COMMONWEALTH OF
PUERTO RICO
Environmental Quality Board

TITLE V OPERATIONAL PERMIT
AIR QUALITY AREA
ENVIRONMENTAL QUALITY BOARD

Permit Number	PFE-TV-4953-27-0111-0001
Date of Receipt of Application	January 11, 2011
Final Issue or Effective Date	June 16, 2016
Expiration Date	June 16, 2021

In accordance with the provisions of Part VI of the Regulations for the Control of Atmospheric Pollution (RCAP) and the provisions of the Code of Federal Regulations (CFR) Title 40, Part 70 we authorize:

MUNICIPALITY OF FAJARDO LANDFILL
FAJARDO, PUERTO RICO

hereinafter the **MFL** or the **permittee**, to operate a stationary source of air pollutants emissions consisting of the units described in this permit. Until such time as this permit expires, is modified or revoked, the permittee is allowed to discharge atmospheric pollutant from those processes and activities directly related and associated with the sources of emission, in compliance with the requirements, limitations and conditions of this permit, until its expiration date or until such is modified or revoked.

The conditions of the permit are enforceable by the federal and state governments. Those requirements that are enforceable only by the state government will be identified as such in the permit. A copy of the permit shall be kept on site at the abovementioned facility at all times.

Cruz A. Matos Environmental Agencies Building
State Road 8838, El Cinco Sector, Rio Piedras, P.R. 00926
Postal Address: P.O. Box 11488, Santurce, P.R. 00910
Tel 787-767-8181, Fax 787-756-5906
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Section I - General Information

A. Facility Information

Name of the Owner:	Municipality of Fajardo
Postal Address:	P.O. Box 865 Fajardo, P.R. 00738
Facility Name:	Municipality of Fajardo Landfill
Facility Location:	PR-982, Km 4.9 Demajagua Ward Fajardo, Puerto Rico
Responsible Official:	Anibal Melendez Rivera Mayor Municipality of Fajardo
Phone No:	787-863-0005
Fax:	787-863-0555
Technical Contact:	Carlos Contreras Moreno President Landfill Technologies of Fajardo, Corp.
Postal Address:	P.O. Box 1322 Gurabo, P.R. 00778
Phone	787-273-7639
Fax	787-687-0337
SIC Primary Code:	4953

B. Process Description

The Municipality of Fajardo Landfill (**MFL**) is an active solid waste municipal landfill that commenced disposal operations in 1971 and is expected to continue operating until 2022. Approximately 166,729 tons of non-hazardous solid wastes are disposed in the **MFL** annually.

The **MFL** is located on State Road PR-982 Km 4.9 in the Demajagua Ward, Fajardo. Landfill Technologies of Fajardo Corp. administers the Municipality of Fajardo Landfill.

Solid wastes are hauled by trucks and other transport vehicles and unloaded in the **MFL** work area (disposal area). Once unloaded, excavators and compactors spread and compact the wastes. The compacted wastes are covered with soil at the close of each work day.

The decomposition of encapsulated wastes in the landfill produces gas (landfill gas). The gas consists of methane (CH_4), carbon dioxide (CO_2) and other non-methane organic compounds (NMOC). The gas generated in the **MFL** is collected through an active gas collection system routed to two enclosed flares and to a gas treatment system routed to two internal combustion engines.

The Municipality of Fajardo Landfill is subject to Title V permit requirements because it has a design capacity of more than 2.5 million megagrams and 2.5 million cubic meters, and it is a major source because it exceeds 100 tons per year of carbon monoxide (CO).

Section II - Emission Units Description

The emission units regulated under this permit are:

Emission Unit	Description	Control Equipment
EU-1	**Active Municipal Sanitary Landfill System** The landfill accepts municipal solid wastes since 1971. It has a design capacity of 4,846,378 megagrams. Accepts wastes at a rate of 166,729 tons/year. Maximum landfill gas generated: 1,466 scfm. Estimated closure year: 2022.	CD-1 and CD-2 and CD-3 Active Landfill Gas Collection System routed to two enclosed flares CD-1 and CD-2; and a Gas Treatment System routed to two internal combustion engines CD-3.
CD-1 CD-2	**Active Landfill Gas Collection System Routed to Two Enclosed Flares** Two enclosed flares. Manufacturer: Perennial Energy Model: FL-84-30-E Series: FL1-1697 • Both process a maximum of 1,426 ft^3/min (160,060 lb/day) • Heat input rate: 22.5 MMBtu/hr	-

Emission Unit	Description	Control Equipment

	• Output temperature: 1,800 °F
	• Startup fuel: Propane at a rate of 2.58 lb/hr
	• Velocity: 26.7 ft^3/sec.
	• Stack:
	  • Height = 30 – 4 ¼"'
	  • Diameter = 7' – 7"
	• Maximum operation hours: 8,760 hr/year
	• Minimum destruction efficiency for NMOC: 98%
	• Minimum Temperature.[1]
	•	

EU-2	**Internal Combustion Engine** Electric generator engine brand Yanmar. Model: 4TNV488 Engine power of 29 hp. Consumes diesel at a rate of 1.76 gallons per hour. • Sulfur content: 0.000491% per weight • Stack Height = 2.5' Diameter = 1.5" Output temperature: 1,300°F Output velocity: 25 ft/sec. Hours of operation: 4,000 hrs/yr.	None
EU-3	**Internal Combustion Engine** Electric generator engine brand Perkins. Series: 1000 Engine power of 70 hp. Consumes diesel at a rate of 3.49 gallons per hour. • Sulfur content: 0.000491% per weight • Stack Height = 2.5' Diameter = 1.5" Output temperature: 1,300°F Output velocity: 25 ft/sec. Hours of operation: 2,000 hrs/yr.	None

[1] The prevailing minimum temperature is the temperature set during the initial flare operational test or that set in the most recent test approved by the Board, as established by applicable regulations.

Emission Unit	Description	Control Equipment
EU-4/CD-3	**Gas treatment system routed to the internal combustion engine** Spark ignition internal combustion engine. Brand: Caterpillar Model: G3516 LE Engine power of 1,148 hp. Consumes treated landfill gas as main fuel. • Maximum flow: 331 scfm • Sulfur content: 2.039E-03% per weight. • Heat input rate: 10.82 MMBtu/hr Height = 22.83' Diameter = 12" Output temperature: 847°F Output velocity: 100.6 ft/sec. Hours of operation: 8,000 hrs/yr.	None
EU-5/CD-3	**Gas treatment system routed to the internal combustion engine** Spark ignition internal combustion engine. Brand: Caterpillar Model: G3520 C Engine power of 2,233 hp. Consumes treated landfill gas as main fuel. • Maximum flow: 518.58 scfm • Sulfur content: 2.039 E-03% per weight. Heat input rate: 14.2 MMBtu/hr Height = 22.83' Diameter = 12" Output temperature: 898°F Output velocity: 200.93 ft/sec. Hours of operation: 6,700 hrs/yr.	None
EU-6	**Roadway Activities** Consists of hauling non hazardous solid wastes from the landfill entrance to the open area designated for waste deposit (working area). Fugitive emissions.	Aspersion / dust suppressing agent

Section III – General Permit Conditions

1. **Sanctions and Penalties:** The permittee must comply with all terms, conditions, requirements, limitations and restrictions established in this permit. Any violation to the terms of this permit is subject to administrative, civil or criminal measures, as established in Section 16 of the Environmental Public Policy Act (Law No. 416 of September 22, 2004, as amended).

2. **Right of Entry**: As specified under Rules 103 and 603(c)(2) of the RCAP, the permittee shall allow the Board or an authorized representative, upon presentation of credentials to perform the following activities:

   a. Enter upon the permittee premises where an emission source is located or where emissions related activities are conducted, or where records must be kept under the conditions of this permit, under the RCAP, or under the Clean Air Act;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit, under the RCAP, or under the Clean Air Act;

   c. Inspect and examine any facility, equipment (including monitoring and air pollution control equipment), practices or operations (including QA/QC methods) regulated or required under this permit; as well as sampling emissions of air quality and fuels; and

   d. As authorized by the Clean Air Act and the RCAP, to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements.

3. **Sworn Statement or Affidavit:** All reports required pursuant Rule 103(D) of the RCAP (i.e., semiannual monitoring reports and annual compliance certification) should be submitted together with a sworn statement or affidavit by the Responsible Official or a duly authorized representative. Such sworn statement or affidavit shall attest to the truth, correctness and completeness of such records and reports.

4. **Data Availability:** As specified under Rule 104 of the RCAP, all emission data obtained by or submitted to the EQB, including data reported pursuant to Rule 103 of the RCAP, as well as that obtained in any other way, shall be available for public inspection and may also be made available to the public in any additional manner that the EQB may deem appropriate.

5. **Emergency Plan:** As specified under Rule 107 of the RCAP, the permittee shall have available an Emergency Plan which must be consistent with adequate safety practices, and provides for the reduction or retention of the emissions from the plant during periods

classified by the EQB as air pollution alerts, warnings or emergencies. These plans shall identify the emission sources, include the reduction to be accomplished for each source, and the means by which such reduction will be accomplished. These plans will be available for any authorized representative of the EQB at any time.

6. **Air Pollution Control Equipment:** The permittee shall comply with Rule 108 of the RCAP, as follows:

   a. All air pollution control equipment or control measures shall provide for continuous compliance with applicable rules and regulations. Such equipment or measures shall be installed, maintained, and operated according to those conditions imposed by this Title V permit, within the specified operating limitations of the manufacturer.

   b. The collected material from air pollution control equipment shall be disposed in accordance with applicable rules and regulations. The removal, manipulation, transportation, storage, treatment or disposal will be done in such or manner that shall not to produce environmental degradation, and in accordance with applicable rules and regulations.

   c. The Board may require, when deemed appropriate to safeguard the health and welfare of human beings, the installation and maintenance of additional, complete and separate air pollution control equipment of a capacity equal to the capacity of the primary control equipment. Furthermore, the Board may require that such additional air pollution control equipment be operated continuously and conjunctionally with the primary air pollution control equipment.

   d. All air pollution control equipment shall be operated at all times while the source being controlled is in operation.

   e. In the case of a shutdown of air pollution control equipment for the necessary scheduled maintenance, the intent to shutdown such equipment shall be reported to the Board at least three days prior to the planned shutdown. Such prior notice shall include, but is not limited to the following:

      1. Identification of the specific source to be taken out of service with its location and permit number.

      2. The expected length of time that the air pollution control equipment will be out of service.

      3. The nature and quantity of emissions of air pollutants likely to be permitted during the shutdown period.

4. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period.

5. The reasons why it will be impossible or impractical to shutdown the operating source during the maintenance period.

7. **Compliance Certification:** As specified under Rule 602(c)(2)(ix)(C) of the RCAP, the permittee shall submit each year a compliance certification. This certification must be submitted to both the EQB and the Environmental Protection Agency (EPA)[2] no later than April 1st, covering the previous calendar year. The compliance certification shall include, but is not limited to, the information required under Rule 603(c) of the RCAP as follows:

   a. The identification of each term or condition of the permit that is the basis of the certification; and

   b. The compliance status. Each deviation shall be identified and taken into account in the compliance certification; and

   c. A statement indicating whether the compliance was continuous or intermittent; and

   d. The methods or other means used for determining the compliance status with each term and condition, currently and over the reporting period consistent with sections (a)(3)-(5) of Rule 603 of the RCAP; and

   e. Identification of possible exceptions to compliance, any periods which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (CAM) occurred; and

   f. Such other facts as the Board may require to determine the compliance status of a source.

8. **Regulation Compliance:** As specified under Rule 115 of the RCAP, any violation to the RCAP, or to any other applicable rule or regulation, shall be grounds for the Board to suspend, modify, or revoke any relevant permit, approval, variance or other authorization issued by the Board.

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[2] The certification to the EQB shall be mailed to: Manager, Air Quality Area, P.O. Box 11488, San Juan, P.R. 00910. The certification to the EPA shall be mailed to: Chief, Enforcement and Superfund Branch, CEPD, US EPA-Region II, City View Plaza – Suite 7000, #48 Rd. 165 Km 1.2 Guaynabo, P.R. 00968-8069.

9. **Location Approval:** As specified under Rule 201 of the RCAP, nothing in this permit shall be interpreted as authorizing the location or construction of a major stationary source, or the modification of a major stationary source, or a major modification of a significant source, without obtaining first a location approval from the Board and without first demonstrating compliance with the National Ambient Air Quality Standards (NAAQS). This permit does not allow the construction of new minor sources without the required permit under Rule 203 of the RCAP.

