

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 7	PAGE 1
	APPL NO 526209 and 533440	DATE 11/20/2013
	PROCESSED BY GCR	CHECKED BY CDY

PERMIT TO OPERATE EVALUATION
(Change of Permit Conditions)

OWNER/OPERATOR:

LA COUNTY SANITATION DISTRICTS (LACSD), PALOS VERDES
P O BOX 4998
WHITTIER, CA 90607

FACILITY LOCATION:

26301 S. CRENSHAW BLVD. (PALOS VERDES LANDFILL)
ROLLING HILLS ESTATES, CA 90274

CO ID: 24520

CONTACT PERSON:

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EQUIPMENT DESCRIPTION:

LANDFILL GAS FLARING SYSTEM CONSISTING OF:

1. LIQUID KNOCKOUT/PARTICULATE REMOVAL VESSEL, JOHN ZINK, 2'-6", DIA. X 6'-0" H.
2. THREE BLOWERS, LANDFILL GAS, EACH MAXIMUM FLOW RATE 3000 SCFM, COMMON TO THE EXISTING FLARE STATION.
3. FLARE, JOHN ZINK, ZULE, 13'-0" DIA. X 35'-0" H., 75.6 MMBTU/HR, LANDFILL GAS FIRED, AUGMENTED WITH NATURAL GAS, WITH A MULTI JET BURNER, A PROPANE GAS PILOT, ELECTRIC IGNITER, UV FLAME SENSOR, THERMOCOUPLE WITH TEMPERATURE INDICATOR AND RECORDER, AUTOMATIC SHUTDOWN AND ALARM SYSTEM, AUTOMATIC COMBUSTION AIR REGULATING SYSTEM, TEMPERATURE CONTROLLER AND FLAME ARRESTOR.

Conditions:

1. CONSTRUCTION AND OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]

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3. THIS EQUIPMENT SHALL BE OPERATED AND MAINTAINED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.
[RULE 204]
4. NON-RESETTABLE FLOW MONITORING AND RECORDING DEVICES SHALL BE INSTALLED AND OPERATED IN THE LANDFILL GAS AND NATURAL GAS SUPPLY LINES TO THIS SYSTEM TO CONTINUOUSLY MEASURE AND RECORD THE LANDFILL GAS AND NATURAL GAS CONSUMPTION IN STANDARD CUBIC FEET PER MINUTE.
[RULE 1303(b)(2)-OFFSET]
5. ALL RECORDING DEVICES SHALL BE SYNCHRONIZED WITH RESPECT TO THE TIME OF DAY.
[RULE 1303(b) (2)-OFFSET]
6. THE TOTAL FLOW RATE OF LANDFILL GAS TO THE FLARE SHALL NOT EXCEED 8100 SCFM AT 150 BTU/SCF (OR EQUIVALENT).
[RULE 1303 (b) (2)-OFFSET]
7. THE MAXIMUM HEATING VALUE TO THE FLARE SHALL NOT EXCEED 75.6 MILLION BTU PER HOUR. THE METHANE CONTENT OF THE LANDFILL GAS SHALL BE MONITORED AND RECORDED WEEKLY. THE HEATING VALUE SHALL BE CALCULATED AND RECORDED WEEKLY BASED ON THE FOLLOWING EQUATION:

$$\text{MM BTU/HR} = [\text{LANDFILL GAS METHANE CONTENT (BTU/SCF)} \times \text{FLOW RATE (SCFM)} + \text{NATURAL GAS METHANE CONTENT (BTU/SCF)} \times \text{FLOW RATE (SCFM)}] \times 60 \text{ MIN/HR.}$$

[RULE 1303(b)(2)-OFFSET]
8. THE FLARE SHALL ONLY BE FIRED WITH LANDFILL GAS OR A BLEND OF LANDFILL GAS AND NATURAL GAS FUEL. NATURAL GAS SHALL ONLY BE USED FOR START-UP AND WHEN THE LANDFILL GAS HEATING VALUE IS NOT SUFFICIENT TO SUPPORT GOOD COMBUSTION. TO ASSIST GOOD COMBUSTION ONLY, NATURAL GAS SHALL BE BLENDED WITH LANDFILL GAS AT OR BEFORE THE FLARE INLETS.
[RULE 1303(a)(1)-BACT]
9. THIS FLARE SHALL BE USED TO COMBUST ALL LANDFILL GAS COLLECTED EXCEPT DURING EQUIPMENT UPSETS WHERE LANDFILL GAS CANNOT BE IMMEDIATELY HANDLED BY THIS FLARE. IN THESE CASES, THE LANDFILL GAS MAY BE DIRECTED TO THE STANDBY FLARE STATION.
[RULE 1303(b)(2)-OFFSET]
10. ALL LANDFILL GAS COLLECTED SHALL BE DIRECTED TO A LANDFILL GAS CONTROL SYSTEM WHICH HAS BEEN ISSUED A VALID PERMIT BY THE AQMD.
[RULE 1150.1, 1303(a)(1)-BACT]

