

# Bay Area Air Quality Management District

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

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**Final**

## MAJOR FACILITY REVIEW PERMIT

**Issued To:**

**City of Palo Alto Landfill  
Facility #A2721**

**Facility Address:**

2380 Embarcadero Road  
Palo Alto, CA 94303

**Mailing Address:**

P. O. Box 10250  
Palo Alto, CA 94303

**Responsible Official**

J. Michael Sartor, Director of Public Works  
(650) 496-5930

**Facility Contact**

Ron Arp, Manager  
(650)-496-5937

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**Type of Facility:** Landfill

BAAQMD Engineering  
Division Contact: Irma C. Salinas

**Primary SIC:** 4953

**Product:** Landfill Gas

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

Signed by Jeff McKay for Jack P. Broadbent  
Jack P. Broadbent, Executive Officer/Air Pollution Control Officer

June 4, 2012  
Date

## TABLE OF CONTENTS

I.	STANDARD CONDITIONS .....	3
II.	EQUIPMENT .....	8
III.	GENERALLY APPLICABLE REQUIREMENTS.....	10
IV.	SOURCE-SPECIFIC APPLICABLE REQUIREMENTS.....	13
V.	SCHEDULE OF COMPLIANCE.....	24
VI.	PERMIT CONDITIONS.....	25
VII.	APPLICABLE LIMITS & COMPLIANCE MONITORING REQUIREMENTS .....	35
VIII.	TEST METHODS .....	45
IX.	PERMIT SHIELD.....	49
X.	REVISION HISTORY.....	51
XI.	GLOSSARY .....	54

## I. STANDARD CONDITIONS

### A. Administrative Requirements

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

- BAAQMD Regulation 1 - General Provisions and Definitions  
(as amended by the District Board on 5/4/11);
- 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 3/4/09);
- SIP Regulation 2, Rule 1 - Permits, General Requirements  
(as approved by EPA through 1/26/99);
- BAAQMD Regulation 2, Rule 2 - Permits, New Source Review  
(as amended by the District Board on 6/15/05);
- SIP Regulation 2, Rule 2 - Permits, New Source Review and Prevention of Significant Deterioration  
(as approved by EPA through 1/26/99);
- BAAQMD Regulation 2, Rule 4 - Permits, Emissions Banking  
(as amended by the District Board on 12/21/04);
- SIP Regulation 2, Rule 4 - Permits, Emissions Banking  
(as approved by EPA through 1/26/99);
- BAAQMD Regulation 2, Rule 5 – New Source Review of Toxic Air Contaminants  
(as amended by the District Board on 01/06/10);
- BAAQMD Regulation 2, Rule 6 - Permits, Major Facility Review  
(as amended by the District Board on 4/16/03); and
- SIP Regulation 2 Rule 6 – Permits, Major Facility Review  
(as approved by EPA through 6/23/95)

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

1. This Major Facility Review Permit was issued on June 4, 2012, and expires on June 3, 2017. The permit holder shall submit a complete application for renewal of this Major Facility Review Permit no later than December 3, 2016 and no earlier than June 3, 2016. **If a complete application for renewal has not been submitted in accordance with this deadline, the facility may not operate after June 3, 2017.** If the permit renewal has not been issued by June 3, 2017, 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)

## I. Standard Conditions

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)
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)

## **I. Standard Conditions**

10. The emissions inventory submitted with the application for this Major Facility Review Permit is an estimate of actual emissions or the potential to emit for the time period stated and is included only as one means of determining applicable requirements for emission sources. It does not establish, or constitute a basis for establishing, any new emission limitations. (MOP Volume II, Part 3, §4.11)
11. The responsible official shall certify all documents submitted by the facility pursuant to the major facility review permit. The certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. The certifications shall be signed by a responsible official for the facility. (Regulation 2-6-409.20, MOP Volume II, Part 3, §4.11)
12. The permit holder is responsible for compliance, and certification of compliance, with all conditions of the permit, regardless whether it acts through employees, agents, contractors, or subcontractors. (Regulation 2-6-307)

### **C. Requirement to Pay Fees**

The permit holder shall pay annual fees in accordance with District Regulation 3, including Schedule P. (Regulation 2-6-402 & 409.13, Regulation 3; MOP Volume II, Part 3, §4.12)

### **D. Inspection and Entry**

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

### **E. Records**

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

### **F. Monitoring Reports**

Reports of all required monitoring must be submitted to the District at least once every six months, except where an applicable requirement specifies more frequent reporting. Reports shall be for the following periods: June 1st through November 30<sup>th</sup> and December 1st through May 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

## **I. Standard Conditions**

permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions. The reports shall be sent to the following address:

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

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

## **G. Compliance Certification**

Compliance certifications shall be submitted annually by the responsible official of this facility to the Bay Area Air Quality Management District and to the Environmental Protection Agency. The certification period will be December 1st through November 30th. The certification shall be submitted by December 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 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

## **I. Standard Conditions**

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

### A. Permitted Source List

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.

**Table II – A  
 Permitted Sources**

S-#	Description	Make or Type	Model	Capacity
S-1	Palo Alto Landfill  with Gas Collection System	Inactive solid waste disposal site that accepted municipal, commercial, industrial, and construction wastes. active		Max. Design Capacity = 7,759,000 yd <sup>3</sup> (5,932,000 m <sup>3</sup> ) Max. Cumulative Decomposable Materials In Place = 5,830,000 tons (5,289,000 Mg)  92 vertical wells
S-5	Wood Grinder	Morbark	Model 5600 CPA #4304	50 tons per hour
S-7	Trommel Screen	Powerscreen	Model 620 CPA #4307	50 tons per hour

### B. Abatement Device List

**Table II – B  
 Abatement Devices**

A-#	Description	Source(s) Controlled	Applicable Requirement	Operating Parameters	Limit or Efficiency
A-3	Landfill Gas Flare, Sur Lite, 30 MM BTU/hour, 1000 cfm of landfill gas	S-1	BAAQMD 8-34-301.3, see also Table IV-A	Minimum combustion zone temperature of 1420 °F, see also Table VII-A	Either ≥ 98% by weight destruction of NMOC, or Outlet Concentration < 30 ppmv of NMOC, as CH <sub>4</sub> , at 3% O <sub>2</sub> , dry
A-5	Water Sprays	S-5 and S-7	BAAQMD 6-1-301	Visible emission	Ringelmann 1



## II. Equipment

### C. Exempt Equipment List

Each of the following devices is exempt from major facility review permitting pursuant to the requirements of BAAQMD Regulation 2, Rule 6: Permits, Major Facility Review. The applicable exemption for each device is identified in the table below. Registered portable engines and non-road engines are exempt from BAAQMD Regulation 2, Rule 6 pursuant to BAAQMD Regulation 2-6-113 and 2-6-114, respectively, even though these engines may be required to have a BAAQMD permit to operate pursuant to BAAQMD Regulation 2, Rule 1, Permit, General Requirements. This table may include other types of equipment that are exempt from the requirement to have a BAAQMD permit to operate pursuant to BAAQMD Regulation 2, Rule 1. Equipment that is exempt from BAAQMD permitting requirements does not need to be included in this permit unless the equipment is a significant source, as defined in BAAQMD, Regulation 2-6-239. Any source that must be included in this permit because it is a significant source will be listed in a separate table.

**Table II C – Exempt Equipment**

S-#	Description	Type or Make and Model	Capacity	Comments
S-6	Portable Diesel Engine, Driver for S-5 Wood Grinder	Caterpillar, Model Year 2000, 3412EC	860 bhp, 2100 rpm, 1649 in <sup>3</sup> , 44.4 gallons/hour of diesel oil, 6.172 MM BTU/hour	Exempt per 2-6-114
S-9	Portable Diesel Engine Driver for S-7 Trommel Screen abated by A-9 Diesel Particulate Filter	Perkins, Model Yr 2006; Model 1106D-E66TA	173 bhp, 2200 rpm, 366 in <sup>3</sup> , 10.6 gallons/hour of diesel oil, 1.46 MM BTU/hour	Exempt per 2-6-114

### 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 the SIP requirements are posted on the EPA Region 9 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 (5/4/11)	N
SIP Regulation 1	General Provisions and Definitions (6/28/99)	Y
BAAQMD Regulation 2, Rule 1	Permits – General Requirements (3/04/09)	N
BAAQMD 2-1-429	Permits – Federal Emissions Statement (12/21/04)	N
SIP Regulation 2, Rule 1	Permits – 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)
SIP Regulation 2-1-429	Permits – Federal Emissions Statement (4/3/95)	Y
BAAQMD Regulation 2, Rule 5	Permits – New Source Review of Toxic Air Contaminants (1/06/10)	N
BAAQMD Regulation 4	Air Pollution Episode Plan (3/20/91)	N
SIP Regulation 4	Air Pollution Episode Plan (8/6/90)	Y
BAAQMD Regulation 5	Open Burning (7/9/08)	N
SIP Regulation 5	Open Burning (9/4/98)	Y
BAAQMD Regulation 6, Rule 1	Particulate Matter – General Requirements (12/5/07)	N
SIP Regulation 6	Particulate Matter and Visible Emissions (9/4/98)	Y
BAAQMD Regulation 7	Odorous Substances (3/17/82)	N
BAAQMD Regulation 8, Rule 1	Organic Compounds – General Provisions (6/15/94)	Y
BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (7/20/05)	N
SIP Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (3/22/95)	Y
BAAQMD Regulation 8, Rule 3	Organic Compounds – Architectural Coatings (7/01/09)	N
SIP Regulation 8, Rule 3	Organic Compounds – Architectural Coatings (1/2/04)	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 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 (6/15/05)	N
BAAQMD 8-40-116	Exemption, Small Volume (12/15/99)	Y
BAAQMD 8-40-117	Exemption, Accidental Spills (12/15/99)	Y
SIP Regulation 8, Rule 40	Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks (4/19/01)	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 (4/26/95)	Y
BAAQMD Regulation 8, Rule 49	Organic Compounds – Aerosol Paint Products (12/20/95)	N
SIP Regulation 8, Rule 49	Organic Compounds – Aerosol Paint Products (3/22/95)	Y
BAAQMD Regulation 8, Rule 51	Organic Compounds – Adhesive and Sealant Products (7/17/02)	N
SIP Regulation 8, Rule 51	Organic Compounds – Adhesive and Sealant Products (2/26/02)	Y
BAAQMD Regulation 9, Rule 1	Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)	N
SIP Regulation 9, Rule 1	Inorganic Gaseous Pollutants – Sulfur Dioxide (6/8/99)	Y

