by EPA through 1/26/99);

BAAQMD Regulation 2, Rule 2 - Permits, New Source Review (as amended by the District Board on 6/15/05);

SIP Regulation 2, Rule 2 - Permits, New Source Review and Prevention of Significant Deterioration (as approved by EPA through 1/26/99);

BAAQMD Regulation 2, Rule 4 - Permits, Emissions Banking (as amended by the District Board on 12/21/04);

SIP Regulation 2, Rule 4 - Permits, Emissions Banking (as approved by EPA through 1/26/99);

BAAQMD Regulation 2, Rule 5 – New Source Review of Toxic Air Contaminants (as adopted by the District Board on 6/15/05); and

BAAQMD Regulation 2, Rule 6 - Permits, Major Facility Review (as amended by the District Board on 4/16/03).

B. Conditions to Implement Regulation 2, Rule 6, Major Facility Review

1. This Major Facility Review Permit was issued on March 4, 2010 and expires on March 3, 2015. The permit holder shall submit a complete application for renewal of this Major Facility Review Permit no later than October 3, 2014 and no earlier than March 3, 2014. **If a complete application for renewal has not been submitted in accordance with this deadline, the facility may not operate after** March 3, 2015**.** If the permit renewal has not been issued by March 3, 2015, but a complete application for renewal has been submitted in accordance with the above deadlines, the existing permit will continue in force until the District takes final action on the renewal application. (Regulation 2-6-307, 404.2, 407, & 409.6; MOP Volume II, Part 3, §4.2)

2. The permit holder shall comply with all conditions of this permit. The permit consists of this document and all appendices. Any non-compliance with the terms and conditions of this permit will constitute a violation of the law and will be grounds for enforcement action; permit termination, revocation and re-issuance, or modification; or denial of a permit renewal application. (Regulation 2-6-307; MOP Volume II, Part 3, §4.11)

3. In the event any enforcement action is brought as a result of a violation of any term or condition of this permit, the fact that it would have been necessary for the

I. Standard Conditions

permittee to halt or reduce the permitted activity in order to maintain compliance with such term or condition shall not be a defense to such enforcement action. (MOP Volume II, Part 3, §4.11)

4. This permit may be modified, revoked, reopened and reissued, or terminated for cause. (Regulation 2-6-307, 409.8, 415; MOP Volume II, Part 3, §4.11)
5. The filing of a request by the facility for a permit modification, revocation and re-issuance, or termination, or the filing of a notification of planned changes or anticipated non-compliance does not stay the applicability of any permit condition. (Regulation 2-6-409.7; MOP Volume II, Part 3, §4.11)
6. This permit does not convey any property rights of any sort, or any exclusive privilege. (Regulation 2-6-409.7; MOP Volume II, Part 3, §4.11)
7. The permit holder shall supply within 30 days any information that the District requests in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. (Regulation 1-441, Regulation 2-6-409.4 & 501; MOP Volume II, Part 3, §4.11)
8. Any records required to be maintained pursuant to this permit that the permittee considers to contain proprietary or trade secret information shall be prominently designated as such. Copies of any such proprietary or trade secret information which are provided to the District shall be maintained by the District in a locked confidential file, provided, however, that requests from the public for the review of any such information shall be handled in accordance with the District's procedures set forth in Section 11 of the District's Administrative Code. (Regulation 2-6-419; MOP Volume II, Part 3, §4.11)
9. Proprietary or trade secret information provided to EPA will be subject to the requirements of 40 CFR Part 2, Subpart B - Public Information, Confidentiality of Business Information. (40 CFR Part 2)
10. The emissions inventory submitted with the application for this Major Facility Review Permit is an estimate of actual emissions or the potential to emit for the time period stated and is included only as one means of determining applicable requirements for emission sources. It does not establish, or constitute a basis for establishing, any new emission limitations. (MOP Volume II, Part 3, §4.11)
11. The responsible official shall certify all documents submitted by the facility pursuant to the major facility review permit. The certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. The certifications shall be signed by a responsible official for the facility. (Regulation 2-6-409.20, MOP Volume II, Part 3, §4.11)
12. The permit holder is responsible for compliance, and certification of compliance, with all conditions of the permit, regardless whether it acts through employees, agents, contractors, or subcontractors. (Regulation 2-6-307)

C. Requirement to Pay Fees

The permit holder shall pay annual fees in accordance with District Regulation 3, including Schedule P. (Regulation 2-6-402 & 409.13, Regulation 3; MOP Volume II,

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Part 3, §4.12)

D. Inspection and Entry

Access to Facility: The permit holder shall provide reasonable access to the facility and equipment that is subject to this permit to the APCO and/or to his or her designee. (Regulation 1-440, Regulation 2-6-409.3; MOP Volume II, Part 3, §4.14)

E. Records

1. The permit holder must provide any information, records, and reports requested or specified by the APCO. (Regulation 1-441, Regulation 2-6-409.4)
2. Notwithstanding the specific wording in any requirement, all records for federally enforceable requirements shall be maintained for at least five years from the date of creation of the record. (Regulation 2-6-501, MOP Volume II, Part 3, §4.7)

F. Monitoring Reports

Reports of all required monitoring must be submitted to the District at least once every six months, except where an applicable requirement specifies more frequent reporting. The first reporting period for this permit shall be March 4, 2010 to August 31, 2010. The report shall be submitted by September 30, 2010. Subsequent reports shall be for the following periods: September 1st through February 28th or 29th and March 1st through August 31st, and are due on the last day of the month after the end of the reporting period. All instances of non-compliance shall be clearly identified in these reports. The reports shall be certified by the responsible official as true, accurate, and complete. In addition, all instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions. The reports shall be sent to the following address:

Director of Compliance and Enforcement
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109
Attn: Title V Reports

(Regulation 2-6-502,MOP Volume II, Part 3, §4.7)

G. Compliance Certification

Compliance certifications shall be submitted annually by the responsible official of this facility to the Bay Area Air Quality Management District and to the Environmental Protection Agency. The initial certification period will be March 4th through February 28th. Subsequent certification periods will be March 1st through February 28th or 29th. The certifications shall be submitted by March 31st of each year." The certification must list each applicable requirement, the compliance status, whether compliance was continuous or intermittent, the method used to determine compliance, and any other specific information required by the permit. The permit holder may satisfy this requirement through submittal of District-generated

I. Standard Conditions

Compliance Certification forms. The certification should be directed to the District's Compliance and Enforcement Division at the address above, and a copy of the certification shall be sent to the Environmental Protection Agency at the following address:

Director of the Air Division
USEPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105
Attention: Air-3

(MOP Volume II, Part 3, §4.5 and 4.15)

H. Emergency Provisions

1. The permit holder may seek relief from enforcement action in the event of a breakdown, as defined by Regulation 1-208 of the District's Rules and Regulations, by following the procedures contained in Regulations 1-431 and 1-432. The District will thereafter determine whether breakdown relief will be granted in accordance with Regulation 1-433. (MOP Volume II, Part 3, §4.8)
2. The permit holder may seek relief from enforcement action for a violation of any of the terms and conditions of this permit by applying to the District's Hearing Board for a variance pursuant to Health and Safety Code Section 42350. The Hearing Board will determine after notice and hearing whether variance relief should be granted in accordance with the procedures and standards set forth in Health and Safety Code Section 42350 et seq. (MOP Volume II, Part 3, §4.8)
3. The granting by the District of breakdown relief or the issuance by the Hearing Board of a variance will not provide relief from federal enforcement. (MOP Volume II, Part 3, §4.8)

I. Severability

In the event that any provision of this permit is invalidated by a court or tribunal of competent jurisdiction, or by the Administrator of the EPA, all remaining portions of the permit shall remain in full force and effect. (Regulation 2-6-409.5; MOP Volume II, Part 3, §4.10)

J. Miscellaneous Conditions

1. The maximum capacity for each source as shown in Table II-A is the maximum allowable capacity. Exceedance of the maximum allowable capacity for any source is a violation of Regulation 2, Rule 1, Section 301. (Regulation 2-1-301)

II. EQUIPMENT

Table II A - Permitted Sources

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. The capacities in this table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-301.

S-#	Description	Make or Type	Model	Capacity
1	Hydrogen Plant			120 MMscf/day
2	Hydrogen Plant Furnace (natural gas, refinery fuel gas, pressure absorption gas)			1,072 MMbtu/hr, HHV 12 MW electrical generation
3	Hydrogen Plant Flare (natural gas, refinery fuel gas, pressure absorption gas)			2,200 MMbtu/hr

Table II B – Abatement Devices

A-#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
1	Selective Catalytic Reduction	S2	BAAQMD Condition 23179, part 5a	None	5 ppmv NOx @ 3% O2 on a clock hour basis
			BAAQMD Condition 23179, part 7a.1	None	7.5 lb NOx/clock hr
			BAAQMD Condition 23179, part 7a.1	None	50 lb NOx/clock hour during startup, shutdown, drying of refractory

II. Equipment

Table II B – Abatement Devices

A-#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
1	Selective Catalytic Reduction	S2	BAAQMD Condition 23179, part 10a	None	28.1 tons NOx per any consecutive 12 months

Table II C – Significant Sources

The following source is exempt from the requirement to obtain an authority to construct and permit to operate, but is defined as a significant source pursuant to BAAQMD Regulation 2-6-239.

S-#	Description	Make or Type	Model	Capacity
4	Cooling Tower			3,700 gpm

III. GENERALLY APPLICABLE REQUIREMENTS

The permit holder shall comply with all applicable requirements, including those specified in the BAAQMD and SIP rules and regulations and other federal requirements cited below. These requirements apply in a general manner to the facility and/or to sources exempt from the requirement to obtain a District Permit to Operate. The District has determined that these requirements will not be violated under normal, routine operations, and that no additional periodic monitoring or reporting to demonstrate compliance is warranted. In cases where a requirement, in addition to being generally applicable, is also specifically applicable to one or more sources, the requirement and the source are also included in Section IV, Source-Specific Applicable Requirements, of this permit. This section also contains provisions that may apply to temporary sources.

The dates in parentheses in the Title column identify the versions of the regulations being cited and are, as applicable:

1. BAAQMD regulation(s): The date(s) of adoption or most recent amendment of the regulation by the District Board of Directors
2. Any federal requirement, including a version of a District regulation that has been approved into the SIP: The most recent date of EPA approval of any portion of the rule, encompassing all actions on the rule through that date

The full language of SIP requirements is on EPA Region 9's website. The address is http://yosemite.epa.gov/r9/r9sips.nsf/Agency?ReadForm&count=500&state=California&cat=Bay+Area+Air+Quality+Management+District-Agency-Wide+Provisions.

NOTE:

There are differences between the current BAAQMD rules and the versions of the rules in the SIP. All sources must comply with both versions of a rule until US EPA has reviewed and approved the District's revision of the regulation.