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11. WHENEVER THE FLARE IS IN OPERATION, A TEMPERATURE OF NOT LESS THAT 1500 DEGREES FAHRENHEIT AS MEASURED BY THE TEMPERATURE INDICATOR SHALL BE MAINTAINED IN THE FLARE STACK, EXCEPT DURING PERIODS OF STARTUP AND SHUTDOWN. STARTUP IS DEFINED AS THE PERIOD FROM FLARE IGNITION TO THE TIME WHEN 1500 DEGREES FAHRENHEIT IS ACHIEVED, NOT TO EXCEED 30 MINUTES. SHUTDOWN IS THE PERIOD FROM WHEN THE GAS VALVE BEGINS TO BE SHUT AND COMPLETELY SHUTS OFF, NOT TO EXCEED 30 MINUTES. THE THERMOCOUPLE USED TO MEASURE THE TEMPERATURE SHALL BE ABOVE THE FLAME ZONE AND AT LEAST 3 FEET BELOW THE TOP OF THE FLARE SHROUD AND AT LEAST 0.6 SECONDS DOWNSTREAM OF THE BURNER.
[RULE 1150.1, 1303(a) (1)-BACT]
12. A SAMPLING PORT SHALL BE INSTALLED AT THE INLET GAS LINE TO THE FLARE.
[RULE 217]
13. A SET OF FOUR SAMPLING PORTS SHALL BE INSTALLED IN THE FLARE SHROUD AND LOCATED AT LEAST TWO FEET ABOVE THE FLAME ZONE AND AT LEAST THREE FEET BELOW THE TOP OF THE FLARE SHROUD. EACH PORT SHALL BE INSTALLED AT 90 DEGREES APART, AND SHALL CONSIST OF FOUR INCH COUPLINGS WITH PLUGS. ADEQUATE AND SAFE ACCESS TO ALL TEST PORTS SHALL BE PROVIDED.
[RULE 217]
14. THE SAMPLING PORTS SHALL BE MAINTAINED ON THE FLARE STACK. ADEQUATE AND SAFE ACCESS TO ALL SOURCE TEST PORTS SHALL BE PROVIDED BY THE APPLICANT WITHIN TWENTY FOUR (24) HOURS OF A REQUEST BY THE AQMD TO CONDUCT A TEST.
[RULE 217]
15. THE SKIN TEMPERATURE OF THE FLARE SHROUD WITHIN FOUR FEET OF ALL THE SOURCE TEST PORTS SHALL NOT EXCEED 250 DEGREES F. IF A HEAT SHIELD IS REQUIRED TO MEET THIS REQUIREMENT, ITS DESIGN SHALL BE APPROVED BY THE AQMD PRIOR TO CONSTRUCTION. THE HEAT SHIELD, IF REQUIRED TO MEET THE TEMPERATURE REQUIREMENT, SHALL BE IN PLACE WHENEVER A SOURCE TEST IS CONDUCTED BY THE AQMD.
[RULE 217]
16. PRIOR TO OPERATING THIS EQUIPMENT, A SUFFICIENT NUMBER OF SIGHT GLASS WINDOWS SHALL BE INSTALLED IN THE FLARE TO ALLOW VISUAL INSPECTION OF THE FLAME AND THERMOCOUPLE LOCATION WITHIN THE FLARE AT ALL TIMES. PERMANENT AND SAFE ACCESS SHALL BE PROVIDED FOR ALL SIGHT GLASS WINDOWS.
[RULE 1303(a)(1)-BACT, 217]
17. THE FLARE SHALL BE EQUIPPED WITH AN AUTOMATIC DAMPER SYSTEM TO REGULATE THE FLOW OF COMBUSTION AIR.
[RULE 1303(a)(1)-BACT]
18. THE FLARE SHALL BE EQUIPPED WITH A CONTINUOUS TEMPERATURE INDICATOR AND RECORDER WHICH MEASURES AND RECORDS THE GAS TEMPERATURE IN THE FLARE STACK THE TEMPERATURE INDICATOR AND RECORDER SHALL OPERATE WHENEVER THE FLARE IS IN OPERATION.
[RULE 1150.1, 1303(a) (1)-BACT]

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19. THE OPERATOR SHALL OPERATE AND MAINTAIN THIS EQUIPMENT ACCORDING TO THE FOLLOWING REQUIREMENTS:

THE EXHAUST TEMPERATURE SHALL BE MAINTAINED AT A MINIMUM OF 1,500 DEGREES FAHRENHEIT WHENEVER THE EQUIPMENT IT SERVES IS IN OPERATION.

