Bay Area Air Quality Management District

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

Final

MAJOR FACILITY REVIEW PERMIT

Issued To:

Gaylord Container Corporation
Facility #A2180

Facility Address:
2301 Wilbur Avenue
Antioch, CA 94509

Mailing Address:
P.O. Box 10
Antioch, CA 94509

Responsible Official	**Facility Contact**
Henry M. Thatcher	Same
Site Manager	
(925) 779-3200	

Type of Facility:	Cogeneration Facility	**BAAQMD Permit Division Contact:**
Primary SIC:	4911	Robert T. Hull
Product:	Electricity	

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Signed by Jack P. Broadbent _____ December 27, 2005 ___
Jack P. Broadbent, Executive Officer/Air Pollution Control Officer Date

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I. STANDARD CONDITIONS

A. Administrative Requirements

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

BAAQMD Regulation 1 - General Provisions and Definitions
(as amended by the District Board on 5/2/01);
SIP Regulation 1 - General Provisions and Definitions
(as approved by EPA through 6/28/99);
BAAQMD Regulation 2, Rule 1 - Permits, General Requirements
(as amended by the District Board on 6/15/05);
SIP Regulation 2, Rule 1 - Permits, General Requirements
(as approved by EPA through 1/26/99);
BAAQMD Regulation 2, Rule 2 - Permits, New Source Review
(as amended by the District Board on 6/15/05);
SIP Regulation 2, Rule 2 - Permits, New Source Review and Prevention of Significant Deterioration
(as approved by EPA through 1/26/99);
BAAQMD Regulation 2, Rule 4 - Permits, Emissions Banking
(as amended by the District Board on 12/21/04);
SIP Regulation 2, Rule 4 - Permits, Emissions Banking
(as approved by EPA through 1/26/99); and
BAAQMD Regulation 2, Rule 6 - Permits, Major Facility Review
(as amended by the District Board on 4/16/03).

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

1. This Major Facility Review Permit was issued on October 30, 2003 and expires on September 30, 2008. The permit holder shall submit a complete application for renewal of this Major Facility Review Permit no later than March 31, 2008, and no earlier than September 30, 2007. **If a complete application for renewal has not been submitted in accordance with this deadline, the facility may not operate after** September 30, 2008. If the permit renewal has not been issued by September 30, 2008, but a complete application for renewal has been submitted in accordance with the above deadlines, the existing permit will continue in force until the District takes final action on the renewal application. (Regulation 2-6-307, 404.2, 407 & 409.6; MOP Volume II, Part 3, §4.2)

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

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

I. Standard Conditions

Volume II, Part 3, §4.11)

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

I. Standard Conditions

Part 3, §4.12)

D. Inspection and Entry

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

E. Records

1. The permit holder must provide any information, records, and reports requested or specified by the APCO. (Regulation 1-441, Regulation 2-6-409.4)
2. Notwithstanding the specific wording in any requirement, all records for federally enforceable requirements shall be maintained for at least five years from the date of creation of the record. (Regulation 2-6-501, Regulation 3; 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 October 30, 2003 to March 31, 2004. The report shall be submitted by April 30, 2004. Subsequent reports shall be for the following periods: April 1st through September 30th and October 1st through March 31st, and are due on the last day of the month after the end of the reporting period. All instances of non-compliance shall be clearly identified in these reports. The reports shall be certified by the responsible official as true, accurate, and complete. In addition, all instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions. The reports shall be sent to the following address:

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

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

G. Compliance Certification

Compliance certifications shall be submitted annually by the responsible official of this facility to the Bay Area Air Quality Management District and to the Environmental Protection Agency. The certification period will be October 1st to September 30th. The certification shall be submitted by October 31st of each year. The certification must list each applicable requirement, the compliance status, whether compliance was continuous or intermittent, the method used to determine compliance, and any other specific information required by the permit. The permit holder may satisfy this requirement

I. Standard Conditions

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)
3. The granting by the District of breakdown relief or the issuance by the Hearing Board of a variance will not provide relief from federal enforcement. (MOP Volume II, Part 3, §4.8)