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
BAAQMD Regulation 1	General Provisions and Definitions (7/9/08)	N
SIP Regulation 1	General Provisions and Definitions (6/28/99)	Y
BAAQMD Regulation 2, Rule 1	General Requirements (11/19/08)	N
BAAQMD 2-1-429	Federal Emissions Statement (6/7/95)	Y

III. Generally Applicable Requirements

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
SIP Regulation 2, Rule 1	General Requirements (1/26/99)	Y
BAAQMD Regulation 2, Rule 5	New Source Review of Toxic Air Contaminants (6/15/05)	N
BAAQMD Regulation 4	Air Pollution Episode Plan (3/20/91)	N
SIP Regulation 4	Air Pollution Episode Plan (8/06/90)	Y
BAAQMD Regulation 5	Open Burning (3/6/02)	N
SIP Regulation 5	Open Burning (9/4/98)	Y
BAAQMD Regulation 6, Rule 1	Particulate Matter, General Requirements (12/5/07)	Y
SIP Regulation 6	Particulate Matter and Visible Emissions (9/4/98)	Y
BAAQMD Regulation 7	Odorous Substances (3/17/82)	N
BAAQMD Regulation 8, Rule 1	Organic Compounds - General Provisions (6/15/94)	Y
BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (7/20/05)	N
SIP Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (6/15/94)	Y
BAAQMD Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (11/21/01)	Y
BAAQMD Regulation 8, Rule 4	Organic compounds - General Solvent and Surface Coating Operations (10/16/02)	Y
BAAQMD Regulation 8, Rule 15	Organic Compounds – Emulsified and Liquid Asphalts (6/1/94)	Y
BAAQMD Regulation 8, Rule 40	Organic Compounds - Aeration of Contaminated Soil and Removal of Underground Storage Tanks (6/15/05)	Y
BAAQMD Regulation 8, Rule 47	Organic Compounds - Air Stripping and Soil Vapor Extraction Operations (6/15/05)	Y
BAAQMD Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (12/20/95)	N
SIP Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (3/22/95)	Y
BAAQMD Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (7/17/02)	N
SIP Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (2/26/02)	Y
BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants - Sulfur Dioxide (3/15/95)	N
SIP Regulation 9, Rule 1	Inorganic Gaseous Pollutants - Sulfur Dioxide (6/8/99)	Y

III. Generally Applicable Requirements

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants - Asbestos Demolition, Renovation and Manufacturing (10/7/98)	N
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (7/11/90)	N
SIP Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (9/2/81)	Y
California Health and Safety Code Section 41750 et seq.	Portable Equipment	N
California Health and Safety Code Section 44300 et seq.	Air Toxics "Hot Spots" Information and Assessment Act of 1987	N
California Health and Safety Code Title 17, Section 93115	Airborne Toxic Control Measure for Stationary Compression Ignition Engines	N
40 CFR Part 61, Subpart M	National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos (6/19/95)	Y
EPA Regulation 40 CFR 82	Protection of Stratospheric Ozone (2/21/95)	
Subpart F, 40 CFR 82.156	Leak Repair	Y
Subpart F, 40 CFR 82.161	Certification of Technicians	Y
Subpart F, 40 CFR 82.166	Records of Refrigerant	Y
Subpart H, 40 CFR 82.270(b)	Prohibitions, Halon	Y

IV. SOURCE-SPECIFIC APPLICABLE REQUIREMENTS

The permit holder shall comply with all applicable requirements, including those specified in the BAAQMD and SIP rules and regulations and other federal requirements cited below. The requirements cited in the following tables apply in a specific manner to the indicated source(s).

The dates in parentheses in the Title column identify the versions of the regulations being cited and are, as applicable:

1. BAAQMD regulation(s): The date(s) of adoption or most recent amendment of the regulation by the District Board of Directors
2. Any federal requirement, including a version of a District regulation that has been approved into the SIP: The most recent date of EPA approval of any portion of the rule, encompassing all actions on the rule through that date

The full text of each permit condition cited is included in Section VI, Permit Conditions, of this permit. The full language of SIP requirements is on EPA Region 9's website. The address is: http://yosemite.epa.gov/r9/r9sips.nsf/Agency?ReadForm&count=500&state=California&cat=Bay+Area+Air+Quality+Management+District-Agency-Wide+Provisions. All other text may be found in the regulations themselves.

Table IV – All Sources
Facility-Specific Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 1	**General Provisions and Definitions (7/9/08)**		
1-107	Combination of Emissions	Y	
1-301	Public Nuisance Prohibition	N	
1-510	Area Monitoring	Y	
1-521	Monitoring May Be Required	Y	
1-523	Parametric Monitoring and Recordkeeping Procedures	N	
1-530	Area Monitoring Downtime	Y	
1-540	Area Monitoring Date Examination	Y	
1-542	Area Concentration Excesses	Y	
1-543	Record Maintenance for Two Years	Y	
SIP Regulation 1	**General Provisions and Definitions (6/28/99)**		
1-523	Parametric Monitoring and Recordkeeping Procedures	Y[1]	

IV. Source Specific Applicable Requirements

Table IV – All Sources
Facility-Specific Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
1-544	Monthly Summary	Y[1]	
BAAQMD Regulation 2, Rule 1	**General Requirements (11/19/08)**		
2-1-429	Federal Emissions Statement	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 2	**Inorganic Gaseous Pollutants - Hydrogen Sulfide (10/6/99)**		
9-2-301	Limitations on Ground Level Concentrations	N	
9-2-501	Area Monitoring Requirements (Regulations 1-510, 1-530, 1-540, 1-542, 1-543, 1-544)	N	
9-2-601	Ground Level Monitoring	N	
BAAQMD Condition 23181			
Part A.1	Notification of startup and shutdown [2-1-403]	Y	
Part A.2	Concentration of ammonia less than 20% by weight [2-1-305]	Y	
Part B.1	Sources subject to project mass emission limits [Cumulative increase, 2-1-403]	Y	
Part B.2	Annual mass emission limits		
Part B.2a	NOx annual mass emission limit [Cumulative Increase, 2-1-403]	Y	
Part B.2b	SO2 annual mass emission limit [Cumulative Increase, 2-1-403]	Y	
Part B.2c	PM10 annual mass emission limit [Cumulative Increase, 2-1-403]	Y	
Part B.2d	POC annual mass emission limit [Cumulative Increase, 2-1-403]	Y	
Part B.2e	CO annual mass emission limit [Cumulative Increase, 2-1-403]	Y	

IV. Source Specific Applicable Requirements

Table IV – All Sources
Facility-Specific Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Part B.2f	Sulfuric acid mist annual mass emission limit [PSD]	Y	
Part B.2g	Ammonia annual mass emission limit [Regulation 2, Rule 5]	N	
Part B.3	Sulfuric acid mist daily mass emission limit [PSD]	Y	
Part B.4	Calculation methods for mass emission limits [2-1-305]	Y	
Part B.5	Contingency for non-compliance with annual mass emission limits	Y	
Part B.6	Annual mass emission for PM10 from CFEP project including sources S2 and S3 at Facility B7419 and sources S45, S434, and S1010 at Facility A0016 [1-104, 2-2-304]	Y	

Table IV - A
Source-specific Applicable Requirements
S1 – HYDROGEN PLANT

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 7	**Odorous Substances (3/17/82)**		
7-303	Limit on Odorous Compounds	N	
BAAQMD Regulation 8, Rule 2	**Organic Compounds – Miscellaneous Operations (6/15/94)**		
8-2-301	Miscellaneous Operations: emissions shall not exceed 15 lb/day and 300 ppm carbon on a dry basis	Y	
BAAQMD Regulation 8, Rule 10	**Organic Compounds – Process Vessel Depressurization (1/21/2004)**		
8-10-301	Depressurization Control Options	N	
8-10-302	Opening of Process Vessels	N	
8-10-302.1	organic compounds cannot exceed 10,000 ppm (methane) prior to release to atmosphere	N	

IV. Source Specific Applicable Requirements

Table IV - A
Source-specific Applicable Requirements
S1 – HYDROGEN PLANT

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
8-10-302.2	Organic compound concentration of a refinery process vessel may exceed 10,000 ppm prior to release to atmosphere provided total number of such vessels during 5-year period does not exceed 10%.	N	
8-10-401	Turnaround Records. Annual report due February 1 of each year with initial report of process vessels due 4/1/2004.	N	
8-10-501	Monitoring prior to and during process vessel opening	Y	
8-10-502	Concentration measurement using EPA Method 21	Y	
8-10-503	Recordkeeping	N	
8-10-601	Monitoring Procedures	N	
SIP Regulation 8, Rule 10	**Organic Compounds – Process Vessel Depressurization (7/20/83)**		
8-10-301	Process Vessel Depressurizing. POC emissions shall be vented through a knock-out pot and then abated in one of the following ways, to as low a vessel pressure as possible, but at least until pressure is reduced to less than 1000 mm Hg:	Y[1]	
8-10-301.1	recovery to the fuel gas system	Y[1]	
8-10-301.2	combustion at a firebox or incinerator	Y[1]	
8-10-301.3	combustion at a flare	Y[1]	
8-10-301.4	containment such that emissions to atmosphere do not occur	Y[1]	
8-10-401	Turnaround Records. The following records shall be kept for each process unit turnaround, and retained for at least 2 years and made available to the District on demand during inspections:	Y[1]	
8-10-401.1	date of depressurization event	Y[1]	
8-10-401.2	approximate vessel hydrocarbon concentration when emissions to atmosphere begin	Y[1]	
8-10-401.3	approximate quantity of POC emissions to atmosphere	Y[1]	
BAAQMD Condition 23178			
Part 1	Hydrogen production limit and monitoring [Cumulative increase, 2-6-503]	Y	
Part 2	Electrical generation limit [2-1-301, 2-1-305]	Y	

IV. Source Specific Applicable Requirements

Table IV - A
Source-specific Applicable Requirements
S1 – HYDROGEN PLANT

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Part 3	Prohibition against burning fuel in the heat recovery steam generator [2-1-301, 2-1-305]	Y	
Part 4	Daily deaerator vent limit [2-1-301, 2-1-305, Cumulative increase]	Y	
Part 5	Hourly ammonia limit [Regulation 2, Rule 5]	N	
Part 6	Annual limit on POC emissions from components [Cumulative increase, 2-1-305]	Y	
Part 7	Deleted Application 14738		
Part 8	Deleted Application 14738		
Part 9a	Annual source test for POC [Cumulative increase, 2-1-305]	Y	
Part 9b	Annual source test for NH3 [Regulation 2, Rule 5]	N	
Part 10	Pressure relief devices must be vented to fuel gas recovery system, furnace, or flare [BAAQMD and SIP 8-28-302, BACT]	Y	
Part 11a	Equipment requirements for light hydrocarbon control valves [BACT]	Y	
Part 11b	Leak standard for valves [BACT, Regulation 8, Rule 18]	Y	
Part 12	Equipment requirements for flanges and connectors [BACT]	Y	
Part 13	Equipment requirements for compressors [BACT]	Y	
Part 14	Equipment requirements for pumps [BACT]	Y	
Part 15	Leak standard for pumps and compressors [BACT]	Y	
Part 16	Reports of component counts [BACT, Cumulative Increase, Regulation 2, Rule 5]	Y	
Part 17	Inspections [BACT, Regulation 8, Rule 18]	Y	
Part 18	Method for determining daily emissions [Cumulative increase, 2-1-305]	Y	
BAAQMD Condition 23181			
Part B.1	Applicability of mass emission limits [Cumulative Increase, 2-1-403]	Y	
Part B.2	Annual Mass Emission Limits		
Part B.2a	Annual NOx limit [Cumulative Increase, 2-1-403]	Y	
Part B.2b	Annual SO2 limit [Cumulative Increase, 2-1-403]	Y	
Part B.2c	Annual PM10 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	

