Construction Permit

R13-3555

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:
Empire Green Generation, LLC
Follansbee Operation
009-00141

Laura M. Crowder
Director, Division of Air Quality

Issued: DRAFT
Facility Location: 801 Koppers Rd.
Follansbee, Brooke County, West Virginia
Mailing Address: 1400 Main Street
Follansbee, WV 26037
Facility Description: Medical Waste Storage and Treatment using a Pyrolysis Unit
NAICS Codes: 562219
UTM Coordinates: 533.51 km Easting • 4,465.42 km Northing • Zone 17
Permit Type: Construction
Description of Change: This action is for the construction and operation of a pyrolysis unit that will utilize non-hazardous medical waste as feedstock. The facility will also include four spark-ignition engines which will be used to generate electricity for the facility.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified, or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

The source is not subject to 45CSR30.
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### 1.0. Emission Units

<table>
<thead>
<tr>
<th>Emission Unit ID</th>
<th>Emission Point ID</th>
<th>Emission Unit Description</th>
<th>Year Installed</th>
<th>Design Capacity</th>
<th>Control Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td></td>
<td>Macerator/Shredder</td>
<td>2022</td>
<td>2,543 ft³/hr</td>
<td>FE &amp; C2</td>
</tr>
<tr>
<td>220</td>
<td></td>
<td>Dryer</td>
<td>2022</td>
<td>7,700 lb/hr</td>
<td>Cyclones &amp; 1C or 2C</td>
</tr>
<tr>
<td>300A</td>
<td>1000 or 1000E</td>
<td>Reactor A Train w/settling chamber</td>
<td>2022</td>
<td>70 Tons per Day</td>
<td></td>
</tr>
<tr>
<td>300B</td>
<td></td>
<td>Reactor B Train w/settling chamber</td>
<td>2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400A</td>
<td></td>
<td>Gas Cleanup Train A</td>
<td>2022</td>
<td>5,833 lb/hr</td>
<td>N/A</td>
</tr>
<tr>
<td>400B</td>
<td></td>
<td>Gas Cleanup Train B</td>
<td>2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400C</td>
<td></td>
<td>Gas Cleanup Train C</td>
<td>2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td></td>
<td>Gas Bladder (Gasometer) Syngas storage vessel</td>
<td>2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>800</td>
<td></td>
<td>Vitrifier (pyrolysis heating furnace)</td>
<td>2022</td>
<td></td>
<td>Cyclones &amp; 1C or 2C</td>
</tr>
<tr>
<td>GE-1</td>
<td>1000 or 1000E</td>
<td>Generator Set 1 4 Stroke, Spark-ignition, Lean Burn Engine Generator Set Engine Model: TGS159D32</td>
<td>2022</td>
<td>429 bhp</td>
<td>Cyclones &amp; 1C or 2C</td>
</tr>
<tr>
<td>GE-2</td>
<td></td>
<td>Generator Set 2 4 Stroke, Spark-ignition, Lean Burn Engine Generator Set Engine Model: TGS159D32</td>
<td>2022</td>
<td>429 bhp</td>
<td></td>
</tr>
<tr>
<td>GE-3</td>
<td></td>
<td>Generator Set 3 4 Stroke, Spark-ignition, Lean Burn Engine Generator Set Engine Model: TGS159D32</td>
<td>2022</td>
<td>429 bhp</td>
<td></td>
</tr>
<tr>
<td>GE-4</td>
<td></td>
<td>Generator Set 4 4 Stroke, Spark-ignition, Lean Burn Engine Generator Set Engine Model: TGS159D32</td>
<td>2022</td>
<td>429 bhp</td>
<td></td>
</tr>
<tr>
<td>900</td>
<td>1000</td>
<td>Thermal Oxidizer (Re-Ox) This unit is also identified as Control Device 1C</td>
<td>2022</td>
<td>3.7 MMBtu/hr</td>
<td>N/A</td>
</tr>
<tr>
<td>1000</td>
<td>1000E</td>
<td>Emergency Flare Elevate Flare This unit is also identified as Control Device 2C</td>
<td>2022</td>
<td>12.2 MMBtu/hr</td>
<td>N/A</td>
</tr>
</tbody>
</table>
2.0. General Conditions

2.1. Definitions

2.1.1. All references to the “West Virginia Air Pollution Control Act” or the “Air Pollution Control Act” mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The “Clean Air Act” means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. “Secretary” means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary’s designated representative for the purposes of this permit.

