

# Bay Area Air Quality Management District

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

---

---

## Proposed

# MAJOR FACILITY REVIEW PERMIT

Issued To:  
**Air Products and Chemicals, Inc.**  
**Facility #B0295**  
A support facility for:  
**Tesoro Refining and Marketing Company**  
**Facility #B2758 & Facility #B2759**

**Facility Addresses:**

Facility #A0295  
Golden Eagle Refinery  
150 Solano Way  
Martinez, CA 94553

**Mailing Address:**

555 1<sup>st</sup> Street  
Benicia, CA 94510

**Responsible Official**

Eric Schneider  
Area Manager, Air Products and Chemicals  
(925) 372-9302, x14

**Facility Contact**

Scot C. Govert  
Environmental Engineer  
(707) 748-7595, x11

---

---

**Type of Facility: Gases for Petroleum Refining**

**Primary SIC:** 2813

**Product:** Hydrogen

BAAQMD Engineering Division Contact:  
Arthur P. Valla

**ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

---

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

Date

## TABLE OF CONTENTS

I.	STANDARD CONDITIONS.....	3
A.	ADMINISTRATIVE REQUIREMENTS .....	3
B.	CONDITIONS TO IMPLEMENT REGULATION 2, RULE 6, MAJOR FACILITY REVIEW .....	3
C.	REQUIREMENT TO PAY FEES.....	5
D.	INSPECTION AND ENTRY .....	5
E.	RECORDS.....	5
F.	MONITORING REPORTS.....	5
G.	COMPLIANCE CERTIFICATION.....	6
H.	EMERGENCY PROVISIONS .....	6
I.	SEVERABILITY .....	7
J.	MISCELLANEOUS CONDITIONS .....	7
K.	ACCIDENTAL RELEASE .....	7
II.	EQUIPMENT.....	8
	<i>Table II A - Permitted Sources.....</i>	<i>8</i>
	<i>Table II B – Abatement Devices.....</i>	<i>8</i>
	<i>Table II C- –Sources Exempt From Permitting .....</i>	<i>9</i>
III.	GENERALLY APPLICABLE REQUIREMENTS .....	10
IV.	SOURCE-SPECIFIC APPLICABLE REQUIREMENTS.....	14
	SECTION A SITEWIDE .....	14
	SECTION B PROCESS UNITS .....	20
	SECTION C COMBUSTION .....	23
	SECTION D - MISCELLANEOUS ORGANIC SOURCES (FUGITIVE COMPONENTS) .....	29
V.	SCHEDULE OF COMPLIANCE.....	41
VI.	PERMIT CONDITIONS.....	42
	CONDITION 21087.....	42
	CONDITION 25199.....	45
	CONDITION 25995.....	47
VII.	APPLICABLE LIMITS & COMPLIANCE MONITORING REQUIREMENTS.....	50
	SECTION A SITEWIDE .....	50
	SECTION B PROCESS UNITS .....	52
	SECTION C COMBUSTION .....	54
	SECTION D MISCELLANEOUS ORGANIC SOURCES (INCLUDING FUGITIVE COMPONENTS) .....	57
VIII.	TEST METHODS .....	64
IX.	PERMIT SHIELD.....	68
	SUBSUMED REQUIREMENTS .....	68
X.	REVISION HISTORY .....	70
XI.	GLOSSARY.....	71

## 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 5/4/2011);
- SIP Regulation 1 - General Provisions and Definitions  
(as approved by EPA on 6/28/1999);
- BAAQMD Regulation 2, Rule 1 - Permits, General Requirements  
(as amended by the District Board on 4/18/2012);
- SIP Regulation 2, Rule 1 - Permits, General Requirements  
(as approved by EPA on 1/26/1999);
- BAAQMD Regulation 2, Rule 2 - Permits, New Source Review  
(as amended by the District Board on 6/15/2005);
- SIP Regulation 2, Rule 2 - Permits, New Source Review and Prevention of Significant Deterioration  
(as approved by EPA on 1/26/1999);
- BAAQMD Regulation 2, Rule 4 - Permits, Emissions Banking  
(as amended by the District Board on 12/19/2012);
- SIP Regulation 2, Rule 4 - Permits, Emissions Banking  
(as approved by EPA on 1/26/1999);
- BAAQMD Regulation 2, Rule 5 – New Source Review of Toxic Air Contaminants  
(as amended by the District Board on 1/6/2010);
- BAAQMD Regulation 2, Rule 6 - Permits, Major Facility Review  
(as amended by the District Board on 4/16/2003); and.
- SIP Regulation 2, Rule 6 – Permits, Major Facility Review  
(as approved by EPA on 6/23/1995)

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

1. This Major Facility Review Permit was issued on TBD, and expires on TBD. The permit holder shall submit a complete application for renewal of this Major Facility Review Permit no later than TBD, and no earlier than TBD. **If a complete application for renewal has not been submitted in accordance with this deadline, the facility may not operate after TBD.** If the permit renewal has not been issued by TBD, 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) -- DATES WILL BE ENTERED IN FINAL PERMIT.
2. The permit holder shall comply with all conditions of this permit. The permit

## I. Standard Conditions

- 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 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, which 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

## **I. Standard Conditions**

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, Part 3, §4.12)

## **D. Inspection and Entry**

Access to Facility: The permit holder shall provide reasonable access to the facility and equipment, which 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 [date of issuance], to [June 30<sup>th</sup> or December 31<sup>st</sup>]. The report shall be submitted by [July 31<sup>st</sup> or January 31<sup>st</sup>]. Subsequent reports shall be for the following reporting periods: January 1st through June 30th and July 1st through December 31<sup>st</sup>, 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

## **I. Standard Conditions**

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. Certification periods will be January 1<sup>st</sup> to December 31<sup>st</sup>. All compliance certifications are due on the last day of the month after the end of the certification period. 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 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)

## **I. Standard Conditions**

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. In Table IIA, for each source with a capacity identified as a firm limit, the maximum capacity for each source as shown in Table IIA 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)
2. [Reserved]
3. The owner/operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled start-up or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours after the unscheduled startup/shutdown 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. [basis: Regulation 2-1-403]
4. Where an applicable requirement allows multiple compliance options and where more than one such option is incorporated into the permit, the permit holder must maintain records indicating the selected compliance option. Such records at a minimum shall indicate when any change in options has occurred. In addition, the annual compliance certification must specifically indicate which option or options were selected during the certification period. This is in addition to any recordkeeping and reporting contained in the requirement itself.

### **K. Accidental Release**

This facility is subject to 40 CFR Part 68, Chemical Accident Prevention Provisions. The permit holder shall submit a risk management plan (RMP) by the date specified in §68.10. The permit holder shall also certify compliance with the requirements of Part 68 as part of the annual compliance certification, as required by Regulation 2, Rule 6. (40 CFR Part 68, Regulation 2, Rule 6)

## II. EQUIPMENT

**Table II A - Permitted Sources**

**Plant #B0295 – Air Products and Chemicals, Inc. - Golden Eagle Refinery**

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 pursuant to 2-1-301. Throughput limits function as reporting thresholds as described in Standard Conditions J.

S-#	Description	Make or Type	Model	Capacity	Grandfathered Limit, or Firm Limit and Basis
1030	No. 2 Hydrogen Plant	KTI with Air Products Pressure Swing Absorption purification system		12,775MM SCFY 38MM SCFD	Firm Limit Condition #21087, part 13 New Source Review
1031	No. 2 Hydrogen Plant Reforming Furnace Refinery Fuel Gas, Natural Gas, Hydrogen Plant Pressure Swing Absorption Gas Abated by A-38 SCR	KTI	Top-fire box style	2,580,000MM Btu/yr 294MM Btu/hr	Firm Limit Condition #25199, part 1 New Source Review

**Table II B – Abatement Devices**

**Plant #B0295 – Air Products and Chemicals, Inc. - Golden Eagle Refinery**

A-#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
38	No. 2 Hydrogen Plant Selective Catalytic Reduction (SCR) System	S1031	BAAQMD Condition # 21087, Part 1	none	NOx: 10 ppmvd corrected to 3% oxygen, 3 hour average



## II. Equipment

**Table II C- –Sources Exempt From Permitting**

**Plant #B0295 – Air Products and Chemicals, Inc. - Golden Eagle Refinery**

The following sources have been determined to be exempt from the requirements of BAAQMD Regulation 2, Permits and have applicable requirement(s) listed in Section IV.

<b>S-#</b>	<b>Description</b>	<b>Make or Type</b>	<b>Model</b>	<b>Capacity</b>	<b>Comment (Exemption Citation)</b>
N/A	Water Heater	Electric		50 gallons	2-1-114.1
N/A	Calorimeter	COSA	CW95 Digital		2-1-114.1
N/A	Abrasive Blasting	ECONOLINE			2-1-118.1
N/A	Wipe Cleaning				2-1-118.9
N/A	Pedestal Grinder and Hand-held Grinders	Baldor Electric	8107W	¾ HP	2-1-121.1
N/A	Aqueous Ammonia Storage Tank			5,000 gallons	2-1-123.2
N/A	Lubricating Oil Drums	Drums		54 gallons	2-1-123.3.4

### 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 the 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 (05/04/2011)	N
SIP Regulation 1	General Provisions and Definitions (06/28/1999)	Y
BAAQMD Regulation 2, Rule 1	General Requirements (04/18/2012)	N
SIP Regulation 2, Rule 1	General Requirements (01/26/1999)	Y

### III. Generally Applicable Requirements

**Table III**  
**Generally Applicable Requirements**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>
BAAQMD Regulation 2, Rule 2	New Source Review (06/15/2005)	N
SIP Regulation 2, Rule 2	New Source Review (01/26/1999)	Y
BAAQMD Regulation 2, Rule 4	Emissions Banking (12/19/2012)	N
SIP Regulation 2, Rule 4	Emissions Banking (01/26/1999)	Y
BAAQMD Regulation 2, Rule 5	New Source Review of Toxic Air Contaminants (01/26/2010)	N
BAAQMD Regulation 2, Rule 6	Major Facility Review (04/16/2003)	N
SIP Regulation 2, Rule 6	Major Facility Review (06/23/1995)	Y
BAAQMD Regulation 2, Rule 9	Interchangeable Emission Reduction Credits (06/15/2005)	N
BAAQMD Regulation 3	Fees (06/06/2012)	N
SIP Regulation 3	Fees (05/03/1984)	Y
BAAQMD Regulation 4	Air Pollution Episode Plan (03/20/1991)	N
SIP Regulation 4	Air Pollution Episode Plan (08/06/1990)	Y
BAAQMD Regulation 5	Open Burning (07/09/2008)	N
SIP Regulation 5	Open Burning (09/04/1998)	Y
BAAQMD Regulation 6, Rule 1	Particulate Matter, General Requirements (12/05/2007)	N
SIP Regulation 6	Particulate Matter and Visible Emissions (09/04/1998)	Y
BAAQMD Regulation 7	Odorous Substances (03/17/1982)	N
BAAQMD Regulation 8, Rule 1	Organic Compounds - General Provisions (06/15/1994)	Y
BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (07/20/2005)	N
SIP Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (03/22/1995)	Y
BAAQMD Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (07/01/2009)	N
SIP Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (01/02/2004)	Y
BAAQMD Regulation 8, Rule 4	Organic compounds - General Solvent and Surface Coating Operations (10/16/2002)	Y
BAAQMD Regulation 8, Rule 5	Organic Compounds – Storage of Organic Liquids (10/18/2006)	N
SIP Regulation 8, Rule 5	Organic Compounds – Storage of Organic Liquids (06/05/2003)	Y
BAAQMD Regulation 8, Rule 10	Organic Compounds – Process Vessel Depressurization (01/21/2004)	N
SIP Regulation 8, Rule 10	Organic Compounds – Storage of Organic Liquids (10/03/1984)	Y

### III. Generally Applicable Requirements

**Table III**  
**Generally Applicable Requirements**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>
BAAQMD Regulation 8, Rule 16	Organic Compounds – Solvent Cleaning Operations (10/16/2002)	Y
BAAQMD Regulation 8, Rule 18	Organic Compounds – Equipment Leaks (09/15/2004)	N
SIP Regulation 8, Rule 18	Organic Compounds – Equipment Leaks (06/05/2003)	Y
BAAQMD Regulation 8, Rule 22	Organic Compounds – Valve and Flanges at Chemical Plants (06/01/1994)	Y
SIP Regulation 8, Rule 25	Organic Compounds – Pump and Compressor Seals at Petroleum Refineries, Chemical Plants, Bulk Plants and Bulk Terminals (03/07/1995)	Y
BAAQMD Regulation 8, Rule 28	Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants (12/21/2005)	N
SIP Regulation 8, Rule 28	Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants (03/07/1995)	Y
BAAQMD Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (12/20/1995)	N
SIP Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (3/22/1995)	Y
BAAQMD Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (7/17/2002)	N
SIP Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (2/26/2002)	Y
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants - Asbestos Demolition, Renovation and Manufacturing (10/07/1998)	N
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (07/11/1990)	Y
SIP Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (09/02/1981)	N
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
California Health and Safety Code Title 17, Section 93116	Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater	N

### III. Generally Applicable Requirements

**Table III**  
**Generally Applicable Requirements**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>
40 CFR 61 Subpart M	National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos (06/19/1995)	Y
40 CFR 82 Subpart F	Protection of Stratospheric Ozone; Recycling and Emissions Reduction (04/13/2005)	Y
40 CFR 82 Subpart H	Protection of Stratospheric Ozone; Halon Emissions Reduction (03/05/1998)	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.