10. **Objectionable Odors:** As specified under Rule 420 of the RCAP, the permittee shall not cause or permit emissions to the atmosphere of any matter which produces an *objectionable* odor that can be perceived in an area other than that designated for industrial purposes. If objectionable odors are detectable beyond the property perimeter, and complaints are received, the permittee shall investigate and take measures to minimize and/or eliminate the objectionable odors, if necessary. [This condition is enforceable only by the State]

11. **Permit Renewal Applications:** As established under Rule 602 (a)(1)(iv) of the RCAP, the permittee shall submit a permit renewal application applications for permit renewal shall be submitted at least 12 months prior to the date of permit expiration. A responsible official must certify all required applications consistent with paragraph (c)(3) of Rule 602 of the RCAP.

12. **Permit Duration:** As specified under Rule 603 of the RCAP, the following terms will apply during the duration of this permit:

    a. Expiration: This authorization shall have a fixed term of 5 years since the effective date. The expiration date will be automatically extended until the Board approves or denies a renewal application (Rule 605(c)(4)(ii) of the RCAP) but <u>only</u> in those cases where the permittee submits a complete renewal application at least twelve (12) months before the expiration date. [Rules 603 (a)(2), 605 (c)(2), and 605(c)(4) of the RCAP]

    b. Permit Shield: As specified under Rule 605 (c)(4)(i) of the RCAP, the permit shield may be extended until the time the permit is renewed if a timely and complete renewal application is submitted.

    c. In case that this permit is subject to any challenge by third parties, the permit shall remain in effect until the time it is revoked by a court of law with jurisdiction in the matter.

13. **Recordkeeping Requirement:** As established under Rule 603(a)(4)(ii) of the RCAP, the permittee shall retain records of all required monitoring data and support information for a period of 5 years from the date of the monitoring sample, measurement, report, or application.

14. **Semiannual Monitoring Reports/Samplings:** As established under Rule 603(a)(5)(i) of the RCAP, the permittee shall submit reports to the EQB of all required monitoring every 6 months, or more frequently if required by the Board or any other underlying applicable requirement. These reports cover two major elements. The first element is the summary of all periodic monitoring / sampling required in this permit. The second element requires that all deviations from permit conditions are clearly identified, summarized and reported to the Board. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official as established under Rule 602(c)(3) of the RCAP. The report covering the period from January through June shall be submitted no later than October 1st of the same year and the report covering the period from July through December shall be submitted no later than April 1st of the following year. Once the guidelines are developed by the Board, the permittee must use them to complete these reports.

15. **Deviations Reporting due to Emergencies:** According to Rule 603(a)(5)(ii)(a) of the RCAP, any deviation resulting from an upset (such as sudden malfunction or break-down) or emergency conditions, as defined in Rule 603(e) of the RCAP, must be reported within the next 2 working days from the time the emission limits are exceeded due to the emergency, if the permittee wishes to assert the affirmative defense authorized under Rule 603 (e) of the RCAP. If the permittee raises the emergency defense upon an enforcement action, the permittee shall demonstrate that such deviation happens due to an emergency and that the Board was adequately notified. If such emergency deviation last for more than 24 hours, the affected units may be operated until the end of the cycle or 48 hours, whichever occurs first. The Board may only extend the operation of an emission source in excess of 48 hours, if the source demonstrates to the Board's satisfaction that the National Air Quality Standards have not been exceeded and that there is no risk to the public health.

16. **Deviation Reporting (Hazardous Air Pollutants):** The source shall act as specified in its Emergency Response Plan (established in Rule 107 (C) of the RCAP), when such Plan has shown no significant impact on an area other than those that have been designated for industrial purposes or will cease operations immediately if there is a significant impact on an area other than those that have been designated for industrial purposes (state-only enforceable condition). In accordance with Rule 603(a)(5)(ii)(b) of the RCAP, the Board shall be notified within the next 24 hours if a deviation that results in the release of emissions of hazardous air pollutants for more than an hour in excess of the applicable limit occurs. For the discharge of any regulated air pollutant that continues for more than 2 hours in excess of the applicable limit, the permittee shall notify the Board within 24 hours of the deviation. The permittee shall submit to the Board, within 7 days of the deviation, a detailed written report which includes probable causes, time and duration of the deviation, remedial action taken and the steps you are following to prevent recurrence.

17. **Severability Clause:** As specified under Rule 603(a)(6) of the RCAP, the clauses in this permit are severable. In the event of a successful challenge to any portion of the permit in an administrative or judicial forum, or in the event any of its clauses is held to be invalid,

all other portions of the permit shall remain valid and effective, including those related to emission limits, terms and conditions, be they specific or general, as well as monitoring, record keeping and reporting requirements.

18. **Permit Noncompliance:** According to Rule 603(a)(7)(i) of the RCAP, the permittee must comply with all conditions of the permit. Permit noncompliance constitutes a violation of the RCAP and will be grounds for taking the appropriate enforcement action, impose sanctions, revoke, terminate, modify, and/or reissue the permit, or to deny a permit renewal application.

19. **Defense not Allowed:** As specified under Rule 603(a)(7)(ii) of the RCAP, the permittee shall not allege as a defense in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

20. **Permit Modification and Revocation:** As specified under Rule 603(a)(7)(iii) of the RCAP, the permit may be modified, revoked, reopened, reissued, or terminated for cause according to the Law of Uniform Administrative Procedures. The filing of a request by the permittee 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.

21. **Property Rights:** As specified under Rule 603(a)(7)(iv) of the RCAP, this permit does not convey any property rights of any sort, nor does it grant any exclusive privilege.

22. **Obligation to Furnish Information:** As specified under Rule 603(a)(7)(v) of the RCAP, the permittee shall furnish to the EQB, within a reasonable time, any information that the EQB 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 permittee shall also furnish to the EQB copies of documents related to this permit.

23. **Changes in Operating Scenarios:** As specified in Rule 603(a)(10) of the RCAP, the permittee shall, contemporaneously with making a change from one operating scenario to another, record in a log the scenario under which it is operating. This record shall be kept onsite at all times.

24. **Prohibition on Default Issuance:** As specified under Rule 605(d) of the RCAP, it shall never be considered that a permit has been issued by default as a result of the EQB's failure to take final action on a permit application within 18 months. The EQB's failure to issue a final permit within 18 months should be treated as a final action <u>solely</u> for the purpose of obtaining judicial review in a state court.

25. **Administrative Permit Amendments and Permit Modifications:** As specified under Rule 606 of the RCAP, the permit shall not be amended nor modified unless the permittee complies with the requirements for administrative permit amendments and permit modifications as described in the RCAP.

26. **Permit Reopening:** As specified under Rule 608(a)(1), this permit shall be reopened and revised under the following circumstances:

    a. Whenever additional applicable requirements under any law or regulation become applicable to the permittee, when the remaining permit term is of 3 or more years. Such reopening shall be completed 18 months after promulgation of said applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to Rule 605(c)(4)(i) or Rule 605(c)(4)(ii) of the RCAP.

    b. Whenever the EQB or the EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit.

    c. Whenever the EQB or the EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

27. **Changes in Name or Responsible Official:** This permit is issued to **Municipality of Fajardo Landfill.** In the event that the company and/or facility change its name, the responsible official must submit an administrative amendment to this permit to reflect the change in name. If the event that the responsible official changes, the new responsible official must submit no later than 30 days after the change, an administrative amendment including a sworn statement in which he/she accepts and promises to comply with all the conditions of this permit.

28. **Changes in Ownership**: This permit is issued to **Municipality of Fajardo Landfill.** In the event that the company and/or facility is transferred to a different owner or change operational control and the Board determines that no other change in the permit is necessary, the new responsible official must submit an administrative amendment. The administrative amendment shall include a sworn statement in which the new responsible official accepts and promises to comply with all the conditions of this permit, <u>and</u> a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee. This is not applicable if the Board determines that changes to the permit are necessary.

29. **Renovation Work/ Demolition:** The permittee shall comply with the provisions set forth in 40 CFR §61.145 and §61.150, and Rule 422 of the RCAP, and Regulations for the Processing of General Permits (General Permit for the Handling of Asbestos Containing Materials) when doing renovation or demolition activities of asbestos containing materials at the facility. The permittee is not authorized to receive asbestos containing materials in the sanitary landfill system.

30. **Risk Management Plan:** If during the effectiveness of this permit, the permittee is subject to the 40 CFR part 68, the permittee shall submit a Risk Management Plan according with the compliance schedule in the 40 CFR part 68.10. If during the effectiveness of this permit, the permittee is subject to the 40 CFR part 68, the permittee shall submit a compliance certification with the requirements of part 68 as part of the annual compliance certification required under 40 CFR part 70, including the recordkeeping and the Risk Management Plan.

31. **General Duty:** The permittee has the general obligation of identifying hazards which may result from accidental releases of any controlled substance under section 112(r) of the Clean Air Act or any other extremely hazardous substance in a process, using appropriate hazard assessment techniques, designing, maintaining, and operating a safe facility and minimizing the consequences of accidental releases if they occur as required in section 112(r)(1) of the Act and Rule 107(D) of the RCAP.

32. **Requirements for Refrigerants (Climatologic and Stratospheric Ozone Protection):**

    a. In the event that the permittee has equipment or appliances, including air conditioning units, which use Class I or II refrigerants as defined in 40 CFR part 82, subpart A, Appendices A and B, the permittee shall take the necessary measures to ensure that all maintenance, service or repair services performed are done so according to the practices, certification and personnel requirements, disposition requirements, and recycling and/or recovery equipment certification requirements specified under 40 CFR part 82, subpart F.

    b. Owners/ operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR §82.166.

    c. Service on Motor Vehicles: If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, subpart B, Servicing of Motor Vehicle Air Conditioners. The term motor vehicle as used in subpart B does not include a vehicle in which final assembly of

the vehicle has not been completed. The term MVAC as used in subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo or system used on passenger buses using HCFC-22 refrigerant.

33. **Labeling of Products Using Ozone-Depleting Substances**: The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR part 82, subpart E.

    a. All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR §82.106.

    b. The placement of the required warning statement must comply with the requirements pursuant to 40 CFR §82.108.

    c. The form of the label bearing the required warning statement must comply with the requirements pursuant to 40 CFR §82.110.

    d. No person may modify, remove, or interfere with the required warning statement except as described in 40 CFR §82.112.

34. **Roof Surface Coating:** Pursuant to Rule 424 of the RCAP, the permittee shall not cause or permit the roof surface coating by applying hot tar or any other coating material containing organic compounds without previous notification to the Board. The use of used oil or hazardous waste for roof surface coating is prohibited. This rule will not apply to activities where tar or sealing material is applied without heat and such material is asbestos-free. [State enforceable only]

35. **Storage Tanks:** The permittee shall keep records of all fuel oil storage tanks showing the dimensions of each tank and an analysis showing the capacity of each tank pursuant to the 40 CFR §60.116b. This documentation shall be readily available at any time for inspection of the Board personnel and shall be kept onsite for the life of the tank.

36. **Compliance Clause**: Under no circumstances does compliance with this permit exempt the permittee from complying with all other applicable state or federal laws, regulations, permits, administrative orders or applicable court orders

37. **Emissions Calculations**: The permittee shall submit, on or before April 1st of each year, the actual or permissible emissions calculations for the previous natural year. The emissions calculations shall be submitted on the forms prepared by the Board for this

purpose and the responsible official must certify all the information submitted as true, correct and representative of the permitted activity included in the permit.

38. **Annual Fee:** As specified under Rule 610 of the RCAP, the permittee must submit an annual payment based on the emissions calculations for each regulated pollutant. The payment will be based on their actual emissions at a rate of $37.00 per ton, unless the Board decides otherwise as permitted under Rule 610(b)(2)(iv) of the RCAP. This payment for the previous year must be made on or before June 30 of each year.

39. **New or Amended Regulation:** Whether a federal or state regulation is promulgated or amended and the facility is affected by it, the owner or operator shall comply with the requirements of the new or amended regulation.

40. **Reports:** Unless a permit condition establishes otherwise, any requirement of information submittal to the Board shall be addressed to: Manager, Air Quality Area, PO Box 11488, San Juan, P.R. 00910.