2.2. Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAAA</td>
<td>Clean Air Act Amendments</td>
</tr>
<tr>
<td>CBI</td>
<td>Confidential Business Information</td>
</tr>
<tr>
<td>CEM</td>
<td>Continuous Emission Monitor</td>
</tr>
<tr>
<td>CES</td>
<td>Certified Emission Statement</td>
</tr>
<tr>
<td>C.F.R. or CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>C.S.R. or CSR</td>
<td>Codes of State Rules</td>
</tr>
<tr>
<td>DAQ</td>
<td>Division of Air Quality</td>
</tr>
<tr>
<td>DEP</td>
<td>Department of Environmental Protection</td>
</tr>
<tr>
<td>dscm</td>
<td>Dry Standard Cubic Meter</td>
</tr>
<tr>
<td>FOIA</td>
<td>Freedom of Information Act</td>
</tr>
<tr>
<td>HAP</td>
<td>Hazardous Air Pollutant</td>
</tr>
<tr>
<td>HON</td>
<td>Hazardous Organic NESHAP</td>
</tr>
<tr>
<td>HP</td>
<td>Horsepower</td>
</tr>
<tr>
<td>lbs/hr</td>
<td>Pounds per Hour</td>
</tr>
<tr>
<td>LDAR</td>
<td>Leak Detection and Repair</td>
</tr>
<tr>
<td>M</td>
<td>Thousand</td>
</tr>
<tr>
<td>MACT</td>
<td>Maximum Achievable Control Technology</td>
</tr>
<tr>
<td>MDHI</td>
<td>Maximum Design Heat Input</td>
</tr>
<tr>
<td>MM</td>
<td>Million</td>
</tr>
<tr>
<td>MMBtu/hr or</td>
<td>Million British Thermal Units</td>
</tr>
<tr>
<td>mmbtu/hr</td>
<td>per Hour</td>
</tr>
<tr>
<td>MMCF/hr or</td>
<td>Million Cubic Feet per Hour</td>
</tr>
<tr>
<td>mmcf/hr</td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
</tr>
<tr>
<td>NESHAPS</td>
<td>National Emissions Standards for Hazardous Air Pollutants</td>
</tr>
<tr>
<td>NOx</td>
<td>Nitrogen Oxides</td>
</tr>
<tr>
<td>NSPS</td>
<td>New Source Performance Standards</td>
</tr>
<tr>
<td>PM</td>
<td>Particulate Matter</td>
</tr>
<tr>
<td>PM10</td>
<td>Particulate Matter less than 10μm</td>
</tr>
<tr>
<td>Ppb</td>
<td>Pounds per Batch</td>
</tr>
<tr>
<td>Pph</td>
<td>Pounds per Hour</td>
</tr>
<tr>
<td>Ppm</td>
<td>Parts per Million</td>
</tr>
<tr>
<td>Ppmv or ppmw</td>
<td>Parts per Million by Volume</td>
</tr>
<tr>
<td>PSD</td>
<td>Prevention of Significant Deterioration</td>
</tr>
<tr>
<td>Psi</td>
<td>Pounds per Square Inch</td>
</tr>
<tr>
<td>SIC</td>
<td>Standard Industrial Classification</td>
</tr>
<tr>
<td>SIP</td>
<td>State Implementation Plan</td>
</tr>
<tr>
<td>SO2</td>
<td>Sulfur Dioxide</td>
</tr>
<tr>
<td>TAP</td>
<td>Toxic Air Pollutant</td>
</tr>
<tr>
<td>TPY</td>
<td>Tons per Year</td>
</tr>
<tr>
<td>TRS</td>
<td>Total Reduced Sulfur</td>
</tr>
<tr>
<td>TSP</td>
<td>Total Suspended Particulate</td>
</tr>
<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>UTM</td>
<td>Universal Transverse Mercator</td>
</tr>
<tr>
<td>VEE</td>
<td>Visual Emissions Evaluation</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
<tr>
<td>VOL</td>
<td>Volatile Organic Liquids</td>
</tr>
</tbody>
</table>

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Act W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:
2.3.1. **45CSR13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation.**

2.4. **Term and Renewal**

2.4.1. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked, or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule.

2.5. **Duty to Comply**

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-3555, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to. [45CSR§§13-5.10 and 10.3.]

2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA.

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7.

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies, i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. **Duty to Provide Information**

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. **Duty to Supplement and Correct Information**

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.
2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.

[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.

[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.

[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee’s premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit.

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

2.12.1. An “emergency” means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.
2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency.

b. The permitted facility was at the time being properly operated.

c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. [45CSR§13-10.1.]
2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.
3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. Open burning. The open burning of refuse by any person, firm, corporation, association, or public agency is prohibited except as noted in 45CSR§6-3.1.

3.1.2. Open burning exemptions. The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow, or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.

3.1.3. Asbestos. The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.

3.1.4. Odor. No person shall cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.

3.1.5. Permanent shutdown. A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.

3.1.6. Standby plan for reducing emissions. When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

3.3.1. Stack testing. As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary
exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary’s delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

1. The permit or rule evaluated, with the citation number and language.
2. The result of the test for each permit or rule condition; and,
3. A statement of compliance or noncompliance with each permit or rule condition.

[ WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

3.4.1. Retention of records. The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information
includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

3.4.2. Odors. For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.

[45CSR§4. State Enforceable Only.]