IV. Source Specific Applicable Requirements

Table IV - A
Source-specific Applicable Requirements
S1 – HYDROGEN PLANT

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Part B.3	Daily limit for sulfuric acid mist [PSD]	Y	
Part B.4a	Calculation procedures for mass emission limits [2-1-305]	N	
Part B.5	Contingency for exceedances of mass emission limits [2-1-403]	Y	
Part B.6	PM10 limit for sources S45, S434, and S1010 at Facility A0016 and sources S2 and S3 at Facility B7419 [1-104, 2-2-304]	Y	

[1]This section has been removed from BAAQMD Regulations because it has been superseded. Nevertheless, the source must comply with this regulation until US EPA has reviewed and approved the District's revision of the regulation.

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 (7/9/08)**		
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	

IV. Source Specific Applicable Requirements

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
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]	
1-522.7	emission limit exceedance reporting requirements	Y[1]	
1-523	Parametric Monitoring and Recordkeeping Procedures	Y[1]	
1-523.3	Reports of Violations	Y[1]	
BAAQMD Regulation 6, Rule 1	**Particulate Matter, General Requirements (12/5/07)**		
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[1]	
6-305	Visible Particles	Y[1]	
6-310	Particulate Weight Limitation	Y[1]	
6-310.3	Particulate Weight Limitation	Y[1]	
6-501	Sampling Facilities and Instruments Required	Y[1]	
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	

IV. Source Specific Applicable Requirements

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
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)**		
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	

IV. Source Specific Applicable Requirements

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
60.13(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(b)	Applicability to sources built after 5/14/07	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	
60.102a(g)	Stayed until further notice		
60.103a	Work Practice Standards	Y	
60.103a(b)	Root cause analysis of any emission limit exceedance or process start-up, shutdown, upset, or malfunction that causes a discharge to the atmosphere in excess 500 lb per day of SO2.	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	
60.104a(i)(1)	Method 1 for sample and velocity traverses	Y	
60.104a(i)(2)	Method 2 for velocity and volumetric flow rate	Y	
60.104a(i)(3)	Method 3, 3A, or 3B for gas analysis	Y	
60.104a(i)(4)	Method 6, 6A, or 6C for SO2 concentration	Y	
60.104a(j)(4)	Method 11, 15, or 15A or 16 for determining the H2S concentration	Y	
60.104a(i)(5)	Method 7, 7A, 7C, 7D, or 7E for moisture content and NOX calculated as NO2	Y	
60.104a(j)(1)	Method 1 for sample and velocity traverses	Y	
60.104a(j)(2)	Method 2 for velocity and volumetric flow rate	Y	
60.104a(j)(3)	Method 3, 3A, or 3B for gas analysis	Y	
60.104a(j)(4)	Method 11, 15, or 15A or 16 for determining the H2S concentration	Y	
60.107a	Monitoring of emissions and operations for fuel gas combustion devices	Y	

IV. Source Specific Applicable Requirements

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
60.107a(a)(1)	Continuous monitoring for SO2	Y	
60.107a(a)(3)	Exemption for fuel gas streams that are exempt under 60.102a(h) and fuel gas streams inherently low in sulfur content	Y	
60.107a(a)(3)(i)	No monitoring for pilot gas	Y	
60.107a(a)(3)(ii)	No monitoring for fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less.	Y	
60.107a(a)(3)(iii)	No monitoring for fuel gas streams produced in process units that are intolerant to sulfur contamination	Y	
60.107a(c)	Process heaters subject to NOX limit-requirement for NOx and O2 monitors	Y	
60.107a(f)	Excess emissions	Y	
60.107a(f)(3)	Excess SO2 emissions	Y	
60.107a(f)(2)	Excess H2S concentrations	Y	
60.107a(f)(3)	Excess NOx emissions	Y	
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)(5)	Documentation of exempt fuel gas streams	Y	
60.108a(c)(6)	Notification of discharges greater than 500 lb SO2/day and discharge to flare greater than 500,000 scfd	Y	
60.108a(d)	Excess emissions reports	Y	
NSPS 40 CFR 60, Appendix A	**Appendix A to Part 60 – Test Methods**	Y	
Method 3, 3A or 3B	Methods for determination of oxygen content	Y	
Method 6 or 6C	Methods for determination of SO2 content	Y	
Method 7, 7A, 7C, 7D or 7E	Methods for determination of nitrogen oxide emissions	Y	

IV. Source Specific Applicable Requirements

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
NSPS 40 CFR 60, Appendix B	**Performance Specifications**		
Performance Specification 2	Specifications and Test Procedures for SO2 and NOX Continuous Emission Monitoring Systems in Stationary Sources	Y	
Performance Specification 3	Specifications and Test Procedures for O2 and CO2 Continuous Emission Monitoring Systems in Stationary Sources	Y	
Performance Specification 4A	Specifications and test procedures for carbon monoxide continuous emission monitoring systems in stationary sources	Y	
NSPS 40 CFR 60, Appendix F			
Procedure 1	Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination	Y	
40 CFR 63, Subpart B	**Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)**	Y	
63.50	Applicability	Y	
63.51	Definitions	Y	
63.52	Approval process for new and existing affected sources	Y	
63.53	Application content for case-by-case MACT determinations	Y	
63.54	Preconstruction review procedures for new affected sources	Y	
63.55	Maximum achievable control technology (MACT) determinations for affected sources subject to case-by-case determination of equivalent emission limitations	Y	
63.56	Requirements for case-by-case determination of equivalent emission limitations after promulgation of subsequent MACT standard	Y	
BAAQMD Condition 23179			

IV. Source Specific Applicable Requirements

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 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		
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 PM10mass 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	
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]	Y	

IV. Source Specific Applicable Requirements

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 15	Deleted Application 14738		
Part 16	Initial source tests [BACT, Cumulative Increase, PSD]	Y	
Part 16a	Initial source test for ammonia [Regulation 2, Rule 5]	N	
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 NOx, CO, and O2 or CO2 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 NOx limit [Cumulative Increase, 2-1-403]	Y	
Part B.2b	Annual SO2 limit [Cumulative Increase, 2-1-403]	Y	
Part B.2c	Annual PM10 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	PM10 limit for sources S45, S434, and S1010 at Facility A0016 and sources S2 and S3 at Facility B7419.	Y	

IV. Source Specific Applicable Requirements

Table IV – C
Source-specific Applicable Requirements
S3 – HYDROGEN PLANT FLARE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 1	**General Provisions and Definitions (7/9/08)**		
1-521	Monitoring may be required	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	
SIP Regulation 1	**General Provisions and Definitions (6/28/99)**		
1-523	Parametric Monitoring and Recordkeeping Procedures	Y[1]	
1-523.3	Reports of Violations	Y[1]	
BAAQMD Regulation 6, Rule 1	**Particulate Matter, General Requirements (12/5/07)**		
6-1-301	Ringelmann #1 Limitation	N	
6-1-305	Visible Particles	N	
6-1-310	Particulate Weight Limitation	N	
6-1-401	Appearance of Emissions	N	
6-1-502	Data, Records and Reporting	N	
SIP Regulation 6	**Particulate Matter and Visible Emissions (9/4/98)**		
6-301	Ringelmann #1 Limitation	Y[1]	
6-305	Visible Particles	Y[1]	
6-310	Particulate Weight Limitation	Y[1]	
6-401	Appearance of Emissions	Y[1]	
6-502	Data, Records and Reporting	Y[1]	
BAAQMD Regulation 9, Rule 1	**Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)**		

IV. Source Specific Applicable Requirements

Table IV – C
Source-specific Applicable Requirements
S3 – HYDROGEN PLANT FLARE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
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	
40 CFR 60 Subpart A	**General Provisions (03/16/1994)**		
60.13	Monitoring Requirements	Y	
60.13(i)	Approval of Alternative Monitoring	Y	
60.18	General Control Device 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(a)	Applicability to combustion devices	Y	
60.100a(b)	Applicability to flares built after 6/24/08	Y	
60.100a(g)(1)	SO2 standard stayed until further notice		
60.107a(3)(iii)	Exemption from SO2 monitoring fuel gas streams from hydrogen plants	Y	
BAAQMD Condition 23180			
Part 1	Restrictions on types of gases flared [2-1-305]	Y	
Part 2	Allowable use of flare [2-1-305, Cumulative increase]	Y	
Part 3	Flow meter [Cumulative increase]	Y	
Part 4a	NOx mass emission limit per consecutive 12 month period [Cumulative increase]	Y	
Part 4b	CO mass emission limit per consecutive 12 month periods [Cumulative increase]	Y	
Part 4c	NOx mass emission limit per consecutive 60 minute period [2-1-403, CAAQS]	Y	

IV. Source Specific Applicable Requirements

Table IV – C
Source-specific Applicable Requirements
S3 – HYDROGEN PLANT FLARE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
Part 5	Estimates of monthly emissions [Cumulative increase]	Y	
Part 6	Contingency for exceedances of limits in Part 4 [2-1-403, CAAQS, Cumulative increase]	Y	
Part 7	Flaring event definition [2-6-409.2]	Y	
Part 8	Flaring event inspection procedure [6-301, 2-1-403]	Y	
Part 9	Flaring event compliance criteria [2-6-403]	Y	
Part 10	Flaring event records [2-6-501, 2-6-409.2]	Y	
BAAQMD Condition 23181			
Part B.1	Applicability of mass emission limits	Y	
Part B.2	Annual Mass Emission Limits	Y	
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	PM10 limit for sources S45, S434, and S1010 at Facility A0016 and sources S2 and S3 at Facility B7419.	Y	

[1]This section has been removed from BAAQMD Regulations because it has been superseded. Nevertheless, the source must comply with this regulation until US EPA has reviewed and approved (or disapproved) the District's revision of the regulation.