41. **Reservation of Rights:** Except as expressly provided in this Title V permit:

a. Nothing herein shall prevent Board or the EPA from taking administrative enforcement measures or seeking legal or equitable relief to enforce the terms of the Title V permits, including but not limited to the right to seek injunctive relief, and imposition of statutory penalties and/or fines.

b. Nothing herein shall be construed to limit the rights of the Board or the EPA to undertake any criminal enforcement activity against the permittee or any person.

c. Nothing herein shall be construed to limit the authority the Board or the EPA to undertake any actions in response to conditions that present an imminent and substantial endangerment to public health or welfare, or the environment

d. Nothing herein shall be construed to limit the permittee's rights to administrative hearing and judicial appeal of termination/ revocation/ disputes over modification/ denial actions in accordance with regulations and the Environmental Public Policy Act.

42. **Source Modifications without a permit revision**: According to Rule 607 of the RCAP, the permittee may perform:

(a) Source changes

(1) Permitted sources may make Section 502(b)(10) changes without requiring a permit revision, if the changes are not modifications under any provision of Title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions).

(i) For each such change, the facility must provide the Administrator and the Board with written notification in advance of the proposed changes, which shall be seven (7) days. The written notification shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The source, the Board, and EPA shall attach each such notice to their copy of the relevant permit.

(ii) The permit shield described in paragraph (d) of Rule 603 shall not apply to any change made pursuant to section (a)(1) of Rule 607.

(2) Permitted sources may trade increases and decreases in emissions in the permitted facility for the same pollutant, where the permit provides for such emissions trades without requiring a permit revision and based on the 7-day notice prescribed in section (a)(2) of Rule 607. This provision is available in those cases where the permit does not already provide for such emissions trading.

(i) Under paragraph (a)(2) of Rule 607, the written notification required shall include such information as may be required by the provision in the Puerto Rico State Implementation Plan (PR-SIP) authorizing the emissions trade, including when the proposed change will occur, a description of each such change, any change in emissions, the permit requirements with which the source will comply using the emissions trading provisions of the PR-SIP, and the pollutants emitted subject to the emissions trade. The notice shall also refer to the provisions with which the source will

comply in the PR- SIP and that provide for the emissions trade.

(ii) The permit shield described in paragraph (d) of Rule 603 shall not extend to any change made under section (a)(2) of Rule 607. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the applicable implementation plan authorizing the emissions trade.

(3) If a permit applicant requests it, the Board shall issue permits that contain terms and conditions (including all terms required under sections (a) and (c) of Rule 603 to determine compliance) allowing for the trading of emissions increases and decreases in the permitted facility solely for the purpose of complying with a federally-enforceable emissions cap. Such a cap must be established in the permit independent of otherwise applicable requirements. The permit applicant shall include in its application proposed replicable procedures and permit terms that ensure the emissions trades are quantifiable and enforceable. The Board shall not be required to include in the emissions trading provisions any emissions units for which emissions are not quantifiable or for which there are no replicable procedures to enforce the emissions trades. The permit shall also require compliance with all applicable requirements.

(i) Under section (a)(3) of Rule 607, the written notification required shall state when the change will occur and shall describe the changes in emissions that will result and how these increases and decreases in emissions will comply with the terms and conditions of the permit.

(ii) The permit shield described in paragraph (d) of Rule 603 may extend to terms and conditions that allow such increases and decreases in emissions.

(b) Off-Permit Changes. The Board may allow changes that are not addressed or prohibited by the permit and/or State Law.

(1) A permitted facility may make changes without obtaining a permit revision if such changes are not addressed or prohibited by the permit, other than those described in paragraph (c) of Rule 607.

(i) Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition.

(ii) Sources must provide contemporaneous written notice to the Board and EPA of each such change, except for changes that qualify as insignificant under paragraph (c)(1) of Rule 602. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply because of the change.

(iii) The change shall not qualify for the shield under paragraph (d) of Rule 603.

(iv) The permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

(c) A permitted facility cannot make changes without a permit revision if such changes are modifications under any provision of Title I of the Act.

43. (a) The permittee may make changes under section 502(b)(10) of the Act without requiring a permit revision if such changes:

(1) are not modifications under any provision of Title I of the Act,

(2) do not exceed the allowable emissions under the permit,

(3) do not result in the emission of any pollutant not previously emitted,

(4) do not violate any applicable requirement or contravene federally enforceable terms and permit conditions such as monitoring (including test methods), recordkeeping, reporting and compliance certification requirements,

(5) are not changes under Title I of the Act to an emission limit, a work practice or a voluntary emission cap.

(b) Rule 203 of the RCAP is required for any construction or modification of an emission source. For purposes of part II of the RCAP, a modification is defined as any physical change in, change in the method of operation or a change in type of fuel used of an existing stationary source, that would result in a net increase in that stationary source's potential to emit any air pollutant

(subject to any standard), or which results in the emission of any pollutant (subject to an standard) not previously emitted. A physical change shall not include routine maintenance, repair and the replacement of any equipment having the same capacity, equal efficiency or greater environmental benefit to be used for the same purpose.

(c) The written notification addressed in condition 42(a)(1)(i) refers to changes covered under condition 42 (a)(1). Changes not covered will be processed under the requirements of Rule 203 of the RCAP.

(d) Any emission trading as provided in condition 42(a)(2) above will not be authorized if the facility does not provide the reference to the PR-SIP provisions authorizing such emissions trading.

(e) If the permittee requests so, the Board may allow the emission trading in the facility solely for the purpose of complying with a federally-enforceable emissions cap. The application shall be based in replicable procedures and shall include permit terms that ensure the emission trades are quantifiable, replicable and enforceable.

(f) Off-permit changes will not be exempt from complying with the requirements and procedures of Rule 203 of the RCAP, if applicable.

Section IV - Allowable Emissions

A. The emissions described in the table below represent the allowable emissions at the time of the permit application and will be used solely for payment purposes.

Pollutants	Allowable Emissions (tons/year)
PM_{10}	24.48
SO_2	13.71
NO_x	44.31
CO	139.62
NMOC	32.22
VOC (combustion)	15.99
HAPs	4.27
CO_2e	68,487.35

B. According to EQB Resolution RI-06-02[3], emission calculations shall be based on the actual **MFL** emissions; although, calculations based on the allowable emissions will be accepted. If **MFL** decides to perform calculations based on allowable emission, the **MFL** shall pay the same charge per ton than as the facilities that decide to do the calculation based on actual emissions.

C. According to Rule 610(a) of the RCAP, when **MFL** requests a modification, or minor administrative change to its Title V permit, the source will only pay the charges associated with increases in emissions (if any) per ton, based on the change and not based on the total fees previously paid according to Rule 610(a) of the RCAP.

D. According to EQB Resolution R-04-04-1[4], to determine the modification and renewal charges the **MFL** shall calculate allowable emissions with factors k, L_0 y C_{NMOC} established under Sections 60.754(a)(1)(i) of 40 CFR or specific k and C_{NMOC} values as determined by sections 60.754(a)(3)(i) or 60.754(a)(4) of 40 CFR.

E. According to EQB Resolution R-12-17-5[5], those sources that must include or estimate GHG emissions are exempt from payment for Greenhouse Gases (expressed as CO_2e) in conformity with the Tailoring Rule for Title V permits until the Board issues a final determination stating the emission charges or any other charges if needed or by repeal of this Resolution R-12-17-5, whichever comes first.

Section V - Specific Permit Conditions

A. Compliance with Rule 402 of the RCAP (Open Burning) for EU-1

1. According to Rule 402(D) of the RCAP, the **MFL** shall not allow the open burning of refuse, tires or any other solid waste disposed in EU-1. In order to comply, **MFL** must prepare and obtain immediate approval of the following operating procedures, within 90 days of the effective date of this permit:

   a. A fire abatement plan to control any open burning in the property or by the sanitary landfill boundaries.

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[3] EQB Resolution – Payment procedure for Title V operation fees and renewal fees for Title V permit of March 20, 2006.

[4] EQB Resolution – Consultation to Government Board regarding annual calculation of Sanitary Landfill gas emissions to the atmosphere of February 27, 2004.

[5] EQB Resolution – Tailoring Requirements for Greenhouse Gases (GHGs) – Payment exemption of September 7, 2012.

b. A fire abatement plan must have the concurrence of the State and Municipal Fire Department.

B. Unit EU-1

1. The **MFL** shall not cause or permit the discharge of visible emissions of fugitive dust beyond the boundary line of the property on which the emissions originate [Rule 404(B) of the RCAP]

2. The permittee must perform visible daily observations during the operation of the Sanitary Landfill System (SLS) to determine compliance with the visible emission limits mentioned in condition B.1. [PFE-27-0211-0134-I-II-III-C]

3. The permittee must keep a record of the results of visible daily observations. This record must be accessible at any time within the facilities for review by EQB and EPA technical personnel. [PFE-27-0211-0134-I-II-III-C]

4. The **MFL** must use dust suppression measures, as needed, to comply with the limits mentioned in condition B.1 of this section. [PFE-27-0211-0134-I-II-III-C]

5. The **MFL** must record the daily use of dust suppression equipment for processes that are manually operated and intermittent. For example: the operation of water trucks to spray roads. This record must be accessible at any time within the facilities for review by EQB and EPA technical personnel. [PFE-27-0211-0134-I-II-III-C]

6. The **MFL** must keep appropriate and operational dust suppression equipment at the SLS at all times. [PFE-27-0211-0134-I-II-III-C]

7. The **MFL** must cover, at all times when in motion, of open bodied trucks transporting materials likely to give rise to airborne dust. [Rule 404(A)(4) of the RCAP]

8. When reasonable, the **MFL** must pave roadways and keep them in clean conditions. [Rule 404(A)(6) of the RCAP]

9. The **MFL** must promptly remove earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, by erosion by water, or by other means. [Rule 404(A)(7) of the RCAP]

10. Every area, lot or part of a piece of land intended for parking with a capacity greater than 900 square feet must be paved with concrete, asphalt, equivalent hard surface or chemically stabilization on all its accesses and internal roads where unpaved traffic adjoin paved roadways and parking areas. [Rule 404(D) of the RCAP]

11. The **MFL** must retain all required records and support information for a period of 5 years from the date of recording. [PFE-27-0211-0134-I-II-III-C]

12. The maximum design capacity of the Fajardo Sanitary Landfill System shall not exceed **4,846,378 megagrams**. [PFE-27-0211-0134-I-II-III-C]

13. This permit is granted under the specifications established in the Collection and Control System Design Plan approved on August 30, 2011. In case of any discrepancy between the Design Plan and the construction permit, the descriptions and conditions of this permit shall prevail. Any change in the footprint, initial capacity, control equipment that are not included in the approved Design Plan shall be submitted to the Board for evaluation and a review or modification of the construction permit, as applicable. [PFE-27-0211-0134-I-II-III-C]

C. **Conditions according to 40 CFR Part 60, Subpart WWW Standards of Performance for Municipal Solid Waste Landfills.**

1. **MFL** shall comply with all applicable requirements of the Standards of Performance for Municipal Solid Waste Landfill contained in 40 CFR Part 60, Subpart WWW for unit EU-1. [PFE-27-0211-0134-I-II-III-C]

2. The permittee shall install and operate a collection and control system that complies with all applicable requirements of 40 CFR, Part 60, Subpart WWW. [PFE-27-0211-0134-I-II-III-C]

3. The permittee shall submit a collection and control system design plan prepared by a professional engineer to the Environmental Protection Agency (EPA), with copy to the Environmental Quality Board (EQB) within one year of being calculated the emission rate of No Methane Organic Compounds (CONM) in 50 megagrams per year or more under 40 CFR section 60.754. [40 CFR §60.752(b)(2)(i)]

   a. The collection and control system design plan shall include any alternative to the operational standard, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of sections 60.753 through 60.758 of 40 CFR, proposed by the owner or operator. [40 CFR §60.752(b)(2)(i)(B)]

   b. The EPA shall review the information submitted under paragraphs (b)(2)(i)(A), (B) and (C) of 40 CFR Section 60.752 and either approve it, disapproved it, or request that additional information be submitted. [40 CFR §60.752(b)(2)(i)(D)]

4. The permittee shall install a collection and control system that captures the gas generated within the landfill within 30 months after the first annual report in which the emission rate

equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in section 60.757(c)(1) or (2) of 40 CFR. [40 CFR Section 60.752(b)(2)(ii)]