### III. Generally Applicable Requirements

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

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
BAAQMD Regulation 9, Rule 2	Inorganic Gaseous Pollutants – Hydrogen Sulfide (10/06/99)	N
BAAQMD Regulation 11, Rule 1	Hazardous Pollutants – Lead (3/17/82)	N
SIP Regulation 11, Rule 1	Hazardous Pollutants – Lead (9/2/81)	Y
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants – Asbestos Demolition, Renovation and Manufacturing (10/7/98)	N
BAAQMD Regulation 11, Rule 14	Hazardous Pollutants – Asbestos Containing Serpentine (7/17/91)	N
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance – Sandblasting (7/11/90)	N
SIP Regulation 12, Rule 4	Miscellaneous Standards of Performance – Sandblasting (9/2/81)	Y
California Health and Safety Code Section 41750 et seq.	Portable Equipment	N
California Health and Safety Code Section 44300 et seq.	Air Toxics “Hot Spots” Information and Assessment Act of 1987	N
California Health and Safety Code, Title 17, Section 93105	Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations (7/26/01)	N
California Health and Safety Code, Title 17, Section 93106	Asbestos Airborne Toxic Control Measure for Asbestos Containing Serpentine (7/20/00)	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 (2/19/11)	N
40 CFR Part 61, Subpart A	National Emission Standards for Hazardous Air Pollutants – General Provisions (9/13/10)	Y
40 CFR Part 61, Subpart M	National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos (7/20/04)	Y
EPA Regulation 40 CFR 82	Protection of Stratospheric Ozone (4/13/05)	
Subpart F, 40 CFR 82.154	Recycling and Emissions Reductions – Prohibitions	Y
Subpart F, 40 CFR 82.156	Recycling and Emissions Reductions – Required Practices	Y
Subpart F, 40 CFR 82.158	Recycling and Emissions Reductions – Standards for recycling and recovery equipment	Y
Subpart F, 40 CFR 82.161	Recycling and Emissions Reductions – Technician Certification	Y
Subpart F, 40 CFR 82.162	Recycling and Emissions Reductions – Certification by Owners of Recovery and Recycling Equipment (3/12/04)	Y
Subpart F, 40 CFR 82.166	Recycling and Emissions Reductions – Reporting and Recordkeeping Requirements	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 parenthesis 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 the SIP requirements are posted on the EPA Region 9 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-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>BAAQMD Regulation 1</b>	<b>General Provisions and Definitions (5/4/11)</b>		
1-523	Parametric Monitoring and Recordkeeping Procedures	N	
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	N	
1-523.4	Records of inoperation, tests, calibrations, adjustments, & maintenance	Y	
1-523.5	Maintenance and calibration	N	
<b>SIP Regulation 1</b>	<b>General Provisions and Definitions (6/28/99)</b>		

#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
1-523	Parametric Monitoring and Recordkeeping Procedures	Y	
1-523.3	Reports of Violations	Y	
<b>BAAQMD Regulation 6, Rule 1</b>	<b>Particulate Matter – General Requirements (12/5/07)</b>		
6-1-301	Ringelmann No. 1 Limitation	N	
6-1-305	Visible Particles	N	
6-1-310	Particle Weight Limitation (applies to flares only)	N	
6-1-401	Appearance of Emissions	N	
<b>SIP Regulation 6</b>	<b>Particulate Matter and Visible Emissions (9/4/98)</b>		
6-301	Ringelmann No. 1 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particle Weight Limitation (applies to flares only)	Y	
6-401	Appearance of Emissions	Y	
<b>BAAQMD Regulation 8, Rule 2</b>	<b>Organic Compounds – Miscellaneous Operations (7/20/05)</b>		
8-2-301	Miscellaneous Operations (applies to low VOC soil handling and disposal activities only, which occurred prior to 8/1/11) Effective 8/1/11, this landfill ceased accepting waste and became inactive. Since S-1 should not be accepting or handling any VOC-laden soil after 8/1/11, Regulation 8, Rule 2 does not apply as of 8/1/11.	Y	Expired 8/1/11
<b>BAAQMD Regulation 8, Rule 34</b>	<b>Organic Compounds – Solid Waste Disposal Sites (6/15/05)</b>		
8-34-113	Limited Exemption, Inspection and Maintenance	Y	
8-34-113.1	Emission Minimization Requirement	Y	
8-34-113.2	Shutdown Time Limitation	Y	
8-34-113.3	Recordkeeping Requirement	Y	
8-34-116	Limited Exemption, Well Raising	Y	
8-34-116.1	New Fill	Y	
8-34-116.2	Limits on Number of Wells Shutdown	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
8-34-116.3	Shutdown Duration Limit	Y	
8-34-116.4	Capping Well Extensions	Y	
8-34-116.5	Well Disconnection Records	Y	
8-34-117	Limited Exemption, Gas Collection System Components	Y	
8-34-117.1	Necessity of Existing Component Repairs/Adjustments	Y	
8-34-117.2	New Components are Described in Collection and Control System Design Plan	Y	
8-34-117.3	Meets Section 8-34-118 Requirements	Y	
8-34-117.4	Limits on Number of Wells Shutdown	Y	
8-34-117.5	Shutdown Duration Limit	Y	
8-34-117.6	Well Disconnection Records	Y	
8-34-118	Limited Exemption, Construction Activities	Y	
8-34-118.1	Construction Plan	Y	
8-34-118.2	Activity is Required to Maintain Compliance with this Rule	Y	
8-34-118.3	Required or Approved by Other Enforcement Agencies	Y	
8-34-118.4	Emission Minimization Requirement	Y	
8-34-118.5	Excavated Refuse Requirements	Y	
8-34-118.6	Covering Requirements for Exposed Refuse	Y	
8-34-118.7	Installation Time Limit	Y	
8-34-118.8	Capping Required for New Components	Y	
8-34-118.9	Construction Activity Records	Y	
8-34-301	Landfill Gas Collection and Emission Control System Requirements	Y	
8-34-301.1	Continuous Operation	Y	
8-34-301.2	Collection and Control Systems Leak Limitations	Y	
8-34-301.3	Limits for Enclosed Flares	Y	
8-34-301.4	Limits for Other Emission Control Systems (Permit Holder shall ensure that Facility # A0617 will comply with this requirement whenever landfill gas is vented to the sludge incinerators: S-1 or S-2 at Facility # A0617)	Y	
8-34-303	Landfill Surface Requirements	Y	
8-34-304	Gas Collection System Installation Requirements	Y	
8-34-304.1	Based on Waste Age For Inactive or Closed Areas	Y	
8-34-304.2	Based on Waste Age For Active Areas	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
8-34-304.3	Based on Amount of Decomposable Waste Accepted	Y	
8-34-304.4	Based on NMOC Emission Rate	Y	
8-34-305	Wellhead Requirements	Y	
8-34-305.1	Wellhead Vacuum Requirements	Y	
8-34-305.2	Wellhead Temperature Limit	Y	
8-34-305.3	Nitrogen Concentration Limit for Wellhead Gas, or	Y	
8-34-305.4	Oxygen Concentration Limit for Wellhead Gas	Y	
8-34-405	Design Capacity Reports	Y	
8-34-408	Collection and Control System Design Plans	Y	
8-34-408.2	Sites With Existing Collection and Control Systems	Y	
8-34-411	Annual Report	Y	
8-34-412	Compliance Demonstration Tests	Y	
8-34-413	Performance Test Report	Y	
8-34-414	Repair Schedule for Wellhead Excesses	Y	
8-34-414.1	Records of Excesses	Y	
8-34-414.2	Corrective Action	Y	
8-34-414.3	Collection System Expansion	Y	
8-34-414.4	Operational Due Date for Expansion	Y	
8-34-415	Repair Schedule for Surface Leak Excesses	Y	
8-34-415.1	Records of Excesses	Y	
8-34-415.2	Corrective Action	Y	
8-34-415.3	Re-monitor Excess Location Within 10 Days	Y	
8-34-415.4	Re-monitor Excess Location Within 1 Month	Y	
8-34-415.5	If No More Excesses, No Further Re-Monitoring	Y	
8-34-415.6	Additional Corrective Action	Y	
8-34-415.7	Re-monitor Second Excess Within 10 days	Y	
8-34-415.8	Re-monitor Second Excess Within 1 Month	Y	
8-34-415.9	If No More Excesses, No Further Re-monitoring	Y	
8-34-415.10	Collection System Expansion for Third Excess in a Quarter	Y	
8-34-415.11	Operational Due Date for Expansion	Y	
8-34-416	Cover Repairs	Y	
8-34-501	Operating Records	Y	
8-34-501.1	Collection System Downtime	Y	



