Bay Area Air Quality Management District

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

Final

MAJOR FACILITY REVIEW PERMIT

Issued To:

Gas Recovery Systems, Inc.
Facility #B1668

Facility Address:
Marsh Road
Menlo Park, CA 94025

Mailing Address:
5087 Junction Road
Lockport, NY 14094

Responsible Official	**Facility Contact**
Anthony Faldo, Vice President	Matthew Bell,
& General Manager	Environmental Manager
(716) 439-1004	(949) 355-5218

Type of Facility:	Landfill Gas Combustion	BAAQMD Engineering Division Contact:
Primary SIC:	4911	Randy Frazier
Product:	Electrical Power Combustion	Senior Air Quality Engineer

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Signed for by Jeff McKay for Jack P. Broadbent — May 7, 2008 ----------
Jack P. Broadbent, Executive Officer/Air Pollution Control Officer — Date

TABLE OF CONTENTS

I. STANDARD CONDITIONS 3

II. EQUIPMENT 7

III. GENERALLY APPLICABLE REQUIREMENTS 8

IV. SOURCE-SPECIFIC APPLICABLE REQUIREMENTS 11

V. SCHEDULE OF COMPLIANCE 15

VI. PERMIT CONDITIONS 15

VII. APPLICABLE LIMITS AND COMPLIANCE MONITORING REQUIREMENTS 18

VIII. TEST METHODS 21

IX. PERMIT SHIELD 23

X. REVISION HISTORY 24

XI. GLOSSARY 25

I. STANDARD CONDITIONS

A. Administrative Requirements

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

BAAQMD Regulation 1 - General Provisions and Definitions
(as amended by the District Board on 7/19/06);
SIP Regulation 1 - General Provisions and Definitions
(as approved by EPA through 8/27/99);
BAAQMD Regulation 2, Rule 1 - Permits, General Requirements
(as amended by the District Board on 7/16/06);
SIP Regulation 2, Rule 1 - Permits, General Requirements
(as approved by EPA through 2/25/99);
BAAQMD Regulation 2, Rule 2 - Permits, New Source Review
(as amended by the District Board on 12/21/04);
SIP Regulation 2, Rule 2 - Permits, New Source Review and Prevention of Significant Deterioration
(as approved by EPA through 2/25/99);
BAAQMD Regulation 2, Rule 4 - Permits, Emissions Banking
(as amended by the District Board on 12/21/04); and
SIP Regulation 2, Rule 4 - Permits, Emissions Banking
(as approved by EPA through 2/25/99).
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 **May 7, 2008** and expires on **May 8, 2013**. The permit holder shall submit a complete application for renewal of this Major Facility Review Permit no later than **November 8, 2012**, and no earlier than **May 8, 2012**. **If a complete application for renewal has not been submitted in accordance with these deadlines, the facility may not operate after May 8, 2013.** (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 Volume II, Part 3, §4.11)

I. Standard Conditions

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, nor 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 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 condition of the permit, regardless of 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

I. Standard Conditions

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 reports shall be for the following periods: September 1st through February 28th or 29th and March 1st through August 31st and are due on the last day of the month after the end of the reporting period. All instances of non-compliance shall be clearly identified in these reports. The reports shall be certified by the responsible official as true, accurate, and complete. In addition, all instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions. The reports shall be sent to the following address:

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

(Regulation 2-6-502, 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 March 1st to February 28th or 29th of each year. The certification shall be submitted by March 31st of each year. The certification must list each applicable requirement, the compliance status, whether compliance was continuous or intermittent, the method used to determine compliance, and any other specific information required by the permit. The permit holder may satisfy this requirement through submittal of District-generated 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 should be sent to the Environmental Protection Agency at the following address:

Director of the Air Division

I. Standard Conditions

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 caused by conditions beyond the permit holder's reasonable control 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

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
2	Internal Combustion Engine, Landfill Gas (landfill gas)	Superior, Rich Burn	8G825	750 HP 6.75 MM BTU/hour
3	Internal Combustion Engine, Landfill Gas (landfill gas)	Superior, Rich Burn	8G825	750 HP 6.75 MM BTU/hour
4	Internal Combustion Engine, Landfill Gas (landfill gas)	Superior, Rich Burn	8G825	750 HP 6.75 MM BTU/hour
5	Internal Combustion Engine, Landfill Gas (landfill gas)	Superior, Rich Burn	8G825	750 HP 6.75 MM BTU/hour

