MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT
PROPOSED TITLE V OPERATING PERMIT TV 49-01

24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (831) 647-9411

ISSUED TO:

City of Santa Cruz Public Works Department
dba City of Santa Cruz Resource Recovery Facility
809 Center Street, Room 201
Santa Cruz, CA 95060

PLANT SITE LOCATION:

605 Dimeo Lane
Santa Cruz, California

ISSUED BY:

Douglas Quetin, Air Pollution Control Officer

April 1, 2008
Effective Date

Nature of Business: Municipal Solid Waste Landfill

SIC Code: 4953 - Refuse Systems

RESPONSIBLE OFFICIAL:

Name: Mr. Mark R. Dettle
Title: Director of Public Works
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ALTERNATIVE RESPONSIBLE OFFICIAL:

Name: Ms. Chris Chang
Title: Associate Civil Engineer
Phone: (831) 420-5427

FACILITY CONTACT PERSON:

Name: Ms. Chris Chang
Title: Associate Civil Engineer
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FACILITY DESCRIPTION

The City of Santa Cruz Resource Recovery Facility is a Municipal Solid Waste (MSW) Landfill permitted by the California Integrated Waste Management Board to receive a maximum of 535 tons per day of MSW. This landfill has been accepting waste since the mid-1920's.

Located at the landfill and operated by a third-party is a landfill gas collection and destruction system. The collected landfill gas is combusted in a gas turbine which drives a generator to produce electricity. The electricity generated is sold to the local utility company.

The landfill is subject to the federal New Source Performance Standard (NSPS) for Municipal Solid Waste Landfills based upon the design capacity of the landfill being greater than 2.5 million cubic meters. Landfills subject to the MSW Landfill NSPS are also subject to Title V permitting requirements. In addition, the facility is subject to the federal National Emission Standard for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills.

EQUIPMENT DESCRIPTION

MUNICIPAL SOLID WASTE LANDFILL CONSISTING OF:

1. 100 Acre Landfill Site Of Which 67 Acres Are Permitted For Waste Disposal.

2. Landfill Gas Collection System, Vertical Wells, Lateral Collector Pipes, And Header Pipes To Collect And Route Landfill Gas To The Landfill Gas Destruction System.

3. Landfill Gas Destruction System, Gas Turbine, Solar Turbines Model Number GSC-1200R, Rated 1250 BHP At 22,300 RPM.

4. Gas Extraction Trench And Treatment Facility.

5. Ancillary Equipment:

   500 Gallon Aboveground Gasoline Storage Tank With Phase I And Phase II Vapor Recovery.

   Emergency Generator Set, 743 BHp, 500 Kw Output.

   Emergency Generator Set, 166 BHp, 100 Kw Output.

FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS

1. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity. [District Rule 400]

2. Particulate matter shall not exceed 0.15 grains per standard dry cubic foot in the exhaust stream of the gas turbine. [District Rule 403]

3. Sulfur compounds calculated as sulfur dioxide (SO_2) shall not exceed 0.2 percent by volume in the exhaust stream of the gas turbine. [District Rule 404]

4. The landfill gas combusted shall contain no more than 50 grains of sulfur compounds (calculated as hydrogen sulfide) per 100 cubic feet of gas. [District Rule 412]

5. The City of Santa Cruz's gasoline storage tank shall be equipped with a permanent submerged fill pipe and a Phase I vapor recovery system which has been certified by the California Air Resources Board. [District Rule 418]

6. The City of Santa Cruz shall operate a Phase II vapor recovery system on the Gasoline Storage Tank which has been certified by the California Air Resources Board. [District Rule 1002]

7. The City of Santa Cruz shall limit emissions of volatile organic compounds by the use of architectural coatings which comply with the requirements of District Rule 426. [District Rule 426]

8. The City of Santa Cruz shall cause to be operated a landfill gas collection system that effectively captures the gas generated such that [40 CFR Part 60, Subpart WWW]:

   A) the system is designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas collection system; and

   B) landfill gas is collected from each area, cell or group of cells in which non-asbestos degradable solid waste has been placed for a period of 5 years or more for active areas or 2 years or more for closed areas; and

   C) offsite migration of subsurface gas is minimized; and

   D) each wellhead is under negative pressure except under the following conditions:

      i) a fire or increased well temperature. The City of Santa Cruz shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the semiannual reports as provided in condition number 39; or

ii) use of a geomembrane or synthetic cover. Acceptable pressure limits shall be submitted by the City of Santa Cruz in their design plan; or

iii) a decommissioned well.