I. Severability

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

J. Miscellaneous Conditions

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

II. EQUIPMENT

Table II A - Permitted Sources

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

S-#	Description	Make or Type	Model	Capacity
S-35	Gas Turbine (natural gas, diesel fuel)	General Electric	MS 6001	37.1 MW, 457 MMBTU/hr
S-36	Duct Burners (natural gas)	Coen	Low NOx	146 MMBTU/hr
S-53	Diesel IC Engine – Gas Turbine Startup	Detroit Diesel	7123-7300	725 BHP

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 (5/2/01)	N
SIP Regulation 1	General Provisions and Definitions (6/28/99)	Y
BAAQMD Regulation 2, Rule 1	General Requirements (6/15/05)	N
BAAQMD 2-1-429	Federal Emissions Statement (12/21/04)	Y
SIP Regulation 2, Rule 1	General Requirements (1/26/99)	Y

III. Generally Applicable Requirements

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
BAAQMD Regulation 4	Air Pollution Episode Plan (3/20/91)	N
SIP Regulation 4	Air Pollution Episode Plan (8/06/90)	Y
BAAQMD Regulation 5	Open Burning (3/6/02)	N
SIP Regulation 5	Open Burning (9/4/98)	Y
BAAQMD Regulation 6	Particulate Matter and Visible Emissions (12/19/90)	Y
BAAQMD Regulation 7	Odorous Substances (3/17/82)	N
BAAQMD Regulation 8, Rule 1	Organic Compounds - General Provisions (6/15/94)	Y
BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (6/15/94)	Y
BAAQMD Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (11/21/01)	N
SIP Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (2/18/98)	Y
BAAQMD Regulation 8, Rule 4	Organic compounds - General Solvent and Surface Coating Operations (5/15/96)	N
SIP Regulation 8, Rule 4	Organic compounds - General Solvent and Surface Coating Operations (12/23/97)	Y
BAAQMD Regulation 8, Rule 16	Organic Compounds - Solvent Cleaning Operations (10/16/02)	Y
BAAQMD Regulation 8, Rule 40	Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks (12/15/99)	Y
BAAQMD Regulation 8, Rule 47	Organic Compounds – Air Stripping and Soil Vapor Extraction Operations (6/15/94)	Y
BAAQMD Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (12/20/95)	N
SIP Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (3/22/95)	Y
BAAQMD Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (7/17/02)	N
SIP Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (2/26/02)	Y[1]
BAAQMD Regulation 11, Rule 1	Hazardous Pollutants - Lead (3/17/82)	N
SIP Regulation 11, Rule 1	Hazardous Pollutants – Lead (9/2/81)	Y[1]
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants - Asbestos Demolition, Renovation and Manufacturing (10/7/98)	Y
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (7/11/90)	N
SIP Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (9/2/81)	Y

III. Generally Applicable Requirements

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/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
40 CFR Part 61, Subpart A	National Emission Standards for Hazardous Air Pollutants – General Provisions (5/28/03)	Y
40 CFR Part 61, Subpart M	National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos (6/19/95)	Y

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

IV. SOURCE-SPECIFIC APPLICABLE REQUIREMENTS

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

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

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

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

Table IV-A
Source-specific Applicable Requirements
S-35: Gas Turbine
S-36: Duct Burner

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 1	**General Provisions and Definitions (5/2/01)**		
1-107	Combination of Emissions	Y	
1-520	Continuous Emission Monitoring	Y	
1-520.8	Monitors required by Regulations 10, 12, and Section 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	

IV. Source-Specific Applicable Requirements

Table IV-A
Source-specific Applicable Requirements
S-35: Gas Turbine
S-36: Duct Burner

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
1-522.8	monitoring data submittal requirements	Y	
1-522.9	recordkeeping requirements	Y	
1-523	Parametric Monitoring and Recordkeeping Procedures	N	
1-523.1	Parametric monitor periods of inoperation	Y	
1-523.2	Limits on periods of inoperation	Y	
1-523.3	Reports of Violations	N	
1-523.4	Records	Y	
1-523.5	Maintenance and calibration	Y	
1-602	Area and Continuous Emission Monitoring Requirements	Y	
SIP Regulation 1	**General Provisions and Definitions (6/28/99)**		
1-522	Continuous Emission Monitoring and Recordkeeping Procedures	Y[1]	
1-522.7	emission limit exceedance reporting requirements	Y[1]	
1-523	Parametric Monitoring and Recordkeeping Procedures	Y[1]	
1-523.3	Reports of Violations	Y[1]	
BAAQMD Regulation 6	**Particulate Matter and Visible Emissions (12/19/90)**		
6-301	Ringelmann No. 1 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-310.3	Heat Transfer Operations	Y	
6-401	Appearance of Emissions	Y	
BAAQMD Regulation 9, Rule 1	**Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)**		
9-1-301	Limitations on Ground Level Concentrations	Y	
9-1-302	General Emissions Limitation	Y	
9-1-304	Fuel Burning – Liquid Fuels	Y	
BAAQMD Regulation 9, Rule 9	**Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Gas Turbines (9/21/94)**		
9-9-113	Exemption – Inspection/Maintenance	Y	

