

## **FINAL DETERMINATION**

### **Air Construction Permit**

Geoplasma-St. Lucie, LLC – Plasma Gasification Project  
DEP File No. 1110138-001-AC

#### **PERMITTEE**

Geoplasma-St. Lucie, LLC  
171 17<sup>th</sup> Street NW, Suite 1550  
Atlanta, Georgia 30363

#### **PERMITTING AUTHORITY**

Florida Department of Environmental Protection (Department)  
Division of Air Resource Management  
Bureau of Air Regulation, Special Projects Section  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida 32399-2400

#### **PROJECT**

DEP File No. 1110138-001-AC  
St. Lucie Plasma Gasification Project  
Waste-to-Energy (WTE) Facility  
St. Lucie County

This project involves the construction of a 24 megawatt (MW, gross) plasma arc gasification WTE power plant. The proposed Geoplasma-St. Lucie, LLC Plasma Gasification WTE facility will be located in St. Lucie County on a parcel of land approximately 9 acres in size within the site currently occupied by St. Lucie County's Sanitary Landfill. The landfill is located off of Glades Cut-Off Road south of the crossing of Interstate 95 and the Florida Turnpike and approximately 8 miles southwest of the City of Fort Pierce.

The application and key permitting documents are accessible at the following link:

[www.dep.state.fl.us/Air/emission/construction/geoplasma.htm](http://www.dep.state.fl.us/Air/emission/construction/geoplasma.htm)

#### **NOTICES AND PUBLICATION**

Geoplasma-St. Lucie, LLC submitted an air construction permit application on December 17, 2009. On May 25, 2010, the Permitting Authority gave notice of its intent to issue an air permit to the applicant for the project described above. The applicant published the Public Notice of Intent to Issue Air Permit for this project on May 29, 2010 in The St. Lucie News Tribune. The public notice package is accessible at the link provided above.

#### **COMMENTS ON THE DRAFT PERMIT**

##### **General Comments in Support of the Project**

Letters in support of the project were received during the public notice comment period from:

- St. Lucie County Board of County Commissioners;
- The City of Port St. Lucie;
- The Conservative Alliance of St. Lucie County;
- G3 Clean Energy - Renewable Energy Consultants;
- Camp Dresser & McKee Engineering Consultants; and
- Westinghouse Plasma Corporation a Division of Alter NRG Corporation.

The foregoing letters are available at the previously cited link and contained no comments specific to the draft permit.

### **Other Public Comments**

Comments specific to the draft permit were received by letter dated June 11, 2010 from the Blue Ridge Environmental Defense League (BREDL), Glendale Springs, North Carolina. They are accessible at: [BREDL Comments](#).

BREDL summarized their comments as follows:

- *We recommend that the Department clarify how the permitting category was determined;*
- *Amend the waste types under “Authorized Wastes”;*
- *Include the process for adopting a new waste separation plan with public participation;*
- *Reduce the allowable excess emissions from malfunctions; and*
- *Provide additional opportunity for the public to comment.*

### Permitting Category

Soon after receipt of the application, the Department consulted with the Environmental Protection Agency (EPA) Region 4 office in Atlanta regarding the permitting category. The Department relied on the definition of municipal waste combustor (MWC) given in 40 Code of Federal Regulation (CFR), Subpart Eb-Standards of Performance for Large Municipal Waste Combustors (MWC).

MWC is defined therein as: *“any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved-air or excess-air), boilers (i.e., steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and **pyrolysis/combustion units.**”*

In the preamble to 40 CFR 60, Subpart Eb at 60 Federal Register (FR), dated December 19, 1995 it is further clarified that *“municipal solid waste (MSW) combustion includes the direct combustion of MSW or the combustion of **MSW gases from pyrolysis or gasification.**”*

The referenced Subpart Eb applies to *“each MWC with a combustion capacity greater than 250 tons per day (TPD) of MSW waste for which construction, modification, or reconstruction is commenced after September 20, 1994”.*

The proposed project will combust pyrolyzed or gasified MSW and will have a capacity greater than 250 TPD and thus fits squarely into the Subpart Eb category.

### Authorized Wastes

The fact that a particular unit (greater than 250 TPD) burns MSW is sufficient to regulate it under Subpart Eb. However, Subpart Eb does not specifically exclude all that is not within the definition of MSW given in Subpart Eb. The Department has consulted over the years with the EPA Region 4 office on these matters and has developed acceptable non-hazardous solid waste slates such as proposed for the present project.

### Waste (Materials) Separation Plan

Although the Department did not explicitly state the requirement or process related to a materials separation plan (MSP), the requirement and process is described in detail in 40 CFR 60, Subpart Eb at Section 60.57b. The applicability of Subpart Eb is stated and reiterated in several parts of the permit and appendices. The applicant must comply with the MSP requirements in this subpart.

### Excess Emissions

The excess emissions requirements of 40 CFR 60, Subpart Eb were incorporated into the permit as required. The Department included its own additional excess emissions requirements pursuant to Rule 62-210.700, Florida Administrative Code (F.A.C.) without relaxing the requirements under Subpart Eb.

The project is not subject to the rules for the prevention of significant deterioration (PSD) and is not a major stationary source. The permit limits the annual emissions of PSD-pollutants to very low values (< 100 TPY) that are the lowest in the country for the size of the facility and which insure the facility will not be a major stationary source.

The Department requires that the excess emissions be included in the annual accounting of emissions and this will require the applicant to absolutely minimize the number and extent of excess emissions.

### Public Comment

The Department followed the applicable statutes and rules with regard to public comments. It is noted that the project has been publicized extensively by the applicant, the local governments and independent media.

### **Comments by Geoplasma-St. Lucie, LLC**

- *“Geoplasma requests that the emission unit description at the top of page 26, second sentence, for the Auxiliary Boiler read as follows—‘The auxiliary boiler will provide steam in the event the plasma arc gasifier is not in operation or additional steam demand is required’.”*

*Response:* The sentence referenced by the applicant previously read “The auxiliary boiler will provide steam in the event the plasma arc gasifier is not in operation”. The Department agrees with this request to change the description (but not any permit conditions) in the final permit to read “The auxiliary boiler will provide steam in the event the plasma arc gasifier is not in operation or additional steam demand is required”.

- *“On page 17: the pounds per hour (lb/hr) limits for nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and volatile organic compounds (VOC) are currently listed as 7.5 lb/hr in the permit, but were provided as 7.6 lb/hr in the application. Geoplasma requests that they be the values provided in the application.”*

*Response:* No change is required. The Department rounded to the nearest tenth of lb/hr and two significant figures corresponding to the two significant figures in the annual emission caps of 33 tons per year for NO<sub>x</sub>, CO and VOC.

### CONCLUSION

The final action of the Department is to issue the permit with the minor changes described above.