Table IV – D
Source-Specific Applicable Requirements
S4, COOLING TOWER

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 1	**General Provisions and Definitions (7/9/08)**		
1-501	Sampling Facilities	Y	

IV. Source Specific Applicable Requirements

Table IV – D
Source-Specific Applicable Requirements
S4, COOLING TOWER

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 6, Rule 1	**Particulate Matter and Visible Emissions (12/5/07)**		
6-1-301	Ringelmann #1 Limitation	N	
6-1-305	Visible Particles	N	
6-1-310	Particulate Weight Limitation	N	
6-1-311	General Operations	N	
6-1-401	Appearance of Emissions	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[1]	
6-305	Visible Particles	Y[1]	
6-310	Particulate Weight Limitation	Y[1]	
6-311	General Operations	Y[1]	
6-401	Appearance of Emissions	Y[1]	
6-501	Sampling Facilities and Instruments Required	Y[1]	
BAAQMD Regulation 8, Rule 2	**Miscellaneous Operations (6/15/94)**	Y	
8-2-301	Miscellaneous Operations	Y	
BAAQMD Condition 23414			
Part 1	Limit on drift [Cumulative increase]	Y	
Part 2	Limit on dissolved solids [Cumulative increase]	Y	
Part 3	Daily visual inspection [2-6-503]	Y	
Part 4	Analysis of chlorine content [2-6-503]	Y	
Part 5	Monthly records of sodium hypochlorite usage [2-6-501]	Y	
Part 6	Analysis of dissolved solids content [2-6-503]	Y	
Part 7	Reports to Compliance and Enforcement division and Engineering division of hydrocarbon leaks [1-441]	Y	
Part 8	Estimates of VOC emissions during leaks [1-441, 2-1-424, 2-6-416.2, 2-6-501, 2-6-503]	Y	
Part 9	Records [2-6-501]	Y	

[1]This section has been removed from BAAQMD Regulations because it has been superseded. Nevertheless, the source must comply with this regulation until US EPA has reviewed and approved (or disapproved) the District's revision of the regulation.

IV. Source Specific Applicable Requirements

Table IV- AA
Fugitive Sources: Applicable Requirements

Process Unit	BAAQMD Regulation 8, Rule 18	BAAQMD Regulation 8, Rule 28	NSPS Part 60, Subpart GGGa; BAAQMD Regulation 10, Rule 59	NSPS Part 60, Subpart QQQ; BAAQMD Regulation 10, Rule 69	NSPS Part 60, Subpart VVa; BAAQMD Regulation 10, Rule 52	NESHAP Part 61, Subpart J	NESHAP Part 61, Subpart FF; BAAQMD Regulation 11, Rule 12	NESHAP Part 61, Subpart V; BAAQMD Regulation 11, Rule 7	NESHAP Part 63, Subpart CC
Hydrogen Manufacturing Unit (S1)	**Y**	**Y**	**Y**	**N**	**N**	**N**	**N**	**N**	**Y**
Hydrogen Plant Furnace (S2)	**Y**	**Y**	**Y**	**N**	**N**	**N**	**N**	**N**	**Y**
Hydrogen Plant Flare (S3)	**N**	**N**	**Y**	**N**	**Y**	**N**	**N**	**N**	**N**

Table IV – AB
Applicable Requirements
COMPONENTS (FACILITY-WIDE EXCEPT AS NOTED)

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 8, Rule 18	**Organic Compounds-Equipment Leaks (9/15/04)**		
8-18-100	General/Applicability	N	
8-18-200	Definitions	N	
8-18-301	General Standard	Y	
8-18-302	Valves	Y	
8-18-303	Pumps and compressors	Y	
8-18-304	Connections	N	
8-18-305	Pressure relief devices	Y	

IV. Source Specific Applicable Requirements

Table IV – AB
Applicable Requirements
COMPONENTS (FACILITY-WIDE EXCEPT AS NOTED)

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
8-18-306	Non-repairable equipment	N	
8-18-307	Liquid Leaks	Y	
8-18-308	Alternate compliance	Y	
8-18-401	Inspection	Y	
8-18-402	Identification	N	
8-18-403	Visual inspection schedule	Y	
8-18-404	Alternate inspection schedule	Y	
8-18-405	Alternate inspection reduction plan	Y	
8-18-406	Interim Compliance	Y	
8-18-501	Portable Hydrocarbon Detector	Y	
8-18-502	Records	N	
8-18-503	Reports	N	
8-18-602	Inspection Procedures	Y	
8-18-604	Determination of Mass Emissions	N	
SIP Regulation 8, Rule 18	**Organic Compounds-Equipment Leaks (6/5/03)**		
8-18-100	General/Applicability	Y[1]	
8-18-200	Definitions	Y[1]	
8-18-304	Connections	Y[1]	
8-18-306	Non-repairable equipment	Y[1]	
8-18-402	Identification	Y[1]	
8-18-502	Records	Y[1]	
8-18-604	Determination of Mass Emissions	Y[1]	
BAAQMD Regulation 8, Rule 28	**Episodic Releases From Pressure Relief Devices at Petroleum Refineries and Chemical Plants (12/1/05)**		
8-28-100	General/Applicability	N	
8-28-200	Definitions	N	
8-28-302	Pressure Relief Devices at New or Modified Sources at Petroleum Refineries	N	
8-28-303	Pressure Relief Devices at Existing Sources at Petroleum Refineries	N	
8-28-304	Repeat Releases - Pressure Relief Devices at Petroleum Refineries	N	
8-28-401	Reporting at Petroleum Refineries and Chemical Plants	N	
8-28-402	Inspection	N	

IV. Source Specific Applicable Requirements

Table IV – AB
Applicable Requirements
COMPONENTS (FACILITY-WIDE EXCEPT AS NOTED)

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
8-28-403	Records	N	
8-28-404	Identification	N	
8-28-405	Prevention Measures Procedures	N	
8-28-406	Monitoring System Demonstration Report	Y	
8-28-407	Process Unit Identification Report	Y	
8-28-502	Records	Y	
8-28-503	Monitoring	Y	
SIP Regulation 8, Rule 28	**Episodic Releases From Pressure Relief Devices at Petroleum Refineries and Chemical Plants (3/18/98)**		
8-28-100	General/Applicability	Y[1]	
8-28-200	Definitions	Y[1]	
8-28-302	Pressure Relief Devices at New or Modified Sources at Petroleum Refineries	Y[1]	
8-28-303	Pressure Relief Devices at Existing Sources at Petroleum Refineries	Y[1]	
8-28-304	Repeat Releases - Pressure Relief Devices at Petroleum Refineries	Y[1]	
8-28-401	Reporting at Petroleum Refineries and Chemical Plants	Y[1]	
8-28-402	Inspection	Y[1]	
8-28-403	Records	Y[1]	
8-28-404	Identification	Y[1]	
8-28-405	Prevention Measures Procedures	Y[1]	
NSPS Part 60 Subpart VVa; BAAQMD Regulation 10-52	**Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 (11/16/07); BAAQMD Standards of Performance for New Stationary Sources (12/20/95) (Applies to equipment in VOC service)**	Y	
60.480a	Applicability and designation of affected facility	Y	
60.481a	Definitions	Y	
	Equipment: each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service. For the purposes of recordkeeping and reporting only, compressors are considered equipment.	Y	
60.482-1a	Standards: General	Y	
60.482-2a	Standards: Pumps in light liquid service	Y	

IV. Source Specific Applicable Requirements

Table IV – AB
Applicable Requirements
COMPONENTS (FACILITY-WIDE EXCEPT AS NOTED)

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.482-2a(a)(1)	Monthly monitoring of each pump, except for 60.482-1a(c) and (f), 60.482-2(d), (e), or (f)	Y	
60.482-2a(a)(2)	Weekly visual inspection of each pump, except for 60.482-1a(f)	Y	
60.482-2a(b)(1)	Air measurement >2,000 ppm or dripping liquid indicates leak	Y	
60.482-2a(b)(2)	Procedure for liquid drips	Y	
60.482-2a(c)	Pump leak repair period	Y	
60.482-2a(d)	Requirements for Dual-Mechanical seal pump	Y	
60.482-2a(e)	No detectable emission designation: <500 ppm	Y	
60.482-2a(f)	Requirements for Closed Vent Systems	Y	
60.482-2a(g)	Unsafe to monitor pumps	Y	
60.482-3a	Standards: Compressors	Y	
60.482-4a	Standards: Pressure Relief Devices in gas/vapor service	Y	
60.482-4a(c)	Standards: Closed vent systems and control devices	Y	
60.482-5a	Standards: Sampling connecting systems	Y	
60.482-6a	Standards: Open-ended valves or lines	Y	
60.482-7a	Standards: Valves in gas/vapor service and in light liquid service	Y	
60.482-7a(a)(1)	Monthly monitoring of valves	Y	
60.482-7a(b)	Leak standard > 500 ppm	Y	
60.482-7a(c)	Reduction in monitoring frequency	Y	
60.482-7a(d)	Valve leak repair period	Y	
60.482-7a(e)	Methods for first attempts or minimizing valve leaks	Y	
60.482-7a(f)	Designated no-emissions (<500 ppm) valves with no external actuating mechanisms in contact with process fluid, may revert to annual monitoring, or that requested by the Administrator	Y	
60.482-8a	Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service (per 40 CFR 60, Subpart GGGa, Section 60.593a(g), standard applies to all connectors, not just those in heavy liquid service)	Y	
60.482-9a	Standards: Delay of repair	Y	
60.482.10a	Standards: Closed vent systems and control devices	Y	
60.483-1a	Alternative standards for valves--allowable percentage of valves leaking (must notify EPA administrator and BAAQMD)	Y	
60.483-2a	Alternative standards for valves--skip period leak detection and repair (must notify EPA administrator and BAAQMD)	Y	

IV. Source Specific Applicable Requirements

Table IV – AB
Applicable Requirements
COMPONENTS (FACILITY-WIDE EXCEPT AS NOTED)

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.485a	Test Methods and Procedures	Y	
60.486a	Recordkeeping Requirements	Y	
60.487a	Reporting Requirements	Y	
NSPS Part 60 Subpart GGGa; BAAQMD Regulation 10-59	**Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 (11/16/07); BAAQMD Standards of Performance for New Stationary Sources (4/19/89)**		
60.590a	Applicability	Y	
60.591a	Definitions	Y	
60.592a	Subject to provisions of Part 60, Subpart VVa	Y	
60.593a	Exceptions	Y	
60.593a(a)	Compliance with exceptions	Y	
60.593a(b)(1)	Compressors in hydrogen service	Y	
60.593a(g)	Connectors in gas/vapor or light liquid service exempt if owner/operator complies with 40 CFR 60.482-8a for all connectors	Y	
BAAQMD Regulation 10-59	**Incorporates by reference 40 CFR 60 Subpart GGG**	**Y**	
NESHAP Part 63 Subpart CC	**National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries**	Y	
63.640(a)	Applicability	Y	
63.640(p)	Overlap of Subpart CC with other regulations for equipment leaks.	Y	
63.641	Definitions	Y	
63.642(e)	Keep records for 5 years	Y	
63.648(a)	Equipment leak standards. Comply with 40 CFR 60, Subpart VV	Y	
63.648(d)	New sources	Y	
63.648(g)	Equipment leak standards – compressors in hydrogen service	Y	
63.648(h)	Keep records for 5 years	Y	
63.654	Reporting and recordkeeping requirements	Y	
63.654(d)	Record keeping and reporting	Y	
63.654(e)	Reports and records required	Y	
63.654(f)	Notification of compliance within 150 days of required compliance date	Y	
63.654(f)(2)	Reports of initial tests	Y	
63.654(g)	Reports of compliance exceptions	Y	