#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
8-34-501.2	Emission Control System Downtime	Y	
8-34-501.3	Continuous Temperature Records for Enclosed Combustors (applies to flares only)	Y	
8-34-501.4	Testing	Y	
8-34-501.6	Leak Discovery and Repair Records	Y	
8-34-501.7	Waste Acceptance Records	Y	
8-34-501.8	Non-decomposable Waste Records	Y	
8-34-501.9	Wellhead Excesses and Repair Records	Y	
8-34-501.10	Gas Flow Rate Records for All Emission Control Systems	Y	
8-34-501.11	Records of Key Emission Control System Operating Parameters (Permit Holder shall ensure that Facility # A0617 will comply with this requirement whenever landfill gas is vented to the sludge incinerators: S-1 or S-2 at Facility # A0617)	Y	
8-34-501.12	Records Retention for 5 Years	Y	
8-34-503	Landfill Gas Collection and Emission Control System Leak Testing	Y	
8-34-504	Portable Hydrocarbon Detector	Y	
8-34-505	Well Head Monitoring	Y	
8-34-506	Landfill Surface Monitoring	Y	
8-34-506.1	Criteria for Annual Monitoring: Closed Landfill	Y	
8-34-506.2	Criteria for Annual Monitoring: No Excess in 3 Quarters	Y	
8-34-506.3	Criteria for Annual Monitoring: Revert to Quarterly Monitoring if an Excess is Detected	Y	
8-34-507	Continuous Temperature Monitor and Recorder (applies to flares only)	Y	
8-34-508	Gas Flow Meter	Y	
8-34-509	Key Emission Control System Operating Parameter(s) (Permit Holder shall ensure that Facility # A0617 will comply with this requirement whenever landfill gas is vented to the sludge incinerators: S-1 or S-2 at Facility # A0617)	Y	
8-34-510	Cover Integrity Monitoring	Y	
<b>BAAQMD Regulation 9, Rule 1</b>	<b>Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)</b>		
9-1-301	Limitations on Ground Level Concentrations (applies to flares only)	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
9-1-302	General Emission Limitations (applies to flares only)	Y	
<b>BAAQMD Regulation 9, Rule 2</b>	<b>Inorganic Gaseous Pollutants – Hydrogen Sulfide (10/6/99)</b>		
9-2-301	Limitations on Hydrogen Sulfide	N	
<b>40 CFR Part 60, Subpart A</b>	<b>Standards of Performance for New Stationary Sources – General Provisions (9/13/10)</b>		
60.4	Address	Y	
60.4(b)	Requires Submission of Requests, Reports, Applications, and Other Correspondence to the Administrator	Y	
60.7	Notification and Record Keeping	Y	
60.8	Performance Tests	Y	
60.11	Compliance with Standards and Maintenance Requirements	Y	
60.11(a)	Compliance determined by performance tests	Y	
60.11(d)	Control devices operated using good air pollution control practice	Y	
60.12	Circumvention	Y	
60.13	Monitoring Requirements	Y	
60.13(a)	Applies to all continuous monitoring systems	Y	
60.13(b)	Monitors shall be installed and operational before performing performance tests	Y	
60.13(e)	Continuous monitors shall operate continuously	Y	
60.13(f)	Monitors shall be installed in proper locations	Y	
60.13(g)	Requires multiple monitors for multiple stacks	Y	
60.14	Modification	Y	
60.15	Reconstruction	Y	
60.19	General Notification and Reporting Requirements	Y	
<b>40 CFR Part 60, Subpart Cc</b>	<b>Standards of Performance for New Stationary Sources – Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (2/24/99)</b>		
60.33c	Emission guidelines for municipal solid waste landfill emissions	Y	
60.34c	Test methods and procedures	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.35c	Reporting and recordkeeping guidelines	Y	
60.36c	Compliance Times	Y	
60.36c(a)	Collection and Control Systems in Compliance by 30 months after Initial NMOC Emission Rate Report Shows NMOC Emissions $\geq$ 50 MG/year	Y	
<b>40 CFR Part 62, Subpart F</b>	<b>Approval and Promulgation of State Plans for Designated Facilities and Pollutants – California (4/20/06)</b>		
62.1100	Identification of Plan	Y	
62.1115	Identification of Sources – Existing Municipal Solid Waste Landfills	Y	
<b>40 CFR Part 63, Subpart A</b>	<b>National Emission Standards for Hazardous Air Pollutants – General Provisions (9/13/10)</b>		
63.4	Prohibited activities and circumvention	Y	
63.5	Preconstruction review and notification requirements	Y	
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources	Y	
63.6	Compliance with standards and maintenance requirements	Y	
63.6(e)	Operation and maintenance requirements and SSM Plan	Y	
63.6(f)	Compliance with non-opacity emission standards	Y	
63.10	Record keeping and reporting requirements	Y	
63.10(b)	General record keeping requirements	Y	
63.10(b)(2)	For affected sources, maintain relevant records of:	Y	
63.10(b)(2)(i-v)	Records for startup, shutdown, malfunction, and maintenance	Y	
63.10(d)	General reporting requirements	Y	
63.10(d)(5)	Startup, Shutdown, and Malfunction (SSM) Reports	Y	
<b>40 CFR Part 63, Subpart AAAA</b>	<b>National Emission Standards for Hazardous Air Pollutants – Municipal Solid Waste Landfills (4/20/06)</b>		
63.1945	When do I have to comply with this subpart?	Y	
63.1945(b)	Compliance date for existing affected landfills	Y	
63.1955	What requirements must I meet?	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
63.1955(a)	Comply with either 63.1955(a)(1) or (a)(2)	Y	
63.1955(a)(2)	Comply with State Plan that implements 40 CFR Part 60, Subpart Cc	Y	
63.1955(b)	Comply with 63.1960-63.1985, if a collection and control system is required by 40 CFR Part 60, Subpart WWW or a State Plan implementing 40 CFR Part 60, Subpart Cc	Y	
63.1955(c)	Comply with all approved alternatives to standards for collection and control systems plus all SSM requirements and 6 month compliance reporting requirements	Y	
63.1960	How is compliance determined?	Y	
63.1965	What is a deviation?	Y	
63.1975	How do I calculate the 3-hour block average used to demonstrate compliance?	Y	
63.1980	What records and reports must I keep and submit?	Y	
63.1980(a)	Comply with all record keeping and reporting requirements in 40 CFR Part 60, Subpart WWW or the State Plan implementing 40 CFR Part 60, Subpart Cc, except that the annual report required by 40 CFR 60.757(f) must be submitted every 6 months	Y	
63.1980(b)	Comply with all record keeping and reporting requirements in 40 CFR Part 60, Subpart A and 40 CFR Part 63, Subpart A, including SSM Plans and Reports	Y	
<b>BAAQMD Condition # 1028</b>			
Part 1	Design capacity and waste acceptance rate limits (Regulations 2-1-301 and 2-1-234.3)	Y	
Part 2	Handling procedures VOC contaminated soil and VOC content limit for soil accepted at this site (Regulation 8-40-301)	Y	Expires 8/1/11
Part 3	Total carbon emission limit and test procedures for VOC-laden soil (Regulations 8-2-301, 8-40-205, and 8-40-604)	Y	Expires 8/1/11
Part 4	Particulate emission control measures (Regulations 2-1-403, 6-1-301, and 6-1-305)	Y	
Part 5	Control requirements for collected landfill gas (Regulation 8-34-301)	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – A**  
**Source-Specific Applicable Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
Part 6	Landfill gas collection system operating requirements (Regulation 8-34-301.1)	Y	
Part 7	Landfill gas collection system description and Authority to Construct requirement for collection system modifications (Regulations 2-1-301, 8-34-301.1, 8-34-304, and 8-34-305)	Y	
Part 8	Flare heat input limits (Regulation 2-1-301)	Y	
Part 9	Flare temperature limit (Regulations 2-5-301 and 8-34-301.3)	Y	
Part 10	Flare alarm requirements (Regulation 8-34-301)	Y	
Part 11	NO <sub>x</sub> concentration limit in flare exhaust (Basis: Cumulative Increase)	Y	
Part 12	CO concentration limit in flare exhaust (Basis: Cumulative Increase)	Y	
Part 13	Chlorinated compound concentration limit in landfill gas (Regulation 2-5-302)	N	
Part 14	Landfill gas sulfur content limit and monitoring requirements (Regulation 9-1-302)	Y	
Part 15	Annual source test (Cumulative Increase and Regulations 2-5-302, 8-34-301.3, and 8-34-412)	Y	
Part 16	Annual landfill gas characterization test (Regulations 2-5-302 and 8-34-412)	Y	
Part 17	Record keeping requirements (Cumulative Increase and Regulations 2-1-301, 2-5-501, 2-6-501, 6-1-301, 6-1-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)	Y	
Part 18	Reporting periods and report submittal due dates for the Regulation 8, Rule 34 report (Regulation 8-34-411 and 40 CFR 63.1980(a))	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – B  
 Source-Specific Applicable Requirements  
 S-5 WOOD GRINDER AND A-5 WATER SPRAYS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>BAAQMD Regulation 6, Rule 1</b>	<b>Particulate Matter – General Requirements (12/5/07)</b>		
6-1-301	Ringelmann No. 1 Limitation	N	
6-1-305	Visible Particles	N	
6-1-311	General Operations: Emission Limit Based on Process Weight Rate	N	
6-1-401	Appearance of Emissions	N	
<b>SIP Regulation 6</b>	<b>Particulate Matter and Visible Emissions – (9/4/98)</b>		
6-301	Ringelmann No. 1 Limitation	Y	
6-305	Visible Particles	Y	
6-311	General Operations: Emission Limit Based on Process Weight Rate	Y	
6-401	Appearance of Emissions	Y	
<b>BAAQMD Condition # 20476</b>			
Part 1	Wood Throughput Limit (Cumulative Increase)	Y	
Part 2	Throughput Records (Cumulative Increase)	Y	
Part 3	Abatement Requirement (Cumulative Increase)	Y	
Part 4	Visible Emissions Limits and Particulate Fallout Restrictions (Regulations 1-301, 6-1-301, and 6-1-305)	Y	
Part 5	Visual Monitoring and Corrective Action Requirements (Regulations 2-1-403, 6-1-301 and 6-1-305)	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – C**  
**Source-Specific Applicable Requirements**  
**S-7 TROMMEL SCREEN AND A-5 WATER SPRAYS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>BAAQMD Regulation 6, Rule 1</b>	<b>Particulate Matter – General Requirements (12/5/07)</b>		
6-1-301	Ringelmann No. 1 Limitation	N	
6-1-305	Visible Particles	N	
6-1-311	General Operations: Emission Limit Based on Process Weight Rate	N	
6-1-401	Appearance of Emissions	N	
<b>SIP Regulation 6</b>	<b>Particulate Matter and Visible Emissions – (9/4/98)</b>		
6-301	Ringelmann No. 1 Limitation	Y	
6-305	Visible Particles	Y	
6-311	General Operations: Emission Limit Based on Process Weight Rate	Y	
6-401	Appearance of Emissions	Y	
<b>BAAQMD Condition # 20478</b>			
Part 1	Wood Throughput Limit (Cumulative Increase)	Y	
Part 2	Throughput Records (Cumulative Increase)	Y	
Part 3	Abatement Requirement (Cumulative Increase)	Y	
Part 4	Visible Emissions Limits and Particulate Fallout Restrictions (Regulations 1-301, 6-1-301, and 6-1-305)	Y	
Part 5	Visual Monitoring and Corrective Action Requirements (Regulations 2-1-403, 6-1-301, and 6-1-305)	Y	