Table II B - Abatement Devices

A-#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
1	Genstar Thermal Reactor	2	BAAQMD Condition #338: part 3		740 ppmv CO @ 15% O_2
2	Genstar Thermal Reactor	3	BAAQMD Condition #338: part 3		740 ppmv CO @ 15% O_2
3	Genstar Thermal Reactor	4	BAAQMD Condition #338: part 3		740 ppmv CO @ 15% O_2
4	Genstar Thermal Reactor	5	BAAQMD Condition #338: part 3		740 ppmv CO @ 15% O_2

III. Generally Applicable Requirements

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 would 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 rule and the version of the rule in the SIP. For specific information, contact the District's Rule Development Section of the Enforcement Division. 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 (11/15/00)	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 (6/7/95)	Y
SIP Regulation 2, Rule 1	General Requirements (1/26/99)	Y
BAAQMD Regulation 2, Rule 5	New Source Review of Toxic Air Contaminants (6/15/05)	N
BAAQMD Regulation 4	Air Pollution Episode Plan (3/20/91)	N

III. Generally Applicable Requirements

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
SIP Regulation 4	Air Pollution Episode Plan (8/06/90)	Y
BAAQMD Regulation 5	Open Burning (11/2/94)	N
SIP Regulation 5	Open Burning (9/4/98)	Y
BAAQMD Regulation 6, Rule 1	Particulate Matter, General Requirements (12/05/07)	N
SIP 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 (7/20/05)	N
SIP Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (6/15/94)	Y
BAAQMD Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (12/20/95)	Y
BAAQMD Regulation 8, Rule 4	Organic compounds - General Solvent and Surface Coating Operations (10/16/02)	Y
BAAQMD Regulation 8, Rule 15	Organic Compounds – Emulsified and Liquid Asphalts (6/1/94)	Y
BAAQMD Regulation 8, Rule 40	Organic Compounds - Aeration of Contaminated Soil and Removal of Underground Storage Tanks (6/15/05)	N
SIP 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 (6/15/05)	N
SIP 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 (12/20/95)	N
SIP Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (2/26/02)	Y
BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants - Sulfur Dioxide (3/15/95)	N
SIP Regulation 9, Rule 1	Inorganic Gaseous Pollutants - Sulfur Dioxide (5/20/92)	Y
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants - Asbestos Demolition, Renovation and Manufacturing (12/4/91)	Y
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (7/11/90)	Y
California Health and Safety Code Section 41750 et seq.	Portable Equipment	N
California Health and Safety Code Section 44300 et seq.	Air Toxics “Hot Spots” Information and Assessment Act of 1987	N

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 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
40 CFR Part 61, Subpart M	National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos (6/19/95)	Y
EPA Regulation 40 CFR 82	Protection of Stratospheric Ozone (2/21/95)	
Subpart F, 40 CFR 82.156	Leak Repair	Y
Subpart F, 40 CFR 82.161	Certification of Technicians	Y
Subpart F, 40 CFR 82.166	Records of Refrigerant	Y

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-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 1	**General Provisions and Definitions (7/19/06)**		
1-523	Parametric Monitoring and Recordkeeping Procedures	Y	
1-523.1	Reporting requirement for periods of inoperation > 24 hours	Y	
1-523.2	Limit on duration of inoperation	Y	
1-523.3	Reporting requirement for violations of any applicable limits	Y	
1-523.4	Records of inoperation, tests, calibrations, adjustments, & maintenance	Y	
BAAQMD Regulation 6, Rule 1	**Particulate Matter, General Requirements (12/05/07)**		
6-1-301	Ringelmann No. 1 Limitation	N	
6-1-305	Visible Particles	N	
6-1-310	Particle Weight Limitation	N	

