



# Florida Department of Environmental Protection

Lawton Chiles  
Governor

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Virginia B. Wetherell  
Secretary

November 22, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David Testa  
Bay Resource Management Center  
c/o Westinghouse RESD  
1501 Ardmore Boulevard  
Pittsburgh, Pennsylvania 15221

Dear Mr. Testa:

Re: Request for Authorization to Conduct Pollutant Emissions Performance Tests While Firing a Combination of Consumer Product and Pharmaceutical Wastes in the Bay Resource Management Center

Attached is one copy of the proposed performance test authorization amendment to operation permits, Nos. AO 03-165754 and AO 03-165755, for Bay Resource Management Center to conduct pollutant emissions tests on the facility's two municipal waste combustors. The proposed performance tests for pollutant emissions will be conducted at baseline conditions while firing municipal wastes only and while firing a combination of municipal solid wastes and segregated pharmaceuticals/consumer product wastes. The segregated pharmaceutical/consumer product wastes maximum feed rate shall be no more than 2.0%, by weight, of the total waste feed of 10.63 tons per hour per unit. The municipal waste combustors were permitted under construction permits, Nos. AC 03-145061 and AC 03-152196 and operation permits, Nos. AO 03-165754 and AO 03-165755, and are not permitted to fire segregated pharmaceuticals/consumer products wastes under the conditions of the referenced permits.

The emissions tests are being proposed in order to gather data regarding pollutant emissions while firing pharmaceuticals/consumer wastes with municipal solid waste. Screening for applicability of a modification and Prevention of Signification (PSD) will be in accordance with Chapter 403, Florida Statutes; Florida Administrative Code (F.A.C.) Chapters 17-210 thru 17-297, and 17-4; and, Title 40 Code of Federal Regulations (CFR; July, 1992 version).


If, after the performance test results are evaluated by the Department's Bureau of Air Regulation and involved parties (i.e., Department's Northwest District, U.S. EPA, National Park Service, Bay County, etc.) and it is determined that actual pollutant emissions (baseline @ 100% municipal solid waste vs. a combination

Mr. David Testa  
Amendment to AO 03-165754 & AO 03-165755  
November 22, 1993  
Page Two

of municipal solid waste and segregated pharmaceutical/consumer waste) did not increase, the Department may issue an amendment to the construction permits, Nos. AC 03-145061 and AC 03-152196, and to operation permits, Nos. AO 03-165754 and AO 03-165755, authorizing continuous utilization/firing of segregated pharmaceutical/consumer product wastes, in the quantities authorized to be commingled with the normal municipal solid waste during this test, in the facility's two municipal waste combustors. However, if there is an actual emissions increase in pollutant emissions, Bay Resource Management Center will not be permitted to fire segregated pharmaceutical/consumer product wastes in the sources without further emissions evaluation by the Department's Bureau of Air Regulation and involved parties.

If there are any questions, please call Mr. Preston Lewis at (904)488-1344 or submit any written comments you wish to have considered concerning the Department's proposed action to me.

Sincerely,



C. H. Fancy, P.E.  
Chief  
Bureau of Air Regulation

CHF/DO/rbm

Attachments

c: Ed Middleswart, NW District  
Jewell Harper, EPA/Region IV  
John Bunyak, NPS  
Gary Shaffer, NWDB/Panama City

BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of  
Application/Request for Permit Amendment by:

Bay Resource Management Center  
Westinghouse RESD  
1501 Ardmore Boulevard  
Pittsburgh, Pennsylvania 15221

DEP File Nos. AO 03-165754  
AO 03-165755

INTENT TO ISSUE

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue to Bay Resource Management Center an amendment to the operation permits, Nos. AO 03-165754 and AO 03-165755, authorizing performance tests for pollutant emissions while firing a combination of municipal solid wastes and segregated pharmaceuticals/consumer product wastes, as detailed in the application/request package specified above. The Department is issuing this Intent to Issue for the reasons stated below and in the attached proposed amendment.

The applicant, Bay Resource Management Center, submitted a request on November 18, 1993, to the Department's Bureau of Air Regulation (BAR) for authorization to conduct pollutant emissions tests on the two municipal waste combustors while firing a combination of municipal solid waste and segregated pharmaceuticals/consumer product wastes. The performance tests for pollutant emissions will be conducted at baseline conditions while firing municipal wastes only and while firing a combination of municipal solid wastes and segregated pharmaceuticals/consumer product wastes. The maximum feed rate shall not exceed 2.0%, by weight, of the permitted total waste feed of 10.63 tons per hour per unit. The municipal waste combustors were permitted under construction permits, Nos. AC 03-145061 and AC 03-152196, and operation permits, Nos. AO 03-165754 and AO 03-165755, and are not permitted to fire segregated pharmaceuticals/consumer products wastes in accordance with the referenced permits.

Screening for applicability of modification and Prevention of Signification (PSD) will be in accordance with Chapter 403, Florida Statutes (F.S.); Florida Administrative Code (F.A.C.) Chapters 17-210 thru 17-297, and 17-4; and, Title 40 Code of Federal Regulations (CFR; July, 1992 version).

If, after the performance test results are evaluated by the Department's BAR and affected parties (i.e., Department's Northwest District, U.S. EPA, National Park Service, Bay County, etc.) and it is determined that actual pollutant emissions (baseline @ 100% municipal solid waste vs. a combination of segregated pharmaceutical/consumer waste and municipal solid waste) did not

increase, the Department may issue an amendment to the construction permits, Nos. AC 03-145061 and AC 03-152196, and to operation permits, Nos. AO 03-165754 and AO 03-165755, authorizing continuous utilization/firing of segregated pharmaceutical/consumer product wastes, in the quantities approved for this test and commingled with the normal waste, in the facility's two municipal waste combustors. However, if there is an actual emissions increase in pollutant emissions, Bay Resource Management Center will not be permitted to fire segregated pharmaceutical/consumer product wastes in the sources without further evaluation by the Department's BAR and involved parties.

The proposed project will occur at the applicant's facility located off U.S. Highway 231 northeast of Panama City, Bay County, Florida.

The Department has permitting jurisdiction under Chapter 403, F.S.; F.A.C. Chapters 17-210 thru 17-297, and 17-4; and, 40 CFR (July, 1992 version). The project is not exempt from permitting procedures. The Department has determined that a permit amendment is required for the proposed activity.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue a Permit Amendment. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be the one with significant circulation in the area that may be affected by the permitting action. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the amendment.

The Department will issue the permit amendment with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida

32399-2400. Petitions filed by the permit amendment applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the request/application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office in General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION



C. H. Fancy, P.E.  
Chief  
Bureau of Air Regulation

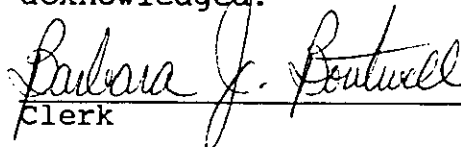
Copies furnished to:

Ed Middleswart, NW District  
Jewell Harper, EPA/Region IV  
John Bunyak, NPS  
Gary Shaffer, NWDB/Panama City

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 11/23/93.

FILING AND ACKNOWLEDGMENT  
FILED, on this date, pursuant to  
§120.52(9), Florida Statute, with  
the designated Department Clerk,  
receipt of which is hereby  
acknowledged.

  
Clerk

11/23/93  
Date

State of Florida  
Department of Environmental Protection  
Notice of Intent to Issue

Bay Resource Management Center

Amendment to AO 03-165754 & AC 03-165755

The Department of Environmental Protection (Department) hereby gives notice of its intent to issue to Bay Resource Management Center an amendment to operation permits, Nos. AO 03-165754 and AO 03-165755, authorizing performance tests for pollutant emissions while firing a combination of municipal solid wastes and segregated pharmaceuticals/consumer product wastes, as detailed in the application/request package. The Department is issuing this Intent to Issue for the reasons stated below and in the attached proposed amendment.

The applicant, Bay Resource Management Center, c/o Westinghouse RESD, 1501 Ardmore Boulevard, Pittsburgh, Pennsylvania, 15221, submitted a request on November 18, 1993, to the Department's Bureau of Air Regulation (BAR) for authorization to conduct pollutant emissions tests on the facility's two municipal waste combustors while firing a combination of municipal solid waste and segregated pharmaceuticals/consumer product wastes. The performance tests for pollutant emissions will be conducted at baseline conditions while firing municipal solid wastes only and while firing a combination of municipal solid wastes and segregated pharmaceuticals/consumer product wastes. The maximum feed rate shall be less than 2.0%, by weight, of the permitted total waste feed of 10.63 tons per hour per unit. The municipal waste combustors were permitted under construction permits, Nos. AC 03-145061 and AC 03-152196, and operation permits, Nos. AO 03-165754 and AO 03-165755, and are not permitted to fire segregated pharmaceuticals/consumer products wastes in accordance with the referenced permits.

Screening for a modification and Prevention of Signification (PSD) will be in accordance with Chapter 403, Florida Statutes (F.S.); Florida Administrative Code (F.A.C.) Chapters 17-210 thru 17-297, and 17-4; and, Title 40 Code of Federal Regulations (CFR; July, 1992 version).

If, after the performance test results are evaluated by the Department's BAR and affected parties (i.e., Department's Northwest District, U.S. EPA, National Park Service, Bay County, etc.) and it is determined that actual pollutant emissions (baseline @ 100% municipal solid waste vs. a combination of municipal solid waste and segregated pharmaceutical/consumer waste) did not increase, the Department may issue an

amendment to the construction permits, Nos. AC 03-145061 and AC 03-152196, and to operation permits, Nos. AO 03-165754 and AO 03-165755, authorizing continuous utilization/firing of segregated pharmaceutical/consumer product wastes, in the quantities authorized to be commingled with the normal solid waste during this test, in the facility's two municipal waste combustors. However, if there is an actual emissions increase in pollutant emissions, Bay Resource Management Center will not be permitted to fire segregated pharmaceutical/consumer product wastes in the sources without further evaluation by the Department's BAR and involved parties.

The proposed project will occur at the applicant's facility located off U.S. Highway 231 northeast of Panama City, Bay County, Florida.

The Department has permitting jurisdiction under Chapter 403, F.S.; F.A.C. Chapters 17-210 thru 17-297, and 17-4; and, 40 CFR (July, 1992 version). The project is not exempt from permitting procedures. The Department has determined that a permit amendment is required for the proposed activity.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;



- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and,
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application/request have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application/request are available for public inspection during business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection  
Bureau of Air Regulation  
111 S. Magnolia, Suite #4  
Tallahassee, Florida 32301

Department of Environmental Protection  
Northwest District Office  
160 Governmental Center  
Pensacola, Florida 32501-5794

Department of Environmental Protection  
Northwest District Branch Office  
2353 Jenks Avenue  
Panama City, Florida 32405

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 14 days of the publication of this notice will be considered in the Department's final determination.

DRAFT

December XX, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David Testa  
Bay Resource Management Center  
c/o Westinghouse RESD  
1501 Ardmore Boulevard  
Pittsburgh, Pennsylvania 15221

Dear Mr. Testa:

Re: Letter Amendment to Operation Permits, Nos. AO 03-165754 and AO 03-165755 to Conduct Performance Tests for Pollutant Emissions While Firing a Combination of Consumer Product and Pharmaceutical Wastes in the Bay Resource Management Center

The Department has reviewed the request that you provided on November 18, 1993. We have also considered the Department's legal authority to allow Bay Resource Management Center to conduct the performance tests. Paragraph 403.061(15), Florida Statutes (F.S.) authorizes the Department to consult with any person proposing to construct, install, or otherwise acquire a pollution control device or system concerning the efficacy of such device or system, or the pollution problem which may be related to the source, device, or system. Paragraph 403.061(16), F.S., authorizes the Department to encourage voluntary cooperation by persons in order to achieve the purposes of the state environmental control act. Paragraph 403.061(18), F.S., authorizes the Department to encourage and conduct studies, investigations, and research relating to the causes and control of pollution. Florida Administrative Code (F.A.C.) Rule 17-210.700(5) authorizes the Department to consider variation in industrial equipment and make allowances for excess emissions that provide practical regulatory controls consistent with the public interest.

In accordance with the provisions of Paragraphs 403.061(15), (16), and (18), F.S., and F.A.C. Rule 17-210.700(5), you are hereby authorized to conduct performance tests for pollutant emissions on the two municipal waste combustors while firing a combination of municipal solid waste and segregated pharmaceuticals/consumer product wastes. The maximum feed rate shall be no more than 2.0%, by weight, of the permitted total waste feed of 10.63 tons per hour per unit. The municipal waste combustors were permitted under construction permits, Nos. AC 03-145061 and AC 03-152196, and operation permits, Nos. AO 03-165754 and AO 03-165755, and are not permitted to fire segregated pharmaceuticals/consumer products wastes in accordance with the referenced permits.

DRAFT

The emissions tests are being proposed in order to gather data regarding pollutant emissions while firing segregated pharmaceutical/consumer product wastes with municipal solid waste. Screening for applicability of modification and Prevention of Significant Deterioration (PSD) shall be in accordance with Chapter 403, F.S.; F.A.C. Chapters 17-210 thru 17-297, and 17-4; and, Title 40 Code of Federal Regulations (CFR; July, 1992 version), which will compare the actual pollutant emissions of the baseline tests (100% municipal waste) to the actual pollutant emissions of the performance tests while firing a combination of segregated pharmaceutical/consumer product wastes with municipal solid waste. The performance test results will be evaluated by the Department's Bureau of Air Regulation (BAR) and involved parties (i.e., Department's Northwest District, U.S. EPA, National Park Service, Bay County, etc.).

