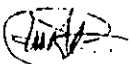



Florida Department of
Environmental Protection

Memorandum

November 6, 1997

TO: Al Linero, PE

FROM: Lennon Anderson 

THROUGH: Cindy Phillips, PE 

SUBJECT: McKay Bay Retrofit Project
Permit No. 0570127-002-AC

In order for the Air Toxic Unit to make a 112(g) applicability determination for the McKay Bay Retrofit Project, additional information was needed. The attached e-mail was sent to John Reynolds detailing the information needed to make the determination. Unfortunately, the information needed was not requested.

Instead, the request for additional information (see question 2) requested reconstruction status as defined in Subpart Eb which is not the same as reconstruction as defined in 112(g) for MACT Determination. Reconstruction pursuant to Subpart Eb means:

rebuilding a municipal waste combustor unit for which the reconstruction commenced after June 19, 1996, and the cumulative costs of the construction over the life of the unit exceed 50 percent of the original cost of the construction and installation of the unit (not including any cost of land purchased in connection with such construction or installation) updated to current costs (current dollars).

Reconstruction pursuant to 112(g) means:

the replacement of components at an existing process or production unit that in and of itself emits or has that potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, whenever:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and

(2) It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under this subpart.

In the future, please allow the Air Toxic Unit to review the request for additional information letter before it goes out.

I N T E R O F F I C E M E M O R A N D U M

Date: 23-Sep-1997 09:25am EST
From: Lennon Anderson TAL
ANDERSON_L
Dept: Air Resources Management
Tel No: 850/488-1344
SUNCOM: 278-1344

TO: John Reynolds TAL (REYNOLDS_J)

CC: Cindy Phillips TAL (PHILLIPS_C)

Subject: Applicability of 112(g) [MACT]

The Air Toxics Permitting Unit received and reviewed the City of Tampa Facility Application for a MACT Determination.

Based on the information provided, the Facility may be subject to review under 112(g) for the reasons below:

-Upgrading the existing four mass-burn combustion units to achieve greater combustion control and improve combustion efficiency could meet the definition of "reconstruct a major source".

-HCL and HF will exceed the 10 TPY threshold for major source.

In order to determine if 112(g) applies, the following information is needed:

- The cost of four new mass-burn combustion units.
- The cost of the components to upgrade each existing mass-burn combustion units.

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Proposed Specific Conditions for Draft Permit for McKay Bay Refuse-to-Energy Facility

1. EMISSION LIMITATIONS -- The following emission limitations shall apply to each affected emissions unit after the proposed improvements to comply with 40 CFR 60 Subpart Cb are made and compliance testing is completed:

a. The stack emissions from each unit shall not exceed any of the following limitations based on the appropriate test method and averaging time:

<u>Pollutant</u>	<u>Emission Limitation</u>	<u>Testing and Averaging Time (1)</u>
PM	0.012 gr/dscf corrected to 7% O ₂	Annual Testing, Method 5 (front-half catch only)
Opacity	10%	Annual Testing, Method 9 and COM, 6-min block arith. mean
SO ₂	29 ppm _{dv} corrected to 7% O ₂ or 75% control, whichever is least stringent, not to exceed	CEMs, 24-hour block geometric mean
HCl	150 ppm _{dv} corrected to 7% O ₂ 29 ppm _{dv} corrected to 7% O ₂ or 95% control, whichever is least stringent, not to exceed	Annual Testing, Method 26/26A
NO _x (as NO ₂)	100 ppm _{dv} corrected to 7% O ₂ 205 ppm _{dv} corrected to 7% O ₂	CEM, 24-hour block arith. mean
CO	100 ppm _{dv} corrected to 7% O ₂	CEM, 4-hour block arith. mean
Lead	440 µg/dscm corrected to 7% O ₂	Annual Testing, Method 29
Mercury	70 µg/dscm corrected to 7% O ₂ or 85% control, whichever is least stringent, not to exceed	Annual Testing, Method 29
Cadmium	135 µg/dscm corrected to 7% O ₂ 40 µg/dscm corrected to 7% O ₂	Annual Testing, Method 29
Dioxin/furan	30 ng/dscm corrected to 7% O ₂	Annual Testing, Method 23 (2)
Ammonia	50 ppm _{dv} corrected to 7% O ₂	(no testing required)
Fluoride	1.5 lb/hour/unit	Initial Testing, Method 13A/13B
Beryllium	0.000115 lb/hour/unit	Initial Testing, Method 29

(1) Or any other method approved by the Department in accordance with Rule 62-297, FAC. Stack tests may also require Method 1, 2, 3/3A/3B, and 4 tests as appropriate. Emission limits based on stack tests are compared to the average of three valid test runs, the duration of which depends on the test method. HCl and mercury stack tests upstream and downstream of the control device(s) shall be conducted to calculate percent control.

(2) Dioxin/furan emission limit expressed as the total mass of tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

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b. These emission limitations shall apply at all times, except during periods of warmup, startup, shutdown, or malfunctions. The duration of startup, shutdown, or malfunction periods shall not exceed three hours per occurrence [40 CFR 60.58b(a)(1)]. The duration of warmup periods is not limited. The startup period for a municipal waste combustor (MWC) unit commences when the MWC unit begins the continuous burning of solid waste and does not include any warmup period when the MWC unit is firing only natural gas and solid waste is not being introduced to the unit. The use of solid waste solely to provide thermal protection to the grate during warmup periods is not considered to be continuous burning.

c. The emissions from other operations at the facility shall not exceed the following limitations based on the appropriate test method and averaging time:

<u>Emission Unit</u>	<u>Emission Limitation</u>	<u>Testing and Averaging Times</u>
Lime and Carbon Silos	0.015 gr/dscf (front-half catch only)	(see Specific Condition 1.d)
Ash Handling Systems	Visible emissions shall not occur more than 5% of the time, except during times of maintenance or repair of these systems	Annual Testing, Method 22

d. Pursuant to Rules 62-296.711(3)(c) and 62-297.620(4), FAC, the particulate matter (PM) compliance test requirements are waived for the carbon and two lime storage silos and an alternate standard of 5% opacity shall apply. Annual visible emission tests shall be performed for each silo during filling operations using Method 9. A visible emission reading greater than 5% does not create a presumption that the emission limit (in gr/dscf) is being violated, but would require the owner or operator to perform a PM compliance stack test.

2. OPERATING REQUIREMENTS -- The following requirements shall apply to the facility after the proposed improvements to comply with 40 CFR 60 Subpart Cb are made and compliance testing is completed:

a. This facility is allowed to operate continuously (i.e., 8760 hours/year).

b. One of the following persons must be on duty at the facility at any time during which one or more of the MWC units is operating: a fully certified chief facility operator or shift supervisor; or a provisionally certified chief facility operator or shift supervisor who is scheduled to take the full certification exam. If this person must leave the facility during his or her operating shift, a provisionally certified control room operator who is onsite may fulfill this requirement [40 CFR 60.39b(c)(4)(ii) and 40 CFR 60.54b(c)].

Each chief facility operator and shift supervisor must obtain and maintain a current provisional operator certification and be scheduled for a full certification exam, or receive full certification, with either the ASME or an equivalent state-approved certification program before the date that person assumes responsibility for operation of the facility [40 CFR 60.39b(c)(4)(ii) and 40 CFR 60.54b(a),(b)].

DRAFT For Review and Comment

Each chief facility operator, shift supervisor and control room operator must complete the EPA or state-approved MWC operator training course before the date that person assumes responsibility for operation of the facility [40 CFR 60.39b(c)(4)(iii) and 40 CFR 60.54b(d)]. The operator training course requirements of 40 CFR 60.54b(d) do not apply to chief facility operators, shift supervisors and control room operators who have obtained full ASME certification on or before the date of State plan approval [40 CFR 60.39b(4)(iii)(A)]. The operator training course requirements of 40 CFR 60.54b(d) may be waived, at the request of the facility owner or operator, for chief facility operators, shift supervisors and control room operators who have obtained provisional ASME certification on or before the date of State plan approval [40 CFR 60.39b(4)(iii)(B)].

c. A site-specific operating manual meeting the requirements of 40 CFR 60.54b(e) must be developed and then updated on an annual basis. A training program must be established to review the operating manual with each person who has responsibilities affecting operation of the facility including chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel and crane/load handlers [40 CFR 60.35b and 40 CFR 60.54b(e)]. Each person must undergo initial training before the date that person assumes responsibilities affecting operation of the facility [40 CFR 60.39b(c)(4)(iii)(C) and 40 CFR 60.54b(f)], and annually thereafter. The operating manual must be kept in a readily accessible location for all persons required to undergo training.

d. Each MWC unit shall be allowed to operate up to 110 percent of the unit's "maximum demonstrated load" based on 4-hour block-averaged measurements of steam or feedwater flow. Higher loads are allowed for testing purposes, as specified at 40 CFR 60.53b(b). The "maximum demonstrated load" is the highest arithmetic averaged measurement of steam or feedwater flow recorded for four consecutive hours during the most recent dioxin/furan stack test in which compliance with the dioxin/furan emission limit was achieved [40 CFR 60.51b and 60.58b(i)(8)].

e. No MWC unit shall be allowed to operate at a temperature exceeding 17°C (30°F) above the unit's "maximum demonstrated particulate matter (PM) control device temperature" based on 4-hour block averaged-measurements of temperature at the PM control device inlet. Higher temperatures are allowed for testing purposes, as specified at 40 CFR 60.53b(c). The "maximum demonstrated PM control device temperature" is the highest arithmetic averaged temperature measured at the PM control device inlet during four consecutive hours during the most recent dioxin/furan stack test in which compliance with the dioxin/furan emission limit was achieved [40 CFR 60.51b and 60.58b(i)(9)].

f. The carbon injection rate for each MWC unit (kilograms per hour [kg/hr] or pounds per hour [lb/hr]) shall be estimated during each mercury and dioxin/furan compliance stack test based on carbon injection system operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed. During operation of each MWC unit, the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate must equal or exceed the level(s) documented during the most recent mercury and dioxin/furan stack tests in which compliance with the emission limits were achieved. The owner or operator shall estimate the total carbon usage for the facility for each calendar quarter according to the weight of carbon

DRAFT For Review and Comment

delivered to the facility and the average carbon mass feed rate (kg/hr or lb/hr) for each MWC unit based on the primary indicator(s) for carbon mass feed rate, summing the results for all MWC units and accounting for the total number of operating hours during the calendar quarter [40 CFR 60.58b(m)].

g. Excess emissions resulting from startup, shutdown, or malfunction of any source shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions is minimized and in no case exceeds three hours per occurrence. A malfunction means any sudden and unavoidable failure of air pollution control or process equipment to operate in a normal or usual manner. Excess emissions which are caused entirely or in part by poor maintenance, careless operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited [Rule 62-210.700(4), FAC].

h. Auxiliary burners for each MWC unit shall be fired only by natural gas, and consumption of natural gas shall be 104,937,500 cubic feet per MWC unit per year or less (i.e., annual capacity factor for natural gas of 10% or less as determined by 40 CFR 60.44b(d)).

i. The authorized fuels for the facility are municipal solid waste (MSW) as defined at 40 CFR 60.51b, and the other solid wastes identified below, except those materials that are prohibited by state or federal law or otherwise prohibited below. The authorized fuels shall be well mixed with MSW or alternately charged with MSW. The authorized fuels may be received either as a mixture or as a single-item stream of household, commercial, institutional, agricultural or industrial discards. Solid waste materials acceptable for processing together with MSW include the following:

- Wood pallets; clean wood; yard wastes; construction, renovation and demolition wastes; refuse-derived fuel; and motor vehicle maintenance materials.
- Items or materials suitable for human, plant or domesticated animal use, consumption or application whose shelf-life has expired or which the generator wishes to remove from the market and ensure the proper destruction of (such as, but not limited to, off-specification or expired consumer-packaged products and pharmaceuticals, non-prescription medications, health-care products, toothpaste, hand creams, cosmetics, shampoos, foodstuffs, nutritional supplements, returned goods and controlled substances).
- Consumer-packaged products intended for human or domesticated animal use or application but not consumption (such as, but not limited to, carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents).
- Waste materials generated in the manufacture of items in the categories above that are functionally or commercially useless (expired, rejected or spent), or finished products not yet formed or packaged for commercial distribution.
- Packaging materials, natural and synthetic fibers, clothing, floor coverings except polyethylene tiles and polyurethane plastic, fabric remnants, empty containers and debris items (such as, but not limited to, aprons, gloves and floor sweepings).
- Waste materials that contain oil from routine cleanup of industrial or commercial establishments and machinery (such as, but not limited to, wipes and specialty oil

DRAFT For Review and Comment

- filters) or oil-contaminated materials used in the cleanup of spills of used or virgin petroleum products (such as, but not limited to, rags, lints and adsorbents).
- Waste materials generated by manufacturing, industrial, commercial or agricultural activities (such as, but not limited to, filtercake from manufacture of synthetic oil, paint overspray and other filtration materials from industrial processes and systems).
 - Confidential documents (such as, but not limited to, business records, lottery tickets, event tickets and microfilm).
 - Contraband which may be disposed of at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not explosive, a propellant, or a hazardous waste.
 - Oil spill debris.
 - Waste tires, but not in excess of 3% of the facility's fuel.

The owner and operator shall not knowingly burn prohibited fuels, such as lead acid batteries, hazardous waste, nuclear wastes, and sewage sludge from publicly owned treatment works.

Natural gas may be used as a supplemental fuel in the auxiliary burners during warmup, startup, shutdown, and malfunction periods, and at other times when necessary and consistent with good combustion practices.

- j. The owner or operator shall not cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor [Rule 62-296.320(2), FAC].
- k. All reasonable precautions shall be taken to prevent and control generation of unconfined emissions of particulate matter at the facility [Rule 62-296.320(4)(c), FAC].
- l. The height of the main facility stack shall not be less than 201 feet above grade level at the base of the stack.

3. MONITORING REQUIREMENTS -- The following requirements shall apply to the facility after the proposed improvements to comply with 40 CFR 60 Subpart Cb are made and compliance testing is completed:

- a. Initial compliance tests for the combustion units and ash handling systems shall be conducted within 60 days after achieving maximum operating capacity, but no later than 180 days after startup of the ash handling system, and each retrofitted unit. Stack testing shall be conducted annually thereafter for PM, opacity, HCl, lead, mercury, cadmium and dioxins/furans. The facility may perform less frequent testing for dioxin/furan emissions, as allowed by 40 CFR 60.38b(b) and subject to prior approval by the Department, if the facility's dioxin/furan emissions are 15 ng/dscm corrected to 7% O₂ or less for all MWC units. Initial compliance tests shall be conducted for fluorides and beryllium and prior to renewal of the operating permit.

Compliance testing for visible emissions from the lime and carbon silos shall be verified by annual tests following the date of completion of the initial stack test.

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b. Continuous Emission Monitoring (CEM) and Continuous Opacity Monitoring (COM) systems with recorders shall be installed, calibrated, maintained and operated for each unit for CO, O₂, NO_x, opacity and SO₂ (for SO₂ and O₂, monitors shall be located both upstream of the scrubber and downstream of the baghouse in order to calculate percent removal efficiency). CEM/COM systems shall be installed, evaluated and operated as required by 40 CFR 60.13 and shall conform to all applicable Performance Specifications in 40 CFR 60, Appendix B. Quality assurance procedures must conform to all applicable sections of 40 CFR 60, Appendix F. Initial performance evaluations must be completed within 180 days after initial startup of each retrofitted unit.

c. Compliance with load level requirements in Specific Condition 2.d for each MWC unit shall be determined by a steam or feedwater flow meter using ASME Power Test Code for Steam Generating Units, Power Test Code 4.1, section 4 [40 CFR 60.58b(i)(6)(ii)]. Steam or feedwater flow shall be calculated in 4-hour block arithmetic averages. The design, construction, installation, calibration, and operation of the steam or feedwater flow meters shall comply with the requirements of 40 CFR 60.58b(i)(6)(i),(ii),(iv). Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed [40 CFR 60.58b(i)(6)(iii)].

d. Compliance with the maximum PM control device temperature requirements in Specific Condition 2.e for each MWC unit shall be determined by using a device to measure temperature on a continuous basis at the inlet to the PM control device. The PM control device temperature shall be calculated in 4-hour block arithmetic averages [40 CFR 60.58b(i)(7)].

e. The daily solid waste charging rate and hours of operation shall be determined and recorded for each MWC unit [40 CFR 60.53(a)]. The daily charging rate shall be determined each month on an average daily basis for each MWC unit using the facility's truck scale data and MWC operating data for the preceding calendar month. Monthly truck scale weight records on the weight of solid waste received and processed at the facility shall be used to determine the amount of solid waste charged during the preceding calendar month on an average daily basis. The MWC load level measurements or other operating data shall be used to determine the number of operating hours per MWC unit for each day during the preceding calendar month.

f. Pursuant to Rule 62-297.310(7)(b), FAC, when the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in this permit is being violated, it may require the owner or operator of the source to conduct compliance tests which identify the nature and quantity of pollutant emissions from the source and to provide a report on the results of said tests to the Department.

g. The owner or operator shall provide sampling ports in the air pollution control equipment outlet duct or stack and shall provide access to the sampling ports in accordance with Rule 62-297.310(6)(c), FAC.

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4. **RECORDKEEPING REQUIREMENTS** -- The following requirements shall apply to the facility after the proposed improvements to comply with 40 CFR 60 Subpart Cb are made and compliance testing is completed:

a. The owner or operator shall maintain a central file at the facility containing all measurements, records and other data that are required to be collected pursuant to the various specific conditions of this permit. This file shall include but not be limited to:

- Data collected from monitoring instruments, including CEM/COM systems, steam or feedwater flow measurements and PM control device temperatures;
- Records of daily solid waste charging rates and hours of operation derived from monthly truck scale and MWC operating data;
- Amounts of natural gas burned per unit in each calendar year;
- Results of all source tests or performance tests;
- Amounts of carbon used for mercury control;
- Calibration logs for all instruments subject to this permit;
- Maintenance/repair logs for any work performed which is subject to this permit; and
- Records showing the names of facility personnel who have been provisionally or fully certified, who have completed the MWC operator training course, and who have completed reviews of the operating manual, including the dates and documentation of certification/review.

b. All measurements, records and other data must be maintained in accordance with 40 CFR 60.59b(d), be retained for at least five years following the date on which such measurements or data are recorded, and shall be made available to the Department or Environmental Protection Commission of Hillsborough County upon request.