3.5. Reporting Requirements

3.5.1. Responsible official. Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

3.5.2. Confidential information. A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. Correspondence. All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format by email as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

DAQ:  
Director  
WVDEP  
Division of Air Quality  
601 57th Street  
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3.5.4. Operating Fee

3.5.4.1. In accordance with 45CSR22 – Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually,
shall be maintained on the premises for which the certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.4.2. In accordance with 45CSR22 – Air Quality Management Fee Program, enclosed with this permit is an Application for a Certificate to Operate (CTO). The CTO will cover the time period beginning with the date of initial startup through the following June 30. Said application and the appropriate fee shall be submitted to this office prior to the date of initial startup. For any startup date other than July 1, the permittee shall pay a fee or prorated fee in accordance with Section 4.5 of 45CSR22. A copy of this schedule may be found on the reverse side of the CTO application.

3.5.5. Emission inventory. At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.
4.0. Source-Specific Requirements Except for SI Engines (GE-1 through GE-4)

4.1. Limitations and Standards

4.1.1. The facility shall only accept and/or process medical waste that is not classified as hazardous waste in 40 CFR §261.3.

a. The following specific waste shall not be accepted:

   i. Trace Chemotherapy Waste.
   ii. Bulk Chemotherapy Waste.
   iii. Radioactive Waste.
   iv. Pharmaceutical Hazardous Waste as defined in 40 CFR 266.500.
   v. Prions or OD infected waste or by-products.

b. The following specific waste may be accepted:

   i. Animal waste.
   ii. Cultures and stocks.
   iii. Anthological/anatomical waste.
   iv. Human waste.
   vi. Sharps.
   vii. Animal waste.
   viii. Spill/cleanup material mixtures.
   ix. Legend drug waste/non-RCRA pharmaceutical waste

c. The permittee shall only store medical waste in either seal containers or fully enclosed structure at the facility.

4.1.2. The following requirements apply to the pyrolysis unit and associated equipment, which includes the syngas cleaning trains.

a. The permittee shall take all necessary precautions to restrict the spreading of biological and infectious diseases by ensuring the equipment used to process the medical waste prior to the pyrolysis units is a closed system maintained under negative pressure at all times.

b. The permittee shall not operate either pyrolysis units unless the syngas cleaning and air pollution control trains are operational.

c. The permittee shall not charge more 5,833 lb/hr of waste into the dryer on a daily average basis.
d. The air pollution control train shall consist of a gas clean up system, cyclones, regenerative thermal oxidizer, and stack with emergency flare. The gas clean-up system shall include one tar condenser, one oil condensing scrubber and one dosing scrubber. Three (3) parallel trains shall be installed with the 3rd train being a 50% system capacity standby.

e. All syngas generated by each pyrolysis train shall be captured, contained, and routed to the gas clean-up system using a closed vent system followed by the acid gas scrubbers prior to being combusted by either the internal combustion engines or utilized by the indirect heat exchanger for the pyrolysis trains at all times.

f. The cleaned syngas generated by the pyrolysis units shall not contain a hydrogen sulfide concentration greater than 50 grains per 100 cubic feet of syngas on a 3-hour averaging basis. [45 CSR 10-5.1. and 10-5.4.]

g. The permittee shall develop and implement a leak detection and repair program to detect leaking components and/or equipment and repair leaks in a timely fashion in accordance with the following:

i. Equipment and components in liquid service: A leak is defined as any visual indication a leak is occurring or defective piece of equipment.

ii. Equipment and components in gas service: The equipment and closed vent system, to include connectors, shall be free of defects including, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; liquid leaks; or broken or missing caps or other closure devices. If using Method 21, an instrument reading of 500 ppm or greater is classified as a leak.

iii. The permittee may develop a continuous monitoring system using appropriate parameters to determine a leak in the system. Implementing such a system, permittee shall develop and written monitoring plan that outlines the locations of sensors; selection of the parameter(s) and value setpoints that would indicate a potential leak; procedure how the system, to include sensor or instruments, will be maintained and calibrated; and action plan when potential leak is detected which must describe how the system will notify the operators of a potential leak and how the event will be recorded. A copy of the monitoring plan shall be maintained on site at all times and made available upon request to the Director and his/her designee. The requirement pertaining to maintaining record of the monitoring plan shall apply to all reversion to the plan that were implemented.

iv. When a defect or leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected unless the leak resulted in a train or process shutdown then the leaker shall be repaired prior to restarting the train and/or process.

h. The gas cleaning train shall be operated in a manner to remove all detectable levels of chlorine or chlorinated compounds. Thus, the permittee shall develop operating levels for the circulation rate and either the pH level or conductivity of the scrubbing liquor used to remove chlorine or chlorinated compounds to non-detectable level in the cleaned syngas.

i. Exhaust from combusting any syngas or syngas shall be routed to regenerative thermal oxidizer at all times except during startup and emergency events. During startup and emergency events, the syngas shall be routed to the flare.

j. The permittee shall operate the regenerative thermal oxidizer in accordance with Condition 4.1.3.
k. The permittee shall operate the flare in accordance with Condition 4.1.4.

l. For start-up operations of the pyrolysis units, the permittee shall use only either propane, natural gas or cleaned syngas for startup operations. This applies to the dryer and process heater (vitrifier) for both pyrolysis trains.

m. The total heat input of any of the permitted fuels in item l. of this condition shall not exceed 20.0 MMBtu/hr and not exceed a total 114.7 MMBtu per startup cycle.

n. Each pyrolysis unit shall be operated in an oxygen free/limited atmosphere which shall not contain oxygen concentration greater than 3% except during startup and shutdown events.

o. All pressure relief devices shall be hard piped to the emergency flare (2C).

p. Prior to the initial startup of the pyrolysis trains, the permittee shall make a non-waste/waste determination or submit a petition to the Administrator of all streams that exiting the pyrolysis train (e.g., synthetic gas, tars) that are being routed to a combustion device as fuel for the combustion unit. Such determination or petition shall be conducted or submitted in accordance with 40 CFR 241.3 and Condition 3.5.1. A record of this determination or petition shall be maintained on site for the life of the pyrolysis trains.