The performance tests shall be subject to the following conditions:

1. The permittee shall notify, in writing, the Department's Northwest District and BAR offices at least 15 days prior to commencement of the performance tests. A written report shall be submitted to these offices within 45 days upon completion of the last test run.
2. The performance tests shall be conducted for not more than 21 consecutive days beginning on the initial baseline tests, but all testing must be concluded by January 31, 1994.
3. Each segregated pharmaceutical/consumer product waste shall be analyzed in accordance with the provisions in Section 3.0, Waste Evaluation Process, in the enclosure to Attachment 3.
4. Segregated pharmaceutical/consumer product wastes shall be limited to those shown in the Westinghouse table 3 and shall not contain lead, cadmium, or mercury compounds.
5. Segregated pharmaceutical/consumer product wastes shall be mixed with municipal solid waste in a municipal waste combustor unit. The feed rate of the segregated pharmaceutical/consumer product wastes shall be no more than 2.0 percent, by weight, of the combined waste feed rate. The maximum permitted municipal solid waste feed rate shall not exceed 10.63 TPH per unit.
6. The pollutant emission results from the baseline tests (100% municipal solid waste) shall be compared to the pollutant emissions tests of the segregated pharmaceutical/consumer product wastes mixed with municipal solid waste to determine if:

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- a) actual emissions increased (baseline versus segregated pharmaceutical/consumer product wastes mixed with municipal solid waste).
  - b) satisfactory waste handling procedures (mixing procedures and charging rates) can be demonstrated for segregated pharmaceutical/consumer product wastes.
7. Performance tests shall be conducted using EPA Methods, as contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources), or 40 CFR Part 61 (National Emission Standards for for Hazardous Air Pollutants), or any other method approved by the Department, in accordance with F.A.C. Chapter 17-297. Tests to be performed and the test methods are listed in Table 1.
  8. Daily accounting of each municipal waste combustor unit's operations while firing segregated pharmaceutical/consumer product wastes shall be required.
  9. If additional time is needed, the permittee shall request an extension of time and provide the Department with documentation of the progress accomplished to date and shall identify what is left to be done to complete the performance tests.
  10. A Type I audit is required and shall be coordinated with the Department's Northwest District office.
  11. Documentation of the firing rates of municipal solid waste vs. segregated pharmaceutical/consumer product (i.e., actual firing rate by weight) shall be tabulated hourly.
  12. The authorized performance tests shall not result in the release of objectionable odors pursuant to F.A.C. Rule 17-296.320(2).
  13. Performance testing shall immediately cease upon the occurrence of a valid environmental complaint by a citizen or other party, or a nuisance or danger to public health or welfare. Performance testing shall not resume until appropriate measures to correct the problem have been implemented.
  14. The performance tests for pollutant emissions shall be conducted under the direct supervision and responsible charge of a professional engineer registered in Florida.

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15. This Department action is just to authorize the performance tests for pollutant emissions on the facility's two municipal waste combustors while firing a combination of segregated pharmaceutical/consumer product wastes with municipal solid waste. Any firing of segregated pharmaceutical/consumer product wastes after the last performance test run is completed will be deemed a violation of the past construction permits, Nos. AC 03-145061 and AC 03-152196, and operation permits, Nos. AO 03-165754 and AO 03-165755.
16. Complete documentation (recording) of any firing of segregated pharmaceutical/consumer product wastes in the facility's two municipal waste combustors shall be required (i.e., testing results; materials utilized, by weight; etc.) and kept on file for a minimum of two years.
17. The Department shall be notified in writing on the date of the last test run completion.
18. The performance tests shall be conducted while each of the municipal waste combustors is operating at 95-100% of the permitted capacity.
19. Any changes in the permits for continuous burning of these products resulting from the testing outcome will be limited to the types of products used during the tests.
20. Attachments (See Attachment Section) are incorporated.

The Department has relied on the information referenced in the attachments and conversations with representatives of the Bay Resource Management Center operation, Westinghouse Electric Corporation, Resource Energy Systems, in authorizing this permit amendment to the operation permits, Nos. AO 03-165154 and AO 03-165755.

Mr. David Testa  
Amendment to AO 03-165154 & AO 03-165755  
December XX, 1993  
Page 5

**DRAFT**

This letter amendment and its Attachments must be attached to the air operation permits, Nos. AO 03-165154 and AO 03-165755, and shall become a part of the permits.

Sincerely,

Howard L. Rhodes  
Director  
Division of Air Resources  
Management

HLR/DO/rbm

Attachments

cc: Ed Middleswart, NW District  
Jewell Harper, EPA/Region IV  
John Bunyak, NPS  
Gary Shaffer, NWDB/Panama City

Table 1:

BAY RESOURCE MANAGEMENT CENTER  
TEST PROTOCOL AND METHODS

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Constituent	Test Method
Particulate Matter	EPA Method 5
Hydrogen Chloride	EPA Method 26
Dioxins/Furans*	EPA Method 23
Semi Volatiles	EPA Method 23
Vclatile Organic Compounds	EPA Method 18
Sulfur Dioxide	EPA Method 6C
Nitrogen Oxides	EPA Method 7E
Carbon Monoxide	EPA Method 10
Total Hydrocarbons	EPA Method 25A
Stack Gas Flow	EPA Method 2
Stack Gas Moisture	EPA Method 4
O <sub>2</sub> /CO <sub>2</sub> /CO	EPA Method 3
Opacity	EPA Method 9

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\*Not required only if the pharmaceuticals/consumer products waste stream does not contain any chlorinated compounds.

**TABLE 3  
GENERIC CATEGORIES OF WASTE**

<b>1.     <u>PHARMACEUTICALS</u></b>	<b><u>EXAMPLES</u></b>
Over the Counter Products	Vitamin drops, tablets, capsules Aspirin Allergy creams, tablets, elixir Chlorpheniramine Maleate Cough drops and syrups Anti-acid tablets, liquids Sinus tablets, liquids Antifungal Creams
Prescription Drugs	Amoxicillin Carbamazepine Cefazolin Cyclobenzaphrine HCl tablets Gantrez 955 Guaifenesin Quinidine
<b>2.     <u>COSMETICS/HEALTH CARE PRODUCTS</u></b>	Hand creams Lip gels Mouthwashes Ovulation test kits Toothpaste Denture cleansers
<b>3.     <u>FOOD RELATED INGREDIENTS/ RAW MATERIALS</u></b>	Flour Milk protein Aloe Bees Wax Borax Corn bran, starch Cottonseed oil Dried fruit pieces Egg whites, dry Fructose Guar gum Rice Nuts



TABLE 3 (continued)

4. FOOD CONSUMER PRODUCTS

Breathsaver mints  
Candy  
Chewing gum  
Chocolate  
Marshmallow

5. INDUSTRIAL PROCESSING RESIDUES

Leather  
Rubber, Elastomer  
Paper, Cardboard  
Polyethylene, Polystyrene  
Polyurethane and other non-  
halogenated plastics  
Textile wastes including yarn,  
fabric and fiber  
Foam, packaging, shipping and  
container materials  
Labeling materials  
Paper products  
Wood Products  
Corrugated Cardboard

Attachment Section

1. Westinghouse Electric Corporation, Resource Energy Systems, letter with enclosure received August 16, 1993.
2. Westinghouse Electric Corporation, Resource Energy Systems, letter with enclosure received August 31, 1993.
3. Westinghouse Electric Corporation, Resource Energy Systems, letter with enclosure received November 5, 1993.
4. DMG Environmental, Inc., letter received November 16, 1993.
5. Westinghouse Electric Corporation, Resource Energy Systems, letter with enclosure received November 18, 1993.
6. 40 CFR (July, 1992 version).
7. Intent to Issue package dated November 19, 1993.
8. Public Notice received November XX, 1993.
9. Final Determination dated December XX, 1993.

Attachment 1



Westinghouse  
Electric Corporation

RECEIVED

AUG 16 1993

Division of Air  
Resources Management

R E S D

1501 Ardmore Boulevard  
Pittsburgh Pennsylvania 15221

August 12, 1993

Mr. Preston Lewis  
Florida Department of Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32399

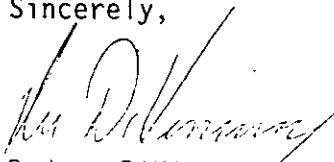
Dear Mr. Lewis:

As discussed, enclosed is a revised plan requesting approval for the Bay County Resource Recovery Facility to process certain non-municipal waste materials. The plan is based on reviewing certified generator waste analysis forms to assure any material accepted is non-toxic, non-hazardous and comprised of the same basic components that are in MSW.

Also enclosed is Attachment A which is a specific request to process the identified pharmaceutical waste materials. These materials have been identified as available for immediate processing at the Bay facility and therefore we would appreciate your expeditious review of this request.

As soon as you have had a chance to review these materials, we will contact you to arrange a meeting and/or answer any questions.

Sincerely,



Rodger DiVincenzo

cc: D. Testa, EA  
J. Leddy, Bay  
J. Joseph  
E. Middleswart, FLDER

**REQUEST TO PROCESS NON-MUNICIPAL WASTES  
BAY COUNTY RESOURCE RECOVERY FACILITY**

**AUGUST 1993**

## **I. INTRODUCTION**

The Bay County Resource Recovery Facility (BCRRF) has been issued Air Quality Permit No. A003-165754 and Solid Waste Management Permit No. 5003-221103 by the Florida Department of Environmental Regulation (FLDER).

The Solid Waste Management Permit allows the facility to process "solid waste" which includes municipal, commercial and industrial non-hazardous and non-biohazardous and non-radioactive waste products. The Air Quality Management permit limits the fuel to municipal solid waste and wood waste. To process other wastes, BCRRF must obtain approval of the FLDER Bureau of Air Quality Management.

Periodically BCRRF has been approached by commercial and industrial generators of municipal-like waste to dispose of their materials. Although not defined as municipal wastes, these materials and/or their components are generally found in the municipal waste stream; some examples are plastics, pharmaceuticals (both over-the-counter and prescriptions), consumer products, food processing residues, textiles, etc. Previously, BCRRF has requested written approval for each type of waste stream on a case-by-case basis. This document summarizes the generic type of non-hazardous, non-biohazardous and non-radioactive waste (referred to herein as non-municipal waste) that BCRRF is seeking approval to accept. This request also summarizes the documentation and recordkeeping procedures BCRRF will utilize to ensure that only those approved types of wastes are received and processed.

The ability to accept residual waste at BCRRF will not interfere with the ability of the Facility to meet its obligations under the approved Bay County Municipal Waste Management Plan. The non-municipal waste will constitute a small portion of the capacity of the BCRRF. These municipal-like wastes will constitute less than 5% of the yearly capacity of the Facility.

Before accepting any non-municipal waste for disposal, BCRRF will require that the generator provide an analysis of the waste in order for BCRRF to screen materials acceptable for processing in order to assure that the BCRRF operates in compliance with its permit. This will ensure that the facility only processes acceptable waste materials. Based on the waste screening methods proposed in this request, processing these waste will have no impact on operation of the facility or environmental emissions.

## II. WASTE CHARACTERISTICS

### Typical MSW

BCRRF is permitted to operate at 95.6 million Btu/hours heat input (using a higher heating value of 4,500 Btu/lb for waste and a processing rate of 510 tons per day for the facility.) The primary fuel is municipal solid waste with wood waste as auxiliary fuel.

The USEPA, Municipal and Industrial Solid Waste Division, commissioned Franklin Associates, Ltd. to characterize municipal solid waste in the United States<sup>1</sup>. Franklin Associates utilized material flows approach to estimate the waste stream on a nationwide basis. EPA's Office of Solid Waste began to develop this method and its database in the late 1960's. The material flows methodology is based on production data for the material and products in the waste stream. Adjustments are made for imports, exports, lifetimes of products and yard wastes.

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<sup>1</sup>Franklin Associates, Ltd., Characterization of Municipal Solid Waste in the United States, 1992 Update, July 1992, U.S. Environmental Protection Agency, Municipal and Industrial Solid Waste Division, Office of Solid Waste.

Table 1 summarizes the categories of products discarded into the municipal waste stream in 1990. Note that the containers/packaging category constitutes 29% of the waste stream and is the largest single category of MSW.

**TABLE 1**  
**Categories of Products Discarded as MSW in 1990**

Category	Million of Tons	Percent
Durable Goods	24.8	15.3
Nondurable Goods	43.2	26.6
Containers/Packaging	47.4	29.2
Food Waste	13.2	8.1
Yard Trimmings	30.8	19.0
Misc. Inorganic Waste	<u>2.9</u>	<u>1.8</u>
Total	162.3	100.0%

Table 2 lists the various components of the waste categories listed in Table 1. These tables show the diverse non-homogeneous mixture that constitutes MSW. Because of the heterogeneity of the waste stream, identifying a typical elemental analysis for MSW is extremely difficult.



TABLE 2		
SPECIFIC PRODUCTS DISCARDED IN 1990		
CATEGORY	MILLION OF TONS	PERCENT
<b>DURABLE GOODS</b>		
MAJOR APPLIANCES	1.9	1.2%
FURNITURE	7.4	4.6%
CARPETS AND RUGS	1.7	1.0%
RUBBER TIRES	1.6	1.0%
BATTERIES, LEAD ACID	0.1	NEG
MISC DURABLES	12.1	7.5%
<b>TOTAL DURABLE GOODS</b>	<b>24.8</b>	<b>15.3%</b>
<b>NONDURABLE GOODS</b>		
NEWSPAPERS	7.4	4.6%
BOOKS	0.9	0.5%
MAGAZINES	2.5	1.5%
OFFICE PAPER	4.7	2.9%
TELEPHONE BOOKS	0.5	0.3%
THIRD CLASS MAIL	3.6	2.2%
OTHER COMMERCIAL	4.5	2.7%
TISSUE PAPER AND TOWELS	3.2	2.0%
PAPER PLATES AND CUPS	0.7	0.45
PLASTIC PLATES AND CUPS	0.3	0.2%
TRASH BAGS	0.8	0.5%
DISPOSABLE DIAPERS	2.6	1.6%
OTHER NONPACKAGING PAPER	3.8	2.3%
CLOTHING AND FOOTWARE	3.6	2.2%
TOWELS AND SHEETS	1.0	0.6%
OTHER MISC NONDURABLES	3.2	2.0%
<b>TOTAL NONDURABLE GOODS</b>	<b>43.2</b>	<b>26.6</b>

TABLE 2		
SPECIFIC PRODUCTS DISCARDED IN 1990		
CATEGORY	MILLION OF TONS	PERCENT
CONTAINER AND PACKAGING		
GLASS PACKAGING	9.3	5.7%
STEEL PACKAGING	2.3	1.4
PAPER AND PAPERBOARD PACKAGING	20.6	12.7%
PLASTIC PACKAGING	6.7	4.1%
WOOD PACKAGING	7.5	4.6%
OTHER MISC PACKAGING	0.2	0.1%
<i>TOTAL CONTAINER AND PACKAGING</i>	<i>47.4</i>	<i>29.2%</i>
<i>FOOD WASTE</i>	<i>13.2</i>	<i>8.1</i>
<i>YARD TRIMMINGS</i>	<i>30.8</i>	<i>19</i>
<i>MISC INORGANIC WASTES</i>	<i>2.9</i>	<i>1.9</i>

## **Non-Municipal Waste**

The BCRRF is requesting permission to accept for processing, the generic types of waste streams listed in Table 3. Table 3 lists broad categories of waste along with selected examples of the specific types of waste considered acceptable for disposal including pharmaceuticals and consumer products. These wastes will be certified to be non-hazardous, non-biohazardous and non-radioactive and the waste will be screened in accordance with the limits listed in Table 4.

