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DRS 8/18 copy to Bruce John Glunn

MONTENAY BAY LLC

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AUG 18 2003

BUREAU OF AIR REGULATION

August 13, 2003

Mr. Scott Sheplak
Florida Department of Environmental Protection
2600 Blair Stone Road
MS5505
Tallahassee, Florida 32399-2400

Reference: Bay County Waste-to-Energy Facility No: 0050031
Permit No: 0050031-008-AV

Dear: Mr. Sheplak:

Please be advised that pursuant to the requirement for reporting Increments of Progress toward the State Compliance Plan, Montenay Bay LLC has recently issued a contract to Merrick Industries of Lynn Haven, Florida for the supply and installation of air pollution equipment including spray dryer absorbers, fabric filter baghouses, lime storage and slaking system, and carbon injection system.

This equipment is currently in its design stages and delivery is not anticipated until early 2004.

We understand this to meet the Increment of Progress milestone of "Award Contracts" contained in our permit.

If any additional information is required please contact me at 850-522-1142 X 203.

Sincerely,

J.J. Zebroski
Bay County Facility
APC Retrofit Manager

6510 Bayline drive - Panama City, Florida 32404 - Tel.: (850) 785-7933 - Fax: (850) 784-1779

-Bruce- Al.
xc: Larry George

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MBLLC/DEP,FCP-03-034

March 11, 2003

Mr. Scott Sheplak
Florida DEP
2600 Blair Stone Road
MS5505
Tallahassee, Florida 32399-2400

Dear Mr. Sheplak:

Ref: Final Control Plan, Title V Draft Permit Number: 0050031-008-AV

Back in September of 2001 a Compliance Plan was submitted to the department. After receiving and reviewing the "INTENT TO ISSUE TITLE V AIR OPERATION PERMIT REVISION", I realized that the Compliance Plan would not meet the requirements for a Final Control Plan. A preliminary design review has been prepared by Camp, Dresser, and McKee, excerpts from this report will meet the requirements for the Final Control Plan. Enclosed find two copies of the excerpts. If I may be of any further service, please do not hesitate to call 850-785-7933x206.

Thank you,

Chalmous Beechem
Operations Manager

Reviewed by Responsible Official ______________________ date 3/19/03
Clifton "Travis" Windham, PE
Utility Services Director
Bay County Utility Services Dept

6510 Bayline drive - Panama City, Florida 32404 - Tel.: (850) 785-7933 - Fax: (850) 784-1779

FINAL CONTROL PLAN
BAY RESOURCE MANAGEMENT CENTER
Title V DRAFT Permit Revision No. : 0050031-008-AV
Bay County

The Final Control Plan will be a SDA/FF baghouse and associated CEMS. Each is discussed in greater detail in the following excerpts taken from the Preliminary Design Report, written for the Bay County by Camp, Dresser, and McKee:

5.3.1.1.2 Spray Dry Absorber Type
5.3.1.1.3 Fabric Filter Type
5.3.1.1.4 Design Basis
5.3.1.3 Lime Storage and Feed System
5.3.1.4 Carbon Storage and Feed System
5.3.1.9 Continuous Emissions Monitoring (CEM) System

Also included are drawings for the SDA/FF baghouse, evaluation chart of emissions vs. subpart BBBB guidelines, and the project implementation schedule.

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BUREAU OF AIR REGULATION

5.3.1.1.2 Spray Dry Absorber Type

SDAs are typically characterized as either upflow or downflow design. With an upflow design, the flue gas enters from the bottom of the vessel and exits from the top. Dual fluid (slurry and compressed air) nozzles are located near the bottom of the vessel and used to inject a finely atomized spray of lime and water. With a downflow design, the flue gas enters from the top of the vessel and exits from the bottom. A finely atomized spray of lime and water is injected near the top of the vessel using dual fluid nozzles or a rotary atomizer.

Upflow designs are more prone to build-up of lime deposits on the sidewalls and subsequent damage to the dual fluid nozzles when the deposits get too large and fall off the wall to the hopper below. Therefore, this type of design will not be considered for use at the Facility. Both dual fluid nozzles and rotary atomizers have been used successfully to achieve the necessary atomizing of lime and water. Dual fluid nozzle systems use a considerable amount of compressed air to facilitate atomization while the rotary atomizer relies on a relatively large horsepower motor to achieve proper atomization. Most APC system vendors use one or the other means of atomization. Therefore, the type of atomizer employed for the Facility will be dependent on the selected APC system vendor.