## **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 # 1028

**For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE**

1. The Permit Holder shall comply with the following waste acceptance and disposal limits and shall obtain the appropriate New Source Review permit, if one of the following limits is exceeded:
  - a. Total waste accepted and placed at the landfill shall not exceed 400 tons in any day prior to August 1, 2011. Effective August 1, 2011, this landfill is inactive and shall not accept any waste for disposal and shall not place any waste or other decomposable materials in the landfill. (Basis: Regulation 2-1-301)
  - b. The total cumulative amount of all decomposable materials placed in the landfill shall not exceed 5,830,000 tons. Exceedance of the cumulative tonnage limit is not a violation of the permit and does not trigger the requirement to obtain a New Source review permit, if the operator can, within 30 days of the date of discovery of the exceedance, provide documentation to the District demonstrating, in accordance with BAAQMD Regulation 2-1-234.3, that the limit should be higher. (Basis: Regulation 2-1-234.3)
  - c. The maximum design capacity of the landfill (total volume of all wastes and cover materials placed in the landfill, excluding final cover) shall not exceed 7,759,000 cubic yards. (Basis: Regulation 2-1-301)
  
2. Effective August 1, 2011, this part does not apply because this site is no longer accepting any waste or cover materials for disposal or placement in the landfill. The following text applies to activities that occurred prior to August 1, 2011. This facility is not subject to Regulation 8, Rule 40 because the landfill does not accept contaminated soil (soil containing more than 50 ppmw of volatile organic compounds, VOCs). The following types of materials may be accepted:
  - a. Materials for which the Permit Holder has appropriate documentation demonstrating that either the organic content of the soil or the organic concentration above the soil is below the “contaminated” level (as defined in Regulation 8, Rule 40, Sections 205, 207, and 211).
  - b. Materials for which the Permit Holder lacks documentation to prove that soil is not contaminated, but source of the soil is known and there is no reason to suspect that the soil might contain organic compounds.

## VI. Permit Conditions

### Condition # 1028

#### For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

- c. Materials which the Permit Holder plans to test in order to determine the VOC contamination level in the soil, provided that the material is sampled within 24 hours of receipt by this site and is handled as if the soil were contaminated until the Permit Holder receives the test results. The Permit Holder shall collect soil samples in accordance with Regulation 8-40-601. The organic content of the collected soil samples shall be determined in accordance with Regulation 8-40-602.
  - i. If the test results indicate that the soil is contaminated or if the soil was not sampled within 24 hours of receipt by the facility, the Permit Holder must continue to handle the soil in accordance with Regulation 8, Rule 40, until the soil has been removed from this site or has completed treatment. Storing soil in a temporary stockpile or pit is not considered treatment. Co-mingling, blending, or mixing of soil lots is not considered treatment.
  - ii. If the test results indicate that the soil, as received at this site, has an organic content of 50 ppmw or less, then the soil need not be handled in accordance with Regulation 8, Rule 40 any longer.

(Basis: Regulation 8-40-301)

3. Effective August 1, 2011, this part does not apply because this site is no longer accepting any waste or cover materials for disposal or placement in the landfill. The following text applies to activities that occurred prior to August 1, 2011. VOC laden soil is any material that contains volatile organic compounds, as defined in Regulation 8-40-213, at a concentration of 50 ppm by weight or less. Soil containing more than 50 ppmw of VOC is considered to be "contaminated soil" and is subject to Part 2 instead of this part. Materials containing only non-volatile hydrocarbons and meeting the requirements of Regulation 8-40-113 are not subject to this part. The Permit Holder shall demonstrate compliance with Regulation 8-2-301 by randomly screening each lot of VOC laden soil for VOC surface emissions (in such a manner as to be representative of the entire lot and using the testing procedures outlined in Regulation 8-40-604) to show that each lot of VOC laden soil is not contaminated soil and could therefore not result in emissions in excess of 300 ppmv of total carbon. Soil presumed to be VOC laden soil that is found to have a surface VOC concentration greater than 50 ppmv shall be considered contaminated soil and will be subject to the requirements of Part 2 of these conditions. In order to demonstrate compliance with this condition, the Permit Holder shall maintain the following records in a District approved log.
  - a. Record a lot number for each shipment of VOC laden soil.

## VI. Permit Conditions

### Condition # 1028

#### For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

- b. Record the soil delivery date, the testing date for the VOC surface emissions screening test, the name and affiliation of the person conducting the screening test, and the results of the screening test for each lot of VOC laden soil accepted at the site.
- c. Maintain certifications that the Regulation 8-40-604 procedures were followed for each screening test.

All records shall be maintained on site or shall be made readily available to District staff upon request for at least 5 years from the date of entry.

(Basis: Regulations 8-2-301, 8-40-205, and 8-40-604)

4. Water and/or dust suppressants shall be applied to all unpaved roadways and active soil removal and fill areas associated with this landfill as necessary to prevent visible particulate emissions that persist for longer than 3 minutes in any hour. Paved roadways at the facility shall be kept sufficiently clear of dirt and debris as necessary to prevent visible particulate emissions (that persist for longer than 3 minutes in any hour) from vehicle traffic.  
(Basis: Regulations 2-1-403, 6-1-301, and 6-1-305)
5. All collected landfill gas shall be vented to the properly operating Landfill Gas Flare (A-3) or the sludge incinerators (S-1 and S-2) as supplemental fuel at site#A617 Palo Alto Regional Water Quality Control Plant. If the sludge incinerators at site #A617 are not operating, all collected landfill gas shall be vented to the A-3 Landfill Gas Flare. Any amount of collected landfill gas that exceeds the capacity of the operating sludge incinerators at Site #A617 shall be vented to the flare. Raw landfill shall not be vented to the atmosphere, except for unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair (which is performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118) and for inadvertent component or surface leaks that do not exceed the limits specified in 8-34-301.2 or 8-34-303. (Basis: Regulation 8-34-301)
6. The landfill gas collection system described in Part 7a shall be operated continuously, as defined in Regulation 8-34-219. Wells and adjustment valves shall not be shut off, disconnected, or removed from operation without written authorization from the District, unless the Permit Holder complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118. (Basis: Regulation 8-34-301.1)

## VI. Permit Conditions

### Condition # 1028

#### For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

7. The Permit Holder shall apply for and receive a Change of Conditions before altering the landfill gas collection system described in Part 7a below. Increasing or decreasing the number of wells or collectors, changing the length of collectors, or changing locations of wells or collectors are all considered to be alterations that are subject to this requirement.
  - a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in Permit Application # 2230.

	Required Components
Total Number of Vertical Wells:	92

(Basis: Regulations 2-1-301, 8-34-301.1, 8-34-304, 8-34-305)
8. The Heat Input to the A-3 Landfill Gas Flare shall not exceed 720 million BTU per day and shall not exceed 262,800 million BTU per year. In order to demonstrate compliance with this part, the Permit Holder shall calculate and record, on a monthly basis, the maximum daily and total monthly heat input to the flare based on: (a) the landfill gas flow rate recorded pursuant to Regulation 8-34-508 and 8-34-501.10, (b) the average methane concentration in the landfill gas measured in most recent source test, and (c) a high heating value for methane of 1013 BTU per cubic foot at 60 degrees F. (Basis: Regulation 2-1-301)
9. The combustion zone temperature of the A-3 Landfill Gas Flare shall be maintained at a minimum of 1420 degrees Fahrenheit, averaged over any 3-hour period. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise the minimum combustion zone temperature limit, in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average combustion zone temperature measured during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature shall not be less than 1400 degrees F. (Basis: Regulations 2-5-301 and 8-34-301.3)
10. The A-3 Landfill Gas Flare shall be equipped with both local and remote alarm systems. (Basis: Regulation 8-34-301)

## VI. Permit Conditions

### Condition # 1028

#### For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

11. Nitrogen oxide (NO<sub>x</sub>) emissions from the A-3 Landfill Gas Flare shall not exceed 32 ppmv of NO<sub>x</sub>, corrected to 15% oxygen, dry basis.  
(Basis: Cumulative Increase)
12. Carbon monoxide (CO) emissions from the A-3 Landfill Gas Flare shall not exceed 208 ppmv of CO, corrected to 15% oxygen, dry basis.  
(Basis: Cumulative Increase)
- \*13. If the total chlorinated compound concentration in the landfill gas is determined to exceed 104 ppmv (dry), the Permit Holder shall submit a permit application to the District for a change in permit conditions within 30 days of receipt of the test results. (Basis: Regulation 2-5-302)
14. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring sulfur dioxide in control system's exhaust. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 860 ppmv (dry) expressed as hydrogen sulfide. In order to demonstrate compliance with this part, the Permit Holder shall test collected landfill gas on an annual basis. The landfill gas sample shall be taken from the main landfill gas header. The Permit Holder shall either test the gas for total reduced sulfur compounds (carbon disulfide, carbonyl sulfide, dimethyl sulfide, hydrogen sulfide, ethyl mercaptan, and methyl mercaptan) using District approved methods (MOP, Volume III, Methods 5, 25, or 44) or test the gas for hydrogen sulfide using a draeger tube and following the manufacturer's recommended procedures for using the draeger tube and interpreting the results. If the draeger tube method is used, the measured hydrogen sulfide concentration shall be multiplied by 1.2 to obtain the total reduced sulfur concentration. (Basis: Regulation 9-1-302)

## VI. Permit Conditions

### Condition # 1028

#### For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

15. To demonstrate compliance with Parts 8-12 above and Regulation 8, Rule 34, Sections 301.3 and 412, the Permit Holder shall ensure that a District approved source test is conducted annually on the Landfill Gas Flare (A-3). As a minimum, the annual source test shall determine the following:
- landfill gas flow rate to the flare (dry basis);
  - concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), methane (CH<sub>4</sub>), and total non-methane organic compounds (NMOC) in the landfill gas;
  - stack gas flow rate from the flare (dry basis);
  - concentrations (dry basis) of NO<sub>x</sub>, CO, CH<sub>4</sub>, NMOC, and O<sub>2</sub> in the flare stack gas;
  - the NMOC and methane destruction efficiencies achieved by the flare; and
  - the average combustion zone temperature in the flare during the test period.