The materials requested to be processed at the BCRRF are comprised of the same basic components that are in MSW. For example, one of the first kinds of waste that BCRRF is requesting to process is pharmaceuticals. The pharmaceutical waste as delivered to BCRRF will be comprised of approximately 30-50% of the specified pharmaceuticals and 50-70% packaging material. This 50-70% packaging material is the same types of packaging material identified in typical MSW listed in Table 2. Therefore, more than half of the non-municipal pharmaceutical waste will actually be MSW. The chemical composition of the remaining pharmaceuticals include both active and inactive ingredients. Most of the major inactive ingredients which are expected to dominate the waste mass include common household items such as sucrose and lactose (types of sugars), talc and magnesium stearate (dusting powder), starch and gelatin. The active ingredients (typically less than 5% of the total compound weight) are largely organic materials that are easily destroyed by the high temperature of combustion.

### **III. PROCESS CONSIDERATIONS**

The BCRRF is requesting to process a wide range of waste streams, such as those listed in Table 3. The BCRRF combustors are designed to process a diverse mixture of waste streams and provides a sufficiently high combustion gas temperature in the combustor barrel (in excess of 1800°F) and adequate residence time to completely combust organic materials. In addition, the BCRRF is equipped with an electrostatic precipitator (ESP)

to remove more than 99% of the particulate matter from the flue gas. The operation of the facility is controlled by the Westinghouse Distributed Process Control Family (WDPF) that monitors over 200 operational parameters used to control plant operation including the combustion process. The BCRRF continuously monitors CO and opacity to assure compliance with their air quality limits. The operational records required by the permits are retained on-site.

All non-municipal waste processed at the BCRRF will be thoroughly mixed with the MSW waste stream prior to charging the waste into the combustor. The mixing of the waste streams will be done on the tipping floor except where the material would be better handled by placing directly onto the conveyor or into the hopper. This will allow the non-municipal waste components to be thoroughly mixed with the MSW. This practice will dilute any of the compounds in the non-municipal waste stream being charged to the combustor. This mixing of the waste materials will minimize the potential for the non-municipal waste to influence the air pollutant emission levels from the plant. Limiting the non-municipal waste feedrate and mixing with MSW should keep individual waste components (sulfur, chlorine, etc.) within the normal range of variation associated with typical MSW.

#### **IV. WASTE ANALYSIS**

The types of non-municipal solid wastes that BCRRF is seeking generic approval to process will be certified to be non-hazardous, non-biohazardous and non-radioactive. BCRRF will require the generator to provide this certification before any waste is accepted for disposal. This certification may come in one of three forms; (1) a non-hazardous material profile form signed by an authorized representative of the generator certifying the wastes' contents, (2) a material safety data sheet (MSDS) or (3) chemical analysis of the waste for pH, ignitability, reactivity and Toxic Characteristic Leaching Procedure (TCLP) constituents (see Table 4). This documentation will be kept on-site for each generator and waste stream type that BCRRF accepts for processing. In

addition to this documentation BCRRF will screen all non-municipal wastes with respect to their chemical composition. An example of this screening process is described in Attachment A.

Attachment A is an example of the screening process used by BCRRF for the specific case of pharmaceutical wastes and consumer products, the information includes the chemical composition, references to Merck, Fax and Lewks, and their usage. The screening also includes their MSDS where needed. BCRRF also uses the chemical composition to calculate the heating value of the waste for determining its suitability for processing, taking into account the packaging.

As part of the initial screening, BCRRF will ensure that the non-municipal waste has a chemical composition similar to that found in typical MSW. BCRRF will limit the chemical composition of the non-municipal waste so that certain constituents of environmental concern are comparable to those found in typical MSW.

These constituents of environmental concern include certain heavy metals that have been identified in MSW. Based upon a recent comprehensive evaluation of MSW waste constituents, an estimate of the amount of heavy metals found in typical MSW has been identified. These levels are listed in Table 5. BCRRF will limit the concentration of these heavy metals in non-municipal waste at or below the upper end of the range listed in Table 5. This will ensure that the loading of these constituents into the combustors will not be increased due to the processing of non-municipal waste streams.

The amount of sulfur and chlorine in the non-municipal waste streams will also be limited to ensure compliance with the permitted emission limitations for SO<sub>2</sub> and HCl. Based on a comprehensive evaluation, the sulfur and chlorine content of MSW can be quantified. The range of sulfur in typical MSW is approximately 0.10 to 0.32%. The range of chlorine in typical MSW is 0.1 to 1.1%. Thus, in order to maintain compliance

with SO<sub>2</sub> and HCl emission limits, BCRRF will limit the content of sulfur and chlorine in non-municipal waste to no more than 0.32 and 1.1 percent, respectively.

Utilizing the above mentioned screening process is a very conservative mechanism to ensure that the combustion of this non-municipal waste stream will not result in increased emissions. The conservatism of this process is based on limiting the feedrate of non-municipal waste to no more than 5% of the total waste stream fed to the combustors.

Plant operating data from the WDPF System and the Continuous Emission Monitoring (CEM) System will be collected during operation of the BCRRF when processing non-municipal waste. Data from the CEM system will be compared to permitted emission limits to insure facility compliance. Also, plant operating data will be analyzed and compared to operating data taken while processing MSW only to insure that facility operations are within acceptable ranges under typical operating modes.

**TABLE 3  
GENERIC CATEGORIES OF WASTE**

<b>1.    <u>PHARMACEUTICALS</u></b>	<b><u>EXAMPLES</u></b>
Over the Counter Products	Vitamin drops, tablets, capsules Aspirin Allergy creams, tablets, elixir Chlorpheniramine Maleate Cough drops and syrups Anti-acid tablets, liquids Sinus tablets, liquids Antifungal Creams
Prescription Drugs	Amoxicillin Carbamazepine Cefazolin Cyclobenzaphrine HCl tablets Gantrez 955 Guaifenesin Quinidine
<b>2.    <u>COSMETICS/HEALTH CARE PRODUCTS</u></b>	Hand creams Lip gels Mouthwashes Ovulation test kits Toothpaste Denture cleansers
<b>3.    <u>FOOD RELATED INGREDIENTS/ RAW MATERIALS</u></b>	Flour Milk protein Aloe Bees Wax Borax Corn bran, starch Cottonseed oil Dried fruit pieces Egg whites, dry Fructose Guar gum Rice Nuts

TABLE 3 (continued)

- |   |   |
|---|---|
| <b>4. <u>FOOD CONSUMER PRODUCTS</u></b>         | Breathsaver mints<br>Candy<br>Chewing gum<br>Chocolate<br>Marshmallow   |
| <b>5. <u>INDUSTRIAL PROCESSING RESIDUES</u></b> | Leather<br>Rubber, Elastomer<br>Paper, Cardboard<br>Polyethylene, Polystyrene<br>Polyurethane and other non-<br>halogenated plastics<br>Textile wastes including yarn,<br>fabric and fiber<br>Foam, packaging, shipping and<br>container materials<br>Labeling materials<br>Paper products<br>Wood Products<br>Corrugated Cardboard |



**Table 4**  
**Maximum Allowable Levels**

<u>Parameter</u>	<u>Maximum Allowable Level</u>
Flash Point (ignitability)	Per 40 CFR 261.21
pH (corrosivity)	Per 40 CFR 261.22
Paint Filter Test	PASS
Reactivity	Per 40 CFR 261.23
TCLP Metals and organics (in extraction fluid):	Per 40 CFR 261.24

**Table 5**  
**Estimated Range of Metals in Typical MSW**

<u>Metal</u>	<u>Amount of Metal in MSW (%)</u>	
As	0.00039	0.0013
Be	0.00016	0.00030
Cd	0.00038	0.0143
Cr	0.0076	0.011
Hg	0.000053	0.00014
Ni	0.0012	0.0021
Pb	0.013	0.019

Reference: Rigo, H.G. et al. Debunking Some Myths About Metals. Presented at the EPA Municipal Solid Waste Combustion Conference, Williamsburg, VA, March 1993.

**ATTACHMENT A**

**Request and Analysis for Processing  
Pharmaceutical and Consumer Product Wastes**

**Bay County Resource Recovery Facility**

## **1.0 INTRODUCTION**

The BCRRF is requesting permission to accept for processing waste pharmaceuticals consumer products. The compositions and amounts of these materials have been reviewed by BCRRF and are consistent with our non-municipal waste processing plan.

The pharmaceutical and consumer product waste as delivered to BCRRF will be comprised of approximately 30-50% of the specified product and 50-70% packaging material. This 50-70% packaging material is the same types of packaging material identified in typical MSW. Therefore, more than half of the non-municipal pharmaceutical and consumer product waste will actually be MSW. The chemical composition of the remaining products include both active and inactive ingredients. Most of the major inactive ingredients which are expected to dominate the waste mass include common household items such as sucrose and lactose (types of sugars), talc and magnesium stearate (dusting powder), starch and gelatin. The active ingredients (typically less than 5% of the total compound weight) are largely organic materials that are easily destroyed by the high temperature of combustion. In addition, these pharmaceuticals and consumer products contain no mercury, lead, or cadmium.

## **2.0 WASTE SCREENING PROCESS**

Each constituent of the pharmaceutical and consumer product waste stream was reviewed in the following manner:

1. A waste characterization sheet was completed by the generator showing chemical composition, packaging and shipment containers, handling or safety requirements, physical properties and MSDS information.
2. BCRRF reviewed this information to assure that the waste streams were not hazardous or toxic by any state or federal laws.

3. BCRRF also reviewed the chemical composition sheets to assure that the inorganic metal levels and halogen levels were below levels found in typical MSW as outlined in our Non-Municipal Waste Processing Plan.

Review of these pharmaceutical and consumer products showed that they contained no mercury, lead or cadmium.

### **3.0 PHARMACEUTICAL AND CONSUMER PRODUCT WASTES**

Table 1 provides a listing of the types of pharmaceutical and consumer products for which waste characterization sheets have been received and reviewed. Appendix A contains completed waste material profile and characterization sheets for four of the materials that will comprise the bulk of any shipments. The waste profile and characterization sheets for the other specific pharmaceuticals and consumer products are available at the BCRRF for review, if required.

Review of the waste profile and characterization forms showed these materials to be non-toxic and non-hazardous. The amounts of inorganic metals and halogen compounds are less (in this waste) than is found in typical MSW as outlined in our Non-Municipal Waste Processing Plan. In addition, these pharmaceuticals and consumer products contain no mercury, lead or cadmium compounds.

Since more than half of the pharmaceutical and consumer product waste stream is expected to be made up of packaging material typically found in regular MSW, the processing rate of the pharmaceutical and consumer product agents should be an extremely small part of the total waste feedrate to the combustors. Also, a major portion of the active ingredients in pharmaceuticals and consumer products are common household items such as sugar, talc, starch, and gelatin.

All pharmaceutical and consumer product waste processed at the BCRRF will be thoroughly mixed with the MSW waste stream prior to charging the waste into the combustor. The mixing of the waste streams will be done on the tipping floor except where the material would be better handled by placing directly onto the conveyor or into the hopper. This will allow the waste components to be thoroughly mixed with the MSW. This mixing of the waste materials will minimize the potential for the pharmaceutical and consumer product wastes to influence the air pollutant emission levels from the plant. Limiting the pharmaceutical and consumer product waste feedrate and mixing with MSW should keep individual waste components (sulfur, chlorine, etc.) within the normal range of variation associated with typical MSW.

