SOUTHEAST DISTRICT PERMIT PROCESSING WORKSHEET

LOGGING

NAME OF PROJECT: (Lime Silo) South Broward Resource Recovery Fac.

PROJECT LOG NO: AC 06-187000 COUNTY: Broward

DATE APPLICATION RECEIVED: 9/27/90 30-DAY (HW 60-DAY) DATE: 10/26/90

Rec# 159886

AMOUNT OF FEE PAID: $ 200.00 COPIES OF PLANS: _____

COPIES OF APPLICATION: 4 COPIES OF SPECIFICATIONS: _____

COPIES TO: CORPS__; LOCAL PROGRAM ✓; TALLAHASSEE__; DNR__; OTHER__

9/27/90 (cover letter only)

PERMIT REVIEW

PERMIT ASSIGNED TO: Sittig, M. AMOUNT OF FEE REQ'D $_____

DISCHARGE TO OR LOCATED IN AQUATIC PRESERVE: Yes__ No __ N/A ___

PERMIT STATUS AND CHRONOLOGY

DATE	REVIEWER'S INITIALS	COMMENTS

(continue on reverse side)

FIELD INSPECTION BY: _____ DATE _____; N/A _____

WATER MANAGEMENT COMMENTS (DATE) _____; N/A _____

LOCAL PROGRAM APPROVAL (DATE) _____; N/A _____

GPSI, APIS, OR PWS UPDATE DRAFTED: Yes _____ ; N/A _____

PUBLIC NOTICE LETTER ISSUED/PUBLISHED (DATES) _____ ; N/A _____

APPLICATION COMPLETION DATE _____ > DEFAULT DATE _____

>> D.A.S. 90+ DAYS INACTIVITY AUTHORIZATION: _____OK ____DENY <<

COMMENTS: _____

PERMIT, EXEMPTION, DENIAL DRAFTED BY: _____ DATE: _____

INTENT: PROGRAM HEAD _____ PROGRAM ADM. _____

FINAL DRAFT REVIEWED BY: _____ DATE: _____

FINAL DRAFT APPROVED BY: _____ DATE: _____

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STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

AC 06-187000

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Municipal Solid Waste Incinerator [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Wheelabrator South Broward Inc. COUNTY: Broward

Identify the specific emission point source(s) addressed in this application (i.e., Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Silo Vent Filter

SOURCE LOCATION: Street 4400 South State Road 7 City Fort Lauderdale

UTM: East 579.600 meters North 2,883.300 meters

Latitude 26 ° 4 ' 5 "N Longitude 80 ° 12 ' 15 "W

APPLICANT NAME AND TITLE: Wheelabrator South Broward Inc.

APPLICANT ADDRESS: 4400 S. State Road 7, Fort Lauderdale, FL 33314

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Wheelabrator South Broward Inc.

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: J R Wiegner

James R. Wiegner, Project Manager
Name and Title (Please Type)

Date: 9/26/90 Telephone No. (305) 581-6606

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgement, that

[1]See Florida Administration Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed Kennard F. Kosky

Kennard F. Kosky
Name (Please Type)

KBN Engineering and Applied Sciences, Inc.
Company Name (Please Type)

1034 NW 57th Street, Gainesville, FL 32605
Mailing Address (Please Type)

Florida Registration No. 14996 Date: June 5, 1990 Telephone No. (904) 331-9000

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

A vent filter will be installed on the lime silo to control dust during truck unloading of pebble lime.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction August 1, 1990 Completion of Construction August 1, 1991

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

$15,000

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Power Plant Site Certification PA 85-21; PSD-FL-105

E. Requested permitted equipment operating time:[1] hrs/day ____; days/wk ____; wks/yr 52 ;
If power plant, hrs/yr ____; if seasonal, describe: ____

F. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? NA[2]
   a. If yes, has "offset" been applied? ____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? ____
   c. If yes, list non-attainment pollutants. ____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes[3]
3. Does the State "Prevention of Significant Deterioration" (PSD) requirement apply to this source? If yes, see Sections VI and VII. Yes[4]
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No
   a. If yes, for what pollutants? ____
   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

[1]Air is displaced through the vent filter only when lime trucks are being pneumatically unloaded. This will not be a continuous operation. Each truck will require approximately 2½ hours to unload. Five to seven trucks will be unloaded each week.

[2]Broward County is nonattainment for ozone; the applicable pollutant is volatile organic compounds (VOCs). This source will not emit VOCs.

[3]BACT for emission type is baghouse as identified by EPA's BACT/LAER clearinghouse documents.