5. The **MFL** must route all the collected gas to a control system that complies with the following requirements:

   a. CD-1 and CD-2: The collected gas must be routed principally to the enclosed flares (CD-1 and CD-2), but the permittee may route a **maximum of 849.58 scfm of the collected gas** to the gas treatment system for subsequent use by the two internal combustion engines (CD-3 which includes EU-4 and EU-5). The enclosed combustion flares CD-1 and CD-2 must be designed and operated to reduce NMOC by 98%, or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3% oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test using the test methods specified in 40 CFR section 60.754(d). [40 CFR §60.752(b)(2)(iii)(B)]

   b. CD-3: A maximum of 849.58 scfm of the collected gas may be routed to a treatment system to process the gas before it is used by the internal combustion engines. **All emissions from any atmospheric vent from the gas treatment system, shall be subject to the requirements of paragraph (b)(2)(iii)(A) or (B) of 40 CFR §60.752.** [40 CFR §60.752(b)(2)(iii)(C)]

6. The owner or operator shall operate the collection and control device installed in accordance with the provisions of 40 CFR sections 60.753, 60.755 and 60.756. [40 CFR §60.752(b)(2)(iv)]

7. The collection and control system may be capped or removed provided that all following conditions are met: [40 CFR §60.752(b)(2)(v)]:

   a. The landfill shall be a closed landfill as defined in Section 60.751 of 40 CFR. A closure report shall be submitted to the EPA with copy to the Board as provided in section 60.757(d) of 40 CFR. [40 CFR §60.752(b)(2)(v)(A)]

   b. The collection and control system shall have been in operation a minimum of 15 years; and [40 CFR §60.752(b)(2)(v)(B)]

   c. Following the procedures specified in §60.754(b) of 40 CFR, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart. [40 CFR §60.752(b)(2)(v)(C)]

d. Submit a closure letter to the Board. [PFE-27-0211-0134-I-II-III-C]

8. Shall operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for 5 years or more if active; or 2 years or more if closed or at final grade. [40 CFR §60.753(a)]

9. The permittee shall operate the collection system with negative pressure at each wellhead except under the following conditions [40 CFR §60.753(b)]:

   (a) A fire or increase in well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in §60.757(f)(1);

   (b) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;

   (c) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the EPA.

10. Shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20% or an oxygen level less than 5%. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens. [40 CFR §60.753(c)]

    a. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by §60.752(b)(2)(i) of 40 CFR.

    b. According to 40 CFR section 60.753(c)(2), unless an alternative test method is established as allowed by section 60.752(b)(2)(i) of 40 CFR, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

       i. The span shall be set so that the regulatory limit is between 20 and 50% of the span;

       ii. A data recorder is not required;

       iii. Only two calibration gases are required, a zero and span, and ambient air may be used as the span;

iv. A calibration error check is not required;

v. The allowable sample bias, zero drift, and calibration drift are ±10 percent.

11. Operate the gas collection system so that the methane concentration is less than 500 parts per million (ppm) above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [40 CFR §60.753(d)]

12. Operate the system such that all collected gases are vented to the control system (CD-1 and CD-2) designed and operated in compliance with section 60.752(b)(2)(iii) of 40 CFR. In the event the collection and control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour. [40 CFR §60.753(e)]

13. Operate the control or treatment system (CD-1, CD-2 and/or CD-3) at all times when the collected gas is routed to the system. [40 CFR §60.753(f)]

14. According to section 60.753(g) of 40 CFR, if monitoring demonstrates that the operational requirements in sections 60.753(b), (c), or (d) of 40 CFR are not met, corrective action[6] shall be taken as specified in section 60.755(a)(3) through (5) or section 60.755(c) of 40 CFR. If corrective actions are taken as specified in section 60.755 of 40 CFR, the monitored exceedance is not a violation of the operational requirements in section 60.753(g) of 40 CFR.

15. The landfill owner or operator shall calculate the NMOC emission rate using the equations provided in section 60.754 of 40 CFR and shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

[6] Monitoring results demonstrating that operational requirements are not met shall be documented before taking corrective action. Corrective action must also be documented.

16. The owner or operator may use other methods to determine the NMOC concentration or a site-specific k as an alternative to the methods required is paragraphs (a)(3) and (a)(4) of section 60.754 of 40 CFR if the method has been approved by the EPA.{40 CFR §60.754(a)(5)]

17. After the installation of a collection and control system in compliance with section 60.755 of 40 CFR, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in section 60.752(b)(2)(v). [40 CFR §60.754(b)]

18. **Comparison of Prevention of Significant Deterioration (PSD) Levels.** The owner or operator of each Municipal SLS shall estimate the NMOC emission rate for comparison to the PSD major source and significant levels in Section 51.166 or 52.21 of 40 CFR using the Federal Environmental Protection Agency Compilation of Air Pollutants Emission Factors (AP-42) or other EPA approved measurement procedures. [40 CFR §60.754(c)]

19. As established in section 60.754(d) of 40 CFR, for the performance test required in section 60.752(b)(2)(iii)(B) of 40 CFR, Method 25, 25C, or Method 18 of appendix A of 40 CFR Part 60 must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the EPA as provided by section 60.752(b)(2)(i)(B) of 40 CFR. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutants Emission Factors (AP-42). The equation in section 60.754(d) of 40 CFR shall be used to calculate efficiency.

20. Except as provided in §60.752(b)(2)(i)(B), the specified methods in sections 60.755(a)(1) to (a)(6) of 40 CFR, shall be to determine whether the gas collection system is in compliance with section 60.752(b)(2)(ii) of 40 CFR.

    a. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1) of 40 CFR, one of the following equations shall be used. The k and L_0 kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the EPA. If k has been determined as specified in section 60.754(a)(4) of 40 CFR, the value of k determined from the test shall be used. A value of no more than 15 years shall be used

for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

i. For sites with unknown year-to-year solid waste acceptance rate the equation provided in section 60.755(a)(1)(i) of 40 CFR shall be used.

ii. For sites with known year-to-year solid waste acceptance rate the equation provided in section 60.755(a)(1)(ii) of 40 CFR shall be used.

iii. If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in §§60.755(a)(1)(i) or 60.755(a)(1)(ii) of 40 CFR. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in §§60.755(a)(1)(i) or (ii) of 40 CFR or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

b. For the purposes of determining sufficient density of gas collectors for compliance with section 60.752(b)(2)(ii)(A)(2) of 40 CFR, the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the EPA and the Board, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

c. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with section 60.752(b)(2)(ii)(A)(3) of 40 CFR, the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under Section 60.753(b) of 40 CFR. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards.

d. Owners or operators are not required to expand the system as required in section 60.755(a)(3) of 40 CFR during the first 180 days after gas collection system startup.

e. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in section 60.753(c) of 40 CFR. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards.

f. An owner or operator seeking to demonstrate compliance with section 60.752(b)(2)(ii)(A)(4) of 40 CFR through the use of a collection system not conforming to the specifications provided in section 60.759 of 40 CFR shall provide information satisfactory to the EPA with copy to the Board, as specified in section 60.752(b)(2)(i)(C) of 40 CFR demonstrating that off-site migration is being controlled.

21. For purposes of compliance with section 60.753(a) of 40 CFR, each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in section 60.752(b)(2)(i) of 40 CFR. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of 5 years or more if active; or 2 years or more if closed or at final grade.

22. According to section 60.755(c) of 40 CFR, the owner or operator shall use the following procedures for compliance with the surface methane operational standard.

a. After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or at site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in section 60.755(d) of 40 CFR.

b. 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.

c. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of 40 CFR, Part 60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

d. Any reading of 500 parts per million (ppm) or more above background at any location shall be recorded as a monitored exceedance and the actions specified below shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of Section 60.755(c)(i) through (v) of 40 CFR.

   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 calendar days of detecting the exceedance. 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.

   iii. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the action specified in the next paragraph shall be taken.

   iv. For any location where monitored methane concentration equals or exceeds 500 parts per million 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, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the EPA with copy to the Board for approval and the location need not be monitored until such action is taken.

   v. The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

23. Each owner or operator seeking to comply with the section 60.755(c) of 40 CFR, shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices, according to section 60.755(d) of 40 CFR:

a. The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of part 60 of 40 CFR, except that "methane" shall replace all references to VOC.

b. The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

c. To meet the performance evaluation requirements in section 3.1.3 of Method 21 of Appendix A of part 60 of 40 CFR, the instrument evaluation procedures of section 4.4 of Method 21 of Appendix A of Part 60 of 40 CFR shall be used.

d. The calibration procedures provided in section 4.2 of Method 21 of Appendix A of Part 60 of 40 CFR shall be followed immediately before commencing a surface monitoring survey.

24. The provisions of subpart WWW of Part 60 of 40 CFR apply at all times, except during periods of start-up, shutdown, or malfunction[7], provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

25. **Monitoring of Active Gas Collection Systems:** According to section 60.756, except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, each owner or operator seeking to comply with §60.752(b)(2)(ii)(A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurement at each wellhead and;

a. Measure the gauge pressure in the gas collection header on a monthly basis as provided in section 60.755(a)(3) of 40 CFR; and

b. Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in section 60.755(a)(5) of 40 CFR; and

c. Monitor temperature of the landfill gas on a monthly basis as provided in section 60.755(a)(5) of 40 CFR.

26. **Monitoring for the enclosed combustion chamber (CD-1 and CD-2):** According to section 60.756(b) of 40 CFR, each owner or operator seeking to comply with

[7] It refers to the existing definition of malfunction as defined in Subpart A of 40 CFR Part 60.

§60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:

a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater.

b. A device that records flow to or bypass of the control device. The owner or operator shall either:

   i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

   ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

27. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, any owner or operator seeking to install a collection and control system that does not meet the specifications in section 60.759 of 40 CFR or seeking to sample alternative parameters to those required by section 60.753(b)(2)(iii) to 60.756 of 40 CFR will provide information satisfactory to the EPA with copy to the Board describing the design and operation of the collection and control system, the operating parameters that would indicate proper performance, and appropriate sampling procedures. The EPA may specify additional sampling procedures as per section 60.752(b)(2)(i)(B) and (C) of 40 CFR.

28. An owner or operator seeking to demonstrate compliance with section 60.755(c) of 40 CFR, shall sample surface concentrations of methane according to the instrument specifications and procedures provided in section 60.755(d) of 40 CFR. Any closed sanitary landfill system that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that sanitary landfill system to quarterly monitoring.

29. Except as provided in Section 60.752(b)(2)(i)(B) of 40 CFR the owner or operator shall submit an NMOC emission rate report to the EPA with copy to the Board, initially and annually thereafter, except as provided for in section 60.757(b)(1)(ii) or (b)(3) of 40 CFR. The EPA or the Board may request such additional information as may be necessary to

verify the reported NMOC emission rate. They must submit annual reports of the NMOC emission rate thereafter.

30. According to section 60.757(b)(1) of 40 CFR, the NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in section 60.754(a) or (b) of 40 CFR, as applicable.

31. According to section 60.757(b)(1)(ii) of 40 CFR, if the estimated NMOC emission rate as reported in the annual report to the EPA and the Board is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the EPA with copy to the Board. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the EPA with copy to the Board. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

32. According to section 60.757(b)(2) of 40 CFR, the NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

33. According to section 60.757(b)(3) of 40 CFR, after the installation of a collection and control system in compliance with §60.752(b)(2), each owner or operator is exempted from the requirements of section 60.757(b)(1) and (2) of 40 CFR, during such time as the collection and control system is in operation and in compliance with sections 60.753 and 60.755 of 40 CFR.

34. Each owner or operator of a controlled landfill shall submit a closure report to the EPA with copy to the Board within 30 days of waste acceptance cessation, as specified in section 60.757(d) of 40 CFR. The EPA or the Board may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the EPA with copy to the Board, no additional wastes may be placed into the landfill without filing a notification of modification as described under section 60.7(a)(4) of 40 CFR.

35. Once the collection and control system is installed in compliance with established rules, the owner or operator will calculate the NMOC emission rate using the equations in section 60.754 of 40 CFR to determine when the system can be removed.

36. Each owner or operator of a controlled landfill shall submit an equipment removal report to the EPA with copy to the Board 30 days prior to removal or cessation of operation of control equipment CD-1, CD-2 and CD-3, according to section 60.757(e) of 40 CFR. The equipment removal report shall contain all of the following items:

    a. A copy of the closure report submitted in accordance with section 60.757(d) of 40 CFR;

    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 NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

37. According to section 60.757(e)(2) of 40 CFR, the EPA and the Board may request such additional information as may be necessary to verify that all of the conditions for removal in section 60.752(b)(2)(v) of 40 CFR have been met.