**TABLE 1  
GENERIC CATEGORIES OF WASTE**

<b>1.     <u>PHARMACEUTICALS</u></b>	<b><u>EXAMPLES</u></b>
Over the Counter Products	Vitamin drops, tablets, capsules Aspirin Allergy creams, tablets, elixir Chlorpheniramine Maleate Cough drops and syrups Anti-acid tablets, liquids Sinus tablets, liquids Antifungal Creams
Prescription Drugs	Amoxicillin Carbamazepine Cefazolin Cyclobenzaphrine HCl tablets Gantrez 955 Guaifenesin Quinidine
<b>2.     <u>COSMETICS/HEALTH CARE PRODUCTS</u></b>	Hand creams Lip gels Mouthwashes Ovulation test kits Toothpaste Denture cleansers
<b>3.     <u>FOOD RELATED INGREDIENTS/ RAW MATERIALS</u></b>	Flour Milk protein Aloe Bees Wax Borax Corn bran, starch Cottonseed oil Dried fruit pieces Egg whites, dry Fructose Guar gum Rice Nuts

TABLE 1 (continued)

4. FOOD CONSUMER PRODUCTS

Breathsaver mints  
Candy  
Chewing gum  
Chocolate  
Marshmallow



## **APPENDIX A**

### **Example Waste Material Profile and Characterization Forms - Pharmaceutical and Consumer Products**



NON-HAZARDOUS MATERIAL PROFILE SHEET

Profile No. 1079

I. Customer Information

Generator: WARNER-LAMBERT CO  
 Address: 175 TAVOR RD  
MORRIS PLAINS NJ 07950  
 Phone # 01 540-7111 Contact: SEIERIED  
 EPA ID#: NJD 980 768 600

Broker: JAMES ENVR TECH INC  
 Address: 3 SOUTH HILLSIDE DR  
BUDD LAKE NJ 07828  
 Phone # 01 691-2861 Contact: JAMES

II. Material Description/Origin

A. Material Name TUCKS PADS

Waste is hazardous  Yes  No  
 Waste is toxic  Yes  No

B. Origin

Raw Material  Intermediate Product  
 Finished Product  Production Waste  
 Package Insert  Yes  No  
 Description of Process Generating Waste

MANUFACTURING  
RETURN GOODS

C. Reason for Disposal

Out of Spec  Low Value Waste  
 Expired  Other QA REJECT  
 Contaminated \_\_\_\_\_ (Contaminant)

D. Physical Form

Solid  Powder  Liquid  Semi-solid  
 Minimum % Solids \_\_\_\_\_ Particle size \_\_\_\_\_  
 Stratified  Yes  No  
 Homogenous  Yes  No  
 Free Standing Liquids  Yes  No  
 Sample  Yes  No

III. Packaging/Shipping

A. Material Package

Plastic, Polymer Composition JAR/METAL LID  
 Foil  Paper  Other BULK

B. Volume per Package

C. Desired Disposal Schedule

One Time  Periodic (specify) 2 MONTHS  
 Amount per Shipment 200 #

D. Shipping Container

Box  Bulk Solid  
 Drum  Other FIBRE DRUM  
 Volume/weight per Container 25-50#  
 Unfilled Package Weight \_\_\_\_\_

E. Proper DOT Shipping Name

N/A

F. DOT Hazard Class

N/A

IV. Chemical Characteristics

A. Chemical Composition (w/w)

SEE ATTACHED \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 Total (100%) \_\_\_\_\_ %

B. Total Metals (ppm)  
 (Include all TCLP Metals)

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

C. Physical Properties

\_\_\_\_\_ pH \_\_\_\_\_ Viscosity (cp)  
 \_\_\_\_\_ Boiling Point (°F)  
 \_\_\_\_\_ Melting Point (°F)  
 \_\_\_\_\_ Ignition Point (°F)  
 \_\_\_\_\_ Density (lb/ft³)  
 \_\_\_\_\_ Flash Point (°F)  
N/A % Free Liquid  
 \_\_\_\_\_ Heating Value (Btu/lb)

D. Total Inorganics (w/w)

Chlorine 0 Bromine 0 Iodine 0  
 Fluoride 0 Sulfur 0 Cyanide 0 Nitrogen 0

E. Attached Waste Analysis

Yes  No

V. Safety Issues

A. Attach MSDS for material

B. Describe any special handling or storage requirements

VI. Current Disposal Method

Municipal Landfill  Non-Hazardous Incinerator  
 Hazardous Waste Landfill  Hazardous Incinerator

VII. Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I further certify that the material is non-hazardous and poses no serious public safety nor health threat.

Signature: J. James Name (print): JAMES Title: CONSULTANT Date: 7/21/93

Tucks Pads

Characteristic of Waste:

White cotton pads, saturated with solution listed below  
Plastic jar with metal lid or foil packs repacked in fiber cartons or drums

Chemical Composition of Waste:

Witch hazel (Hamamelis) CAS 68916-39-2  
50% of solution  
Dried leaves of Hamamelis virginiana, Hamamelidaceae, collected in autumn  
Ther Cat: astringent  
Merck 4490, page 664  
Sax and Lewis WCB000, page 3490  
A mild irritant, combustible when exposed to heat or flame, can react with oxidizing materials

Water H<sub>2</sub>O MW: 18 CAS 7732-18-5  
40% of solution  
Merck 9853, page 930  
Sax and Lewis WAT259, page 3487

Glycerin C<sub>3</sub>H<sub>8</sub>O<sub>3</sub> MW: 98.1 CAS 56-81-5  
9% of solution  
Ther Cat: pharmaceutical aid - humectant solvent  
Merck 4347, page 664  
Sax and Lewis GGA000, page 1810  
When heated to decomposition emits acrid smoke and fumes

Sodium citrate C<sub>6</sub>H<sub>5</sub>Na<sub>3</sub>O<sub>7</sub> MW: 258.1 CAS 55049-48-4  
0.3% of solution  
Ther Cat: alkalizer, diuretic, expectorant, sudorific, invitro anticoagulant  
Merck 8435, page 1233  
Sax and Lewis SFX725, page 3056  
When heated to decomposition it emits toxic fumes of Na<sub>2</sub>O

Citric Acid C<sub>6</sub>H<sub>8</sub>O<sub>7</sub> MW: 192.1 CAS 77-92-9  
0.3% of solution  
Ther Cat: component of anticoagulant citrate  
Merck 2297, page 330  
Sax and Lewis CMS750, page 725  
When heated to decomposition it emits acid smoke and irritating fumes

Benzalkonium chloride  
0.3% of solution  
Ther Cat: topical anti-infective  
Merck 1055, page 150  
Sax and Lewis BBA500, page 356  
A severe eye irritant, a bactericide and fungicide, when heated to decomposition it emits toxic fumes of Cl<sup>-</sup> and NO<sub>x</sub>

Methylparaben  $C_8H_8O_3$  MW: 152.1

0.1% of solution

Preservative in foods, beverages and cosmetics

Merck 5977, page 874



NON-HAZARDOUS MATERIAL PROFILE SHEET

I. Customer Information

Profile No. 1060

Generator: WARNER-LAMBERT CO  
 Address: 175 TABOR RD  
MORRIS PLAINS NJ 07950  
 Phone # 01 540-7111 Contact C SEIFRIED  
 EPA ID#: NJD 980 768 600

Broker: JAMES ENVR TECH INC  
 Address: 3 SOUTH HILLSIDE DR  
BUDD LAKE NJ 07828  
 Phone # 01 691-2861 Contact F JAMES

II. Material Description/Origin

A. Material Name TACRINE HCL

C. Reason for Disposal

Waste is hazardous  Yes  No  
 Waste is toxic  Yes  No

Out of Spec  Low Value Waste  
 Expired  Other QA RETEST  
 Contaminated \_\_\_\_\_ (Contaminant)

B. Origin

Raw Material  Intermediate Product  
 Finished Product  Production Waste  
 Package Insert  Yes  No  
 Description of Process Generating Waste

D. Physical Form NEEDLES

Solid  Powder  Liquid  Semi-solid  
 Minimum % Solids \_\_\_\_\_ Particle size \_\_\_\_\_  
 Stratified  Yes  No  
 Homogenous  Yes  No  
 Free Standing Liquids  Yes  No  
 Sample  Yes  No

MANUFACTURING  
CLINICAL DEVELOPMENT

III. Packaging/Shipping

A. Material Package  
 Plastic, Polymer Composition \_\_\_\_\_  
 Foil  Paper  Other BULK

D. Shipping Container

Box  Bulk Solid  
 Drum  Other FIBRE DRUM  
 Volume/weight per Container 50#  
 Unfilled Package Weight \_\_\_\_\_

B. Volume per Package \_\_\_\_\_

C. Desired Disposal Schedule  
 One Time  Periodic (specify) 4 MONTHS  
 Amount per Shipment 100#

E. Proper DOT Shipping Name N/A

F. DOT Hazard Class N/A

IV. Chemical Characteristics

A. Chemical Composition (W%)	B. Total Metals (ppm) (Include ALL TCLP Metals)
<u>SEE ATTACHED</u> _____ %	_____
_____ %	_____
<u>ACTIVE INGREDIENT</u> _____ %	_____
<u>IN COGNEX</u> _____ %	_____
_____ %	_____
_____ %	_____
_____ %	_____
_____ %	_____
Total (100%) _____ %	_____

C. Physical Properties
_____ pH _____ Viscosity (cp)
_____ Boiling Point (°F)
_____ Melting Point (°F)
_____ Ignition Point (°F)
_____ Density (lb/ft')
<u>N/A</u> Flash Point (°F)
<u>N/A</u> % Free Liquid
_____ Heating Value (BTU/lb)

D. Total Inorganics (W%)  
 Chlorine 10% Bromine 0 Iodine 0  
 Fluoride 0 Sulfur 0 Cyanide 0 Nitrogen 0

E. Attached Waste Analysis  
 Yes  No

V. Safety Issues

A. Attach MSDS for material  
 B. Describe any special handling or storage requirements

VI. Current Disposal Method

Municipal Landfill  Non-Hazardous Incinerator  
 Hazardous Waste Landfill  Hazardous Incinerator

VII. Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I further certify that the material is non-hazardous and poses no serious public safety nor health threat.

Signature [Signature] Name (print) FX JAMES Title CONSULTANT Date 7/20/93

## Tacine

### Characteristic of Waste:

Yellow needles from concentrated hydrochloric acid, bitter taste; soluble in water  
Active ingredient in Cognex  
Fiber cartons or drums

### Chemical Composition of Waste:

Tacrine hydrochloride  $C_{13}H_{14}N_2HCl$  MW: 234.5

5.1 % of composition

Ther Cat: anticholinesterase, respiratory stimulant

Merck 8907, page 1298

Lactose  $C_{12}H_{22}O_{11}$  MW: 342.3

60.4 % of composition

Ther Cat: pharmaceutical aid; tablet and capsule diluent

Merck 5180, page 769

Sax and Lewis LAR000, page 2088

When heated to decomposition emits acrid smoke and irritating fumes

Microcrystalline Cellulose  $(C_6H_{10}O_5)_n$

34 % of composition

Ther Cat: stabilizer, thickener, texturizer

Merck 1925, page 273

Magnesium stearate  $C_{36}H_{70}MgO_4$  MW: 591.3

0.5 % of composition

Used in baby dusting powders; as tablet lubricant

Merck 5512, page 812



NON-HAZARDOUS MATERIAL PROFILE SHEET

I. Customer Information

Profile No. 0524

Generator: WARNER-LAMBERT CO  
Address: 175 TABOR RD  
MORRIS PLAINS NJ 07950  
Phone # 201 540-7111 Contact: C SEIERIED  
EPA ID#: NJD 980 768 600

Broker: JAMES ENVR TECH INC  
Address: 3 SOUTH HILLSIDE DR  
BUDD LAKE NJ 07828  
Phone # 201 691-2861 Contact: F JAMES

II. Material Description/Origin

A. Material Name METHYLDOPA TABLETS  
Waste is hazardous  Yes  No  
Waste is toxic  Yes  No

C. Reason for Disposal:  
 Out of Spec  Low Value Waste  
 Expired  Other QA REJECT  
 Contaminated \_\_\_\_\_ (Contaminant)

B. Origin  
 Raw Material  Intermediate Product  
 Finished Product  Production Waste  
Package Insert  Yes  No  
Description of Process Generating Waste  
MANUFACTURING  
CLINICAL DEVELOPMENT

D. Physical Form  
 Solid  Powder  Liquid  Semi-solid  
Minimum % Solids \_\_\_\_\_ Particle size \_\_\_\_\_  
Stratified  Yes  No  
Homogenous  Yes  No  
Free Standing Liquids  Yes  No  
Sample  Yes  No

III. Packaging/Shipping

A. Material Package  
 Plastic, Polymer Composition BLISTERS  
 Foil  Paper  Other POLY BOTTLES  
BULK

D. Shipping Container  
 Box  Bulk Solid  
 Drum  Other FIBRE DRUM  
Volume/weight per Container 25-50#  
Unfilled Package Weight \_\_\_\_\_

B. Volume per Package \_\_\_\_\_  
C. Desired Disposal Schedule  
 One Time  Periodic (specify) 6 MONTHS  
Amount per Shipment 100 #

E. Proper DOT Shipping Name N/A  
F. DOT Hazard Class N/A

IV. Chemical Characteristics

A. Chemical Composition (w/%)  
SEE ATTACHED \_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
\_\_\_\_\_ %  
Total (100%) \_\_\_\_\_ %

B. Total Metals (ppm)  
(Include all TCLP Metals)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Physical Properties  
\_\_\_\_\_ pH \_\_\_\_\_ Viscosity (cp)  
\_\_\_\_\_ Boiling Point (°F)  
\_\_\_\_\_ Melting Point (°F)  
\_\_\_\_\_ Ignition Point (°F)  
\_\_\_\_\_ Density (lb/ft³)  
N/A Flash Point (°F)  
N/A % Free Liquid  
\_\_\_\_\_ Heating Value (BTU/lb)

D. Total Inorganics (w/%)  
Chlorine 0 Bromine 0 Iodine 0  
Fluoride 0 Sulfur 0 Cyanide 0 Nitrogen 0

E. Attached Waste Analysis  
 Yes  No

V. Safety Issues

A. Attach MSDS for material  
B. Describe any special handling or storage requirements

VI. Current Disposal Method

Municipal Landfill  Non-Hazardous Incinerator  
 Hazardous Waste Landfill  Hazardous Incinerator

VII. Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I further certify that the material is non-hazardous and poses no serious public safety nor health threat.