E) the collected landfill gas temperature is less than 55°C at each well with a nitrogen level less than or equal to 20 percent or an oxygen level less than or equal to 5 percent; and

F) the surface methane concentration over the landfill shall not exceed 500 ppm above background.

9. The gas turbine shall either reduce non-methane organic compounds (NMOC) by 98 weight-percent or reduce the NMOC outlet concentration to less than 20 ppmv, dry basis as hexane at 3% oxygen. [40 CFR Part 60, Subpart WWW]

10. The City of Santa Cruz shall cause the gas turbine to be operated at all times that the collected landfill gas is routed to the turbine. In the event that the gas collection system or the gas turbine is inoperable, the gas mover system shall be shut down and all valves in the collection system and gas turbine contributing to venting of the gas to the atmosphere shall be closed within 1 hour. [40 CFR Part 60, Subpart WWW]

11. Condition numbers 9 and 10 do not apply to the gas turbine during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 1 hour. [40 CFR Part 60, Subpart WWW]

12. The City of Santa Cruz shall cause the gas turbine to be equipped with an exhaust gas temperature monitoring device equipped with a continuous recorder with the ability to record the average combustion temperature every 15 minutes, and having an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 °C, whichever is greater. [40 CFR Part 60, Subpart WWW]

13. The 3-hour average exhaust gas temperature shall not be 28° C less than the average exhaust gas temperature during the most recent performance testing required under condition number 24. [40 CFR Part 60, Subpart WWW]

14. The City of Santa Cruz shall install, calibrate, and maintain a gas flow measuring device that shall record at least every 15 minutes the gas flow to the gas turbine or to the bypass valve if so equipped. [40 CFR Part 60, Subpart WWW]

15. If the gas collection system is equipped with a valve to bypass the gas turbine, this bypass valve must be in a closed position with a car-seal or a lock-and-key type configuration. [40 CFR Part 60, Subpart WWW]

16. The City of Santa Cruz shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR Part 60, Subpart WWW]

17. The City of Santa Cruz shall have in place a Start-up, Shutdown, and Malfunction (SSM) Plan according to the provisions of 40 CFR §63.6(e)(3). The SSM Plan shall be maintained at the facility, and be made available to District staff upon request. The SSM Plan is incorporated by reference into this Title V permit. [40 CFR Part 63, Subpart AAAA]

18. The City of Santa Cruz shall include deviations specified in the Municipal Solid Waste Landfill NESHAP in the semiannual report required by condition number 39. Specified deviations include periods when [40 CFR Part 63, Subpart AAAA]:

    A) the gas turbine exhaust gas temperature falls below the value established in condition number 13.

    B) 1-hour or more of the hours during the 3-hour block averaging period for determining compliance with condition number 13 does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.

    C) the Start-up, Shutdown, and Maintenance Plan is not developed, implemented, or maintained on site.

19. The City of Santa Cruz shall comply with the requirements of 40 CFR Part 68 - Risk Management Plans. The City of Santa Cruz shall submit a Risk Management Plan (RMP) if the facility becomes subject to the requirements of Part 68. [40 CFR Part 68]

20. The City of Santa Cruz shall comply with the requirements of 40 CFR Part 82 - Protection of Stratospheric Ozone. [40 CFR Part 82]

TESTING REQUIREMENTS AND PROCEDURES

21. No testing is specified for the generic (Rule 400) opacity requirement from condition number 1. The engine is assumed to be in compliance with the opacity requirement due to its being fired on gaseous fuel. If testing is conducted for condition number 1, the City of Santa Cruz should conduct testing in accordance with the methodology contained in EPA Method 9 and the averaging/aggregating period contained in District Rule 400. [District Rule 218]

