Mr. Douglas E. McKinley, Jr.
Director of Administration
Integrated Environmental Technologies, LLC
1935 Butler Loop
Richland, Washington 99352

Dear Mr. McKinley:

Thank you for the opportunity to assist you in clarifying certain requirements of the Environmental Protection Agency's (EPA) Land Disposal Restrictions (LDR) program. Earlier this year, you met with David Hockey and Mary Cunningham of my staff, to discuss the procedures for submitting a ADetermination of Equivalent Treatment (DET) petition under §268.42(c). Specifically, you asked about a possible DET for the treatment standard expressed as CMBST found in §268.40. As it was explained to us, your company, Integrated Environmental Technologies, has developed an electrothermal process where hazardous wastes are treated to produce syngas and glass. This system, called a Plasma Enhanced Melter (PEM) or a GASVIT (gasification and vitrification) system, uses electrical heating to create a non-combustive, oxygen-reduced, thermal treatment process. At the time, you believed a DET was necessary because your treatment technology was not specifically identified in the definition of CMBST found in 268.42. Based on subsequent telephone calls and our meeting on August 2, 2000, we have decided that in lieu of a DET petition, an interpretation of the regulatory definition of CMBST, as found in §268.42, is an appropriate response to your request. As such, this letter will serve as EPA=s interpretation that your technology, known as both PEM and GASVIT, is covered under the definition of CMBST found in §268.42.

In the Phase III LDR Rule (61 FR at 15588, April 8, 1996), we modified the treatment standard for hazardous waste expressed as INCIN to CMSBT. The change from INCIN to CMBST was made to make clear that thermal units other than incinerators, such as boilers and industrial furnaces, are suitable treatment technologies for treating organic hazardous constituents. In addition, we

determined that certain non-combustion units, when operated properly (particularly when operated pursuant with applicable technical operating requirements), could perform as efficiently as combustion technologies and therefore, are also appropriately included under the CMBST definition. Id. col. 2. The regulatory language found in 268.42 is as follows:

> CMBST: High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or 40 CFR 266, subpart H, and in other units operated in accordance with applicable technical operations requirements; and certain non-combustive technologies, such as the Catalytic Extraction Process.

Last year, EPA Region X issued a RCRA Subpart X permit, for one of your PEM/GASVIT systems, to ATG Incorporated in Richland, Washington, for the treatment of mixed hazardous and radioactive waste. We have reviewed documents supporting that permit issuance, including selected pages of your storage and treatment permit identifying the waste feed cutoff parameters of the unit, as well as your APEM/GASVIT Equivalency Test Report@which documents a full-scale treatment test of the unit. In these documents, we have identified information and data that support our determination that your PEM/GASVIT technology comports with the definition of CMBST found in §268.42. These documents establish that you are achieving two measures that describe parameters which are characteristic of good combustion conditions for the destruction of organic compounds in this type of unit: (1) Temperatures in the process chamber consistently are in the range of 2000°F; and (2) Temperatures in the air pollution dry particulate control devices are maintained outside the temperature window optimum for surface catalyzed dioxin/furan formation (450°F to 750°F). Furthermore, the measured destruction removal efficiencies for benzene, monochlorobenzene, tetrachloroethylene, toluene, and naphthalene, all difficult-to-treat organic hazardous constituents, exceeded 99.9999%.

Based on our review of the information and data submitted to us, we conclude that the PEM/GASVIT system, when properly operated pursuant to applicable technical requirements, performs in a manner equivalent to other thermal treatment technologies consistent with criteria set forth in the definition of CMBST found in 268.42, as well as the regulatory history to that provision. Therefore, the use of this technology to satisfy the treatment standard of CMBST found in §268.40 is appropriate and within the meaning of the present rule. If

you should have any further questions, please contact Elaine Eby of my staff at (703) 308-8449.

Sincerely,

James R. Berlow, Director
Hazardous Waste Minimization and
Management Division

cc: David Hockey, USEPA
Mary Cunningham, USEPA
Catherine Massimino, USEPA- Region X