#### SECTION A SITEWIDE

**Table IV – A**  
**Source-specific Applicable Requirements**  
**FACILITY B0295**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>BAAQMD Regulation 1</b>	<b>General Provisions and Definitions (05/04/2011)</b>		
1-510	Area Monitoring	Y	
1-521	Monitoring may be required.	Y	
1-530	Area Monitoring Downtime	Y	
1-540	Area Monitoring Data Examination	Y	
1-542	Area Concentration Excesses	Y	
1-543	Record Maintenance	Y	
1-544	Monthly Summary	Y	
<b>BAAQMD Regulation 2 Rule 1</b>	<b>Permits - General Requirements (04/18/2012)</b>		
2-1-429	Federal Emissions Statement	N	
<b>BAAQMD Regulation 7</b>	<b>Odorous Substances</b>		

## VI. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-specific Applicable Requirements**  
**FACILITY B0295**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
7-301	General Limit on Odorous Substances:	N	
7-302	Limit on Odorous Substances at or Beyond Property Line	N	
7-303	Limit on Odorous Compounds	N	
7-302 Table II	Maximum Allowable Ammonia Emissions	N	
7-401	Collection of Samples	N	
7-402	Analysis of Samples	N	
7-403	Evaluation Apparatus	N	
7-404	Evaluation Procedure	N	
7-405	Evaluation Analysis	N	
7-601	Collection of Samples	N	
7-602	Sampling Equipment and Techniques for Collection	N	
<b>BAAQMD Regulation 8, Rule 16</b>	<b>Organic Compounds - Solvent Cleaning Operations (10/16/2002)</b>		
8-16-111	Exemption, Wipe Cleaning	Y	
8-16-501.3	Solvent Records – Wipe Cleaning	Y	
<b>BAAQMD Regulation 8 Rule 40</b>	<b>Organic Compounds - Aeration of Contaminated Soil and Removal of Underground Storage Tanks (06/15/2005)</b>		
8-40-304	Active Storage Piles	Y	
8-40-305	Inactive Storage Piles	Y	
8-40-306	Contaminated Soil – Excavation and Removal	Y	
8-40-402	Reporting, Excavation of Contaminated Soil	Y	
8-40-403	Reporting, Excavation of Contaminated Soil	Y	
8-40-404	Reporting, Contaminated Soil Excavation During Organic Liquid Service Pipeline Leak Repairs	Y	
8-40-405	Reporting, Contaminated Soil Excavations Unrelated to Underground Storage Tank Activities	Y	
8-40-601	Contaminated Soil Sampling	Y	
8-40-602	Measurement of Organic Content	Y	
8-40-604	Measurement of Organic Concentration	Y	
8-40-605	Analysis of Samples Initial Boiling Point	Y	
<b>BAAQMD Regulation 9 Rule 1</b>	<b>Inorganic Gaseous Pollutants – Sulfur Dioxide (03/15/1995)</b>		
9-1-110	Conditional Exemption, Area Monitoring	Y	
9-1-301	Limitations on Ground Level Concentrations	Y	
9-1-302	General Emission limitation	Y	
9-1-501	Area Monitoring Requirements	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-specific Applicable Requirements**  
**FACILITY B0295**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>BAAQMD Regulation 9 Rule 2</b>	<b>Inorganic Gaseous Pollutants - Hydrogen Sulfide (10/06/1999)</b>		
9-2-110	Exemptions	N	
9-2-301	Limitations on Hydrogen Sulfide	N	
9-2-501	Area Monitoring Requirements (Applies only when ground level monitors are not operating or are out of compliance.)	N	
<b>BAAQMD Regulation 10</b>	<b>Standards of Performance for New Stationary Sources – incorporated by reference (02/16/2000)</b>		
10-1	Subpart A – General Provisions (12/20/1995)	Y	
10-14	Subpart J -- Standards Of Performance For Petroleum Refineries	Y	
<b>40 CFR 60 Subpart A</b>	<b>NSPS - General Provisions (12/22/2008)</b>		
60.1	Applicability	Y	
60.2	Definitions	Y	
60.3	Units and Abbreviations	Y	
60.4	Address	Y	
60.5	Determination of Construction or Modification	Y	
60.6	Review of Plans	Y	
60.9	Availability of Information	Y	
60.14	Modification	Y	
60.15	Reconstructions	Y	
60.17	Incorporated by Reference	Y	
<b>40 CFR 63 Subpart A</b>	<b>NESHAPs for Source Categories - General Provisions (8/11/2011)</b>		
63.1	Applicability	Y	
63.2	Definitions	Y	
63.3	Units and abbreviations	Y	
63.4	Prohibited activities and circumvention	Y	
63.5	Preconstruction review and notification requirements	Y	
63.6	Compliance with standards and maintenance requirements	Y	
63.7	Performance test requirements	Y	
63.8	Monitoring requirements	Y	
63.9	Notification requirements	Y	
63.10	Recordkeeping and reporting requirements	Y	
63.12	State Authority and Delegations	Y	
63.13	Addresses of EPA Regional Offices	Y	
63.14	Incorporation by Reference	Y	
63.15	Availability of Information and confidentiality	Y	
63.16	Performance Track Provisions	Y	



## VI. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-specific Applicable Requirements**  
**FACILITY B0295**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>40 CFR 63 Subpart B</b>	<b>NESHAPs for Source Categories: Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections, Section 112(g) and 112(j); Final Rule (07/11/2005)</b>		
63.52	Approved process for new and existing affected sources.	Y	
63.52(a)	Sources subject to section 112(j) as of the section 112(j) deadline	Y	
63.52(a)(1)	Submit an application for Title V permit revision	Y	
63.52(e)	Permit application review	Y	
63.52(h)	Enhanced monitoring	Y	
63.52(h)(i)	MACT emission limitations	Y	
63.52(h)(i)(1)	Compliance with all requirements applicable to affected sources, including compliance date for affected sources	Y	
63.53	Application content for case-by-case MACT determination	Y	
63.53(a)	Part 1 MACT application	Y	
63.53(b)	Part 2 MACT application	Y	
<b>40 CFR 63 Subpart CC</b>	<b>NESHAPs for Source Categories - Petroleum Refineries (06/30/2010)</b>		
63.640(a)	Applicability applies to petroleum refining process units and related emission points	Y	
63.640(c)	Applicability and Determination of Affected Source – Includes all emission points listed in subpart	Y	
63.640(d)	Applicability and Determination of Affected Source – Exclusions	Y	
63.640(e)	Applicability and Determination of Affected Source – Storage Vessels	Y	
63.640(f)	Applicability and Determination of Affected Source – Miscellaneous Process Vents	Y	
63.640(g)	Applicability and Determination of Affected Source – Exempt Processes	Y	
63.640(h)	Applicability and Determination of Affected Source – Compliance dates	Y	
63.640(i)	Applicability and Determination of Affected Source – Additional petroleum refining process units at existing major source	Y	
63.640(j)	Applicability and Determination of Affected Source – Changes to existing petroleum refining process units	Y	
63.640(k)	Applicability and Determination of Affected Source – Additional requirements for new or changed process units if subject to requirements for new process units in 63.640(i) or (j)	Y	
63.640(l)	Applicability and Determination of Affected Source – Requirements for added Group 1 emission points (i.e. process vents, storage vessels, etc) not subject to requirements for new process units in 63.640(i) or (j)	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-specific Applicable Requirements**  
**FACILITY B0295**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
63.640(m)	Applicability and Determination of Affected Source – Changes causing Group 2 emission points to become Group 1 points	Y	
63.640(o)	Applicability and Determination of Affected Source – Overlap with other regulations for wastewater	Y	
63.640(p)	Applicability and Determination of Affected Source – Overlap with other regulations for equipment leaks	Y	
63.640(q)	Applicability and Determination of Affected Source Overlap of subpart CC with local or State regulations; the permitting authority for the affected source may allow consolidation of the monitoring, recordkeeping, and reporting requirements under this subpart.	Y	
63.641	Definitions	Y	
63.642	General Standards	Y	
63.642(a)	Apply for a part 70 or part 71 operating permit	Y	
63.642(c)	Table 6 of this subpart specifies the subpart A provisions that apply.	Y	
Appendix Table 1	Hazardous Air Pollutants	Y	
Appendix Table 6	General Provisions Applicability to Subpart CC	Y	
<b>BAAQMD Condition 21087</b>			
Part 8	Valve Design Requirements (Basis: BACT, Offsets)	Y	
Part 9	Pump Design Requirements (Basis: BACT, Offsets)	Y	
Part 11	General Source Test Requirements (Basis: Cumulative Increase, Offsets)	Y	
Part 12	Recordkeeping Requirements (Basis: Cumulative Increase, BACT, Offsets)	Y	
Part 14	Recordkeeping Requirements (Basis: Cumulative Increase, BACT, Offsets)	Y	
<b>BAAQMD Condition 25199</b>			
Part 8	General Source Test Requirements (Basis: Cumulative Increase, Offsets)	Y	
Part 19	Recordkeeping Requirements (Basis: Cumulative Increase, BACT, Offsets)	Y	
<b>BAAQMD Condition 25995</b>			
Part 1	Flare Causal Report Requirements (Basis: Regulation 2-1-403)	N	
Part 2	Vent Gas Prevention Measures (Basis: Regulation 2-1-403)	N	
Part 3	General Information Requirements (Basis: Regulation 2-1-403)	N	

## VI. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-specific Applicable Requirements**  
**FACILITY B0295**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
Part 4	Requirements for Updated FMP for New or Modified Equipment (Basis: Regulation 2-1-403)	N	

## VI. Source-Specific Applicable Requirements

### SECTION B PROCESS UNITS

**Table IV – B**  
**Source-specific Applicable Requirements**  
**S1030-No. 2 Hydrogen Plant**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>District Regulation 8, Rule 2</b>	<b>Miscellaneous Operations (07/20/05)</b>		
8-2-301	Limit on Organic Emissions from Miscellaneous Operations	Y	
<b>BAAQMD Regulation 8, Rule 9</b>	<b>Vacuum Producing Systems (10/03/84)</b>		
8-9-301	Vacuum Producing Systems	Y	
<b>BAAQMD Regulation 8, Rule 10</b>	<b>Organic Compound – Process Vessel Depressurization (1/21/2004)</b>		
8-10-101	Description	N	
8-10-110	Exemption: Storage Vessels	N	
8-10-110.1	Exemption: Storage Vessels	N	
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	
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	
<b>SIP Regulation 8, Rule 10</b>	<b>Organic Compound – Process Vessel Depressurization (10/03/1984)</b>		
8-10-301	Process Vessel Depressurizing.	Y	
8-10-301.1	recovery to the fuel gas system	Y	
8-10-301.2	combustion at a firebox or incinerator	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – B**  
**Source-specific Applicable Requirements**  
**S1030-No. 2 Hydrogen Plant**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
8-10-301.3	combustion at a flare	Y	
8-10-301.4	containment such that emissions to atmosphere do not occur	Y	
8-10-401	Turnaround Records.	Y	
8-10-401.1	date of depressurization event	Y	
8-10-401.2	approximate vessel hydrocarbon concentration when emissions to atmosphere begin	Y	
8-10-401.3	approximate quantity of POC emissions to atmosphere	Y	
<b>BAAQMD Regulation 8, Rule 28</b>	<b>Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants (12/21/2005)</b>		
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	
8-28-404	Identification	N	
<b>SIP Regulation 8, Rule 28</b>	<b>Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants (05/24/2004)</b>		
8-28-302	Pressure Relief Devices at New or Modified Sources at Petroleum Refineries	Y	
8-28-303	Pressure Relief Devices at Existing Sources at Petroleum Refineries	Y	
8-28-404	Identification	Y	
<b>40 CFR 63 Subpart CC</b>	<b>NESHAPs for Source Categories - Petroleum Refineries (06/30/2010)</b>		
63.642	General Standards	Y	
63.642(a)	Apply for a part 70 or part 71 operating permit	Y	
63.642(c)	Table 6 of this subpart specifies the subpart A provisions that apply.	Y	
63.642(d)	Initial performance tests and compliance determinations shall be required only as specified in this subpart	Y	
63.642(e)	Keep copies of all applicable reports and records for at least 5 years, except as otherwise specified in this subpart.	Y	
63.642(f)	All reports required by this subpart shall be sent to the Administrator	Y	
63.642(i)	Existing source owners/operators shall demonstrate compliance with (g) by following procedures in (k) or by following emission averaging compliance approach in (l) for specified emission points and the procedures in (k) for other emission points.	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – B**  
**Source-specific Applicable Requirements**  
**S1030-No. 2 Hydrogen Plant**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
63.642(k)	Existing source owners/operators may comply, and new sources owners/operators shall comply with the wastewater provisions in 63.647 and comply with 63.654 and is exempt from (g)	Y	
<b>BAAQMD Condition # 21087</b>			
Part 8	Valve Design Criteria (Basis: BACT, Offsets)	Y	
Part 9	Pump Design Criteria (Basis: BACT, Offsets)	Y	
Part 12	Recordkeeping Requirements (Basis: Cumulative Increase, BACT, Offsets)	Y	
Part 13	Throughput Limit (Basis: Cumulative Increase, Offsets)	Y	
Part 16	Recordkeeping Requirements (Basis: Cumulative Increase, Offsets)	Y	

## VI. Source-Specific Applicable Requirements

### SECTION C COMBUSTION

**Table IV – C**  
**Source-specific Applicable Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>BAAQMD Regulation 1</b>	<b>General Provisions and Definitions (07/19/2006)</b> <b>Applies to all sources</b>		
1-520	Continuous Emission Monitoring	Y	
1-520.8	Monitors pursuant to Regulations 10, 12 and 2-1-403	Y	
1-522	Continuous Emission Monitoring and Recordkeeping Procedures	N	
1-522.1	approval of plans and specifications	Y	
1-522.2	scheduling requirements	Y	
1-522.3	CEM performance testing	Y	
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	monitors required by Sections 1-521 or 2-1-403 shall meet the requirements specified by the APCO Continuous Emission Monitoring and Recordkeeping Procedures	Y	
1-523	Parametric Monitoring and Recordkeeping Procedures	N	
1-523.1	Report periods of parametric monitor inoperation	Y	
1-523.2	Limits on periods of parametric monitor inoperation	Y	
1-523.3	Report exceedances	N	
1-523.4	Recordkeeping	Y	
1-523.5	Maintenance and calibration; written policy	Y	
1-602	Area and Continuous Monitoring Requirements	Y	
<b>SIP Regulation 1</b>	<b>General Provisions and Definitions (06/28/1999)</b>		
1-522	Continuous Emission Monitoring and Recordkeeping Procedures	Y	
1-522.7	Excesses	Y	
1-523	Parametric Monitoring and Recordkeeping Procedures	Y	
1-523.3	Report exceedances	Y	
<b>BAAQMD Regulation 6 Rule 1</b>	<b>Particulate Matter; General Requirements (12/07/2007)</b>		
6-1-301	Ringelmann No. 1 Limitation	N	
6-1-302	Opacity Limitation	N	

## VI. Source-Specific Applicable Requirements

**Table IV – C**  
**Source-specific Applicable Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
6-1-304	Tube Cleaning	N	
6-1-305	Visible Particles	N	
6-1-310	Particle Weight Limitation	N	
6-1-310.3	Heat transfer operations	N	
6-1-601	Particulate Matter, Sampling, Sampling Facilities, Opacity Instruments and Appraisal of Visible Emissions	N	
<b>SIP Regulation 6</b>	<b>Particulate Matter and Visible Emissions (09/04/1998)</b>		
6-301	Ringelmann No. 1 Limitation	Y	
6-302	Opacity Limitation	Y	
6-304	Tube Cleaning	Y	
6-305	Visible Particles	Y	
6-310	Particle Weight Limitation	Y	
6-310.3	Heat transfer operations	Y	
6-601	Particulate Matter, Sampling, Sampling Facilities, Opacity Instruments and Appraisal of Visible Emissions	Y	
<b>BAAQMD Regulation 9, Rule 3</b>	<b>Inorganic Gaseous Pollutants - Nitrogen Oxides from Heat Transfer Operations (3/17/82)</b>		
9-3-303	New or Modified Heat Transfer Operation Limits	N	
<b>BAAQMD Regulation 9 Rule 10</b>	<b>Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators, and Process Heaters in Petroleum Refineries (12/15/2010)</b>		
9-10-110.6	Sources subject to BACT exempt	N	
<b>SIP Regulation 9 Rule 10</b>	<b>Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators, and Process Heaters in Petroleum Refineries (04/02/2008)</b>		
9-10-303	Federal Interim Facility-wide NOx emission rate limit	Y	
9-10-502	Monitoring for sources subject to 9-10-303	Y	
9-10-504.1	Recordkeeping for sources subject to 9-10-303	Y	
9-10-505	Reporting requirements for sources subject to 9-10-303 and/or 306	Y	
<b>BAAQMD Regulation 10</b>	<b>Standards of Performance for New Stationary Sources incorporated by reference (02/16/2000)</b>		
10-14	Subpart J – Standards of Performance for Petroleum Refineries	Y	