IV. Source-Specific Applicable Requirements

Table IV-A
Source-specific Applicable Requirements
S-35: Gas Turbine
S-36: Duct Burner

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
9-9-114	Exemption – Start-up and Shutdown Periods	Y	
9-9-301	Emission Limits – General	Y	
9-9-301.2	Emission Limits – Turbines over 10.0 MW without SCR	Y	
9-9-501	Monitoring & Recordkeeping	Y	
BAAQMD Manual of Procedures Volume V	**Continuous Emission Monitoring Policy and Procedures (1/20/82)**		
40 CFR Part 60	**Standards of Performance for New Stationary Sources (12/23/71)**	Y	
Subpart A	General Provisions	Y	
60.7	Notification and record keeping	Y	
60.8	Performance Tests	Y	
60.11	Compliance with standards and maintenance requirements	Y	
60.12	Circumvention	Y	
60.13	Monitoring Requirements	Y	
60.13(a)	Continuous monitoring systems	Y	
60.13(b)	Installation deadline	Y	
60.13(e)	Continuous operation	Y	
60.13(f)	Representative measurements	Y	
40 CFR 60 Subpart Db	**Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (12/16/87)**		
60.44b(a)(1)	Performance Standard, NOx	Y	
60.46b(c)	Performance Testing, NOx	Y	
40 CFR 60 Subpart GG	**Standards of Performance for Stationary Gas Turbines (1/27/82)**		
60.332	Standard for Nitrogen Oxides	Y	
60.332(a)(1)	NOx Emission Standard – Turbines > 100 MMBTU/hr	Y	
60.333	Standard for Sulfur Dioxide	Y	
60.333(a)	Sulfur Dioxide Emission Standard	Y	
60.333(b)	Fuel Sulfur Limit	Y	
60.334	Monitoring of Operations	Y	
60.334(b)	CEMS in lieu of Steam to Fuel Monitoring	Y	

IV. Source-Specific Applicable Requirements

Table IV-A
Source-specific Applicable Requirements
S-35: Gas Turbine
S-36: Duct Burner

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
60.334(h)(3)	Fire Only Natural Gas in lieu of Fuel Sulfur Monitoring	Y	
60.334(h)(4)	Monitor Fuel Sulfur Under Approved Custom Schedule	Y	
60.334(j)	Excess Emissions Reports	Y	
60.334(j)(5)	Report Due Dates	Y	
BAAQMD Cond #249			
part 1	Fuel Requirements [BACT, 40 CFR 60.333]	Y	
part 2	Fuel Sulfur Limit [Regulation 9-1-304]	Y	
part 3	Gas Turbine NOx Limit [BACT]	Y	
part 4	Duct Burner NOx Limit [BACT]	Y	
part 5a	Gas Turbine NOx Limit [Regulation 9-9-301.2]	Y	
part 5b	NOx Limit for Turbine and Duct Burner Combined [Regulation 2-1-403]	Y	
part 6	NOx and O2 Monitoring [BACT, Regulation 9-9-501]	Y	
part 7	Fuel Monitoring Requirement [Cumulative Increase]	Y	
part 8	Natural Gas Sulfur Content Demonstration [40 CFR 60.334(h)(3,4)]	Y	
part	Recordkeeping Requirements [BACT, Cumulative Increase, Regulation 9-1-304, Regulation 9-9-301.2]	Y	

IV. Source-Specific Applicable Requirements

Table IV – B
Source-Specific Applicable Requirements
S-53 Diesel IC Engine For Gas Turbine Startup