IV. Source Specific Applicable Requirements

Table IV – AB
Applicable Requirements
COMPONENTS (FACILITY-WIDE EXCEPT AS NOTED)

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
63.654(h)	Other reports	Y	
63.654(i)	Retention of information for 5 years	Y	
BAAQMD Condition 23178			
Part 6	Annual limit on POC emissions from components [Cumulative increase, 2-1-305] (Applies to S1, Hydrogen Plant only)	Y	
Part 10	Pressure relief devices must be vented to fuel gas recovery system, furnace, or flare [8-28-302, BACT] (Applies to S1, Hydrogen Plant only)	Y	
Part 11a	Equipment requirements for light hydrocarbon control valves [BACT]	Y	
Part 11b	Leak standard for valves [BACT, Regulation 8, Rule 18]	Y	
Part 12	Equipment requirements for flanges and connectors [BACT]	Y	
Part 13	Equipment requirements for compressors [BACT]	Y	
Part 14	Equipment requirements for pumps [BACT]	Y	
Part 15	Leak standard for pumps and compressors [BACT]	Y	
Part 16	Reports of component counts [BACT, Cumulative Increase, Regulation 2, Rule 5]	Y	
Part 17	Inspections [BACT, Regulation 8, Rule 18]	Y	
Part 18	Method for determining daily emissions [Cumulative increase, 2-1-305]	Y	

1 This section has been removed from BAAQMD Regulations because it has been superseded. Nevertheless, the source must comply with this regulation until US EPA has reviewed and approved (or disapproved) the District's revision of the regulation.

V. SCHEDULE OF COMPLIANCE

The permit holder shall comply with all applicable requirements cited in this permit. The permit holder shall also comply with applicable requirements that become effective during the term of this permit on a timely basis.

VI. PERMIT CONDITIONS

Any condition that is preceded by an asterisk is not federally enforceable.

CONDITION 23178

S1, Hydrogen Plant

1. The production of S1, Hydrogen Plant, shall not exceed 120 MMscf H2/day, averaged over any consecutive 12-months. The owner/operator shall install and maintain a hydrogen flow monitor and a device that continuously records hydrogen flow. The hydrogen flow monitor shall be calibrated according to the manufacturer's instructions. The owner/operator shall maintain records of daily hydrogen output. [Cumulative Increase, 2-6-503]

2. The owner/operator of the electrical generator associated with the hydrogen plant shall not generate more than 12 MW at any time. The owner/operator shall ensure that the hydrogen plant or the refinery consumes all of the electricity that is produced by the generator. The owner/operator shall monitor electrical output and record any exceedances. [2-1-301, 2-1-305, 2-6-503]

3. The owner/operator shall not burn any fuel in the HRSG associated with the S1, Hydrogen Plant. [2-1-301, 2-1-305]

4. The owner/operator shall ensure that the emissions of POC from the deaerator vent at S1 do not exceed 4.35 lb/day. [2-1-301, 2-1-305, Cumulative Increase]

*5. The owner/operator shall ensure that the emissions of NH3 from the deaerator vent at S1 do not exceed 0.64 lb/hr. [Regulation 2, Rule 5]

6. The owner/operator shall ensure that the fugitive emissions of POC from the components (valves, flanges, pumps, compressors, connectors, sample points, etc.) at the hydrogen plant do not exceed 3,000 lb/year. [Cumulative Increase, 2-1-305]

7. Deleted Application 14738.

8. Deleted Application 14738.

9a. No later than 90 days from the startup of S1 and every year thereafter, the owner/operator shall conduct a District-approved source test to determine compliance with the limit in Part 4 for POC and the limit in BAAQMD Regulation 8-2-301. The owner/operator shall conduct the POC source tests in accordance with the Manual of Procedures, Volume IV, Method ST-7 or EPA Method 25 or 25A. The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test. [Cumulative Increase, 2-1-305]

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*9b. No later than 90 days from the startup of S1 and every year thereafter, the owner/operator shall conduct a District-approved source test to determine compliance with the limit in Part 5 for NH3. The owner/operator shall conduct the NH3 source tests in accordance with the Manual of Procedures, Volume IV, Method ST-1B. The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test. [Regulation 2, Rule 5]

10. The owner/operator shall ensure that all pressure relief devices on the process unit are vented to a fuel gas recovery system, furnace, or flare with a recovery/destruction efficiency of 98%. [BAAQMD and SIP 8-28-302, BACT]

Fugitive Components at S1, Hydrogen Plant, and S2, Hydrogen Plant Furnace

11a. The owner/operator shall equip all new light hydrocarbon control valves installed at S1 and S2 with live loaded packing systems and polished stems, or equivalent. [BACT]

11b. The owner/operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any new valve installed at S1 and S2. The owner/operator shall not be considered in violation of the leak standard if the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8, Rule 18. [BACT, Regulation 8, Rule 18]

12. The owner/operator shall equip all new flanges/connectors installed in the light hydrocarbon piping systems at S1 and S2 with graphitic-based gaskets unless the service requirements prevent this material. [BACT]

13. The owner/operator shall equip all new hydrocarbon centrifugal compressors installed at S1 and S2 with "wet" dual mechanical seals with a heavy liquid barrier fluid, or dual dry gas mechanical seals buffered with inert gas. [BACT]

14. The owner/operator shall equip all new light hydrocarbon centrifugal pumps installed at S1 and S2 with a seal-less design or with dual mechanical seals with a heavy liquid barrier fluid, or equivalent. [BACT]

15. The owner/operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any new pumps and/or compressors installed at S1 and S2. The owner/operator shall not be considered in violation of the leak standard if the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. All pumps and/or compressors subject to the leak standard of 100 ppm TOC shall be included in the total number of pumps and compressors used in Regulation 8-18-306.2 to determine the total number of non-repairable pumps and compressors allowed. [BACT]

16. The Owner/Operator shall submit a count of installed pumps, compressors, valves, and flanges/connectors every 180 days starting the startup date of the first unit, S1 or S2, until construction is complete. For flanges/connectors, the owner/operator shall also provide a count of the number of graphitic-based and non-graphitic gaskets used. The owner/operator has been permitted to install fugitive components (948 valves in gas service, 48 valves in

VI. Permit Conditions

light liquid service, 4,193 flanges in gas service, 98 flanges in light liquid service, 5 pumps in light liquid service, 4 sample connections in gas service, 3 compressors in gas service) with a total POC emission rate of 1.5 ton/yr. The exact number of components may change without penalty. If there is an increase in the total fugitive component emissions, the plant's cumulative emissions for the project shall be adjusted to reflect the difference between emissions based on predicted versus actual component counts. The owner/operator shall provide to the District all additional required offsets at an offset ratio of 1.15:1 no later than 14 days after the submittal of the final POC fugitive equipment count. If the actual component count is less than the predicted, at the completion of the project, the total will be adjusted accordingly and all emission offsets applied by the owner/operator in excess of the actual total fugitive emissions will be credited back to owner/operator prior to issuance of the permits. [BACT, Cumulative Increase, Regulation 2, Rule 5]

17. Inspections

The owner/operator shall conduct inspections of new fugitive components installed at S1 and S2 in light hydrocarbon service with an initial boiling point less than or equal to 302 degree F in accordance with the frequency listed below:

Pumps: Quarterly
Compressors: Quarterly
Valves: Quarterly
Connectors (Not Flanges): Annual
Flanges: Annual

[BACT, Regulation 8, Rule 18]

18. In order to determine compliance with part 6, the owner/operator shall determine the daily emissions of fugitive components within 90 days of start-up, and within 30 days of the end of every calendar quarter thereafter. The owner/operator shall use the last concentration measured in accordance with BAAQMD Regulation 8, Rule 18, for each component. The owner/operator shall use the equations in ARB publication California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities. [Cumulative Increase, Regulation 2-1-305]

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.

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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

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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 at the S2, Hydrogen Plant Furnace, 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 hourly limit in part 7a, and the annual limits in part 10 and Condition 23181, part B.2.

15. Deleted Application 14738.

16. No later than 90 days from the startup of S2, the owner/operator shall conduct District-approved source tests to determine initial compliance with the limits in Parts 5, 7, and 9 for NOx, CO, POC, PM10, SO2, sulfuric acid mist, and POC. 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]

*16a. No later than 90 days from the startup of S2, the owner/operator shall conduct District-approved source tests to determine initial compliance with the limits in Parts 6 and 8 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]

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

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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:
a. continuous NOx analyzer/recorder
b. continuous CO analyzer/recorder
c. continuous O2 or CO2 analyzer/recorder
d. continuous SO2 analyzer/recorder
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 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.