## VI. Source-Specific Applicable Requirements

**Table IV – C**  
**Source-specific Applicable Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>BAAQMD Manual of Procedures, Volume V</b>	<b>Continuous Emission Monitoring Policy and Procedures (01/20/1982)</b>	N	
<b>40 CFR 60 Subpart A</b>	<b>General Provisions (7/1/2000)</b>		
60.7	Notification and record keeping.	Y	
60.8	Performance tests.		
60.11	Compliance with standards and maintenance requirements.	Y	
60.11(a)	Performance test	Y	
60.11(d)	Good air pollution control practice for minimizing emissions	Y	
60.11(f)	Special provisions	Y	
60.11(g)	Any credible evidence or information	Y	
60.12	Circumvention.	Y	
60.13	Monitoring requirements.	Y	
60.13(a)	Continuous monitoring systems subject to Appendix B, and Appendix F(if used to demonstrate compliance with continuous emission limits), of Part 60	Y	
60.13(b)	Continuous monitoring systems and devices operational prior to performance tests required by 60.8	Y	
60.13(c)	Continuous opacity monitoring systems and devices operational prior to performance tests required by 60.8	Y	
60.13(d)	Continuous monitoring system zero and span calibration requirements	Y	
60.13(e)	Continuous monitoring system minimum frequency of operation	Y	
60.13(f)	Continuous monitoring system installation location requirement	Y	
60.13(h)	Continuous monitoring system averaging criteria		
60.13(i)	Alternatives to any monitoring procedures or requirements	Y	
60.19	General notification and reporting requirements.	Y	
<b>40 CFR 60 Subpart J</b>	<b>NSPS – Standards of Performance for Petroleum Refineries (06/24/2008)</b> <b>Applicability specified in Condition 23562</b>		
60.100	Applicability	Y	
60.100(a)	Applicability: FCCU Catalyst Regenerators, Fuel Gas Combustion Devices, and Claus Sulfur Recovery Plants (20 LTD)	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – C**  
**Source-specific Applicable Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.100(b)	Applicability: Constructed/reconstructed/modified after 6/11/1973 and before May 14, 2007	Y	
60.104	Standards for sulfur oxides	Y	
60.104(a)(1)	Limit on hydrogen sulfide content in fuel gas burned in fuel gas combustion devices	Y	
60.105	Monitoring of Emissions and Operations	Y	
60.105(a)	Continuous monitoring system requirements	Y	
60.105(a)(4)	Monitoring requirement for H <sub>2</sub> S (dry basis) in fuel gas prior to combustion (in lieu of separate combustion device exhaust SO <sub>2</sub> monitors as required by 60.105(a)(3))	Y	
60.105(a)(4)(i)	Span value for H <sub>2</sub> S monitoring is 425 mg/dscm H <sub>2</sub> S	Y	
60.105(a)(4)(ii)	Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location	Y	
60.105(a)(4)(iii)	Use Performance Specification 7 for performance evaluations and Method 11, 15, 15A, or 16 for relative accuracy evaluations	Y	
60.105(e)	Periods of excess emissions for 60.7(c)	Y	
60.105(e)(3)	Excess emissions of sulfur dioxide from fuel gas combustion	Y	
60.105(e)(3)(ii)	excess H <sub>2</sub> S in fuel gas as measured under 60.105(a)(4)	Y	
60.106	Test Methods and Procedures	Y	
60.106(a)	Performance test requirements	Y	
60.106(e)(1)	Compliance determination for H <sub>2</sub> S standards for fuel gas combustion devices	Y	
60.107	Reporting and recordkeeping requirements	Y	
60.107(f)	Semiannual reporting	Y	
60.107(g)	Certification of semiannual report	Y	
<b>40 CFR 60 Appendix B</b>	<b>NSPS Title 40 Part 60 Appendix B – Performance Specifications (10/17/2000)</b>		
Performance Specification 7	Specifications and Test Procedures for Hydrogen Sulfide Continuous Emission Monitoring Systems in Stationary Sources	Y	
<b>40 CFR 60 Appendix F</b>	<b>NSPS – Title 40 Part 60 Appendix F – Quality Assurance Procedures (06/13/2007)</b>		
Procedure 1	QA Requirements for Gas Continuous Emission Monitoring Systems	Y	
<b>40 CFR 64</b>	<b>Compliance Assurance Monitoring (10/22/1997)</b>		
64.1	Definitions	Y	
64.2(a)	General Applicability	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – C**  
**Source-specific Applicable Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
64.2(a)(1)	General Applicability: Subject to an emission limitation or standard for regulated air pollutant	Y	
64.2(a)(2)	General Applicability: Uses a control device to achieve compliance with emission limitation	Y	
64.2(a)(3)	General Applicability: Has pre-control device potential to emit $\geq$ major source threshold	Y	
64.2(b)(1)	Exemptions for emission limitations or standards	Y	
64.2(b)(1)(i)	Exemptions for emission limitations or standards: Emission limitation proposed after 11/15/1990	Y	
64.3	Monitoring design criteria	Y	
64.3(a)	General criteria	Y	
64.3(b)	Performance criteria	Y	
64.3(c)	Evaluation factors	Y	
64.4	Submittal requirements	Y	
64.4(a)	Submit monitoring that satisfies requirements in section 64.3	Y	
64.4(b)	Submit justification for the proposed monitoring elements. Detailed justification not needed for presumptively acceptable monitoring	Y	
64.4(c)	Submit existing operating parameter data from applicable compliance or performance test on control device.	Y	
64.5	Deadlines for submittals	Y	
64.5(a)	Large pollutant-specific emissions units	Y	
64.5(b)	Other pollutant-specific emissions units	Y	
64.5(c)	Effective date to submit information under 64.4	Y	
64.5(d)	Requirements prior to approval of CAM	Y	
64.7	Operation of approved monitoring	Y	
64.7(a)	Commencement of operation	Y	
64.7(b)	Proper maintenance	Y	
64.7(c)	Continued operation	Y	
64.7(d)	Response to excursions or exceedances	Y	
64.7(e)	Documentation of need for improved monitoring	Y	
64.8	Quality improvement plan (QIP) requirements	Y	
64.8(a)	When QIP is required	Y	
64.8(b)	Elements of a QIP	Y	
64.8(c)	Preparation and implementation requirements for QIP	Y	
64.8(d)	When QIP modification is required	Y	
64.8(e)	QIP does not replace other regulatory requirements	Y	
64.9	Reporting and recordkeeping requirements	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – C**  
**Source-specific Applicable Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
64.9(a)	General reporting requirements	Y	
64.9(b)	General recordkeeping requirements	Y	
<b>BAAQMD Condition 21087</b>			
Part 1	NOx and CO concentration limits (basis: BACT)	Y	
Part 2	Fire exclusively natural gas, pressure swing adsorber purge gas, refinery fuel gas	Y	
Part 3	Fuel gas total reduced sulfur and hydrogen sulfide limits (basis: BACT)	Y	
Part 4	Startup and shutdown definitions (basis: cumulative increase, offsets)	Y	
Part 6	NOx and CO CEM requirements (basis: cumulative increase, offsets)	Y	
Part 10	Ammonia slip limit ((basis: toxics)	Y	
Part 11	Source Test general provisions (basis: cumulative increase, offsets)	Y	
Part 12	Recordkeeping requirements (basis: cumulative increase, offsets, BACT)	Y	
Part 14	Fuel Gas Recordkeeping requirements (basis: cumulative increase, offsets, BACT)	Y	
Part 16	Hydrogen Production Recordkeeping requirements (basis: cumulative increase, offsets)	Y	
<b>BAAQMD Condition 25199</b>			
Part 1	Firing rate limit (basis: cumulative increase, offsets, BACT)	Y	
Part 2	Annual NOx, CO, POC, SO2 and PM10 mass emission limits (basis: cumulative increase, offsets)	Y	
Part 3	NOx emission calculation requirements (basis: cumulative increase, offsets)	Y	
Part 4	CO emission calculation requirements (basis: cumulative increase, toxics)	Y	
Part 5	POC source test requirement (basis: cumulative increase, offsets)	Y	
Part 6	SO2 source test requirement (basis: cumulative increase, offsets)	Y	
Part 7	PM-10 source test requirement (basis: cumulative increase, offsets)	Y	
Part 8	Source Test general provisions (basis: cumulative increase, offsets)	Y	
Part 9	Recordkeeping requirements (basis: cumulative increase, offsets, BACT)	Y	

## VI. Source-Specific Applicable Requirements

### SECTION D - MISCELLANEOUS ORGANIC SOURCES (FUGITIVE COMPONENTS)

**Table IV – D.0**  
**Source-specific Applicable Requirements**  
**Summary of Applicable requirements pertaining to fugitive sources**

<b>Process Unit</b>	<b>Note 1</b>	<b>Note 2</b>	<b>Note 3</b>	<b>Note 4</b>	<b>Note 5</b>	<b>Note 6</b>	<b>Note 7</b>	<b>Note 8</b>
S1030 No. 2 Hydrogen Plant	<b>Y</b>	<b>Y</b>	<b>N</b>	<b>Y</b>	<b>Y</b>	<b>N</b>	<b>N</b>	<b>N</b>

**NOTES:**

- (1) The entire facility is subject to Regulation 8 Rule 18 with exemptions as noted in the Rule. The group of equipment subject to the standards includes valves, pumps, compressors, pressure relief devices, diaphragms, hatches, fittings, sampling ports, pipes, plugs, open-ended lines, gauges and sight-glasses.
- (2) The entire facility is subject to NSPS Subpart GGG with exemptions as noted in the rule. The group of equipment subject to the rule includes valves, pumps, pressure relief devices, sampling connection systems, open-ended valve or line and flange or other connector in VOC service.
- (3) No components in the facility are currently subject to NSPS Subpart GGGa, which applies to equipment for which construction, reconstruction or modification commenced after 11/7/06.
- (4) This rule applies to wastewater collection and treatment systems. Wastewater collection system components include structures used to collect and transport wastewater such as process drains, manholes, junction boxes, etc.
- (5) NSPS Subpart QQQ applies to wastewater system equipment in petroleum refineries for which construction, reconstruction or modification commenced after 5/4/87.
- (6) There is no equipment at the facility subject to NESHAP Subpart J or V or BAAQMD Reg 11 Rule 12 because there is no equipment in benzene service as defined in these rules.
- (7) The facility is subject to Benzene Waste NESHAPs (40 CFR 61 Subpart FF) since it is a process unit in a petroleum refinery. However, the facility does not produce streams that could be considered benzene waste. Therefore, the facility is not subject to 40 CFR 61 Subpart FF.
- (8) The facility is potentially subject to Refinery MACT 40 CFR Part 63 Subpart CC. However, the Air Products No 2 Hydrogen Plant does not have equipment that is in organic HAP service as defined in 40 CFR 63.641. Therefore, according to 40 CFR 63.648(a)(1), there are no equipment leak standards applicable.