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 6	**Particulate Matter and Visible Emissions (12/19/90)**		
6-303	Ringelmann No. 2 Limitation	Y	
6-303.1	Internal combustion engines below 1500 cubic inches displacement or standby engines	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-401	Appearance of Emissions	Y	
BAAQMD Regulation 9, Rule 1	**Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)**		
9-1-301	Limitations on Ground Level Concentrations	Y	
9-1-304	Fuel Burning (Liquid and Solid Fuels)	Y	
CCR Title 17, Section 93115	**Airborne Toxic Control Measure for Stationary Compression Ignition Engines (2/26/04)**		
93115(c)(12)	Exemption for Low-Use Prime Engines	N	
93115(e)(1)(B)	Fuel Requirements, In-Use CI Engines	N	
93115(e)(4)	Recordkeeping, Reporting, and Monitoring Requirements	N	
93115(e)(4)(A)(2)	Reporting Requirement for In-Use Engines	N	
93115(e)(4)(A)(3)	Required Information	N	

IV. Source-Specific Applicable Requirements

Table IV – B
Source-Specific Applicable Requirements
S-53 Diesel IC Engine For Gas Turbine Startup

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
93115(e)(4)(G)	Non-resettable Hour Meter	N	
93115(e)(4)(H)	Reporting Requirements for Exempted Prime Engines	N	
BAAQMD Condition #22199			
part 1	Low-Use Prime Engine Hours of Operation Limit [CCR Section 93115(c)(12)]	N	
part 2	Usage Metering Requirements [CCR Section 93115(c)(12)]	N	
part 3	CARB Diesel Fuel Requirement, Demonstration of Sulfur Content [CCR Section 93115(e)(1)]	N	
part 4	Recordkeeping [CCR Sections 93115(c)(12) and 93115(e)(1)]	N	

V. SCHEDULE OF COMPLIANCE

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

VI. PERMIT CONDITIONS

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

Condition #249
For S-35, Gas Turbine; S-36, Duct Burners

1. The Gas Turbine (S-35) shall be fired exclusively with California Public Utilities Commission (PUC) standard natural gas-except during periods of curtailment. The Duct Burners (S-36) shall be fired exclusively with PUC standard natural gas during all periods of operation. (basis: BACT, Regulation 2-1-403)

2. Standby fuels combusted at S-35 during periods of curtailment shall have a maximum sulfur content <0.5% sulfur by weight. The maximum sulfur content of the fuels shall be demonstrated by vendor certification. (basis: Regulation 9-1-304)

3. The nitrogen oxide concentration from the Gas Turbine's exhaust shall not exceed 42 ppmvd @15% O2 averaged over any consecutive 3 hour period, except during start-up periods not to exceed 4 hours. (basis: BACT)

4. The nitrogen oxide concentration from the Duct Burners exhaust shall not exceed 30 ppmvd @ 15% O2 averaged over any consecutive 3 hour period. (basis: BACT)

5. Emissions of nitrogen oxides (NOx) shall not exceed the following:

    a. When only S-35 is operating, 15 ppmvd @ 15% O2 averaged over any rolling three hour average, except during startup or shutdown periods not to exceed 4 hours and 2 hours, respectively. (basis: Regulation 9-9-301.2, BACT)
    b. When both S-35 and S-36 are operating, 19 ppmvd @ 15% O2 averaged over any rolling three hour average, except during startup or shutdown periods not to exceed 4 hours and 2 hours, respectively. The owner/operator of S-35 and S-36 may petition the Air Pollution Control Officer to adjust the NOx limits of this part 5 upward if it is demonstrated to the satisfaction of District staff that the thermal efficiency of S-35 is in excess of 25% per Regulation 9, Rule 9. (basis: Regulation 2-1-403, BACT)

VI. Permit Conditions

Condition #249
For S-35, Gas Turbine; S-36, Duct Burners

6. The operator of S-35 and S-36 shall maintain District approved continuous emission monitors for nitrogen oxide (NOx) and oxygen (O2) at emission point P-5. Daily emissions of NOx (calculated as NO2) in lb/day shall be reported to the District on a monthly basis. (basis: BACT, Regulation 9-9-501)

7. The owner/operator of S-35 and S-36 shall install and operate a continuous monitoring system to monitor and record the fuel consumption at each source. (basis: Cumulative Increase)