Each annual source test shall be conducted no later than 12 months after the previous annual source test. The Source Test Section of the District shall be contacted to obtain 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 and the Source Test Section within 45 days of the test date.

(Basis: Cumulative Increase and Regulations 2-5-302, 8-34-301.3, and 8-34-412)

16. To demonstrate compliance with Part 13 above and Regulation 8-34-412, the Permit Holder shall conduct a characterization of the landfill gas concurrent with the annual source test required by Part 15 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in part 15b, the landfill gas shall be analyzed for the organic compounds listed below. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 45 days of the test date. (Basis: Regulations 2-5-302 and 8-34-412)

## VI. Permit Conditions

### Condition # 1028

**For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE**

Organic Compounds

acrylonitrile  
benzene  
carbon tetrachloride  
chlorobenzene  
chloroethane  
chloroform  
1,1 dichloroethane  
1,1 dichlorethene  
1,2 dichloroethane  
1,4 dichlorobenzene  
ethyl benzene  
ethylene dibromide

Organic Compounds

hexane  
isopropyl alcohol  
methyl ethyl ketone  
methylene chloride  
perchloroethylene  
toluene  
1,1,1 trichloroethane  
1,1,2,2 tetrachloroethane  
trichloroethylene  
vinyl chloride  
xylenes

17. To demonstrate compliance with the above conditions, the Permit Holder shall maintain the following records in a District approved logbook.
- a. Record the total amount of municipal solid waste received at S-1 on a daily basis. Summarize the daily waste acceptance records for each calendar month.
  - b. For each area or cell that is not controlled by a landfill gas collection system, maintain a record of the date that waste was initially placed in the area or cell. Record the cumulative amount of waste placed in each uncontrolled area or cell on a monthly basis.
  - c. If the Permit Holder plans to exclude an uncontrolled area or cell from the collection system requirement, the Permit Holder shall also record the types and amounts of all non-decomposable waste placed in the area and the percentage (if any) of decomposable waste placed in the area.
  - d. Record of the dates, locations, and frequency per day of all watering activities on unpaved roads or active soil or fill areas. Record the dates, locations, and type of any dust suppressant applications. Record the dates and description of all paved road-cleaning activities. The Permit Holder may use District approved checklists that describe the standard dust mitigation measures employed at this site in lieu of these daily records, provided that the checklists are completed on a daily basis and any deviations from standard procedures are described. All records shall be summarized on monthly basis.
  - e. Record the initial operation date for each new landfill gas well and collector.

## VI. Permit Conditions

### Condition # 1028

#### For: S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM AND A-3 LANDFILL GAS FLARE

- f. Maintain an accurate map of the landfill that indicates the locations of all refuse boundaries and the locations of all wells and collectors (using unique identifiers) that are required to be operating continuously pursuant to part 7a. Any areas containing only non-decomposable waste shall be clearly identified. This map shall be updated at least once a year to indicate changes in refuse boundaries and to include any newly installed wells and collectors.
- g. Calculate and record the heat input to A-3, pursuant to Part 8.
- h. Maintain records of all test dates and test results performed to maintain compliance Parts 14-16 above or to maintain compliance with any applicable rule or regulation

All records shall be maintained on site or shall be made readily available to District staff upon request for a period of at least 5 years from the date of entry. These record keeping requirements do not replace the record keeping requirements contained in any applicable rules or regulations.

(Basis: Cumulative Increase and Regulations 2-1-301, 2-5-501, 2-6-501, 6-1-301, 6-1-305, 8-2-301, 8-34-301, 8-34-304, and 8-34-501)

- 18. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting periods and report submittal due dates for all increments of the Regulation 8-34-411 report shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F of the MFR Permit for this site. A single report may be submitted to satisfy the requirements of Section I.F, Regulation 8-34-411, and 40 CFR Part 63.1980(a), provided that all items required by each applicable reporting requirement are included in the single report. (Basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))



## **VI. Permit Conditions**

### **Condition # 20476**

#### **FOR: S-5 WOOD GRINDER AND A-5 WATER SPRAYS**

1. The tonnage of wood processed through S-5 shall not exceed 50,000 tons per year.  
(Basis: Cumulative Increase)
2. A District approved logbook of tonnage of wood processed at S-5 shall be maintained on a daily basis. Records shall be kept for a period of five years from the date of entry and shall be made readily available to District staff upon request.  
(Basis: Cumulative Increase)
3. The S-5 Wood Grinder shall be abated by the A-5 Water Sprays during all periods of operation. (Basis: Cumulative Increase)
4. Visible particulate emissions from S-5 shall not exceed Ringelmann 1.0 or result in particulate fallout on adjacent property in such quantities as to cause a public nuisance as per Regulation 1-301.  
(Basis: Regulations 1-301, 6-1-301, and 6-1-305)
5. The Permit Holder shall observe the S-5 Wood Grinder for visible particulate emissions during all periods of operation. If visible emissions that persist for longer than 3 minutes in any hour are detected, the operator of the source shall take the necessary corrective action to stop the emissions.  
(Basis: Regulations 2-1-403, 6-1-301, and 6-1-305)

## **VI. Permit Conditions**

### **Condition # 20478**

#### **FOR: S-7 TROMMEL SCREEN AND A-5 WATER SPRAYS**

1. The tonnage of wood processed through S-7 shall not exceed 50,000 tons per year.  
(Basis: Cumulative Increase)
2. A District approved logbook of tonnage of wood processed at S-7 shall be maintained on a daily basis. Records shall be kept for a period of five years from the date of entry and shall be made readily available to District staff upon request.  
(Basis: Cumulative Increase)
3. The S-7 Trommel Screen shall be abated by the A-5 Water Sprays during all periods of operation. (Basis: Cumulative Increase)
4. Visible particulate emissions from S-7 shall not exceed Ringelmann 1.0 or result in particulate fallout on adjacent property in such quantities as to cause a public nuisance as per Regulation 1-301.  
(Basis: Regulations 1-301, 6-1-301, and 6-1-305)
5. The Permit Holder shall observe the S-7 Trommel Screen for visible particulate emissions during all periods of operation. If visible emissions that persist for longer than 3 minutes in any hour are detected, the operator of the source shall take the necessary corrective action to stop the emissions.  
(Basis: Regulations 2-1-403, 6-1-301, and 6-1-305)

## VII. APPLICABLE LIMITS & COMPLIANCE MONITORING REQUIREMENTS

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

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

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Periods of Inoperation for Parametric Monitors	BAAQMD 1-523.2	Y		≤ 15 consecutive days per incident and ≤ 30 calendar days per 12 month period	BAAQMD 1-523.4	P/D	Operating Records for All Parametric Monitors (gas flow meters and temperature monitors)
Opacity	BAAQMD 6-1-301 and SIP 6-301	Y		Ringelmann No. 1 for < 3 minutes in any hour (applies to S-1)	BAAQMD Condition # 1028, Part 17d	P/E, M	Records of all site watering and road cleaning events

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD 6-1-301 and SIP 6-301	Y		Ringelmann No. 1 for < 3 minutes in any hour (applies to flares)	None	N	NA
FP	BAAQMD 6-1-310 and SIP 6-310	Y		≤ 0.15 grains/dscf (applies to flares only)	None	N	NA
Total Carbon	BAAQMD 8-2-301 and SIP 8-2-301	Y	Expired 8/1/11 when landfill became inactive	≤ 15 pounds per day or ≤ 300 ppmv, dry basis (applies only to aeration of or use as cover soil of soil containing ≤ 50 ppmw of volatile organic compounds)	BAAQMD Condition # 1028, Part 3	P/E	Surface VOC Analysis and Records
Collection and Control Systems Shutdown Time	BAAQMD 8-34-113.2	Y		≤ 240 hours per year and ≤ 5 consecutive days	BAAQMD 8-34-501.1	P/D	Operating Records
Well Shutdown Limits	BAAQMD 8-34-116.2	Y		No more than 5 wells at a time or < 10% of total collection system, whichever is less	BAAQMD 8-34-116.5 and 501.1	P/D	Records
Well Shutdown Limits	BAAQMD 8-34-116.3	Y		≤ 24 hours per well	BAAQMD 8-34-116.5 and 501.1	P/D	Records

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Well Shutdown Limits	BAAQMD 8-34-117.4	Y		No more than 5 wells at a time or < 10% of total collection system, whichever is less	BAAQMD 8-34-117.6 and 501.1	P/D	Records
Well Shutdown Limits	BAAQMD 8-34-117.5	Y		≤ 24 hours per well	BAAQMD 8-34-117.6 and 501.1	P/D	Records
Gas Flow	BAAQMD 8-34-301 and 301.1	Y		Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	BAAQMD 8-34-501.10 and 508	C	Gas Flow Meter and Recorder (every 15 minutes)
TOC (Total Organic Compounds Plus Methane)	BAAQMD 8-34-301.2	Y		≤ 1000 ppmv as methane (component leak limit)	BAAQMD 8-34-501.6 and 503 and BAAQMD Condition # 1028, Part 17h	P/Q	Quarterly Inspection of collection and control system components with portable analyzer and Records