## VI. Source-Specific Applicable Requirements

**Table IV – D.1  
 Source Specific Applicable Requirements  
 EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>BAAQMD Regulation 8 Rule 8</b>	<b>Organic Compounds - Wastewater Collection and Separation Systems (09/15/2004)</b>		
8-8-101	Description, Applicability	N	
8-8-308	Junction Box: Equipped with either a solid, gasketed, fixed cover totally enclosing the junction box or a solid manhole cover. May include openings in covers/vent pipes if total open area does not exceed 12.6 square inches and vent pipes are 3 ft long.	Y	
8-8-312	Controlled Wastewater Collection System Components at Petroleum Refineries	N	
8-8-313	Uncontrolled Wastewater Collection System Components at Petroleum Refineries; comply with 8-8-313.1 or 8-8-313.2 for uncontrolled sources	N	
8-8-313.2	Uncontrolled Wastewater Collection System Components at Petroleum Refineries; Inspection and Maintenance Plan Option	N	
8-8-314	New Wastewater Collection System Components at Petroleum Refineries ; equip new components with water seal or equivalent control	N	
8-8-402	Wastewater Inspection and Maintenance Plans at Petroleum Refineries	N	
8-8-402.1	Wastewater Inspection and Maintenance Plans at Petroleum Refineries : ID all components and submit to BAAQMD	N	
8-8-402.2	Wastewater Inspection and Maintenance Plans at Petroleum Refineries ; complete initial inspection of components	N	
8-8-402.3	Wastewater Inspection and Maintenance Plans at Petroleum Refineries ; implement 8-8-313.2 Inspection and Maintenance Plan	N	
8-8-402.4	Wastewater Inspection and Maintenance Plans at Petroleum Refineries ; semi-annual inspections of controlled equipment	N	
8-8-402.5	Wastewater Inspection and Maintenance Plans at Petroleum Refineries ; keep records per 8-8-505	N	
8-8-403	Compliance Schedule	N	
8-8-404	Uncontrolled Components Election	N	
8-8-502	Wastewater Critical Organic Compound Concentration or Temperature Records	Y	
8-8-504	Portable Hydrocarbon Detector	Y	
8-8-505	Records for Wastewater Collection System Components at Petroleum Refineries	N	
8-8-505.1	Records for Wastewater Collection System Components at Petroleum Refineries	N	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1**  
**Source Specific Applicable Requirements**  
**EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
8-8-505.2	Records for Wastewater Collection System Components at Petroleum Refineries	N	
8-8-505.3	Records for Wastewater Collection System Components at Petroleum Refineries	N	
8-8-505.4	Records for Wastewater Collection System Components at Petroleum Refineries	N	
8-8-601	Wastewater Analysis for Critical Organic Compounds	N	
8-8-603	Inspection Procedures	N	
<b>SIP Regulation 8 Rule 8</b>	<b>Organic Compounds, Wastewater (Oil-Water) Separators (08/29/1994)</b>		
8-8-101	Description, Applicability	Y	
8-8-601	Wastewater Analysis for Critical OCs	Y	
8-8-603	Inspection Procedures	Y	
<b>BAAQMD Regulation 8 Rule 18</b>	<b>Organic Compounds - Equipment Leaks (09/15/2004)</b>		
8-18-100	General/Applicability	Y	
8-18-110	Exemption, Controlled Seal Systems and Pressure Relief Devices	N	
8-18-113	Limited Exemption, Initial Boiling Point	Y	
8-18-115	Limited Exemption, Storage Tanks	Y	
8-18-116	Limited Exemption, Vacuum Service	Y	
8-18-200	Definitions	Y	
8-18-301	General Standard	Y	
8-18-302	Valves	N	
8-18-303	Pumps and compressors	N	
8-18-304	Connections	N	
8-18-304.1	Connection Leak Discovered by Operator	Y	
8-18-304.2	Connection Leak Discovered by APCO	N	
8-18-304.3	Connections Subject to 8-18-306	N	
8-18-305	Pressure relief devices	Y	
8-18-306	Non-repairable equipment	N	
8-18-306.1	Non-repairable Equipment	N	
8-18-306.2	Non-repairable Equipment	N	
8-18-306.3	Non-Repairable Connections Count as Two Valves	N	
8-18-306.4	Requirements for Valves with Major Leaks ( $\geq 10,000$ ppm)	N	
8-18-307	Liquid Leaks	Y	
8-18-308	Alternate compliance	Y	
8-18-401	Inspection	N	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1  
 Source Specific Applicable Requirements  
 EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
8-18-402	Identification	Y	
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	Y	
8-18-503	Reports	N	
8-18-601	Analysis of Samples	Y	
8-18-602	Inspection Procedure	Y	
8-18-603	Determination of Control Efficiency	N	
8-18-604	Determination of Mass Emissions	N	
<b>SIP Regulation 8 Rule 18</b>	<b>Organic Compounds, Equipment Leaks (06/05/2003)</b>		
8-18-110	Exemption, Controlled Seal Systems and Pressure Relief Devices	Y	
8-18-302	Valves	Y	
8-18-303	Pumps and Compressors	Y	
8-18-304	Connections	Y	
8-18-304.2	Connection Leak Discovered by APCO	Y	
8-18-306	Non-repairable Equipment	Y	
8-18-306.1	Non-repairable Equipment	Y	
8-18-306.2	Non-repairable Equipment	Y	
8-18-401	Inspection	Y	
8-18-502	Records	Y	
8-18-603	Determination of Control Efficiency	Y	
8-18-604	Determination of Mass Emissions	Y	
<b>BAAQMD Regulation 10</b>	<b>Standards of Performance for New Stationary Sources incorporated by reference (02/16/2000)</b>		
10-52	Subpart VV - Standards of Performance for Equipment Leaks for SOCFI (Fugitive Emission Sources) Applicability determined by 40 CFR 63 Subpart CC and 40 CFR 60 Subpart GGG		
10-59	Subpart GGG - Standards of Performance for Equipment Leaks for Petroleum Refineries (Fugitive Emission Sources)		
<b>40 CFR 60 Subpart VV;</b>	<b>Standards of Performance for Equipment Leaks for SOCFI (Fugitive Emission Sources) ((06/02/2008) Referenced by 40 CFR 60 Subpart GGG</b>		
60.482-1	Standards: General	Y	



## VI. Source-Specific Applicable Requirements

**Table IV – D.1**  
**Source Specific Applicable Requirements**  
**EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.482-1(b)	Compliance with 60.482-1 to 60.482-10 will be determined....	Y	
60.482-1(d)	Equipment that is in vacuum service is excluded from the requirements of 60.482-2 to 60.482-10 if it is identified as required in 60.486(e)(5).	Y	
60.482-2	Standards: Pumps in light liquid service	Y	
60.482-2(a)(1)	Monthly monitoring of each pump, except for 60.482-2(d).	Y	
60.482-2(a)(2)	Weekly visual inspection of each pump.	Y	
60.482-2(b)(1)	Air measurement instrument reading >10,000 ppm indicates leak	Y	
60.482-2(b)(2)	Dripping liquid from pump seal indicates leak	Y	
60.482-2(c)(1)	Leak repaired within 15 calendar days, except as provided in 60.482-9.	Y	
60.482-2(c)(2)	First attempt at leak repair made within 5 calendar days.	Y	
60.482-2(d)	Pump with dual-mechanical seal system that includes barrier fluid system and meets specified requirements is exempt from 60.482-2(a).	Y	
60.482-2(g)	Pump designated, per 60.486(f)(1), as unsafe-to-monitor pump is exempt from 60.482-2(a) and (d)(4) through (d)(6) if hazard documented and written monitoring plan is followed.	Y	
60.482-3	Standards: Compressor	Y	
60.482-3(a)	Each compressor equipped with seal system that includes a barrier fluid system and prevents leakage of VOC to atmosphere.	Y	
60.482-3(b)	Each compressor seal system operated with barrier fluid at pressure greater than compressor stuffing box pressure; or equipped with system that purges barrier fluid into process stream with zero emissions to atmosphere.	Y	
60.482-3(c)	Barrier fluid system shall be in heavy liquid service.	Y	
60.482-3(d)	Each barrier fluid system equipped with sensor that detects failure of seal system, barrier fluid system or both.	Y	
60.482-3(e)(1)	Each sensor shall be checked daily or shall be equipped with an audible alarm.	Y	
60.482-3(e)(2)	Owner shall determine a criterion that indicates failure of seal system, barrier fluid system, or both.	Y	
60.482-3(f)	If sensor indicates failure based on criterion established in 60.482-3(e)(2), a leak is detected.	Y	
60.482-3(g)(1)	Leak shall be repaired within 15 calendar days, except as provided in 60.482-9.	Y	
60.482-3(g)(2)	First attempt at repair shall be made within 5 calendar days.	Y	
60.482-3(j)	Existing reciprocating compressor in a process unit that becomes an affected facility is exempt from 60.482-3(a) through (e) and (h) if recasting distance piece or replacing compressor are only options for compliance.	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1**  
**Source Specific Applicable Requirements**  
**EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.482-4	Standards: Pressure relief devices in gas/vapor service	Y	
60.482-4(a)	Except during pressure releases, pressure relief device shall be operated with no detectable emissions (< 500 ppm).	Y	
60.482-4(b)(1)	After each pressure release, pressure release device shall be returned to a condition of no detectable emissions within 5 calendar days after pressure release, except as provided in 60.482-9.	Y	
60.482-4(b)(2)	No later than 5 calendar days after pressure release, the pressure relief device shall be monitored to confirm no detectable emissions.	Y	
60.482-4(c)	Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage to a control device as described in 60.482-10 is exempt from 60.482-4(a) and (b).	Y	
60.482-4(d)(1)	Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from 60.482-4(a) and (b) provided complies with 60.482-4(d)(2).	Y	
60.482-4(d)(2)	After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 60.482-9.	Y	
60.482-5	Standards: Sampling connecting systems	Y	
60.482-6	Standards: Open-ended valves or lines	Y	
60.482-7	Standards: Valves in gas/vapor service and in light liquid service	Y	
60.482-7(a)	Monitor monthly to detect leaks, except as provided in 60.482-7(g) and (h) and 60.483-2.	Y	
60.482-7(b)	Instrument reading >10,000 ppm indicates leak.	Y	
60.482-7(c)	Valve that does not have a detectable leak for 2 successive months, can be monitored the first month of every quarter.	Y	
60.482-7(d)(1)	Leak shall be repaired within 15 calendar days, except as provided in 60.482-9.	Y	
60.482-7(d)(2)	First attempt at leak repair shall be made within 5 calendar days.	Y	
60.482-7(e)	Methods for first attempt at repair.	Y	
60.482-7(g)	Valve designated, per 60.486(f)(1), as unsafe-to-monitor valve is exempt from 60.482-7(a) if hazard documented and written monitoring plan is followed.	Y	
60.482-7(h)	Valve designated, per 60.486(f)(1), as difficult-to-monitor valve is exempt from 60.482-7(a) if hazard documented, less than 3% of facility valves are designated and written plan with is followed that requires monitoring at least once per year.	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1  
 Source Specific Applicable Requirements  
 EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.482-8	Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors.	Y	
60.482-8(a)	Monitor within 5 days if evidence of potential leak is found.	Y	
60.482-8(b)	Instrument reading >10,000 ppm indicates leak.	Y	
60.482-8(c)(1)	Leak shall be repaired within 15 calendar days, except as provided in 60.482-9.	Y	
60.482-8(c)(2)	First attempt at leak repair shall be made within 5 calendar days.	Y	
60.482-8(d)	Minimum requirements for first attempt at repair.	Y	
60.482-9	Standards: Delay of Repair	Y	
60.482-9(a)	Delay allowed if repair is technically infeasible without a process unit shutdown and repair occurs before end of next process unit shutdown.	Y	
60.482-9(b)	Repair may be delayed for isolated equipment.	Y	
60.482-9(c)	Delay of repair for valves only allowed under certain circumstances.	Y	
60.482-9(d)(1)	Only dual-mechanical seal pumps qualify for delay of repair	Y	
60.482-9(d)(2)	Pump leaks must be repaired within 6 months.	Y	
60.482-9(e)	Delay of repair beyond process shutdown allowed if valve assembly replacement is required and other circumstances are met.	Y	
60.482-10	Standards: Closed Vent Systems and Control Devices	Y	
60.482-10(b)	Vapor recovery systems must recover VOC emissions by 95% or greater or to a concentration of 20ppmv, whichever is less stringent	Y	
60.482-10(c)	Enclosed combustion devices shall be designed and operated to reduce the VOC emissions by 95% or greater or to a concentration of 20ppmv, whichever is less stringent	Y	
60.482-10(e)	Monitoring of control devices	Y	
60.482-10(f)	Inspection requirements – vapor collection system or closed vent system	Y	
60.482-10(g)	First attempt at repairing leaks (> 500 ppmv) in 5 days. Repair must be completed within 15 days.	Y	
60.482-10(h)	Closed vent system delay of repair	Y	
60.482-10(i)	Vapor collection system or closed vent system operated at a vacuum is exempt from inspection requirements	Y	
60.482-10(j)	Unsafe to monitor closed vent systems	Y	
60.482-10(k)	Difficult to monitor closed vent systems	Y	
60.482-10(l)	Recordkeeping for inspections	Y	
60.482-10(m)	Closed vent system and control devices - Operate at all times	Y	
60.483-2	If a process unit has 5 consecutive quarters with <2% of valves leaking at >10,000 ppm, then any individual valve which measures <100 ppm for 5 consecutive quarters may be monitored annually.	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1**  
**Source Specific Applicable Requirements**  
**EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.485	Test Methods and Procedures	Y	
60.485(a)	Performance tests methods specified in Appendix A or 60.8(b)	Y	
60.485(b)	Method 21 for determining presence of leaking sources.	Y	
60.485(d)	Test each piece of equipment unless process unit not in VOC series.	Y	
60.485(e)	Light liquid service demonstrated by vapor pressure and if liquid at operating conditions.	Y	
60.485(f)	Samples representative of process fluid.	Y	
60.486	Record keeping Requirements	Y	
60.486(a)	Comply with recordkeeping requirements of this section.	Y	
60.486(b)	Identification and tagging requirements for leaks detected as specified in 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2.	Y	
60.486(c)	When leak detected as specified in 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, record in log and keep for 2 years.	Y	
60.486(d)	Information to be recorded pertaining to the design requirements for closed vent systems and control devices: designs, dates, monitoring parameters required in 60.486(e), non-operational plans, startup and shutdown dates.	Y	
60.486(e)	Information to be recorded for all equipment subject to requirements in 60.482-1 through 60.482-10.	Y	
60.486(f)	Record information pertaining to all valves subject to the requirements in 60.482-7(g) and (h).	Y	
60.486(g)	Record information pertaining to all valves subject to the requirements in 60.483-2.	Y	
60.486(h)	Record design criterion required in 60.482-2(d)(5) and 60.482-3(e)(2).	Y	
60.486(i)	Record information in log that is readily accessible for use in determining exemption as provided in 60.480(d).	Y	
60.486(j)	Records to demonstrate piece of equipment not in VOC service.	Y	
60.486(k)	Provisions of 60.7(b) and (d) do not apply if subject to VV.	Y	
60.487	Reporting Requirements	Y	
60.487(a)	Submit semiannual reports.	Y	
60.487(c)	Information to be included in semiannual reports.	Y	
60.487(e)	Report results of all performance tests in accordance with 60.8. The provisions of 60.8(d) do not apply to affected facilities subject to VV.	Y	
<b>40 CFR 60 Subpart GGG</b>	<b>Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After 1/4/1983 and on or Before 11/7/2006 (06/02/2008);</b>		
60.590	Applicability and designation of affected facility	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1**  
**Source Specific Applicable Requirements**  
**EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.590(a)(1)	Applicability and designation of affected facility; petroleum refineries	Y	
60.590(a)(2)	Applicability and designation of affected facility; petroleum refineries - compressors	Y	
60.590(a)(3)	Applicability and designation of affected facility; petroleum refineries – all equipment within a process unit	Y	
60.590(b)	Applicability and designation of affected facility; petroleum refineries – applicable dates	Y	
60.590(c)	Applicability and designation of affected facility; petroleum refineries – limit of definition of modification	Y	
60.590(e)	Applicability and designation of affected facility; petroleum refineries – stay of standards; definition of process unit	Y	
60.591	Definitions	Y	
60.592	Standards	Y	
60.592(a)	Standards: Comply with 40 CFR 60 Subpart VV [60.482-1 thru 60.482-10]	Y	
60.592(b)	Standards; Alternatives to 60.482-7 for valves	Y	
60.592(c)	Standards; Allowance for determination of equivalency	Y	
60.592(d)	Standards; Comply with 60.485 in Subpart VV except as provided in 60.593	Y	
60.592(e)	Standards; Comply with 60.486 and 60.487 for recordkeeping and reporting	Y	
60.593	Exceptions	Y	
60.593(a)	Exceptions; Allowable exceptions to the provisions of subpart VV	Y	
60.593(b)(1)	Exceptions; Exemption for compressors in hydrogen service	Y	
60.593(b)(2)	Exceptions; Determination of hydrogen service - methods	Y	
60.593(b)(3)(i)	Exceptions; Determination of hydrogen service – engineering judgment	Y	
60.593(b)(3)(ii)	Exceptions; Determination of hydrogen service - revisions	Y	
60.593(c)	Exceptions; Exemption for existing reciprocating compressor that becomes an affected facility	Y	
60.593(d)	Exceptions; additional definition of “in light liquid service”	Y	
60.593(f)	Exceptions; open-ended valves or lines containing asphalt	Y	
<b>40 CFR 60 Subpart QQQ</b>	<b>NSPS - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems (10/17/2000) Requirements for Control Devices</b>		
60.690	Applicability and designation of affected facility	Y	
60.690(a)(1)	Affected facilities located in petroleum refineries; construction, modification, or reconstruction commenced after May 4, 1987	Y	
60.691	Definitions	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1**  
**Source Specific Applicable Requirements**  
**EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.692-1	Standards: General	Y	
60.692-1(a)	Standards: General; Comply except during periods of startup, shutdown, or malfunction	Y	
60.692-1(b)	Standards: General; Determination of compliance	Y	
60.692-1(c)	Standards: General; Alternative means of compliance	Y	
60.692-1(d)	Standards: General; Exemptions	Y	
60.692-2	Standards: Individual drain systems	Y	
60.692-2(a)(1)	Standards: Individual drain systems; equip each drain with water seal	Y	
60.692-2(a)(2)	Standards: Individual drain systems; Drains in active service - Monthly visual or physical inspections for low water level or other problem	Y	
60.692-2(a)(3)	Standards: Individual drain systems; Drains out of active service - Weekly visual or physical inspections for low water level or other problem	Y	
60.692-2(a)(4)	Standards: Individual drain systems; Drains out of active service – Alternative to weekly inspection – tightly sealed cap or plug with semiannual inspections	Y	
60.692-2(a)(5)	Standards: Individual drain systems; Repair – first attempt within 24 hours of detection unless delay of repair (60.692-6)	Y	
60.692-2(b)(1)	Standards: Individual drain systems; Junction box requirements – vent pipes	Y	
60.692-2(b)(2)	Standards: Individual drain systems; Junction box requirements – sealed covers	Y	
60.692-2(b)(3)	Standards: Individual drain systems; Junction box requirements – sealed covers - semiannual visual inspections	Y	
60.692-2(b)(4)	Standards: Individual drain systems; Junction box requirements – Repairs – first attempt within 15 calendar days after detection except delay of repair (60.692-6)	Y	
60.692-2(c)(1)	Standards: Individual drain systems; Sewer line requirements – no visual gaps or cracks	Y	
60.692-2(c)(2)	Standards: Individual drain systems; Sewer line requirements – semiannual inspections of unburied sewer lines	Y	
60.692-2(c)(3)	Standards: Individual drain systems; Sewer line requirements – Repairs – first attempt within 15 calendar days after detection except delay of repair (60.692-6)	Y	
60.692-2(d)	Standards: Individual drain systems; Exemption for systems with catch basins installed prior to May 4, 1987	Y	

