

PREVENTATIVE MAINTENANCE PLAN

Peoples Landfill Gas Electric Generating Facility
Saginaw County, Michigan

North American is submitting the following Preventive Maintenance Plan pursuant to the requirement of the Renewable Operating Permit the Peoples Generating Facility owned and operated by North American Natural Resources, Inc. The Preventive Maintenance Plan is and has been North American's standard operating procedure for the Plant.

1. Responsible Personnel

The personnel responsible for overseeing the inspection, maintenance, and repair of the Plant and related facilities are:

Richard Spranger
Plant Supervisor
Peoples Landfill
Peoples Generating Facility
4516 Rathbun Road
Birch Run, Michigan 48415
Telephone:
Plant: 989/777-6284
Cell: 517/719-1322

Ben Petz
Plant Operator
Peoples Landfill
Peoples Generating Facility
4516 Rathbun Road
Birch Run, Michigan 48415
Telephone:
Plant: 989/777-6284

2. Equipment Identification

Five CAT 3516 Engines are installed

These are lean burn engines.

Major Parts Inventory

North American maintains a stock of long-lead time or hard to obtain replacement parts for the electric generating units and for the two landfill gas compressors at the Peoples Generating Facility. The part list is balanced against the requirement given North American's long-term engine maintenance program following practices in the industry.

Michigan Caterpillar also stocks a list of parts as required by the various landfill gas to energy power producers in the state of Michigan. Additionally, North American works in concert at the operator level to network with other likely situated companies to exchange parts when required.

The following parts are kept on-site for the Treatment System: Site glass gauges for the water separator and oil separator; spare gauges for coalescing filters; 12 coalescing filters; spare compressor belt, spare vanes for compressor and 200 gallons of oil for compressor.

3. Gas Treatment System and Monitoring and Preventative Maintenance.

The gas received from Peoples Landfill is initially de-watered in knockout tanks that are located upstream of the Peoples Landfill gas treatment system where a portion of the condensate in the landfill is removed.

After the initial knockout de-watering, the landfill gas is treated in equipment and processes operated by North American Natural Resources that consist of:

1. A scrubber vessel that contains a wire-mesh filter which is designed to remove particles in the gas stream that are 10 microns or larger. Condensate collected by the scrubber filter fall to the bottom of vessel where it is transferred by gravity sump back to landfills knock out tanks.
2. Then gas compressors heat up the gas during compression and more condensate is created which is removed in the next piece of equipment.
3. A heat exchanger using air is blown through the exchanger and cools the gas from 200 degrees approx. to 120 degrees f and remaining water is dropped out into coalescing filter.
4. A Coalescing filter is used to remove the final particles of .4 microns and larger. Condensate collected by the filters are dropped to bottom of vessel and drained daily to the initial landfill knock out tank.

Based on the design of the Peoples landfill gas treatment system, the following equipment and process will be monitored daily:

The Scrubber Vessel is monitored with a differential gauge and a site tube. If condensate is at a level of 50 % Site tube or 50 % of the differential gauge the vessel is drained and an inspection of the up-stream knock out system will be performed and a corrective action will be done.

The Compressor is inspected daily, checking the oil level and checking for leaks. If oil levels are under 2 gallons and operating temperatures are above 250 degrees, the compressor will be shut down to investigate and repair failed parts which are in on site inventory.

The Water Separator and Oil Separator are drained as needed as indicated by gauges which are monitored daily.

The Coalescing Filters are replaced as needed as indicated by differential pressure gauges which are monitored daily. If differential gauge across the inlet and outlet of vessel show more than a 2 psig loss the .4 micron filters will be change .

The Gas Cooler runs at an inlet max temp of 250 degrees and a max temp of 140 outlet temp. If any temps exceed these manufactured limitations the system will be shut down and corrective action will be done by plant operator.

4. Recordkeeping

North American's personnel keep Daily Logs recording the status of operations for each of the generating unit. Any shut-downs, likely cause of the shutdown, and the down time period are recorded and the records maintained at the Plant. Likewise, daily logs are kept on the Treatment System.

5. Normal Operating Range and Monitoring Procedures

At any time, if one of the generating units shuts down, the plant operator is paged immediately. This operator is on call twenty-four (24) hours a day, seven (7) days a week and returns to the plant to investigate the nature of the shutdown. A rotation system is in place with operators from near-by locations covering for each other. Whenever a shutdown occurs, the flare immediately picks up the extra gas. As such, the flare is a backup to the engine plant.

Corrective actions/procedures in the event of a malfunction of Treatment System: (i) evaluate problem; (ii) correct problem with replacement part needed; (iii) if cannot be repaired in timely manner, turn flare on.