Signature [Signature] Name (print) FX JAMES Title CONSULTANT Date 7/6/93

## Methyldopa

### Characteristic of Waste:

Blue odorless tablets or granulation  
Antihypertensive  
Blister pack/plastic bottles repacked in cartons or drums

### Chemical Composition of Waste:

Methyldopa  $C_{10}H_{13}NO_4$  MW: 211.2  
78.3 % of composition  
Ther Cat: antihypertensive  
Merck 5928, page 867

Cellulose  $(C_6H_{10}O_5)_n$   
15.7 % of composition  
Ther Cat: stabilizer, thickener, texturizer  
Merck 1925, page 273

Starch  $(C_6H_{10}O_5)_n$   
4.7 % of composition  
Ther Cat: pharmaceutical aid - tablet disintegrate filler,  
binder  
Merck 8650, page 1258  
Sax and Lewis SLJ500, page 3112  
A nuisance dust, an allergen, flammable when exposed to  
flame

Edetate disodium  $C_{10}H_{14}N_2Na_2O_8$  MW: 336.2  
0.27 % of composition  
Ther Cat: chelating agent  
Merck 3487, page 508

Silicon dioxide  $SiO_2$  MW: 60.1  
0.03 % of composition  
Ther Cat: anticaking and defoaming agent  
Merck 8329, page 1220

Stearic acid  $C_{18}H_{36}O_2$  MW: 284.5  
1.00 % of composition  
Ther Cat: coating agent  
Merck 8654, page 1258





NON-HAZARDOUS MATERIAL PROFILE SHEET

Profile No. 0525

I. Customer Information

Generator: WARNER-LAMBERT CO  
 Address: 175 TABOR RD  
MORRIS PLAINS NJ 07950  
 Phone # 201 540-7111 Contact: C SEIFRIED  
 EPA ID#: NJD 980 768 600

Broker: JAMES ENVR TECH INC  
 Address: 3 SOUTH HILLSIDE DR  
BUDD LAKE NJ 07828  
 Phone # 201 691-2861 Contact: F JAMES

II. Material Description/Origin

A. Material Name METHYL DCPA GRANULATION

Waste is hazardous  Yes  No  
 Waste is toxic  Yes  No

C. Reason for Disposal

Out of Spec  Low Value Waste  
 Expired  Other \_\_\_\_\_  
 Contaminated \_\_\_\_\_ (Contaminant)

B. Origin

Raw Material  Intermediate Product  
 Finished Product  Production Waste  
 Package Insert  Yes  No  
 Description of Process Generating Waste

MANUFACTURING  
CLINICAL DEVELOPMENT

D. Physical Form

Solid  Powder  Liquid  Semi-solid  
 Minimum % Solids \_\_\_\_\_ Particle size \_\_\_\_\_  
 Stratified  Yes  No  
 Homogenous  Yes  No  
 Free Standing Liquids  Yes  No  
 Sample  Yes  No

III. Packaging/Shipping

A. Material Package

Plastic, Polymer Composition \_\_\_\_\_  
 Foil  Paper  Other BULK

B. Volume per Package

C. Desired Disposal Schedule

One Time  Periodic (specify) 6 MONTHS  
 Amount per Shipment 100 #

D. Shipping Container

Box  Bulk Solid  
 Drum  Other FIBER DRUM  
 Volume/weight per Container 50-100#  
 Unfilled Package Weight \_\_\_\_\_

E. Proper DOT Shipping Name N/A

F. DOT Hazard Class N/A

IV. Chemical Characteristics

A. Chemical Composition (w/%)

SEE # 0524 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 \_\_\_\_\_ %  
 Total (100%) \_\_\_\_\_ %

B. Total Metals (ppm)  
 (Include all TCLP Metals)

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

C. Physical Properties

\_\_\_\_\_ pH \_\_\_\_\_ Viscosity (cp)  
 \_\_\_\_\_ Boiling Point (°F)  
 \_\_\_\_\_ Melting Point (°F)  
 \_\_\_\_\_ Ignition Point (°F)  
 \_\_\_\_\_ Density (lb/ft³)  
 \_\_\_\_\_ Flash Point (°F)  
N/A % Free Liquid  
 \_\_\_\_\_ Heating Value (BTU/lb)

D. Total Inorganics (w/%)

Chlorine 0 Bromine 0 Iodine 0  
 Fluoride 0 Sulfur 0 Cyanide 0 Nitrogen 0

E. Attached Waste Analysis

Yes  No

V. Safety Issues

A. Attach MSDS for material

B. Describe any special handling or storage requirements

VI. Current Disposal Method

Municipal Landfill  Non-Hazardous Incinerator  
 Hazardous Waste Landfill  Hazardous Incinerator

VII. Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I further certify that the material is non-hazardous and poses no serious public safety nor health threat.

Signature J. James Name (print) EX JAMES Title CONSULTANT Date 7/6/93

Methyldopa

Characteristic of Waste:

Blue odorless tablets or granulation  
Antihypertensive  
Blister pack/plastic bottles repacked in cartons or drums

Chemical Composition of Waste:

Methyldopa  $C_{10}H_{13}NO_4$  MW: 211.2  
78.3 % of composition  
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Sax and Lewis SLJ500, page 3112  
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Stearic acid  $C_{18}H_{36}O_2$  MW: 284.5  
1.00 % of composition  
Ther Cat: coating agent  
Merck 8654, page 1258

Attachment 2



Westinghouse  
Division of Resource Management  
Electric Corporation

RECEIVED  
AUG 31 1993

R E S D

1501 Ardmore Boulevard  
Pittsburgh Pennsylvania 15221

August 30, 1993

Mr. Preston Lewis  
FL Department of Environmental Regulation  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32399

Dear Mr. Lewis:

Enclosed is the additional information you requested during your conversation with Mr. Jerry Joseph on August 17, 1993.

Attachment A provides metal emission test data from the Bay County Resource Recover Facility (BCRRF) and other Municipal Waste Combustors (MWCs) equipped with electrostatic precipitators (ESP). As shown in the attachment the BCRRF emission data compares favorable to those levels observed at other facilities. Please note that these emission data points are the actual tested levels and not the permitted levels.

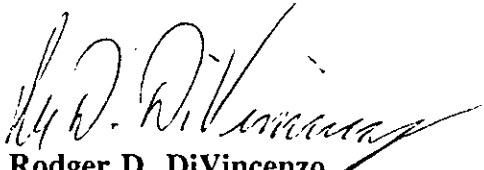
Attachment B provides a rough mass balance estimate of the amount of inorganic metals in MSW using measured emission data for both flue gas and combined bottom and fly ash. These estimated metal concentrations concur with the data previously submitted. (Table 5 of our August 12, 1993 submittal.)

In reviewing data on metal concentrations in MSW and flue gas, we are not aware of any valid test data whereby flue gas emissions could be accurately predicted based on incoming MSW metal content. However, for processing a specific non-municipal waste (such as the pharmaceuticals) that may be more homogeneous than MSW, BCRRF can require that inorganic metal concentrations will be at or below the upper ranges listed in Attachment B. Therefore by limiting the incoming metal concentrations in these

Mr. Preston Lewis  
August 30, 1993  
Page 2

non-municipal waste streams there will not be any increase in emission levels of these compounds as compared to processing "typical MSW". In addition, for the case of the pharmaceuticals and consumer products, these analyses have shown that they would contain no mercury, lead or cadmium.

We are planning to be in the Bay County area the week of September 6, 1993 and would like to set-up a meeting with you to discuss this issue. We will contact you shortly to set a date. In the meantime, if you have any questions, please do not hesitate to contact me at (412) 247-6425.



Rodger D. DiVincenzo  
Resource Energy Systems

/tlb

**ATTACHMENT A**

**METAL EMISSION LEVELS FOR  
MUNICIPAL WASTE COMBUSTORS  
EQUIPPED WITH ESP'S**

Attached is Tables A-1 showing the stack metal emission levels from the BCRRF and Table A-2 which provides metal emission levels from other MWCs equipped with an Electrostatic Precipitator (ESP). The BCRRF data was obtained from compliance tests required by the permit; while the data in Table A-2 was obtained from the EPA document "Compilation of Air Pollutant Emission Factors" (AP-42), September 1992.

Also included are graphs of these data showing how the BCRRF test data compares to other facilities equipped with ESP's per each metal. As can be seen, the emission test levels from BCRRF are within the range of emission levels measured at other similarly controlled facilities.

Table A-1  
 Bay County Resource Recovery Facility  
 Metal Emission Test Data

POLLUTANT	ug/dscm @ 7% O2
As	4.7
As	5.9
As	8.6
As	4.9
Be *	4.45E-04
Be *	4.30E-04
Be *	4.06E-04
Be *	4.49E-04
Be *	4.48E-04
Be *	2.89E-02
Cd	14.6
Cd	18.9
Cd	51.8
Cd	17.6
Hg *	351.9
Hg *	328.5
Hg *	236.6
Hg *	305.6
Hg *	155.9
Hg *	252.0
Hg *	164.0
Hg *	192.3
Hg *	282.3
Hg *	440.9
Ni	0.8
Ni	1.4
Ni	5.6
Ni	4.3
Pb *	224.1
Pb *	280.6
Pb *	730.6
Pb *	293.1
Pb *	120.6
Pb *	296.6
Pb *	547.4
Pb *	565.0
Pb *	584.5
Pb *	669.0

\* PERMIT LIMITS:

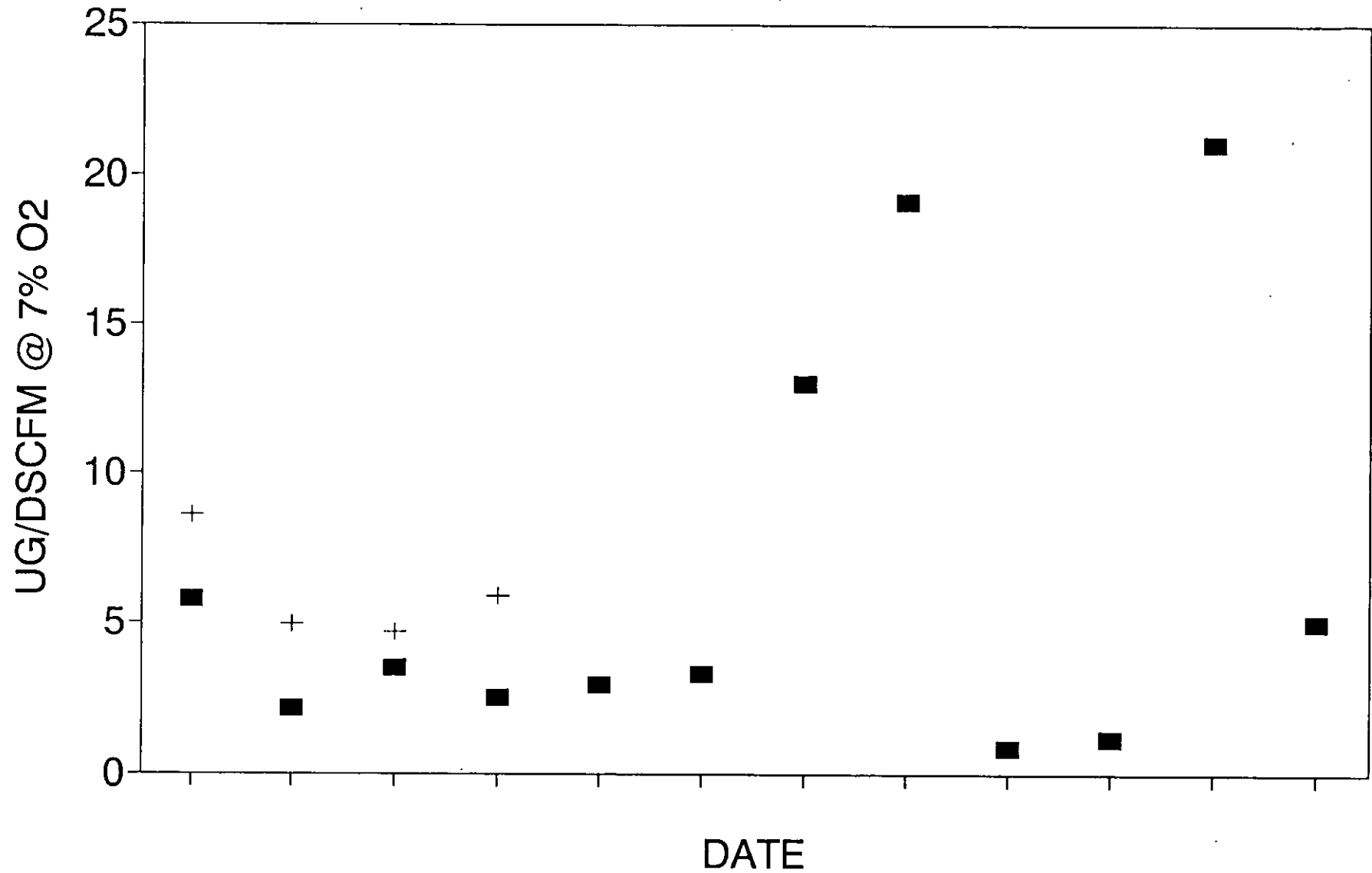
Pollutant	ug/dscm @ 7% O2
Be	4.67E-02
Hg	1680.8
Pb	933.8



Table A-2  
Metal Emission Test Data For Municipal Waste Combustors  
with Electrostatic Precipitators

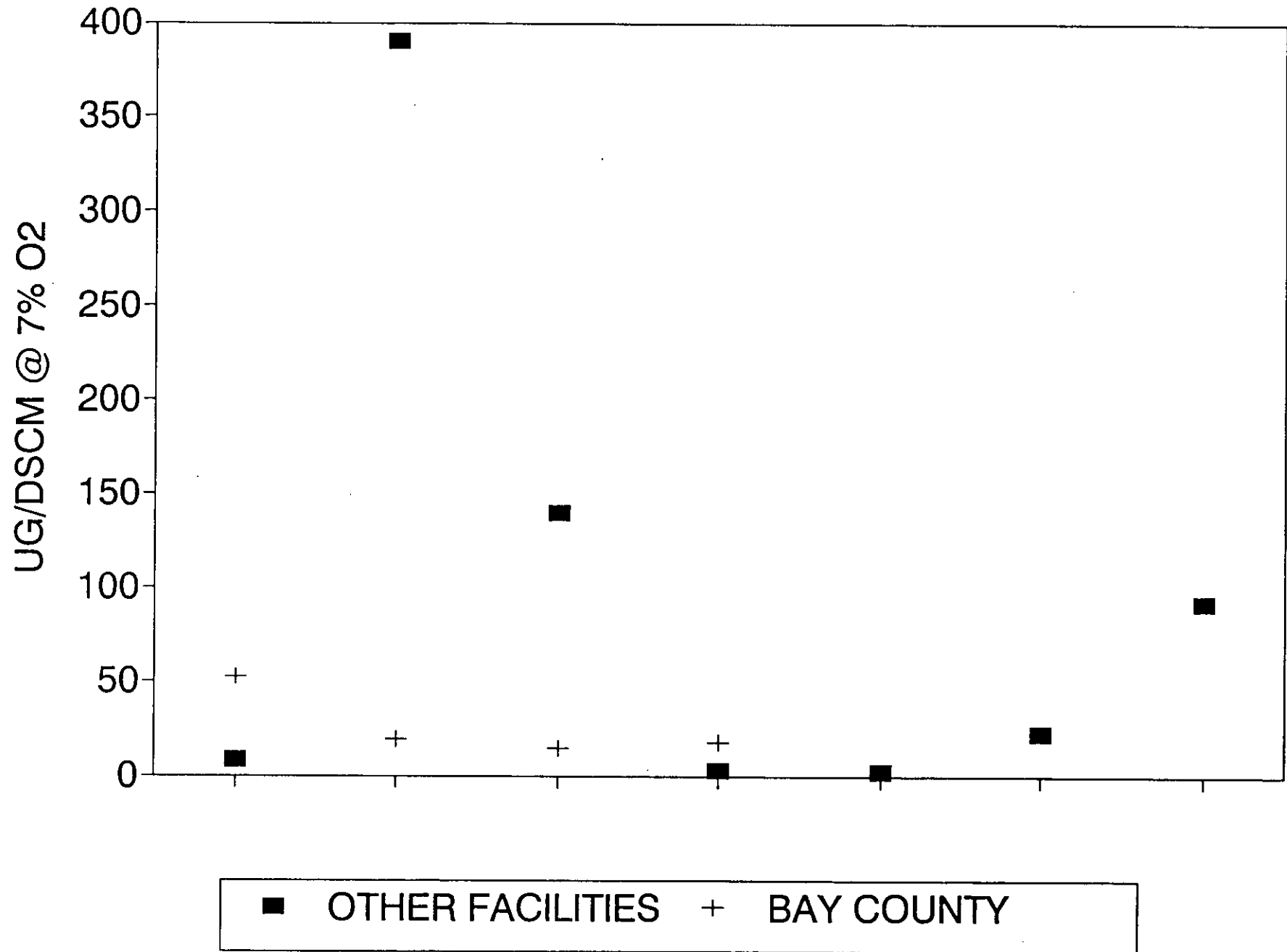
FACILITY	Metal Emissions (ug/dscm @ 7% O2)				
	As	Cd	Hg	Ni	Pb
ALBANY	19.10				
BALTIMORE RESCO	5.80				
BARRON COUNTY	21	22			270
DAYTON	2.94	3.00	1150	2.74	530
DAYTON	2.51	1.90	1020	5.63	560
HILLSBOROUGH			823		320
NSP RED WING	13.00		194	34.0	
NSP RED WING	3.30		653	129	
ONEIDA COUNTY	5.03	92	2060	125	430
PEEKSKILL	2.17				
PIGEON POINT	0.833		363	43.9	150
PINELLAS COUNTY	3.50	8.00	847	2.38	150
POPE/DOUGLAS	1.15		133		
TULSA		140.00	711		410
TULSA		390.00	466		
TULSA			746		
TULSA			600		
TULSA			97		
TULSA			1000		
TULSA			418		