5. **REPORTING REQUIREMENTS** -- The following requirements shall apply to the facility after the proposed improvements to comply with 40 CFR 60 Subpart Cb are made and compliance testing is completed:

a. In case of excess emissions resulting from malfunctions, the facility shall notify the Department's Southwest District Office in accordance with Rule 62-4.130, FAC. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department [Rule 62-210.700(6), FAC]. Duplicate copies of such reports shall be submitted to the Environmental Protection Commission of Hillsborough County.

b. Stack test protocol(s) shall be submitted for approval to the Environmental Protection Commission of Hillsborough County at least 90 days prior to performing any formal compliance test. The Environmental Protection Commission of Hillsborough County shall be notified in writing at least 30 days (initial) and 15 days (annual) prior to the date on which each formal compliance test is to begin. The notice shall identify the date, time, and place of each such test, and the contact person responsible for coordinating the test(s).

c. For CEM and other monitoring systems required by this permit, data on monitoring equipment specifications, manufacturer, type, calibration and maintenance needs, and proposed

DRAFT For Review and Comment

location shall be provided to the Department's Southwest District Office and Environmental Protection Commission of Hillsborough County for review at least 30 days prior to installation.

d. Drawings of testing facilities, including sampling port locations as required by Rule 62-297.310(6)(c), FAC, shall be submitting to the Department's Southwest District Office and Environmental Protection Commission of Hillsborough County for approval at least 60 days prior to construction of the sampling ports.

e. The owner or operator shall submit reports for each calendar quarter to the Department's Southwest District Office and Environmental Protection Commission of Hillsborough County. The reports shall include the following:

- The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each period of excess emissions [40 CFR 60.7(c)(1)];
- Specific identification of each period of excess emissions that occurred during startups, shutdowns and malfunctions. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted [40 CFR 60.7(c)(2)];
- The date and time identifying each period during which the CEM/COM systems were inoperative, except for zero and span checks, and the nature of the system repairs or adjustments [40 CFR 60.7(c)(3)]; and
- When no excess emissions have occurred or the CEM/COM systems have not been inoperative, repaired, or adjusted, such information shall be stated in the report [40 CFR 60.7(c)(4)].

f. Before March 1st of each year, the owner or operator shall submit to the Department and the Environmental Protection Commission of Hillsborough County the Annual Operating Report [DEP Form No. 62-210.900(5)], which summarizes operations for the previous calendar year [Rule 62-210.370(3), FAC]. This report shall include the information required by 40 CFR 60.59b(g) and, if applicable, 40 CFR 60.59b(h).

g. If applicable, the owner or operator shall submit to the Department and the Environmental Protection Commission of Hillsborough County the information required in 40 CFR 60.59b(h) on a semiannual basis.

h. A copy of stack test results/reports indicating the results of required compliance tests shall be submitted to the Department's Southwest District Office and the Environmental Protection Commission of Hillsborough County as soon as practical, but no later than 45 days after the last sampling run. The stack test reports or accompanying documentation shall include the information required by 40 CFR 60.59b(f).

November 5, 1997 Meeting
 @ FDOT Tallahassee / BAR
 City of Tampa McKay Bay RRF Application

Bill Corbin	RTP Environmental Associates	732-968-9600
Mary Brodeur	City of Tampa	(813) 242-5408
Cynthia Stranglibbard	CDM	(617) 252-8233
David S. Jess	Landis + Parsons	(904) - 681 - 0311
Daniel Strobbridge	CDM	813 289-2900
PAT COMER	OGC/DEP	(850) 488-9730
Donald F. Elias	RTP ENV. ASSOC	732 968-9600
Beresu Heron	DEP	850 488 -
Edward J. Sore	BAR - T.H.E.V	850/488-1344
Clair Farnoy	BAR	850 488 1344
JOSEPH KAHN	BAR	850-488-1344
Ala Linn	BAR	(850) 488 - 1344
Susan DeVore	BAR	"

w/STP TAMPA MOLAY BAY
RESPONSE LETTER

1. SUBJECT TO LARGE UNIT REGULATIONS
AGREE:

2. ID FANS TO ACCOM Δ TO BAY
E. LAWL COSTS @ "PRIMARILY" FOR COMPLIANCE TO NOT COUNT
EPA - 3 THINGS FOR SDIO

1. PIT, 2. CRANES 3. IF ~~RECALCULATED~~ ^{DESIGNED} 3. NOT PURSUED
1.2. PURSUED

EPA SAYS ID FANS, NOT INCL.

CLAIM WANTS EPA LETTER(S) & SUPPORTING INFO + EPA RESPONSES.

3. KILN MUST BE REPLACED TO MEET EG. #3 INCL HERE.

CONTRACT W/ WHEELABRATOR TO OPERATE FACILITY THROUGH
TEAM OF THE BENDS (~2007) AT FIXED FEE.

IMPROVED CAPACITY FACTOR FROM ~70% 1990 \rightarrow ~90% 1997 &
INCR. TONS PROCESSED. PLANT ^{IS} NOT ~~NEAR~~ READY TO FALL APART.

4. UNDECIDED, WHAT WILL BE INSTALLED TO REPLACE EXISTING.

WILL HAVE TO SCRAP EXISTING FURNACE + KILN.

IS PERMIT NEEDED NOW? WHY NOT WAIT UNTIL ~~BEFORE~~ AFTER
VENDOR IS SELECTED?

MAKE BENEFICIAL - CLARIFY COSTS/RISKS - TO HAVE PERMIT IN HAND
BEFORE VENDOR'S BID.

REASONABLE ASSURANCE REAS DESIGD OF FAN - THIRD PARTY INTEREST.
PARENT GUARANTEE FOR REAS. ASSURANCE.

NEED A TECHNICAL RESPONSE. DESCRIBE OPTIONS & WHY THEY
ARE SIMILAR OR DIFFERENT.

LEAVE THIS ITEM OPEN - ADDL INFO NEEDED FOR THIS.

WILL SUBMIT BID SPEC FR. MARCO M PAVIE (DRAFT) & TECHNICAL
CONTENT.

5. FACILITY WILL NOT BE LIMITED TO MSW. NEED TO DEFINE EXPLICITLY & INCL. IN PUBLIC NOTICE.
6. CEMS WERE IDENTIFIED IN APPLICATION INCLUDING QA.
7. PAST ACT. PROVIDED.
FUTURE EST. NOT PROVIDED - INSUFFICIENT INFO.
COMPARE CURRENT ACTUAL TO FUTURE POTENTIAL -
FUTURE POTENTIALS COULD BE HIGHER FOR SAME.

RCMD MWC SUMMARY EXCERPTS & DRAFT PERMIT, PROP.
BY APPLICANT.

Hillsborough County - NEED TO REOPEN PSD PERMIT TO CLARIFY
FUEL DEFINITION. "ALTERNATIVE FUEL."
2 ISSUES - RETROFIT @ ALTERNATIVE FUEL.

PUBLIC NOTICE w/ NEW/CLARIFIED WASTE STREAM REQUIRED.

TITLE V APPLICATION - ADDRESS TITLE V SEPARATELY LATER.
REVISE TV PERMIT LATER.

- ADD'L INFO TO DEP BY NEXT WEEK.
- 30 DAY PUBLIC NOTICE.
- NEED PERMIT BY JAN.
- TWO BIL. ISSUES: FUELS + REAS. ASSURANCE.

Put in file

Date: 11/2/97 10:13:28 AM
From: Alvaro Linero TAL
Subject: Tampa MacKay Bay RRF
To: See Below

We will meet with representatives of Tampa MacKay RRF on Wednesday, November 5.

We received their response to our completeness letter this past Friday.

Kim. Please distribute the full version of the response to EPA, NPS, HCEPC, SWD, and John Reynolds. Original to file. Send another copy around to Cindy Phillips/Mike Harley/Mike Hewitt/Al Linero. Put a note on it to attach any comments.

Distribute the shorter versions to Doug Beason, Pat Comer, Joe Kahn, Ed Svec and Clair Fancy. Put a note on Clair's with a copy of this E-Mail. Indicate that this material is for Wednesday's meeting.

Joe. Please review the application and comments on what they want to burn and coordinate with the solid waste folks to the extent necessary. Teresa has the notebook with the original information on what they are allowed to burn.

John. Please review and be ready to let these folks know what further information may be required to make decisions on outstanding matters.

To: John Reynolds TAL
To: Kim Tober TAL
To: Clair Fancy TAL
To: Joseph Kahn TAL
CC: Ed Svec TAL
CC: Doug Beason TAL
CC: Patricia Comer TAL
CC: Scott Sheplak TAL



Camp Dresser & McKee Inc.

consulting
engineering
construction
operations

1715 North Westshore Boulevard, Suite 875
Tampa, Florida 33607
Tel: 813 281-2900 Fax: 813 288-8787

October 30, 1997

Mr. Al Linero, P.E.
Administrator, New Source Review Section
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

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OCT 31 1997

**BUREAU OF
AIR REGULATION**

Subject: DEP File Number 0570127-002-AC, McKay Bay Retrofit Project

Dear Mr. Linero:

The following letter contains the City of Tampa's responses to the Department's request for additional information dated October 14, 1997. The Department's questions are in italics and are followed by the City's responses.

1. *"For verification of combustion capacity as indicated in the August 25, 1997 federal rule changes for Subpart Cb and Eb units, please provide calculations of the maximum charging rate of each unit according to the procedures under Section 60.58b(j) of 40 CFR Subpart Eb. Also provide annual tonnage of municipal solid waste processed by the MBREF over the last five years along with any heat content determinations that have been made for the municipal solid waste burned."*

Response: The maximum charging rate calculations originally prepared by the vendor for the McKay Bay facility can not be located. The City's consultants have conducted an exhaustive records search for these calculations, but have had no success. However, the contract between the City and the vendor contains a guarantee that the Facility can process at least 1000 tons per day of refuse with a heating value up to 5000 Btu/lb. Since the vendor guaranteed 1000 tons per day of processing capacity with refuse containing 5000 Btu/lb, we assume that each of the four units was designed to process more than 250 tons per day of refuse with a heating value of 4500 Btu/lb (i.e. the reference value used by EPA). Our assumption is consistent with the results of the initial acceptance testing at the facility, when the Facility processed more than 250 tons per day per unit. The City's application (Volume 1 page 1-1) confirms this information.

Given this and other similar information, the City, the Hillsborough County Environmental Protection Commission, and DEP previously determined that the units at the McKay Bay facility are "large" units as defined under the EPA regulations.

The quantities of waste processed at the Facility over the past five years are summarized below:

Mr. Al Linero, P.E.
October 30, 1997
Page 2

<u>Year</u>	<u>Tons Processed</u>
1996	324,318
1995	319,284
1994	318,930
1993	295,312
1992	289,165

The City and the operator have not attempted to estimate the average heating value of the waste delivered to the McKay Bay facility. At the Hillsborough County resource recovery facility, such determinations are made monthly, and the annual average heating value is approximately 4800 Btu/lb. Although the heating value of the waste collected within the City of Tampa may be different than in the unincorporated County, the heating value for Hillsborough County's waste stream may provide an approximation of the heating value expected with the City's waste stream.

- 2. "For verification of 'modification' or 'reconstruction' status as defined in Subpart Eb, provide Subpart Eb construction cost calculations consistent with the EPA's August 20, 1996 'Applicability Determination,' as amended on December 30, 1996. The Department considers induced draft (ID) fans to be part of the MWC units because they could not operate without them even if there was no air pollution control equipment. The ID fans are required to overcome the pressure drop of the process equipment as well as the pollution control equipment. In this case, the ID fans are the equivalent of forced air fans and should be considered as being within the physical boundaries of the MWC unit.*

Response: EPA previously advised the City that the cost of the City's proposed improvements to the Facility's refuse receiving building, pit and cranes would be included in any calculation to determine whether the City's improvements constituted a "reconstruction," but the cost of the other improvements to the Facility would not be included in that calculation.

The total estimated cost of this work is well under 10 million dollars, which does not approach 50 percent of the 1980 facility cost (approximately \$80 million).

CDM agrees that the municipal waste combustor unit (MWC) would not operate without the ID fan. However, EPA's rule is clear that the MWC, as defined by EPA, ends immediately following the heat recovery equipment [40 CFR 60 Subpart Eb Section 60.51b Municipal Waste Combustor definition (1)]. Since the ID fan is located downstream of the heat recovery equipment, the ID fan is not part of the MWC unit, as defined by EPA. Costs for changes that do not involve the MWC are excluded from the 50% calculation.

Mr. Al Linero, P.E.
October 30, 1997
Page 3

The cost of replacing the ID fans at the Tampa Facility would be excluded from the 50% "reconstruction" rule [40 CFR 60 Subpart Eb Section 60.50b(a)], regardless of how the boundaries of the MWC unit are defined. The ID fans at the Tampa Facility will be replaced solely because Tampa must change the current configuration of the Facility to comply with EPA's MWC EG. The only reason the ID fans would be replaced would be to accommodate the increased pressure drop resulting from substituting a baghouse for the existing ESP. Even if DEP considers the ID fan as part of the MWC, the cost of replacing the ID fan would be excluded from the 50% calculation because changes made primarily for the purpose of complying with the emission guidelines are not considered a modification or reconstruction [40 CFR 60 Subpart Eb Section 60.50b(d)]. Consequently, it is not necessary to include the cost of the ID fan in the 50% calculation.

- 3. The process equipment retrofit appears to be more of a life extension project than for meeting Subpart Cb in which case Subpart Eb may apply. Please provide a detailed engineering report confirming that the process equipment replacements are required for the MBREF to meet the Subpart Cb guidelines. The report should be prepared and sealed by a professional engineer with expertise in the appropriate mechanical and process disciplines addressed in the report.*

Response: The City would not need to change the "process equipment" at the Facility if the City did not need to comply with the requirements of Subpart Cb. The existing furnace, grate, boiler and air pollution control systems are adequate to comply with the Facility's existing permit conditions for the remainder of the Facility's projected life. If no new air pollution controls were required under Subpart Cb, the City would simply construct an ash management facility to comply with applicable Florida solid waste regulations.

A detailed engineering report was previously prepared for the City by Mr. Ted Sjoberg of SVI. Sealed copies of his report are attached hereto as Exhibit 1 together with Mr. Sjoberg's resume. Mr. Sjoberg has extensive experience with waste-to-energy facilities, including the City's Facility. Mr. Sjoberg was personally involved with the original design, construction, and operation of the Facility in its current configuration. He is well qualified to evaluate the Facility's current performance and the need for improvements to meet the requirements of Subpart Cb.

CDM has reviewed SVI reports and other relevant materials. CDM generally agrees with Mr. Sjoberg's conclusions, including his conclusion that without major changes to the Facility's combustion units and the boilers, compliance with the carbon monoxide and dioxin limitations contained in Subpart Cb could not be guaranteed by a full-service system vendor/operator.

EPA has already reviewed and accepted Mr. Sjoberg's analyses of these issues. The EPA evaluation was performed by representatives of EPA Region IV from Atlanta, the EPA Office

Mr. Al Linero, P.E.
October 30, 1997
Page 4

of Air Quality Planning and Standards (OAQPS) in North Carolina, and EPA Headquarters in Washington, D.C. EPA's conclusion about the proposed project, the applicability of EPA's EG, and related issues were set forth in letters dated August 20, 1996 and December 30, 1996, which were provided to DEP by EPA.

- 4. Please indicate the most probable choice between reconstructing the existing mass burn refractory combustors or replacing them with the waterwall design (page 2-5), and between replacing the existing boilers or substantially improving them (page 3-1). This is necessary to meet the requirements of Rule 62-4.070, F.A.C., Standards for Issuing or Denying Permits Subpart applicability, the ultimate performance of the facility, and the ability to efficiently burn the slate of wastes anticipated in the application may be related to this decision.*

Response: At this point in the City's procurement process for a full service vendor, it is not possible to indicate a "most probable" choice relative to replacing or repairing the Facility's combustors and boilers. However, it is not necessary to make that decision now. All of the vendors are required to meet certain minimum performance guarantees. All of the vendors must guarantee the City that the upgraded Facility will comply with all of the applicable emission limitations promulgated by EPA or DEP, including Subpart Cb. Regardless of what the successful vendor proposes, the work at the Facility is required "primarily to meet the Emission Guidelines" in Subpart Cb and as such is not included in the reconstruction calculation. [40 CFR 60 Subpart Eb Section 60.50b(d)]. Of course, the City would be willing to provide DEP with copies of the Vendors' specific plans and specifications when they become available.

- 5. Please indicate which of the wastes specified in the application are already burned at the facility. How will the proposed specification of fuels affect overall waste throughput quantities? We may submit additional questions regarding wastes and fuel following review by Department solid waste staff.*

Response: The City believes that all of the waste materials specified in the City's application are currently received and processed at the Facility as part of the City's normal solid waste stream. The proposed specification is offered simply to clarify and more precisely define allowable fuels and the manner in which they are handled. The overall waste throughput quantities are not expected to change. The fuel quantity and quality will generally normalize around past throughput quantities and fuel quality.

- 6. The proposed monitoring plan does not reference specific monitors, locations, or techniques. Please provide this information.*

Response: Section 3.3.7, page 3-7, Volume 1 of the City's application explains that continuous emission monitors (CEMs) for SO₂, NO_x, CO, and O₂ will be installed after the

Mr. Al Linero, P.E.
October 30, 1997
Page 5

fabric filter (FF) outlet of each combustion unit. SO₂ and O₂ CEMs will be installed at the economizer outlet, prior to the Spray Dry Absorber inlet, to allow calculation of SO₂ removal efficiency. A continuous opacity monitor (COM) will be installed after the FF outlet on each unit.

Flue gas samples will be taken continuously at the economizer/boiler outlet for SO₂ and O₂ and after the FF outlet for SO₂, NO_x, CO, and O₂. The sample lines will be connected to a climate controlled CEM trailer. The CEM trailer will contain the sample preparation equipment and analyzers. Data collected from the CEM analyzers will be transmitted to the Facility's main control room and collected with data loggers.

At this time, a vendor has not been selected and, therefore, the specific brand names of the analyzers and CEMS cannot be provided. The exact location within the ductwork where the CEMS will be located cannot be provided for this same reason. The City is willing to submit this information to the Department when it becomes available.

7. Table 1-1 provides a comparison of present and projected emission limits. Please provide annual and hourly emissions reflecting actual emissions for a representative two year period reflective of normal operations prior to the retrofit project. To the extent possible and based upon expected equipment performance, please submit best estimates of future annual and hourly emissions.