IV. Source-specific Applicable Requirements

Table IV – A
Source-specific Applicable Requirements
S-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
6-1-401	Appearance of Emissions	N	
SIP Regulation 6	**Particulate Matter and Visible Emissions (12/19/90)**		
6-301	Ringelmann No. 1 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particle Weight Limitation	Y	
6-401	Appearance of Emissions	Y	
BAAQMD Regulation 8, Rule 34	**Organic Compounds - Solid Waste Disposal Sites (10/6/99)**		
8-34-113	Limited Exemption, Inspection and Maintenance	N	
8-34-113.1	Emission Minimization Requirement	Y	
8-34-113.2	Shutdown Time Limitation	N	
8-34-113.3	Recordkeeping Requirement	Y	
~~8-34-114~~	~~Limited Exemption, Energy Recovery Device and Emission Control System~~	~~Y~~	~~Expires 7/1/02 (exp. date not FE)~~
8-34-119	Limited Exemption, Inactive or Closed Landfills	N	
8-34-301	Landfill Gas Collection and Emission Control System Requirements	N	
8-34-301.1	Continuous Operation	N	
8-34-301.2	Collection and Control Systems Leak Limitations	N	
8-34-301.4b	Limits for Other Emission Control Systems	N	7/1/02
8-34-408	Collection and Control System Design Plans	N	
8-34-408.2	Sites With Existing Collection and Control Systems	N	
8-34-410	Equipment Removal Report	N	
8-34-411	Annual Report	N	
8-34-501	Operating Records	N	
8-34-501.2	Emission Control System Downtime	N	
8-34-501.3	Continuous Temperature Records for Enclosed Combustors	N	7/1/02
8-34-501.4	Testing	N	
8-34-501.6	Leak Discovery and Repair Records	N	
8-34-501.10	Gas Flow Rate Records for All Emission Control Systems	N	7/1/02

IV. Source-specific Applicable Requirements

Table IV – A
Source-specific Applicable Requirements
S-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
8-34-501.12	Records Retention for 5 Years	N	
8-34-503	Landfill Gas Collection and Emission Control System Leak Testing	Y	
8-34-504	Portable Hydrocarbon Detector	Y	
8-34-507	Continuous Temperature Monitor and Recorded	N	7/1/02
8-34-508	Gas Flow Meter	N	7/1/02
SIP Regulation 8, Rule 34	**Organic Compounds - Solid Waste Disposal Sites (6/15/94)**		
8-34-113	Exemption, Inspection and Maintenance	Y	
8-34-113.1	Emission Minimization Requirement	Y	
8-34-113.2	Shutdown Time Limitation	Y[1]	
8-34-113.3	Recordkeeping Requirement	Y	
8-34-114	Limited Exemption, Energy Recovery Device and Emission Control System	Y[1]	
8-34-301	Landfill Gas Collection and Emission Control System Requirements	Y	
8-34-301.1	Collection and Control Systems Leak Limitations	Y	
8-34-301.4	Continuous Operation	Y	
8-34-501	Operating Records	Y	
8-34-501.2	Emission Control System Downtime	Y	
8-34-501.4	Records of Testing for Compliance with 8-34-111.3 or 301	Y	
8-34-501.6	Records Retention	Y	
8-34-503	Landfill Gas Collection System Testing	Y	
8-34-504	Portable Hydrocarbon Detector	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 Emission Limitations	Y	
BAAQMD Regulation 9, Rule 2	**Inorganic Gaseous Pollutants – Hydrogen Sulfide (10/6/99)**		
9-2-301	Limitations on Hydrogen Sulfide	N	

IV. Source-specific Applicable Requirements

Table IV – A
Source-specific Applicable Requirements
S-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 9 Rule 8	**Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines (1/20/93)**		
9-8-302	Emission Limits – Waste Derived Fuel Gas	Y	
9-8-302.2	Rich-Burn Engines: NOx Emission Limit	Y	
9-8-302.3	CO Emission Limit	Y	
BAAQMD Condition # 338			
Part 1	Exclusively on landfill gas (Plant Cumulative Increase)	Y	
Part 2a	NO2 from each engine $\leq$ 210 ppm @ 15% O2 (BACT and Regulation 9-8-302.2)	Y	
Part 2b	NOx from each engine <70 ppm @ 15% O2 (Regulation 9-8-302.2)	N	01-01-2012
Part 3	CO from each engine $\leq$ 740 ppm @ 15% O2 (BACT and Plant Cumulative Increase)	Y	
Part 4	Annual source test (Regulation 8-34-114, 8-34-301.4, 9-8-302.2 and 9-8-302.3)	Y	
Part 5	Total reduced sulfur compounds of the collected landfill gas $\leq$ 1300 ppmv (dry) (Regulation 9-1-302)	Y	
Part 6	Annual throughput limit (Regulation 2-1-301)	Y	
Part 7	Recordkeeping for throughput limit (Regulation 2-1-301)	Y	

1

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 # 338
For S-2, S-3, S-4, S-5, Internal Combustion Engines, Landfill Gas Fired