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Non-Methane Organic Compounds (NMOC)	BAAQMD 8-34-301.3	Y		$\geq 98\%$ removal by weight OR $< 30$ ppmv, dry basis @ 3% O <sub>2</sub> , expressed as methane (applies to A-3 only)	BAAQMD 8-34-412 and 8-34-501.3 and 8-34-501.4 and 507 BAAQMD Condition # 1028, Parts 15 and 17h	P/A	Annual Source Tests and Records
TOC	BAAQMD 8-34-303	Y		$\leq 500$ ppmv as methane at 2 inches above surface	BAAQMD 8-34-415, 416, 501.6, 506 and 510 and BAAQMD Condition # 1028, Part 17h	P/M, Q, and E	Monthly Visual Inspection of Cover, Quarterly Inspection of Surface with portable analyzer, Various Reinspection Times for Leaking Areas, and Records
Collection System Installation Dates	BAAQMD 8-34-304.2	Y		For Active Areas: Collection system components must be installed and operating by 5 years + 60 days after initial waste placement	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 1028, Parts 12a-c, 12e-f	P/E	Records

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Collection System Installation Dates	BAAQMD 8-34-304.3	Y		For Any Uncontrolled Areas or Cells: collection system components must be installed and operating within 60 days after the uncontrolled area or cell accumulates 1,000,000 tons of decomposable waste	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition # 1028, Parts 12a-c, 12e-f	P/E	Records
Wellhead Pressure	BAAQMD 8-34-305.1	Y		< 0 psig	BAAQMD 8-34-414, 501.9 and 505.1 and BAAQMD Condition # 1028, Part 17h	P/M	Monthly Inspection and Records
Temperature of Gas at Wellhead	BAAQMD 8-34-305.2	Y		< 55 °C (< 131 °F)	BAAQMD 8-34-414, 501.9 and 505.2 and BAAQMD Condition # 1028, Part 17h	P/M	Monthly Inspection and Records
Gas Concentrations at Wellhead	BAAQMD 8-34-305.3 or 305.4	Y		N <sub>2</sub> < 20% by volume <b>OR</b> O <sub>2</sub> < 5% by volume	BAAQMD 8-34-414, 501.9 and 505.3 or 505.4 and BAAQMD Condition # 1028, Part 17h	P/M	Monthly Inspection and Records

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Gas Flow	BAAQMD Condition # 1028, Parts 5, 6, and 7	Y		Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	BAAQMD 8-34-501.1, 501.2, 501.10 and 508 and BAAQMD Condition # 1028, Part 17f	C, P/E	Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components
Continuous Monitors	40 CFR 60.13(e)	Y		Requires Continuous Operation except for breakdowns, repairs, calibration, and required span adjustments	40 CFR 60.7(b)	P/D	Operating Records for All Continuous Monitors (gas flow meters and temperature monitors)
Startup Shutdown or Malfunction Procedures	40 CFR 63.6(e)	Y		Minimize Emissions by Implementing SSM Plan	40 CFR 63.1980(a-b)	P/E	Records (all occurrences, duration of each, and corrective actions)
Temperature of Combustion Zone (CT)	BAAQMD Condition # 1028, Part 9	Y		CT $\geq$ 1420 °F, averaged over any 3-hour period (applies to A-3 only)	BAAQMD 8-34-501.3 and 507	C	Temperature Sensor and Recorder (continuous)



## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NO <sub>x</sub>	BAAQMD Condition # 1028, Part 11	Y		From A-3 Only: ≤ 32 ppmv at 15% O <sub>2</sub> , dry basis	BAAQMD Condition # 1028, Parts 15 and 17h	P/A	Annual Source Test and Records
CO	BAAQMD Condition # 1028, Part 12	Y		From A-3 Only: ≤ 208 ppmv at 15% O <sub>2</sub> , dry basis	BAAQMD Condition # 1028, Parts 15 and 17h	P/A	Annual Source Test and Records
SO <sub>2</sub>	BAAQMD 9-1-301	Y		Property Line Ground Level Limits: ≤ 0.5 ppm for 3 minutes and ≤ 0.25 ppm for 60 min. and ≤ 0.05 ppm for 24 hours (applies to flares only)	None	N	NA
SO <sub>2</sub>	BAAQMD Regulation 9-1-302	Y		From Flares: ≤ 300 ppm (dry basis)	BAAQMD Condition # 1028, Parts 14 and 17h	P/Q	Sulfur analysis of landfill gas
Total Sulfur Content in Landfill Gas	BAAQMD Condition # 1028, Part 14	Y		In Collected Landfill Gas: ≤ 860 ppmv of TRS (expressed as H <sub>2</sub> S)	BAAQMD Condition # 1028, Parts 14 and 17h	P/A	Sulfur analysis of landfill gas
H <sub>2</sub> S	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	None	N	NA

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM;**  
**AND A-3 LANDFILL GAS FLARE**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Amount of Waste Accepted	BAAQMD Condition # 1028, Part 1a	Y	Expired 8/1/11	≤ 400 tons/day of waste accepted and placed in S-1	BAAQMD Condition # 1028, Part 17a	P/D	Records
Amount of Waste Accepted	BAAQMD Condition # 1028, Part 1a	Y	8/1/11	0 tons/day of waste accepted and placed in S-1	BAAQMD Condition # 1028, Part 17a	P/D	Records
Amount of Waste Accepted	BAAQMD Condition # 1028, Parts 1b and 1c	Y		≤ 5,830,000 tons (cumulative amount of alldecomposable materials) and ≤ 7,759,000 yd <sup>3</sup> (cumulative amount of all wastes and cover materials)	BAAQMD Condition # 1028, Part 17a	P/D	Records
Heat Input	BAAQMD Condition # 1028, Part 8	Y		≤ 720 MM BTU per day and ≤ 262,8000 MM BTU per year	BAAQMD Condition # 1028, Parts 8 and 17g	P/D	Records
Total Chlorinated Compounds in Landfill Gas	BAAQMD Condition # 1028, Part 13	N		≤ 104 ppmv, dry	BAAQMD Condition # 1028, Parts 16 and 17h	P/A	Annual Gas Characterization Analysis and Records

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – B**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-5 WOOD GRINDER AND A-5 WATER SPRAYS**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD 6-1-301 and SIP 6-301	Y		Ringelmann 1.0 for < 3 minutes in any hour	BAAQMD Condition # 20476, Part 5	P/E	Visual Observation of Operations
Opacity	BAAQMD Condition # 20476, Part 4	Y		≤ Ringelmann 1.0	BAAQMD Condition # 20476, Part 5	P/E	Visual Observation of Operations
FP	BAAQMD 6-1-311 and SIP 6-311	Y		For P<57,320 pounds/hour: $E = 0.026(P)^{0.67}$ For P>57,320 pounds/hour: E = 40 pounds/hour where: E = Maximum Allowable Emission Rate (pounds/hour); and P = Process Weight Rate (pounds/hour)	None	N	NA
Wood Through-put	BAAQMD Condition # 20476, Part 1	Y		≤ 50,000 tons per year	BAAQMD Condition # 20476, Part 2	P/D	Records

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – C**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S-7 TROMMEL SCREEN AND A-5 WATER SPRAYS**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Opacity	BAAQMD 6-1-301 and SIP 6-301	Y		Ringelmann 1.0 for < 3 minutes in any hour	BAAQMD Condition # 20478, Part 5	P/E	Visual Observation of Operations
Opacity	BAAQMD Condition # 20478, Part 4	Y		≤ Ringelmann 1.0	BAAQMD Condition # 20478, Part 5	P/E	Visual Observation of Operations
FP	BAAQMD 6-1-311 and SIP 6-311	Y		For P<57,320 pounds/hour: $E = 0.026(P)^{0.67}$ For P>57,320 pounds/hour: E = 40 pounds/hour where: E = Maximum Allowable Emission Rate (pounds/hour); and P = Process Weight Rate (pounds/hour)	None	N	NA
Wood Through-put	BAAQMD Condition # 20478, Part 1	Y		≤ 50,000 tons per year	BAAQMD Condition # 20478, Part 2	P/D	Records

## VIII. TEST METHODS

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

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

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
BAAQMD 6-1-301 and SIP 6-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions; or US EPA Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources
BAAQMD 6-1-303.1 and SIP 6-303.1	Ringelmann No. 2 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions; or US EPA Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources
BAAQMD 6-1-310 and SIP 6-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulates Sampling or For combustion equipment: US EPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
BAAQMD 6-1-311 and SIP 6-311	Process Weight Rate Based Emissions Limits	Manual of Procedures, Volume IV, ST-15, Particulates Sampling, or US EPA Method 5, Determination of Particulate Matter Emissions from Stationary Sources
BAAQMD 8-2-301 and SIP 8-2-301	Total Organic Compound (TOC) Emission Limitation for Miscellaneous Operations	Manual of Procedures, Volume IV, ST-7, Non-Methane Organic Carbon Sampling; or EPA Reference Method 25 Determination of Total Gaseous Nonmethane Organic Emissions as Carbon, or EPA Reference Method 25A, Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer
BAAQMD 8-34-301.2	Collection and Control System Component Leak Limitations	US EPA Reference Method 21, Determination of Volatile Organic Compound Leaks
BAAQMD 8-34-301.3	NMOC Emission Limits for Flares	Manual of Procedures, Volume IV, ST-14, Oxygen, Continuous Sampling; and Manual of Procedures, Volume IV, ST-7, Non-Methane Organic Carbon Sampling; or US EPA Reference Methods 18, 25, 25A, or 25C
BAAQMD 8-34-303	Landfill Surface Requirements	US EPA Reference Method 21, Determination of Volatile Organic Compound Leaks
BAAQMD 8-34-305.1	Wellhead Gauge Pressure	APCO Approved Device