Response: Stack test data summaries for the past 11 years are provided in Appendix E of Volume I of the permit application, and are broken out in more detail in the attached Exhibit 2. The Exhibit 2 provides the annual and hourly emissions reflecting actual emissions from the Facility for a two-year period before the retrofit. (Note, however, that there is only one year of test data for carbon monoxide and beryllium). The Exhibit 2 also shows a calculation of the mean plus two standard deviations above the mean for all data collected for each pollutant. The Retrofit will result in a net reduction in actual air pollutant emissions from the facility.

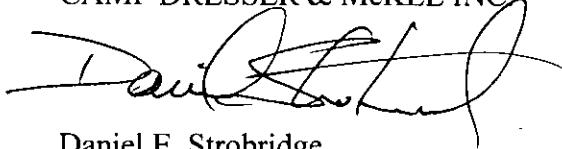
With regard to expected future performance, we would expect emissions to be somewhat below the requested emission limitations to provide for a reasonable operating margin between the expected performance of the equipment over time and the permit limitation. This operating margin may vary considerably from pollutant to pollutant and will likely vary from vendor to vendor, depending upon their respective risk posture. Consequently, any estimates of future actual emissions at the Facility may deviate significantly from those that may be realized. For all these reasons it would be difficult to estimate future actual emissions accurately and any such estimates may provide misleading information.

Mr. Al Linero, P.E.
October 30, 1997
Page 6

If you have any questions or comments, do not hesitate to contact me.

Sincerely,

CAMP DRESSER & McKEE INC



Daniel E. Strobridge
Associate

cc: Mike Salmon, City of Tampa
Nancy McCann, City of Tampa
David Dee, Landers & Parsons
Don Elias, RTP
Cynthia Hibbard, CDM
Doug Fredericks, CDM
Ted Sjoberg, SVI

cc: G. Reynolds
C. Nancy
J. Kahn
E. Svec
EPA
NPS
HCEPC
SWD

EXHIBIT 1

S. U. J.
10404 Oakbrook Drive
Tampa, Florida 33624
(813) 968-7483

October 29, 1997

R. Michael Salmon, Project Director
Environmental Services and
Public Works Project Coordinator
City of Tampa
306 E. Jackson St., 7th Floor
Tampa, Florida 33602

Subject: Confirmation - McKay Bay Waste-to-Energy Report - March 1996

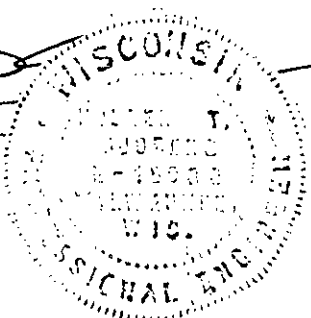
Dear Mr. M. Salmon:

Pursuant with your request, I have reviewed the information prepared for the City of Tampa and provided in the McKay Bay Waste-to-Energy Compliance Report - dated March 1996 - and find that the conclusions reached as part of the analysis, relative to the capability of the existing systems meeting the revised emissions standards as promulgated by the EPA remain, to the best of my knowledge and belief, to be accurate. The many recent subsequent meetings held with almost all of the major system suppliers, facility operators, and consultants active on this project have corroborated the conclusions in the Report relative to requiring replacement of the major combustion, heat recovery, and air pollution control systems.

You have also indicated that the Florida Environmental Protection Agency has requested confirmation that I am a registered Professional Engineer in any State and provide my seal with this letter. I am a registered Professional Engineer in the States of New Jersey and Wisconsin, but am not registered in the State of Florida. I have not in the past nor intend to in the future represent myself as a registered Professional Engineer in the State of Florida and my seals on this letter are applied only to provide reference information as requested.

Sincerely,


H.T.D. Sjoberg



City of Tampa
McKay Bay Waste - to - Energy Facility
Compliance Review

Prepared by SVI

March 1996

Table of Contents

List of Figures

Objective

Summary

Facility Background

Compliance Review

ARCHITECTURAL / STRUCTURAL / CIVIL

SITE

PROCESS BUILDING

TIPPING AREA & PIT

CONTROL ROOM

MAINTENANCE BUILDING

TRANSFER STATION

SCALE HOUSE

PROCESS EQUIPMENT

CRANES

AIR HANDLING

ELECTRICAL DISTRIBUTION

TOOLS

COMBUSTION SYSTEM

FURNACE / KILN

PREHEAT SYSTEM

HEAT RECOVERY SYSTEM

BOILER

ASH SYSTEM

ASH / LIME PROCESSING BUILDING

ASH CONVEYOR SYSTEM

AIR POLLUTION CONTROL SYSTEM

Cost Estimate

List of Figures

- | | |
|-----------------|--|
| Figure 1 | McKay Bay Plot Plan
Current Layout |
| Figure 2 | McKay Bay Plot Plan
Proposed Layout |
| Figure 3 | McKay Bay - Cross Section
Current Configuration |
| Figure 4 | McKay Bay
Proposed Configuration |

City of Tampa
McKay Bay Waste-to-Energy Facility
Compliance Review re USEPA Emission Guidelines

Objective: This intent of this brief overview is to evaluate portions of the McKay Bay Waste-to-Energy facility as to its current operational status and the changes deemed necessary to comply with the recently mandated USEPA Emission Guidelines. The total facility is involved, which includes not only the processing lines, but also the site, transfer station and scale house. Facility changes must also provide for the extension of operational life for an additional 20 years as a requirement for bond financing of the plant retrofit.

SUMMARY: This review addresses the changes to the principal areas of the facility, as denoted below, required to bring it into compliance with the new USEPA Emission Guidelines. An estimate is also provided to delineate the incumbent costs associated with the retrofit program.

COMPLIANCE REVIEW

ARCHITECTURAL/STRUCTURAL/CIVIL

The physical plant, including the process building, maintenance building, transfer station and scale house are basically in good to fair condition. Some refurbishment and repairs will be necessary to extend the plant life for the required 20 years.

PROCESS EQUIPMENT

The major plant equipment is currently operational but will require some upgrading and refurbishment to meet the extended plant life criteria.

COMBUSTION SYSTEM

The existing furnace/kiln system cannot be revised to provide the combustion environment necessary to prohibit dioxin formation required for compliance. It will be necessary to alter the furnace configuration by eliminating the kiln system and exchanging it with a furnace only system. A gas fired pre-heat system will also be required.

HEAT RECOVERY SYSTEM

The existing boilers do not currently have sufficient heat absorbing capability to reduce the flue gas exit temperatures to a satisfactory level of approximately 400-450 F necessary to inhibit reformation of dioxin. Several changes to the boilers will be required, which consists basically of expanding the surface areas of the 2nd and 3rd passes.

ASH SYSTEM

Environmental constraints will require that a new Ash/Lime Processing Building be erected. The ash conveyor system will have to be upgraded and rerouted to the new building site location. A revised ash processing system will also be required due the incorporation of the lime and activated carbon to the Air Pollution Control System.

Facility Background: Initially, the McKay Bay Waste to Energy facility was an incinerator that was operational from 1967 through 1979. The City of Tampa opted to rebuild the plant to comply with environmental regulations mandated at that time. It was determined that a 1,000 ton per day facility having 4 - 250 ton per day processing lines would be the optimum configuration. A contract was awarded in 1982 to equip the plant with a totally new combustion system, waste heat boilers, turbine/generator and air pollution control system. During this period a scale house and transfer station were constructed. The plant was totally gutted with only the structural portions remaining intact. Construction, installation and testing was completed in 1985 and the plant has been operational since that time. It must be taken into consideration when evaluating the plant that the structures are almost 30 years old and the processing systems have been in service for over 10 years of their rated 20 year life. These systems should be functional at the end of that period if operated correctly and properly maintained. The technology, however, was state of the art for the late 1970s. This is particularly true of the furnace, instrumentation and control systems. The plant processed in excess of 310,000 tons of waste during the year 1995 and is meeting the electrical generation contract commitments.

AIR POLLUTION CONTROL SYSTEM

The entire existing electrostatic precipitator systems will have to be replaced with flue gas scrubbers and bag houses. A lime slurry and activated carbon will be injected into the gas stream at the scrubbers and the dioxin-heavy metal absorption/adsorption process will then take place on the surface of the filter bags.

COST ESTIMATE

Estimated cost to bring the McKay Bay Facility into compliance with the USEPA Emission Guidelines is broken down into the principal components noted above. The total estimated cost to retrofit the plant is anticipated to be approximately \$ 85 million.

Compliance Review:

ARCHITECTURAL / STRUCTURAL / CIVIL

◇ SITE

- Description: The site encompasses approximately 11 acres on which the plant is located (Figure 1) and an additional area where the transfer station and scale house are situated along with interconnecting roadway. Road surfacing, fencing, gates and area lighting are in satisfactory condition for current operations.

USEPA Compliance Action: Each process line will have to be extended to the south and the existing stacks removed and relocated. It will also be necessary to incorporate a new Ash/Lime Processing Building on the site. The site will be expanded to the south and occupy a portion of the existing Police Auto Compound (Figure 2). Some of the roadway area may require resurfacing after construction is completed.

◇ PROCESS BUILDING

Description : The main processing building was totally stripped during the 1983 modification. An extension was added over the tipping floor area, aluminum siding provided for the existing structure and a new roof installed. The interior renovations consisted of new flooring, wall covering and ceilings provided for the administration areas with all other portions of the plant repainted.

Action: The processing building is in satisfactory condition and will require "sprucing up" in the form of repainting the exterior and the office and shop areas. Some refurbishment will be required after the plant rework since some of these areas will be occupied by outside contractors.

* Tipping Area and Pit

Description : The tipping area is covered with a steel framed enclosure. Pit capacity is approximately 2,000 tons, which is nominal for this size plant, and is part of the original structure. The tipping floor and pit areas are in poor condition, which is typical of ten years of operation in this harsh working environment.

Action: The tipping area and pit will have to be refurbished in all respects to provide the additional 20 year life of the plant

* **Control Room**

Description: The control room layout is unique in this plant because the crane operators and plant operators are in the same room. This is purposely done to improve communication and coordination. The control panels for the plant extend the length of one wall and consists primarily of analog instrumentation since the system was installed prior to the extensive use of computerized controls.

USEPA Compliance Action: It is anticipated that the combustion system will be modified and computer controlled. The computers will be housed in a console located in the middle of the control room. It is not necessary that the control room undergo any major revisions. The existing halon fire suppression system is no longer environmentally permitted and will require upgrading.

◇ **MAINTENANCE BUILDING**

Description: A pre-fabricated metal sided building utilized for maintenance and parts storage is located south of the current stacks (Figure 1).

USEPA Compliance Action: Installation of the required scrubber/baghouses will necessitate relocating this building to the area currently used for ash storage (Figure 2).

◇ **TRANSFER STATION**

Description: The transfer station is located on the plant site, a short distance from the process facility, and connected by asphalt roadway. The building is a metal sided, steel truss structure erected in 1985, and is in good condition.

Action: Some refurbishment may be necessary.

◇ **SCALE HOUSE**

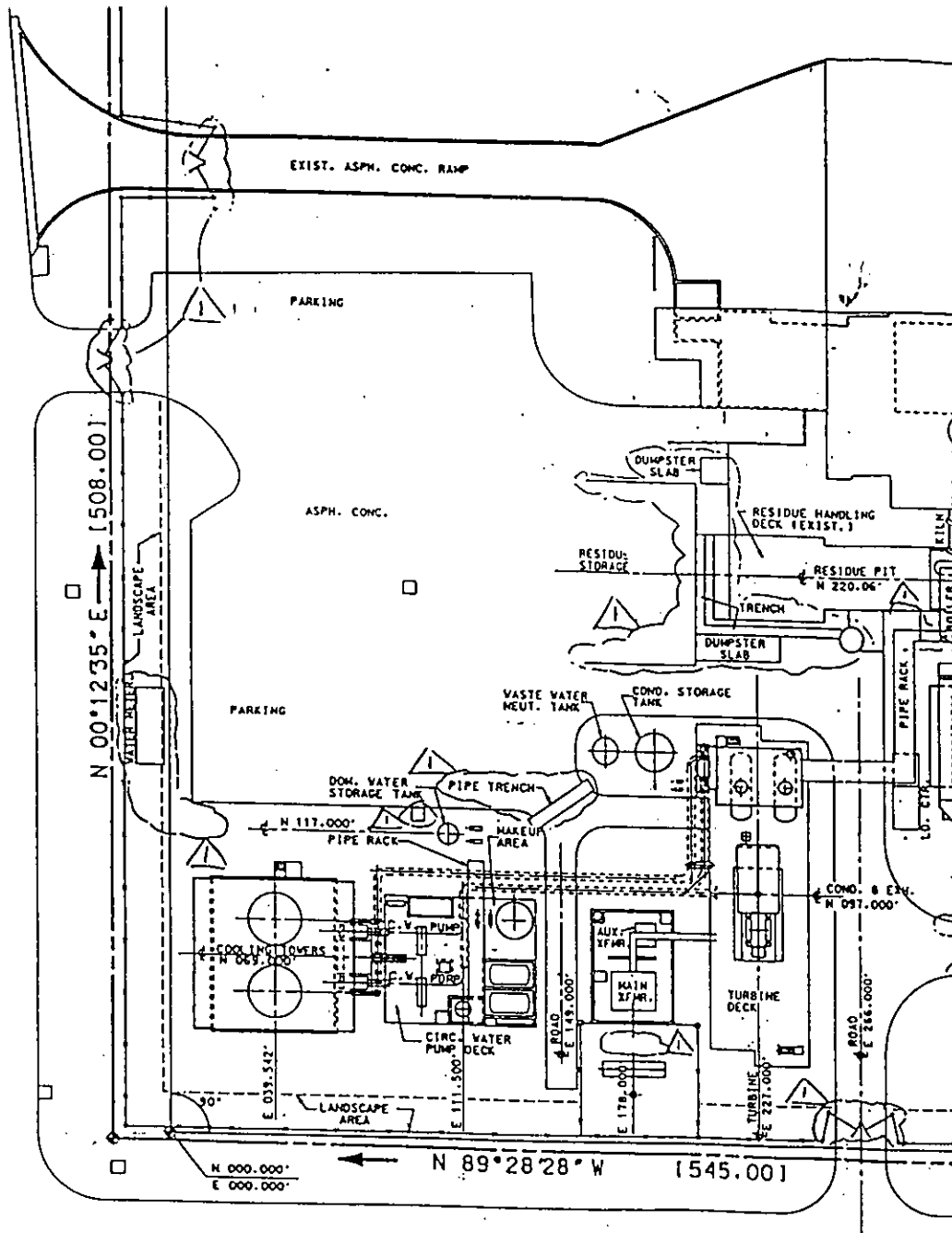
Description: The Scale House and associated computer system was installed in 1985. The facility is in good condition.

Action: Some building refurbishment may be necessary. The computer system is currently fully operational but should be reviewed as to upgrading to current technology.

Figure 1

**McKay Bay Plot Plan
Current Layout**

34TH. STREET

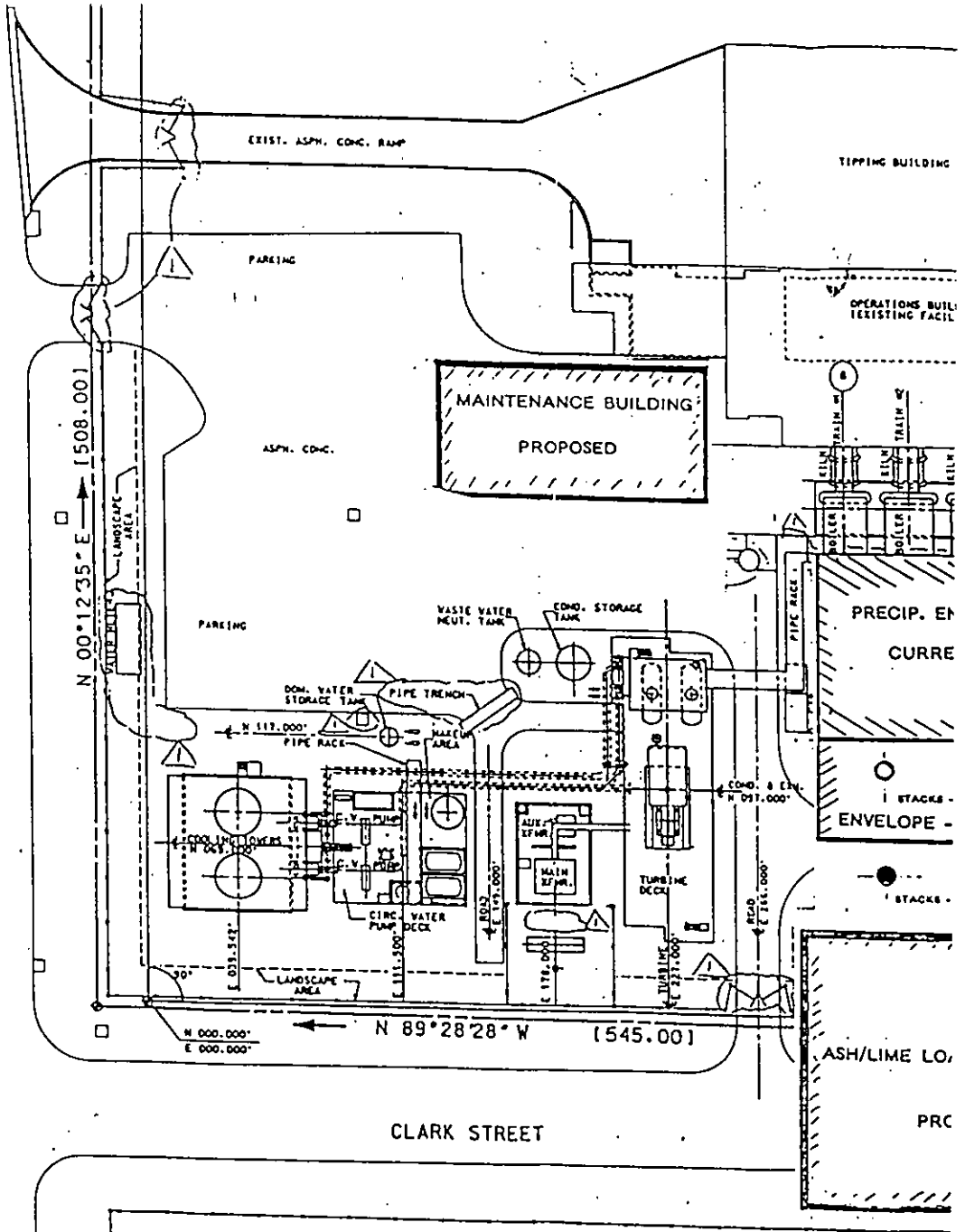


CLARK STREET

Figure 2

**McKay Bay Plot Plan
Proposed Layout**

34TH. STREET



CLARK STREET

PROCESSING EQUIPMENT

◇ CRANES

Description: Two - 100% capacity cranes are installed and controlled by "joy sticks" from either of two operator control stations. The cranes were designed and supplied by the Finnish firm - KONE. However, the semi automated control system was installed by a KONE-US subcontractor and replacement parts are difficult to obtain. Switching is done with breakers located on the next lower level. Trolley, bridge and hoist operation is electrically driven and traversing is via steel wheels on crane rails. Orange peel grapples are utilized with the tines hydraulically actuated and hoisting by drum wound wire rope.