1. The Internal Combustion Engines (S-2, S-3, S-4, and S-5) shall be fired on landfill gas exclusively. (Basis: Plant Cumulative Increase)

2. Nitrogen Oxide (NO_x) emissions, from each internal Combustion Engine (S-2, S-3, S-4, and S-5) shall not exceed the following levels:
   a) Until December 31, 2011: 210 ppmv, dry basis, corrected to 15% O_2. (Basis: BACT and Regulation 9-8-302.2)
   b) Effective January 1, 2012: 70 ppmv, dry basis, corrected to 15% O_2 (Basis: Regulation 9-8-302.2)

3. Carbon Monoxide (CO) emissions from each Internal Combustion Engine (S-2, S-3, S-4, and S-5) shall not exceed 740 ppmv, dry basis, corrected to 15% O_2. (Basis: BACT and Plant Cumulative Increase)

4. In order to demonstrate compliance with Parts #2 and #3 above; Regulation 8, Rule 34, Section 301.4; Regulation 9-8-302.2 and 302.3; the owner or operator shall ensure that a District approved source test is conducted annually on each Internal Combustion Engine (S-2, S-3, S-4, and S-5). At a minimum, the annual source tests shall determine the following:
   a. Landfill gas flow rate to each engine (dry basis);
   b. Concentrations (dry basis) of carbon dioxide (CO_2), nitrogen (N_2), oxygen (O_2), methane (CH_4), total non-methane organic compounds (NMOC), in the landfill gas;
   c. exhaust gas flow rate from each engine (dry basis);
   d. concentrations (dry basis) of NO_x, CO, NMOC, and O_2 in the exhaust gas from each engine;
   e. the NMOC destruction efficiency and exhaust gas NMOC concentration at 3% oxygen achieved by each engine;
   f. The average combustion temperature of each engine during the test period.
   Source tests for each engine shall be conducted no sooner than 9 months and no later than 12 months after the previous source test. The Source Test Section of

I. Permit Conditions

the District shall be contacted to obtain their approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. (Basis: BACT, Plant Cumulative Increase, Regulations 8-34-301.4, 9-8-302.2, and 9-8-302.3)

5. Surrogate Monitoring

   a. Total Reduced Sulfur Compounds: Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in the exhaust from the internal combustion engines. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 1300 ppmv (dry), reported as hydrogen sulfide (H_2S). In order to demonstrate compliance with this Part, the owner or operator shall sample the landfill gas at the main landfill gas header and shall measure the total sulfur content using a Draeger Tube. The owner or operator shall follow the manufacturer's recommended procedures for using the Draeger Tube and interpreting the results. The owner or operator shall conduct the first Draeger Tube test no later than 3 months after the issue date of the renewal MFR Permit and at a frequency of at least quarterly thereafter. . For the purposes of demonstrating compliance with this part, quarterly means at least one time every three calendar months. (Basis: Regulation 9-1-302)
   b. Combustion Temperature Limitations - Minimum Temperature: The minimum combustion temperature for each of the internal combustion engines S-2, S-3, S-4, and S-5 shall be maintained at a minimum of 750 degrees F, averaged over any calendar 3-hour period, as measured at the exhaust manifold. The owner or operator shall monitor this parameter on a continuous basis and shall record the calendar 3-hour average temperatures in a District-approved log.

      If a source test demonstrates compliance with all applicable requirements at a lower average temperature, the APCO may revise this minimum temperature limit is accordance with the following procedures. The minimum combustion temperature measured during the most recent complying source test minus 50 degrees F, provided that the minimum combustion temperature is not less than 700 degrees F.

6. The heat input to each Internal Combustion Engine (S-2, S-3, S-4, or S-5) shall not exceed 162 million BTU during any one day. The combined heat input to the four Internal Combustion Engines (S-2, S-3, S-4, and S-5) shall not exceed 236,520 million BTU during any rolling consecutive 12-month period. (Basis:

I. Permit Conditions

Regulation 2-1-301)

7. In order to demonstrate compliance with Parts 5 and 6 above, the owner or operator shall maintain the following records in a District approved log.
   a. Daily records of operating hours for each engine (S-2, S-3, S-4, and S-5), summarized on a monthly basis,
   b. Monthly records of the combined consumption of landfill gas at all engines (S-2, S-3, S-4, and S-5),
   c. Monthly records of the average methane content of the landfill gas burned in the engines (S-2, S-3, S-4, and S-5),
   d. Monthly records of the average high heat value of the landfill gas calculated by multiplying the methane content recorded pursuant to subpart c times the high heat value of methane (1013 BTU/scf), and
   e. Monthly records of the combined heat input to the engines (S-2, S-3, S-4, and S-5) calculated by multiplying the landfill gas consumption recorded pursuant to subpart b times the average high heat value of the landfill gas determined pursuant to subpart d.