5.3.1.1.3 Fabric Filter Type

There are three types of FF designs: pulse jet, reverse air and mechanical shaking. With a pulse jet design, dirty flue gas enters the bottom of the FF through an inlet plenum and passes through the outside of the fabric bags which are hung right side up from a tube sheet at the top of the FF. Ash and unreacted lime accumulate on the outside of the bags. A "pulse" of compressed air is periodically distributed down through the inside of each bag that causes the bag to flex, dislodging the accumulated material. With a reverse air design, dirty flue gas enters the bottom of the FF through an inlet plenum and passes through the inside of the fabric bags which are hung upside down from the top of the FF. Ash and unreacted lime accumulate on the inside of the bags. An external fan is used to periodically "reverse" the air flow through the FF to dislodge the accumulated material in a process similar to "back washing". The mechanical shaking design is similar to the reverse air design but use a mechanical mechanism to "shake" the bags and dislodge the accumulated material instead of reversing the air stream. In some cases, "deflation" air is used in combination with mechanical shaking to collapse the bags providing greater cleaning efficiency (shake/deflate design).

All three types of FFs have been used successfully on waste-to-energy applications with pulse jet designs being used the most frequently. Pulse jet FFs have been determined to be the most appropriate type for the Facility for several reasons. The individual compartments on a pulse jet FF can be cleaned on line (i.e., with the compartment in service) or off line. By comparison individual compartments are required to be taken off line for cleaning with the reverse air and mechanical shaking designs, effectively reducing the filtering area during the cleaning cycle. Pulse jet modules can also be shipped pre-assembled to minimize installation time and costs. Pulse jet units are also easy to operate and maintain and have the least amount of moving components. Sizing of the FF will be based on one compartment being off line for cleaning or bag replacement.

5.3.1.1.4 Design Basis

Based on the above analysis and for purposes of the preliminary design, CDM recommends that a downflow SDA (using either a rotary atomizer or dual fluid nozzles) and a pulse jet FF be installed and designed based on the following flue gas conditions at the outlet of each boiler:

Minimum Flue Gas Flow:	33,324 acfm at 375 F 93,631 lb/hr

Future Normal Flue Gas Flow:	56,260 acfm at 425 F 147,040 lb/hr
Maximum Flue Gas Flow:	68,224 acfm at 475 F 168,776 lb/hr

The volumetric flow for the minimum and maximum conditions is based on conservative boiler exit temperatures of 375 F (clean condition) and 475 F (fouled condition), respectively. A flow diagram for the proposed flue gas system is provided on Drawing PID-1 in Appendix A. A general arrangement and elevation view of the SDA and FF equipment is provided on Drawings M-1 and M-2 in Appendix A.

5.3.1.3 Lime Storage and Feed System

5.3.1.3.1 Equipment Requirements

Lime storage, preparation and feed equipment are required to support operation of the SDAs. Pebble lime (CaO) will be stored on site in a silo and a paste slaker used to prepare a lime slurry ($Ca(OH)_2$). Grit will be removed from the slurry using a vibratory screen and the lime slurry stored in a mix tank. Lime slurry will be pumped from the storage tank to the SDA atomizers via a common header. The header will contain a return line back to the slurry storage tank in order to maintain a minimum lime slurry flow through the header to reduce lime build-up on the pipe walls. Two sets of slakers, grit screens and pumps will be provided for redundancy.

5.3.1.3.2 Design Basis

CDM recommends that the basis of design for the lime storage and feed system be as follows based on general industry practices:

- Pebble lime storage capacity – 7 days at maximum capacity
- Lime slurry storage tank capacity – 8 hours at maximum capacity
- Lime slaker and grit screen redundancy – 2 at 100 percent capacity
- Lime slurry pump redundancy – 2 at 100 percent capacity

A flow diagram for the proposed lime storage and feed system is provided on Drawing PID-2 in Appendix A. A general arrangement and elevation view of the lime storage and feed system is provided on Drawings M-3 and M-4 in Appendix A.

5.3.1.4 Carbon Storage and Feed System

5.3.1.4.1 Historical Emission Test Data

Below is a summary of the "uncontrolled" mercury emissions measured from the Facility's flue gas stack. The data represents an average of three test runs per unit.

Test Date	Unit 1	Unit 2
May 1989	0.260 mg/dscm	0.266 mg/dscm
April 1994	0.087 mg/dscm	0.136 mg/dscm
December 1994	0.098 mg/dscm	0.072 mg/dscm
December 1995	0.059 mg/dscm	0.152 mg/dscm
December 1996	0.082 mg/dscm	0.106 mg/dscm
December 1997	0.150 mg/dscm	0.111 mg/dscm
December 1998	0.148 mg/dscm	0.125 mg/dscm
December 1999	0.066 mg/dscm	0.064 mg/dscm
December 2000	0.036 mg/dscm	0.034 mg/dscm
December 2001	0.058 mg/dscm	0.073 mg/dscm