4.1.3. The regenerative thermal oxidizer (RTO and Emission Unit ID 1000) shall be operated and maintained in accordance with the following requirements.

a. The emissions from the regenerative thermal oxidizer shall not exceed the respective limits in the following.

i. Oxides of nitrogen (NO\textsubscript{x}) emissions no greater than 5.70 lb/hr on a 3-hour average basis except during startup operations. During startup, oxides of nitrogen shall not exceed 84.24 pounds over each entire startup event.

ii. Carbon monoxide (CO) emissions no greater than 22.6 lb/hr on a 3-hour average basis.

iii. Sulfur dioxide (SO\textsubscript{2}) emissions no greater than 8.90 lb/hr on a 3-hour average hour basis.

iv. Particulate matter emissions no greater than 3.20 lb/hr on a 3-hour average basis.  
[45 CSR §§6-3.1.]

v. Particulate matter less than 10 microns emissions no greater than 3.20 lb/hr on a 6-hour average basis.

vi. Particulate matter less than 2.5 microns emissions no greater than 2.05 lb/hr on a 6-hour average basis.

vii. Volatile organic compounds emissions no greater than 5.48 methane basis (15.07 propane basis) on a 3-hour average basis.

viii. Visible Emissions (opacity) from the emission point 1000 shall not equal or exceed 20% opacity on a six (6) minute average basis.  
[45CSR §§6-4.3.]

b. The permittee shall install, operate, and maintain the regenerative thermal oxidizer with a minimum destruction efficiency of no less than 95% for VOCs or a VOC concentration of no greater than 20 ppmvd at 12 % O\textsubscript{2} on a propane basis.
c. The permittee shall establish a minimum combustion operating temperature for the thermal oxidizer based on satisfying the respective minimum VOC Destruction Efficiency or VOC concentration requirements of Condition 4.1.3.c. through compliance demonstration as required in Condition 4.3.1. This combustion operating temperature shall be established by taking the average of 3 test runs using the hourly average of each recorded combustion temperature readings during the required compliance demonstration. The new VOC destruction efficiency for the respective thermal oxidizer will be utilized for determining actual emissions in the following month that a test report demonstrating compliance with the efficiency requirements of item c of Condition 4.1.2. has been submitted to the Director in accordance with Condition 3.3.1.

d. The permittee shall not operate the regenerative thermal oxidizer 10 degrees Fahrenheit below the most recently established minimum combustion operating temperature at all times when any amount of syngas is being generated from the pyrolysis process except during startup.

e. At times when a new minimum combustion operation temperature is established, the permittee shall begin operating the regenerative thermal oxidizer at the newly established minimum combustion operating temperature the following month after submission of the compliance report to the Director as required in Conditions 3.3.1. and 4.3.1. of this permit.

f. Natural gas and propane are the only permitted supplemental fuel sources for the thermal oxidizer. The permittee shall not introduce more than 2.20 MMBtu/hr of supplemental fuel into the regenerative thermal oxidizer during normal operations.

g. During startup operations of the pyrolysis units the following requirements shall apply for the regenerative thermal oxidizer:
   i. The total heat input of supplemental fuel to the regenerative thermal oxidizer shall not exceed 3.8 MMBtu/hr for six hours or a total of 22.7 MMBtu per startup event.

4.1.4. The flare (Emission ID 1000) shall be installed, operated, and maintained in accordance with the following requirements.

a. The emissions from the flare (Emission ID 1000) shall not exceed the respective limits in the following table.

<table>
<thead>
<tr>
<th></th>
<th>NOx (lb/hr)</th>
<th>CO (lb/hr)</th>
<th>SO2 (lb/hr)</th>
<th>PM (lb/hr)</th>
<th>PM10 (lb/hr)</th>
<th>PM2.5 (lb/hr)</th>
<th>VOCs (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flare</td>
<td>5.70</td>
<td>22.60</td>
<td>8.90</td>
<td>3.20</td>
<td>3.20</td>
<td>2.05</td>
<td>5.48</td>
</tr>
</tbody>
</table>

b. The permittee shall install, operate, and maintained the flare with a minimum destruction efficiency of no less than 98% for VOCs though complying with the following requirements:
   i. Exit velocity of effluent from the flare tip shall not exceed 10 m/s (33 ft/s).
   ii. Effluent to the flare shall have a gross heating value of not less than 11.2 MJ/scm (300 Btu/scf).
   iii. The permittee shall operate the flare with no visible emissions (opacity) from the emission point 1000 for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

[45CSR§§6-4.3]

iv. The permittee shall maintain the flare in an operational status with the pilot light lit at all times when either pyrolysis train is operating, which includes startup and shutdown operations.
c. The permittee is permitted to use either natural gas or propane as the fuel supply for the pilot light with a maximum heat input no greater than 0.1 MMBtu/hr.