   Both these records and records of H_2S data shall be kept on site and made available for District inspection for a period of at least five years from the date on which a record is made. (Basis: Regulation 2-1-301)

VII. APPLICABLE LIMITS AND COMPLIANCE MONITORING REQUIREMENTS

This section has been included only 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 indicates whether periodic (P) or continuous © monitoring is required. For periodic monitoring, the frequency of the monitoring has also been shown, either 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.

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
FP	BAAQMD 6-1-301	N		Ringelmann No. 1		N	
FP	BAAQMD 6-1-310	N		0.15 grains/dscf		N	
FP	SIP 6-301	Y		Ringelmann No. 1		N	
FP	SIP 6-310	Y		0.15 grains/dscf		N	
TOC (Total Organic Com-pounds Plus Methane)	BAAQMD 8-34-301.2	N		1000 ppmv as methane (component leak limit)	BAAQMD 8-34-501.6 and 8-34-503	P/Q	Quarterly Inspection and Records
TOC	SIP 8-34-301.1	Y		1000 ppmv as methane (component leak limit)	SIP 8-34-503	P/Q	Quarterly Inspection
Non-Methane Organic Com-pounds (NMOC)	BAAQMD 8-34-301.4b	N		98% removal by weight OR < 120 ppmv dry @ 3% O_2, expressed as methane	BAAQMD Condition # 338, Part 4e	P/A	Annual Source Tests

VIII. Test Methods

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO_2	BAAQMD 9-1-301	Y		Property Line Ground Level Limits ≤ 0.5 ppm for 3 minutes, ≤ 0.25 ppm for 60 minutes, and ≤0.05 ppm for 24 hours		N	
SO_2	BAAQMD 9-1-302	Y		≤ 300 ppm (dry)	BAAQMD Condition # 338, Part 5	P/W, M, or Q (Monthly if 3 months data < 1300 ppm, Quarterly if 1 year of data < 1300 ppm)	Sulfur Analysis of landfill gas only
H_2S	BAAQMD 9-2-301	N		Property Line ground level limits ≤ 0.06 ppm Averaged over 3 minutes and ≤ 0.03 ppm Averaged over 60 minutes		N	
Total Sulfur Content in Landfill Gas	BAAQMD Condition # 338, Part 5	Y		≤ 1300 ppmv (dry)	BAAQMD Condition # 338, Part 5	P/Q	Sulfur Analysis of landfill gas only
NO_x	BAAQMD 9-8-302.2 and BAAQMD Condition # 338, Part 2	Y		Until December 31, 2011: Waste Fuel Gas, Rich-Burn 210 ppmv dry @ 15% O_2 Effective January 1, 2012: Waste Fuel Gas, Rich-Burn: 70 ppmv dry @ 15% O_2	BAAQMD Condition # 338, Part 4d	P/A	Annual Source Test

VIII. Test Methods

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
CO	BAAQMD 9-8-302.3	Y		Waste Fuel Gas: 2000 ppmv dry @ 15% O_2	BAAQMD Condition # 338, Part 4d	P/A	Annual Source Test
CO	BAAQMD Condition # 338, Part 3	Y		740 ppmv dry @ 15% O_2	BAAQMD Condition # 338, Part 4d	P/A	Annual Source Test
Emission Control System Shutdown Time	BAAQMD 8-34-113.2	N		240 hours/year	BAAQMD 8-34-501.2	P/D	Records
Emission Control System Shutdown Time	SIP 8-34-113.2	Y[1]		12 hours/calendar month	SIP 8-34-501.2	P/D	Records
Temper-ature of Combus-tion Zone	BAAQMD Regulation 8-34-509	N		Minimum Combustion Temperature: 750 F	BAAQMD 8-34-501.3, 8-34-507, and 8-34-509	C	Temperature sensor and continuous recorder
Gas Flow	BAAQMD 8-34-301 and 301.1;	N		Vent all collected gases to a properly operating control system and operate control system continuously.	BAAQMD 8-34-501.10 and 508	C	Gas Flow Meter and Recorder (every 15 minutes);
Gas Flow	SIP 8-34-301 and 301.4	Y		Vent all collected gases to a properly operating control system and operate control system continuously.	SIP 8-34-501.1	P/D	Operating Records