Action: The crane system will require refurbishment to provide the required extended 20 year life criteria. This will entail overhauling the trolley and bridge hoisting equipment and rails. The control and switching systems will require upgrading to a solid state maintainable system.

◇ AIR HANDLING

Description: The forced draft air handling system consists of individual primary and secondary fans for each line. Primary air fans are located on the lower level, drawing the air from ducts located at the roof level. The air passes through a steam air heater and then is ducted into chambers below the furnace grates. Control is by varying the air flow from the fans and remote controlled valves. There is no method to measure the air flow or distribution beneath each grate. Secondary air is drawn from the tipping area by fans located on the roof and ducted down to the furnaces. Control of secondary air is by manual valves with no method to determine the quantity of air introduced.

USEPA Compliance Action: A computerized control system is necessary to control air distribution to the furnaces. This will entail providing air measuring and remote control devices with associated revised ducting. It will be necessary to increase the capacity of the primary and induced air fans to compensate for the increased pressure drop caused by replacement of the precipitators with a scrubber/baghouse configuration.

◇ ELECTRICAL DISTRIBUTION

Description : The plant electrical system is a typical design with the motor control centers located throughout the plant. Electrical and control distribution throughout the plant is "hard wired" using cable trays or conduit where required. Obtaining replacement parts for the existing electrical system is difficult due to the age of the equipment. The plant battery system is in satisfactory condition.

USEPA Compliance Action: The requirement to install the new scrubber/baghouses, forced and induced air fans, and modify the combustion system will require revising most of the electrical supply and controls throughout the plant.

◇ TOOLS

Description: The plant currently has computers of different types which process work orders, plant operation data and budget control. Plant engineering information and files are limited. The majority of shop tools are those provided to the plant in 1985. The plant has 4 front end loaders, of which 2 are in poor condition. The 3 stand-by truck tractors and 12 trailers retained for waste hauling from the Transfer Station or during plant outages are in fair condition.

USEPA Compliance Action: The requirement to provide an additional 20 year plant operational status and the mandatory system changes will impact this area. Upgrading of the computers is necessary to utilize enhanced computer programming to improve record keeping and tracking plant performance. Additional equipment necessary for effective plant maintenance is required, including instrumentation testing and calibration systems. Two additional 5 ton forklifts should be provided and 2 of the front end loaders replaced. The condition of the waste hauling tractors and trailers should be assessed at the completion of the compliance program.

COMBUSTION SYSTEM

◇ FURNACE

Description: Four waste burning furnace/kiln units, each rated at 250 tons/day capacity, based on a proven incinerator design dating to the 1950's, were manufactured and installed in 1985 by Volund Miljoteknik A/S of Copenhagen, Denmark. The system was designed in conformance with the US environmental regulations in force at that time. This work was done under the direction of Waste Management Energy Systems, with the process systems subcontracted to Volund USA, a Volund subsidiary that was located in Chicago, Ill.. It is to be noted that Volund Miljoteknik A/S was purchased in 1992 by the Italian company, Ansaldo, and the Volund office in the US was closed. Construction and installation was subcontracted to the Bechtel Corporation.

The Volund units are steel casing, refractory lined furnaces with three reciprocating grates discharging into a refractory lined rotary kiln for final burnout, with an ash gravity feed to the water trough steel drag chain transport system (Figure 3). Underfire combustion air is injected upward through the grates from a sectioned hopper beneath the grates. Secondary air is injected through the refractory side walls, acting as coolant, with additional air introduced into the bypass duct prior to the 1st pass of the boiler. Ash sifting down through the grates drops into a hopper with a water covered drag chain conveyor and is then discharged into the main ash transport.

The primary control system addresses control of the waste combustion process in the furnace and the kiln. As currently installed, the control system consists of analog instrumentation with all control parameters manually set. The system basically reflects state of art control technology available in the 1970s. Extended along one wall of the control room is the control panel dedicated to the furnace/kiln which the operator monitors and manually adjusts as he deems necessary. The primary control parameter is steam flow, which the operator attempts to optimize while maximizing waste throughput. Throughput is controlled by the rate of grate movement and kiln rotation speed. Combustion air control is maintained by varying the total combustion or forced draft air to the system, underfire air individually for the three grates and total secondary air flow. Control factors include a minimum of manually adjusted 12 variables to maintain proper

furnace temperature - system pressures - temperatures throughout the total system and steam flow among other parameters. The operators must do this for four lines in addition to monitoring the balance of plant As can be noted from Figure 3, once the burning waste enters the kiln, where approximately 20% of the combustion or final burnout takes place, there is no capability to meter either primary or secondary combustion air and control combustion temperature to inhibit the formation of dioxin.

USEPA Compliance Action: The existing system will not comply with the new USEPA Guidelines. It will be modified by reconfiguring the furnace from a grate/kiln system to a grate only system (Figure 4) to permit accurate control of the process and furnace temperatures. The furnace will be refractory or ceramic lined with the flue gas exiting directly into the existing boiler. Waste feed from the existing chute to the three segment reciprocating grate system will be controlled by a hydraulically driven ram. Individual air plenums will be located beneath each grate section and measured air flow controlled by flow control valving in each section. Secondary air is also be similarly controlled for each section . Furnace temperature at each grate section - flue gas temperatures - steam flow - air flows - feed rate - grate speed - and other contributing parameters will be monitored and computer controlled. An individual computer, data acquisition and logging system will be provided for each line.

Ash will be discharged from the third grate into a water filled ash hopper push system, which not only cools the ash but also acts as an air seal. The cooled ash is then pushed up out of the water bath by a hydraulic ram on to one of two transfer conveyors.

◇ PREHEAT SYSTEM

USEPA Compliance Action: A gas or oil fired system is mandated to preheat the furnaces prior to introduction of waste to avoid "cold" startup or operation of the combustion system at reduced temperatures to repress the possibility of dioxin formation.

Figure 3
McKay Bay - Cross Section
Current Configuration

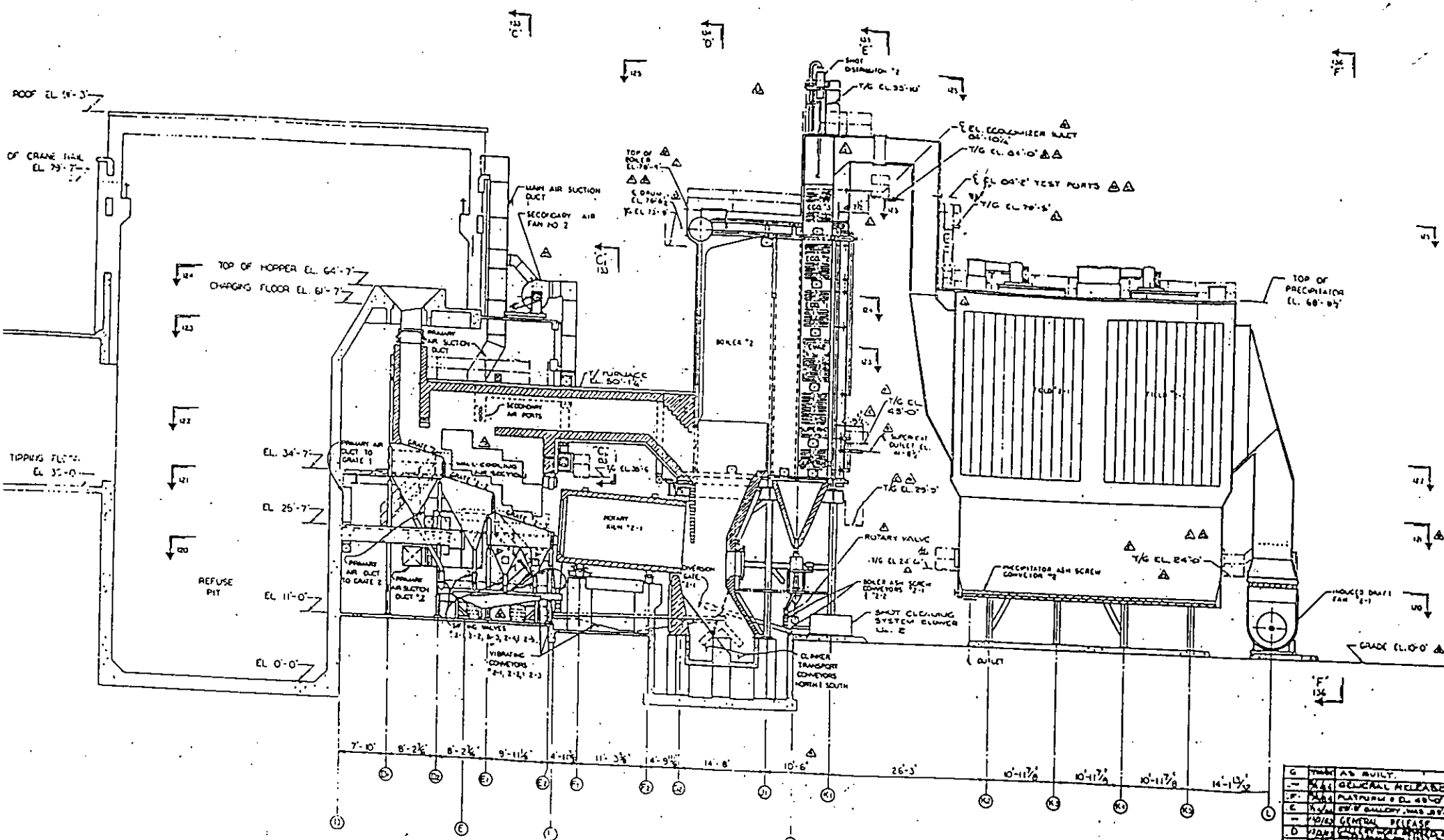


Figure 3

McKay Bay - Cross Section

Current Configuration

C	TRUCK AS BUILT
-	GENERAL RELEASE
F	ALUMINUM EL. 48'-0"
E	STEEL GANTRY 2ND ST.
-	GENERAL RELEASE
D	STEEL TRUSS BRIDGE
-	GENERAL RELEASE FOR CONSTRUCTION
C	ALUMINUM EL. 58'-0"
-	GENERAL RELEASE
B	STEEL TRUSS BRIDGE
-	GENERAL RELEASE FOR CONSTRUCTION
A	STEEL TRUSS BRIDGE
-	GENERAL RELEASE FOR CONSTRUCTION
REF	REFUSE PIT

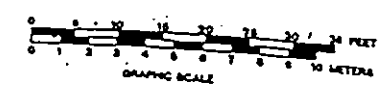


Figure 4
McKay Bay - Cross Section
Proposed Configuration

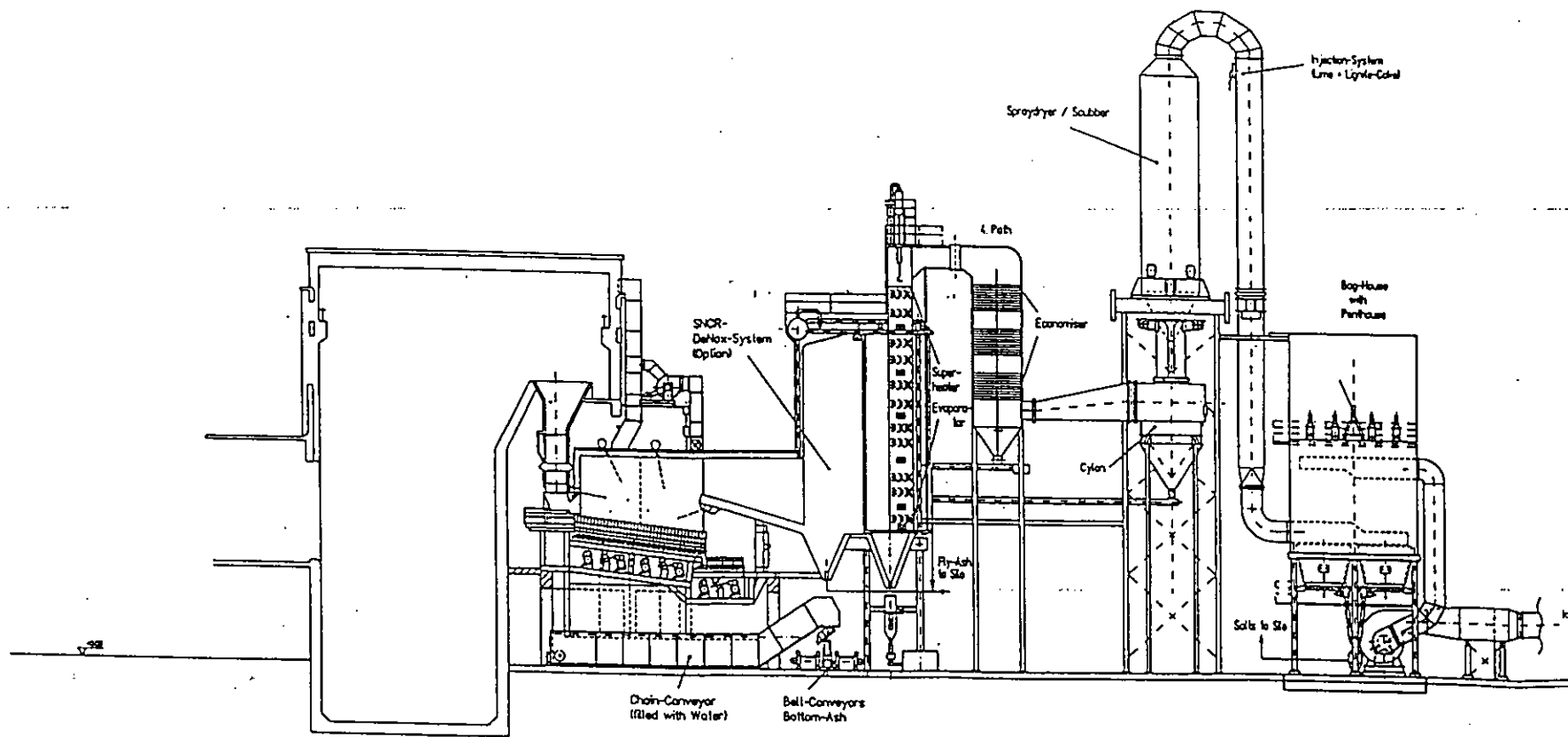


Figure 4

McKay Bay - Cross Sect

Proposed Configuratio



RIEMANN, SONNE

HEAT RECOVERY SYSTEM

◇ BOILER

Description: The boilers were provided by Volund Miljoteknik A/S and manufactured in Denmark. They are corner tube - 3 pass - single drum - bottom supported units based on an Ekrühr design licensed from Deutsch Babcock of Germany. Heat absorption capability of the boilers has proven to be marginal. This is manifested by the fact that at full load, in a fouled condition, flue gas exit temperatures are in the range of 600 F vs. the 400 F - 450 F range deemed acceptable for inhibiting dioxin reformation. Volund unsuccessfully attempted to rectify this problem by adding additional economizer capacity and changing the superheater configuration. Gas distribution is uneven within the units and several approaches have been tried to create laminar flow, but none have proven effective to date. It is anticipated that thermal profiling of the boilers will show post ignition in the boilers of unburned gases emanating from the furnace, a situation, which constrains performance of the air pollution control systems.

USEPA Compliance Action: The boilers must be modified to provide the required additional heat absorption necessary to have the flue gas exit temperatures in the acceptable range of 400 - 450 F for dioxin control. This can be accomplished by increasing the surface area in the 1st pass - adding tube pendants in the 2nd pass - enlarging the 3rd pass by altering the width of the side walls and providing larger superheaters. The precise boiler modifications will be dependent upon a further detailed design review. It is not anticipated that additional NOx control will be required. If deemed necessary, NOx control will be provided by spraying Urea or other appropriate chemicals into the 1st pass flue gas stream.

ASH SYSTEM

◊ ASH/LIME PROCESSING BUILDING

Description: Current regulations dictate that the ash be stored under roof and chemically treated before disposal off site. Plans are in work for cover to be provided over the existing ash storage area (Figure 1), which is restrictive in size and run off control..

USEPA Compliance Action: Installation of the scrubber/baghouse system will require the addition of a lime handling system in addition to an upgraded ash and spent lime processing system. It is a requisite that this processing and storage be done under cover to prohibit dust excursion and possible leaching from rainfall. A new Processing Building is required and will be located south of the repositioned stacks (Figure 2) and situated to provide access from the existing entrance roadway for loading and off loading.

◊ BOTTOM ASH

Description: The bottom ash is discharged from the end of the rotating kiln into water filled reinforced concrete troughs which are common to all units. Grate ash and fly ash from the boilers is also discharged into the bottom ash stream. All ash is then transported by steel link drag chain conveyor up into a rotating trommel, which permits the ash to drop through and the larger items to be separated. The ash conveyor system was originally installed in 1967. Ferrous material is magnetically removed from the separated ash streams. A temporary Wes-Phix chemical ash treatment system has recently been added.

USEPA Compliance Action: The ash conveyor system will be rerouted, due to the location of the Ash/Lime Processing Building, and the existing steel drag chain system will be abandoned. A pair of parallel rubber belt conveyors, providing a 100% redundancy, will be installed to provide ash transport. As shown in the area plot plan (Figure 2), the furnace ash conveyors upon exiting from the process area will discharge onto one of two north/south covered rubber belt conveyors transporting the ash into the Ash/Lime Processing Building.

AIR POLLUTION CONTROL SYSTEM

Description: The existing emission control equipment consists of an electrostatic precipitator for each line. Installed during the 1985 plant overhaul, the units were fabricated by F.L. Schmidt of Denmark. The precipitator system has performed satisfactorily during the 10 years of service and the plant has been in environmental compliance.