4.1.5. The annual combined emissions from the emission points 1000 and 1000E shall not exceed the following limits on a 12-month rolling basis.

a. NOx emission rate shall not exceed 24.0 tons per year.
b. CO emissions rate shall not exceed 99.0 tons per year.
c. SO2 emission rate shall not exceed 39.0 tons per year.
d. VOC emission rate shall not exceed 24.0 (66.0) tons per year.
e. PM\textsubscript{10} emission rate shall not exceed 14.0 tons per year.
f. PM2.5 emission rate shall not exceed 9.0 tons per year.
g. Total HAP emission rate shall not exceed 2.0 tons per year.

4.1.6. The permittee shall maintain all paved and unpaved roadways at the facility in a fashion that minimizes fugitive PM from such sources. Specifically, the permittee shall apply control measures to all active unpaved roadways that prevents fugitive PM from being discharged beyond the boundary lines of the facility. Such control measures can be the application of water or chemical treatments, or other measures that reduce the silt concentration of the roadway. Records of such efforts shall be maintained in accordance with Condition 3.4.1. of this permit.

[45 CSR §17-3.1]

4.1.7. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.

[45CSR§13-5.10.]

4.2. **Monitoring Requirements**

4.2.1. The permittee shall monitor the following parameters of the process (pyrolysis unit), gas cleaning trains, and associated control devices (cyclones and RTO/Flare).

**Pyrolysis Unit:**

Feed Rate into the shredder in terms of lb/hr for each operating hour.

Clean syngas produced in terms of scfh on an hourly basis.

**Gas Cleaning Trains**

Temperature of the scrubbing liquor at or near each oil skimmer.

Liquid level in each separator.
Ph or conductivity of the scrubbing liquor at or near each oil skimmer.

Dryer Cyclones:
The pressure drop across each cyclone in terms of inches of water column on a daily basis.

Regenerative thermal oxidizer (Control Device 1C):
Combustion chamber temperature in degrees Fahrenheit on an hour basis.

Flare (Control Device 2C):
Presence of flame for the pilot light on a continuous basis.
The total and peak volumetric flow rate of effluent being routed to the device during each event that effluent is being routed.
Date/time and duration of venting to the flare.
The reason for routing effluent to the device.

Such records shall identify the method and/or procedures used in the analysis, date sample taken, date of the analysis, and results be maintained in accordance with the Condition 3.41. of this permit.

4.2.2. The permittee shall determine the heat content and sulfur content of the syngas generated by the pyrolysis units in accordance with the following schedule.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>First 6 Months After Initial Startup</th>
<th>Months 7 through 12 after Initial Startup</th>
<th>Thereafter from 12 months after initial startup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Sulfide and Sulfur Content</td>
<td>1 sample every 2 months</td>
<td>1 sample every 3 months</td>
<td>Once per every 12 months</td>
</tr>
<tr>
<td>Heat Content</td>
<td>1 sample every month</td>
<td>1 sample every 2 months</td>
<td>Once sample every 3 months</td>
</tr>
</tbody>
</table>

The permittee shall select a sample location that the syngas sample is representative of the combined cleaned syngas from both pyrolysis trains. The permittee shall take a representative gas sample and analyze to determine the gross calorific value, hydrogen sulfide concentration and total sulfur content in accordance with the following method(s) and procedure(s).

samples may be analyzed for percent sulfur by any consensus standard method prescribed for the affected unit under 40 CFR 60.

The permittee shall determine the GCV and composition of the gaseous fuel (syngas) at the frequency specified in this condition, using the following methods: ASTM D1945-96(2001), ASTM D3588-98, ASTM D4891-89 (Reapproved 2006), GPA Standard 2172-96, Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis, or GPA Standard 2261-00, Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography (all incorporated by reference under 40 CFR §75.6). Alternatively, the gas samples may be analyzed for heat content by any consensus standard method prescribed for the affected unit under 40 CFR 60 or approved by the Director.

Such records shall identify the method and/or procedures used in the analysis, date sample taken, date of the analysis, sample location and results be maintained in accordance with the Condition 3.41. of this permit.

4.2.3. The permittee shall conduct periodic monitoring of the regenerative thermal oxidizer (Control Device 1C) to measure the NO\textsubscript{x}, CO and O\textsubscript{2} concentrations exhaust of the regenerative thermal oxidizer using portable electro-chemical gas analyzer in accordance with the following schedule.