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(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)

CONDITION 23180

S3, Hydrogen Plant Flare

1. The owner/operator shall ensure that only the following streams are sent to S3, Hydrogen Plant Flare:
   a. Hydrogen
   b. Syn-gas
   c. Venting from the ammonia tank
   d. PSA Offgas

   The owner/operator shall ensure that any feed for S1, Hydrogen Plant, or any fuel including natural gas that is provided to S2, Hydrogen Plant Furnace, is not flared in S3, Hydrogen Plant Flare.
   [2-1-305]

2. S3, Hydrogen Plant Flare, may be used during startup, shutdown, upset, or malfunction of S1, Hydrogen Plant, loss of the PSA process, PSA maintenance, contractual outage, and customer constraint, as long as the emissions do not exceed the limits in part 4. [2-1-305, Cumulative Increase]

3. The owner/operator shall install a flow meter to determine the flow of gases to the flare.

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The flow meter shall comply with the requirements for flow meters in BAAQMD Regulation 12, Rule 11. [Cumulative increase]

4. The owner/operator shall ensure that the emissions of S3, Hydrogen Plant Flare, do not exceed the following limits:
   a. NOx: 2.8 tons/any consecutive 12 months [Cumulative increase]
   b. CO: 12.1 tons/any consecutive 12 months [Cumulative increase]
   c. NOx: 129 lb/any consecutive 60 minutes [2-1-403, CAAQS]

5. The owner/operator shall estimate the emissions every month by using the flow data to the flare and estimating emissions using the emission factors provided in Application 13678. [Cumulative increase]

6. If the limits in parts 4a and 4b are exceeded, the owner/operator shall apply to increase the annual limit within 60 days of determining that the limit has been exceeded, and shall provide offsets for the increase in the limits. If the limit in part 4c is exceeded, the owner/operator shall determine using PSD modeling if the CAAQS or NAAQS for NO2 was exceeded during the event, and if so, shall report the exceedance to the BAAQMD Director of Enforcement and Compliance. [2-1-403, CAAQS, Cumulative increase]

7. For the purposes of these conditions, a flaring event is defined as a flow rate of vent gas flared in any consecutive 15 minutes period that continuously exceeds 330 standard cubic feet per minute (scfm). If during a flaring event, the vent gas flow rate drops below 330 scfm and then increases above 330 scfm within 30 minutes, that shall still be considered a single flaring event, rather than two separate events. For each flaring event during daylight hours (between sunrise and sunset), the owner/operator shall inspect the flare within 15 minutes of determining the flaring event, and within 30 minutes of the last inspection thereafter, using video monitoring or visible inspection following the procedure described in Part 8. [Regulation 2-6-409.2]

8. The owner/operator shall use the following procedure for the initial inspection and each 30-minute inspection of a flaring event.

   a. If the owner/operator can determine that there are no visible emissions using video monitoring, then no further monitoring is necessary for that particular inspection.
   b. If the owner/operator cannot determine that there are no visible emissions using video monitoring, the owner/operator shall conduct a visual inspection outdoors using either:
      i. EPA Reference Method 9; or
      ii. Survey the flare by selecting a position that enables a clear view of the flare at least 15 feet, but not more than 0.25 miles, from the emission source, where the sun is not directly in the observer's eyes.
   c. If a visible emission is observed, the owner/operator shall continue to monitor the flare for at least 3 minutes, or until there are no visible emissions, whichever is shorter.
   d. The owner/operator shall repeat the inspection procedure for the duration of the flaring event, or until a violation is documented in accordance with Part 9. After a violation is documented, no further inspections are required until the beginning of a new calendar day. [Regulation 6-1-301, 2-1-403]

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9. The owner/operator shall comply with one of the following requirements if visual inspection is used:

a. If EPA Method 9 is used, the owner/operator shall comply with Regulation 6-1-301 when operating the flare.

b. If the procedure of Part 8.b.ii is used, the owner/operator shall not operate a flare that has visible emissions for three consecutive minutes.

[Regulation 2-1-403]

10. The owner/operator shall keep records of all flaring events, as defined in Part 7. The owner/operator shall include in the records the name of the person performing the visible emissions check, whether video monitoring or visual inspection (EPA Method 9 or visual inspection procedure of Part 8) was used, the results of each inspection, and whether any violation of this condition (using visual inspection procedure in Part 8) or Regulation 6-301 occurred (using EPA Method 9). [Regulation 2-1-403]

11. Deleted Application 14738.

12. Deleted Application 14738.

CONDITION 23181

A. Facility Conditions

1. *The owner/operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit, and, for any unscheduled startup or shutdown of a process unit, within 48 hours or within the next normal business day. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. This requirement is not federally enforceable. [Regulation 2-1-403]

2. The owner/operator shall ensure that the concentration of ammonia in the ammonia tank is less than 20% by weight so that 40 CFR 68, Accidental Release, does not apply. [2-1-305]

B. Project Mass Emission Limits

1. Following are the sources that are subject to the project mass emission limits:
S1, Hydrogen Plant including HRSG and steam turbine generator
S2, Hydrogen Plant Furnace
S3, Hydrogen Plant Flare
[Cumulative Increase, 2-1-403]

2. The owner/operator shall ensure that the annual emissions of the above sources do not exceed the following annual emission limits, including periods of startup, shutdown, malfunction, and upset emissions.

a.	NOx	30.9 tpy [Cumulative Increase, 2-1-403]
b.	SO2	5.0 tpy [Cumulative Increase, 2-1-403]
c.	PM10	13.8 tpy [Cumulative Increase, 2-1-403]
d.	POC	13.9 tpy [Cumulative Increase, 2-1-403]

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e.	CO	46.2 tpy [Cumulative Increase, 2-1-403]
f.	Sulfuric acid mist	0.43 tpy [PSD]
*g.	Ammonia	26.9 tpy [Regulation 2, Rule 5]

3. The owner/operator shall ensure that the daily emissions of the above sources do not exceed the following daily emission limit, including periods of startup, shutdown, malfunction, and upset emissions.

a.	Sulfuric acid mist	2.35 lb/day [PSD]

4. The owner/operator shall determine whether the emissions are below the allowable mass emissions for the above sources as shown below. The owner/operator calculate and report the emissions of NOX, SO2, PM10, POC, CO, ammonia, and sulfuric acid mist on an annual basis in the following manner.
   a. The owner/operator shall the use the POC emission rate determined by the annual source test data at the deaerator for S1.
   b. The owner/operator shall use the data generated by the BAAQMD Regulation 8, Rule 18, monitoring to determine the annual POC emission rate for the components.
   c. The owner/operator shall use the mass emissions data generated by the NOx and CO CEMs at S2.
   d. Deleted Application 14738.
   e. The owner/operator shall use the CEM monitoring of SO2 at the outlet of the hydrogen plant furnace.
   f. The owner/operator shall use the emission rates of sulfuric acid mist, PM10, POC, and CO determined in annual source tests at S2 in units of pounds of pollutant per MMbtu and the records of heat input to calculate emissions of sulfuric acid mist, PM10, POC, and CO.
   *g. The owner/operator shall use the ammonia emission rates determined by source tests at S1 and S2 and the clock hours of operation to calculate emissions of ammonia at S1 and S2.
   h. The owner/operator shall use the calculations of flare emissions at S3 required by BAAQMD Condition 23180, part 5.
   *i. In the case that ammonia is released to the flare, S3, the owner/operator shall prepare and submit an estimate of ammonia emissions from the flare to the District Engineering Division for approval. Upon approval of the calculation, the owner/operator shall add the resulting ammonia emissions to the annual total.

   [2-1-305]

5. If the annual emissions, as determined in part B.4, are above the allowable emissions for the project, the owner/operator shall supply additional offsets, where applicable, and perform additional analysis for PSD, if necessary. The results of the analysis shall be submitted to the Director of Compliance and Enforcement on an annual basis on the anniversary of the startup of S2, Hydrogen Plant Furnace. [2-1-403]

6. The annual emissions of the following sources shall not exceed 16.3 tons PM10/yr: S45, S434, and S1010 at Facility A0016, and S2 and S3 at Facility B7419. If the emissions exceed 16.3 tons in any consecutive 12 month period, the owners/operators of Facilities A0016 and B7419 shall provide contemporaneous offsets of PM10 that comply with

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BAAQMD Regulations 2-2-201 and 2-2-605. [1-104, 2-2-304]

7. Deleted Application 14738

CONDITION 23414

S4, Cooling Tower

1. The owner/operator shall ensure that the cooling tower is designed to have a drift of no more than 0.005% of total cooling water flow. [Cumulative Increase]

2. The owner/operator shall ensure that the dissolved solids content in the cooling water at S4, Cooling Tower, does not exceed 3000 ppm total dissolved solids. [Cumulative Increase]

3. The owner/operator shall take a sample and perform a visual inspection of the cooling tower water at the cooling tower on a daily basis to check for signs of hydrocarbon in the cooling water. [Regulation 2-6-503]

4. The owner/operator shall take a sample of the cooling tower water 3 times per week at the cooling tower and analyze for chlorine content as an indicator of hydrocarbon leakage into the cooling water. On a monthly basis, the owner/operator shall sample the water in the inlet line and in the return line of the cooling tower and determine the VOC content in each line using EPA laboratory method 8015. [Regulation 2-6-503]

5. The owner/operator shall maintain monthly records of sodium hypochlorite usage at each cooling tower above. [Regulation 2-6-501]

6. The owner/operator shall sample the cooling tower water at least once per month and subject the sample to a District approved laboratory analysis to determine its total dissolved solids content. [Regulations 2-6-503]

7. If the monitoring in part 3 or part 4 indicates that there is a hydrocarbon leak into the cooling water, the owner/operator shall submit a report to the Enforcement and the Engineering divisions at the District. The owner/operator shall submit reports on a weekly basis until the monitoring indicates that no hydrocarbon leaks into the cooling water. [Regulation 1-441]

8. If the monitoring in part 3 or part 4 indicates a hydrocarbon leak, the owner/operator shall estimate the daily amount of VOC emitted using the following procedure. The owner/operator shall sample the water in the inlet line and in the return line and determine the VOC content in each line using EPA laboratory method 8015. This analysis shall be performed each week until VOC levels return to normal. The owner/operator shall report the VOC estimates to the Enforcement and the Engineering divisions at the District on a monthly basis. The owner/operator shall use the VOC estimates to confirm that no more than 5 tons VOC per year was emitted at the source. If more than 5 tons VOC per year is emitted at the source, the facility shall submit an application for a District permit within 90 days of determining that the source is subject to District permits. If the source requires a permit, the source shall be subject to BACT and offsets. [Regulations 1-441, 2-1-424, 2-6-416.2, 2-6-501, 2-6-503]

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9. The owner/operator shall maintain the following records for five years from the date of record:
   a. Records of daily visual inspection
   b. Records of chlorine content 3 times per week
   c. Records of monthly usage of sodium hypochlorite
   d. Records of monthly determination of total dissolved solids
   e. Records of any indications of hydrocarbon leaks
   f. Records of any analyses of VOC content in cooling tower inlet and outlet

   [Regulation 2-6-501]

VII. APPLICABLE LIMITS & COMPLIANCE MONITORING REQUIREMENTS

This section has been included to summarize the applicable emission limits contained in Section IV, Source-Specific Applicable Requirements, of this permit. The following tables show the relationship between each emission limit and the associated compliance monitoring provisions, if any. The monitoring frequency column indicates whether periodic (P) or continuous (C) monitoring is required. For periodic monitoring, the frequency of the monitoring has also been shown using the following codes: annual (A), quarterly (Q), monthly (M), weekly (W), daily (D), hourly (H), or on an event basis (E). No monitoring (N) has been required if the current applicable rule or regulation does not require monitoring, and the operation is unlikely to deviate from the applicable emission limit based upon the nature of the operation.

This section is only a summary of the limits and monitoring requirements. In the case of a conflict with any requirement in Sections I-VI, the preceding sections take precedence over Section VII.