Review of the above historical stack test data shows a general decline in mercury emissions over the past 12 years consistent with efforts to reduce the amount of mercury used in consumer products such as batteries. However, since 1994, mercury emissions have exceeded the 0.070 mg/dscm standard applicable to the APC Retrofit Project during 12 of the 18 tests, although emissions over the past three years have generally been at or slightly below the mercury standard. It can be expected that "uncontrolled" mercury emissions will decline further in the future due to continued efforts to reduce the amount of mercury used in packaging and other consumer products. While the proposed SDA would likely decrease mercury emissions by 10-15 percent due solely to the drop in flue gas temperature, the regulatory standard for mercury emissions may also be tightened further due to concerns over the health effects of this particular heavy metal. Two states, Massachusetts and New Jersey, have already established a significantly lower mercury standard of 0.028 mg/dscm. MWCs equipped with activated carbon injection systems have demonstrated that a standard of 0.028 mg/dscm is attainable on a consistent basis. It is, therefore, conceivable that other states and/or the USEPA will follow suit in the near future and lower allowable mercury emissions to this level.

The applicable mercury standard also specifies a requirement for 85percent removal but it only applies if it is less stringent than 0.070 mg/dscm standard. In other words, the removal requirement applies for conditions where the inlet or "uncontrolled" mercury emission is greater than 0.467 mg/dscm (i.e., 0.07/0.15). Based on the above historical data, it is unlikely that the percent removal standard will ever apply to the Facility.

Three dioxin tests have been performed to date at the Facility, one on Unit 1 and two on Unit 2. The dioxin emissions measured at the Facility to date are listed below:

Test Date	Unit 1	Unit 2
March 1988	--	599 ng/dscm
July 1996	474 ng/dscm	638 ng/dscm

The dioxin standard that will be applicable to the APC Retrofit Project will be 30 ng/dscm based on the current permitted MWC unit capacity (Subpart BBBB) regulations. If the County chooses to increase the permitted capacity of the Facility in the future and the Facility becomes subject to the Subpart Eb regulations for new or modified MWCs as a result, the applicable dioxin standard will be 13 ng/dscm. A 95-98 percent reduction in current dioxin emissions will be necessary to achieve compliance with the above standards. While the SDAs and FF will substantially reduce dioxin emissions, use of a carbon injection system is recommended in order to achieve compliance with the dioxin standard on a consistent basis, particularly the more stringent Subpart Eb limit.

5.3.1.4.2 *Alternative Storage Systems*

Two different types of carbon storage systems have been used successfully to date on MWCs. One system employs a common bulk carbon storage silo with individual feed hoppers for each unit. A common spare feed hopper is typically for redundancy. Each feed hopper is generally equipped with a surge bin and feeder. The other type of system employs a bulk bag (900 lb) dispensing unit that includes a bag lifting assembly and stand, surge bin and feeder. Three bulk bag dispensing systems would be needed for the Facility (one per unit plus a common spare) to provide the same degree of redundancy provided by a silo equipped with three individual hoppers and feed systems.

The capital cost of a storage silo system for the Facility is expected to be slightly more than a bulk bag dispensing system given the same degree of redundancy (i.e., three dispensing systems installed). The budget price to supply a 30-ton silo with three feed trains for the Facility is $275,000, excluding installation, foundations and an enclosure for the feeders and conveying equipment. The budget price to supply three bulk bag dispensing systems is $150,000, excluding the building enclosure, foundation and installation.

Based on information from carbon supplier Norit Americas, the current spot price for activated carbon delivered FOB to Bay County in bulk tanker loads is approximately 20 percent less than carbon shipped in 900 pound bulk bags on a flatbed truck ($0.46/lb versus $0.54/lb). Based on other similar facilities, the average usage rate of carbon is expected to be approximately 0.75 pound per ton of waste processed (or 200 pounds/day/unit at full load). The annual cost savings from purchasing carbon in bulk tanker shipments would be approximately $15,000.

At the expected carbon usage rate, the interval between bulk tanker (20 ton) shipments for a silo operation would be approximately 100 days while the 900-pound bulk bags would need to be changed out every four to five days for each unit. Carbon deliveries for a bulk bag system (22 bags/truck) would require off loading with a forklift and covered storage prior to use.

5.3.1.4.3 Alternative Injection Approaches

Activated carbon can be injected into the flue gas stream either dry (using a pneumatic blower) or wet (using a slurry mix tank and pump). Dry carbon is typically injected into the duct work either upstream of the SDA or immediately after the SDA and prior to the FF. The recommended location for dry injection is upstream of the SDA since it provides for a greater residence time and potentially better control efficiency and reagent utilization. Wet carbon is injected directly into the SDA through the rotary atomizer or dual fluid nozzle.

Both approaches provide similar control efficiencies for a given carbon usage rate. Housekeeping with both approaches can be problematic but cleanup of dry carbon spills is generally easier than slurry spills. Wet injection systems are also prone to build-up of carbon on the transport pipe walls leading to reduced flows and eventual plugging. A license fee to Babcock & Wilcox (B&W), which holds a patent for injection carbon into a spray dryer/baghouse system, would apply regardless of the type of system installed.