USEPA Guidelines Compliance Action: The USEPA Emission Guidelines requires that the electrostatic precipitator system be replaced with a scrubber/bag house configuration. This is particularly necessary to meet the heavy metals and dioxin level standards. The emission control configuration to be installed (Figure 4) is similar to the system utilized Hamm, Germany in a plant of similar size to McKay Bay, 4 lines of 250 ton per day throughput capacity. Dioxin emission results were less than 0.1 nanograms per cubic meter, which is the threshold level required to meet the highly restrictive German 17 BImSchV environmental standards. A lime slurry and a small percentage of activated carbon will be injected into the flue gas stream at the scrubber. The flue gases will then be filtered through the bag house system where the chemical reaction and adsorption/absorption of the emission contaminants occurs, primarily on the surface of the filtration bags. A continuous emission monitoring system will also be installed to conform with USEPA Guidelines.

Cost Estimate

The estimated costs are for changes and refurbishment required to retrofit the McKay Bay Waste-to-Energy Facility to comply with the new USEPA Emission Guidelines and the financing obligation for an additional 20 year plant life.

	<u>Cost (\$1,000)</u>
Architectural / Structural / Site	1,180
Process Equipment	1,950
Furnace / Control System	22,000
Heat Recovery System	11,100
Ash & Conveyor System	1,100
Ash / Lime Processing Building	950
Air Pollution Control System	33,500
	<hr/> <hr/>
	71,780
Contingency	7,200
	<hr/> <hr/>
	78,980
Engineer / Permitting	6,000
	<hr/> <hr/>
Total	84,980

H.T.D.SJOBERG

BIOGRAPHICAL SUMMARY

Mr. Sjoberg has over 35 years management experience in varied technical enterprises of which almost the last 20 years has been in the field of waste-to energy .

After initial involvement for several years in the construction field, Mr. Sjoberg was then active in the aerospace industry during the " Man on the Moon " phase. While employed by Thiokol Chemical Corp. and Wright Aeronautical Corp., he progressed from responsibility for a rocket testing complex to establishing and directing a corporate diversification program which provided major rocket testing facilities for NASA and all the major aerospace vendors.

Mr. Sjoberg, then founded and managed Space Engineering Inc. and Sjoberg & Hart Associates, which for 10 years provided specialized equipment and facilities for such typical clients as Allied Chemical Corp., Walter Kidde & Co., Pratt & Whitney Corp. and E.I. DuPont Inc..

Mr. Sjoberg assumed responsibility for all technical and operational aspects for the resource recovery organization of the American Can Co., known as Americology in 1975. A primary project was the first major Refuse-Derived-Fuel (RDF) facility in the U.S. to provide an alternate fuel supplement for a coal burning power plant which was constructed in Milwaukee, Wisconsin. His responsibilities encompassed direction of plant design and operation, permitting, contract negotiations, interface with all governmental agencies and subsequent start up and operation of the 1,000 ton per day RDF facility and power plant interface. Mr. Sjoberg was also involved with technical overview of a developmental waste-to-energy pyrolysis process which involved operation a 100 ton per day facility.

In 1980, Mr. Sjoberg joined Waste Management Inc., where he initially had overall responsibility for all corporate engineering functions and resource recovery operations, as well as all aspects of solid, chemical and infectious waste disposal and treatment. These included Recovery I, a 600 ton per day waste shredding and separation facility and landfill in New Orleans, La. - and RefCOM, a 100 ton per day anaerobic digestive process demonstration

plant which converted solid waste and digested sewage sludge to methane gas for energy utilization. It consisted of a shredding and separation facility which prepared material for the anaerobic digesters. He assumed overall responsibility for the resource recovery area as a staff Corporate Vice-President and President of Waste Management Energy Systems (WMES). This involved the full spectrum of business activities in the field of waste-to-energy. Typical WMES projects were constructing and operating a 1,000 ton per day mass burn facility in Tampa, FL.; a 2,200 ton per day facility for Broward County, FL was negotiated and under contract with all State and Federal environmental permits being issued, among others. WMES was merged with Wheelabrator Technologies in late 1988.

Mr. Sjoberg is currently President of Sjoberg Ventures, Inc.(SVI), which he founded in 1988. S.V.I. has provided consulting services in all aspects of both solid and chemical waste treatment and alternative energy systems. Clients have included such organizations as Bechtel Corporation, Tampa Electric Company, Waste Management Inc. and Wheelabrator Technologies among others. Activities have involved projects in the US and overseas. This has included tasks such as being totally responsible for the rebuilding and reorganization of a 1,000 ton per day mass burn facility in Germany, which was in excess of 75 million dollars and incorporated an emission control system to meet the latest stringent European regulations. Landfill design evaluation, waste to energy business development plans, analysis of anaerobic digestion systems for waste conversion to methane for the Department of Energy are among some of the SVI projects.

Mr. Sjoberg holds a degree in Engineering from the New Jersey Institute of Technology and is a licensed Professional Engineer in the States of New Jersey and Wisconsin. His service activities include periods as an instructor in Tactical Nuclear Weapons and Shipboard Communications Officer.

Mr. Sjoberg has held membership in the American Institute of Aeronautics and Astronautics, the American Defense Preparedness Association, the Society of Plastic Engineers, The American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Public Works Association, and the National Solid Waste Association among others. He is the author of several papers on Aerospace Testing and Resource Recovery has been active on many professional organization panels.

EXHIBIT 2

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
Particulate Matter (in lb/hr)**

		Year of Stack Test										
		1985	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Unit 1	Run 1	3.11	3.51	2.95	1.57	2.43	3.09	3.27	1.81	1.11	9.98	1.43
	Run 2	5.87	3.06	1.20	1.38	0.76	2.46	1.67	3.81	0.94	8.12	1.85
	Run 3	1.47	5.27	2.43	1.92	0.73	4.67	1.22	3.72	3.26	1.07	0.90
Unit 2	Run 1	3.99	2.62	1.98	1.54	2.12	1.62	6.50	2.08	7.68	19.26	1.03
	Run 2	3.08	2.19	3.32	1.57	2.43	2.01	1.46	2.09	6.79	2.63	0.72
	Run 3	8.14	1.79	3.86	0.89	2.44	1.52	1.08	3.81	6.01	6.36	1.75
Unit 3	Run 1	0.86	3.03	3.55	2.67	2.92	2.06	2.73	1.63	1.81	0.66	0.69
	Run 2	0.57	3.35	1.62	4.68	1.44	3.23	1.03	1.88	1.35	1.86	1.19
	Run 3	0.30	3.65	5.26	4.12	1.22	3.78	1.73	5.53	0.97	0.72	0.60
Unit 4	Run 1	4.18	1.10	9.55	0.97	2.44	1.15	0.89	3.23	3.96	2.49	0.87
	Run 2	NA	0.77	2.67	2.65	1.52	1.15	1.48	2.91	1.06	0.38	0.66
	Run 3	1.47	0.87	2.44	4.20	1.45	5.72	3.56	4.28	0.78	0.92	0.60
Test Series Averages:												
	Unit 1	3.49	3.95	2.19	1.62	1.31	3.41	2.05	3.11	1.77	6.39	1.39
	Unit 2	5.07	2.20	3.05	1.33	2.33	1.72	3.01	2.66	6.83	9.42	1.17
	Unit 3	0.58	3.34	3.48	3.82	1.86	3.02	1.83	3.01	1.38	1.08	0.83
	Unit 4	2.83	0.91	4.89	2.61	1.80	2.67	1.98	3.47	1.93	1.26	0.71
Facility Total:		11.96	10.40	13.61	9.39	7.30	10.82	8.87	12.26	11.91	18.15	4.10

Annual Facility availability (as of fiscal year ending 9/9):		90.9%	
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year	
	18.15	72.26	
	13.61	54.19	

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	lb/hr	ton/year	b/hr/serie	lb/hr	ton/year
Overall Average	2.70	10.79	42.97	2.70	10.80	42.99
Standard Deviation	2.40	---	---	1.73	---	---
Average + 2SD	7.49	29.96	119.26	6.17	24.67	98.21

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
SO₂ (in lb/hr)**

		Year of Stack Test					
		1985	1987	1988	1989	1990	1991
Unit 1	Run 1	41.0	14.5	48.3	25.3	24.1	26.8
	Run 2	34.5	10.7	13.6	16.2	35.4	29.2
	Run 3	9.13	18.9	23.5	18.3	24.5	23.2
Unit 2	Run 1	38.1	12.2	17.3	29.8	39.0	41.6
	Run 2	36.1	NA	21.6	35.4	23.2	36.9
	Run 3	25.8	20.0	31.5	69.1	23.6	37.1
Unit 3	Run 1	18.8	21.5	23.2	26.4	25.0	17.3
	Run 2	26.6	23.6	13.4	24.7	15.7	11.7
	Run 3	37.2	42.1	18.3	33.0	24.4	6.8
Unit 4	Run 1	36.7	11.4	16.5	7.2	72.1	22.7
	Run 2	NA	17.4	22.4	28.3	22.7	11.0
	Run 3	65.0	30.7	26.4	21.2	40.0	1.3
Test Series Averages:							
	Unit 1	28.2	14.7	28.5	19.9	28.0	26.4
	Unit 2	33.3	16.1	23.5	44.8	28.6	38.5
	Unit 3	27.5	29.1	18.3	28.0	21.7	11.9
	Unit 4	50.9	19.8	21.8	18.9	44.9	11.7
Facility Total:		139.9	79.7	92.0	111.6	123.2	88.5

Annual Facility availability (as of fiscal year ending 9/97)		90.9%
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year
	139.9	557.1
	123.2	490.6

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	Equiv. Facility Total lb/hr	ton/year	b/hr/serie	Equiv. Facility Total lb/hr	ton/year
Overall Average	26.3	105.0	418.2	26.5	105.8	421.4
Standard Deviation	13.3	—	—	10.3	—	—
Average + 2SD	52.9	211.6	842.7	47.0	188.0	748.7

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
NOx (in lb/hr)**

		Year of Stack Test					
		1985	1987	1988	1989	1990	1991
Unit 1	Run 1	NA	26.1	50.1	45.9	42.6	28.7
	Run 2	NA	34.9	48.1	39.7	32.7	31.2
	Run 3	NA	30.7	43.1	54.2	43.6	26.3
Unit 2	Run 1	12.8	29.1	41.6	61.4	31.0	61.6
	Run 2	11.2	31.4	43.6	75.2	52.0	44.1
	Run 3	9.4	42.9	50.2	64.6	63.2	46.0
Unit 3	Run 1	29.7	31.7	38.6	53.6	37.8	31.6
	Run 2	31.3	32.9	38.7	51.8	47.3	38.9
	Run 3	14.0	41.2	40.1	67.3	57.1	33.5
Unit 4	Run 1	28.7	35.8	38.6	50.0	42.7	23.1
	Run 2	33.4	37.3	41.7	66.1	28.9	38.5
	Run 3	29.0	33.1	45.5	62.4	28.7	42.9
Test Series Averages:							
	Unit 1	NA	30.6	47.1	46.6	39.6	28.7
	Unit 2	11.1	34.5	45.1	67.1	48.7	50.6
	Unit 3	25.0	35.3	39.1	57.6	47.4	34.7
	Unit 4	30.4	35.4	41.9	59.5	33.4	34.8
Facility Total:							
		66.5 (3 units)	135.7	173.3	230.7	169.2	148.8

Annual Facility availability (as of fiscal year ending 9/9)		90.9%
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year
	230.7	918.6
	173.3	690.0

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	lb/hr	ton/year	lb/hr/serie	lb/hr	ton/year
Overall Average	40.2	160.7	640.0	40.2	160.7	640.0
Standard Deviation	13.5	---	---	12.3	---	---
Average + 2SD	67.1	268.5	1069.2	64.8	259.1	1031.7

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
Lead (in lb/hr)**

		Year of Stack Test										
		1985	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Unit 1	Run 1	0.124	0.25	0.08	0.05	0.07	0.09	0.080	0.0578	0.0359	0.2455	0.0232
	Run 2	0.086	0.15	0.03	0.01	0.01	0.10	0.046	0.0893	0.0252	0.0893	0.0183
	Run 3	0.088	0.07	0.04	0.03	0.02	0.17	0.029	0.1370	0.0717	0.0468	0.0132
Unit 2	Run 1	0.098	0.09	0.05	0.04	0.03	0.04	0.073	0.0210	0.1925	0.4400	0.0253
	Run 2	0.091	0.08	0.06	0.03	0.05	0.03	0.047	0.0358	0.1551	0.0461	0.0170
	Run 3	0.106	0.08	0.11	0.02	0.04	0.04	0.027	0.0898	0.1776	0.0747	0.0456
Unit 3	Run 1	0.090	0.03	0.08	0.07	0.03	0.06	0.091	0.0248	0.0403	0.0223	0.0134
	Run 2	0.089	0.02	0.10	0.15	0.02	0.13	0.014	0.0214	0.0227	0.0346	0.0194
	Run 3	0.100	0.04	0.13	0.27	0.02	0.09	0.064	0.0315	0.0163	0.0126	0.00824
Unit 4	Run 1	0.118	0.02	0.08	0.03	0.06	0.01	0.014	0.0828	0.1104	0.0362	0.0232
	Run 2	0.114	0.02	0.04	0.09	0.03	0.03	0.020	0.0668	0.0824	0.0196	0.0183
	Run 3	0.105	0.02	0.05	0.17	0.02	0.17	0.072	0.0939	0.0461	0.0300	0.0132
Test Series Averages:												
	Unit 1	0.10	0.16	0.05	0.03	0.03	0.12	0.05	0.09	0.04	0.13	0.02
	Unit 2	0.10	0.08	0.07	0.03	0.04	0.04	0.05	0.05	0.18	0.19	0.03
	Unit 3	0.09	0.03	0.10	0.16	0.02	0.09	0.06	0.03	0.03	0.02	0.01
	Unit 4	0.11	0.02	0.06	0.10	0.04	0.07	0.04	0.08	0.08	0.03	0.02
Facility Total:		0.40	0.29	0.28	0.32	0.13	0.32	0.19	0.25	0.33	0.37	0.08

Annual Facility availability (as of fiscal year ending 9/9):			90.9%
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year	
	0.40	1.60	
	0.37	1.46	

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	lb/hr	ton/year	b/hr/serie	lb/hr	ton/year
Overall Average	0.07	0.27	1.07	0.07	0.27	1.07
Standard Deviation	0.06	---	---	0.05	---	---
Average + 2SD	0.19	0.76	3.01	0.16	0.63	2.53

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
Fluorides (in lb/hr)**

		Year of Stack Test	
		1985	1991
Unit 1	Run 1	0.51	0.46
	Run 2	0.35	0.45
	Run 3	0.18	0.53
Unit 2	Run 1	0.24	0.26
	Run 2	0.47	0.26
	Run 3	0.52	0.39
Unit 3	Run 1	0.47	0.37
	Run 2	0.90	0.37
	Run 3	0.56	0.28
Unit 4	Run 1	0.94	0.33
	Run 2	NA	0.50
	Run 3	0.85	0.50
Test Series Averages:			
	Unit 1	0.35	0.48
	Unit 2	0.41	0.30
	Unit 3	0.64	0.34
	Unit 4	0.90	0.44
Facility Total:		2.30	1.57

Annual Facility availability (as of fiscal year ending 9/97) 90.9%		
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year
	2.30	9.14
	1.57	6.24

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	Equiv. Facility Total lb/hr	ton/year	b/hr/serie	Equiv. Facility Total lb/hr	ton/year
Overall Average	0.46	1.86	7.40	0.48	1.93	7.69
Standard Deviation	0.20	---	---	0.20	---	---
Average + 2SD	0.87	3.47	13.81	0.88	3.51	13.99

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
Mercury (in lb/hr)**

		Year of Stack Test					
		1985	1991	1993	1994	1995	1996
Unit 1	Run 1	0.044	0.0098	0.01065	0.00639	0.019	0.0135
	Run 2	0.051	0.0297	0.02351	0.10408	0.013	0.0148
	Run 3	0.109	0.0357	0.02505	0.03167	0.011	0.0088
Unit 2	Run 1	0.102	0.0122	0.0177	0.02340	0.01765	0.0133
	Run 2	0.042	0.0067	0.02906	0.02200	0.01100	0.0172
	Run 3	0.092	0.0132	0.01335	0.01262	0.00726	0.00951
Unit 3	Run 1	0.124	0.0064	0.03668	0.00438	0.01241	0.00939
	Run 2	0.103	0.0065	0.01016	0.00923	0.01293	0.00650
	Run 3	0.067	0.0121	0.01302	0.01180	0.5564	0.0151
Unit 4	Run 1	0.169	0.0043	0.0102	0.0124	0.00708	0.0108
	Run 2	0.073	0.0108	0.01751	0.0258	0.00400	0.0743
	Run 3	0.074	0.0126	0.02973	0.0135	0.00631	0.0114
Test Series Averages:							
	Unit 1	0.068	0.025	0.020	0.047	0.014	0.012
	Unit 2	0.079	0.011	0.020	0.019	0.012	0.013
	Unit 3	0.098	0.008	0.020	0.008	0.194	0.010
	Unit 4	0.105	0.009	0.019	0.017	0.006	0.032
Facility Total:		0.350	0.053	0.079	0.092	0.226	0.068

Annual Facility availability (as of fiscal year ending 9/97)			90.9%
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year	
	0.350	1.393	
	0.226	0.900	

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	lb/hr	ton/year	lb/hr/serie	lb/hr	ton/year
		Equiv. Facility Total			Equiv. Facility Total	
Overall Average	0.036	0.145	0.577	0.036	0.145	0.577
Standard Deviation	0.071	—	—	0.044	—	—
Average + 2SD	0.177	0.710	2.825	0.125	0.498	1.985

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
CO (in lb/hr)**

		Year 1985
Unit 1	Run 1	7.5
	Run 2	4.2
	Run 3	4.2
Unit 2	Run 1	6.7
	Run 2	5.2
	Run 3	6.3
Unit 3	Run 1	6.1
	Run 2	4.5
	Run 3	3.8
Unit 4	Run 1	5.2
	Run 2	5.4
	Run 3	6.5
Test Series Averages:		
	Unit 1	5.3
	Unit 2	6.1
	Unit 3	4.8
	Unit 4	5.7
Facility Total:		21.9

Annual Facility availability (as of fiscal year ending 9/97) 90.9%		
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year
	21.9	87.1
	NA	NA

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	Equiv. Facility Total		b/hr/serie	Equiv. Facility Total	
		lb/hr	ton/year		lb/hr	ton/year
Overall Average	5.5	21.9	87.1	5.5	21.9	87.1
Standard Deviation	1.2	---	---	0.5	---	---
Average + 2SD	7.8	31.2	124.1	6.6	26.2	104.4

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
VOC (in lb/hr)**

		Year of Stack Test	
		1985	1991
Unit 1	Run 1	1.7	0.37
	Run 2	0.46	0.39
	Run 3	0.46	0.24
Unit 2	Run 1	0.47	0.20
	Run 2	0.32	0.27
	Run 3	0.32	0.29
Unit 3	Run 1	0.71	0.29
	Run 2	0.42	0.35
	Run 3	0.99	0.38
Unit 4	Run 1	0.48	0.25
	Run 2	1.00	0.21
	Run 3	0.69	0.39
Test Series Averages:			
	Unit 1	0.87	0.33
	Unit 2	0.37	0.25
	Unit 3	0.71	0.34
	Unit 4	0.72	0.28
Facility Total:		2.67	1.21

Annual Facility availability (as of fiscal year ending 9/97) 90.9%		
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year
	2.67	10.64
	1.21	4.82

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	Equiv. Facility Total		lb/hr/serie	Equiv. Facility Total	
		lb/hr	ton/year		lb/hr	ton/year
Overall Average	0.49	1.94	7.73	0.49	1.94	7.73
Standard Deviation	0.34	---	---	0.24	---	---
Average + 2SD	1.16	4.63	18.45	0.97	3.87	15.42

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
Beryllium (in lb/hr)**

		Year 1991
Unit 1	Run 1	5.72E-06
	Run 2	5.61E-06
	Run 3	5.66E-06
Unit 2	Run 1	5.47E-06
	Run 2	5.64E-06
	Run 3	5.61E-06
Unit 3	Run 1	5.91E-06
	Run 2	4.60E-06
	Run 3	7.04E-06
Unit 4	Run 1	5.65E-06
	Run 2	5.77E-06
	Run 3	1.87E-05
Test Series Averages:		
	Unit 1	5.66E-06
	Unit 2	5.57E-06
	Unit 3	5.85E-06
	Unit 4	1.00E-05
Facility Total:		2.71E-05

Annual Facility availability (as of fiscal year ending 9/9)		90.9%
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year
	2.71E-05	1.08E-04
	NA	NA

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	lb/hr	ton/year	lb/hr/serie	lb/hr	ton/year
Overall Average	6.78E-06	2.71E-05	1.08E-04	6.78E-06	2.71E-05	1.08E-04
Standard Deviation	3.79E-06	—	—	2.18E-06	—	—
Average + 2SD	1.44E-05	5.75E-05	2.29E-04	1.11E-05	4.45E-05	1.77E-04

Note: Beryllium testing was conducted in 1985, but is not included here, because the detection limit used was higher than the permit limit.