## VI. Source-Specific Applicable Requirements

**Table IV – D.1  
 Source Specific Applicable Requirements  
 EQUIPMENT LEAK COMPONENTS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.692-2(e)	Standards: Individual drain systems; Refinery wastewater routed through new process drains and a new first common downstream junction box as part of new or existing individual drain system, shall not be routed through a downstream catch basin.	Y	
60.692-6	Standards: Delay of repair	Y	
60.692-6(a)	Standards: Delay of repair; Allowances for delay or repair	Y	
60.692-6(b)	Standards: Delay of repair; Complete repairs before end of next refinery or process unit shutdown	Y	
60.693-1	Alternative Standards for Individual Drain Systems	Y	
<b>BAAQMD Condition 21087</b>			
Part 8	Valve Design Criteria (Basis: BACT, Offsets)	Y	
Part 9	Pump Design Criteria (Basis: BACT, Offsets)	Y	

## VI. Source-Specific Applicable Requirements

**Table IV –D.2**  
**Source-specific Applicable Requirements**  
**ATMOSPHERIC PRESSURE RELIEF DEVICES SUBJECT TO BAAQMD 8-28**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>BAAQMD Regulation 8 Rule 28</b>	<b>Organic Compounds - Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants (12/21/2005)</b>		
8-28-101	Description, applicability	N	
8-28-302	Pressure Relief Devices at New or Modified Sources at Petroleum Refineries	N	
8-28-303	Existing Pressure Relief Devices Petroleum Refineries	N	
8-28-404	Identification	N	
<b>SIP Regulation 8 Rule 28</b>	<b>Organic Compounds - Episodic Releases from Pressure Relief Devices (05/24/2004)</b>		
8-28-101	Description, applicability	Y	
8-28-302	Pressure Relief Devices at New or Modified Sources at Petroleum Refineries	Y	
8-28-303	Pressure Relief Devices at Existing Sources at Petroleum Refineries	Y	
8-28-404	Identification	Y	
8-28-502	Records	N	
8-28-502.2	Records; PRD Records		



## **V. SCHEDULE OF COMPLIANCE**

### **A. Standard 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 21087

Application #3318 (1991)  
Amended by Application 10912 (1995)  
Amended by Application #5222 (2002)  
Amended by Application #7978 (2003)  
Administratively changed by Application 24173 (Apr2012), Longer startup  
duration allowed in Part 4 for Refractory curing  
Altered by Application 23933, Replaced 20 Burners in S-1031 (April 2013)

#### Permit Condition

Sources S-1030, S-1031 and A-38

Plant 10295, Air Products and Chemicals, Inc.

1. The Owner/Operator shall ensure that, except during periods of startup or shutdown, concentrations of nitrogen oxides (calculated as NO<sub>2</sub>) and carbon monoxide from the Hydrogen Plant furnace S-1031 shall not exceed the following limits. These limits shall be based on a 3 hour average and corrected to 3% excess oxygen on a dry basis.

NO	CO
(ppmvd)	(ppmvd)
10	50
(basis: BACT)	
2. The Owner/Operator shall ensure that S-1031 is fired exclusively on natural gas and/or pressure swing adsorber purge gas and/or refinery fuel gas.  
(basis: BACT)
3. The Owner/Operator shall ensure that the total reduced sulfur (TRS)/hydrogen sulfide content of the refinery fuel gas fired at S-1031 does not exceed each and all of the following limits:
  - i) hydrogen sulfide limited to not more than 0.1 grain per dry standard cubic foot (230 mg/dscm), based on a three hour average.
  - ii) hydrogen sulfide limited to not more than 100 ppmv averaged over any consecutive 24-hour period.

## VI. Permit Conditions

- iii) hydrogen sulfide limited to not more than 50 ppmv averaged over any consecutive 12-month period.
  - iv) total reduced sulfur (hydrogen sulfide, methyl mercaptan, carbon disulfide, dimethyl sulfide, dimethyl disulfide, and carbonyl sulfide) expressed as hydrogen sulfide equivalent is limited to not more than 100 ppmv averaged over any consecutive 12-month period.  
(basis: BACT)
4. For the purposes of this permit, "startup" and "shutdown" operations for furnace S-1031 are limited to a maximum of 24 hours in duration. The owner/operator may develop and present documentation in support of alternate startup and shutdown times for these units. These alternate times may be used if approved in writing by the APCO.  
"Start-up" shall mean that period of time during which the piece of equipment in question is put into normal operation from an inactive status by following a prescribed series of separate steps or operations.  
"Shutdown" shall mean that period of time during which the piece of equipment in question is taken out of service from a normal operating mode to an inactive status following a prescribed series of separate steps or operations.  
(basis: cumulative increase, offsets)
5. Deleted (basis for deletion: Requested by Applicant as per Settlement Agreement, May 18, 2004. Deletion is NOT a relaxation of requirements.)
6. The Owner/Operator shall ensure that a District approved continuous emission monitor (CEM) is installed and operated in the exhaust stack of the No. 2 Hydrogen Plant SCR Unit (A-38) to measure NO<sub>x</sub> and CO concentrations from furnace S-1031. These measurements shall be used to calculate NO<sub>x</sub> and CO mass emissions. (basis: cumulative increase, offsets)
7. Deleted. (Emissions from Air Products Plant 10295 were removed from the Tesoro Refinery Emissions Cap in 2012. CEM procedures and reporting requirements are detailed in Regulations 1-522 and 1-544.)
8. The Owner/Operator shall ensure that any new valves in volatile hydrocarbon service (i.e., handling material above 0.5 psia true vapor pressure) or anhydrous ammonia service associated with this facility shall be "low-emission" valves. For the purposes of this permit, "low-emission" valves are one of the following:
- A) live-loaded valves,
  - B) bellows valves,
  - C) diaphragm valves, or

## VI. Permit Conditions

D) other valve approved by the APCO, in writing.  
(basis: BACT, offsets)

9. The Owner/Operator shall ensure that any new pumps in volatile hydrocarbon service (i.e. handling material above 0.5 psia vapor pressure) or ammonia service associated with this facility shall have double mechanical seals with a barrier fluid which either: 1) is at a higher pressure than the seal pressure, or 2) is vented to a closed system, or 3) shall install an equivalent sealing system approved by the APCO. (basis: BACT, offsets)
10. The Owner/Operator shall ensure Ammonia emissions slip from the SCR Unit (A-38) controlling the No. 2 Hydrogen Plant furnaces do not exceed 25 ppmvd, averaged over 3 hours and corrected to 3% oxygen. Within 60 days of startup of the No. 2 Hydrogen Plant (S-1030), Owner/operator shall conduct a source test for ammonia emissions. This test shall be repeated annually. (basis: toxics)
11. For the purposes of these permit conditions, all Owner/Operator source testing and monitoring requirements will be subject to the following general provisions:
  - a) At least two weeks prior to testing, Owner/operator shall contact the District's Source Test Section, in writing, to provide notification of the testing procedure, date and time, and to obtain details on source testing requirements. Source test procedures are subject to approval of the APCO.
  - b) Prior to commencement of construction, Owner/operator shall submit plans and specifications for the Continuous Emission Monitor (CEM) to the District's Source Test Section and obtain approval.
  - c) Prior to commencement of construction, Owner/operator shall submit plans showing the details of sampling facilities to the District's Source Test Section and obtain approval.(basis: cumulative increase, offsets)
12. To demonstrate compliance with the above conditions, the owner/operator shall maintain records of required pollutant measurements and mass emissions calculations, as well as other data used in the emissions calculations. These records shall be kept on site and made available for District inspection for a period of not less than 60 months from the date on which a record was made. (basis: cumulative increase, offsets, BACT)
13. The Owner/Operator shall ensure that hydrogen production at S-1030 does not exceed 38 million standard cubic feet during each calendar day. (basis: cumulative increase, offsets)

## VI. Permit Conditions

14. In a District approved log, the Owner/Operator shall ensure that the following records are retained regarding the refinery fuel gas fired at S-1031:
- i) hydrogen sulfide content of the refinery fuel gas measured in grains per dry standard cubic foot, based on a three hour average.
  - ii) hydrogen sulfide content of the refinery fuel gas in ppmv units, averaged over each/any consecutive 24-hour period.
  - iii) hydrogen sulfide content of the refinery fuel gas in ppmv units, averaged over each consecutive 12-month period.
  - iv) total reduced sulfur (hydrogen sulfide, methyl mercaptan, carbon disulfide, dimethyl sulfide, dimethyl disulfide, and carbonyl sulfide) content of the refinery fuel gas expressed in ppmv units as hydrogen sulfide equivalent averaged over each consecutive 12-month period.

The Owner/Operator shall ensure that the log is made available for inspection by the District staff for a period of not less than 5 years from date of last entry. (basis: BACT, cumulative increase, offsets)

15. Deleted (basis for deletion: Requested by Applicant as per Settlement Agreement, May 18, 2004. Deletion is NOT a relaxation of requirements.)
16. In a District approved log, the Owner/Operator shall record the rate of hydrogen production at S-1030 in standard cubic feet per hour and in standard cubic feet per calendar day, and record the S-1031 CEM data. Permittee/Owner/Operator shall ensure that the log is retained on site and is made available for inspection by the District staff for a period of not less than 5 years from date of last entry. (basis: cumulative increase, offsets)

### Condition 25199

Air Products and Chemicals, Inc.  
Golden Eagle Refinery, Martinez, Ca  
Application 3318 (1991)  
Application 10912 (1995)  
Application 5222 (2002)  
Altered by Application 23933, Replaced 20 Burners in S-1031 (April 2013)

No. 2 Hydrogen Plant

## VI. Permit Conditions

1. The Owner/Operator shall only operate S-1031 SMR Furnace when total firing rate does not exceed 294MMBtu/hr. (Basis: Cumulative Increase, Offsets, BACT)

2. The Owner/Operator shall only operate S-1031 SMR Furnace when the total emissions do not exceed any of the following limits in any consecutive 12-month period:

NO<sub>x</sub>: 16.13 tons

CO: 21.93 tons

POC: 3.87 tons

SO<sub>2</sub>: 4.46 tons

PM<sub>10</sub>:12.90 tons

(Basis: Cumulative Increase, Offsets)

3. In order to demonstrate compliance with the NO<sub>x</sub> emission limit in Part 2, the Owner/Operator shall, on a monthly basis, calculate the NO<sub>x</sub> mass emissions from S-1031 using the recorded concentrations from the NO<sub>x</sub> CEM required by Condition 21087, Part 6. The calculated monthly NO<sub>x</sub> mass emissions shall be totaled for each consecutive 12-month period. (Basis: Cumulative Increase, Offsets)

4. In order to demonstrate compliance with the CO emission limit in Part 2, the Owner/Operator shall, on a monthly basis, calculate the CO emissions from S-1030 and S-1031. The calculated monthly CO emissions shall be totaled for each consecutive 12-month period. (Basis: Cumulative Increase, Toxics)

5. In order to demonstrate compliance with the POC emission limit in Part 2, the Owner/Operator shall conduct a District approved source test at the discharge of A-38 SCR, and at any other process atmospheric discharge (if they exist), within 90 days of the startup of the SMR Furnace Burner Replacement Project. This source test shall determine a POC emissions factor in lb POC/MMBtu of S-1031 firing, Annual POC emissions shall be calculated by multiplying the source test emission factor by 294MMBtu/hr and by 8760 hrs/year, and by then dividing this product by 2000 lb/ton. This source test shall be repeated when Refinery Fuel Gas is used as a fuel or feedstock for S-1030 or S-1031, and this source test shall be repeated every 5 years when the Owner/Operator applies for a Title V Permit Renewal. (Basis: Cumulative Increase, Offsets)

6. In order to demonstrate compliance with the SO<sub>2</sub> emission limit in Part 2, the Owner/Operator shall, on a monthly basis, calculate the SO<sub>2</sub> emissions from S-1030 and S-1031. The calculations shall be based on Stoichiometric conversion of all sulfur in the fuel gas to SO<sub>2</sub> emissions. The calculated monthly SO<sub>2</sub> emissions shall be totaled for each consecutive 12-month period. (Basis: Cumulative Increase, Offsets)

## VI. Permit Conditions

7. In order to demonstrate compliance with the PM-10 emission limit in Part 2, the Owner/Operator shall conduct a District approved source test at the discharge of A-38 SCR, and at any other process atmospheric discharge (if they exist), within 90 days of the startup of the SMR Furnace Burner Replacement Project. This source test shall determine a PM-10 emissions factor in lb PM-10/MMBtu of S-1031 firing, Annual PM-10 emissions shall be calculated by multiplying the source test emission factor by 294MMBtu/hr and by 8760 hrs/year, and by then dividing this product by 2000 lb/ton. This source test shall be repeated when Refinery Fuel Gas is used as a fuel or feedstock for S-1030 or S-1031, and this source test shall be repeated every 5 years when the Owner/Operator applies for a Title V Permit Renewal. (Basis: Cumulative Increase, Offsets)

8. For the purposes of these permit conditions, all Owner/Operator source testing and monitoring requirements will be subject to the following general provisions:

a) At least two weeks prior to testing, Owner/operator shall contact the District's Source Test Section, in writing, to provide notification of the testing procedure, date and time, and to obtain details on source testing requirements. Source test procedures are subject to approval of the APCO.

b) Prior to commencement of construction, Owner/operator shall submit plans showing the details of sampling facilities to the District's Source Test Section and obtain approval. (basis: cumulative increase, offsets)

9. To demonstrate compliance with the above conditions, the Owner/Operator shall maintain records of required pollutant measurements and mass emissions calculations, as well as other data used in the emissions calculations. These records shall be kept on site and made available for District inspection for a period of not less than 60 months from the date on which a record was made. (basis: cumulative increase, offsets, BACT)

### Condition 25995

1. The owner/operator shall provide all necessary information to the refinery flare operator upon request when a reportable flaring event occurs during a period when the No. 2 Hydrogen Plant facility is venting to the refinery flare system. The information shall include, but is not limited to, the following (Basis: Regulation 2-1-403):

a. The primary cause and contributing factors for any No. 2 Hydrogen Plant vent gas that is potentially associated with the flaring event;

b. Any prevention measures that were considered or implemented to prevent recurrence of venting from the No. 2 Hydrogen Plant together with a justification for rejecting any measures that were considered but not implemented;

## VI. Permit Conditions

- c. If appropriate, an explanation of why the venting is consistent with the implementation of all feasible prevention measures;
- d. Where applicable, an explanation of why the venting was an emergency and necessary to prevent an accident, hazard or release of vent gas to the atmosphere or where, due to a regulatory mandate to vent to a flare, it cannot otherwise be recovered, treated and used as fuel gas at the refinery.