5.3.1.4.4 Design Basis

Based on the results of the above analysis and for purposes of the preliminary design, CDM recommends that a dry carbon injection system consisting of a common bulk carbon storage silo (designed to hold 1.5 bulk tanker loads or 30 tons) with three independent pneumatic conveying lines be installed as part of APC Retrofit Project and that the carbon be injected into the duct work upstream of the SDAs for the following reasons.

- Installation of a carbon injection system will ensure that mercury emissions will be well below the current standard of 0.070 mg/dscm and provide additional flexibility in the event that the standard is reduced further in the future;
- Carbon injection also enhances the removal of dioxins. This would be beneficial in meeting the more stringent dioxin standard of 13 ng/dscm should the Facility's permitted capacity be increased in the future and the Facility subject to the more stringent Subpart Eb regulations;
- A future request to increase the permitted capacity of the Facility may be viewed more favorably by regulators and the community if a carbon injection system is installed at the Facility;
- Installation of a common carbon silo instead of separate bulk bag systems would eliminate the labor costs associated with handling and changing out the bulk bags every four to five days and also eliminate the need for covered space to store the bulk bags;
- The total cost for a silo system is expected to be comparable to a bulk bag system when labor costs, reagent costs and additional covered storage space are included;
- Installation of the carbon injection system could be accomplished more cost effectively as part of the larger retrofit project than as a stand-alone project at a future date;
- Use of a dry injection system is preferred over a wet system due to reduced maintenance and housekeeping needs; and
- Injection of the dry carbon into the duct work upstream of the SDA will provide for greater residence time and potentially greater control efficiency and reagent utilization.

The carbon system will be designed to meet a mercury standard of 0.028 mg/dscm and a dioxin standard of 13 mg/dscm. A flow diagram for the proposed carbon storage and system is provided on Drawing PID-3 in Appendix A. A general arrangement and elevation view of the carbon storage and feed system is provided on Drawings M-3 and M-4 in Appendix A.

5.3.1.9 Continuous Emissions Monitoring (CEM) System

5.3.1.9.1 Future CEM Requirements

Based on the results of CDM's regulatory review, the following parameters are required to be continuously monitored:

Scrubber Inlet Duct (Each Unit):	Sulfur Dioxide (SO_2) Oxygen (O_2)
Fabric Filter Outlet Duct (Each Unit):	Sulfur Dioxide (SO_2) Oxygen (O_2) Nitrogen Oxides (NO_x) Carbon Monoxide (CO) Opacity

As discussed in Section 3.4, the existing system does not meet all of the future CEM requirements. In order for this system to comply with the future requirements, inlet and outlet SO_2 analyzers and inlet O_2 analyzers would need to be added to the existing system. A second enclosure would be necessary since there is insufficient space in the existing CEM enclosure to locate the additional analyzers and sample preparation equipment. Additional analyzers and sample preparation equipment would also be needed to provide a measure of redundancy in order to ensure that the CEM availability criteria is achieved.

An alternative approach would be to install a totally new CEM system as part of the APC retrofit. The new system would include new sample probes, sample conditioners, sample lines, analyzers and a data logging system. Two options are available for conditioning the sample. In the past, sample conditioners have been housed in the CEM enclosure and a heated sample line used to convey the flue gas sample to the enclosure. More recently, CEM vendors have been offering to locate the sample conditioners at the probe location so that a smaller diameter sample line can be used since it does not need to be heat traced. All of this equipment needs to be kept in a climate-controlled enclosure at the stack.

The conditioners located at the probe extract a sample through a heated probe tube with a coarse filter, to a heated fine filter and onto a unit that dries the sample. The dryer consists of two concentric, large diameter tubes. The inner sample tube is a semi-permeable material that selectively allows water molecules to migrate into the outer tube while keeping the gases of interest unaffected. The dry air carries the moisture to a vent while the dry and clean sample gas is delivered to the analyzer or analyzers.

Two options are also available for analyzing the samples. One option includes the use of individual analyzers (single component) to measure each parameter similar to the current set-up. The other option involves the use of multi-component (or multi-gas) analyzers that are capable of measuring all of the parameters needed within a single analyzer. Regardless of the approach, separate analyzers would be required for each combustion unit.