[4]PSD applies since the total particulate matter/PM10 emissions from the resource recovery facility are greater than the significant emission amounts. PSD modeling and BACT analysis were performed for the municipal solid-waste-fired boilers. Because the emissions from this source are extremely low and well less than the significant emission levels, modeling of this source was considered unnecessary.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Pebble Lime			40,000 max*	Attachment C

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 40,000

2. Product Weight (lbs/hr): 40,000

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1] **		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential Emission **		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Particulate	0.13***	0.021	17-2.610(1)(b)	23	25.7	4.2	Att. C

[1]See Section V, Item 2.
[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)
[3]Calculated from operating rate and applicable standard.

* Each truck will unload at approximately 20,000 lb/hr. Maximum rate will be 40,000 lb/hr if two trucks unload at the same time.
**Based on 5 trucks of lime being received per week with each truck requiring 2½ hours to unload.
***Based on two trucks unloading simultaneously.

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Silo Vent Filter	Particulate	99%+	>0.3μm	Att. A
Wheelabrator Air				
Pollution Control				
Model 1016 BA-108				
Jet III				

E. Fuels

Not Applicable

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, others--lbs/hr.

Fuel Analysis:

Percent Sulfur:_____ Percent Ash:_____

Density: _____ lbs/gal Typical Percent Nitrogen:_____

Heat Capacity:_____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution):_____

_____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

_____

_____

_____

_____

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):
Downward Discharge
Stack Height: 102 ft. Stack Diameter: 32"x12" ft.

Gas Flow Rate: 1,500 ACFM _____ DSCFM Gas Exit Temperature: 40 to 100 °F.

Water Vapor Content: 60 to 95 % Velocity: 9.4 FPS
(relative humidity)

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type II (Rubbish)	Type III (Refuse)	Type IV (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control devices: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner
[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

Lime dust collected in the filter will be discharged into lime silo.

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
   See Attachment A
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods, 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
   See Attachment A
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
   See Attachment A
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
   See Attachment B
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
   See Attachment A
6. An 8 ½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
   See Attachment C
7. An 8 ½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Examples: Copy of relevant portion of USGS topographic map).
   See Attachment D
8. An 8 ½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.
   See Attachment D

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[X] Yes [ ] No

Contaminant	Rate or Concentration
Particulate Matter	99+ percent efficiency down to 0.01 gr/scf (see EPA BACT/LAER Clearinghouse Documents, 1985, 1986, 1987, 1988, and 1989)

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration
Particulate Matter	99+ percent efficiency/0.01 gr/acf

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft.

b. Diameter ft.

c. Flow Rate: ACFM

d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Devices:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

Not Applicable

A. Company Monitored Data

1. _____ no. sites _____ TSP _____( ) SO^{2*} _____ Wind spd/dir

Period of Monitoring _____/_____/_____ to _____/_____/_____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location) _____

4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	_____	grams/sec
SO^2	_____	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e, jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT A

LIME SILO VENT FILTER
AIR PERMIT CALCULATIONS

A. Calculate lb/hr particulate emission using 0.01 grain/ACF and assuming two trucks maximum unloading pneumatically at 750 ACF/min each (1500 ACFM total).

1500 ACF/min X 0.01 gr/acf / 7000 gr/lb X 60 min/hr = 0.13 lb/hr

B. Calculate tons/year(t/yr) particulate emissions Using 1,493 lb/hr normal lime usage (from WAPC mass balances) for three boilers.

1493 lb/hr X 24 hr/day X 7 days/week / 2000 lb/ton = 125 tons/week lime usage

Using 25 ton capacity trucks

125 tons/week / 25 tons/truck = 5 trucks/week

Using 750 ACF/min per truck and 2.5 hours to unload each truck

750 ACF/min X 0.01 gr/acf / 7000 gr/lb X 150 min/truck = 0.16 lb/truck

0.16 lb/truck X 5 trucks/week X 52 weeks/yr / 2000 lb/ton = 0.021 tons/yr

C. Calculate lb/hr potential (uncontrolled) emissions using 2.0 grain/ACF and assuming two trucks maximum unloading pneumatically at 750 ACF/min each (1500 ACFM total).

1500 ACF/min X 2.0 gr/acf / 7000 gr/lb X 60 min/hr = 25.7 lb/hr

D. Calculate tons/year(t/yr) uncontrolled particulate emissions using 750 ACF/min per truck and 2.5 hours to unload each truck

750 ACF/min X 2.0 gr/acf / 7000 gr/lb X 150 min/truck = 32.1 lb/truck

32.1 lb/truck X 5 trucks/week X 52 weeks/yr / 2000 lb/ton = 4.2 tons/yr

E. Calculate exit velocity for 12" X 32" downward discharge

12" X 32" / 144sq in. per sq. ft= 2.67 ft2
1500 ft3/min / 2.67 ft2 / 60 sec/min = 9.4 ft/sec

By:
Checked:

ATTACHMENT B