## VIII. Test Methods

**Table VIII  
 Test Methods**

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
BAAQMD 8-34-305.2	Temperature Limit for Gas at Wellheads	APCO Approved Device
BAAQMD 8-34-305.3	Nitrogen Concentration in Gas at Wellheads	US EPA Reference Method 3C, Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources
BAAQMD 8-34-305.4	Oxygen Concentration in Gas at Wellheads	US EPA Reference Method 3C, Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources
BAAQMD 8-34-412	Compliance Demonstration Test	US EPA Reference Method 18, Measurement of Gaseous Organic Compound Emissions by Gas Chromatography, Method 25, Determination of Total Gaseous Nonmethane Organic Emissions as Carbon, Method 25A, Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer, or Method 25C, Determination of Nonmethane Organic Compounds (NMOC) in MSW Landfill Gases
BAAQMD 9-1-301	Limitations on Ground Level Concentrations (SO <sub>2</sub> )	Manual of Procedures, Volume VI, Part 1, Ground Level Monitoring for Hydrogen Sulfide and Sulfur Dioxide
BAAQMD 9-1-302	General Emission Limitation (SO <sub>2</sub> )	Manual of Procedures, Volume IV, ST-19A, Sulfur Dioxide, Continuous Sampling, or
BAAQMD 9-1-304	Liquid Fuel Sulfur Content	Manual of Procedures, Volume III, Method 10A, Determination of Sulfur in Petroleum and Petroleum Products or ASTM D2622-94 or CARB Approved Equivalent
BAAQMD 9-2-301	Limitations on Hydrogen Sulfide	Manual of Procedures, Volume VI, Part 1, Ground Level Monitoring for Hydrogen Sulfide and Sulfur Dioxide
40 CFR 60.8	Performance Tests	EPA Reference Method 18, Measurement of Gaseous Organic Compound Emissions by Gas Chromatography, Method 25, Determination of Total Gaseous Non-methane Organic Emissions as Carbon, Method 25A, Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer, or Method 25C, Determination of Non-methane Organic Compounds (NMOC) in MSW Landfill Gases
BAAQMD Condition # 1028, Part 2	VOC Determination for Soils Containing VOCs	BAAQMD 8-40-601 and US EPA Reference Methods 8015B and 8021B; or or any method determined to be equivalent by the US EPA and approved by the APCO; or US EPA Reference Method 21

## VIII. Test Methods

**Table VIII  
 Test Methods**

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
BAAQMD Condition # 1028, Part 3	Total Carbon Emission Limit for Low VOC Soils	BAAQMD 8-40-601 and US EPA Reference Methods 8015B and 8021B; or US EPA Reference Method 21 and APCO Approved Calculation Procedure Described in BAAQMD Condition # 1028, Part 3
BAAQMD Condition # 1028, Part 8	Heat Input Limits	APCO approved gas flow meter and APCO approved calculation procedure described in BAAQMD Condition # 1028, Part 8
BAAQMD Condition # 1028, Part 9	Flare Combustion Zone Temperature Limit	APCO Approved Device
BAAQMD Condition # 1028, Part 11	NO <sub>x</sub> Concentration Limit for Flare	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling or US EPA Reference Method 20, Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
BAAQMD Condition # 1028, Part 12	CO Concentration Limit for Flare	Manual of Procedures, Volume IV, ST-6, Carbon Monoxide, Continuous Sampling and ST-14, Oxygen, Continuous Sampling or US EPA Reference Method 10, Determination of Carbon Monoxide Emissions from Stationary Sources
BAAQMD Condition # 1028, Part 13	Total Chlorinated Compound Concentration Limit in Landfill Gas	US EPA Reference Method 18, Measurement of Gaseous Organic Compound Emissions by Gas Chromatography
BAAQMD Condition # 1028, Part 14	Landfill Gas Sulfur Content Limit	Manual of Procedures, Volume III, Method 5 Determination of Total Mercaptans in Effluents and Method 25 Determination of Hydrogen Sulfide in Effluents, or Method 44 Determination of Reduced Sulfur Gases and Sulfur Dioxide in Effluent Samples by Gas Chromatographic Methods;
BAAQMD Condition # 1028, Part 15	Compliance Demonstration Test	Manual of Procedures, Volume IV, ST-17, Stack Gas Velocity and Volumetric Flow Rate; ST-23 Water Vapor; ST-14, Oxygen, Continuous Sampling; ST-13A, Oxides of Nitrogen, Continuous Sampling; ST-6, Carbon Monoxide, Continuous Sampling; and Manual of Procedures, Volume IV, ST-7, Organic Compounds or US EPA Reference Methods 10 and 20; and Methods 18, 25, 25A, or 25C; and Method 44

## VIII. Test Methods

**Table VIII  
 Test Methods**

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
BAAQMD Condition # 1028, Part 16	Gas Characterization Analyses	US EPA Reference Method 18, Measurement of Gaseous Organic Compound Emissions by Gas Chromatography; and Method 44 Determination of Reduced Sulfur Gases and Sulfur Dioxide in Effluent Samples by Gas Chromatographic Methods
BAAQMD Condition # 20476, Part 4	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions; or US EPA Reference Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources
BAAQMD Condition # 20478, Part 4	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions or US EPA Method 9 Visual Determination of the Opacity of Emissions from Stationary Sources



**IX. PERMIT SHIELD**

Effective August 1, 2011, the permit shield described below is not applicable. The permit shield described below only applied to the handling, disposal, or re-use of VOC laden soil. Since this site no longer accepts, disposes of, or re-uses VOC laden soil, a permit shield is no longer necessary.

**A. SUBSUMED REQUIREMENTS**

Pursuant to District Regulations 2-6-233.2 and 2-6-409.12, until August 1, 2011, 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-1 PALO ALTO LANDFILL WITH GAS COLLECTION SYSTEM**

<b>Subsumed Requirement Citation</b>	<b>Title or Description</b>	<b>Streamlined Requirements</b>	<b>Title or Description</b>
BAAQMD Regulation 8-2-601	Determination of Compliance (for organic compound emissions as total carbon)	BAAQMD Regulation 8-40-604	Measurement of Organic Concentration (to classify VOC-laden soil as “contaminated” or “not contaminated”)

The Regulation 8, Rule 2 total carbon test procedure is subsumed by the Regulation 8, Rule 40 VOC test procedure for the Palo Alto Landfill (S-1), because testing performed pursuant to Regulation 8-40-604 will rule out the need to test in accordance with Regulation 8-2-601.

Regulation 8, Rule 2 “Miscellaneous Operations” is only applicable to sources of precursor organic compounds that are not otherwise limited by Regulation 8 or Regulation 10 rules. In the case of an active landfill, the storage, handling, reuse (such as for cover material), and disposal of soil that contains volatile organic compounds (VOC) results in the transfer of some of the VOCs from the soil into the atmosphere. This process is called aeration. Soil which has an organic content exceeding 50 ppmw or that registers an organic concentration greater than 50 ppmv

## IX. Permit Shield

(expressed as methane, C1) at the soil surface is defined as “contaminated” soil in Regulation 8-40-205. VOC-laden soil is soil that contains some VOCs but that has less VOCs than the contaminated soil thresholds above. The aeration of contaminated soil is subject to Regulation 8, Rule 40. However, the aeration of the low concentration VOC-laden soils is subject to Regulation 8, Rule 2.

Regulation 8-2-301 limits organic compound emissions (expressed as total carbon) from an operation to 15 pounds per day, if the emission from the operation has an organic compound concentration greater than 300 ppmv (expressed as total carbon, dry basis). Thus, an operator may verify compliance with Regulation 8-2-301 by either demonstrating compliance with the 15 pound/day total carbon limit or by demonstrating compliance with the 300 ppmv total carbon concentration limit. Condition # 1028, Part 3 identifies the alternative measures that may be used to verify compliance with the 300 ppmv total carbon concentration limit.

If the operator chooses to demonstrate compliance with Regulation 8-2-301 using Condition #1028 Part 3, the operator will be required to use the Regulation 8-40-604 test procedures to verify that the soil is not contaminated (i.e., does not contain more than 50 ppmw of VOC or will not emit more than 50 ppmv of VOC from the surface of the soil). Since soil found not to be contaminated using the procedures of Regulation 8-40-604 will have a surface VOC concentration of less than 50 ppmv (expressed as methane, C1) it can reasonably be assumed that the concentration that occurs in the atmosphere during the aeration of VOC-laden soil will also be less than 300 ppmv (total carbon, dry basis) as determined by the procedures of Regulation 8-2-601. Since this VOC-laden soil aeration operation will comply with the total carbon concentration limit (< 300 ppmv), it will also comply with Regulation 8-2-301.

Since soil found not to be contaminated using the procedures of Regulation 8-40-604 will have a surface VOC concentration of less than 50 ppmv (expressed as methane, C1) it can reasonably be assumed that the concentration that occurs in the atmosphere during the aeration of VOC-laden soil will also be less than 300 ppmv (total carbon, dry basis) as determined by the procedures of Regulation 8-2-601. Since this VOC-laden soil aeration operation will comply with the total carbon concentration limit (< 300 ppmv), it will also comply with Regulation 8-2-301.

In summary, measurements conducted under Regulation 8-40-604 that show surface VOC concentrations are less than 50 ppmv (expressed as methane, C1) are conclusive to demonstrate that any aeration of such soil will comply with Regulation 8-2-301.

## **X. REVISION HISTORY**

### **Title V Permit Issuance (Application 3047):**

**December 4, 2003**

### **Minor Revision (Application 2230):**

**April 9, 2004**

- Corrected a date in Section I.B.1.
- Revised the minimum flare temperature in Condition # 1028, Part 9 and Tables II-B and VII-A based on new source test data.
- Corrected the peak waste disposal limit in Condition # 1028, Part 1a and Tables II-A and VII-A based on the Solid Waste Facility Permit for the landfill.
- Added text to Condition # 1028, Part 7 that describes the proposed vertical wells that the District is planning to issue an Authority to Construct for.
- Corrected typographical errors in Condition # 1028, Part 12 and Table VII-A.
- Deleted future effective dates that have passed in Tables IV-A and VII-A.
- Added Section X Revision History and revised subsequent section numbers.