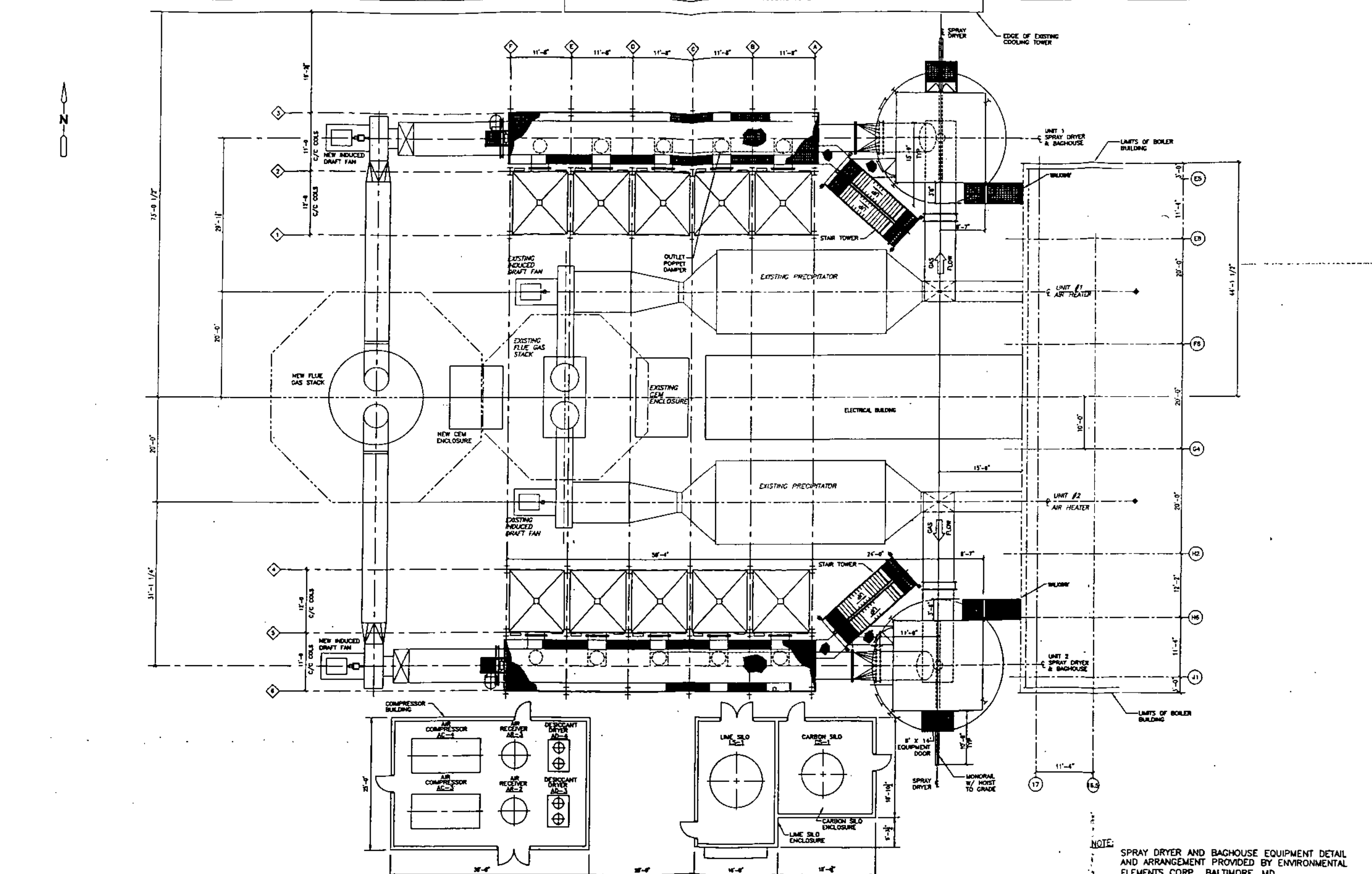
Montenay Bay has indicated a preference for using a multi-component analyzer system with the sample conditioner located at the sample probe. Montenay installed a similar system at their York County, PA facility within the last two years and reportedly is very pleased with its performance. CDM considers this preference reasonable given the cost of either system is expected to be comparable.

Data logging would be similar regardless of the analyzer type used. Data would be compiled using a data logger located within the CEM enclosure and displayed in the main control room.

5.3.1.9.2 Design Basis

Based on the above analysis and for purposes of the preliminary design, CDM recommends that a new CEM system be installed as part of the APC Retrofit Project given the relative cost to upgrade the existing CEM system including provisions for a back-up system. Installing a new system would also allow the Facility to take advantage of recent advances in CEM technology. The new system would include multi-component analyzers with the sample conditioner located at the sample probe.

Consideration was also given to maintaining the existing CEM system as a back-up. However, the cost to add SO_2 and O_2 analyzers to the existing system and install another CEM enclosure was determined to be more expensive than installing a fifth multi-component analyzer as part of the new CEM system. The fifth analyzer would serve as a common spare to the four locations but would not be fully automatic. Operators will need to make some manual adjustments to scale settings and valving for the selected location.



PLAN
1/8" = 1'-0"

NOTE: SPRAY DRYER AND BAGHOUSE EQUIPMENT DETAIL AND ARRANGEMENT PROVIDED BY ENVIRONMENTAL ELEMENTS CORP., BALTIMORE, MD.