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII - All Sources
Applicable Limits and Compliance Monitoring Requirements
Facility-Specific Generally Applicable Requirements

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO2	BAAQMD 9-1-301	Y		ground level SO2 concentrations (0.5 ppm for 3 min; 0.25 ppm for 60 min; 0.05 ppm for 24 hr)	9-1-501 requires compliance with BAAQMD 1-510	C	SO2 GLM
NH3	BAAQMD Cond# 23181, part A.2	Y		ammonia solution less than 20% by weight	BAAQMD Cond# 23181, part A.2	P/E	records
NH3	BAAQMD Cond# 23181, part 2g	N		26.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Source tests and calculations
Organic com-pounds	BAAQMD 8-2-301	Y		emission streams with 15 lb/day AND 300 ppm total carbon on a dry basis prohibited	None	N	None

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII - A
Applicable Limits and Compliance Monitoring Requirements
S1 – HYDROGEN PLANT

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 8-10-301	Y		abatement of emissions from process vessel depressurization is required until pressure is reduced to less than 1000 mm Hg	8-10-401.2 (SIP) and 8-10-501 & 502 (non-SIP)	P/E	Records
POC	BAAQMD Cond# 23178, part 4	Y		Deaerator vent POC emissions < 4.35 lb/day	BAAQMD Cond# 23178, part 9a	P/A	Source test
POC	BAAQMD Cond# 23178, part 6	Y		Fugitive mass emissions < 3,000 lb/yr	BAAQMD Cond# 23178, part 18	P/Q	Inspection and calculations
POC	BAAQMD Cond# 23181, part 2d	Y		13.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Annual source tests, inspection data, and calculations
Organic com-pounds	BAAQMD 8-2-301	Y		emission streams with 15 lb/day AND 300 ppm total carbon on a dry basis prohibited	BAAQMD Cond# 23178, part 9a	P/A	source test
Through-put	BAAQMD Cond# 23178, part 1	Y		120 MMscf H2/day, annual average	BAAQMD Cond# 23178, part 1	P/D	records
NH3	BAAQMD 7-303	N		5000 ppm	BAAQMD Cond# 23178, part 9b	P/A	Source test

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII - A
Applicable Limits and Compliance Monitoring Requirements
S1 – HYDROGEN PLANT

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NH3	BAAQMD Cond# 23178, part 5	N		0.64 lb/hr	BAAQMD Cond# 23178, part 9b	P/A	Source test
NH3	BAAQMD Cond# 23181, part 2g	N		26.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Source tests and calculations
Electrical produc-tion	BAAQMD Cond# 23178, part 2	Y		< 12 MW	BAAQMD Cond# 23178, part 2	C	records
Hydrogen produc-tion	BAAQMD Cond# 23178, part 1	Y		120 MMscf H2/day	BAAQMD Cond# 23178, part 1	C	Hydrogen flow monitoring
NOx	BAAQMD Cond# 23181, part 2a	Y		30.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	CEM data and calculations
SO2	BAAQMD Cond# 23181, part 2b	Y		5.0 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	CEM and calculations
PM10	BAAQMD Cond# 23181, part 2c	Y		13.8 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Annual source test at S2 and calculations
CO	BAAQMD Cond# 23181, part 2e	Y		46.2 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	CO CEM, annual source tests, and calculations

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII - A
Applicable Limits and Compliance Monitoring Requirements
S1 – HYDROGEN PLANT

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Sulfuric acid mist	BAAQMD Cond# 23181, part 2f	Y		0.43 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	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	Moni-toring Fre-quency (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 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

VII. Applicable Limits and Compliance Monitoring Requirements

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	BAAQMD Cond# 23179, part 7b	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
NOx	BAAQMD Cond# 23181, part 2a	Y		30.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	CEM data and calculations
NOx	40 CFR 60.102a(g)(2)	Y		40 ppmv, dry, @ 0% O2 on a 24-hr rolling average basis Stayed until further notice	40 CFR 60.107a(c) (Monitoring not stayed)	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

VII. Applicable Limits and Compliance Monitoring Requirements

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
CO	BAAQMD Cond# 23181, part 2e	Y		46.2 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 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	P/A	Source test
SO2	BAAQMD Cond# 23179, part 10	E		5.0 tons per any consecutive 12 months	BAAQMD Cond# 23179, part 17	P/A	Source test
SO2	BAAQMD Cond# 23181, part 2b	Y		5.0 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Sulfur monitoring or CEM and calculations
SO2	40 CFR 60.102a(g)(1)	Y		20 ppmdv @ 0% O2 on a rolling 3 clock hour basis; 8 ppmdv @ 0% O2 on a rolling 365 calendar day basis Stayed until further notice	40 CFR 60.107a(a)(1) (Monitoring not stayed)	C	CEM
Sulfuric acid mist	BAAQMD Cond# 23179, part 9	Y		0.098 lb/clock hour	BAAQMD Cond# 23179, part 17	P/A	Source test

VII. Applicable Limits and Compliance Monitoring Requirements

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
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 2f	Y		0.43 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	annual source tests, and calculations
Sulfuric acid mist	BAAQMD Cond# 23181, part 3	Y		2.35 lb/day for S1, S2, and S3	BAAQMD Cond# 23181, part 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
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 2d	Y		13.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Annual source tests, inspection data, and calculations

VII. Applicable Limits and Compliance Monitoring Requirements

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
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 2g	N		26.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Source tests and calculations
O2		Y		No limit	BAAQMD 1-520.1	C	O2 Monitor
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

VII. Applicable Limits and Compliance Monitoring Requirements

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
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 2c	Y		13.8 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Annual source test at S2 and calculations

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – C
Applicable Limits and Compliance Monitoring Requirements
S3 – HYDROGEN PLANT FLARE

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	BAAQMD Cond# 23180, parts 8-10	P/E	Visible emissions monitoring
Opacity	SIP 6-301	Y		Ringelmann 1 for no more than 3 minutes in any hour	BAAQMD Cond# 23180, parts 8-10	P/E	Visible emissions monitoring
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
SO2	60.100a(g)(1)	Y		Standard stayed until further notice	60.100a(3)(iii) Exemption from monitoring for gas streams from hydrogen plants	N	None
NOx	BAAQMD Cond# 23180, part 4a	Y		2.8 tons per any consecutive 12 months	BAAQMD Cond# 23180, part 5	P/M	Flow data and calculations
NOx	BAAQMD Cond# 23180, part 4c	Y		129 lb per any consecutive 60 minutes	BAAQMD Cond# 23180, part 5	P/M	Flow data and calculations

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – C
Applicable Limits and Compliance Monitoring Requirements
S3 – HYDROGEN PLANT FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NOx	BAAQMD Cond# 23181, part 2a	Y		30.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	CEM data and calculations
POC	BAAQMD Cond# 23181, part 2d	Y		13.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Annual source tests, inspection data, and calculations
PM10	BAAQMD Cond# 23181, part 2c	Y		13.8 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Annual source test at S2 and calculations
CO	BAAQMD Cond# 23180, part 4b	Y		12.1 tons per any consecutive 12 months	BAAQMD Cond# 23180, part 5	P/M	Flow data and calculations
CO	BAAQMD Cond# 23181, part 2e	Y		46.2 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	CO CEM, annual source tests, and calculations
SO2	BAAQMD Cond# 23181, part 2b	Y		5.0 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Sulfur monitoring or CEM and calculations
Sulfuric acid mist	BAAQMD Cond# 23181, part 2F	Y		0.43 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	annual source tests, and calculations
NH3	BAAQMD Cond# 23181, part 2g	N		26.9 tons per year for S1, S2, and S3	BAAQMD Cond# 23181, part 4	P/A	Source tests and calculations

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – C
Applicable Limits and Compliance Monitoring Requirements
S3 – HYDROGEN PLANT FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
VE	40 CFR 60.18(c)(1)	Y		No visible emissions except for 5 min in any two hours	40 CFR 60.18(f)(1)	P/E	Method 22
Presence of flame	40 CFR 60.18(c)(2)	Y		Flame present at all times	40 CFR 60.18(f)(2)	C	Thermocouple or eq. device
Velocity and heat content require-ments	40 CFR 60.18(c)(3)(i) or 40 CFR 60.18(c)(3)(ii) & (c)(4)(i) or 40 CFR 60.18(c)(3)(ii) & (c)(4)(ii)			If hydrogen content is equal to or greater than 8% by volume, velocity must be less than 122 ft/sec and less than Vmax or Net heating value of gas greater than 300 btu/scf and less than 1000 btu/scf and velocity less than 60 ft/sec or Net heating value of gas greater than 1000 btu/scf and velocity greater than 60 ft/sec and less than 400 ft/sec	40 CFR 60.18(f)(3), (4), and 5	C	Volume measurements gas analysis

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – D
Applicable Limits and Compliance Monitoring Requirements
S4, COOLING TOWER

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 Regulation 6-1-301	N		Ringelmann No. 1 for no more than 3 minutes/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 6-1-310	N		0.15 grain/dscf	None	N	None
FP	SIP 6-310	Y		0.15 grain/dscf	None	N	None
FP	BAAQMD 6-1-311	N		40 lb/hr	None	N	None
FP	SIP 6-311	Y		$4.10P^{0.67}$ lb/hr, where P is process weight, ton/hr	None	N	None
PM	BAAQMD Condition 23414, part 2	Y		Dissolved solids < 3000 ppm	BAAQMD Condition 23414, part 6	P/M	Analysis total dissolved solids
Organic com-pounds	BAAQMD 8-2-301	Y		300 ppm as carbon and 15 lb organic compounds/day	BAAQMD Condition 23414, part 3	P/D	Visual inspection
Organic com-pounds	BAAQMD 8-2-301	Y		300 ppm as carbon and 15 lb organic compounds/day	BAAQMD Condition 23414, part 4	P/3 times per week	Analysis of chlorine content
Organic com-pounds	BAAQMD 8-2-301	Y		300 ppm as carbon and 15 lb organic compounds/day	BAAQMD Condition 23414, part 8	P/W, after indication of hydrocarbon leak	Estimate of daily VOC loss
Chloro-form				None	BAAQMD Condition 23414, part 5	P/M	Records of NaOCl usage

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – AB
Applicable Limits and Compliance Monitoring Requirements
COMPONENTS

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 8-18-301	Y		General equipment leak ≤ 100 ppm	BAAQMD 8-18-401.2	P/Q	Inspection
POC	BAAQMD 8-18-302	Y		Valve leak ≤ 100 ppm	BAAQMD 8-18-401.2	P/Q	Inspection
POC	BAAQMD 8-18-303	Y		Pump and compressor leak ≤ 500 ppm	BAAQMD 8-18-401.2	P/Q	Inspection
POC	BAAQMD 8-18-304	Y		Connection leak ≤ 100 ppm	BAAQMD 8-18-401.2e & BAAQMD Condition 23178, part 18	P/Q	Inspection
POC	BAAQMD 8-18-305	Y		Pressure relief valve leak ≤ 500 ppm	BAAQMD 8-18-401.2	P/Q	Inspection
POC	BAAQMD 8-18-306.1	Y		Valve, pressure relief, pump or compressor must be repaired within 5 years or at the next scheduled turnaround	BAAQMD 8-18-502.4	P/quarterly	report
POC	BAAQMD 8-18-306.2	Y		Awaiting repair Valves ≤ 0.5% Pressure Relief ≤ 1% Pump and Connector ≤ 1%	BAAQMD 8-18-401.5	P/within 24 hours	Inspection
POC	BAAQMD 8-18-306.3.2	Y		Mass emissions & non-repairable equipment allowed Valve ≤ 0.1 lb/day & ≤1.0% Pressure Relief ≤ 0.2 lb/day & ≤ 5% Pump and Connector ≤ 0.2 lb/day & ≤ 5%	BAAQMD 8-18-401.3	P/D	Inspection