<table>
<thead>
<tr>
<th>Table 4.2.3. Monitoring Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 6 Months After Initial Startup</td>
</tr>
<tr>
<td>Monitoring Frequency</td>
</tr>
</tbody>
</table>

Such monitoring shall be conducted in accordance with the following:

a. Conduct three monitoring runs of at least 20 minutes duration per run. The duration between runs of at least 20 minutes and no more than 60 minutes.

b. Determine NO\textsubscript{x} and CO emissions and O\textsubscript{2} concentrations in the exhaust using an electro-chemical cell portable gas analyzer maintained in accordance with the manufacturer’s specifications and procedures.

c. The measured NO\textsubscript{x} and CO concentrations shall be corrected to zero percent oxygen and average for the three runs.

d. Records of such monitoring shall include the following and be maintained in accordance with Condition 3.4.1. of this permit:
   i. The date, start and end time of each run.
   ii. The measure and corrected NO\textsubscript{x} concentration in ppmv for each run.
   iii. The measure and corrected CO concentration in ppmv for each run.
   iv. The measure CO concentration in percent for each run.
   v. The average corrected NO\textsubscript{x} concentration in ppmv for the test.
   vi. The average corrected CO concentration in ppmv for the test.
vii. Make, model and serial number of the analyzer used during the test.

viii. Name of operator who conducted the test.

4.2.4. To determine compliance with the opacity limits of Condition 4.1.2.a.viii., the permittee shall conduct visible emission checks and/or opacity monitoring and recordkeeping for the regenerative thermal oxidizer (Control Device 1C).

The visible emission check shall determine the presence or absence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40 CFR Part 60, Appendix A, Method 9 certification course.

The permittee shall verify compliance with Condition 4.1.2.a.viii. by taking visual observations using U.S. EPA Method 22 for one minute once per calendar month with a maximum of forty-five (45) days between consecutive readings. Should the permittee observe visible emissions from emission point 1E during the one-minute observation, then the permittee shall continue the observation for an additional five minutes. If the cumulative time that visible emissions are observed exceeds 55 seconds, the permittee shall conduct corrective action(s) to bring oven 1S back into proper operating conditions of no visible emissions within 48 hours of the initial observation or by the next cleaning batch (whichever is later) and re-verify compliance with Method 22 observations or the permittee shall conduct a Method 9 observation to demonstrate compliance with the opacity standard of Condition 4.1.1.d. Records of these observations and any corrective actions shall be maintained in accordance with Condition 3.4.1.

[45 CSR §6-7.1.]

4.2.5. The permittee shall verify compliance with Condition 4.1.3.b.iii. by taking visual observations using U.S. EPA Method 22 for one minute during startup operations of the pyrolysis trains once every 12 months. If the pyrolysis train has not undergone a shutdown and startup cycle within 12-months of the previous observation, then the permittee shall conduct an observation during the next startup of the pyrolysis trains. Should the permittee observe visible emissions from the flare during the one-minute observation, then the permittee shall continue the observation for additional fourteen minutes. If the cumulative time that visible emissions was observed exceeds sixty seconds, the permittee shall conduct corrective action(s) to bring the control device (flare) back into proper operating conditions as outlined in Condition 4.1.3.b.iii. within 48 hours of the initial observation and re-verify compliance with Method 22 observation. Records of these observations and any corrective actions shall be maintained in accordance with Condition 3.4.1.

[45 CSR §6-7.1.]

4.2.6. After 30 days from initial startup of the pyrolysis trains and prior to conducting the initial compliance demonstration as required in Condition 4.3.2., the permittee shall sample and analyze the liquid fuel being feed to the process heater (vitrifier) to determine the heat content, composition, and total sulfur content of this liquid fuel. Records of the analysis shall include the results; methods used to perform the analytical analysis; name and address of the laboratory that conducted the analysis; date, and time the sample was obtained. Such records shall be maintained in accordance with Condition 3.4.1. of this permit.
4.2.7. Within 12-months after determining an average hydrogen sulfide concentration equate to or greater than 45 grains per 100 scf of synthetic gas, the permittee shall install and certify a continuous emission monitoring system in accordance with the approved monitoring plan. 

[45 CSR 10A-6.3.b.2.]

4.3. Testing Requirements

4.3.1. The permittee shall conduct within 180 days after initial startup of the regenerative thermal oxidizer and subsequent performance determination to demonstrate compliance with the hourly VOC limit of Condition 4.1.3.a.vii. and minimum destruction efficiency of Condition 4.1.3.b. for the regenerative thermal oxidizer (1C), once every 61 months from the previous compliance demonstration thereafter. During such demonstration, the permittee shall determine the minimum operating combustion chamber temperature for each oxidizer. Such demonstration shall be conducted in accordance with Condition 3.3.1. of this permit using U.S. EPA Method 25A and Method 320 to determine methane and ethane emissions unless an alternative method is approved by the Director. Method 320 results of methane and ethane shall be used to deduct these two non-VOCs rates from the Method 25A VOC rates. Records of the demonstration shall be maintained in accordance with Condition 3.4.1. of this permit.