PRELIMINAF

REV. NO.	DATE	DRWN	CHKD	REMARKS

DATE: DEC 2002

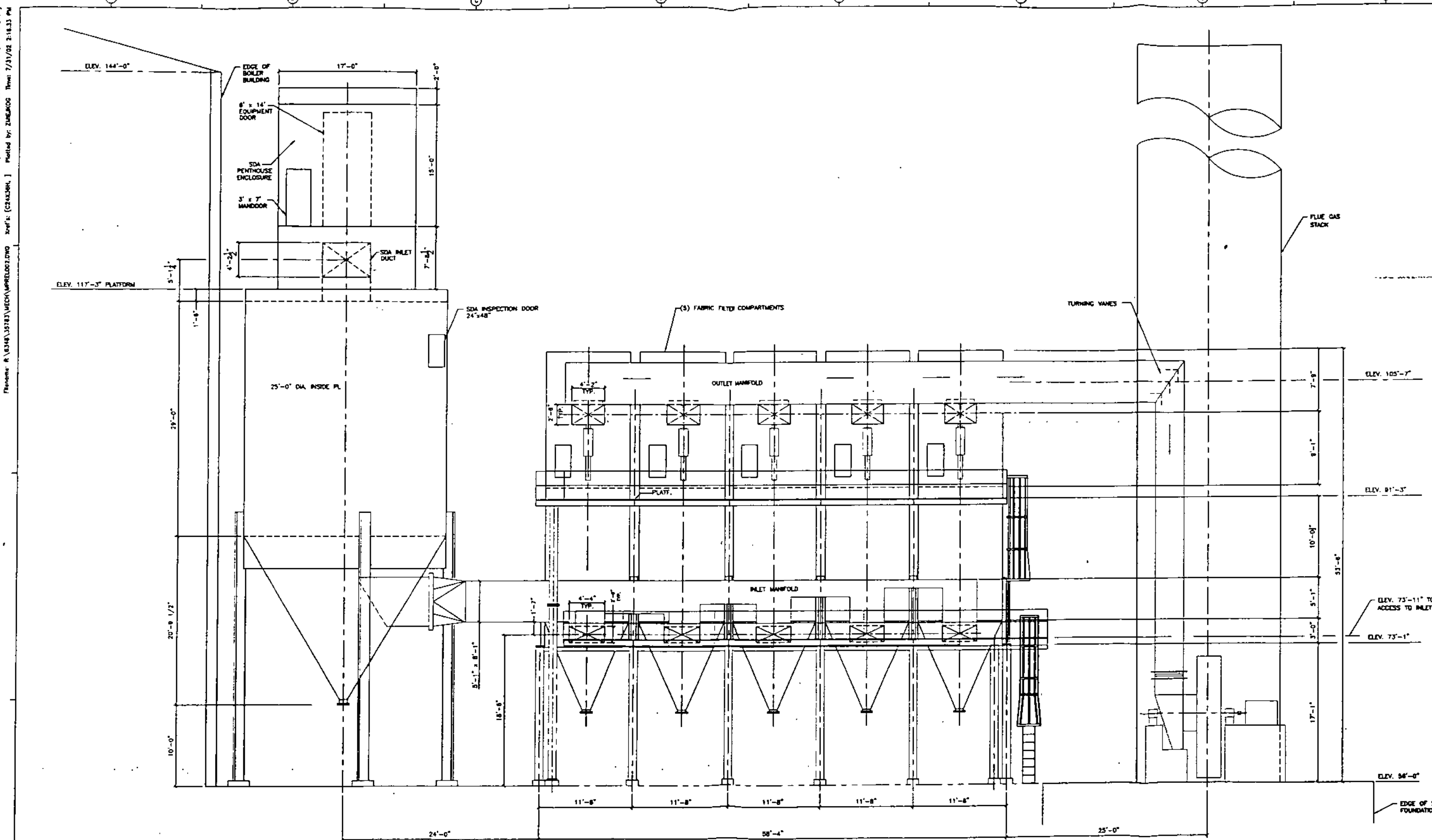
CDM Camp Dresser & McKee

BAY COUNTY RESOURCE RECOVERY FACILITY
BAY COUNTY, FLORIDA
AIR POLLUTION CONTROL RETROFIT PROJECT

PROCESS GENERAL ARRANGEMENT PLAN

M–

[BAY COUNTY - RESOURCE RECOVERY FACILITY] Plotted by: ZMEJKOG Time: 7/31/02 2:18:33 PM
Filename: R:\6348\35783\MECH\MPRELD03.DWG Xref's: [C24X36H,]



NOTES:

- EQUIPMENT DETAIL AND ARRANGEMENT PROVIDED ENVIRONMENTAL ELEMENTS CORP. BALTIMORE, M
- ACCESS PLATFORMS/STAIRWAYS AND FLY ASH H SYSTEM NOT SHOWN

ELEVATION - LOOKING SOUTH
3/16" = 1'-0"

PRELIMINARY

REV. NO.	DATE	DRWN	CHKD	REMARKS

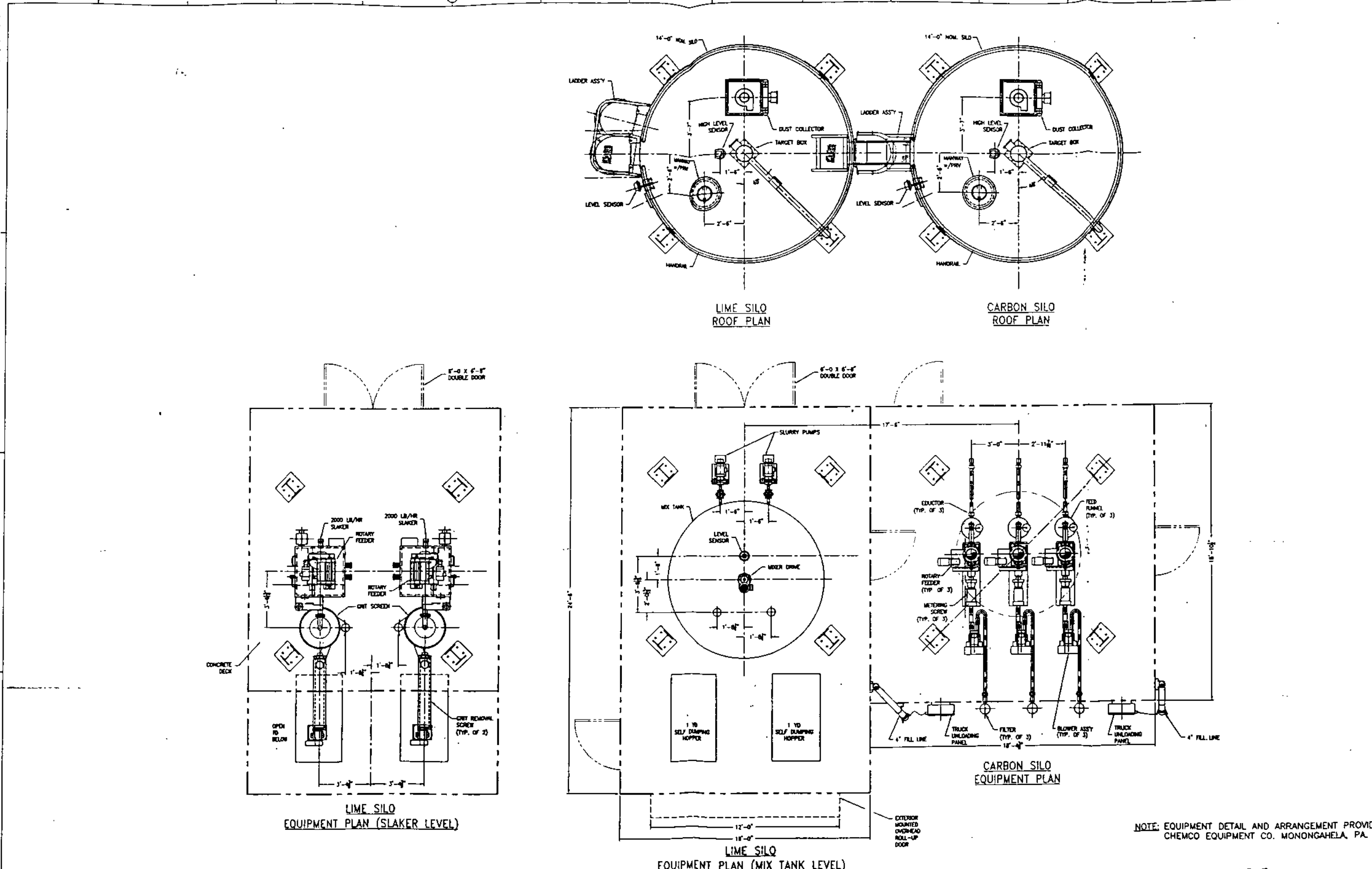
DESIGNED BY: T. Lofts
DRAWN BY: G. Zmejkog
SHEET CHK'D BY: T. Lofts
CROSS CHK'D BY: T. Lofts
APPROVED BY:
DATE: DEC 2002

CDM Camp Dresser & McKee

BAY COUNTY RESOURCE RECOVERY FACILITY
BAY COUNTY, FLORIDA
AIR POLLUTION CONTROL RETROFIT PROJECT

PROCESS GENERAL ARRANGEMENT ELEVATION
SPRAY DRY ABSORBER AND FABRIC FILTER BAGHOUSE

PROJECT NO. 35
FILE NAME: M
SHEET
M-



NOTE: EQUIPMENT DETAIL AND ARRANGEMENT PROVID... CHEMCO EQUIPMENT CO. MONONGAHELA, PA.

