

## **40 CFR 63, Subpart AAAA LANDFILL LANDFILL GAS TREATMENT SYSTEM MONITORING PLAN for ENGINES**

This Landfill Gas Treatment System Monitoring Plan has been prepared pursuant to 40 CFR 63.159(b)(2)(i) and 63.1983(b)(5) of Subpart AAAA. The landfill gas treatment system consists of equipment required to treat landfill gas prior subsequent sale or beneficial use. Landfill gas treatment system includes filtration, compression, and moisture removal. As such, the purpose of this plan is to outline monitoring and data collection practices to ensure the treatment system is operating as designed to filter, compress, and remove moisture. Site will perform routine parametric monitoring to ensure proper operation. Continuous monitoring of the parameters below is not required for proper operation of the treatment system.

Description of each key component of a treatment system:

- **Filtration**- Landfill gas passes through two filtering steps in the treatment system. An in-line demister mesh pad, installed prior to the compressor, is designed to protect equipment, by removing larger pieces of debris from the gas stream. Secondary coalescing filters are placed in-line, after the gas cooler, to provide additional filtration at the back end of the system, prior to re-heating and delivery. The monitoring method, frequency and operating range in in Table 1 ensure that the treatment system is properly removing particulate matter as needed to meet the definition of treatment system and for the intended beneficial use.
- **Compression** - Landfill gas is extracted from the landfill under vacuum. The compression step is required to ensure gas is delivered at the needed pressure to be used as a fuel. The compression process increases the pressure and temperature of the gas. The monitoring method, frequency and operating range in Table 1 ensure compression of the landfill gas is occurring as needed to meet the definition of treatment system and for the intended beneficial use.
- **Moisture removal** – The gas is processed through a gas cooler to lower the temperature which removes moisture. As the gas is cooled, entrained moisture is condensed and trapped by the in-line coalescing filters, removed from the process and managed in the condensate removal system. The monitoring method, frequency and operating range in Table 1 ensure

proper moisture removal is occurring to for the intended beneficial use of the treated landfill gas and meets the definition of treatment system.

<b>Table 1 - Landfill Gas Treatment System Monitoring Plan</b>				
<b>Equipment</b>	<b>Parameter</b>	<b>Inspection Frequency</b>	<b>Monitoring Device</b>	<b>Range of Operation</b>
Compressor / Blower	Discharge Pressure	Twice per month	Pressure monitoring device	1-14 psi,
Coalescing Filter Vessel/Final Gas Filter	Differential Pressure	Twice per month	Pressure Monitoring Device	0.0 – 4.0 psi / 2 to 100 inches WC (differential pressure between the inlet and outlet of the filter vessel)
Gas Cooler (moisture removal)	differential temperature	Twice per month	Temperature gauges	differential temperature of at least 10F

**Actions Taken for Readings Out of Range**

For any readings taken that demonstrate that the above equipment is operating out of range, maintenance will be scheduled to be taken within 7 days of the reading. Maintenance may include changing out or cleaning filters, suction lines, or other actions based on manufacture and operational recommendations.

**Responsibility for Data Collection**

The following job titles that are authorized to take these readings: Gas Plant Manager, Regional Manager, Landfill Gas Technician/Consultant, or Operations Specialist.

**Recordkeeping**

The person(s) performing the inspection as per the frequency listed in Table 1, will record the observed value and determine if the value is within the range of operation. If the recorded value is out of the range of operation, they will immediately take corrective action, including contacting all relevant staff, as necessary. Furthermore, collected data and a description of the actions taken will be placed into the plant file.

### **Quality Assurance/Maintenance/Repair**

The data and equipment are reviewed regularly during the month to verify accuracy and look for trends that may be characteristic of diminishing performance. Additionally, staff perform visual inspections of the equipment and note issues as they arise. Repairs will be made as necessary. At a minimum, filters will be cleaned and or replaced as needed to maintain the listed differential pressures.