CONTINUOUS EXHAUST TEMPERATURE MONITORING AND RECORDING SYSTEM SHALL BE PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7. SUCH A SYSTEM SHALL HAVE AN ACCURACY OF WITHIN $\pm 1\%$ OF THE TEMPERATURE BEING MONITORED AND SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS USING AN APPLICABLE AQMD OR EPA APPROVED METHOD.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN A TEMPERATURE OF LESS THAN 1,500 DEGREES FAHRENHEIT OCCURS DURING NORMAL OPERATION EXCEPT DURING STARTUPS OR SHUTDOWNS. NOT TO EXCEED 30 MINUTES. THE EXHAUST TEMPERATURE SHALL BE AVERAGED OVER A 15-MINUTE PERIOD, AND HOURLY AVERAGE SHALL BE COMPUTED FROM SUCH DATA POINTS. THE OPERATOR SHALL REVIEW THE RECORDS OF TEMPERATURE ON A DAILY BASIS TO DETERMINE IF A DEVIATION OCCURS OR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K, WHENEVER A DEVIATION OCCURS FROM 1,500 DEGREES FAHRENHEIT, THE OPERATOR SHALL TAKE IMMEDIATE CORRECTIVE ACTION, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATIONS EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN ALL COMPONENTS OF THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS. [RULE 3004(A) (4)-PERIODIC MONITORING, 40CFR PART 64]

20. THE FLARE SHALL BE EQUIPPED WITH AN AUTOMATIC PILOT RESTART SYSTEM APPROVED BY THE AQMD. THE AUTOMATIC PILOT RESTART SHALL BE CHECKED WEEKLY AND RESULTS RECORDED.

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[RULE 1303(a)(1)-BACT, 3004]

21. A FLARE FAILURE ALARM WITH AUTOMATIC BLOWER AND LANDFILL GAS SUPPLY VALVE SHUT-OFF SYSTEM, APPROVED BY THE AQMD, SHALL BE INSTALLED. THIS SYSTEM SHALL BE TESTED MONTHLY FOR PROPER OPERATION AND RESULTS RECORDED.
[RULE 1303(a)(1)-BACT]

22. AMBIENT METHANE ANALYZERS SHALL BE INSTALLED AROUND THE FLARE STATION IN THE VICINITY OF THE BLOWERS AND POSITIVE PRESSURE LANDFILL GAS PIPELINES TO MONITOR FOR LINE BREAKS AND MAJOR LEAKS. AN ALARM SYSTEM AND SUBSEQUENT BLOWER SHUTDOWN SHALL BE ACTIVATED BY ANY ONE OF THE MONITORS WHEN SPECIFIED CONCENTRATIONS ARE MEASURED. THIS SYSTEM SHALL BE TESTED MONTHLY FOR PROPER OPERATION AND RESULTS RECORDED.
[RULE 1303(a) (1)-BACT]

23. OPERATOR SHALL ANNUALLY CONDUCT EQUIPMENT PERFORMANCE TESTS IN ACCORDANCE WITH AQMD APPROVED TESTS PROTOCOL, PURSUANT TO THE SOURCE TESTING AND ANALYTICAL METHODS. WRITTEN RESULTS SHALL BE SUBMITTED TO AQMD WITHIN 45 DAYS OF THE TESTS. WRITTEN NOTICE OF THE PERFORMANCE TESTS SHALL BE PROVIDED TO THE AQMD 10 DAYS PRIOR TO TESTING SO THAT AN OBSERVER MAY BE PRESENT. THE TESTS SHALL BE CONDUCTED AT THE MAXIMUM RATED HEAT INPUT WITH THE AS FUELED MIXTURE OF LANDFILL GAS AND NATURAL GAS. THE TEST SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, A TEST OF THE INLET GAS TO THE FLARE AND THE EXHAUST OF THE FLARE FOR:

- A. METHANE
- B. TOTAL NON-METHANE ORGANICS
- C. OXIDES OF NITROGEN (EXHAUST ONLY)
- D. CARBON MONOXIDE (EXHAUST ONLY)
- E. TOTAL PARTICULATES (EXHAUST ONLY)
- F. HYDROGEN SULFIDE (INLET ONLY)
- G. C1 THROUGH C3 SULFUR COMPOUNDS (SPECIATED)
- H. CARBON DIOXIDE
- I. RULE 1150.1, TABLE 1 COMPOUNDS
- J. OXYGEN
- K. NITROGEN
- L. MOISTURE CONTENT
- M. TEMPERATURE
- N. FLOW RATE