4.3.2. The permittee shall conduct within 180 days of initial startup of the regenerative thermal oxidizer a performance determination to demonstrate compliance with the hourly emission limits of Condition 4.1.3.a except for VOCs and subsequent determination be conducted in accordance with Condition 4.3.3. The permittee shall conduct such a demonstration using U.S. EPA Method 320 to measure NOx, CO, SO2, formaldehyde, hydrogen chloride, n-hexane, and all hydrocarbons detected in the syngas and liquid fuel analysis that shall consist of 3 1-hour test runs. PM10 and PM2.5 emissions shall be measured using U.S. EPA Methods 201A and 202 to determine the filterable and condensable fractions of the particulate matter. Such demonstration shall be conducted in accordance with Condition 3.3.1. of this permit. Records of the demonstration shall be maintained in accordance with Condition 3.4.1. of this permit.

4.3.3. The permittee shall conduct subsequent compliance demonstrations in accordance with the Condition 4.3.2. within 180 days after measuring a concentration as required in Condition 4.2.3. above the concentration with respect to the type of concentration in the following table.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Triggering Concentration (ppmv)</th>
<th>Type of Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>2,532</td>
<td>Hourly Avg</td>
</tr>
<tr>
<td></td>
<td>3,377</td>
<td>Individual Corrected Measurement Run</td>
</tr>
<tr>
<td>NOx</td>
<td>374</td>
<td>Hourly Avg</td>
</tr>
<tr>
<td></td>
<td>498</td>
<td>Individual Corrected Measurement Run</td>
</tr>
</tbody>
</table>

4.3.4. At any instance that the results of the hydrogen sulfide analysis, as required in Condition 4.2.2., yields a concentration of equal to or greater than 45 grains per 100 scf of synthetic gas, the permittee shall determine the 3-hour average concentration of hydrogen sulfide concentration of the synthetic gas within 180 days of receiving the results of such instance. Such determination shall be conducted in accordance with U.S. EPA Method 15 and Condition 3.3.1. of this permit.

4.3.5. During all demonstrations required in this section, the permittee shall include all measured parameters and process data as required to be monitored as stated in Condition 4.2.1. with the report of respective determination.

4.4. Recordkeeping Requirements

4.4.1. Record of Monitoring. The permittee shall keep records of monitoring information that include the following:
a. The date, place as defined in this permit, and time of sampling or measurements.

b. The date(s) analyses were performed.

c. The company or entity that performed the analyses.

d. The analytical techniques or methods used.

e. The results of the analyses; and

f. The operating conditions existing at the time of sampling or measurement.

4.4.2. Record of Maintenance of Air Pollution Control Equipment. For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.4.3. Record of Malfunctions of Air Pollution Control Equipment. For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.

b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.5. Reporting Requirements

4.5.1. Any deviations(s) of the allowable visible emission requirement for any emission source discovered during observations using 40 CFR Part 60, Appendix A, Method 9 must be reported in writing to the Director of the Division of Air Quality as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned. Such notification shall be submitted in accordance with Section 3.5. of this permit. A record of such report shall be maintained in accordance with Condition 3.4.1.

4.5.2. Any deviation(s) from the regenerative thermal oxidizer (Control Device 1C) design and operation criteria in Condition 4.1.3. shall be reported in writing to the Director as soon as practicable, but in any case, within ten (10) calendar days of discovery of such deviation. Such notification shall be
submitted in accordance with Section 3.5. of this permit. A record of such report shall be maintained in accordance with Condition 3.4.1.

4.5.3. For any instance where the results of the hydrogen sulfide monitoring as required in Condition 4.2.2. yields a concentration of equal to or greater than 45 grains per 100 scf of synthetic gas, the permittee shall notify the Director within 10 days of receiving the results of the sampling analysis. Such notification shall include the laboratory results/report, chain of custody of the sample, location that the sample was taken from, and date/time the sample was taken. This notification shall be submitted in accordance with Condition 3.5.1. and records of the notification maintained in accordance with Condition 3.4.1.

4.5.3. At any instance where the results of the hydrogen sulfide testing as required in Condition 4.3.4. yields an average concentration equal to or greater than 45 grains per 100 scf of synthetic gas, the permittee shall develop and submit a monitoring plan to monitor the concentration of hydrogen sulfide concentration of the synthetic gas within 60 days of receiving the results of such testing for the Director approval. This submittal shall be submitted in accordance with Condition 3.5.1. of this permit. Such monitoring plan shall comply with the requirements of 45 CSR §10A-6.4. [45 CSR §10-8.1.a.]
5.0. Specific Requirements for Engines GE-1, GE-2, GE-3, and GE-4

5.1. Limitations and Standards

5.1.1. The following conditions and requirements are specific to each of the internal combustion engines identified as GE-1, GE-2, GE-3, and GE-4:

a. Prior to start-up of any of the engines, the permittee shall submit an applicability determination to the Administrator to determine which emission standards under 40 CFR 60, Subpart JJJJ apply to these engines. Such determination shall be submitted in accordance with Condition 3.5.1. of this permit.

b. Each engine shall be equipped with an air to fuel (AFR) controller. The AFR controller must be maintained and operated appropriately to ensure proper operation of the engine and control device to minimize emissions at all times. [40 CFR §60.4243(g)]

c. The permittee shall install and maintain a non-resettable hour meter for the purpose of recording the operating hours of each engine.

d. The crankcases of each engine shall be vented back to the engine or to a control device (e.g., regenerative thermal oxidizer).

f. The permittee shall install sample ports for each engine exhaust at a location that satisfies the duct disturbance requirements as specified in Method 1A of Appendix A of 40 CFR 60.