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
Cadmium (in lb/hr)**

		Year of Stack Test	
		1994	1995
Unit 1	Run 1	0.00176	0.01120
	Run 2	0.00233	0.00064
	Run 3	0.00376	0.00248
Unit 2	Run 1	0.00280	0.02531
	Run 2	0.01168	0.00571
	Run 3	0.01156	0.00388
Unit 3	Run 1	0.00183	0.00106
	Run 2	0.00311	0.00299
	Run 3	0.03078	0.00042
Unit 4	Run 1	0.00500	0.00782
	Run 2	0.00440	0.00203
	Run 3	0.00289	0.00138
Test Series Averages:			
	Unit 1	0.00262	0.00477
	Unit 2	0.00868	0.01163
	Unit 3	0.01191	0.00149
	Unit 4	0.00410	0.00374
Facility Total:		0.02730	0.02164

Annual Facility availability (as of fiscal year ending 9/97) 90.9%		
Highest two years of Facility stack test data:	lb/hr	Estimated ton/year
	0.02730	0.10869
	0.02164	0.08616

Statistics	Individual Run Results			Test Series Averages		
	lb/hr/run	Equiv. Facility Total lb/hr	ton/year	b/hr/serie	Equiv. Facility Total lb/hr	ton/year
Overall Average	0.00612	0.02447	0.09743	0.00612	0.02447	0.09743
Standard Deviation	0.00756	---	---	0.00407	---	---
Average + 2SD	0.02123	0.08492	0.33810	0.01425	0.05699	0.22692

**McKAY BAY REFUSE-TO-ENERGY FACILITY
STACK TEST DATA SUMMARY
Facility Totals for All Pollutants (tons/year)**

	Highest 2 Years 1st High 2nd High		Statistics		
			Overall Average	Average + 2 Std. Dev. Individual Test Series	
				Runs	Averages
PM	72.26	54.19	42.97	119.3	98.21
SO ₂	557.1	490.6	418.2	842.7	748.7
NO _x	918.6	690.0	640.0	1069	1032
Lead	1.60	1.46	1.07	3.01	2.53
Fluorides	9.14	6.24	7.40	13.81	13.99
Mercury	1.39	0.90	0.58	2.83	1.98
CO	87.1	NA	87.1	124.1	104.4
VOC	10.64	4.82	7.73	18.45	15.42
Beryllium	1.08E-04	NA	1.08E-04	2.29E-04	1.77E-04
Cadmium	0.1087	0.0862	0.0974	0.3381	0.2269

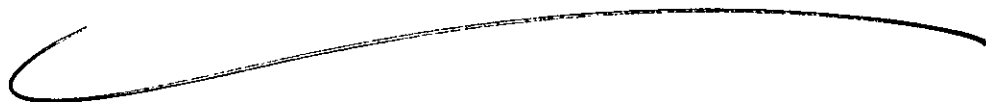
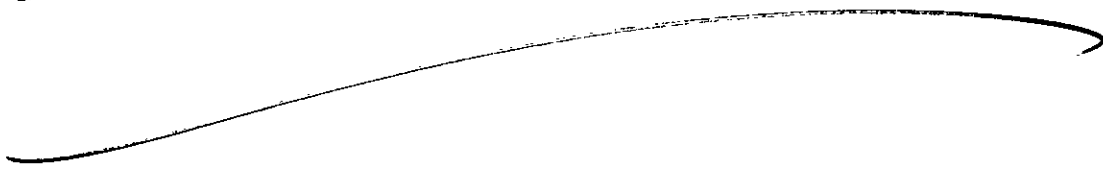
Note: Test data was collected as lb/hr. Ton/yr is based on 90.9% availability, or about 7963 hours of operation per year.

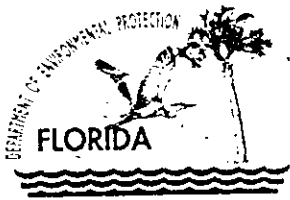
2 Vols.

I & II

on Shelf (Kim's)

Or top of File Cabinet





Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
October 14, 1997

Virginia B. Wetherell
Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Honorable Dick Greco, Mayor
City of Tampa
306 E. Jackson
Tampa, Florida 33602

Re: DEP File Number 0570127-002-AC
McKay Bay Retrofit Project

Dear Mayor Greco:

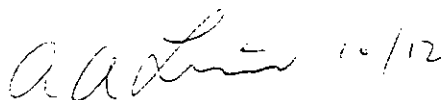
The Department received the City's application for the McKay Bay Refuse-to-Energy Facility (MBREF) Air Pollution Control Equipment and Facility Improvements project on September 16, 1997. Following our initial review, we need the additional information listed below to process this request.

1. For verification of combustion capacity as indicated in the August 25, 1997 federal rule changes for Subpart Cb and Eb units, please provide calculations of the maximum charging rate of each unit according to the procedures under Section 60.58b(j) of 40 CFR 60 Subpart Eb. Also provide annual tonnage of municipal solid waste processed by the MBREF over the last five years along with any heat content determinations that have been made for the municipal solid waste burned.
2. For verification of "modification" or "reconstruction" status as defined in Subpart Eb, provide Subpart Eb construction cost calculations consistent with the EPA's August 20, 1996 "Applicability Determination," as amended on December 30, 1996. The Department considers induced draft (ID) fans to be part of the MWC units because they could not operate without them even if there was no air pollution control equipment. The ID fans are required to overcome the pressure drop of the process equipment as well as the pollution control equipment. In this case, the ID fans are the equivalent of forced air fans and should be considered as being within the physical boundaries of the MWC unit.
3. The process equipment retrofit appears to be a more of a life extension project than for meeting Subpart Cb in which case Subpart Eb may apply. Please provide a detailed engineering report confirming that the process equipment replacements are required for the MBREF to meet the Subpart Cb guidelines. The report should be prepared and sealed by a professional engineer with expertise in the appropriate mechanical and process disciplines addressed in the report.
4. Please indicate the most probable choice between reconstructing the existing mass burn refractory combustors or replacing them with the waterwall design (page 2-5), and between replacing the existing boilers or substantially improving them (page 3-1). This is necessary to meet the requirements of Rule 62-4.070, F.A.C., Standards for Issuing or Denying Permits. Subpart applicability, the ultimate performance of the facility, and the ability to efficiently burn the slate of wastes anticipated in the application may be related to this decision.
5. Please indicate which of the wastes specified in the application are already burned at the facility. How will the proposed specification of fuels affect overall waste throughput quantities? We may submit some additional questions regarding wastes and fuels following review by Department solid waste staff.

6. The proposed monitoring plan does not reference specific monitors, locations, or techniques. Please provided this information.
7. Table 1-1 provides a comparison of present and projected emission limits. Please provide annual and hourly emissions reflecting actual emissions for a representative two year period reflective of normal operations prior to the retrofit project. To the extent possible and based on expected equipment performance, please submit best estimates of future annual and hourly emissions.

We will resume processing this application after receipt of the requested information. We have contacted your engineering consultant, Camp Dresser and McKee, regarding the above request. Your project staff and consultants can contact me or Mr. John Reynolds at 850/488-1344 if they have any questions regarding this matter.

Sincerely,



A. A. Linero, P.E. Administrator
New Source Review Section

cc: Mike Salmon, City of Tampa
Douglas W. Fredericks, P.E., CK&M
Brian Beals, EPA Region IV
Mr. John Bunyak, NPS
Bill Thomas, DEP
Jerry Campbell, EPCHC

Florida Department of Environmental Protection

Memorandum

Is your RETURN ADDRESS completed on the reverse side?	SENDER: ■ Complete items 1 and/or 2 for additional services. ■ Complete items 3, 4a, and 4b. ■ 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): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.	
	3. Article Addressed to: Honorable Dick Greco, Mayor City of Tampa 306 E. Jackson Tampa, FL 33602	4a. Article Number P 265 659 469	4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail <input type="checkbox"/> Insured <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD
	5. Received By: (Print Name) 	7. Date of Delivery OCT 16 1997	
	6. Signature: (Addressee or Agent) X	8. Addressee's Address (Only if requested and fee is paid)	

Thank you for using Return Receipt Service.

PS Form 3811, December 1994

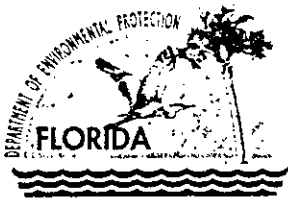
Domestic Return Receipt

P 265 659 469

 US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
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Sent to:	
Dick Greco	
Street & Number:	
City of Tampa	
Post Office, State, & ZIP Code:	
Tampa, FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	
0570127-02-AC 10-14-97	

PS Form 3800, April 1995



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
January 30, 1997

Virginia B. Wetherell
Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Donald F. Elias
RTP Environmental Associates Inc.
239 U.S. Highway 22 East
Green Brook, New Jersey 08812-1909

Dear Mr. Elias:

Re: Tampa McKay Bay RRF Emission Guidelines Compliance Project
Your letters of November 14 and 19, 1996

The Department is in receipt of your letters dated November 14 and 19, 1996, on behalf of the City of Tampa McKay Bay Resource Recovery Facility (MBRRF) requesting approval of various issues prior to submittal of the construction permit application. The purpose of the referenced project is to comply with 40 CFR 60 Subpart Cb - Emission Guidelines and Compliance Times for Municipal Waste Combustors that are constructed on or before December 19, 1995 (adopted as in Rule 62-204.800(8)(b), F.A.C.). These issues pertain to the Reasonable Available Control Technology (RACT) requirements for minor and fugitive sources of Particulate Matter (PM) as well as the definition of municipal solid waste (MSW) and the most appropriate process limitation for the proposed project.

The Department has reviewed your request and has the following responses:

RACT DETERMINATION

The Subpart Cb requirements for PM from minor and fugitive sources proposed for these sources appear to be reasonable as RACT. The specific plan will be reviewed with your application and a determination will be made as part of our technical review pursuant to the Department's authority contained in Rule 62-296.711(2)(c) F.A.C. However, the proposal to use a different test method (EPA Method 22 instead of EPA Method 9) will be reviewed under *Exceptions and Approval of Alternate Procedures and Requirements*, Rule 62-297.620 F.A.C. The Department does not have the authority under 62-296.711 (3) F.A.C. to approve a different test method.

Please submit a request in accordance with Rule 62-297.620 F.A.C., for approval of an alternate sampling procedure (ASP) along with your application.

DEFINITION OF MUNICIPAL SOLID WASTE (MSW) AS INCLUDED IN THE EG

The Department has received requests other than yours regarding the definition of solid waste from other MWC operators. We have referred these matters to the Division's Office of Policy Analysis and Program Management who will coordinate a response with this Bureau, the Office of General Counsel, and the Bureau of Solid and Hazardous Waste Management. We will provide a determination on this matter during the course of reviewing the application.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

OPERATING CONDITIONS

PROCESS LIMITATION:

Based on preliminary discussions, the Department is not inclined to delete the current MSW throughput limit measured as tons per day (TPD). We are continuing to review the matter and will make a final decision during review of the application.

We recognize that the throughput rating depends on the heating value of the waste. Heating value of municipal waste can vary significantly from one part of the country to another. It can also vary in time based on changing composition of municipal waste - for example from the continuing trend toward burning of plastics. Therefore a 250 TPD unit in one part of the country and at a given time may not be a 250 TPD unit at another site or time. Note however that based on the increasing amounts of plastic in waste, we would expect the units to be capable of processing less waste instead of more than originally designed to handle (unless they were overdesigned to begin with).

Now that the units at MBRRF have operated for years, it should be possible to provide ratings for them and get the manufacturer or modification contractor to guarantee their ability to efficiently burn waste throughout an appropriate operating window. If the new ratings (for waste throughput and steam production) and future method of operation will result in an increase in emissions, it will be necessary to conduct a PSD and BACT Review. You will need to assess and reconcile the ramifications of the permit revisions required to incorporate the NSPS requirements with the possible PSD/BACT implications of a throughput increase.

The proposal to use steam production to calculate the solid waste firing rate (in lieu of actually weighing the material) will be acceptable *only* under the following circumstances:

1. COMPLIANCE TESTING

Under this scenario, MBRRF would be required to use the F-factor in Table 19-1 of EPA Method 19 or collect the samples necessary to determine a fuel specific F- factor and heating value at the time of each run of the emission test. The procedures specified in EPA Method 19 should be used to determine the fuel specific F- factor and heating value. This eliminates boiler efficiency as a potential source of error. Subpart Ea [40 CFR 60.58a (b) (4)] requires affected sources to use the F- factor and EPA Method 19 in the emission rate determination. EPA Method 19 allows MBRRF the option of using the F- factor in Table 19 or determining a source specific F- factor using the procedure given in EPA Method 19.

2. CONTINUOUS COMPLIANCE

Under this scenario, MBRRF will either need to install weighing devices, or devices to continuously measure flue gas flow rate and oxygen and content. MBRRF would also need to either use the F- factor in Table 19-1 of EPA Method 19 or conduct daily analyses to determine the fuel specific F- factor and heating value. When units are continuously charged the options include, but are not limited to, belt scales. For units that are continuously charged, the weighing options may include a weighing device mounted on the crane based on the principle of a strain gauge.

OPERATING WINDOW

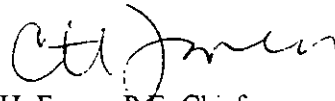
The Department acknowledges your statement that the MSW unit will be operationally limited by 40 CFR 60.53b (b) to a load level of 110% or less of the maximum demonstrated MWC *unit load* [40 CFR 60.51b and 40 CFR 60.58b(i)(6)]. This is consistent with the federal guidelines which stated that "no owner or operator of an affected facility located within a small or large municipal waste combustor plant shall cause such facility to operate at a load level greater than 110 percent of the of the maximum demonstrated MWC *unit load* level [highest 4-hour arithmetic average], achieved during four consecutive hours during the most recent dioxin/furan compliance test" (Page 65424, FR/Vol 60, No.243 Tuesday, December 19, 1995).

The *proposed operating window* based on 80% to 115% of a nominal 250 tpd capacity and 80% to 115% of a nominal 104.2 MMBtu/hour capacity (250 tpd at 5000 Btu/lb) is not acceptable as presented because it appears to conflict with NSPS Subpart Cb. However, as mentioned above, the characteristics of the unit can be updated (by the manufacturer or modification designers) and expressed at a nominal heating value of 4,500 Btu/lb as indicated in Subpart Cb and the operating window defined within the constraints of Subpart Cb [40 CFR 60.51b and 40 CFR 60.58b(j)].

MBRRF shall also comply with Rule 62-297.310(2), F.A.C., Operating Rate during Testing and Rule 62-297.310(2)(b) F.A.C., Permitted Capacity definition.

If you have any questions, please contact Al Linero or Teresa Heron at 904/488-1344.

Sincerely,



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

CHF/th/hh

cc: Brian Beals, EPA
Bill Thomas, SWD
Jerry Campbell, HCEPC
Pat Comer, DEP
Larry George, DEP
Dottie Diltz, DEP
Michael Hewett, DEP

Fold at line over top of envelope to
the return address

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- 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):

1. Addressee's Address
2. Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Don Elias
RTP Env. Assoc. Inc.
239 US Hwy 22 East
Green Brook, NJ
08812-1909

4a. Article Number
P 265 659 155

4b. Service Type

<input type="checkbox"/> Registered	<input checked="" type="checkbox"/> Certified
<input type="checkbox"/> Express Mail	<input type="checkbox"/> Insured
<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> COD

7. Date of Delivery
2/6/99

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)
X Mark P. Jordan

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PS Form 3811, December 1994

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Thank you for using Return Receipt Service.

P 265 659 155

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to	Don Elias
Street & Number	RTP
Post Office, State, & ZIP Code	Green Brook, NJ
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	Tampa McKay RRF 2-3-99

PS Form 3800, April 1995



Camp Dresser & McKee Inc.

consulting
engineering
construction
operations

1715 North Westshore Boulevard, Suite 875
Tampa, Florida 33607
Tel: 813 281-2900 Fax: 813 281-8787

January 7, 1997

Mr. Joseph Kahn, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: DEP File Number 0570127-002-AC, McKay Bay Retrofit Project, HCEPC
Memorandum dated December 11, 1997.