8. The owner/operator shall not operate the Gas Turbine S-35 alone or in combination with the Duct Burners S-36 unless the equipment is in compliance with the applicable requirements of 40 CFR Part 60 Subpart GG, as amended on July 8, 2004. The sulfur content of the natural gas fuel shall be demonstrated to contain 20.0 grains or less of total sulfur per 100 standard cubic feet by one of the following methods:

    a. The sulfur content of the natural gas fuel shall be monitored in accordance with the following custom schedule approved by the USEPA on August 14, 1987 during all periods of active turbine operation:
        i. The sulfur content shall be measured twice per month for the first six months.
        ii. If the results of the testing required by part 8(a)(i) are below 0.2% sulfur by weight, the sulfur content shall be measured quarterly for the next year of operation.
        iii. If the results of the testing required by part 8(a)(ii) are below 0.2% sulfur by weight, the sulfur shall be measured semi-annually for the remainder of the permit term.
    b. The sulfur content of the natural gas fuel shall be demonstrated through a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less.

VI. Permit Conditions

Condition #249
For S-35, Gas Turbine; S-36, Duct Burners

9. The following records shall be maintained in a District approved log. These records shall be kept on site, summarized monthly, and made available for District inspection for a period of 5 years from the date on which a record is made. (basis: BACT, Cumulative Increase, Regulation 9-1-304, Regulation 9-9-301.2)

    a. NOx in ppmvd @ 15% O2
    b. Amount of natural gas (therms) used at each source, S-35 and S-36
    c. Amount of oil (gallons) used at S-35
    d. Hours of operation of each source, S-35 and S-36
    e. Number of startups and shutdowns
    f. Liquid fuel sulfur content
    g. All monitoring results from part 8, above.

Condition #22199

For S-53: Diesel IC Engine for Gas Turbine Start

1. The Diesel Engine S-53 shall be limited to 20 hours per year of operation. (basis: CCR Section 93115(c)(12))

2. In order to demonstrate compliance with part 1, S-53 shall be equipped with a non-resettable totalizing meter that measures and records the hours of operation for the engine. (basis: CCR Section 93115(c)(12))

3. Only CARB Diesel Fuel (<0.05% sulfur by weight) or approved alternative shall be combusted at S-53. The maximum sulfur content of the fuel shall be demonstrated by vendor certification. (basis: CCR Section 93115(e)(1))

4. In order to demonstrate compliance with the above requirements, the operator of S-53 shall maintain records of the hours of operation and vendor fuel sulfur certifications in a District approved log. These records shall be updated on at least a monthly basis, kept on-site, and be available for District inspection for at least 5 years from the date on which a record was made. (basis: CCR Sections 93115(c)(12) and 93115(e)(1))

VI. Permit Conditions

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), semi-annual (SA), 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.

Table VII-A
Applicable Limits and Compliance Monitoring Requirements
S-35: Gas Turbine
S-36: Duct Burner

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD Regulation 6-301	Y		Ringelmann 1.0 for less than 3 minutes/hour	None	N	
FP	BAAQMD Regulation 6-310.3	Y		0.15 gr/dscf @ 6% O2	None	N	
NOx	BAAQMD Regulation 9-9-301.2	Y		15 ppmv @ 15% O_2 (dry), 3 hr average (turbine only)	BAAQMD Regulation 9-9-501	C	C.E.M.
NOx	40 CFR 60 Subpart Db, 60.44b (a)(4)(i)	Y		0.20 lb/MMBTU, natural gas		N	

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII-A
Applicable Limits and Compliance Monitoring Requirements
S-35: Gas Turbine
S-36: Duct Burner

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NOx	40 CFR 60 Subpart GG, 60.332 (a)(1)	Y		83 ppmv @ 15% O_2 (dry)	Monitoring requirement subsumed by BAAQMD Permit Condition #249, part 6. See Permit Shield.	C	C.E.M.
NOx	Condition #249, part 5.a.	Y		15 ppmv @ 15% O_2 (dry) 3 hour rolling average (turbine only)	Condition #249, part 9.a.	C	C.E.M.
NOx	BAAQMD Condition #249, part 4	Y		30 ppmv @ 15% O_2 (dry) 3 hour rolling average (duct burner only)	None	N	
NOx	Condition #249, part 5.b.	Y		19 ppmv @ 15% O_2 (dry) 3 hour rolling average (for turbine and duct burner combined)	Condition #249, part 9.a.	C	C.E.M.
SO_2	BAAQMD Regulation 9-1-301	Y		ground level concentrations: 0.5 ppm for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, 0.05 ppm averaged over 24 hours	None	N	