38. According to section 60.757(f) of 40 CFR, each owner or operator of a landfill seeking to comply with section 60.752(b)(2) of 40 CFR using an active collection system designed in accordance with section 60.752(b)(2)(ii) of 40 CFR shall submit to the EPA with copy to the Board annual reports of the recorded information described below. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under section 60.8 of 40 CFR. For enclosed combustion devices and flares, reportable exceedances are defined under section 60.758(c) of 40 CFR.

    a. Value and length of time for exceedance of applicable parameters monitored under section 60.756(a), (b), (c), and (d) of 40 CFR.

    b. Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under section 60.756 of 40 CFR.

c. Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

d. All periods when the collection system was not operating in excess of 5 days.

e. The location of each exceedance of the 500 parts per million methane concentration as provided in section 60.753(d) of 40 CFR and the concentration recorded at each location for which an exceedance was recorded in the previous month.

f. The date of installation and the location of each well or collection system expansion added pursuant to sections (a)(3), (b), and (c)(4) of 60.755 of 40 CFR.

39. Each owner or operator seeking to comply with section 60.752(b)(2)(iii) of 40 CFR shall include the following information with the initial performance test report required under 60.8 of 40 CFR.

a. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

b. The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

c. The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;

d. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and

e. The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

f. The provisions for the control of off-site migration.

40. All SLS that are required to meet the condition above must inform the Board of its milestones towards complying with the increments of progress within 60 days after meeting each of the increments of progress of the compliance schedule.

41. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, each owner or operator of a MSW landfill subject to the provisions of section 60.752(b) of 40 CFR shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

42. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

    a. Where an owner or operator of a municipal SLS seeks to demonstrate compliance with section 60.702(b)(2)(ii) of 40 CFR:

        i. The maximum expected gas generation flow rate as calculated in section 60.755(a)(1) of 40 CFR. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the EPA.

        ii. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in section 60.759(a)(1) of 40 CFR.

    b. If an owner or operator of a municipal SLS seeks to demonstrate compliance with section 60.752(b)(2)(iii) of 40 CFR through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

        i. The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

        ii. The percent reduction of NMOC determined as specified in section 60.752(b)(2)(iii)(B) of 40 CFR achieved by the control device.

c. Except as provided in section 60.752(b)(2)(i)(B), the owner or operator of a controlled landfill shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in section 60.756 of 40 CFR as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

d. **The following constitute exceedances** that shall be recorded and reported under section 60.757(f) of 40 CFR:

   i. For enclosed combustors (CD-1 and CD-2), **all 3-hour periods of operation during which the average combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with section 60.702(b)(2)(iii) of 40 CFR was determined.**

43. According to section 60.757(c)(2) of 40 CFR, each owner or operator shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under section 60.756 of 40 CFR.

44. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, each owner or operator shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.

    a. Each owner or operator of a municipal SLS shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under section 60.755(b) of 40 CFR.

    b. Each owner or operator of a municipal SLS shall keep readily accessible records of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in section 60.759(a)(3)(i) of 40 CFR as well as any nonproductive areas excluded from collection as provided in section 60.759(a)(3)(ii) of 40 CFR.

45. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, each owner or operator of a municipal SLS shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in section 60.753 of 40 CFR, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

46. According to section 60.759(a) of 40 CFR each owner or operator seeking to comply with section 60.752(b)(2)(i) of 40 CFR shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the EPA as provided in section 60.752(b)(2)(i)(C) and (D) of 40 CFR:

    a. The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

    b. The sufficient density of gas collection devices determined in section 60.759(a)(1) of 40 CFR shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

    c. The placement of gas collection devices determined in section 60.759(a)(1) of 40 CFR shall control all gas producing areas, except as provided below:

        i. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under section 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the EPA and the Board upon request.

        ii. Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the EPA and the Board upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire sanitary landfill. Emissions from each section shall be computed using the equation described in section 60.759(a)(3)(ii) of 40 CFR.

iii. The values for k, and C_{NMOC} determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, L_o and C_{NMOC} provided in section 60.754(a)(1) or 60.754(a)(5) of 40 CFR shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in section 60.759(a)(3)(i) of 40 CFR.

47. According to Section 60.759(b) of the RCAP, each owner or operator seeking to comply with section 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

a. The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

b. Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

c. Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one

sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

48. According to section 60.759(c) of 40 CFR, each owner or operator seeking to comply with section 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with section 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

    a. For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of section 60.759 of 40 CFR.

    b. For new collection systems, the maximum flow rate shall be in accordance with section 60.755(a)(1).

D. Conditions according to 40 CFR, Part 63, Subpart AAAA National Emission Standards for Hazardous Air Pollutants (NESHAP): Municipal Solid Waste landfills

1. The permittee shall comply with the applicable requirements of subpart WWW, in accordance with Section 63.1955(a)(1) of 40 CFR.

2. The permittee must comply with the requirements in sections 63.1960 through 63.1980 of 40 CFR and with the general provisions specified in Table 1 of 40 CFR, Subpart AAAA [40 CFR §63.1955(b)]

3. For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the facility must follow the procedures in 40 CFR 60.752(b)(2) [40 CFR §63.1955(c)]

    a. If alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State plan, these alternatives can be used to comply with the subpart AAAA of 40 CFR, **except** that all affected source must comply with the SSM (Startup, Shutdown and Malfunction) requirements in Subpart A of part 63 as specified in Table 1 of Subpart AAAA of 40 CFR.

        i. The source must submit compliance reports every 6 months as specified in section 63.1980(a) and (b) of 40 CFR, including information on all deviations that occurred during the 6-month reporting period.

ii. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour[8] monitoring block average.

b. Compliance with Subpart AAAA of 40 CFR is determined in the same way it is determined in 40 CFR part 60, subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. [40 CFR §63.1960]

c. Continuous parameter monitoring data, collected under sections 40 CFR 60.756(b)(1), (c)(1) and (d) of subpart WWW of 40 CFR, are used to demonstrate compliance with the operating conditions for control systems.

i. If a deviation occurs, the installation has failed to meet the control device operating conditions described in Subpart AAAA of 40 CFR.

4. The permittee must develop a **written** SSM plan according to the provisions in 40 CFR 63.6(e)(3). [40 CFR §63.1960]

a. A copy of the SSM plan must be maintained on site.

b. Failure to write or maintain a copy of the SSS Plan is a deviation from the requirements of subpart AAAA of 40 CFR.

i. A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) of subpart WWW are exceeded [40 CFR §63.1965(a)]

ii. A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. [40 CFR §63.1965(b)]

1. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.

[8]The averages are calculated as they are calculated in Subpart WWW of 40 CFR, **except** that the data obtained during the events listed in sections 63.1975(a), (b), (c) and (d) of 40 CFR shall not be included in any average calculated under Subpart AAAA of 40 CFR.

iii. A deviation occurs when the SSM plan is not developed or maintained on site. [40 CFR §63.1965(c)]

5. The permittee must keep records and reports as specified in 40 CFR part 60, subpart WWW, **except** that the permittee must submit the annual report described in 40 CFR 60.757(f)every **6 months**. [40 CFR §63.1980(a)]

6. The permittee must also keep records and reports as specified in the general provisions of 40 CFR, Part 60 and part 63 as shown in Table 1 of subpart AAAA of 40 CFR. [40 CFR §63.1980(b)]

E. OTHER SPECIFIC CONDITIONS

CD-1 and CD-2 Enclosed Gas Flares and CD-3, EU-4 and EU-5 Internal Combustion Engine / Gas Treatment System

1. The permittee will operate under the following scenarios:

   a. Burning a maximum of 750 cubic feet per minute in each burner, for a total capacity of 1,500 cubic feet per minute (CD-1 and CD-2). [PFE-27-0211-0134-I-II-III-C]

   b. Burning 849.58 cubic feet per minute maximum in CD-3 from the 1,500 cubic feet per minute of the flares. [PFE-27-0211-0134-I-II-III-C]

2. The permittee shall prepare and keep a monthly record of the daily amount (on a rotating monthly basis) of the collected landfill gas routed to each of the units CD-1, CD-2 and CD-3. [PFE-27-0211-0134-I-II-III-C]

3. The auxiliary fuel authorized for the flares shall be propane gas whose maximum consumption shall be no more than 15 hours per year, with maximum sulfur content of 0.00001 percent by weight. [PFE-27-0211-0134-I-II-III-C]

4. Gas flares will be operated in such a way that they shall not generate visible emissions as determined by Test Method 22 of 40 CFR, Part 60, Appendix A, except for periods no longer than 5 minutes during any consecutive 2 hour period, but in compliance with Rule 403 of the RCAP.

5. Units CD-1, CD-2 and CD-3 shall be installed, operated and maintained with the equipment according to the manufacturer's specifications such that the operational efficiency of the

unit is not affected. Manufacturer specifications must be accessible at all times in the facility for Board technical personnel review. [PFE-27-0211-0134-I-II-III-C]

6. The permittee shall keep a monthly record of maintenance provided to units CD-1, CD-2 and CD-3. The record shall be kept at the facility accessible to Board personnel or to submit it to the Board as necessary.

7. **A performance test must be implemented within 180 days** from the construction or installation of the collection and **CD-1, CD-2 and CD-3** control system and upon achievement of final compliance. [PFE-27-0211-0134-I-II-III-C]

8. According to Rule 106(C) of the RCAP, the permittee must submit to the Board at least 30 days prior to the start of the test of units CD-1 and CD-2, a detailed test protocol describing all test equipment, procedures, and quality assurance measures to be utilized. The protocol must be specific for the test, facility, operating conditions and parameters to be measured. The protocol should include, at minimum, the following:

   a. Stack diagram showing test ports, their distances from upstream and downstream disturbances, the stack diameter and planned sampling equipment and monitoring locations.

   b. A determination of the presence and degree of cyclonic flow.

   c. The proposed number or sampling traverse point,, sampling time at each point, and total sampling volume.

   d. A detailed description of all sampling, sample recovery, and analytical procedures. The entire procedure in the case of nonstandard procedures or modification should be described with justification and necessary data for backup. Options offered by the Reference Method should be selected and justified.

   e. Any special conditions for the preparation of the sampling equipment and containers to avoid sample contamination.

   f. Sample of forms to be used to record sample history, sampling conditions and equipment operating conditions.

   g. Methodology for measurement of equipment operating conditions, including production rate, fuel flow rate, process data and pollution control data, all to be recorded at a minimum of 15 minute intervals.

h. If more than one sampling train is to be used, detailed description of the relevant sequencing and logistics.

i. If Continuous Emission Monitors (CEMs) are to be used, detailed description of the operating data logging procedures.

9. According to Rule 106(D) of the RCAP, the owner or operator shall provide the Board at least 15 days of prior written notification of any test required by the Board, to afford the EQB the opportunity to have an observer present. Results of any stack test done in the absence of an EQB's approved protocol will not be accepted.

10. Two copies of the emission test reports shall be submitted by the permittee to the Board within 60 days after the performance of the emission test. The emission test report should include at a minimum, the following: [Rule 106(E) of the RCAP]

    a. A summary of emission rates, isokinetic sampling rates, operational level and any other relevant process, fuel, or control device parameters monitored during the test.

    b. All field data collected, including legible copies of field data sheets (raw data) and any transcribed or computer data sheets that may be relevant.

    c. All laboratory data, including blanks, tare weighs, calibration data, quality assurance samples, and results of the analyses.

    d. All calculations used to determine emission rates, process rates, or other factor relevant to the test results, compliance, etc.

11. According to Rule 106(F) of the RCAP, during the test, the source must be operated at its maximum rated capacity or based on representative performance of the affected facility; understanding that, after proving compliance with any applicable emission limit, the Board may restrict the operation of the source at the capacity reached during the performance tests.

12. The permittee shall characterize, on a quarterly basis, the condensate generated in vertical wells and the gas collection system in general to determine condensate composition and whether it exhibits any risk characteristics according to the RCAP, the Hazardous Solid Wastes Regulations or 40 CFR, Part 261. [PFE-27-0211-0134-I-II-III-C]

13. If there is condensate evaporation in vertical wells, the permittee calculate the fugitive emissions of Hazardous Air Pollutants as defined in the RCAP. [PFE-27-0211-0134-I-II-III-C]

Units EU-2 and EU-3 Internal Combustion Engine

14. The operation of the EU-2 internal combustion engine shall not exceed 4,000 hours per year. [PFE-27-0211-0134-I-II-III-C]

15. The operation of the EU-3 internal combustion engine shall not exceed 2,000 hours per year. [PFE-27-0211-0134-I-II-III-C]
16. Internal combustion engines (electricity generators), shall be provided a non-resettable hour meter prior to beginning engine operation to allow verification of hours of operation and fuel consumption calculation.