# ARSENIC EMISSIONS

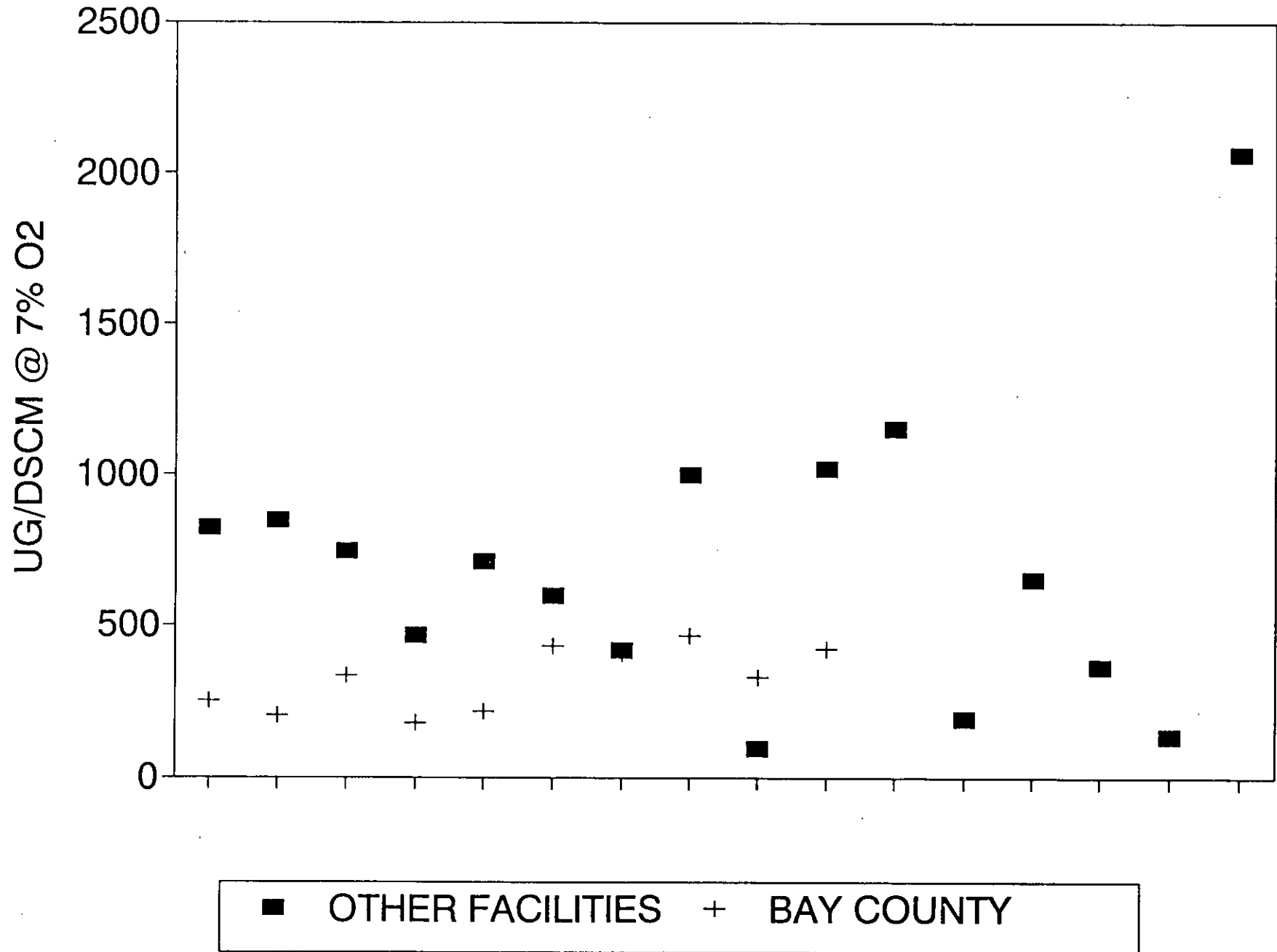


■ OTHER FACILITIES + BAY

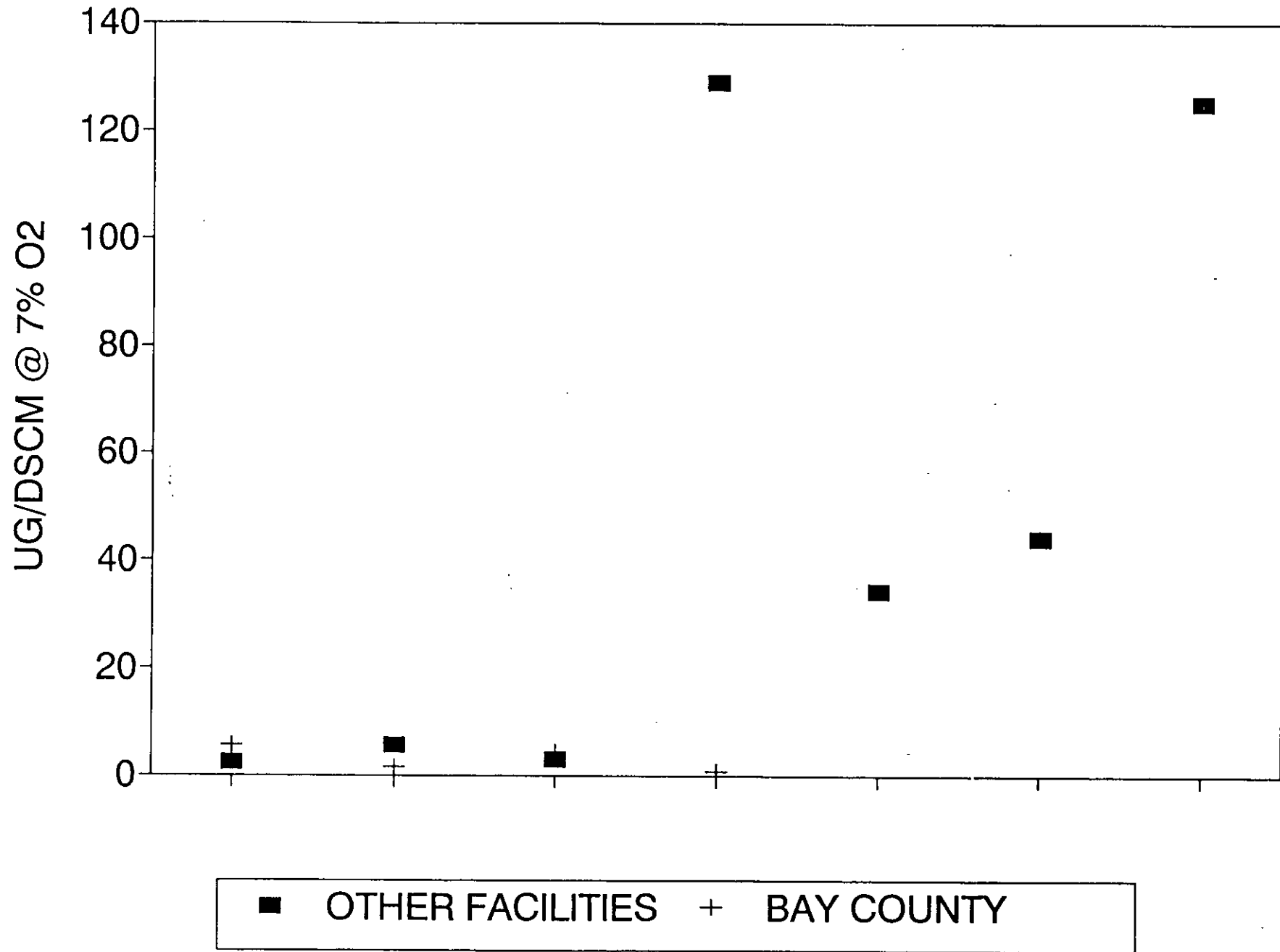
# CADMIUM EMISSIONS



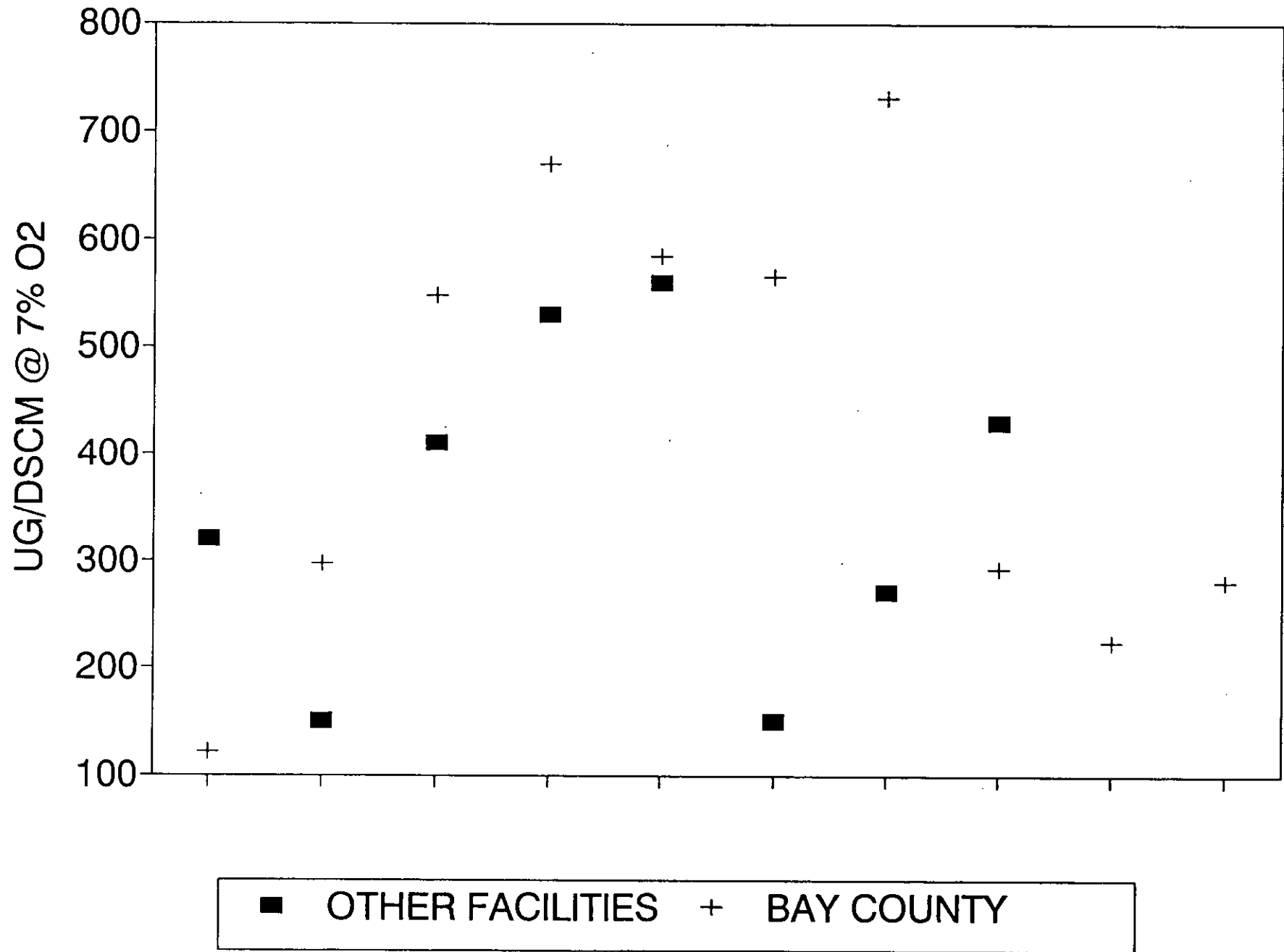
# MERCURY EMISSIONS



# NICKEL EMISSIONS



# LEAD EMISSIONS



## **ATTACHMENT B**

### **METAL LEVELS IN TYPICAL MUNICIPAL SOLID WASTE (MSW)**

In our letter dated August 17, 1993 we provided data from a study that estimated "typical" concentrations of inorganic metals in MWCs. As a follow-up, we are providing additional data to try and perform a second estimate of the range of metals that could be found in typical MSW. Table B-1 provides an estimate of these typical concentrations of inorganic metals in MSW utilizing flue gas emission factors and metal concentrations in combined bottom ash and fly ash. In compiling this table we are providing a "rough" mass-balance estimate of the incoming metal concentration in MSW by utilizing test data on both the solid and gas emission streams.