2. The owner/operator of the No.2 Hydrogen Plant shall implement all feasible prevention measures to address the following vent gas release events (Basis: Regulation 2-1-403):

- a. Process gas venting that has occurred or may reasonably be expected to occur during
  - planned major maintenance activities,
  - startup and
  - shutdown;

These prevention measures shall consider, at a minimum, the following factors:

- i. The feasibility of performing these activities without venting or otherwise contributing to refinery flaring;
  - ii. The amount of time required to reach hydrogen purity during startup and feasible opportunities to reduce same;
  - iii. Opportunities to reduce, to the extent feasible, the hydrogen production rate during startup until hydrogen purity is reached;
  - iv. Efforts to reduce the number of plant start-ups that may occur each year;
  - v. Coordination with the refinery during start-up to maximize the amount of hydrogen product that can be used; and
  - vi. Conducting pre-turnaround planning to eliminate or reduce the chance of malfunctions, upset, and other process venting events that affect flare gas quality and quantity.
- b. Process gas venting caused by the recurrent failure of a process, air pollution control equipment, or process equipment to operate in a normal or usual manner;
    - i. These prevention measures shall consider the adequacy of existing maintenance schedules and protocols for such processes and equipment.



## VI. Permit Conditions

- ii. For purposes of this permit condition, a failure is recurrent if it occurs more than twice during any five year period as a result of the same cause.
  - c. The owner/operator of the No 2. Hydrogen Plant shall record all prevention measures that are determined to be feasible that address vent gas from the No 2 Hydrogen Plant.
  - d. Failure to implement applicable prevention measures recorded as required in Part 2c is a violation of this condition.
3. The owner/operator of the No 2. Hydrogen Plant shall provide any information requested by the APCO as necessary to enable determination of compliance with applicable provisions of this condition. (Basis: Regulation 2-1-403)
4. Prior to installing or modifying any equipment that requires a District permit to operate, the owner or operator shall provide all necessary information to the flare operator such that the flare operator can obtain an approved updated Flare Management Plan addressing the new or modified equipment (Basis: Regulation 2-1-403).

## 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), 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.

### SECTION A SITEWIDE

**Table VII – A.1  
 Applicable Limits and Compliance Monitoring Requirements  
 FACILITY B0295**

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 8-16-111	Y		No Limit	BAAQMD 8-16-501.3	M	Records
Ambient SO <sub>2</sub>	BAAQMD 9-1-301	Y		Ground level concentrations of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours	BAAQMD 9-1-501 9-1-604	C	Area Monitoring
Ambient H <sub>2</sub> S	BAAQMD 9-2-301	Y		Ground level concentrations of 0.06 ppm for 3 min or 0.03 ppm for 60 min	BAAQMD 9-2-501 9-2-602	C	Area Monitoring
H <sub>2</sub> S NH <sub>3</sub>	BAAQMD 9-1-313.2	N		Refinery wide: 95% H <sub>2</sub> S removal (refinery fuel gas) 95% H <sub>2</sub> S removal (process water streams) 95% NH <sub>3</sub> removal (process water streams)	None	N	N/A

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – A.1**  
**Applicable Limits and Compliance Monitoring Requirements**  
**FACILITY B0295**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
H2S NH3	SIP 9-1-313.2	Y		Refinery wide: 95% H2S removal (refinery fuel gas) 95% H2S removal (process water streams) 95% NH3 removal (process water streams)	None	N	N/A
PM	BAAQMD 8-40-304	Y		Exposed surface area ≤ 6,000 square feet (Active storage pile)	None	N	N/A
PM	BAAQMD 8-40-305	Y		Cover contaminated soil with heavy duty plastic sheeting when inactive > one hour	None	N	N/A
VOC	BAAQMD 8-40-306.4	Y		Within 45 days of excavation or 90 days of < 500 ppmw, cover with ≥ 6" uncontaminated soil or remove all contaminated soil from site or initiate treatment	BAAQMD 8-40-601.3 (≤ 250 cubic yds) 8-40-601.4 (> 250 cubic yds)	P/E	Sample every 50 cubic yds excavated (≤ 250 cubic yds)  Sample every 100 cubic yds excavated (> 250 cubic yds)
VOC	BAAQMD 8-40-306.6	Y		During periods of inactivity > 12 hours, Backfilled contaminated soil covered with ≥ 6" uncontaminated soil or continuous heavy duty plastic sheeting	None	N	N/A

## VII. Applicable Limits & Compliance Monitoring Requirements

### SECTION B PROCESS UNITS

**Table VII – B**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1030-NO. 2 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
Organic HAPs	40 CFR 63.643(a)(2)	Y		Reduce Organic HAPs using a control device by 98% or to 20 ppmvd, whichever is less stringent	40 CFR 63.644(a)(3) 63.645(d)(1)	None	N/A
VOC	BAAQMD 8-2-301	Y		15 lbs/day & 300 ppm total carbon, dry basis	BAAQMD 8-2-601	None	Source Test
VOC	BAAQMD 8-10-301	N		Abatement of emissions from process vessel depressurization is required until pressure is reduced to less than 1000 mm Hg (4.6 psig)	BAAQMD 8-10-401 8-10-501 8-10-502	P/E	Records
VOC	SIP 8-10-301	Y		Abatement of emissions from process vessel depressurization is required until pressure is reduced to less than 1000 mm Hg (4.6 psig)	SIP 8-10-401 BAAQMD 8-10-501 8-1-502	P/E	Records
VOC	BAAQMD 8-10-302.1 8-10-302.2	N		< 10,000 ppm organic concentration [A refinery vessel may exceed this limit provided total number of such vessels does not exceed 10% of total vessel population over 5-consecutive year period and total mass organic compound emissions are less than 15 lb/day]	BAAQMD 8-10-501 8-10-502 8-10-503	P/E (prior to opening vessel and daily during time vessel is open to atmosphere)	Method 21 Inspection and Records

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – B**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1030-NO. 2 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
VOC	SIP 8-28-303.1	Y		Pressure relief devices shall be vented to vapor recovery or disposal system with a control efficiency of 95% by weight	BAAQMD 8-28-404, 8-28-405, 8-28-502 and 8-28-602	C	Records and testing with approved methods
VOC	BAAQMD 8-28-303.1	N		Pressure relief devices shall be vented to vapor recovery or disposal system with a control efficiency of 95% by weight	BAAQMD 8-28-404, 8-28-405, 8-28-502 and 8-28-602	C	Records and testing with approved methods
VOC	BAAQMD 8-28-303.2	N		Facility to implement Process Safety Requirements of BAAQMD 8-28-405 for Pressure Relief Devices	BAAQMD 8-28-502.1	P/E	Records
VOC	BAAQMD & SIP 8-28-304	Y		If one reportable Release Event from a pressure relief device in any consecutive 5 year period, shall meet specified conditions	BAAQMD 8-28-401, 8-28-402, , 8-28-404, 8-28-405, and 8-28-502	P/E	Reporting and prescribed measures.
Through-put	BAAQMD Condition 21087, Part 13	Y		38 mmscf per calendar day Hydrogen production	BAAQMD Condition 21087, Part 16	P/Hourly	Records

## VII. Applicable Limits & Compliance Monitoring Requirements

### SECTION C COMBUSTION

**Table VII – C**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Ammonia	BAAQMD Condition 21087 Part 10	Y		25 ppmv dry at 3% O2 3-hour average	BAAQMD Condition 21087 Part 10	P/A	Source Test
CO	BAAQMD 9-10-305	N		400 ppmv (dry, 3% O2)	BAAQMD 9-10-502, 9-10-504.1, 9-10-505, 1-522 and 1-523	C	CEM
CO	BAAQMD Condition 21087 Part 1	Y		50 ppmv (dry, 3% O2)	BAAQMD Condition 21087 Part 6	C	CEM
CO	BAAQMD Condition 25199 Part 2	Y		21.93 tons in any consecutive 12-months	BAAQMD Condition 25199 Part 4	M	Calculations based on CEM
Firing Rate	BAAQMD Condition 25199 Part 1	Y		294MM Btu/hr	BAAQMD 9-10-502.2	C	Fuel Flowmeter
NOx	BAAQMD Condition 21087 Part 1	Y		10 ppmv (dry, 3% O2)	BAAQMD Condition 21087 Part 6	C	CEM
NOx	BAAQMD Condition 25199 Part 2	Y		16.13 tons in any consecutive 12-months	BAAQMD Condition 25199 Part 3	M	Calculations based on CEM
NOx	BAAQMD 9-3-303	N		125 ppm	BAAQMD Condition 21087 Part 6	C	CEM
NOx	SIP 9-10-303	Y		NOx emission rate shall not exceed 0.2 lb/MMBtu, operating-day average	SIP 9-10-502, 9-10-504.1, 9-10-505 and 1-523	C	Monitoring, records, and reporting
O2		N		No limit	BAAQMD 9-10-502.1	C	CEM
Opacity	BAAQMD 6-1-302	N		20% opacity, except for 3 minutes in any one hour	None	N	N/A

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – C**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1031-No. 2 Hydrogen Plant Reforming Furnace**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	SIP 6-302	Y		20% opacity, except for 3 minutes in any one hour	None	N	N/A
PM	BAAQMD 6-1-310.3	N		0.15 grain per dscf at 6% O <sub>2</sub>	None	N	None
PM	SIP 6-310.3	Y		0.15 grain per dscf at 6% O <sub>2</sub>	None	N	None
PM-10	BAAQMD Condition 25199 Part 2	Y		12.90 tons in any consecutive 12-months	BAAQMD Condition 25199 Part 7	P/E & every 5 years	Source Test
POC	BAAQMD Condition 25199 Part 2	Y		3.87 tons in any consecutive 12-months	BAAQMD Condition 25199 Part 5	P/E & every 5 years	Source Test
SO <sub>2</sub>	BAAQMD Condition 25199 Part 2	Y		4.46 tons in any consecutive 12-months	BAAQMD Condition 25199 Part 6	M	Calculations based on fuel sulfur content
SO <sub>2</sub>	BAAQMD Condition 21087, Part 3i  40 CFR 60.104 (a)(1)	Y		Fuel gas H <sub>2</sub> S limited to 0.10 gr/dscf (160 ppm) 3-hr average	BAAQMD Condition 21087, Part 14i  40 CFR 60.105(a)(4) & 60.105(e)(3)	C	H <sub>2</sub> S Analyzer
SO <sub>2</sub>	BAAQMD Condition 21087, Part 3ii	Y		Fuel gas H <sub>2</sub> S limited to 100 ppm 24-hr average	BAAQMD Condition 21087, Part 14ii	C	H <sub>2</sub> S Analyzer
SO <sub>2</sub>	BAAQMD Condition 21087, Part 3iii	Y		Fuel gas H <sub>2</sub> S limited to 50 ppm 12-month average	BAAQMD Condition 21087, Part 14iii	C	H <sub>2</sub> S Analyzer
SO <sub>2</sub>	BAAQMD Condition 21087, Part 3iv	Y		Fuel gas TRS limited to 100 ppm 12-month average	BAAQMD Condition 21087, Part 14iv	M	Records
Visible Emissions	BAAQMD 6-1-301	N		Ringelmann No. 1 for no more than 3 minutes/hour	None	N	N/A
Visible Emissions	SIP 6-301	Y		Ringelmann No. 1 for no more than 3 minutes/hour	None	N	N/A
Visible Emissions	BAAQMD 6-1-304	N		Ringelmann No. 2 for no more than 3 minutes/hour during tube cleaning	None	N	N/A
Visible Emissions	SIP 6-304	Y		Ringelmann No. 2 for no more than 3 minutes/hour during tube cleaning	None	N	N/A

**VII. Applicable Limits & Compliance Monitoring Requirements**

**Table VII – C  
 Applicable Limits and Compliance Monitoring Requirements  
 S1031-No. 2 Hydrogen Plant Reforming Furnace**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Visible Particles	BAAQMD 6-1-305	N		Prohibition of nuisance	None	N	N/A
Visible Particles	SIP 6-1-305	Y		Prohibition of nuisance	None	N	N/A