17. Internal combustion engines will use diesel fuel only. To authorize any other fuel the permittee must request and obtain a modification to the construction and operation permit. [PFE-27-0211-0134-I-II-III-C]

18. Fuel sulfur content may not exceed 0.000491%[9] by weight for internal combustion engines EU-2 and EU-3. [PFE-27-0211-0134-I-II-III-C]

19. The permittee shall keep a monthly record of the dates, hour meter readings and total hours of operation, monthly fuel consumption and fuel sulfur content in percent by weight, for evaluation and review by Board technical personnel. [PFE-27-0211-0134-I-II-III-C]

20. The permittee shall keep the record of the operating hours of each engine on a rotating basis including any operational startup, shutdown or malfunction. [PFE-27-0211-0134-I-II-III-C]

21. The permittee shall send to the Board a monthly report of internal combustion engines EU-2 and EU-3 and flares CD-1 and CD-2 indicating:

    a. Monthly fuel consumption;

    b. Hours of operation;

[9] This value does not exceed the limit sulfur content of 15 ppm established in 40 CFR section 80.510 (b) for nonroad diesel fuel.

c. Daily fuel sulfur content in percent by weight. These reports shall be sent to the Board's Mathematical Data Validation and Modeling Division, Air Quality Area no later than the 15th day of the month following the report month.

Compliance with 40 CFR, Part 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines EU-2 and EU-3

22. Internal combustion engines EU-2 and EU-3 are subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines of Subpart ZZZZ, Part 63, 40 CFR. The permittee shall comply with all applicable requirements of subpart ZZZZ by complying with the applicable requirements of Subpart IIII of 40 CFR, Part 60.

Compliance with 40 CFR, Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines EU-2 and EU-3

Unit EU-2 (Non-Emergency 29 hp)

23. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines for area sources contained in Subpart IIII, Part 60, Title 40 of the Code of Federal Regulations (40 CFR) for unit EU-2.

24. For Unit EU-2, the permittee must comply with the emission standards for new CI engines in section 60.4201 of 40 CFR. (Manufacturer Certification as required by paragraph (a) of Section 60.4201 of 40 CFR). [40 CFR §60.4204]

25. The date of compliance with the provisions of Subpart IIII for unit EU-2 is immediately upon startup of operations.

26. The permittee must operate and maintain the stationary CI ICE of unit EU-2 that achieve the emission standards as required in Section 60.4204 of 40 CFR over the entire life of the engine. [40 CFR §60.4206]

27. The permittee must purchase diesel for unit EU-2 that meets the requirements of 40 CFR §80.510(b) for non-road diesel fuel.

28. The permittee must comply with the import and installation deadline requirements of unit EU-2 established in section 60.4208 of 40 CFR.

29. The permittee must comply with the monitoring requirements of Section 60.4209 and those specified in Section 60.4211 of 40 CFR. [40 CFR §60.4209]

30. The permittee must comply with the applicable test requirements of section 60.4212 of 40 CFR.

31. The permittee must comply with the applicable notification, reporting and record keeping requirements of Section 60.4214 of 40 CFR.

32. The permittee shall comply with the applicable General Provisions of Section 60.1 to 63.19 which are included in Table 8 of this Subpart IIII of 40 CFR.

Unit EU-3 (Emergency Pre-2007 model year)

33. The permittee must comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines for area sources contained in Subpart IIII, Part 60, 40 CFR for unit EU-3.

34. For unit EU-3, the permittee must comply with nitrogen oxides (NOx) of 9.2 g/KW-hr (6.9 g/HP-hr) as established in Table 1 of Subpart IIII, 40 CFR. [40 CFR §60.4205]

35. The date of compliance with the provisions of Subpart IIII for unit EU-3 is immediately upon startup of operations. [PFE-27-0211-0134-I-II-III-C]

36. The permittee must operate and maintain the internal combustion engine of unit EU-3 such that they comply with the emission standards required in Section 60.4205 of 40 CFR for the life of the engine. [40 CFR §60.4206]

37. The permittee must purchase diesel for unit EU-3 that meets the requirements of 40 CFR §80.510(b) for non-road diesel fuel.

38. The permittee must comply with the deadline requirements of unit EU-3 for import and installation established in section 60.4208 of 40 CFR.

39. The permittee must comply with the monitoring requirements of section 60.4209 and those specified in Section 60.4211 of 40 CFR. [40 CFR §60.4209]

40. The permittee must comply with the applicable test requirements of section 60.4212 of 40 CFR.

41. The permittee must comply with the applicable notification, reporting and recordkeeping requirements of section 60.4214 of 40 CFR.

42. The permittee shall comply with the applicable General Provisions of Section 60.1 to 63.19 which are included in Table 8 of this Subpart IIII of 40 CFR.

Units EU-4 and EU-5 (internal combustion engines CD-3)

43. The operation of internal combustion engine EU-4 shall not exceed 8,000 hours per year. [PFE-27-0211-0134-I-II-III-C]

44. The operation of internal combustion engine EU-5 shall not exceed 6,700 hours per year. [PFE-27-0211-0134-I-II-III-C]

45. Internal combustion engines EU-4 and EU-5, shall be provided an hour meter to allow verification of hours of operation and fuel consumption calculation [PFE-27-0211-0134-I-II-III-C]

46. Internal combustion engines EU-4 and EU-5 can only use landfill gas collected and treated in the treatment system as fuel. To authorize any other fuel, the permittee shall request and obtain a modification of the construction permit. [PFE-27-0211-0134-I-II-III-C]

47. Fuel sulfur content in percent by weight may not exceed that listed in Section II of this permit for internal combustion engines EU-4 and EU-5. [PFE-27-0211-0134-I-II-III-C]

48. The permittee shall keep a monthly record of the dates, hour meter readings and total hours of operation, monthly fuel consumption and fuel sulfur content in percent by weight, for evaluation and review by Board technical personnel. [PFE-27-0211-0134-I-II-III-C]

49. The permittee shall not allow the venting of raw gas to the atmosphere while this equipment is in operation. [PFE-27-0211-0134-I-II-III-C]

50. The permittee shall install and maintain a safety valve against automatic failures in each internal combustion engine. The valve must stop the flow of gas if there is a failure in the internal combustion engine. [PFE-27-0211-0134-I-II-III-C]

51. The permittee must keep record of the following on a monthly rolling basis: [PFE-27-0211-0134-I-II-III-C]

a. The hours of operation of each engine including any startup, shutdown or malfunction of the operation of the facilities.

b. The total gas flowing to the gas treatment system and to each internal combustion engine.

c. Maximum total power generated in (kw-hrs) for each internal combustion engine.

52. As part of the gas treatment system, the landfill gas must be filtered, dewatered and compressed prior to being used in any internal combustion engine: [PFE-27-0211-0134-I-II-III-C]

a. The permittee shall install a dry filter or similar device. The filter shall be used to remove the particulate material generated in the gas currents before the combustion process begins. The permittee must make sure to comply with the minimum particulate matter removal of 10 microns (PM-10).

b. The permittee shall install a cooling system (using chillers or other dehydration equipment) to maintain the water levels in the gas and thus prevent the degradation of the combustion process. This system must also reduce the landfill gas water condensation point at least 20 degrees Fahrenheit with a gas dewatering and compression process (through the use of blowers or other similar equipment).

c. The permittee shall install, maintain and operate the gas treatment system according to manufacturer specification and install, operate and maintain:

i. A meter to read the drop in pressure through the filtration system.

ii. A device to measure the difference in temperature through the gas dewatering process.

53. The permittee shall not exceed the 20% six-minute average opacity limit for each internal combustion engine. However, it may emit visible gas emissions with opacity of up to 60% for a period of no more than four (4) minutes in any thirty (30) minute interval. [Rule 403(A) of the RCAP]

54. The permittee shall hire an independent opacity reader, certified by an EPA accredited school or by the Board, to read the opacity of the stack of each internal combustion engine no later than 180 days after the initial startup of the corresponding engine. The opacity reader shall use Method 9 described in Appendix A of 40 CFR, Part 60. The engine must be in operation at the time of the opacity reading. [PFE-07-0304-0336-I-II-III-C]
55. The permittee shall submit to the Board at least thirty (30) days in advance of the initial opacity reading a copy of the format to be used to record the visible emission readings. [PFE-27-0211-0134-I-II-III-C]

56. The permittee shall notify the Board in writing fifteen (15) days prior to the initial sampling under Method 9 to allow the Board an opportunity to have an observer present. [Rule 106(D) of the RCAP]

57. The permittee shall submit two (2) copies of the report of the results of the initial sampling under Method 9 within 60 days of completing the tests. This report shall include the information required by Rule 106(E) of the RCAP.

58. The permittee shall send a monthly report to the Board regarding every EU-4 and EU-5 internal combustion engine indicating:

    a. Monthly fuel consumption.

    b. Hours of operation.

    c. Daily fuel sulfur content in percent by weight. These reports shall be sent to the Board's Mathematical Data Validation and Modeling Division, Air Quality Area no later than the 15th day of the month following the report month.

Compliance with 40 CFR, Part 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines EU-4 and EU-5

59. Internal combustion engines EU-4 and EU-5 are subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines of Subpart ZZZZ, Part 63, 40 CFR. The permittee shall comply with all applicable requirements of subpart ZZZZ by complying with the applicable requirements of Subpart JJJJ of 40 CFR, Part 60.

Compliance with 40 CFR, Part 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines EU-4 and EU-5

60. The permittee must comply with the emission limits established in Table 1 of 40 CFR, Part 60 Subpart JJJJ for the following pollutants: nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic compounds (VOC,). The emission limits are established in the table below:

Type of Engine and Fuel	Maximum Power	Manufacturer Date	Emission Limit					
			g/hp-hr			ppmv at 15%O_2		
			NOx	CO	VOC	NOx	CO	VOC
Landfill/ Digester gas lean burn	500≥hp≤ 1,350	7/1/2010	2.0	5.0	1.0	150	610	80

61. The permittee must comply with the emission standards specificed in Section 60.4233(e) of 40 CFR, showing compliance with the requirements established in Section 60.4243(b)(2) of 40 CFR, Subpart JJJJ for non-certified engines. [40 CFR §60.4243(b)(2)]

62. The permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §60.4243(b)(2)(ii)]

63. The permittee must conduct an **initial performance test** to demonstrate compliance with the emission standards established in condition **59** for pollutants CO, NOx and VOC. For each internal combustion engine the permittee must conduct an initial performance test within 60 days from achievement of the allowed capacity but no later than 180 days after the initial startup of each engine. **Subsequently it will conduct performance tests every 8,760 hours or every 3 years,** whichever is first, to show compliance with the emission standards established in condition **59**. [40 CFR §60.4243(b)(2)(ii) and 40 CFR §60.8(a)]

64. The permittee shall submit to the Board at least 30 days prior to the start of each performance test, a detailed test protocol describing all test equipment, procedures, and

quality assurance measures to be utilized. The protocol must be specific for the test, facility, operating conditions and parameters to be measured. The protocol should include, at minimum, the following:

a. Stack diagram showing test ports, their distances from upstream and downstream disturbances, the stack diameter and planned sampling equipment and monitoring locations.

b. A determination of the presence and degree of cyclonic flow.

c. Total sampling volume, the number of transverse points, and sampling time at each point.

d. A detailed description of all sampling, sample recovery, and analytical procedures. In the case of nonstandard procedures or modification a justification and necessary backup data must be included. Options of the Reference Method should be selected and justified.

e. Any special conditions for the preparation of the sampling equipment and containers to avoid sample contamination.

f. A copy of the forms to be used to record sample history, sampling conditions and equipment operating conditions.

g. Methodology for measurement of equipment operating conditions, including production rate, fuel flow rate, process data and control equipment data, all to be recorded at a minimum of 15 minute intervals.

h. If more than one sampling train is to be used, detailed description of the relevant sequencing and logistics.

i. If continuous emission monitors (CEMs) are to be used, detailed description of the operating data logging procedures.

65. The permittee shall provide the Board at least 15 days of prior written notification of any performance test to afford the EQB the opportunity to have an observer present. Results of any stack test done in the absence of an EQB approved protocol will not be accepted.