22. No testing is specified for the generic (Rule 403) particulate matter emission standard from condition number 2. The engine is assumed to be in compliance with the particulate matter emission standard due to its being fired on gaseous fuel. If testing is conducted for condition number 2, the City of Santa Cruz should conduct testing in accordance with the methodology contained in EPA Method 5. [District Rule 218]

23. No testing is specified for the generic (Rule 412) sulfur concentration limit in condition number 3. The engine is assumed to be in compliance with the sulfur concentration limit based upon the calculations contained in the engineering evaluation. If testing is conducted for condition number 3, the City of Santa

Cruz should conduct testing in accordance with the methodology contained in EPA Method 20. [District Rule 218]

24. Annual testing of the landfill gas to determine the sulfur content shall be completed. The City of Santa Cruz shall conduct testing in accordance with ASTM D 1072-80, ASTM D 3031-81, ASTM D 3246-81, SCAQMD Method 307-91 or equivalent to verify compliance with condition number 4. [District Rule 218]

25. The City of Santa Cruz shall cause monitoring or testing to be conducted to verify compliance with condition numbers 8, 15 and 16 as follows [40 CFR Part 60, Subpart WWW]:

On a monthly basis:

A) Monitor the cover integrity, visually inspect the bypass valve to ensure that it is closed, and measure the gage pressure and monitor the temperature and nitrogen or oxygen content at each well head. The nitrogen level shall be determined using EPA Method 3C, or the oxygen level shall be determined using EPA Method 3A except that: 1) the span shall be set so the regulatory limit is between 20 and 50 percent of the span; 2) a data recorder is not required; 3) only two calibration gases are required, a zero and a span, and ambient air may be used as the span; 4) a calibration error check is not required; and 5) the allowable sample bias, zero drift, and calibration drift are ± 10 percent.

On a quarterly basis:

B) Monitor the surface concentrations of methane along the entire perimeter of the collection area and along a serpentine pattern within the collection area at 30 meter intervals. This surface monitoring shall be performed in accordance with section 4.3.1 of EPA Method 21, except that the probe shall be placed within 5 to 10 centimeters of the ground. The portable analyzer shall meet the instrument specifications provided in section 3 of EPA Method 21 except that "methane" shall replace all references to VOC and the instrument evaluation procedures in section 4.4 of EPA Method 21 shall be used to meet the performance evaluation requirements of section 3.1.3. The calibration procedures provided in section 4.2 of EPA Method 21 shall be followed immediately before commencing a surface monitoring survey, and the calibration gas shall be methane diluted to a nominal concentration of 500 ppm.

Any reading of 500 ppm or greater above background shall be recorded as a monitored exceedance. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. A monitored exceedance is not a violation of the operational requirement contained in condition 8(F) as long as the following specified actions are taken:

i) The location of each monitored exceedance shall be marked and the location recorded.

ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calender days of detecting the exceedance; and

iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in section *v* of this condition shall be taken.

iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm above background at the 10-day re-monitoring specified in ii or iii above shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 ppm above background, no further monitoring is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in section *iii* or *v* of this condition shall be taken.

v) For any location where monitored methane concentration equals or exceeds 500 ppm above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance and a corresponding time line for installation may be submitted to the District for approval.

26. On an annual basis the City of Santa Cruz shall cause testing to be conducted to verify compliance with condition number 9. This testing shall be conducted in accordance with EPA test method 18 or 25. [40 CFR Part 60, Subpart WWW and District Rule 218]

RECORD KEEPING REQUIREMENTS

27. The City of Santa Cruz shall maintain up-to-date records of the maximum design capacity, the current amount of solid waste in place, the year-by-year waste acceptance rate, and the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from gas collection as provided by §60.759(a)(3)(I) as well as any nonproductive areas excluded from gas collection as provided by §60.759(a)(3)(ii). These records shall be retained on-site or be available within 4 hours if stored off-site. [40 CFR Part 60, Subpart WWW]

28. The City of Santa Cruz shall maintain, readily accessible records for the life of the control equipment, the control device vendor specifications, and the following data as measured during the initial performance test or compliance determination [40 CFR Part 60, Subpart WWW]:

A) The maximum expected gas generation flow rate as calculated in §60.755(a)(1); and

B) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in §60.759(a)(1).