In Table B-1, a percentage range of metals in MSW was estimated by adding the flue gas emission factor (uncontrolled) for a particular metal to the range of concentrations of that metal observed in combined MSW ash. The metal flue gas emission estimates were obtained from EPA's recently updated data base for AP-42 "Compilation of Air Pollutant Emission Factors". These emission factors are based on uncontrolled concentration levels for mass burn and modular excess air MWCs. The concentration of metals in combined ash were obtained from an MWC ash characterization study conducted for EPA and referenced in Table B-1.

The metal in MSW concentrations in Table B-1 are consistent with the ranges that were provided in our August 17, 1993 submission; and are reproduced in Table B-2.

As stated in our August 1993 submittal, any non-municipal waste that BCRRF will accept will be certified to contain the ranges listed in Table B-2 or less.



TABLE B-1

Compound	Metals in Flue Gas <sup>1</sup> lbs/ton MSW	Ash <sup>2</sup> lbs/ton MSW <sup>3</sup>	Total Range	
			lb/ton	%
Arsenic (As)	$4.37 \times 10^3$	$1.74 \times 10^{-3} - 1.37 \times 10^{-2}$	$1.74 \times 10^{-3} - 1.78 \times 10^{-2}$	$8.7 \times 10^{-5} - 8.89 \times 10^{-4}$
Cadmium (Cd)	$1.09 \times 10^{-2}$	$4.68 \times 10^{-3} - 2.7 \times 10^{-2}$	$4.68 \times 10^{-3} - 3.79 \times 10^{-2}$	$2.34 \times 10^{-4} - 1.9 \times 10^{-3}$
Chromium (Cr)	$8.97 \times 10^{-3}$	$7.2 \times 10^{-3} - 1.99 \times 10^{-1}$	$7.2 \times 10^{-3} - 2.09 \times 10^{-1}$	$3.6 \times 10^{-4} - 1.05 \times 10^{-2}$
Mercury (Hg)	$5.6 \times 10^{-3}$	$6.6 \times 10^{-5} - 5.22 \times 10^{-3}$	$6.6 \times 10^{-5} - 1.08 \times 10^{-2}$	$3.3 \times 10^{-6} - 5.4 \times 10^{-4}$
Nickel (Ni)	$7.85 \times 10^{-3}$	$7.8 \times 10^{-3} - 3.34 \times 10^{-1}$	$7.8 \times 10^{-3} - 1.71 \times 10^{-2}$	$3.9 \times 10^{-4} - 1.71 \times 10^{-2}$
Lead (Pb)	$2.13 \times 10^{-1}$	$1.55 \times 10^{-1} - 7.92$	$1.55 \times 10^{-1} - 8.13$	$7.55 \times 10^{-3} - 4.06 \times 10^{-1}$

<sup>1</sup> From "Compilation of Air Pollutant Emission Factors". AP-42 update 7/93.

<sup>2</sup> "Characterization of Municipal Waste Combustor Ashes and Leachate from Municipal Solid Waste Landfills, Monofils, and Co-Disposal Sites" U.S. EPA September 1987.

<sup>3</sup> In the study, metal ranges were given in percent of combined ash. A conversion factor of 600 lbs. of ash produced per ton MSW burned was used to convert to units of lbs. of metals per ton of MSW.

**TABLE B-2  
ESTIMATED RANGE OF METALS IN TYPICAL MSW**

Metal	Amount of Metal in MSW (%)*	
	Reference 1	Reference 2
As	$3.9 \times 10^{-4} - 1.3 \times 10^{-3}$	$8.7 \times 10^{-5} - 8.89 \times 10^{-4}$
Be	$1.6 \times 10^{-4} - 3.0 \times 10^{-4}$	N/A
Cd	$3.8 \times 10^{-4} - 1.43 \times 10^{-2}$	$2.34 \times 10^{-4} - 1.9 \times 10^{-3}$
Cr	$7.6 \times 10^{-3} - 1.1 \times 10^{-2}$	$3.6 \times 10^{-4} - 1.05 \times 10^{-2}$
Hg	$5.3 \times 10^{-5} - 1.4 \times 10^{-4}$	$3.3 \times 10^{-6} - 5.4 \times 10^{-4}$
Ni	$1.2 \times 10^{-3} - 2.1 \times 10^{-3}$	$3.9 \times 10^{-4} - 1.71 \times 10^{-2}$
Pb	$1.3 \times 10^{-2} - 1.9 \times 10^{-2}$	$7.55 \times 10^{-3} - 4.06 \times 10^{-1}$

**\*Reference:**

<sup>1</sup> Rigo, H.G. et al. Debunking Some Myths About Metals. Presented at the EPA Municipal Solid Waste Combustion Conference, Williamsburg, VA, March 1993.

<sup>2</sup> "Compilation of Air Pollutant Emission Factors". AP-42 updated 7/93.

N/A - Not Available

Attachment 3



Westinghouse  
Electric Corporation

Resource Energy Systems

1501 Ardmore Boulevard  
Pittsburgh Pennsylvania 15221

EN5906DT  
November 4, 1993

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NOV 05 1993

Division of Air  
Resources Management

Mr. Preston Lewis  
Florida Department of Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32399

Dear Mr. Lewis:

At the October 19, 1993 SWANA meeting held at the Bay County Resource Recovery Facility (BCRRF), the issue of incinerating "segregated" waste streams at waste-to-energy facilities in Florida was discussed. As a result, a working meeting between the waste-to-energy industry and FLDEP will be scheduled to discuss procedures for FLDEP approval to process these waste streams. As you know, Westinghouse is currently involved in discussions with the Department regarding the approval of an individual segregated waste stream (i.e., pharmaceuticals/consumer products) for processing at the BCRRF and would like to keep these discussions moving forward in parallel with the industry/FLDEP efforts. Specific to our discussions during the October meeting, it was apparent that providing you with additional site-specific waste screening procedures would assist in your evaluation of our request. Therefore, enclosed is a document that describes the operating procedures for screening and processing special waste at the BCRRF.

This document discusses:

- Persons responsible for evaluating the feasibility of processing various waste streams.
- Data and evaluation procedures to be used by BCRRF for accepting special waste streams.
- Waste handling and screening procedures

This information is to supplement the prior submittals to you (August 12, 1993 and August 30, 1993) in which we provided:

- A list of pharmaceuticals/consumer products that we were requesting permission to process.
- Special waste analysis procedures to verify that the material is non-toxic and non-hazardous.

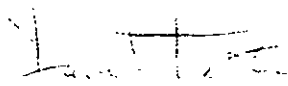
- Technical evaluation of data and literature information to verify that air emissions from the processing of this special waste.
- Metal emission test data from BCRRF and other waste-to-energy facilities equipped with an ESP to illustrate typical emission levels.
- Estimation of gross levels of metals in municipal solid waste.

To reiterate our position, based on all of the above information provided to date, Westinghouse believes that this special waste stream can be processed at the BCRRF without increasing air emission. Levels beyond those associated with processing municipal solid waste alone and without the need to modify the facility's current air quality permit because of the following:

- Pharmaceutical/consumer product waste stream will comprise less than 2% of the total waste feed rate of the facility. Of this 2%, 50-70% is estimated to be comprised of cardboard and other packaging materials.
- Waste handling procedures (mixing and charging) will assure that the small amount of special waste received will be mixed with MSW on the tipping floor prior to charging.
- The chemical analysis for each individual product will be evaluated to assure that the combustion of the special waste will not result in increased air emissions. For example, acid gas forming compounds, in addition to heavy metals, will be limited in the special waste streams to at or less than ranges typically found in MSW.
- The pharmaceutical/consumer product waste stream analyses have been reviewed and show that there is no lead, cadmium, or mercury compounds in any of the individual products. After your review of this additional information, we would appreciate the opportunity to meet with you to finalize the manner in which the BCRRF can begin to accept the pharmaceutical/consumer product waste stream.

Should have any questions in the meantime, please call me at 412/247-6478 or Jerry Joseph at 412/824-2355.

Sincerely,



David Testa  
Environmental Affairs

Enclosure

cc: J. Leddy, BCRRF  
R. Brookins, BCRRF  
E. Middleswart, FLDEP-Pensacola  
J. Joseph  
D. Lazzara

**OPERATING PROCEDURE FOR APPROVAL,  
RECEIPT AND PROCESSING OF SPECIAL WASTES  
BAY COUNTY RESOURCE RECOVERY FACILITY**

## TABLE OF CONTENTS

SECTION 1.0	INTRODUCTION
SECTION 2.0	WASTE COORDINATOR ASSIGNMENTS
	2.1 RES Headquarters
	2.2 Bay County, FL Facility
SECTION 3.0	WASTE EVALUATION PROCESS
	3.1 Waste Description
	3.2 Process Evaluation
	3.3 Environmental/Permitting Evaluation
	3.4 Site Evaluation
SECTION 4.0	SITE LOGISTICS
	4.1 Delivery Coordination
	4.2 Waste Handling and Inspection Procedures

## **SECTION 1.0 INTRODUCTION**

This procedure provides working policies on the analysis and approval responsibilities which must be received for the processing of a special waste stream at the Bay County Resource Recovery Facility (BCRRF). It outlines a process which is intended to protect the employees of the facilities, the equipment of the facilities and the commercial obligations of the Corporation both from a performance and a regulatory standpoint.

This procedure is a living document which must be updated periodically dependent on any changes in the facility or unique special waste stream.

Section 2.0, Waste Coordinator Assignment, identifies the RES headquarters and the site-specific position responsible for coordinating the review process and commercial arrangements of accepting special waste streams at the facility.

Section 3.0, Waste Evaluation Process - outlines the evaluation process that the RES headquarters will use in consideration and approval of specific special waste streams in question at the facility, and the steps for assuring compliance with all applicable State and Federal regulations to accept and process non-MSW wastestreams.

Section 4.0, Site Logistics, addresses the site concerns of materials processing specific to delivery, handling and verification of materials content.



## **SECTION 2.0 WASTE COORDINATOR ASSIGNMENTS**

This section identifies the staff members at RES headquarters and at the Bay County facility who will be responsible for coordinating the review of potential special waste streams and coordinating their overall acceptability for processing, both from a facility and regulatory viewpoint. These personnel are responsible for the complete technical and commercial review at each site and will assure that all agreements necessary will be reached before providing a decision to move forward with special waste stream acceptance and processing.

### **SECTION 2.1 RES Headquarters**

The Special Wastes Task Force Manager will be the RES headquarters' person responsible for the following:

- Receiving and ranking customer's requests
- Routing the customer request through the internal review process at RES headquarters Engineering, required prior to site evaluation
- Routing the internally approved customer request through the Bay site review process for acceptability
- Interfacing with the customer contact to commence commercial arrangements for waste processing

### **SECTION 2.2 Bay County, FL Facility**

The Business and Financial Operations Manager at the BCRRF will be the position responsible for coordinating the review and approval of BCRRF management for potential special waste stream processing. This person will perform the following:

- Receive RES headquarters' - approved customer processing requests for special waste streams
- Coordinate a review of the receiving, handling and process implications at the site with the following individuals:
  - a. Operations Supervisor
  - b. Environmental Control Officer
  - c. Plant Manager, as necessary
  - d. County, as necessary

- **Interface with customer contact for approval of special waste stream**
- **Forward additional customer requests for processing of other special waste streams to the Special Wastes Coordinator**

## **SECTION 3.0 WASTE EVALUATION PROCESS**

This section outlines the analysis required and approval process for a potential special waste stream before the waste can be accepted at the site for processing.

### **SECTION 3.1 Waste Description**

Any customer wishing to use the facilities' processing services must first complete a Material Profile Sheet on the special waste stream. **Attachment 1** presents a copy of the Materials Profile Sheet.

In addition to completing the Material Profile Sheet which provides the physical and chemical characteristics on the special waste stream, the following items also need to be addressed in detail:

- Where is the waste currently being stored/processed (i.e., location, company, length of time, etc.)?
- What quantity and in what time frame of delivery will the waste stream be generated and delivered?
- Who will be the hauler/deliverer of the waste?
- What forms of verification can be provided that the individual deliveries are uncontaminated with other (hazardous) materials?
- What forms of Proof of Destruction, if any, will be required?
- What kind of storage life does the waste have before its changes properties or method of handling? (MSDS)
- What kind of elements (water, air, temperature, etc.) can change the storage capability of the waste? (MSDS)
- What method of destruction has been used and for how long?