66. Two copies of the emission test reports shall be submitted to the Board within 60 days after the performance of the emission test. The emission test report shall include, but will not be limited to, the following:

    a. A summary of emission rates, isokinetic sampling rates, operational level and any other relevant process, fuel, or control device parameters monitored during the test.

    b. All field data collected, including legible copies of field data sheets (raw data) and any transcribed computer data that may be relevant.

    c. All laboratory data including control samples (blanks), tare weighs calibration data, quality assurance samples, and results of the analyses.

    d. All calculations used to determine emission rates, process rates, and any other data relevant to the test results, compliance, etc.

67. The permittee must conduct the performance tests within 10 percent of 100 percent of the peak load (or the highest achivable) and according to the requirements of 40 CFR §60.8 and under the specific conditions established in Table 2 of 40 CFR, Part 60 Subpart JJJJ. [40 CFR §60.4244(a)]

68. The permittee shall not conduct performance tests during startup, shutdown or malfunction periods as specified in 40 CFR §60.8(c). If the engine being tested is not operational, it must not initiate operations only to conduct the test; however, the performance test must be conducted immediately upon engine startup. [40 CFR §60.4244(c)]

69. The permittee shall conduct three separate runs of each performance test required in 40 CFR §60.4244(c), as specified in 40 CFR§60.8(f). Each run must be conducted within 10 per cent of 100 percent of peak load (or the highest achievable) and will last at least one hour. [40 CFR §60.4244(c)]

70. The permittee must demonstrate compliance with the emission limits as per 40 CFR §60.4244 as follows:

    a. To determine compliance with the NOx emission limit, the permittee will convert the NOx concentration at engine output using equation 1 of 40 CFR §60.4244 (d).

    b. To determine compliance with the CO, emission limit, the permittee will convert the CO concentration at engine output using equation 2 of 40 CFR §60.4244 (e).

c. For purposes of this supart, formaldehyed emissions shall not be included as VOC emissions. To determine compliance with the VOC emission limit, the permittee shall convert the VOC concentration at engine output using equation 3 of 40 CFR §60.4244 (f).

d. The permittee may choose to measure VOC emissions using Method 18 of 40 CFR Part 60, Appendix A, or Method 320 of 40 CFR Part 63, Appendix A following the methodology and equations established in 40 CFR §60.4244(g).

71. The permittee shall keep records of the following:

a. All notification submitted to comply with 40 CFR Part 60 Subpart JJJJ and all documents supporting any notification. [40 CFR §60.4245 (a)(1)]

b. Maintenance provided to engines. [40 CFR §60.4245(a)(2)]

c. If the engine is not certified, or is certified but will operate in a way that is not certified and subject to 40 CFR §60.4243(a)(2), the permittee must maintain documentation showing that the engine meets emission standards. [40 CFR §60.4245(a)(4)]

72. A permittee that does not have a manufacturer certification for an engine that meets with emission standards of 40 CFR §60.4231, must submit an initial notification (with postmak no later than 30 days after the date of construction) as required in 40 CFR §60.7(a)(1). The notification must include the following:

a. Name and address of the owner or operator.

b. Address of the affected source.

c. Information about the engine including: construction, model, generator family, serial number, model year, maximum engine capacity and engine displacement.

d. Emission control equipment.

e. Fuel used.

73. In addition to the specific conditions described in this permit, the permittee must meet the requirements established in 40 CFR Part 60 Subpart A – General Provisions as specified in Table 3 of 40 CFR Part 60 Subpart JJJJ. [40 CFR §60.4246]

74. **Visible Emission Limits for Units EU-2, EU-3, EU-4 and EU-5:**

a. The permittee shall not exceed the 20% six-minute average opacity limit for each internal combustion engine. However, according to Rule 403(A) of the RCAP it may emit visible gas emissions with opacity of up to 60% for a period of no more than four (4) minutes in any thirty (30) minute interval.

b. The permittee will hire an independent opacity reader, certified by an EPA accredited school to read the opacity of the stack or unit during the first year of the permit using Method 9 described in Appendix A of 40 CFR, Part 60. The device must be in operation at the time of the opacity reading.

c. The permittee must submit to the Board at least thirty (30) days in advance of the initial opacity reading a copy of the format to be used to record the visible emission readings.

d. The permittee shall notify the Board in writing 15 days prior to the initial sampling under Method 9 to afford the Board an opportunity to have an observer present. [Rule 106(D) of the RCAP]

e. The permittee shall submit two copies of the report of the results of the initial sampling under Method 9 within 60 days of completing the tests. This report shall include the information required by Rule 106(E) of the RCAP. Subsequent reading requirements shall be submitted in the reading summary that will be filed with the semiannual report required in this permit.

f. The Board reserves the right to require additional readings of visible emissions in order to show compliance with the opacity limit.

Unit EU-6 – Roadway Activities

75. Activities on EU-6 roadways of the **MFL** including waste hauling and disposition are limited to an operation of 12-hours per day and 5.7 days per week. The velocity of hauling vehicles in unpaved roads shall not exceed 15.5 miles per hour [Accumulative increase; calculation of emissions]. [PFE-27-0211-0134-I-II-III-C]

76. The permittee shall not cause or permit visible emissions of fugitive dust beyond the property boundary of the property on which the emissions originate. [Rule 404(B) of the RCAP]

77. The **MFL** must perform visible daily observations during the operation of the Landfill to determine compliance with the visible emission limits mentioned in condition 2 of this section. [PFE-27-0211-0134-I-II-III-C]

78. The permittee must keep a record of the results of visible daily observations. This record must be accessible at any time within the facilities for review by EQB and EPA technical personnel. [PFE-27-0211-0134-I-II-III-C]

79. The **MFL** must apply asphalt, water, appropriate chemical compounds or will use vegetation on dirt roads, or roads under construction, materials, load and other surfaces that are likely to become airborne dust. [Rule 404(A)(2) of the RCAP]

80. The permittee must use dust suppression measures, as needed, to comply with the limits mentioned in condition 2 of this section. [PFE-27-0211-0134-I-II-III-C]

81. The **MFL** must record the daily use of dust suppression equipment for processes that are manually operated and intermittent. For example: the operation of water trucks to spray roads. This record must be accessible at any time within the facilities for review by EQB and EPA technical personnel. [PFE-27-0211-0134-I-II-III-C]

82. The permittee must keep appropriate and operational dust suppression equipment at the SLS at all times which must be in good operating conditions and ready to operate whenever the SLS is in operation. [PFE-27-0211-0134-I-II-III-C]

83. The **MFL** must cover, at all times when in motion, open bodied trucks transporting materials likely to give rise to airborne dust. [Rule 404(A)(4) of the RCAP]

84. When reasonable, the **MFL** must pave roadways and their maintenance in a clean condition. [Rule 404(A)(6) of the RCAP]

85. The permittee must promptly remove earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, by erosion by water, or by other means. [Rule 404(A)(7) of the RCAP]

86. Every area, lot or part of a piece of land intended for parking with a capacity greater than 900 square feet must be paved with concrete, asphalt, equivalent hard surface or chemical stabilization on all its access and internal roads where unpaved traffic adjoin paved roadways and parking areas. [Rule 404(D) of the RCAP]

87. The **MFL** must retain records of all required monitoring data and support information for a period of 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit [Rule 603(a)(4)(ii) of the RCAP]

88. If in the future it should become necessary to add internal combustion engines as landfill gas control system, the permittee must request and obtain approval of a new environmental document that evaluates the total emissions of the engines to be proposed.

89. The permittee must comply with all the monitoring, record maintenance and reporting requirements of Table 1 of this permit.

Table 1 - Monitoring, Maintenance of Records and Reports	
Continuous Monitoring	Flares should have a constant measurement of flame presence and gas flow towards the control equipment.
Monthly Monitoring	The permittee must: 1. Measure the gauge pressure in the gas collection header. 2. Measure nitrogen or oxygen content in the landfill gas, and 3. Measure the temperature of the landfill gas.
Quarterly Monitoring	Methane concentrations in the surface using Method 21 of the EPA.
Maintenance of Records	The permittee shall have readily accessible in the facility: ▪ Records of the maximum design capacity ▪ Amount of wastes at the site ▪ Performance/compliance tests ▪ Operation parameters/equipment exceedance. ▪ Waste acceptance rate every year, for a period of at least 5 years ▪ Records of the manufacturer's specifications of the equipment shall be maintained until the Gas Control System is removed. ▪ A plot map showing all existing and planned collection wells, it must be maintained for the life of the Gas Control System. ▪ The date and location of any newly installed well. The documentation regarding the nature, quantity, location and date of the disposal of any non-degradable waste excluded from the Gas Control System shall be maintained.

Table 1 - Monitoring, Maintenance of Records and Reports	
Reports	The reports shall be submitted to the EQB and the EPA. The annual report must include all the information recorded according to 40 CFR §60.757(f)(1) through (f)(6).
	When a performance test is required, it must be submitted with the annual report that shall contain the information listed in 40 CFR §60.757(g)(1) through (g)(6).
	An equipment removal report shall be submitted to EPA 30 days prior to removal or cessation of any control equipment and it must contain the information listed in 40 CFR §60.757(e)(1)(i) through (e)(1)(iii).

Section VI - Insignificant Emission Units

The following activities shall be considered insignificant if the **MFL** meets the descriptions below.

Emission Source Identification	Units	Description (Exemption Basis)
Crusher	1	Appendix B.3.iii. of the RCAP
External maintenance activities of facility property including grass.	2	Appendix B.3.ii.(I) of the RCAP
Air conditioners	4	Rule 206(B)(1) of the RCAP
Refrigeration system	2	Rule 206(B)(1) of the RCAP
Activities in maintenance workshops such as soldering equipment.	1	Appendix B.3.ii.(E) of the RCAP
Water tanks (2,000 gallons and 1,000 gallons)	2	Appendix B.3.iii of the RCAP
Tank truck for new oil	5	Appendix B.3.iii (N) of the RCAP
Pickups	3	Appendix B.3.iii of the RCAP
Air compresors	3	Appendix B.3.xxiii of the RCAP
Tank trucks for diesel storage (500 gallons)	1	Appendix B.3.ii (N) of the RCAP
Used oil drums (55 gallons)	4	Appendix B.3.ii (N) of the RCAP

Section VII - Permit Shield

A. According to Rule 603(D) of the RCAP, compliance with the conditions of the permit shall be considered compliance with any applicable requirement at the date of issuance, provided that the requirement is included and specifically identified in the permit.

(1) Non Applicable Requirements

Non Applicable Requirements	Regulation	Reason for Inapplicability
Emission Guidelines for municipal sanitary landfill system emissions.	Part VII of the Regulations for the Control of Atmospheric Pollution.	Is a modified facility. It is affected by 40 CFR Part 60 Subpart WWW.
Particulate matter emission limits.	Rule 406 of the Regulations for the Control of Atmospheric Pollution.	Not applicable to EU-2, EU-3, EU-4 and EU-5 because they do not comply with the Fuel Burning Equipment of Rule 102 of the RCAP because they do not produce power by indirect heat transfer.
Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	40 CFR Part 60 Subpart IIII	This Subpart does not apply to the engines of units EU-4 and EU-5 since these are spark ignition engines and not compression ignition engines.
Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	40 CFR Part 60 Subpart JJJJ	Not applicable to EU-2 and EU-3 because they are not spark ignition internal combustion engines, these engines are ignited by compression.

Section VIII - Permit Approval

Pursuant to the powers granted to the Environmental Quality Board by the Environmental Public Policy Act, Public Law Number 416 of September 22 of 2004, as a mended, and after verifying the administrative file and compliance with the Uniform Administrative Procedures Act, Public Law Number 170 of August 12, 1988, as amended, the US Clean Air Act, the Puerto Rico Environmental Public Policy Act and the Regulations for the Control of Atmospheric Pollution, the Environmental Quality Board approves the permit subject to the terms and conditions stated therein.

In San Juan, Puerto Rico, June 6, 2016.

ENVIRONMENTAL QUALITY BOARD

Suzette M. Meléndez Colón
Vice President

Rebeca Acosta Pérez
Associate Member

Weldin F. Ortiz Franco
President

APPENDIX

Appendix I Definitions and Abbreviations

A. Definitions

1. Law – Federal Clean Air Act, as amended, 42 U.S.C. 7401, et seq.

2. Responsible Official – See definition of Responsible Official in the Environmental Quality Board Regulations for the Control of Atmospheric Pollution (1995).