[RULE 1303(b) (2)-OFFSET, 1401]

24. EMISSIONS RESULTING FROM THE FLARE SHALL NOT EXCEED THE FOLLOWING:

POLLUTANT	LBS/HR
ROG, AS HEXANE	1.23
NOX	1.89
SOX	3.39
CO	4.46
PM	1.15

[RULE 1303(b) (2)-OFFSET]

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25. THE OPERATION OF THIS EQUIPMENT SHALL NOT RESULT IN THE RELEASE OF LANDFILL GAS INTO THE ATMOSPHERE. ANY BREAKDOWN OR MALFUNCTION WHICH RESULTS IN EMISSION OF LANDFILL GAS SHALL BE REPORTED TO THE AQMD WITHIN ONE HOUR AFTER OCCURRENCE OR WITHIN ONE HOUR OF THE TIME THE OPERATING PERSONNEL KNEW OR REASONABLY SHOULD HAVE KNOWN OF THE OCCURRENCE. IMMEDIATE REMEDIAL MEASURES SHALL BE UNDERTAKEN TO CORRECT THE PROBLEM AND PREVENT FURTHER EMISSIONS INTO THE ATMOSPHERE.
[RULE 402, 430]
26. ALL RECORDS SHALL BE KEPT FOR A PERIOD OF AT LEAST FIVE (5) YEARS AND SHALL BE MADE AVAILABLE TO THE AQMD UPON REQUEST.
[RULE 1150.1, 303(b)(2)-OFFSET]

Emissions and Requirements:

27. NMOC: 20 PPMV OR 98 % WEIGHT REDUCTION, RULE 1150.1, 40 CFR 63 SUBPART AAAA
NOX: 0.025 LBS/MMBTU, RULE 1303(a) (1)-BACT
SOx: 150 PPMV, RULE 431.1
CO: 0.06 LBS/MMBTU, RULE 1303(a) (1)-BACT
CO: 2000 PPMV, RULE 407
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: 0.1 GR/SCF, RULE 404

BACKGROUND:

This application was submitted on August 19, 2011 for change of permit conditions to the permit to construct issued for the LFG flare A/N 483623. The applicant has filed for TV revision, A/N 533440, to include this permit. This is a Title V facility for which Draft Title V Renewal permit was issued December 30, 2011.

PROCESS DESCRIPTION:

The LFG flare is operating under PC 483623 rated at 75.6 MMBTU/hr and serves to the landfill gas collection system to control LFG emissions. Change of permit condition is to revise condition to reflect the current operation to exclude discontinued permits issued for planned energy recovery equipment (A/N 483598-LFG Microturbines, 483617-LFG Fuel Cell and 483625 associated modifications to the LFG collection system). Flare operating condition language, related to minimum temperature of 1500 Deg. F., is revised to standardize operation and min. temperature exclusion applicable during flare startup and shutdown. Also, condition is added for compliance with 40 CFR part 64 (CAM Plan). Recently, source test for the flare was conducted under approved ST Protocol- P11410 and pending final report.

EMISSIONS:

There is no net change in permitted PC emissions for the proposed change of conditions. Emissions are kept same as under PC.

RULES :

Compliance with all applicable rules and regulations is expected as there is no change in emissions for change of permit conditions.

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RECOMMENDATION:

Permit to operate with above conditions is recommended. This permit will be included under Title V permit revision, (A/N 533440) upon completion of 45-day EPA review/commenting period.

A/N 533440: TITLE V PERMIT EVALUATION (MINOR REV.)

Background:

On 02/22/2012, this application was submitted by Los Angeles County Sanitation District (LACSD) – Palos Verdes landfill facility, for Title V permit revision. The TV permit revision is required to incorporate the change of permit condition submitted for the LFG flaring system, A/N 526209 (John Zink, ZULE, 75.6 MMBTU/HR rated flare). The revision is considered minor permit revision to clarify flare operating temperature compliance during normal operation and excludes flare start-up and shutdown period, not to exceed 30 minutes for each event. No impact on emission is expected for this change of condition.

Title V Renewal Draft permit was issued December 30, 2011.

Rules Evaluation:

Compliance with applicable rules and Reg. XXX -Title V permits is expected. As there is no net increase from the change of condition for the LFG flare (A/N 526209), and it is not subject to further review of NSPS or NESHAP. Public notice is **not** required for this minor permit revision; however, it is subject to EPA 45-day review and comment period.

Conclusions & Recommendations:

Issue the revised Title V permit (Minor Revision) upon completion of 45-day EPA review and commenting period.