29. The City of Santa Cruz shall keep for at least 5 years up-to-date, readily accessible continuous records of all data required by condition number 25. [40 CFR Part 60, Subpart WWW]

30. The City of Santa Cruz shall maintain SSM Plan records as specified in 40 CFR §60.6(e)(3)(iii) and 40 CFR §60.6(e)(3)(iv). [40 CFR Part 63, Subpart AAAA]

31. As applicable the City of Santa Cruz shall maintain the following general records of required monitoring information [District Rule 218]:

    A) the date and time of sampling or measurements;

    B) the date(s) analyses were performed;

    C) the company or entity that performed the analyses;

    D) the analytical techniques or methods used;

    E) the results of such analyses;

    F) the operating conditions existing at the time of sampling or measurement; and

    G) the records of quality assurance for continuous monitoring systems (including, but not limited to quality control activities, audits, and calibration drift checks) and source testing methods.

32. The City of Santa Cruz shall maintain records on the occurrence and duration of any start-up, shutdown, or malfunction in the operation of the equipment under this permit. [District Rule 218]

33. The City of Santa Cruz shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring, sample collection, measurement, report, and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. [District Rule 218]

REPORTING REQUIREMENTS

34. The City of Santa Cruz shall report all breakdowns which result in the inability to comply with any emission standard or requirement contained on this permit to the Air Pollution Control Officer (APCO) within 1 hour of the occurrence; this one hour period may be extended up to six hours for good cause by the APCO. The APCO may elect to take no enforcement action if the City of Santa Cruz demonstrates to the APCO's satisfaction that a breakdown condition exists.

    The estimated time for repair of the breakdown shall be supplied to the APCO within 24 hours of the occurrence and a written report shall be supplied to the APCO within 5 days after the occurrence has been corrected. This report shall include at a minimum [District Rule 214]:

    a) a statement that the condition or failure has been corrected and the date of correction; and

    b) a description of the reasons for the occurrence; and

c) a description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future; and

d) an estimate of the emissions caused by the condition or failure.

35. The City of Santa Cruz shall report to the District any actions not consistent with the SSM Plan. The initial report shall be within 2 working days via telephone or facsimile, followed by a letter delivered or postmarked within 7 working days after the end of the event. The letter shall contain the name, title, and signature of the responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the SSM Plan, and whether any excess emissions and or parameter monitoring exceedances are believed to have occurred. [40 CFR Part 63, Subpart AAAA]

36. The City of Santa Cruz shall report any violation of any requirement contained in this permit to the District within 96 hours after such occurrence. The violation report shall include the time intervals, date and magnitude of excess emissions; nature and cause of the excess (if known), corrective actions and preventive measures adopted. [District Rule 218]

37. For protection from enforcement action based upon an emergency, as defined in District Rule 218, the responsible official for the City of Santa Cruz shall submit to the District relevant evidence which demonstrates [District Rule 218]:

A) an emergency occurred; and

B) that the City of Santa Cruz can identify the cause(s) of the emergency; and

C) that the facility was being properly operated at the time of the emergency; and

D) that all steps were taken to minimize the emissions resulting from the emergency; and

E) within two working days of the emergency event, the City of Santa Cruz provided the District with a description of the emergency and any mitigating or corrective actions taken.

38. The City of Santa Cruz shall submit semiannual monitoring reports to the District, in a District approved format, no later than August 15 for the period of January 1 through June 30 and no later than February 15 for the period of July 1 through December 31. [District Rule 218]

These monitoring reports shall include at a minimum:

A) the time intervals, date and magnitude of excess emissions, nature and cause of the excess (if known), corrective actions and preventative measures adopted; and

B) the averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard for the pollutant in question; and

C) all information pertaining to any monitoring as required by the permit; and

D) a negative declaration specifying when no excess emissions occurred.