3. Regulations – Regulations for the Control of Atmospheric Pollution of the Environmental Quality Board.

4. Title V – Title V of the U.S. Clean Air Act (42 U.S.C. 7661)

B. Abbreviations

AP-42	Compilation of Air Pollutant Emission Factors
Btu	British Thermal Unit
C_{NMOC}	Non Methane Organic Compounds Concentration
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
NMOC	Non Methane Organic Compounds
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
GHG	Greenhouse Gases
HAP	Hazardous Atmospheric Pollutants

EQB	Puerto Rico Environmental Quality Board
k	Methane generation rate constant
Mg	Megagrams
MMBtu	Million Btu
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NAAQS	National Ambient Air Quality Standards
NSPS	New Source Performance Standards
NO_X	Nitrogen Oxides
NMHC	Non Methane Hydrocarbons
Pb	Lead
PM	Particulate matter
PM_{10}	Particulate matter with aerodynamic mass diameter equal to or less than ten (10) microns.
PSD	Prevention of Significant Deterioration
RCAP	Regulation for the Control of Atmospheric Pollution
RMP	Risk Management Plan
SIC	Standard Industrial Classification
scfm	Standard cubic feet per meter
SO_x	Sulfur oxides

SO_2	Sulfur dioxide
MFL	Fajardo Municipal Landfill
VOC	Volatile Organic Compounds

COMMONWEALTH OF
PUERTO RICO
Environmental Quality Board

STATEMENT OF BASIS – TITLE V PERMIT
MUNICIPALITY OF FAJARDO LANDFILL
PFE-TV-4953-27-0111-0001

The Environmental Quality Board (EQB) is issuing the Title V permit pursuant to Title 40 of the Code of Federal Regulations (CFR), Part 70 and Part VI of the Regulations for the Control of Atmospheric Pollution (RCAP) for the **Municipality of Fajardo Landfill (MAL).** The facility is located on State Road PR-982, Km. 4.9, Demajagua Ward, Fajardo, Puerto Rico. The EQB received an application for Title V permit on January 11, 2011, which was amended several times.

The **Municipality of Fajardo Landfill** is an active non-hazardous solid wastes municipal landfill. The MAL is operating since 1971 and it is estimated to reach its maximum capacity by 2022. Landfill Technologies of Fajardo Corp. manages of Fajardo Sanitary Landfill System (SLS).

Solid wastes are hauled by trucks and other transport vehicles and deposited in the landfill work area (disposal area). Once unloaded, excavators and compactors spread and compact the wastes. They are covered with dirt at the close of each work day. The decomposition of encapsulated wastes in the municipal solid wastes landfill produces gas (landfill gas). The gas consists of methane (CH_4), carbon dioxide (CO_2) and other non-methane organic compounds (NMOC). The gas generated in the MFL is collected through an active gas collection system routed to two enclosed flares and subsequently to a gas treatment system routed to two internal combustion engines.

The Municipality of Fajardo Landfill is subject to Title V permit requirements because it has a design capacity of more than 2.5 million megagrams and 2.5 million cubic meters, and because it is a major source because it exceeds 100 tons/year of carbon monoxide (CO) The facility is a minor source of greenhouse gases (GHGs) expressed as carbon dioxide equivalent (CO_2e). The landfill is subject to the applicable requirements of Title 40 of the Code of Federal Regulations, Part 60, Subpart WWW, New Source Performance Standards (NSPS) for municipal solid waste landfills; and Part 63, Subpart AAAA, National Emission Standards for Hazardous Air Pollutants (NESHAP) for municipal solid waste landfills.

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EQB
Environmental Quality Board
Commonwealth of Puerto Rico

Emission Units

The Emission Units section lists the significant emission units, the related control equipment, if any, and the type of fuel. This section provides a general description of the facility. The emission units are the following:

EU-1: Municipal Sanitary Landfill System. The landfill accepts only non-hazardous municipal solid wastes since 1971. The average annual acceptance rate is 166,729 tons per year. It has a maximum design capacity of 4,846,378 megagrams. Control equipment: Two enclosed flares (CD-1 and CD-2) and a gas treatment system routed subsequently to two internal combustion engines (CD-3).

CD-1 and CD-2: Active Landfill Gas Collection and Control System. The landfill gas collected will be routed to two enclosed flares both of which process a maximum of 1,500 scfm with heat input of 22.5 MMBtu/hr each. This is the control used to burn the landfill gas at a ratio of 85,560 cubic feet per hour. Propane is the auxiliary fuel used at a rate of 2.58 pounds per hour with maximum sulfur content of 1×10^{-6} % per weight. The initial performance test of the landfill gas collection and control system was performed on July 23 and 24, 2013, to show 98% NCOM destruction efficiency.

EU-2: Internal combustion engine for electricity generator. It has a 29 hp (22 kW) compression ignition internal combustion engine. It consumes diesel at a rate of 1.76 gallons per hour. It is authorized to operate 4,000 hours annually.

EU-3: Internal combustion engine for electricity generator. It has a 70 hp (52 kW) compression ignition internal combustion engine. It consumes diesel at a rate of 3.49 gallons per hour. It is authorized to operate 2,000 hours annually.

EU-4/CD-3: Internal combustion engine for electricity generator / Gas treatment system. It has a 1,148 hp spark ignition internal combustion engine. It uses treated landfill gas as fuel. Maximum flow is 331 scfm and heat input is 10.82 MMBtu/hr. It is authorized to operate 8,000 hours annually.

EU-5/CD-3: Internal combustion engine for electricity generator / Gas treatment system. It has a 2,233 hp spark ignition internal combustion engine. It uses treated landfill gas as fuel. Maximum flow is 518.58 scfm and heat input is 14.2 MMBtu/hr. It is authorized to operate 6,700 hours annually.

EU-6: Roadway activities. Consists of hauling loads over paved and unpaved roads while generating fugitive dusts emissions. Water aspersion is used to control fugitive dust emissions.

Allowable Emissions

The emissions described in the table below represent the allowable emissions at the time of the permit application and will be used only for payment purposes. According to Rule 610(a) of the RCAP, when the MFL applies for a modification, administrative change or minor modification of its Title V permit, the source will pay only those charges related to any emission increase (if any) per tonnage, based on the change and not based on the total fees paid previously according to Rule 610(a) of the RCAP.

Pollutants	Allowable Emissions (tons/year)
PM_{10}	24.68
SO_2	13.71
NO_X	44.31
CO	139.62
NMOC	33.22
VOC (combustion)	15.99
HAPs	4.27
CO_2e	68,487.35

According to EQB Resolution RI-06-02[1], emission calculations will be based on actual **MFL** emissions; however, calculations based on the emissions allowable for the facilities will be accepted. If the **MFL** decides to use the allowable emission for their calculations, the **MFL** will pay the same charge per ton as the facility that decides to make the calculation based on the actual emissions. Also, according to EQB Resolution R-04-04-1[2], to determine the modification and renovation fees, the **MFL** must calculate the emission with factors k, l_o and C_{NMOC} determined in Sections 60.754(a)(1)(i) of 40 CFR or the specific values of k, l_o and C_{NMOC} as determined in Section 60.754(a)(3)(1) and 60.754(a)(4) of 40 CFR.

According to EQB Resolution R-12-17-5[3] those sources that must include or estimate GHGs emission are exempt for payment for Greenhouse Gases (expressed as CO_{2e}) in conformity with the Tailoring Rule for Title V permits until the Board issues a final determination stating the emission charges or any other charges if needed or by revocation of this Resolution R-12-17-5, whichever comes first.

[1]EQB Resolution – Payment procedure for Title V operation fees and renewal fees for Title V permit of March 20, 2006.
[2]EQB Resolution – Consultation with Government Board regarding annual calculation of Sanitary Landfill gas emissions to the atmosphere of February 27, 2004.
[3]EQB Resolution – Tailoring Requirements for Greenhouse Gases (GHGs) – Payment exemption of September 7, 2012

Applicable Requirements

New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills: 40 CFR, Part 60, Subpart WWW.

This emission source is subject to performance standards of Subpart WWW because it was modified after May 30, 1991. The facilities that are subject to this subpart must install emissions controls if NMOC emissions are greater than or equal to 50 Mg per year. Also this part requires effective capture of the generated gas, minimize the underground gas migration outside the landfill and direct the collected gas to the enclosed flares (CD-1 and CD-2) that will be operated to reduce the NMOC by 98% by weight or to the gas treatment system to burn in the two engines (CD-3).

National Emission Standards for Hazardous Air Pollutants (NESHAP): Municipal Solid Waste landfills - 40 CFR, Part 63, Subpart AAAA.

This subpart applies to area sources subject to the applicability requirements of 40 CFR, Part 60, Subpart WWW, which have a design capacity equal to or greater than 2.5 million cubic meters (m^3) and non-controlled NMOC emission of 50 Mg/year or more. The control technologies chosen by the EPA are the same as those in Subpart WWW of 40 CFR, Part 60, therefore the MACT does not impose additional control requirements. The NESHAP imposes some additional requirements to determine compliance and reports that are necessary under section 112 of the Clean Air Act. This includes startup, shutdown, and malfunctions (SSM) provisions, the use of continuous parameter monitoring data to determine compliance with the operating conditions requirements, and reporting deviations every 6 months instead of annually.

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines - 40 CRF Part 63 Subpart ZZZZ

This subpart applies to any existing stationary reciprocal internal combustion engine, new or reconstructed, located in area sources or major sources of hazardous air pollutants. The MFL is a minor source of hazardous air pollutants. The engines of units EU-2 and EU-3 and the engines of units EU-4/CD-3 and EU-5/CD-3 are considered new, and therefore compliance with this Subpart is demonstrated by complying with the applicable requirements of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines - 40 CFR Part 60 Subpart IIII or the Standards of Performance for Stationary Spark Ignition Internal Combustion Engine - 40 CFR Part 60 Subpart JJJJ.

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines - 40 CRF Part 60 Subpart IIII

This subpart applies to stationary compression ignition internal combustion engines ordered after July 11, 2005, and manufactured after April 1st, 2006. This subpart applies to EU-2 unit engines (Non-Emergency) EU-3 unit engines (Emergency Pre-2007 model year). This standard

establishes emission limits or manufacturer certification requirements for several criteria pollutants. In additional, they must comply with the requirements of 40 CFR Part 60, Subpart A – General Provisions, as applicable.

Standards of Performance for Stationary Spark Ignition Internal Combustion Engines - 40 CFR Part 60 Subpart JJJJ

This subpart establishes the emission limits and compliance requirements for emission control of stationary spark ignition internal combustion engines that began construction, modification or reconstruction after June 12, 2006. The engines of units EU-4 and EU-5 must comply with the requirements of this subpart. This standard establishes emission limits or manufacturer certification requirements for nitrogen oxides, carbon monoxide, and volatile organic compounds. In addition, they must comply with the requirements of 40 CFR Part 60, Subpart A – General Provisions, as applicable.

The requirements below are not applicable to the following units of the Municipality of Fajardo Landfill:

- Emission Guidelines and Compliance Schedules for Municipal Sanitary Landfill Systems established under Part VII of the RCAP. The provisions of this part apply only to existing municipal sanitary landfill systems whose construction, reconstruction or modification began before May 30, 1991.

- New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines - 40 CFR Part 60 Subpart IIII – applies to stationary compression ignition internal combustion engines. This Subpart does not apply to the engines of units EU-4 and EU-5 since these are spark ignition engines and not compression ignition engines.

- New Sources Performance Standards for Stationary Spark Ignition Internal Combustion Engines - 40 CFR Part 60 Subpart JJJJ applies to stationary spark ignition internal combustion engines. This Subpart does not apply to the engines of units EU-2 and EU-3 since these are compression ignition engines and not spark ignition engines.

- Particulate matter emission limit established in Rule 406 of the Regulations for the Control of Atmospheric Pollution. This Rule does not apply to units EU-2, EU-3, EU-4 and EU-5 since these do not meet the definition of Fuel Burning Equipment of Rule 102 of the RCAP because they do not generate power by internal heat transfer.

For certification of compliance purposes for this source, reports must be submitted annually. Unless specifically established, all the terms and conditions of the Title V permit, including provisions designed to limit the emission potential of the source, are enforceable by the EPA and by citizens under the US Clean Air Act. Terms and conditions, designated as enforceable only by the state, as indicated in the permit, are enforceable only by the EQB.

The EQB has determined that this Title V Operating Permit meets all the requirements of Part VI of the RCAP.