Dear Mr. Kahn:

In the above referenced memorandum, the Hillsborough County Environmental Protection Commission appears to be of the opinion that modifying the definition of acceptable fuels for the McKay Bay Facility constitutes a "modification" as defined in 40 CFR 60.2 which would, in turn, require modifying the Facility's PSD permit. We believe that this opinion is not correct.

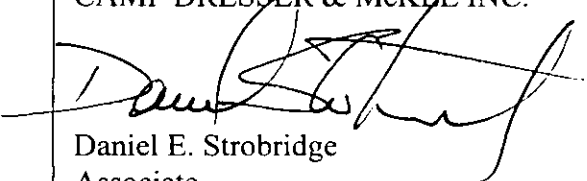
"Modification" as defined in 40 CFR 60.2 means *"any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) into the atmosphere not previously emitted"* (emphasis added).

As demonstrated in the City's permit application, no increase in any regulated pollutant will occur as a result of the proposed retrofit and modification of the acceptable fuels definition. Consequently, a "modification" within the meaning of 40 CFR 60.2 will not occur and the Facility's PSD permit will not require modification.

If you have any questions or comments, do not hesitate to contact me.

Sincerely,

CAMP DRESSER & MCKEE INC.



Daniel E. Strobridge
Associate

c: Nancy McCann, City of Tampa
David Dee, Landers & Parsons w/attachments

RECEIVED

JAN 12 1998

BUREAU OF
AIR REGULATION

COMMISSION

DOTIE BERGER
JOE CHILLURA
CHRIS HART
JIM NORMAN
JAN PLATT
THOMAS SCOTT
ED TURANCHIK

EXECUTIVE DIRECTOR

ROGER P. STEWART



ADMINISTRATIVE OFFICES, LEGAL &
WATER MANAGEMENT DIVISION
1900- 9TH AVENUE
TAMPA, FLORIDA 33605
TELEPHONE (813) 272-5960
FAX (813) 272-5157

AIR MANAGEMENT DIVISION
TELEPHONE (813) 272-5530

WASTE MANAGEMENT DIVISION
TELEPHONE (813) 272-5788

WETLANDS MANAGEMENT DIVISION
TELEPHONE (813) 272-7104

MEMORANDUM

DATE: December 27, 1996

TO: Clair Fancy

FROM: Jerry Campbell *JC*

SUBJECT: City of Tampa's McKay Bay Refuse-to-Energy (RTE) Facility

In response to Mr. Elias' letters to you dated November 14 and 19, 1996 (attached), we offer the following:

1. We have no objection to their alternative RACT request for ash handling, but be advised there was a LAER determination done in 1986 limiting the flyash silo to 5% (also attached). Thus, your hands may be tied on the silo, but the rest of the system appears eligible. If the USEPA determined that 9 minutes of visible emissions over 3 hours represents the top 12% for these operations, then we agree this is justified. They should provide that documentation with the application. Naturally this limitation will not shield them from the general nuisance prohibitions, nor would we be inclined to accept any emissions which were reasonably preventable. The ash system is a minor source and our real concern is the incinerators themselves.
2. The EPC also has no objection to their up front request that no stack testing be required on the lime and activated carbon silos. If the standard is to be 0.03 grains, and they have 0% opacity with a manufacturer's guaranty for their typical operating conditions at 0.015, then we would be satisfied. They are probably trying to avoid the cost of the test platform as well as the test itself. We believe it would still be appropriate to include the standard permit conditions requiring a Method 5 and a platform if we have reason to believe they are not meeting their mass emission standard.
3. Regarding their request to modify their fuel definition, we have some concern. The City is pretty well built out and our understanding is they do not anticipate any significant growth in the amount of MSW collected in their jurisdiction. There



Clair Fancy
December 27, 1996
Page 2

are times of the year now when they have excess incinerator capacity available, yet they need to generate so much electricity or pay significant penalties. Thus, they have been fairly aggressive about seeking outside sources of fuel. You recall a few years ago EPC had a case with them where they brought industrial waste across state lines to burn at McKay Bay contrary to their permits. Thus, we view this facility as having the potential to do more than just assist the City's need to reduce their waste volume.

In that light, we reviewed their proposal very carefully. On page 2 of his November 19 letter, Mr. Elias proposes to include industrial and agricultural discards in their definition of authorized fuels. Neither of the two municipal waste definitions from the EPA includes agricultural waste, and EPA input excludes industrial process waste. They suggest that they should be limited to "not knowingly" burning industrial process waste, inferring they would not be responsible for burning it inadvertently. The stakes are too high here for this type of language and we recommend the "not knowingly" be stricken.

Our concern on the agricultural waste is we need more information. We know the strawberry farmers generate a great deal of black plastic, there is the question of spent pesticide containers and other agricultural waste that we just do not know enough about to agree up front. A few years ago, the County disposed of a large volume of benelate contaminated plants. Is this the type of agricultural waste the City wants to burn and would their controls be sufficient? We are not currently in a position to say.

The existing operating permit allows for the disposal of up to 10,000 gallons per day from liquid vessels or 10 tons per day from fiber drums, of waste oil from spills cleaned up by our Port Authority. Their proposal drops the provision that the waste oil must originate from spills cleaned up in Tampa's port area. Again this changes the whole utilization of this facility. Is it a facility owned by the City to assist them in dealing with an oil spill on the Bay, or is it a waste oil incinerator for anyone who can economically deliver it to Tampa's doorstep? We do not believe the latter is what was originally presented when their construction permit was issued. Any time you multiply the number of sources of waste, it becomes harder to provide the assurance that prohibited contaminants are not included. And unfortunately there is an economic incentive for outside waste oil suppliers to sell or give the City contaminated material (versus the cost of proper disposal of some type of hazardous waste).

Clair Fancy
December 27, 1996
Page 3

While we appreciate the City's desire to establish certain parameters at the start, we do not feel we are in a position to recommend either way on some of the specifics about the fuel definition. During the application review, we will have the opportunity to raise questions and the City will be able to respond--and probably lay most of these issues to rest. By bringing up the utilization of the facility and the origin of the fuels now, we are trying to avoid the situation where an undesirable waste shows up in Tampa and the public says we do not want it. The environmental agencies are then put on the hot seat and asked to find a reason to prohibit its incineration under the permit. We understand, secondhand, this happened recently in a neighboring county.

4. On the capacity issue, we concede the EPA's practice is to base it on steam load. Still we are more interested in the amount of garbage burned because that is what causes the pollution. We do not buy the argument that the difference in tonnage burned is simply the moisture content. It stands to reason that if you throw wet garbage into a furnace, you will have substantial heat loss in driving off the moisture. Thus, you would have to charge more combustible materials to reach a certain available heat figure.

Given the difficulty in weighing the charge on a constant basis, we would be receptive to using steam flow if the tonnage is adjusted to reflect the lower BTU garbage. At 3800 BTU per pound, a 250 TPD unit at 4500 BTU per pound converts to a 296 TPD furnace. Potential to emit calculations should be based on the 296 figure and the same for any impact modelling.

This has been an issue for some time with the City. You recall in 1990 they approached CAPS and requested a simple amendment to go from a 1000 TPD facility to 1200. The Department rightfully determined this was a modification and requested a construction permit application. The City withdrew their request.

Thank you for the opportunity to provide comments.

cc: Al Linero
Jerry Kissel
Mike Salmon
Dan Strobbridge
David Dee

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

RECEIVED
NOV 17 1986
11:22TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

November 7, 1986

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Nancy McCann
Urban Environmental Coordinator
Office of Environmental Coordination
City Hall Plaza, 5N
Tampa, Florida 33602

Dear Ms. McCann:

Re: Amendment to Construction Permit AC 29-47277

The department is in receipt of your request to amend the above referenced state construction permit to reflect the "as built" construction of the facility. The amendment to the permit allows for the construction of a flyash storage silo. Particulate matter emissions will be controlled by use of a baghouse filter and are in accordance with the department's determination of Lowest Achievable Emission Rate for particulate matter. The department is in agreement with the request and the following shall be added or changed:

Expiration Date:From: April 30, 1986
To: December 31, 1986Specific Conditions:

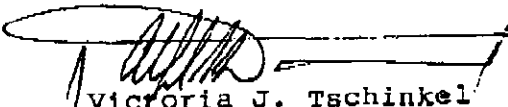
9. Particulate matter emissions from the flyash storage silo shall not exceed 0.025 grains per dry standard cubic foot or 0.36 pound per hour based on a maximum flow rate of 2109 acfm.
10. Visible emissions from the flyash storage silo shall not exceed 5% opacity. Compliance with this limit shall be demonstrated by DER Method 9 in accordance with the requirements of section 17-2.700, FAC.
11. The permittee shall provide HCEPC and SWFDER at least 30 days advanced written notice of the startup date of the flyash storage silo.

Ms. Nancy McCann
Page Two
November 7, 1986

12. The visible emissions tests for the flyash storage silo must be accomplished within 5 days of startup of the silo.
13. Should HCEPC or the Department have reason to believe the particulate emission standard is not being met, HCEPC or the Department may require that compliance with the particulate emission standards be demonstrated by testing in accordance with EPA Methods 1, 2, 3, 4, and 5.
14. Within 45 days of initial compliance testing of the source, test results along with 4 copies of a completed Certificate of Completion of Construction form shall be submitted to the HCEPC.

This letter must be attached to your construction permit, AC 29-47277, and shall become a part of that permit.

Sincerely,


Victoria J. Tschinkel
Secretary

VJT/ks

cc: Bill Thomas, SW District
Victor San Augustin, HCEPC ✓

cc Teresa Aeron

COMMISSION

DOTTIE BERGER
PHYLLIS BUSANSKY
JOE CHILLURA
CHRIS HART
JIM NORMAN
ED TURANCHIK
SANDRA WILSON



WATER MANAGEMENT DIVISION
1900 - 8TH AVENUE
TAMPA, FLORIDA 33605
TELEPHONE (813)272-5560
FAX (813)272-5167

AIR MANAGEMENT DIVISION
TELEPHONE (813)272-5530

WASTE MANAGEMENT DIVISION
TELEPHONE (813)272-5788

ECOSYSTEMS MANAGEMENT DIVISION
TELEPHONE (813)272-7104

EXECUTIVE DIRECTOR

ROGER P. STEWART

ENVIRONMENTAL PROTECTION COMMISSION
OF HILLSBOROUGH COUNTY

FAX TRANSMITTAL SHEET

DATE: 12/27/96

TO: Al Lineo

FAX PHONE: _____ VOICE PHONE: _____

TOTAL NUMBER OF PAGES INCLUDING THIS COVER PAGE: 6

EPC FAX TRANSMISSION LINE: (813) 272-5605
FOR RETRANSMISSION OR ANY FAX PROBLEMS, CALL: (813) 272-5530

FROM: Jeany Campbell
(CIRCLE APPLICABLE SECTION BELOW)

AIR DIVISION

- ENFORCEMENT
- ENGINEERING
- SUPPORT OPERATIONS

RECEIVED

DEC 30 1996

BUREAU OF
AIR REGULATION

SPECIAL INSTRUCTIONS: _____

Florida Department of
Environmental Protection

Memorandum

TO: John Brown
Larry George
Pat Comer
Mike Hewett
Mike Harley

THRU: Al Linero

FROM: Teresa Heron T.H.

DATE: November 22, 1996

SUBJECT: Hillsborough County Resource Recovery Facility
City of Tampa's Mc Kay Bay Resource Recovery Facility
MSW-EG definitions and MSW-EG requirements

If you have any comments on these requests, please let us know at your earliest convenience.
These requests were received on November 20, 1996.

AL:
I gave a hard copy of all the letters
E-mailed to each one and
↓
a memo (copy to you)
and J. Campbell
and Jerry Kessel

I will be reading at home the EB.



RTP ENVIRONMENTAL ASSOCIATES INC.®

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239 U.S. Highway 22 East
Green Brook, New Jersey 08812-1909

(908) 968-9600
Fax: (908) 968-9603

November 19, 1996

Mr. Clair H. Fancy, P.E.
Florida Dept. of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

NOV 20 1996

BUREAU OF
AIR REGULATION

Dear Mr. Fancy:

As discussed in our November 6th and 7th meetings with the Department, Camp Dresser & McKee, Inc. (CDM) is planning to submit a construction permit application for the City of Tampa's McKay Bay Resource Recovery Facility (MBRRF) in early 1997. After obtaining the necessary Department approvals, proposed improvements to the MBRRF will be made to enable the facility to meet the Emission Guidelines (EG) requirements contained in 40 CFR 60 Subpart Cb, and incorporated by reference at FAC 62-204.800(8). The applicant is also requesting other changes in the permit to make conditions consistent with EG definitions and current industry practice.

For allowable fuels, the applicant is proposing to use the definition of Municipal Solid Waste (MSW) as included in the EG, with some clarifications based on the intent of the EG and current statewide practices. The applicant is also proposing to redefine the operating window for the facility based on steam load, according to EG requirements, rather than waste throughput, which is impossible to accurately measure.

There is considerable interest in expediting the EG improvements to the MBRRF. Therefore, we are submitting the attached for your approval so we can complete the air permit application. Thank you for your consideration to these matters. If you have any questions, please feel free to contact either William E. Corbin or myself at 908-968-9600 or David S. Dee, Esq. at 904-681-0311.

Sincerely,
RTP ENVIRONMENTAL ASSOCIATES, INC.®

Donald F. Elias
Principal

DFE/WEC/wec
Attachment

- 2 -

cc: A. Linero, T. Heron, C. Holladay/FDEP-Tallahassee
J. Kissel/FDEP-Southwest District
J. Campbell/Hillsborough County Environmental Protection Commission
N. McCann, G. Grotecloss, M. Salmon/City of Tampa
D. Strobridge, C. Hibbard/CDM
D. Dee, Esq./Landers & Parsons
W. Corbin, TAMPA3 Project File/RTP

DRAFT LANGUAGE FOR INCLUSION INTO AIR CONSTRUCTION PERMIT APPLICATION

Definition of Allowable Fuels

Current permit conditions for the City of Tampa's McKay Bay Resource Recovery Facility (MBRRF) allow the incineration of municipal solid waste (MSW) and waste oil from spills cleaned up by the Port Authority (waste oil up to 10,000 gallons per day from tanker trucks or 10 tons per day from fiber drums allowed). MSW is defined as any solid waste, except sludge, resulting from the operation of residential, commercial, governmental, or institutional establishments that would normally be collected, processed, and disposed of through a public or private solid waste management service. As defined in the permit, MSW includes yard trash, but does not include solid waste from industrial, mining, or agricultural operations. MSW accepted at the facility may be generated outside the city limits. MSW includes waste tires as they are collected as part of the normal waste stream (not segregated) and do not exceed more than 3% of the total charge at any given time. Other materials cannot be charged at the facility, including water treatment plant sludges, biomedical waste, radiological waste, and hazardous waste.

The facility currently can accept a wide variety of materials that fits within the broad definition of MSW. These materials may be received either as a mixture or as a single-item stream of household, commercial, or institutional discards. Federal regulations concerning municipal waste combustors (MWCs) use different definitions for MSW and allow different materials. For example, Section 129(g)(5) of the Clean Air Act defines "Municipal Waste" as:

"refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastic, leather, rubber, and other combustible materials and non-combustible materials such as metals, glass and rock...[but] does not include industrial process wastes or medical wastes that are segregated from such other wastes."

An equally broad definition of MSW is included in USEPA's EG for MWCs (40 CFR 60.51b):

"Municipal solid waste or municipal-type solid waste or MSW means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or

manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes include: (1) Yard wastes; (2) Refuse-derived fuel; and (3) Motor vehicle maintenance materials limited to vehicle batteries and tires... "

In the EG preamble (60 FR 65392), the MSW definition is further clarified to include either a mixture or a single-item waste stream of household, commercial and/or institutional discards. Also, while the MSW definition does not include used oil, sewage sludge, wood pallets, medical waste, etc., these wastes can be intermixed and combusted with MSW (i.e., the regulations do not prohibit their combustion).

In the near future, the City of Tampa will spend \$80 million or more to install new air pollution control equipment and to make other improvements at the facility. These improvements will ensure that the facility can meet the stringent new EG emissions limitations, at all times, under a wide range of operating conditions. In light of the improvements that will be made to the facility, the City would like to amend the permit conditions for the facility to ensure that the permit conditions allow the City to accept and process all of the non-hazardous solid wastes that are delivered to the facility for disposal. The City wants the permit to be consistent with the new EG requirements for MWCs, and consistent with industry practice at newer facilities in Florida. Specifically, the City believes the permit for the facility should state:

"The authorized fuels for the facility include municipal solid waste (MSW), as defined at 40 CFR 60.51b, and non-hazardous solid waste, except those materials that are prohibited by state or federal law or otherwise prohibited below. The authorized fuels may be received either as a mixture or as a single-item stream of household, commercial, institutional, agricultural or industrial discards. The facility may receive oil spill debris, provided that the debris is limited to 10,000 gallons per day of waste oil from tanker trucks or 10 tons per day from fiber drums. Waste tires may be accepted, but may not exceed 3% of the facility's fuel. The facility owner and operator shall not knowingly burn prohibited fuels, such as lead acid batteries, industrial process wastes, untreated medical wastes, nuclear wastes, and sludge or sewage treatment wastes (e.g., grease, scum, grit, and sewage sludge)."

All of the allowable materials can be safely combusted at the facility because the units are designed to handle a wide range of operating conditions. The combustion of these materials will not adversely affect the facility's ability to comply with permit requirements. The facility will be equipped with spray dry adsorbers, fabric filters, selective non-catalytic reduction, and activated carbon injections systems, which are designed to handle all of the operating conditions that are likely to occur while combusting the normal fuels, including all of the fuels described herein. These air pollution control systems perform well, even when there are fluctuations in the facility's operating conditions. Further, the facility will have continuous emission monitors, which will monitor the facility's performance at all times and under all operating conditions.