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – AB
Applicable Limits and Compliance Monitoring Requirements
COMPONENTS

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 8-18-306.3.3	Y		Total valve, pressure relief, pump or compressor leaks $\geq$ 15 lb/day, they must be repaired within 7 days	BAAQMD 8-18-502.4	P/Q	sampling or equivalent
POC	BAAQMD 8-28-303	Y		Vent Pressure Relief Devices to an Abatement Device with at least 95% by weight control efficiency or Meet Prevention Measures Procedures	BAAQMD 8-28-405	P/turn-around	None
POC	BAAQMD 8-28-304	Y		PHA within 90 days and meet Prevention Measures Procedures. After 2nd release Vent Pressure Relief Devices to an Abatement Device with at least 95% by weight control efficiency.	BAAQMD 8-28-405	P/release per 5 calendar year	None
40 CFR 60; Subpart VVa							
POC	40 CFR 60.482-2a (b)(1)	Y		Pump leak less than 2,000 ppm	40 CFR 60.482-2a (a)(1)	P/M	Measure for leaks
POC	40 CFR 60.482-2a (b)(2)	Y		Pump leak Indicated by dripping liquid	40 CFR 60.482-2a (a)(2)	P/W	Visual Inspection
POC	40 CFR 60.482-2a (e)	Y		Designated "No detectable emissions" less than 500 ppm	40 CFR 60.482-2(e)(3)	P/A	Measure for leaks
POC	40 CFR 60.482-3a (f)	Y		Leak is failure of seal or barrier system	40 CFR 60.482-3a(d)-(f)	C	Sensor for detection of seal or barrier system failure

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – AB
Applicable Limits and Compliance Monitoring Requirements
COMPONENTS

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
POC	40 CFR 60.482-7a (b)	Y		Valve leak > 500 ppm	40 CFR 60.482-7a (a)(1)	P/M unless 2 successive months w/o leak	Measure for leaks
POC	40 CFR 60.482-7a (c)(1)(i)	Y		Valve leak < 500 ppm; 2 successive months w/o leaking	40 CFR 60.482-7(c)	P/Q unless leak found, then monthly monitoring	Measure for leaks
POC	40 CFR 60.482-7(f)	Y		Designated "No detectable emissions" < 500 ppm	40 CFR 60.482-7 (f)(3)	P/A	Measure for leaks
POC	40 CFR 60.482-8a(a)	Y		Pumps and valves in heavy liquid service, Pressure Relief devices (light or heavy liquid), Flanges, Connectors leak shall be measured for leak in 5 days if detected by inspection	40 CFR 60.482-8a(a)	P/E	Visible, Audible, or olfactory Inspection
POC	40 CFR 60.482-8a(b)	Y		Pressure Relief devices (liquid), Flanges, Connectors leak > 10,000 ppm	40 CFR 60.482-8a(a)	P/E	Measure for leaks
BAAQMD Conditions							
POC	BAAQMD Cond# 23178, part 6	Y		Fugitive emissions of POC from hydrogen plant components < 3,000 lb/yr	BAAQMD Cond# 23178, part 18	P/Q	Method 21 and calculations
TOC	BAAQMD Cond# 23178, part 11b	Y		< 100 ppm of TOC (measured as C1) at valves	BAAQMD Cond# 23178, part 17	P/Q	Method 21

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – AB
Applicable Limits and Compliance Monitoring Requirements
COMPONENTS

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
	BAAQMD Cond# 23178, part 15	Y		< 100 ppm of TOC (measured as C1) at pumps and compressors	BAAQMD Cond# 23178, part 17	P/Q	Method 21

VIII. TEST METHODS

The test methods associated with the emission limit of a District regulation are generally found in Section 600 et seq. of the regulation. The following table indicates only the test methods associated with the emission limits included in Section VII, Applicable Limits & Compliance Monitoring Requirements, of this permit.

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
SIP 6-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions
BAAQMD 6-1-304	Tube Cleaning	Manual of Procedures, Volume I, Evaluation of Visible Emissions; or USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
SIP 6-304	Tube Cleaning	Manual of Procedures, Volume I, Evaluation of Visible Emissions; or USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
BAAQMD 6-1-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulates Sampling or USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
SIP 6-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulates Sampling or USEPA Method 5, Determination of Particulate Matter Emissions 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 USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
SIP 6-310.3	Particulate Weight Limitation for Heat Transfer Operations	Manual of Procedures, Volume IV, ST-15, Particulates Sampling or USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources

VIII. Test Methods

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
BAAQMD 6-1-311	General Operations	Manual of Procedures, Volume IV, ST-15, Particulates Sampling or USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
SIP 6-311	General Operations	Manual of Procedures, Volume IV, ST-15, Particulates Sampling or USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
NSPS 40 CFR 60 Subpart J	**Standards of Performance for Petroleum Refineries (7/1/00)**	
60.104(a)(1)	Fuel gas H2S concentration limited to 230 mg/dscm (0.10 gr/dscf)	Method 11, Determination of Hydrogen Sulfide Content of Fuel Gas Streams in Petroleum Refineries

IX. PERMIT SHIELD

Not applicable

X. REVISION HISTORY

Initial Issuance (Application 14738)	March 4, 2010
Administrative Amendment Change end of compliance certification period in Section 1, Part G, from June 30th to February 28th or 29th. Change date of compliance certification submittal in Section 1, Part G, from July 30th to March 31st.	July 29, 2010
Administrative Amendment (Application 23561) Change to non-federally enforceable ammonia monitoring requirements in Condition 23181	March 9, 2012

XI. GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer

API
American Petroleum Institute

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

BARCT
Best Available Retrofit Control Technology

Basis
The underlying authority that allows the District to impose requirements.

C5
An Organic chemical compound with five carbon atoms

C6
An Organic chemical compound with six carbon atoms

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CEQA
California Environmental Quality Act

CEM
A "continuous emission monitor" is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NOx concentration) in an exhaust stream.

CFR
The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CO
Carbon Monoxide

CO2
Carbon Dioxide

XI. Glossary

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

DAF
A "dissolved air flotation" unit is a process vessel where air bubbles injected at the bottom of the vessel are used to carry solids in the liquid into a froth on the liquid surface, where it is removed.

District
The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

dscm
Dry Standard Cubic Meter

E 6, E 9, E 12
Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53 E 6 equals (4.53) x (10^6) = (4.53) x (10 x 10 x 10 x 10 x 10 x 10) = 4,530,000. Scientific notation is used to express large or small numbers without writing out long strings of zeros.

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District Regulations.

Federally Enforceable, FE
All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPS), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), and also including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP
Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

FR
Federal Register

GLM
Ground Level Monitor

grains
1/7000 of a pound

Graphitic
Made of graphite.

HAP
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

H2S
Hydrogen Sulfide

XI. Glossary

H2SO4
Sulfuric Acid

Hg
Mercury

HHV
Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

HRSG
Heat recovery steam generator

LHV
Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60F.

Long ton
2200 pounds

Major Facility
A facility with potential emissions of: (1) at least 100 tons per year of any regulated air pollutant, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MDEA
Methyl Diethanolamine

MFR
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Act and implemented by District Regulation 2, Rule 6.

MOP
The District's Manual of Procedures

MSDS
Material Safety Data Sheet

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

NESHAPS
National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NH3
Ammonia

NMHC
Non-methane Hydrocarbons

NMOC
Non-methane Organic Compounds (Same as NMHC)

XI. Glossary

NOx
Oxides of nitrogen.

NSPS
Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR
New Source Review. A federal program for pre-construction review and permitting of new and modified sources of air pollutants for which the District is classified "non-attainment". Mandated by Title I of the Clean Air Act and implemented by 40 CFR Parts 51 and 52 as well as District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

O2
The chemical name for naturally-occurring oxygen gas.

Offset Requirement
A New Source Review requirement to provide federally enforceable emission offsets at a specified ratio for the emissions from a new or modified source and any pre-existing cumulative increase minus any onsite contemporaneous emission reduction credits. Applies to emissions of POC, NOx, PM10, and SO2.

POC
Precursor Organic Compounds

PM
Total Particulate Matter

PM10
Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD
Prevention of Significant Deterioration. A federal program for permitting new and modified sources of air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

Regulated Organic Liquid
"Regulated organic liquids" are those liquids which require permits, or which are subject to some regulation, when processed at a liquid-handling operation. For example, for refinery marine terminals, regulated organic liquids are defined as "organic liquids" in Regulation 8, Rule 44.

RFG
Refinery Fuel Gas

SCR
A "selective catalytic reduction" unit is an abatement device that reduces NOx concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates at a specific temperature range, and injected ammonia to promote the conversion of NOx compounds to nitrogen gas.

SIP
State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO2
Sulfur dioxide

SO2 Bubble
An SO2 bubble is an overall cap on the SO2 emissions from a defined group of sources, or from an entire facility.

XI. Glossary

SO2 bubbles are sometimes used at refineries because combustion sources are typically fired entirely or in part by "refinery fuel gas" (RFG), a waste gas product from refining operations. Thus, total SO2 emissions may be conveniently quantified by monitoring the total amount of RFG that is consumed, and the concentration of H2S and other sulfur compounds in the RFG.

SO3
Sulfur trioxide

THC
Total Hydrocarbons (NMHC + Methane)

therm
100,000 British Thermal Unit

Title V
Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC
Total Organic Compounds (NMOC + Methane, Same as THC)

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Plan

TRS
"Total reduced sulfur" is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO2 that will be present in the combusted fuel gas, since sulfur compounds are converted to SO2 by the combustion process.

TSP
Total Suspended Particulate

TVP
True Vapor Pressure

VOC
Volatile Organic Compounds

Units of Measure:

bbl	=	barrel of liquid (42 gallons)
bhp	=	brake-horsepower
btu	=	British Thermal Unit
C	=	degrees Celsius
F	=	degrees Fahrenheit
f^3	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour

XI. Glossary

lb	=	pound
in	=	inches
max	=	maximum
m^2	=	square meter
min	=	minute
M	=	thousand
Mg	=	mega-gram, one thousand grams
µg	=	micro-gram, one millionth of a gram
MM	=	million
mm	=	millimeter
MMbtu	=	million btu
mm Hg	=	millimeters of Mercury (pressure)
MW	=	megawatts
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

Symbols:

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to