39. The City of Santa Cruz shall submit semiannual reports to the District, no later than August 15 for the period of January 1 through June 30 and no later than February 15 for the period of July 1 through December 31, with the following required information [40 CFR Part 60, Subpart WWW, 40 CFR Part 63, Subpart AAAA]:

A) the value and length of time for exceedances of applicable parameters monitored as required in condition number 8; and

B) deviations as specified in condition number 18; and

C) a description and the duration of all periods when the gas stream is diverted from the gas turbine; and

D) a description and the duration of all periods when the gas turbine was not operating for any period exceeding 1 hour and the length of time the gas turbine was not operating; and

E) all periods when the collection system was not operating in excess of five days; and

F) the location and concentration of each exceedance of condition 8(F) as monitored by condition 25(B); and

G) the date of installation and the location of each well or collection system expansion added pursuant to condition 25(B)(*v*); and

H) SSM Report as specified in 40CFR §63.10(d)(5)(i).

40. The City of Santa Cruz shall submit an annual compliance certification report to the District and U.S. EPA, in a District approved format, no later than February 15 for the period of January 1 through December 31 of the preceding year. [District Rule 218]

This report shall include a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report and shall include at a minimum:

A) identification of each term or condition of the permit that is the basis of the certification; and

B) the compliance status; and

C) whether compliance was continuous or intermittent; and

D) the method(s) used for determining the compliance status of the source, currently and over the reporting period.

41. The City of Santa Cruz shall submit a closure report to the District within 30 days of waste acceptance cessation. If a closure report has been submitted to the District, no additional wastes may be placed into the landfill without filing a notification of modification as described in 40 CFR §60.7(a)(4). [40 CFR Part 60,

Subpart WWW]

42. The City of Santa Cruz shall submit an equipment removal report to the District 30 days prior to removal or cessation of operation of the landfill gas control equipment. The equipment removal report shall contain the following [40 CFR Part 60, Subpart WWW]:

    A) A copy of the closure report submitted in accordance with condition number 41; and

    B) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and

    C) Dated copies of three successive annual NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

GENERAL CONDITIONS

43. The City of Santa Cruz shall comply with all conditions of this federal operating permit. Any noncompliance with a permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [District Rule 218]

44. In an enforcement action, the fact that the City of Santa Cruz would have to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit is not a defense. [District Rule 218]

45. This permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by the District. The filing of a request by the City of Santa Cruz for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 218]

46. This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. [District Rule 218]

47. The City of Santa Cruz shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the City of Santa Cruz shall also furnish to the District copies of records required to be retained by this permit. [District Rule 218]

48. For applicable requirements that will become effective during the permit term, the City of Santa Cruz shall meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement. [District Rule 218]

49. Any document submitted to the District pursuant to this permit shall contain certification by the responsible or the alternative responsible official of truth, accuracy and completeness. All certifications 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 City of Santa Cruz shall promptly, upon discovery, report to the District a material error or omission in these records, reports, plans, or other documents. [District Rule 218]

50. Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, record keeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with. [District Rule 218]

51. For this federal operating permit to remain valid through the permit term of five years from the date of issuance, the City of Santa Cruz shall pay an annual emission fee based upon the requirements of District Rule 308. [District Rule 218]

52. The City of Santa Cruz shall have available at the facility at all times a copy of this federal operating permit. [District Rule 218]

53. Upon presentation of credentials, the City of Santa Cruz shall allow the District, the ARB, the EPA, or an authorized representative, to perform the following [District Rule 218]:

    A) enter upon the premises where the federal operating permit source is located or in which any records are required to be kept under the terms and conditions of this federal operating permit;

    B) to have access to and copy any records required to be kept under the terms and conditions of this federal operating permit;

    C) to inspect any equipment, operation, or process described or required in this federal operating permit; and,

    D) to sample emissions from the source.

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