NON-HAZARDOUS MATERIAL PROFILE SHEET

I. Customer Information

Profile No. 0045

Generator: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone #: \_\_\_\_\_ Contact: \_\_\_\_\_  
EPA ID#: \_\_\_\_\_

Broker: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone #: \_\_\_\_\_ Contact: \_\_\_\_\_

II. Material Description/Origin

A. Material Name \_\_\_\_\_

Waste is hazardous  Yes  No  
Waste is toxic  Yes  No

B. Origin  
 Raw Material  Intermediate Product  
 Finished Product  Production Waste  
Package Insert  Yes  No  
Description of Process Generating Waste  
\_\_\_\_\_

C. Reason for Disposal

Out of Spec  Low Value Waste  
 Expired  Other \_\_\_\_\_  
 Contaminated \_\_\_\_\_ (Contaminant)

D. Physical Form

Solid  Powder  Liquid  Semi-solid  
Minimum % Solids \_\_\_\_\_ Particle size \_\_\_\_\_  
Stratified  Yes  No  
Homogenous  Yes  No  
Free Standing Liquids  Yes  No  
Sample  Yes  No

III. Packaging/Shipping

A. Material Package  
 Plastic, Polymer Composition \_\_\_\_\_  
 Foil  Paper  Other \_\_\_\_\_

B. Volume per Package \_\_\_\_\_

C. Desired Disposal Schedule  
 One Time  Periodic (specify) \_\_\_\_\_  
Amount per Shipment \_\_\_\_\_

D. Shipping Container

Box  Bulk Solid  
 Drum  Other \_\_\_\_\_  
Volume/weight per Container \_\_\_\_\_  
Unfilled Package Weight \_\_\_\_\_

E. Proper DOT Shipping Name \_\_\_\_\_

F. DOT Hazard Class \_\_\_\_\_

IV. Chemical Characteristics

A. Chemical Composition (w/%)

_____	_____	%
_____	_____	%
_____	_____	%
_____	_____	%
_____	_____	%
_____	_____	%
_____	_____	%
_____	_____	%
Total (100%)	_____	%

B. Total Metals (ppm)  
(Include all TCLP Metals)

_____
_____
_____
_____
_____
_____
_____
_____

C. Physical Properties

\_\_\_\_\_ pH \_\_\_\_\_ Viscosity (cp)  
\_\_\_\_\_ Boiling Point (°F)  
\_\_\_\_\_ Melting Point (°F)  
\_\_\_\_\_ Ignition Point (°F)  
\_\_\_\_\_ Density (lb/ft³)  
\_\_\_\_\_ Flash Point (°F)  
\_\_\_\_\_ % Free Liquid  
\_\_\_\_\_ Heating Value (BTU/lb)

D. Total Inorganics (w/%)

Chlorine \_\_\_\_\_ Bromine \_\_\_\_\_ Iodine \_\_\_\_\_  
Fluoride \_\_\_\_\_ Sulfur \_\_\_\_\_ Cyanide \_\_\_\_\_ Nitrogen \_\_\_\_\_

E. Attached Waste Analysis

Yes  No

V. Safety Issues

A. Attach MSDS for material  
B. Describe any special handling or storage requirements  
\_\_\_\_\_

VI. Current Disposal Method

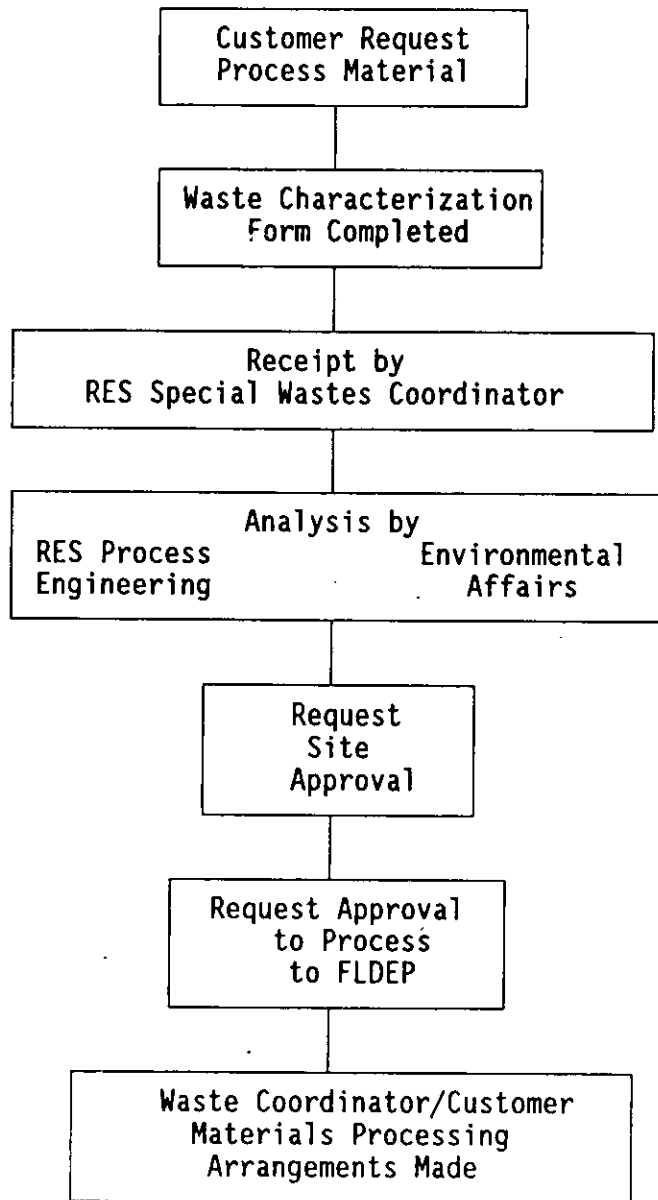
Municipal Landfill  Non-Hazardous Incinerator  
 Hazardous Waste Landfill  Hazardous Incinerator

VII. Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I further certify that the material is non-hazardous and poses no serious public safety nor health threat.

Signature \_\_\_\_\_ Name (print) \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

FIGURE 3-1  
FLOW CHART — WASTE EVALUATION



## SECTION 3.2 Process Engineering Evaluation

The Special Wastes Coordinator will receive the Material Profile Sheet and other waste description materials from the customer. He/she will initiate a process review of the materials by the RES Process Engineering group. This group will consider the process impacts to the equipment and system performance when handling the potential waste stream. Considered is the impact of the specialty waste on:

1. What is the potential impact to the storage and loader area?
2. What is the potential impact to the conveying systems?
3. What is the potential impact to the hydraulic feed rams?
4. What is the inherent energy (HHV) at the processing rate of MSW?
5. How will chemical makeup impact the combustion control scheme now in use at the facility?
6. How will the material affect corrosion/erosion in the combustors and boilers?
7. How will the material affect the quantity, quality of ash (does it change its handling characteristics) and ash handling system?
8. How will the material affect the emissions?
9. If the material requires special feeding requirements, what does the process modifications mean to the system?

## SECTION 3.3 Environmental/Permitting Evaluation

When the Special Wastes Coordinator has received the Materials Profile Sheet and any additional waste description materials from the customer, he/she will initiate a process review of the materials by the Environmental Affairs group, concurrent with the review being done by the Process Engineering group. Environmental Affairs will consider the regulatory impacts to the facility, if any, if the waste is accepted for processing. Items to be considered are the following:

- Does the facility's current permits have any restrictions relating to this material?
- Will the processing of this waste endanger any of the process guarantees with respect to processing and emissions which are found in the permits?
- Will the Environmental Engineer on site be responsible for any additional recordkeeping and/or require any additional verifications concerning this waste to be kept on file at the site?

- Will any problems associated with dust, noise, odor or free-flying waste be involved with the processing of this waste?
- Will the resultant ash generated from the processing of this waste have any physical or chemical concerns for the ultimate disposal facility?

### SECTION 3.5 Site Evaluation

When the Process Engineering and the Environmental Affairs groups have reviewed and initially accepted the potential special waste stream, the Special Wastes Coordinator will issue the internal analyses along with the Materials Profile Sheet and any additional information known about the waste stream to the site manager.

Appropriate safety considerations and procedure modifications to accommodate processing will need to be addressed, as necessary and enacted on site. It is the responsibility of the Business and Financial Operations Manager to have reviewed the waste information with all relevant parties.

## SECTION 4.0 SITE LOGISTICS

This section identified the procedures for safe delivery, receipt, storage and processing of special waste streams that have received appropriate approval for processing at the Facility. Discrepancies between materials approved and materials reviewed will be handled by the on site waste coordinators.

### SECTION 4.1 Delivery Coordination

Upon receipt of approval to process, the site's waste coordinator will arrange the delivery date and time of special waste stream(s) with the customer. The coordinator will determine the special needs for floor space allocation, floor storage and conveyor feeding and make appropriate arrangements with the appropriate floor supervisor. Arrangements for any unusual personnel requirements will also be made at this time.

Deliveries will only be taken during normal delivery hours. Specific delivery arrangements will be prearranged through the site's waste coordinator.

Confirmation by the waste coordinator of the acceptability of the delivery time and date will be received from the operations supervisor.

### SECTION 4.2 Waste Handling and Inspection Procedures

The shift supervisor will be apprised of any special handling conditions required on the floor by loader operators or operating personnel and he/she will inform appropriate personnel prior to or upon receipt of special waste streams.

The shift supervisor will inspect the delivery truck for the special waste delivery and verify visually through random inspection that materials are as specified. Any discrepancies between materials contracted and materials received will be handled by the site's waste coordinator. Storage of materials for future combinations in the waste stream will be managed by the shift supervisor.

An on-site acceptance procedure for special wastes will be instituted at the Facility to assure that only approved waste will be processed. When a load of special waste arrives at the scalehouse, the scalehouse operator will first verify that the waste is approved for disposal by checking an approval list which will be kept current at all times. If the waste does not appear on the approval list, the load of waste will be rejected. Even if the waste appears on the approval list, if the waste load is determined by BCRRF personnel to be suspicious or contain unacceptable waste, BCRRF will reject the load. The shift supervisor will verify that the special waste is as described on the materials profile sheet. This sheet will include information on the physical state, color, odor, and consistency of the waste load.

If the waste is acceptable, the hauler will be directed to proceed to the designated area of the tipping floor.



In addition, the shift supervisor will be available to inspect every load which contains special waste. Based on the results of the visual inspection, the shift supervisor will recommend acceptance or rejection of the special waste load.

The appropriate site waste coordinator will prepare, as necessary, a certificate of destruction which will be signed by the Plant Manager. This certificate will be provided to the customer as verification of materials receipt and processing at the Facility.

Attachment 4

**DMG Environmental, Inc.**

21 Yost Blvd. Suite 202, Pittsburgh, PA 15221

(412)824-2355

. Fax (412)824-8131

November 16, 1993

Clair Fancy  
Bureau of Air Quality  
Florida Department of Environmental Protection  
Twin Towers Office Building  
2600 Blainstone Road  
Tallahassee, FL 32399

Dear Clair:

I am writing you confirming the phone conversation on November 15 between you, David Beachler and myself, regarding the upcoming compliance testing at the Bay County Resource Recovery Facility (BCRRF). As we stated during our phone conversation, the BCRRF will be conducting its annual compliance test in early December 1993. BCRRF has submitted a request to the Department to process small amounts of consumer product and pharmaceutical wastes (less than 2% of total throughput) along with documentation concerning the screening and handling of this material to assure no potential increase in emissions. We agreed that it would be useful for the Facility to conduct the upcoming compliance test using a mixture of typical MSW along with a representative sample of the consumer products and pharmaceuticals that we would intend to process in the future.

The purpose of the emission test of course, will be to verify that burning a small amount of consumer product and pharmaceutical waste will not increase emissions above levels typically emitted from the Facility. To summarize the documentation previously submitted to FLDEP, the BCRRF believes that burning small amounts of the pharmaceutical wastes will not increase air emission because:

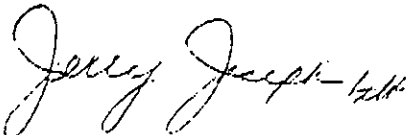
- Pharmaceutical/consumer product waste stream will comprise less than 2% of the total waste feed rate of the facility. Of this 2%, 50-70% is estimated to be comprised of cardboard and other packaging materials.
- Waste handling procedures (mixing and charging) will assure that the small amount of special waste received will be mixed with MSW on the tipping floor prior to charging.

Page 2  
Clair Fancy  
November 16, 1993

- The chemical analysis for each individual product will be evaluated to assure that the combustion of the special waste will not result in increased air emissions. For example, acid gas forming compounds, in addition to heavy metals, will be limited in the special waste streams to at or less than ranges typically found in MSW.
- The pharmaceutical/consumer product waste stream analyses have been reviewed and show that there is no lead, cadmium, or mercury compounds in any of the individual products. After your review of this additional information, we would appreciate the opportunity to meet with you to finalize the manner in which the BCRRF can begin to accept the pharmaceutical/consumer product waste stream.

Please advise either myself or Dave Testa (412/247-6478) as soon as possible as to the Department's approval since we will need time to organize this test for December. Should you have any questions in the meantime, please call me at (412) 824-2355.

Sincerely,



Jerry Joseph

cc: D. Testa, Westinghouse  
E. Middleswart, FLDEP

Attachment 5



Westinghouse  
Electric Corporation

Resource Energy Systems

1501 Ardmore Boulevard  
Pittsburgh Pennsylvania 15221

November 18, 1993

Mr. Clair Fancy  
Florida Department of Environmental Protection  
Twin Towers Office Building  
2600 Blainstone Road  
Tallahassee, FL 32399

Dear Mr. Fancy:

As a follow-up to our conversation on November 18, 1993, Bay County Resource Energy Systems, Inc., on behalf of the Bay County Resource Recovery Facility (BCRRF), is hereby requesting that Air Quality Permit A003-165754 and A003-165755 be amended to allow for a test burn of a mixture of municipal solid waste and pharmaceutical/consumer product waste. This test burn will be conducted for a period of approximately one week during the last two weeks of December 1993. The handling procedures and waste analysis methods as described in our letter of November 16, 1993 and previous submittals to your office will be adhered to during this test burn.

Also, enclosed is a check for \$250.00 for the permit amendment application fee.

If you have any questions on this matter, please do not hesitate to contact me at 412/247-6478.

Sincerely,

A handwritten signature in dark ink, appearing to read "David H. Testa".

David H. Testa  
Senior Environmental Engineer

Enclosure

cc: J. Joseph, DMG, Inc.  
J. Leddy, BRES, Inc.  
R. Brookins, BRES, Inc.  
D. Lazzara, RES

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:  
 Mr David Testa  
 Bay Resource Mgmt Center  
 c/o Westinghouse RESD  
 1501 Ardmore Blvd  
 Pittsburgh, Penn 15221

4a. Article Number  
 P 872 562 574

4b. Service Type  
 Registered  Insured  
 Certified  COD  
 Express Mail  Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)  
 M. W. Thomas

8. Addressee's Address (Only if requested and fee is paid)

PA  
 NC  
 199  
 USA

PS Form 3811, December 1991 \*U.S. GPO: 1992-323-402 **DOMESTIC RETURN RECEIPT**

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

P 872 562 574



**Receipt for Certified Mail**  
 No Insurance Coverage Provided  
 Do not use for International Mail  
 (See Reverse)

PS Form 3800, JUNE 1991

Sent to	
Mr. David Testa	
Street and No.	
Bay Resource Mgmt Center	
P.O., State and ZIP Code	
c/o Westinghouse RESD	
Postage	
1501 Ardmore Blvd	
Certified Fee	
Pittsburgh, Penn 15221	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
mailed 11-23-93	
cancel. to A003-165754	
165755	