## VII. Applicable Limits & Compliance Monitoring Requirements

### SECTION D MISCELLANEOUS ORGANIC SOURCES (INCLUDING FUGITIVE COMPONENTS)

**Table VII – D.1**  
**Applicable Limits and Compliance Monitoring Requirements**  
**FUGITIVE COMPONENTS**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
<b>BAAQMD Regulation 8, Rule 18 and SIP Regulation 8, Rule 18</b>							
POC	BAAQMD 8-18-300	Y		Valves $\leq$ 100 ppm, Pumps $\leq$ 500 ppm, Compressors $\leq$ 500 ppm, Connectors $\leq$ 100 ppm, PRDs $\leq$ 500 ppm General Equipment $\leq$ 100 ppm	BAAQMD 8-18-401.5	P/E (24 hrs after repair/mini-mization)	Method 21 Inspection
POC	BAAQMD. 8-18-301	Y		General equipment leak $\leq$ 100 ppm	None	P/E	Method 21 Inspection
POC	BAAQMD. 8-18-302.1 8-18-302.2	N		Valve leak $\leq$ 100 ppm	BAAQMD. 8-18-401.2	P/Q	Method 21 Inspection
POC	BAAQMD 8-18-302.1 8-18-302.2	N		Inaccessible Valve leak $\leq$ 100 ppm or minimize in 24 hours, repair in 7 days	BAAQMD 8-18-401.3	P/A	Method 21 Inspection
VOC	BAAQMD 8-18-302.3 8-18-306.2 8-18-306.3 8-18-306.4	N		Non-repairable valves	BAAQMD 8-18-401.9	P/Q	Method 21 inspection
VOC	BAAQMD 8-18-302.3 8-18-306.4	N		Mass emission rate $\leq$ 15 lb/day for valve with major leak ( $\geq$ 10,000 ppm)	BAAQMD 8-18-306.4 8-18-604	P/E within 45 days of leak discovery	Mass Emission Sampling
VOC	BAAQMD 8-18-302.3 8-18-306.4	N		Mass emission rate $\leq$ 15 lb/day for non-repairable valve with major leak ( $\geq$ 10,000 ppm)	BAAQMD 8-18-401.10 8-18-604	P/A	Mass Emission Sampling
POC	BAAQMD. 8-18-303.1 8-18-303.2	N		Pump and compressor leak $\leq$ 500 ppm	BAAQMD. 8-18-401.2	P/Q	Method 21 Inspection

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – D.1**  
**Applicable Limits and Compliance Monitoring Requirements**  
**FUGITIVE 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 8-18-304.1 8-18-304.2	N		Connection leak $\leq$ 100 ppm	BAAQMD 8-18-401.6	P/E (Annually or EPA-approved connection inspection program)	Method 21 Inspection										
POC	BAAQMD. 8-18-304.1 8-18-304.2	N		Connection leak $\leq$ 100 ppm	BAAQMD. 8-18-401.1	P/E (90 days after turnaround startup)	Method 21 Inspection										
POC	BAAQMD. 8-18-305	Y		Pressure relief valve leak $\leq$ 500 ppm	BAAQMD. 8-18-401.2 8-18-401.7	P/Q	Method 21 Inspection										
POC	BAAQMD 8-18-305	Y		Inaccessible pressure relief valve leak $\leq$ 500 ppm	BAAQMD 8-18-401.3	P/A	Method 21 Inspection										
POC	BAAQMD 8-18-305	Y		Pressure relief valve leak $\leq$ 500 ppm	BAAQMD 8-18-401.8	P/E (5 working days after release)	Method 21 Inspection										
POC	BAAQMD. 8-18-306.1	N		Valve, connector, pressure relief, pump or compressor must be repaired within 5 years or at the next scheduled turnaround	BAAQMD 8-18-502.4	P/Q	Report										
POC	BAAQMD 8-18-302.3 8-18-303.3 8-18-304.3 8-18-306.2 8-18-306.3 8-18-306.4	N		Maximum percentage awaiting repair <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Components</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Valves (including with major leaks) and connectors per 8-18-306.3</td> <td>0.30</td> </tr> <tr> <td>Valves with major leaks per 8-18-306.4</td> <td>0.025</td> </tr> <tr> <td>Pressure Reliefs</td> <td>1.0</td> </tr> <tr> <td>Pumps and Compressors</td> <td>1.0</td> </tr> </tbody> </table>	Components	%	Valves (including with major leaks) and connectors per 8-18-306.3	0.30	Valves with major leaks per 8-18-306.4	0.025	Pressure Reliefs	1.0	Pumps and Compressors	1.0	BAAQMD 8-18-502.4  BAAQMD 8-18-306.1	P/Q  P/E	Report  Repair/replace within 5 years or at next scheduled turnaround, whichever is first
Components	%																
Valves (including with major leaks) and connectors per 8-18-306.3	0.30																
Valves with major leaks per 8-18-306.4	0.025																
Pressure Reliefs	1.0																
Pumps and Compressors	1.0																

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – D.1**  
**Applicable Limits and Compliance Monitoring Requirements**  
**FUGITIVE 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 8-18-307	Y		Liquid Leak more than 3 drops/min, unless minimized with 24 hrs & repaired within 7 days	None	P/E	Records
POC	BAAQMD 8-18-403	Y		No evidence of leak in Pumps and Compressors	BAAQMD 8-18-403	P/D	Visual Inspection
POC	BAAQMD 8-18-403	Y		Pumps and Compressors with Evidence of Leak on visual inspection	BAAQMD 8-18-403	P/E	Method 21 Inspection
POC	SIP 8-18-302	Y		Valve leak $\leq$ 100 ppm or minimize in 24 hours, repair in 7 days	SIP 8-18-401.2	P/Q	Method 21 Inspection
POC	SIP 8-18-302	Y		Inaccessible Valve leak $\leq$ 100 ppm or minimize in 24 hours, repair in 7 days	SIP 8-18-401.3	P/A	Method 21 Inspection
POC	SIP 8-18-303	Y		Pump and compressor leak $\leq$ 500 ppm or minimize in 24 hours, repair in 7 days	SIP 8-18-401.2	P/Q	Method 21 Inspection
POC	SIP 8-18-304.2	Y		Connection leak $\leq$ 100 ppm or minimize in 24 hours, repair in 7 days	SIP 8-18-401.6	P/E (Annually or EPA-approved connection inspection program)	Method 21 Inspection
POC	SIP 8-18-304.2	Y		Connection leak $\leq$ 100 ppm or minimize in 24 hours, repair in 7 days	SIP 8-18-401.1	P/E (90 days after turnaround startup)	Method 21 Inspection
POC	SIP 8-18-306.1	Y		Valve, pressure relief, pump or compressor must be repaired within 5 years or at the next scheduled turnaround	SIP 8-18-502.4	P/Q	Report

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – D.1**  
**Applicable Limits and Compliance Monitoring Requirements**  
**FUGITIVE 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	SIP 8-18-306.2	Y		Awaiting repair Valves $\leq$ 0.5% Pressure Relief $\leq$ 1% Pumps and Compressors $\leq$ 1%	SIP 8-18-502.4	P/Q	Report
<b>40 CFR 60; Subpart VV – equipment leaks subject to 40 CFR 60 Subpart GGG and to 40 CFR 63 Subpart CC BAAQMD 10-52; 10-59</b>							
VOC	40 CFR 60.482-2(b)(1)	Y		LL pump leak $\leq$ 10,000 ppm	40 CFR 60.482-2(a)(1)	P/M	Method 21 Inspection
VOC	40 CFR 60.482-2(a)(2) 60.482-2(d)(4)(i)	Y		LL Pump, no leak indicated by dripping liquid	40 CFR 60.482-2(a)(2)	P/W	Visual Inspection
VOC	40 CFR 60.482-2(b)(2) 60.482-2(b)(2)(i) 60.482-2(d)(4)(ii) 60.482-2(d)(4)(ii)(A)	Y		LL pump leak $\leq$ 10,000 ppm after discovery of dripping liquid in weekly visual inspection	40 CFR 60.482-2(b)(2)(i) 60.482(d)(4)(ii)( A)	P/E (within 5 days of discovery of liquid leak)	Method 21 Inspection
VOC	40 CFR 60.482-2(b)(2)	Y		No limit - liquid discovered dripping from LL pump in weekly inspection	40 CFR 60.482-2(b)(2)(ii)	P/E (within 15 days of detection)	Designate event as leak. Repair and remove evidence of leak
VOC	40 CFR 60.482-2(b)(2) 60.482-2(d)(4)(ii)	Y		No limit - liquid discovered dripping from LL pump equipped with dual mechanical seal and barrier fluid system in weekly inspection	40 CFR 60.482-2 (d)(4)(ii)(B)	P/E	Designate event as leak
VOC	40 CFR 60.482-2(d)(5)(ii) 60.482-2(d)(5)(iii)	Y		Pump sensor shall detect failure of seal system, barrier fluid system, or both based on user-determined criterion	40 CFR 60.482-2(d)(5)(i)	C or P/D	Sensor with audible alarm or checked daily
VOC	40 CFR 60.482-2(e)	Y		Pump designated for “No detectable emissions” $<$ 500 ppm	40 CFR 60.482-2(e)(3)	P/A	Method 21 Inspection

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – D.1**  
**Applicable Limits and Compliance Monitoring Requirements**  
**FUGITIVE COMPONENTS**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
VOC	40 CFR 60.482-3(d) 60.482-3(e)(2) 60.482-3(f)	Y		Compressor sensor shall detect failure of seal system, barrier fluid system, or both based on user-determined criterion	40 CFR 60.482-3(e)(1),	C or P/D	Sensor with audible alarm or checked daily.
VOC	40 CFR 60.482-3(i)	Y		Compressor designated for “No detectable emissions” leak < 500 ppm	40 CFR 60.482-3(i)(2)	P/A	Method 21 Inspection
VOC	40 CFR 60.482-4(a) 60.482-4(b)(1)	Y		Gas/vapor PRD leak ≤500 ppm	40 CFR 60.482-4(b)(2)	P/E within 5 days after release	Method 21 Inspection
VOC	40 CFR 60.482-7(b)	Y		Valve leak ≤ 10,000 ppm	40 CFR 60.482-7(a)(1) 60.482-7(c)	P/M or Q	Method 21 Inspection
VOC	40 CFR 60.482-7(f)	Y		Valve designated “No detectable emissions” ≤ 500 ppm	40 CFR 60.482-7(f)(3)	P/A	Measure for leaks
VOC	40 CFR 60.482-7(h)	Y		Valve designated “Difficult to monitor”(up to 3% of total valves)” leak < 500 ppm	40 CFR 60.482-7(h)(3)	P/A	Method 21 Inspection
VOC	40 CFR 60.482-8(a) 60.482-8(b)	Y		Pumps and valves in heavy liquid service, Pressure Relief devices (light or heavy liquid), Flanges, Connectors ≤ 10,000 ppm	40 CFR 60.482-8(a)(1) 60.486-8(c)	P/E Within 5 calendar days of evidence of AVO leak	Method 21 Inspection
VOC	40 CFR 60.482-10(b)	Y		Vapor recovery systems ≥ 95% or exit concentration ≤20 ppmv	40 CFR 60.482-10(e)	N	N/A
VOC	60.482-10(c)	Y		Enclosed combustion devices ≥ 95% destruction efficiency or ≥ 0.75 seconds and ≥ 816°C	40 CFR 60.482-10(e)	N	N/A
VOC	40 CFR 60.482-10(g)	Y		Hard piped closed vent systems <500 ppmv	40 CFR 60.482-10(f)(1)(i)	P/I	Method 21 Inspection

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – D.1**  
**Applicable Limits and Compliance Monitoring Requirements**  
**FUGITIVE COMPONENTS**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
VOC	40 CFR 60.482-10(g)	Y		Hard piped closed vent systems – no AVO leaks	40 CFR 60.482-10(f)(1)(ii)	P/A	Visual inspection
VOC	40 CFR 60.482-10(k)	Y		Closed vent system portions designated as “Difficult to inspect” (up to 3% of total closed vent system equipment)	40 CFR 60.482-10(k)(3)	P/ every 5 years	Visual inspection
VOC	40 CFR 60.483-2 BAAQMD 8-18-404.1	Y		Individual valve that measures <100 ppm for 5 consecutive quarters may be monitored annually, if in a process unit with 5 consecutive quarters <2% valves leaking ≥10,000 ppm.	40 CFR 60.483-2 BAAQMD 8-18-404.1	P/Q P/A	Method 21 Inspection

## VII. Applicable Limits & Compliance Monitoring Requirements

**Table VII – J.2**  
**Applicable Limits and Compliance Monitoring Requirements**  
**ATMOSPHERIC PRESSURE RELIEF DEVICES SUBJECT TO BAAQMD 8-28**

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 8-28-303.1	N		Vented to vapor recovery, 95% control efficiency	None	N	N/A
POC	SIP 8-28-303.1	Y		Vented to vapor recovery, 95% control efficiency	None	N	N/A
POC	BAAQMD 8-28-304.1	Y		Initial PRD release in 5-year period	8-28-304.1	P/E within 90 days	Additional Process Hazard Analysis
POC	BAAQMD 8-28-304.2	Y		Second PRD release in a 5-year period	8-28-304.2	P/E within 1 year	Vent to vapor recovery, 95% control efficiency
POC	None	N		No limit	BAAQMD 8-28-402.1	P/D	Visual inspection
POC	None	N		No limit	BAAQMD 8-28-402.2	P/ Within 5 days of a release	Visual inspection
POC	None	N		No limit	SIP 8-28-402	P/ Within 5 days of a release	Visual inspection
POC	None	N		No limit	BAAQMD 8-28-503	P/E	Monitoring System

## 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 Emission Limits & Compliance Monitoring Requirements, of this permit.