VIII. Test Methods

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-2, S-3, S-4, S-5- INTERNAL COMBUSTION ENGINES, LANDFILL GAS FIRED

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Periods of Inopera-tion for Para-metric Monitors	BAAQMD 1-523.2	Y		15 consecutive days/incident and 30 calendar days/12 month period	BAAQMD 1-523.4	P/D	Records of occurrence and duration
Heat Input	BAAQMD Condition # 338, Part 6	Y		162 MM BTU/day/engine and 236,520 MM BTU per 12-month period for all engines combined	BAAQMD Condition # 338, Part 7a-e	P/D, M	Records

VIII. TEST METHODS

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

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
BAAQMD 6-1-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions
BAAQMD 6-1-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulate
BAAQMD 8-34-114	Energy Recovery Device and Emission Control System	Manual of Procedures, Volume IV, ST-7, Organic Compounds and ST-14, Oxygen, Continuous Sampling; or EPA Reference Method 18, 25, 25A, or 25C
BAAQMD 8-34-301.2	Collection and Control System Leak Limitations	EPA Reference Method 21, Determination of Volatile Organic Compound Leaks

VIII. Test Methods

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
BAAQMD 8-34-301.4	Limits for Other Emission Control Systems	Manual of Procedures, Volume IV, ST-7, Organic Compounds and ST-14, Oxygen, Continuous Sampling; or EPA Reference Method 18, 25, 25A, or 25C
SIP 8-34-301.1	Collection and Control Systems Leak Limitations	EPA Reference Method 21, Determination of Volatile Organic Compound Leaks
SIP 8-34-301.3 [1]	Energy Recovery Device or Emission Control System Limit	Manual of Procedures, Volume IV, ST-7, Organic Compounds; or EPA Reference Method 25 or 25A
BAAQMD 9-1-302	General Emission Limitation	Manual of Procedures, Volume IV, ST-19A, Sulfur Dioxide, Continuous Sampling, or ST-19B, Total Sulfur Oxides, Integrated Sample
BAAQMD 9-8-302.2	Waste Derived Fuel Gas NO_x Limits for Rich Burn Engines	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
BAAQMD 9-8-302.3	Waste Derived Fuel Gas CO Limits	Manual of Procedures, Volume IV, ST-6, Carbon Monoxide, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
BAAQMD Condition # 338		
Part 2	NO_x Limit	Manual of Procedures, Volume IV, Oxides of Nitrogen, Continuous Sampling, and ST-14, Oxygen, Continuous Sampling
Part 3	CO Limit	Manual of Procedures, Volume IV, ST-6, Carbon Monoxide, Continuous Sampling, and ST-14, Oxygen, Continuous Sampling
Part 5	Limit for Total Reduced Sulfur Compounds in Landfill Gas	Draeger Tube: used in accordance with manufacturer's recommended procedures
Part 6	Heat Input Limit	Gas Flow Meter: used in accordance with manufacturer's recommended procedures; Methane Content: determined by Manual of Procedures, Volume IV, ST-7, Organic Compounds or EPA Reference Method 18, 25, 25A, or 25C; and Calculation Procedure identified in BAAQMD Condition # 338, Part 7d

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.

IX. PERMIT SHIELD

Not applicable.

X. REVISION HISTORY

Initial Proposal:	**November 6, 2000**
Title V Permit Issuance:	**March 13, 2002**
Renewal Proposal	**December 20, 2007**
Renewal Permit Issuance	**May 7, 2008**

XI. GLOSSARY

ACT
Federal Clean Air Act

AP-42
An EPA Document "Compilation of Air Pollution Emission Factors" that is used to estimate emissions from numerous source types. It is available electronically from EPA's web site at" http://www.epa.gov/ttn/chief/ap42/index.html

APCO
Air Pollution Control Officer: Executive Officer of the Bay Area Air Quality Management District.