### **Minor Revision (Application 9783):**

**October 13, 2004**

- Revised Condition #20477 and Table VII-C for S-6, Diesel Engine, to reflect BACT2 emission factors for POC, NO<sub>x</sub> and CO. POC from 0.042 g/bhp-hr to 1.5 g/bhp-hr, NO<sub>x</sub> 6.2 g/bhp-hr to 6.9 g/bhp-hr and CO from 0.48 g/bhp-hr to 2.75 g/bhp-hr.
- Revised Condition #20479 and the Table VII-E for S-8, Diesel Engine, to reflect BACT2 emission factors for POC, NO<sub>x</sub> and CO. POC from 0.3 g/bhp-hr to 1.5 g/bhp-hr, NO<sub>x</sub> 6.5 g/bhp-hr to 6.9 g/bhp-hr and CO from 1.3 g/bhp-hr to 2.75 g/bhp-hr.

### **Administrative Amendment (Application 14875):**

**August 2, 2006**

- Change of responsible official for the facility

## **X. Revision History**

### **Administrative Amendment (Application 15698):**

**August 28, 2007**

- Permit condition 1028, part 5, was modified to show that landfill gas from plant A2721 can be combusted at A-1 and Sludge Incinerators (S-1 and S-2) at plant A0617 instead of S-1 and S-2 IC Engines at plant A9794 since plant A9794 has closed.
- The “Description of Requirement” for regulations 8-34-301.4, 8-34-501.11, and 8-34-509 in “Table IV-A Source Specific Applicable Requirements” was modified to reflect the option of venting landfill gas to facility A0617 instead of A9794
- Permit condition 1028, part 7b was deleted because authority to construct 2230 has expired.

### **Permit Renewal (Application 18263):**

**June 4, 2012**

- Change responsible official name
- Change facility contact name and phone number.
- Correct BAAQMD contact information.
- Delete line for Section XII in Table of Contents.
- Add and revise text in Section I, III, IV, VII, and VIII to conform to current standard text.
- Remove source that had been shut down from Table II-A (S-8); delete the associated condition (20479) in Section VI Permit Conditions; Delete source S-6 from Table II-A as facility states that this is a portable engine and not stationary engine; delete associated condition (20477) in Section VI Permit Conditions; Delete Tables IV-C and E and VII-C and E and associated test methods in Table VIII.
- Create Section II-C Exempt Equipment List for sources S-6 and S-9
- Correct and update regulatory references and amendment dates throughout the permit.
- Add several missing BAAQMD and federal regulations to Table III, and add several new California regulations to Table III.
- Renumber Table IV-D as Table IV-C and Table VII-D as Table VII-C.
- Incorporate changes to SIP Regulation 6 and BAAQMD Regulation 6, Rule 1 in Tables IV- A-C, VII- A-C, and VIII and in Conditions #1028, 20476, and 20478.

## **X. Revision History**

- Throughout the permit, replace condition bases citing the Toxic Risk Management Policy (TRMP) with the appropriate regulatory citation from BAAQMD Regulation 2, Rule 5, which was adopted in 2005 and amended in 2010.
- In Table IV-A, Condition #1028 Part 1, Table VII-A, and Section IX, clarify the applicability of Regulation 8, Rule 2, the daily waste acceptance limits, and the permit shield for VOC-laden soil handling and re-use due to the discontinuation of waste acceptance at the S-1 landfill as of 7/28/11.
- Correct the descriptions of several requirements in Tables IV-A, VII-A, and VIII.
- Add missing sections of 40 CFR Part 60 Subparts A and Cc, Part 62 Subpart F, and Part 63 Subparts A and AAAA to Table IV-A.
- In Part VI for S-1, correct Condition #1028, Part 7, which previously omitted the total number of vertical wells (92) allowed under A/N 15698.
- For S-1 and A-3, correct the landfill gas sulfur content limit and monitoring frequency in Condition #1028, Part 14 and Table VII-A based on a worst case landfill gas methane content of 25%.
- Remove obsolete testing requirements from Condition # 1028, Parts 15, 16, and 18.
- Add symbols and text to Tables VII – A-C to clarify limits and applicability of monitoring requirements.
- In Tables VII-B and VII-C, clarify the Regulation 6-1-311 limit.
- For Table VIII, add missing test methods and remove obsolete or unnecessary test methods.
- Clarify the applicability of the permit shield in Section IX.
- Correct Header from IX Permit Shield to X Revision History.
- Add this permit renewal to the Section X Revision History.
- Add terms to the Section XI Glossary.
- Remove Section XII State Implementation Plan.

## **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: Head of Bay Area Air Quality Management District

### **ARB**

Air Resources Board

### **ASTM**

American Society for Testing and Materials

### **ATCM**

Airborne Toxic Control Measure

### **BAAQMD**

Bay Area Air Quality Management District

### **BACT**

Best Available Control Technology

### **BARCT**

Best Available Retrofit Control Technology

### **Basis**

The underlying authority that allows the District to impose requirements.

### **C1**

An organic chemical compound with one carbon atom, for example: methane

### **C3**

An organic chemical compound with three carbon atoms, for example: propane

## **XI. Glossary**

### **C5**

An organic chemical compound with five carbon atoms, for example: pentane

### **C6**

An organic chemical compound with six carbon atoms, for example: hexane

### **C<sub>6</sub>H<sub>6</sub>**

Benzene

### **CAA**

The federal Clean Air Act

### **CAAQS**

California Ambient Air Quality Standards

### **CAM**

Compliance Assurance Monitoring per 40 CFR Part 64

### **CAPCOA**

California Air Pollution Control Officers Association

### **CARB**

California Air Resources Board (same as ARB)

### **CCR**

The California Code of Regulations

### **CEC**

California Energy Commission

### **CEM**

A “continuous emission monitor” is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NO<sub>x</sub> concentration) in an exhaust stream. **CEQA**  
California Environmental Quality Act

### **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.

## **XI. Glossary**

### **CH<sub>4</sub> or CH<sub>4</sub>**

Methane

### **CI**

Compression Ignition

### **CIWMB**

California Integrated Waste Management Board

### **CO**

Carbon Monoxide

### **CO<sub>2</sub> or CO<sub>2</sub>**

Carbon Dioxide **CO<sub>2</sub>e**

Carbon Dioxide Equivalent. A carbon dioxide equivalent emission rate is the emission rate of a greenhouse gas compound that has been adjusted by multiplying the mass emission rate by the global warming potential of the greenhouse gas compound. These adjusted emission rates for individual compounds are typically summed together, and the total is also referred to as the carbon dioxide equivalent (CO<sub>2</sub>e) emission rate.

### **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

### **E6, E9, E12**

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, 4.53E6 equals  $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$ . Scientific notation is used to express large or small numbers without writing out long strings of zeros.

### **EG**

Emission Guidelines



## **XI. Glossary**

### **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 (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

### **GDF**

Gasoline Dispensing Facility

### **GHG**

Greenhouse Gas

### **GLM**

Ground Level Monitor

### **Grains**

1/7000 of a pound

### **GRS**

Gas Recovery Systems, Inc.

## **XI. Glossary**

### **GWP**

Global Warming Potential. A comparison of the ability of each greenhouse gas to trap heat in the atmosphere relative to that of carbon dioxide over a specific time period.

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

Hydrogen Sulfide

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

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 40 CFR Part 63.

### **Hg**

Mercury

### **HHV**

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

### **LEA**

Local Enforcement Agency

### **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.

### **Long ton**

2200 pounds

## **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.

### **MAX or Max.**

Maximum

### **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.

### **MIN or Min.**

Minimum

### **MOP**

The District's Manual of Procedures.

### **MSDS**

Material Safety Data Sheet

### **MSW**

Municipal solid waste

### **MW**

Molecular weight

### **N2 or N<sub>2</sub>**

Nitrogen

### **NA**

Not Applicable

### **NAAQS**

National Ambient Air Quality Standards

## **XI. Glossary**

### **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)

### **NO<sub>2</sub>**

Nitrogen Dioxide

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

Oxides of nitrogen.

### **NSPS**

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

### **NSR**

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of 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.)

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

Oxygen

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

### **PERP**

Portable Equipment Registration Program

### **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.

## **XI. Glossary**

### **POC**

Precursor Organic Compounds

### **PM**

Particulate Matter

### **PM10 or PM<sub>10</sub>**

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.

### **PTE**

Potential to Emit as defined by BAAQMD Regulation 2-6-218

### **PV or P/V Valve or PRV**

Pressure / Vacuum Relief Valve

### **RICE**

Reciprocating Internal Combustion Engine

### **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 within a specific temperature range, and injected ammonia to promote the conversion of NOx compounds to nitrogen gas.

## **XI. Glossary**

### **Short ton**

2000 pounds

### **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.

### **SO<sub>2</sub> or SO<sub>2</sub>**

Sulfur dioxide

### **SO<sub>3</sub> or SO<sub>3</sub>**

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

### **TBACT**

Best Available Control Technology for Toxics

### **THC**

Total Hydrocarbons (NMHC + Methane)

### **therm**

100,000 British Thermal Units

### **Title V**

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

### **TOC**

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

## **XI. Glossary**

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

### **TSP**

Total Suspended Particulate

### **TVP**

True Vapor Pressure

### **VOC**

Volatile Organic Compounds

### **VMT**

Vehicle Miles Traveled

### **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 <sup>3</sup>	=	cubic feet

## XI. Glossary

g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grains
hp	=	horsepower
hr	=	hour
in	=	inches
kW	=	kilowatt
lb	=	pound
lbmol	=	pound-mole
max	=	maximum
m <sup>2</sup>	=	square meter
m <sup>3</sup>	=	cubic meters
min	=	minute
mm	=	million
MM	=	million
MM BTU	=	million BTU
MMcf	=	million cubic feet
Mg	=	mega grams
M scf	=	one thousand standard 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
tpy	=	tons per year
yd	=	yard
yd <sup>3</sup>	=	cubic yards
yr	=	year