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII-A
Applicable Limits and Compliance Monitoring Requirements
S-35: Gas Turbine
S-36: Duct Burner

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO_2	BAAQMD Regulation 9-1-302	Y		300 ppm (dry) general emission limitation	BAAQMD Condition #249, part 8.	Custom Schedule (see permit condition); or P/E	Total sulfur analysis for natural gas; or vendor fuel certification
SO_2	BAAQMD Regulation 9-1-304			0.5% sulfur limit for liquid fuel	BAAQMD Condition #249 part 2, part 9.f.	P/E	Liquid fuel usage records, vendor fuel certification
SO_2	40 CFR 60 Subpart GG, 60.333 (a)	Y		0.015% (vol) @ 15% O_2 (dry) (fuel oil)	40 CFR 60 Subpart GG 60.334(h)(1) Monitoring requirement subsumed by BAAQMD Permit Condition #249, part 2, part 9.f. See Permit Shield	P/E	Liquid fuel usage records, vendor fuel certification
SO_2	40 CFR 60 Subpart GG, 60.333 (a)	Y		0.015% (vol) @ 15% O_2 (dry) (natural gas)	40 CFR 60 Subpart GG 60.334(h)(1) and BAAQMD Condition #249, part 8	Custom Schedule (see permit condition); or P/E	Total sulfur analysis for natural gas; or vendor fuel certification

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII-A
Applicable Limits and Compliance Monitoring Requirements
S-35: Gas Turbine
S-36: Duct Burner

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO_2	40 CFR 60 Subpart GG, 60.333 (b)	Y		0.8 % sulfur in fuel by weight	40 CFR 60 Subpart GG 60.334(h)(1) Monitoring requirement subsumed by BAAQMD Permit Condition #249, part 2, part 9.f. See Permit Shield.	P/E	Liquid fuel usage records, vendor fuel certification

Table VII-B
Applicable Limits and Compliance Monitoring Requirements
S-53 Diesel IC Engine For Gas Turbine Startup

VII. Applicable Limits and Compliance Monitoring Requirements

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD Regulation 6-303.1	Y		Ringelmann 2.0 for 3 minutes in any hour		N	
FP	BAAQMD Regulation 6-310	Y		0.15 grain/dscf		N	
SO2	BAAQMD Regulation 9-1-301 BAAQMD	N		ground level concentrations: 0.5 ppm for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, 0.05 ppm averaged over 24 hours	Condition #22199, part 3	P/E	Vendor fuel certification
SO2	BAAQMD Regulation 9-1-304	Y		0.5% sulfur limit for liquid fuel	Condition #22199, part 3	P/E	Vendor fuel certification
SO2	Condition #22199, part 3; and CCR 93115(e)(1)	N		use of CARB Diesel Fuel or equivalent	Condition #22199, part 3	P/E	Vendor fuel certification
Hours of operation	BAAQMD Regulation 9-8-330.1, Condition #22199, part 1; and CCR 93115(c)(12)	Y		operation not to exceed 20 hours in any consecutive 12-month period	BAAQMD 9-8-530 Condition #22199, part 2 and part 4	C P/E	Hour meter, recordkeeping

VIII. TEST METHODS

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

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
BAAQMD 6-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions
BAAQMD 6-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulate; or USEPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
BAAQMD 9-1-302	General Emission Limitation (SO_2)	Manual of Procedures, Volume IV, ST-19A, Sulfur Dioxide, Continuous Sampling, or ST-19B, Total Sulfur Oxides, Integrated Sample
BAAQMD 9-1-304	Fuel Sulfur Content	Manual of Procedures, Volume III, Method 10, Determination of Sulfur in Fuel Oil
BAAQMD 9-9-301.2	Emission Limits- Turbines Rated ≥ 10 MW w/o SCR	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
BAAQMD 9-9-503.2	Deadline for Demonstration of Compliance with §9-9-301	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
BAAQMD Cond. #249		
part 3	NOx Limit [BACT]	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
part 4	NOx Limit [BACT]	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
part 5.a.	NOx Limit [Regulation 9-9-301.2]	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
part 5.b.	NOx Limit for turbine and duct burner combined	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling

VIII: Test Methods

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
part 8	Natural Gas Sulfur Content Monitoring	ASTM D 1072-80, ATSM D 3246-81, 92, 96 ATSM D 4468-85 ATSM D 6667-01
40 CFR 60 Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (12/16/87)	
60.43b (f)	Opacity Limits for Oil Firing	EPA Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources
60.44b (a)(1)	Performance Standard, NOx	EPA Method 20, Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
40 CFR 60 Subpart GG	Standards of Performance for Stationary Gas Turbines (7/8/04)	
60.332 (a)(1)	Performance Standard, NOx	EPA Method 20, Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines, or ASTM D6522-00, Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, or EPA Method 7E, Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)
60.333 (a)	SO2 Volumetric Emission Limit	EPA Method 20, Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
60.333 (b)	Fuel Sulfur Limit (fuel oils)	ASTM D 2880-71, Standard Specification for Gas Turbine Fuel Oils
60.333 (b)	Fuel Sulfur Limit (gaseous fuel)	ASTM D 1072-80 ATSM D 3246-81, 92, 96 ATSM D 4468-85 ATSM D 6667-01

VIII: Test Methods

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
60.334 (h)(1)	Fuel Sulfur Content (liquid fuel)	ATSM D129-00 ATSM D2622-98 ATSM D4294-02 ATSM D4294-02 ATSM D1266-98 ATSM D5453-00 ATSM D1552-01

IX. PERMIT SHIELD

A. 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 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.

Table IX-A
S-35: Gas Turbine

Subsumed Requirement Citation	Title or Description	Streamlined Requirements	Title or Description
40CFR 60 Subpart GG	**Standards of Performance for Stationary Gas Turbines**		
60.334 (h)(1)	Fuel Sulfur monitoring (liquid fuels)	BAAQMD Condition 249, part 2	Requirement for use of low sulfur liquid fuels for emergency standby operation
60.334 (j)(2)	Periods of excess emissions, SO2, fuel oil	BAAQMD Condition 249, part 2	Requirement for use of low sulfur liquid fuels for emergency standby operation

X. REVISION HISTORY

Final Title V Permit (Application #25736):	October 30, 2003
Minor Revision (Application #11036):	December 27, 2005

XI. GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer

API
American Petroleum Institute

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

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

BARCT
Best Available Retrofit Control Technology

C5
An Organic chemical compound with five carbon atoms

C6
An Organic chemical compound with six carbon atoms

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CEC
California Energy Commission

CCR
California Code of Regulations
CEQA

XI. Glossary

California Environmental Quality Act

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

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

CO
Carbon Monoxide

CO2
Carbon Dioxide

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date. Used to determine whether threshold-based requirements are triggered.

District
The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

dscm
Dry Standard Cubic Meter

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

EGT
Exhaust Gas Temperature

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District regulations.

XI. Glossary

Federally Enforceable, FE
All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), 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

GLC
Ground level concentration.

GLM
Ground Level Monitor

grains
1/7000 of a pound

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

H2S
Hydrogen Sulfide

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.

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

XI. Glossary

Major Facility
A facility with potential emissions of: (1) at least 100 tons per year of 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.

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

MOP
The District's Manual of Procedures.

MSDS
Material Safety Data Sheet

MW
Megawatts

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

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

NMHC
Non-methane Hydrocarbons (Same as NMOC)

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx
Oxides of nitrogen.

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

XI. Glossary

NSR
New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

O2
The chemical name for oxygen gas.

Offset Requirement
A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

Phase II Acid Rain Facility
A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC
Precursor Organic Compounds

PM
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 those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

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

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

XI. Glossary

SO2
Sulfur dioxide

SO3
Sulfur trioxide

THC
Total Hydrocarbons (NMHC + Methane)

therm
100,000 British Thermal Unit

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

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

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Plan

TSP
Total Suspended Particulate

TVP
True Vapor Pressure

VOC
Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower

XI. Glossary

hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m^2	=	square meter
min	=	minute
mm	=	million
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year