API
American Petroleum Institute

ARB
Air Resources Board (same as CARB)

ASTM
American Society for Testing and Materials

ATC
Authority to Construct

ATCM
Air Toxic Control Measure

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

BARCT
Best Available Retrofit Technology

Basis
The underlying authority that allows the District to impose requirements

C1
An organic compound with one carbon atom. Example: methane

C3

An organic compound with three carbon atoms. Example: propane

C5
An organic compound with five carbon atoms. Example: pentane

C6
An organic compound with six carbon atoms. Example: hexane

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CARB
California Air Resources Board (same as ARB)

CCR
California Code of Regulations

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.

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.

CH4 or CH_4
Methane

CO
Carbon Monoxide

CO2 or CO_2

Carbon Dioxide

CT
Combustion Zone Temperature

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.

District
The Bay Area Air Quality Management District

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.

EG
Emission Guidelines

EO
Executive Order

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District Regulations.

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

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

FR
Federal Register

GDF
Gasoline Dispensing Facility

GLM
Ground Level Monitor

Grains
1/7000 of a pound

H2S or H_2S
Hydrogen Sulfide

H2SO4 or H_2SO_4
Sulfuric Acid

H&SC
Health and Safety Code

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 both 40 CFR Part 63, and District Regulation 2, Rule 5.

Hg
Mercury

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

LFG
Landfill gas

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 60 °F.

Major Facility
A facility with potential emissions of regulated air pollutants greater than or equal to 100 tons per year, greater than or equal to 10 tons per year of any single hazardous air pollutant, and/or greater than or equal to 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity as determined by the EPA administrator.

MAX or Max.
Maximum

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.

MIN or Min.
Minimum

MOP
The District's Manual of Procedures.

MSDS
Material Safety Data Sheet

MSW
Municipal solid waste

MTBE
Methyl tertiary-butyl ether

MW
Molecular weight

N2 or N_2
Nitrogen

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

NESHAPs
National Emission Standards for Hazardous Air Pollutants. Contained in 40 CFR Part 61.

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 Act, and implemented by both 40 CFR Part 60 and District Regulation 10.

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

O2 or O_2
Oxygen

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

Phase II Acid Rain Facility
A facility that generates electricity for sale through fossil-fuel combustion and by virtue of certain other characteristics (defined in Regulation 2, Rule 6) is subject to Titles IV and V of the Clean Air Act.

POC
Precursor Organic Compounds

PM
Total Particulate Matter

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

PSD
Prevention of Significant Deterioration. A federal program for permitting new and modified

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

PV or P/V Valve
Pressure/Vacuum Valve

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.

RMP
Risk Management Plan

RWQCB
Regional Water Quality Control Board

S
Sulfur

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

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

SO2 or SO_2
Sulfur dioxide

SO3 or SO_3
Sulfur trioxide

SSM
Startup, Shutdown, or Malfunction

SSM Plan
A plan, which states the procedures that will be followed during a startup, shutdown, or malfunction, that is prepared in accordance with the general NESHAP provisions (40 CFR Part 63, Subpart A) and maintained on site at the facility.

TAC
Toxic Air Contaminant (as identified by CARB)

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 Policy

TRS
Total Reduced Sulfur, which 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_2 that will be present in the combusted fuel gas, since sulfur compounds are converted to SO_2 by the combustion process.

TSP
Total Suspended Particulate

TVP
True Vapor Pressure

VMT

Vehicle Miles Traveled

VOC
Volatile Organic Compounds

Symbols:

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

Units of Measure:

atm	=	atmospheres
bbl	=	barrel of liquid (42 gallons)
bhp	=	brake-horsepower
btu	=	British Thermal Unit
BTU	=	British Thermal Unit
°C	=	degrees Centigrade
cfm	=	cubic feet per minute
dscf	=	dry standard cubic feet
°F	=	degrees Fahrenheit
ft^3	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grains
hp	=	horsepower
hr	=	hour
in	=	inches
kW	=	kilowatts
lb	=	pound
lbmol	=	pound-mole
m^2	=	square meter
m^3	=	cubic meters
Mg	=	mega grams
min	=	minute
mm	=	millimeter
mm Hg	=	millimeters of mercury (pressure)
MM	=	million
MM BTU	=	million BTU

M cf	=	one thousand cubic feet
MM cf	=	one million cubic feet
MW	=	megawatts
ppb	=	parts per billion
ppbv	=	parts per billion, by volume
ppm	=	parts per 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
scf	=	standard cubic feet
scfm	=	standard cubic feet per minute
sdcf	=	standard dry cubic feet
sdcfm	=	standard dry cubic feet per minute
yd	=	yard
yd^3	=	cubic yards
yr	=	year