Operating Conditions

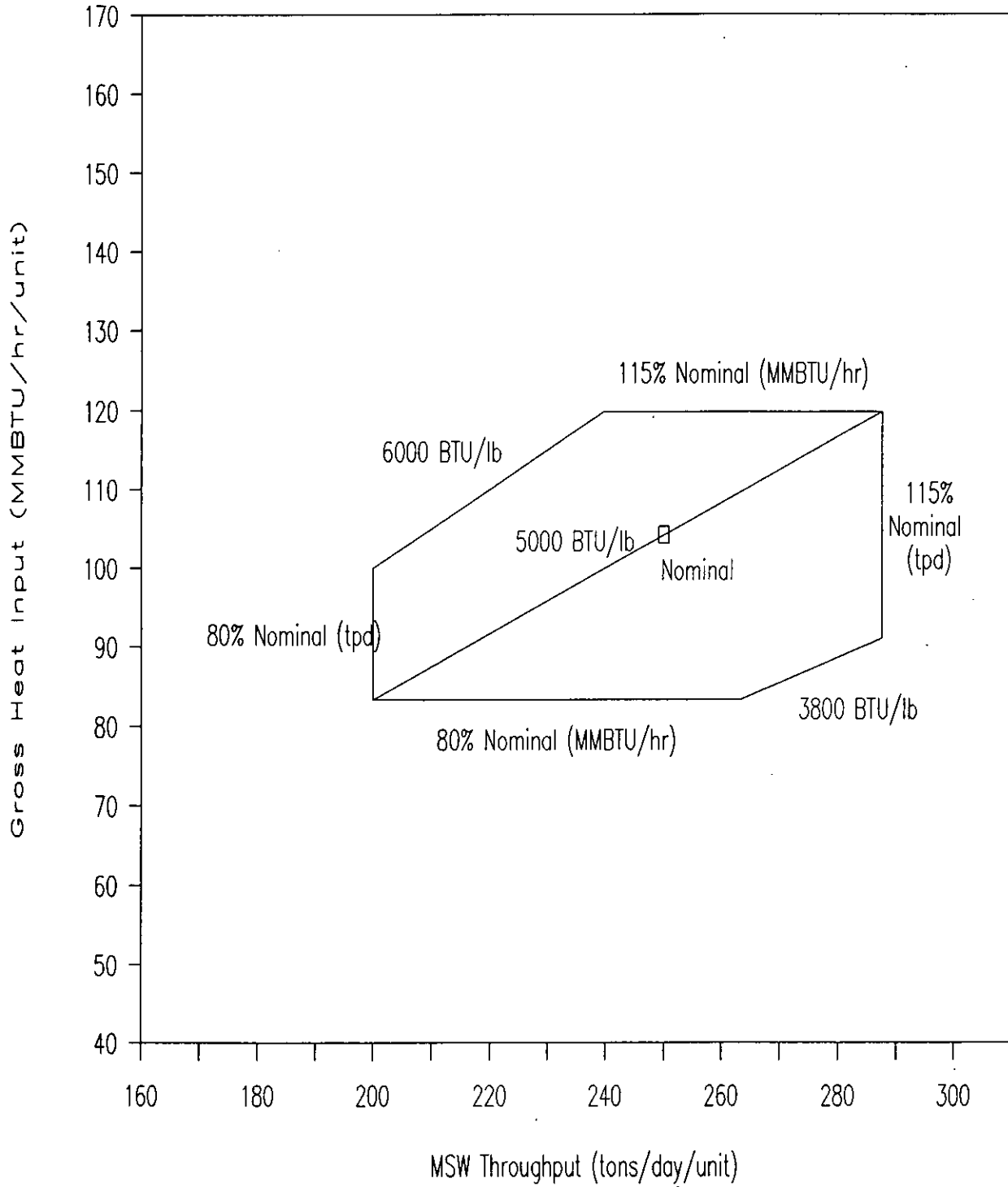
The facility consists of four MWCs with each MWC capable of incinerating a nominal 250 tons/day (tpd) of waste. Each unit is currently permitted to combust up to 250 tpd of MSW. MSW is a heterogenous material and the estimated heat content of MSW ranges from 3800 to 6000 BTU/lb, based on the amount of moisture and non-combustible materials present (average estimated to be 5000 BTU/lb based on recent data). Since emissions and other combustion parameters are related to the incineration of combustible materials, recent industry practice has been to rate MWC units on gross heat input, similar to fossil fuel boilers and other types of combustion equipment, rather than MSW tonnage. As a practical matter, it is impossible to accurately weigh the amount of MSW combusted during short time intervals, but compliance with permitted heat input rates can be determined from steam flow measurements, which are directly related to heat input based on the unit's efficiency.

In the original 1991 EG for MWCs, USEPA recognized that MWCs are "heat input devices" and that actual capacity should be determined by heat input rather than by the weight of MSW charged due to the varying heat content of MSW. As a result, USEPA promulgated maximum capacity requirements based on steam load, which have been retained in the current EG. The measurement of steam load, based on ASME methods, gives a practical method to continuously measure facility load and, together with particulate device temperature and flue gas oxygen (or carbon dioxide) measurements, demonstrate good combustion practice.

Therefore, the City of Tampa would like to delete the current permit limits for MSW throughput and modify the permit limits to be consistent with EG requirements. The operating window shown on the attached figure reflects the physical capacity of each MWC unit. The operating window is based on 80% to 115% of a nominal 250 tpd capacity and 80% to 115% of a nominal 104.2 MMBTU/hour capacity (250 tpd at 5000 BTU/lb). Maximum unit capacity will be determined by steam load, based on annual compliance tests and continuous steam flow measurements (averaged over four hours), as required by the EG. The maximum demonstrated MWC unit load is defined in 40 CFR 60.51b as the highest 4-hour arithmetic average steam load, measured in accordance with 40 CFR 60.58b(i)(6), during the most recent dioxin stack test which demonstrated compliance. After the maximum unit capacity is established during the annual stack test, the unit will be operationally limited by 40 CFR 60.53b(b) to a load level of 110% or less of the maximum demonstrated MWC unit load. Compliance with this limit is based on continuous steam flow measurements calculated in 4-hour block arithmetic averages. Including these EG requirements for steam load as permit conditions will effectively limit the facility's capacity in a manner that is consistent with the EG requirements and current industry practice.

McKay Bay Resource Recovery Facility

Operating Window





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239 U.S. Highway 22 East
Green Brook, New Jersey 08812-1909

(908) 968-9600
Fax: (908) 968-9603

November 14, 1996

Mr. Clair H. Fancy, P.E.
Florida Dept. of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

Nov 20 1996

BUREAU OF
AIR REGULATION

Dear Mr. Fancy:

As discussed in our meetings last week with the Department, Camp Dresser & McKee, Inc. (CDM) is planning to submit a construction permit application for the City of Tampa's McKay Bay Resource Recovery Facility (MBRRF) in early 1997. The permit application will be to obtain the necessary Department approvals for planned improvements to the MBRRF to meet the Emission Guidelines (EG) requirements given at 40 CFR 60 Subpart Cb, and incorporated by reference at FAC 62-204.800(8). Since the facility is located in the particulate matter (PM) maintenance area described in FAC 62-204.340(4)(b)1, we are seeking guidance from the Department concerning Reasonably Available Control Technology (RACT) requirements for PM emissions from minor and fugitive sources. This information will assist us with preparation of the permit application and the preliminary facility design.

RACT requirements for PM emissions are given at FAC 62-296.700 through 62-296.712. For minor and fugitive particulate sources at MBRRF, applicable RACT requirements are given at FAC 62-296.711, Materials Handling, Sizing, Screening, Crushing and Grinding Operations. These PM RACT requirements are applicable to:

- Loading/unloading of materials to/from containers such as trucks and storage structures (FAC 62-296.711(1)(a));
- Non-portable conveyor systems (FAC 62-296.711(1)(b)); and
- Storage of materials in silos or enclosed bins with capacities of 50 cubic yards or greater (FAC 62-296.711(1)(c)).

PM RACT emission limitations for Materials Handling...Operations are given as:

- No visible emissions (i.e., 5% opacity) (FAC 62-296.711(2)(a)) and
- Emissions exhausted through a stack or vent shall be limited to 0.03 gr/dscf or less for operations totally or partially enclosed to comply with the RACT visible emissions limits (FAC 62-296.711(2)(b)).

- 2 -

Pursuant to the authority given the Department at FAC 62-296.711(2)(c), the applicant is requesting the Department to approve the following alternative limitations as RACT for the proposed MBRRF improvements. These alternative limitations are based on the EG requirements or recent permit applications for similar type sources.

Visible Emission Limitations for Fugitive PM Emissions

Ash conveyors and ash storage, handling, and transfer facilities will be enclosed to minimize fugitive emissions. However, some fugitive emissions will still occur from small openings in the enclosure, from seams around access hatches, from building doors, etc. Also, maintenance and repair activities may require opening of the enclosure that could generate short-term fugitive emissions.

USEPA recognized in the new EG that it is not possible to eliminate all visible emissions of ash at all times. USEPA's EG standards at 40 CFR 60.55b(a) do not allow visible emissions "in excess of 5% of the observation period (i.e., 9 minutes per 3-hour period), as determined by EPA Reference Method 22..." Stated differently, visible emissions are allowed up to 9 minutes per 3-hour observation period. As noted at 40 CFR 60.55b(b), this standard applies to both fugitive emissions and emissions from buildings or enclosures of ash conveying systems. The standard for visible emissions does not apply during maintenance and repair activities of ash conveying systems, as noted at 40 CFR 60.55b(c). It should be noted that the EG standards were developed by USEPA after spending several years studying municipal waste combustors in the United States. The limits in the EG are based on the use of Maximum Achievable Control Technology (MACT), which represents the level of performance that is attained by the best 12% of all existing facilities. In light of these facts, the applicant is requesting that the EG visible emission limitations for fugitive ash emissions be approved as RACT for the MBRRF by the Department.

Outlet PM Emission Limitations for Minor PM Sources

Upgrading the air pollution control (APC) equipment to meet the EG requirements (i.e., adding spray dry adsorbers and carbon injection systems) will require lime and activated carbon storage silos. The silos will be equipped with dust collectors (i.e., baghouses) to control PM emissions during filling operations. In addition, PM emissions from the ash handling system (i.e., conveyors) and ash handling building will likely be controlled by equipping exhaust vents with dust collectors. As part of the bid specifications for the MBRRF improvements, the City plans to specify dust collectors with design outlet loadings of 0.015 gr/dscf for silos and ash building ventilation systems. The applicant is requesting the Department to determine that this proposed emission limitation complies with the Department's RACT requirements.


In addition, pursuant to FAC 62-296.711(3)(c), the applicant is requesting that compliance for these minor PM sources controlled by dust collectors be determined using USEPA Method 9 visible emission tests indicating no visible emissions (5% opacity) in lieu of particulate stack tests.

- 3 -

Thank you for your consideration of these matters. The Department's response to these PM RACT issues will assist us in our preparation of the preliminary facility design and air permit application forms. If you have any questions, please feel free to contact me at 908-968-9600 or David S. Dee, Esq. at 904-681-0311.

Sincerely,

RTP ENVIRONMENTAL ASSOCIATES, INC.®



Donald F. Elias
Principal

DFE/WEC/wec

cc: A. Linero, T. Heron, C. Holladay/FDEP-Tallahassee
J. Kissel/FDEP-Southwest District
J. Campbell/Hillsborough County Environmental Protection Commission
N. McCann, G. Grotecloss, M. Salmon/City of Tampa
D. Strobridge, C. Hibbard/CDM
D. Dee, Esq./Landers & Parsons
W. Corbin, TAMPA3 Project File/RTP

CITY OF TAMPA RESOURCE RECOVERY FACILITY

Air Permit Discussion Issues
November 6 and 7, 1996

EMISSION GUIDELINE C(b)

I. INTRODUCTION OF PROJECT PERSONNEL

II. SCOPE OF PROJECT

REFURBISH BOILER + INSTALL APC EQUIPMENT

III. PERMITTING ISSUES

PROCESS RATES - Normalize around a

parameter which makes sense
and is not increasing. Steam flow? TPD,
Heat input.

- A. Non-PSD Applicability
- B. Air Pollution Control Analysis Requirements
- C. Air Quality Impact Analysis Requirements

IV. RACT ISSUES - Minor PM Sources in PM Maintenance Area

No agreement now!!
We will review facts
when they are provided. We will
do rule applicability.

- A. Fugitive Ash Emissions
- B. Minor Baghouse Sources (e.g., lime and activated carbon silos)

V. OTHER AGENCY INVOLVEMENT

- A. USEPA
 - B. National Park Service
- WE WILL PROVIDE LETTER FOR RTP TO
ATTACH TO APPLICATION COPIES.

VI. SCHEDULE - Expect January submittal - preapplication materials + applicability determinations earlier.

VII. CONTACT PERSONNEL

Nancy McCann
City of Tampa
Office of Environmental Coordination
306 East Jackson Street, 5th Floor
Tampa, FL 33602
813/274-8090 813/274-8035 (Fax)

Greig Grotecloss
City of Tampa
same address as at left

Daniel E. Strobridge
Camp Dresser & McKee Inc.
Westshore Center
1715 North Westshore Blvd, Suite 875
Tampa, FL 33607
813/281-2900 813/288-8787 (Fax)

David S. Dee, Esq.
Landers & Parsons
P.O. Box 271
Tallahassee, FL 32302
904/681-0311
904/224-5595 (Fax)

Donald F. Elias
RTP Environmental Associates, Inc.
239 U.S. Highway 22 East
Green Brook, NJ 08812
908/968-9600 908/968-9603 (Fax)

<u>NAME</u>	<u>Organization</u>	<u>Phone</u>
Donald F. ELIAS	RTP ENVIRONMENTAL	(908) 968-9600
Al Linero	DEP, Tallahassee	(904) 488-1377
Dan Stradbridge	CDM	(813) 281-2900
Greig Grotecloss	City of Tampa	(813) 242-5408
Bob KSEN	DEP Tallahassee	904 521-7744
Cleve Holladay	DEP Tallahassee	904-488-1344
TERESA HERON	DEP Tallahassee	>>
Cynthia Hibbard	CDM	(617) 252-8233
Bill Corbin	RTP	908-968-9600
David Dec	Laudis + Parsons	(904) 681-0300

COMPARISON OF FINAL MWC EG/NSPS* TO CITY OF TAMPA (McKAY BAY) RRF EMISSIONS

Pollutant	-----EG (Subpart Cb)-----		-----NSPS (Subpart Eb)-----		-----Approximate CTRRF Emissions-----	
	<u>Emission Limit</u>	<u>Compliance Basis</u>	<u>Emission Limit</u>	<u>Compliance Basis</u>	<u>Emission Limit</u>	<u>Stack Concentration^b</u>
CO	100 ppmv	CEM: 4-hr block arithmetic mean	100 ppmv	CEMs: 4-hour block arithmetic mean	N/A	
PM	0.012 gr/dscf (27 mg/dscm)	Annual Method 5	<u>0.010 gr/dscf</u> (24 mg/dscm)	Annual Method 5	0.025 gr/dscf@12% CO ₂ 6.975 lb/hr/unit	
Opacity	10%	COM and Annual Method 9: 6-minute	10%	COM and Annual Method 9: 6-minute	15%	COM and annual stack test excluding S/S/M periods
SO ₂	<u>31 ppmv</u> or 75% control	CEM: 24-hr daily geometric mean of 1-hr arith. means	30 ppmv or 80% control	CEM: 24-hr daily geometric mean of 1-hr arith. means	42.5 lb/hr/unit	164 ppmv
HCl	<u>31 ppmv</u> or 95% control	Annual Method 26	25 ppmv or 95% control	Annual Method 26	N/A	
Dioxins/Furans (Total) ^c	30 ng/dscm	Annual Method 23	13 ng/dscm	Annual Method 23	N/A	
Cd	40 ug/dscm	Annual Method 29	<u>20 ug/dscm</u>	Annual Method 29	N/A	
Pb	<u>490 ug/dscm</u>	Annual Method 29	<u>200 ug/dscm</u>	Annual Method 29	0.775 lb/hr/unit	7958 ug/dscm
Hg	80 ug/dscm or 85% control	Annual Method 29	80 ug/dscm or 85% control	Annual Method 29	0.15 lb/hr/unit	1540 ug/dscm
NO _x	<u>200 ppmv</u>	CEM: 24-hr daily arithmetic mean	<u>150 ppmv^d</u>	CEM: 24-hr daily arithmetic mean	75 lb/hr/unit	403 ppmv
Fly/Bottom Ash Fugitives	Visible emissions < 5% of time ^e	Annual Method 22	Visible emissions < 5% of time ^e	Annual Method 22	N/A	

*All concentrations corrected to 7% O₂. Final EG/NSPS published in the 12/19/95 Federal Register. Values which changed from the Draft EG/NSPS published in the 9/20/94 Federal Register are underlined. NSPS require siting analysis and material separation plans with public meetings and comments for facilities for which initial construction permit applications were submitted after 12/19/95.

^bBased on an approximate average flowrate of 26,000 dscfm at 7% O₂ per unit from 1995 mercury stack tests. CTRRF permit also has lb/hour emission limits for VOC, HF, and Be. Annual tests required for particulates, opacity, and lead (and mercury by rule) and for permit renewal for other pollutants.

^cTEQ values published in the Draft EG/NSPS were dropped in the Final EG/NSPS. Total dioxin/furan emissions of 30 ng/dscm corrected to 7% O₂ allowed for first three years following initial startup for NSPS facilities commencing construction on or before November 20, 1997. EG dioxin/furan emission limit is 60 ng/dscm for ESP-based control systems. Less frequent testing allowed for EG and NSPS facilities which comply with 15 and 7 ng/dscm, respectively.

^d180 ppmv corrected to 7% O₂ (same averaging time) allowed for first year of operation.

^eDraft EG/NSPS required no visible emissions. Final EG/NSPS exclude times during maintenance and repair activities.

RTP ENVIRONMENTAL ASSOCIATES INC.[®]

AIR • WATER • SOLID WASTE CONSULTANTS

239 U.S. Highway 22 East
Green Brook, New Jersey 08812-1909(908) 968-9600
fax: (908) 968-9603

October 11, 1996

Mr. Clair H. Fancy, P.E.
Florida Dept. of Environmental Protection
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

This letter is to confirm our meeting on Wednesday, November 6th at 1:15 p.m. concerning the City of Tampa (McKay Bay) Resource Recovery Facility (RRF). The meeting will be held at your offices at 111 S. Magnolia in Tallahassee. This pre-application meeting is to discuss permitting requirements and protocols for modifying the RRF to meet the Emission Guideline (EG) requirements.

Please call me with your confirmation of this meeting and a list of possible attendees from the Department. If you have any questions, please feel free to contact me at the above number.

Sincerely,

RTP ENVIRONMENTAL ASSOCIATES, INC.[®]

A handwritten signature in cursive script that reads "Donald F. Elias/wec". The signature is written in dark ink and is positioned above the typed name and title.

Donald F. Elias
Principal

DFE/WEC/wec

cc: A. Linero, C. Holladay, T. Rogers/FDEP
N. McCann, M. Salmon, G. Grotecloss/City of Tampa
D. Strobridge, C. Hibbard/CDM
D. Dee, Esq./Landers & Parsons