5.1.2. The permittee shall only operate Engines GE-1, GE-2, GE-3, and GE-4 using syngas that has an annual average gross calorific value of no less than 738 Btu/scf with no individual samples of less than 425 Btu/scf. The analysis required to be conducted in Condition 4.2.2. shall be used to demonstrate compliance with the syngas specifications in this condition.

5.2. Monitoring Requirements

5.2.1. The permittee shall measure and record the following parameters for each permitted engine:

- Monthly total of syngas in terms of heat input (MMBtu/month).
- Monthly total number of operating hours.
- Total power output either from the engine or generator.
- Each hour that the engine operated outside of the manufacturer’s prescribed air to fuel ratio range.
- Date and time of each startup event
- Date and time of each shutdown event.

These records shall be maintained in accordance with the Condition 3.4.1. of this permit.

5.3. Testing Requirements

5.3.1. The permittee must conduct initial performance testing for each engine GN1, GN2, GN3 and GN4) within 180 days after initial start-up of the respective engine and to demonstrate compliance with
the emission standards as determined by the Administrator. This testing must be conducted at a location that the emissions are representative of the individual engine unless the Administrator approves alternative location and/or testing plan. During such testing, the engine shall be operated within 10% of 100% peak (or highest achievable load), measure and record the engine load or power output of the generator for each test run. Such testing shall be conducted in accordance with the applicable procedures in 40 CFR §60.4244 and Condition 3.3.1. Records of such testing shall be maintained in accordance with Condition 3.4.1. 

[40CFR§§60.4243(b)(2)(i) and §§60.4244]

The permittee is required to perform initial performance testing as indicated in the above requirement, but the permittee is not required to conduct subsequent performance testing unless the stationary engine undergoes rebuild, major repair or maintenance. Engine rebuilding means to overhaul an engine or to otherwise perform extensive service on the engine (or on a portion of the engine or engine system). For this paragraph, perform extensive service means to disassemble the engine (or portion of the engine or engine system), inspect and/or replace many of the parts, and reassemble the engine (or portion of the engine or engine system) in such a manner that significantly increases the service life of the resultant engine.

[40CFR§§60.4243(f)]

Performance test reports using EPA Method 18, EPA Method 320, or ASTM D6348-03 (incorporated by reference - see 40 CFR 60.17) to measure VOC require reporting of all QA/QC data. For Method 18, report results from sections 8.4 and 11.1.1.4; for Method 320, report results from sections 8.6.2, 9.0, and 13.0; and for ASTM D6348-03 report results of all QA/QC procedures in Annexes 1-7.

[40 CFR 60.4245(d)]

5.4. **Recordkeeping Requirements**

5.4.1. Record of Monitoring. The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit, and time of sampling or measurements.

b. The date(s) analyses were performed.

c. The company or entity that performed the analyses.

d. The analytical techniques or methods used.

e. The results of the analyses; and

f. The operating conditions, as specified in Condition 5.2.2., existing at the time of sampling or measurement.

5.4.2. Record of Maintenance of Air Pollution Control Equipment. For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

5.4.3. Record of Malfunctions of Air Pollution Control Equipment. For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.
b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

5.4.5. The permittee shall keep a maintenance plan and records of maintenance performed on each engine (GE-1, GE-2, GE-3, and GE-4).

[40 CFR §60.4243(b)(2)(ii)]

5.5. Reporting Requirements

5.5.1. The permittee shall submit an initial notification to the Director and Administrator within 15 days after initial start-up of each engine (GE-1, GE-2, GE-3, and GE-4) in accordance with Condition 3.5.3. and 40 CFR 60.7(c). Such notification shall contain the following information:

a. Name and address of the owner or operator.

b. The address of the affected source.

c. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement.

d. Emission control equipment; and

e. Fuel used.

[40 CFR 60.4245(c)]
APPENDIX A Visible Emissions Observation (example form)

Date of Observation: ________________________
Data Entered by: ______________________________
Reviewed by: _________________________________
Date Reviewed: ________________________________

Describe the General Weather Conditions:

<table>
<thead>
<tr>
<th>Emission Point ID</th>
<th>Emission Point Description</th>
<th>Time of Observation</th>
<th>Visible Emissions? Yes/No</th>
<th>Consecutive Months of Visual Emissions</th>
<th>Comments</th>
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CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached ___________________________, representing the period beginning ______________________ and ending ______________________, and any supporting documents appended hereto, is true, accurate, and complete.

Signature\(^1\)  
(Please use blue ink)  
Responsible Official or Authorized Representative Date

Name & Title  
(Please print or type)  
Name ________________________________ Title ________________________________

Telephone No. ________________________________ Fax No. ________________________________

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\(^1\)  This form shall be signed by a “Responsible Official.” “Responsible Official” means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

   (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

   (ii) the delegation of authority to such representative is approved in advance by the Director.

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or

d. The designated representative delegated with such authority and approved in advance by the Director.