**Table VIII**  
**Test Methods**

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
BAAQMD 1-604	Opacity Measurements	Manual of Procedures, Volume V, Continuous Emissions Monitoring
BAAQMD 6-1-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions
BAAQMD 6-1-302	Opacity Limit	Manual of Procedures, Volume V, Continuous Emission Monitoring
BAAQMD 6-1-304	Tube Cleaning	Manual of Procedures, Volume I, Evaluation of Visible Emissions
BAAQMD 6-1-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulates Sampling or EPA Method 5, Determination of Particulate Emissions from Stationary Sources
BAAQMD Regulation 8-2-301	Miscellaneous Operation Emission Limit	Manual of Procedures, Volume IV, ST-7 or ST-32; or EPA Method 25 or 25A
BAAQMD Regulation 8-8-301, 302	Vapor tight cover	EPA Reference Method 21, Determination of Volatile Organic Compounds Leaks
8-8-504	Portable Hydrocarbon Detector	A gas detector that meets the specifications and performance criteria of and has been calibrated in accordance with EPA Reference Method 21 (60, Appendix A)
BAAQMD 8-8-601	Wastewater Analysis for Organic Compounds	Manual of Procedures, Volume III, Lab Method 33, Determination of Dissolved Critical Volatile Organic Compounds in Wastewater Separators
8-8-602	Determination of Emissions	Emissions of POCs, as specified in Sections 8-8-301.3, 8-8-302.3, 8-8-304, 8-8-305.2, 8-8-306.2, and 8-8-307.2 shall be measured by as prescribed by any of the following methods: 1). BAAQMD MOP, Volume IV, ST-7 or; 2). EPA Method 25 or 25(A).
8-8-603	Inspection Procedures	For the purposes of 8-8-301, 302, 303, and 304, leaks shall be measured using a portable gas detector as prescribed in EPA Reference Method 21 (60, Appendix A)



## VIII. Test Methods

**Table VIII**  
**Test Methods**

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
BAAQMD Regulation 8-18-301, 8-18-302, 8-18-303, 8-18-304, 8-18-305	Leak inspection procedures	EPA reference method 21 (60, Appendix A), Determination of Volatile Organic Compound Leaks
BAAQMD Regulation 8-18-306	Determination of mass emissions	EPA Protocol for equipment leak emission estimates, Chapter 4, Mass Emission Sampling, (EPAA-453/R-95-017) November 1995
9-1-301	Ground Level Monitoring	Manual of Procedures, Volume VI, Section 1, Area Monitoring
9-2-301	Ground Level Monitoring	Manual of Procedures, Volume VI, Section 1, Area Monitoring
9-1-501, 9-2-501	Continuous Monitoring	Manual of Procedures, Volume V, Continuous Monitoring
9-1-313	NH <sub>3</sub> and H <sub>2</sub> S abatement efficiency	Manual of Procedures, Volume III, Method 32, Determination of H <sub>2</sub> S in Process Water Streams Manual of Procedures, Volume III, Method 1, Determination of NH <sub>3</sub> in Effluents
BAAQMD 9-1-313.2	Sulfur Removal and Recovery	Manual of Procedures, Volume III, Method 32, Determination of Hydrogen Sulfide in Process Water Streams and Method 1, Determination of Ammonia in Effluents
BAAQMD 9-10-301, 303, 304	Determination of Nitrogen Oxides	Manual of Procedures Volume V Continuous Emissions Monitoring or Equivalent Verification System (CEMS verified by Manual of Procedures, Volume IV ST-13A and ST-14 Source Test)
BAAQMD 9-10-305	Determination of Carbon Monoxide and Stack-Gas Oxygen	Manual of Procedures Volume V Continuous Emissions Monitoring or Equivalent Verification System (CEMS verified by Manual of Procedures, Volume IV ST-6 and ST-14 Source Test)
60 Subpart J 60.104(a)(1)	Limit on H <sub>2</sub> S in fuel gas for fuel gas combustion devices	Method 11, Determination of Hydrogen Sulfide Content of Fuel Gas Streams in Petroleum Refineries
60 Subpart J 60.105 (a)(4)(iii)	H <sub>2</sub> S CEMS performance test methods	Performance evaluations for this H <sub>2</sub> S monitor under §60.13(c) shall use Performance Specification 7. Method 11, 15, 15A, or 16 shall be used for conducting the relative accuracy evaluations.
60 Subpart J 60.106(e)	H <sub>2</sub> S concentration monitoring	Method 11, Determination of Hydrogen Sulfide

## VIII. Test Methods

**Table VIII  
 Test Methods**

Applicable Requirement	Description of Requirement	Acceptable Test Methods
60 Subpart J 60.106(e)(1)	H2S in fuel gas standard compliance determination	<p>Method 11, 15, 15A, or 16 shall be used to determine the H2S concentration.</p> <p>The gases entering the sampling train should be at about atmospheric pressure. If the pressure in the refinery fuel gas lines is relatively high, a flow control valve may be used to reduce the pressure. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line.</p> <p>(i) For Method 11, the sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf). Two samples of equal sampling times shall be taken at about 1-hour intervals. The arithmetic average of these two samples shall constitute a run. For most fuel gases, sampling times exceeding 20 minutes may result in depletion of the collection solution, although fuel gases containing low concentrations of H2S may necessitate sampling for longer periods of time.</p> <p>(ii) For Method 15 or 16, at least three injects over a 1-hour period shall constitute a run.</p> <p>(iii) For Method 15A, a 1-hour sample shall constitute a run.</p>
<b>NSPS Title 40 Part 60 Appendix B</b>	<b>Performance Specifications</b>	
Performance Specification 7	H2S continuous emission monitoring systems	Method 11, Determination of Hydrogen Sulfide
<b>NSPS Title 40 Part 60 Appendix F</b>	<b>Quality Assurance Procedures</b>	
Procedure 1	QA requirements for gas continuous emissions monitoring systems	
<b>NSPS Part 60 Subpart VV</b>	<b>Standards of Performance for Equipment Leaks (Fugitive Emission Sources) (10/18/83)</b>	

## VIII. Test Methods

**Table VIII**  
**Test Methods**

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
Subpart VV 40 CFR 60.482-2(b)(1), 60.482-7(b), 60.482-8(b), 60.482-10 (g),	Leak inspection procedures	60 Subpart VV, 60.485(b): EPA reference method 21 (60, Appendix A), Determination of Volatile Organic Compound Leaks
Subpart VV 40 CFR 60.482-2(b)(2), 60.482-8(a),	Visual inspection	60 Subpart VV, 60.485(b)
Subpart VV 40 CFR 60.482-2(e), 60.482-4(a), 60.482-4(b), 60.482-7(f),	Leak inspection procedures	60 Subpart VV, 60.485(c): EPA reference method 21 (60, Appendix A), Determination of Volatile Organic Compound Leaks
Subpart VV 40 CFR 60.483 and BAAQMD 8-18-404.1	Leak inspection procedures	60 Subpart VV, 60.485(b): EPA reference method 21 (60, Appendix A), Determination of Volatile Organic Compound Leaks
<b>NSPS Title 40</b> <b>Part 60</b> <b>Appendix A</b>	Inspection Procedures	EPA Reference Method 21
40 CFR 63, Subpart CC	Test methods, procedures	EPA reference method 21 (60, Appendix A), Determination of Volatile Organic Compound Leaks

**IX. PERMIT SHIELD**

**Non-applicable Requirements**

Pursuant to District Regulations 2-6-233 and 2-6-409.12, the federally enforceable regulations and/or standards cited in the following table[s] do not apply to the source or group of sources identified at the top of the table[s]. Enforcement actions and litigation may not be initiated against the source or group of sources covered by this shield based on the regulatory and/or statutory provisions cited, as long as the reasons listed below remain valid for the source or group of sources covered by this shield.

**Table IX A – 1  
 Permit Shield for Non-applicable Requirements  
 S1030- NO. 2 HYDROGEN PLANT**

Citation	Title or Description (Reason not applicable)
None	

**Table IX A – 2  
 Permit Shield for Non-applicable Requirements  
 S1031- NO. 2 HYDROGEN PLANT REFORMING FURNACE**

Citation	Title or Description (Reason not applicable)
None	

**Subsumed Requirements**

Pursuant to District Regulations 2-6-233.2 and 2-6-409.12, as of the date this permit is issued, the federally enforceable monitoring, recordkeeping, and reporting requirements cited in the following table for the source or group of sources identified at the top of the table[s] are subsumed by the monitoring, recordkeeping, and reporting for more stringent requirements or by a “hybrid” monitoring scheme. The District has determined that compliance with the requirements listed below and elsewhere in this permit will assure compliance with the substantive requirements of the subsumed monitoring requirements. Enforcement actions and litigation may not be initiated against the source or group of sources covered by this shield based on the subsumed monitoring requirements cited.

**IX. Permit Shield**

**Table IX B – 1  
Permit Shield for Subsumed Requirements  
S1030- NO. 2 HYDROGEN PLANT**

<b>Citation</b>	<b>Title or Description (Reason not applicable)</b>
None	

**Table IX B – 2  
Permit Shield for Subsumed Requirements  
S1031- NO. 2 HYDROGEN PLANT REFORMING FURNACE**

<b>Citation</b>	<b>Title or Description (Reason not applicable)</b>
None	

**X. REVISION HISTORY**

Initial Major Facility Review Permit Issuance (Application 21610):	TBD
---	-----

## **XI. GLOSSARY**

**ACT**

Federal Clean Air Act

**AMP**

Alternative Monitoring Plan (as allowed in NSPS and MACT)

**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.

**Bubble**

An emission limit imposed on a group of sources.

**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

## **XI. Glossary**

### **CAPCOA**

California Air Pollution Control Officers Association

### **CEC**

California Energy Commission

### **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.

### **CFP**

Clean Fuels Project

### **CFR**

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

### **CGA**

Calibration Gas Audit

### **CO**

Carbon Monoxide

### **CO2**

Carbon Dioxide

### **Consent Decree**

Case No. SA-05-CA-0569-RF; United States of America v. Valero Refining Company – California, et.al. in the United States District Court, Western District of Texas, San Antonio Division, Lodged 6/15/2005, Entered 11/23/2005

### **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.



## **XI. Glossary**

**DWT**

Dead Weight Ton

**District**

The Bay Area Air Quality Management District

**DNF**

Dissolved Nitrogen Flotation (See DAF)

**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  $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$ . Scientific notation is used to express large or small numbers without writing out long strings of zeros.

**EFRT**

An "external floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an EFRT, the floating roof is not enclosed by a second, fixed tank roof, and is thus described as an "external" roof.

**EMP**

Environmental Management Plan

**EPA**

The federal Environmental Protection Agency.

**ESP**

Electrostatic Precipitator

**ETP**

Effluent Treatment Plant

**Excluded**

Not subject to any District Regulations.

## **XI. Glossary**

### **FAT**

Field Accuracy Test

### **FCC**

Fluid Catalytic Cracker

### **Federally Enforceable, FE**

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 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

### **FRT**

Floating Roof Tank (See EFRT and IFRT)

### **GDF**

Gasoline Dispensing Facility

### **GLM**

Ground Level Monitor

### **grains**

1/7000 of a pound

### **Grandfathered source**

A source that was not subject to District permit requirements at the time it was constructed, but was subsequently required to obtain a District permit to operate, and has never been modified since the permit requirement went into effect. Sources constructed prior to March 7, 1979 (when the District's new source review permit program went into effect) might be grandfathered sources. Source that were exempt from permit requirements at the time of construction, that subsequently lost their exemption due to a change in permit rules, might also be grandfathered sources.

### **GRU**

Gas Recovery Unit

### **Graphitic**

Made of graphite.

## **XI. Glossary**

### **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 Part 63.

### **H<sub>2</sub>S**

Hydrogen Sulfide

### **H<sub>2</sub>SO<sub>4</sub>**

Sulfuric Acid

### **HC**

Hydrocarbon

### **Hg**

Mercury

### **HNC**

Heavy Neutral Hydrocracker

### **HNHF**

Heavy Neutral Hydrofinisher

### **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.

### **IFRT**

An "internal floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an IFRT, the floating roof is enclosed by a second, fixed tank roof, and thus is described as an "internal" roof.

### **ISOM**

Isomerization plant

### **JHT**

Jet Hydrotreater

### **LFSO**

Low sulfur fuel oil

### **LHV**

Lower Heating Value. Similar to the higher heating value (see HHV) except that the water

## **XI. Glossary**

produced by the combustion is not condensed but retained as vapor at 60F.

### **Lighter**

"Lightering" is a transfer operation during which liquid is pumped from an ocean-going tanker vessel to a smaller vessel such as a barge. Like any liquid transfer operation, lightering of organic liquids produces organic vapor emissions.

### **LNC**

Light Neutral Hydrocracker

### **LNHF**

Light Neutral Hydrofinisher

### **Long ton**

2200 pounds

### **LPG**

Liquid Petroleum Gas

### **Major Facility**

A facility with potential emissions of: (1) at least 100 tons per year of any regulated air pollutants, (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.

### **MM**

Million

### **Mo Gas**

Motor gasoline

### **MOP**

The District's Manual of Procedures

### **MOSC**

Mobil Oil Sludge Conversion (licensed technology)

### **MSDS**

Material Safety Data Sheet

## **XI. Glossary**

### **MTBE**

methyl tertiary-butyl ether

### **NA**

Not Applicable

### **NAAQS**

National Ambient Air Quality Standards

### **NESHAPs**

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

### **NMHC**

Non-methane Hydrocarbons

### **NMOC**

Non-methane Organic Compounds (Same as NMHC)

### **NO<sub>x</sub>**

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 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 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.)

### **O<sub>2</sub>**

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, NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.

### **Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 72 from Titles IV and V of the Clean Air Act.

## **XI. Glossary**

### **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 Part 52 and District Regulation 2, Rule 2.

### **RAA**

Relative Accuracy Audit

### **RACT**

Reasonably Available Control Technology

### **RATA**

Relative Accuracy Test Audit

### **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

### **RMG**

Refinery Make Gas

### **SCR**

A "selective catalytic reduction" unit is an abatement device that reduces NO<sub>x</sub> 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 NO<sub>x</sub> compounds to nitrogen gas.

### **SDA**

Solvent deasphalting

## **XI. Glossary**

### **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.

### **SOCMI**

Synthetic Organic Chemical Manufacturing Industry

### **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. 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

### **SRU**

Sulfur Recovery Unit

### **ST-7**

Source Test Method #7: Non-Methane Organic Carbon Sampling

### **THC**

Total Hydrocarbons (NMHC + Methane)

### **therm**

100,000 British Thermal Units

### **Title V**

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

### **TKC**

Taylor Kinetic Cracking

## **XI. Glossary**

### **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 SO<sub>2</sub> that will be present in the combusted fuel gas, since sulfur compounds are converted to SO<sub>2</sub> by the combustion process.

### **TSP**

Total Suspended Particulate

### **TVP**

True Vapor Pressure

### **VGO**

Vacuum Gas Oil

### **VOC**

Volatile Organic Compounds

### **VR**

Vapor Recovery

### **WWT**

Wastewater Treatment

### **Units of Measure:**

bbbl	=	barrel of liquid (42 gallons)
bhp	=	brake-horsepower
BPD	=	barrels per day
BPH	=	barrels per hour
BPY	=	barrels per year
BTU or btu	=	British Thermal Unit
C	=	degrees Celsius
dscf	=	dry standard cubic feet



## XI. Glossary

dscm	=	dry standard cubic meters
F	=	degrees Fahrenheit
f <sup>3</sup>	=	cubic feet
g	=	grams
gr	=	grains
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
k or K	=	thousand
max	=	maximum
m <sup>2</sup>	=	square meter
min	=	minute
Mg	=	mega-gram, one thousand grams
µg	=	micro-gram, one millionth of a gram
ml	=	milliliter
MM	=	million
mm	=	millimeter
MMbtu	=	million BTU
mmBtu	=	million BTU
mmbtu	=	million BTU
MMBTU	=	million BTU
mm Hg	=	millimeters of Mercury (pressure)
MW	=	megawatts
ppmv	=	parts per million, by volume
ppmvd	=	parts per million, by volume, dry basis
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
TPD	=	tons per day
TPY	=	tons per year
tpy	=	tons per year
yr	=	year

### Symbols:

<	=	less than
>	=	greater than

## **XI. Glossary**

$\leq$  = less than or equal to  
 $\geq$  = greater than or equal to