PRELIMINARY

Scale: 3/8" = 1'...

REV. NO.	DATE	DRWN	CHKD	REMARKS

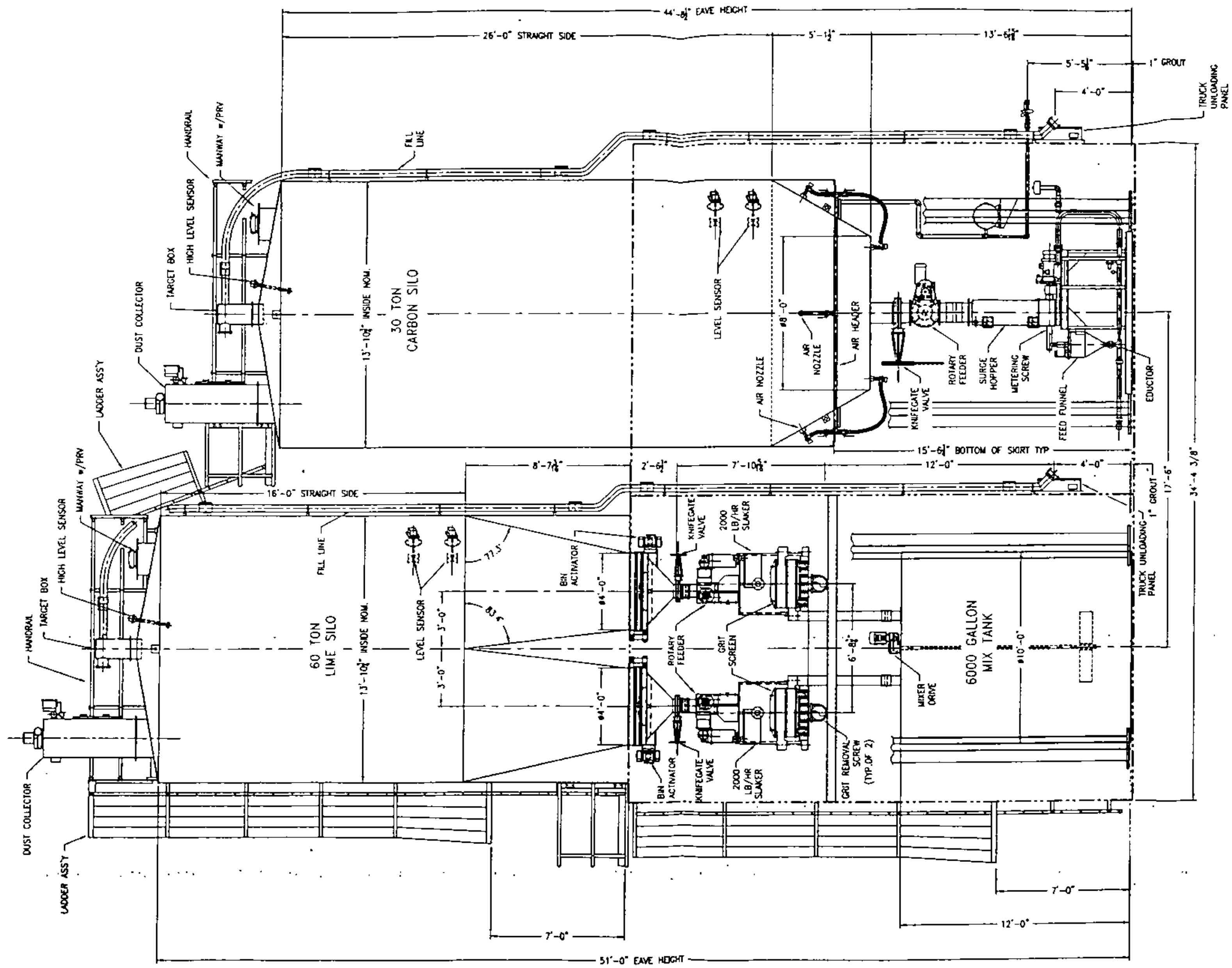
DESIGNED BY: T. LaRo
DRAWN BY: G. ZMEJKO
SHEET CHK'D BY: A. KLBORN
CHECKED BY: T. LaRo
APPROVED BY:
DATE: DEC 2002

CDM Camp Dresser & McKee

BAY COUNTY RESOURCE RECOVERY FACILITY
BAY COUNTY, FLORIDA
AIR POLLUTION CONTROL RETROFIT PROJECT

PROCESS GENERAL ARRANGEMENT PLANS
LIME AND CARBON STORAGE & FEED SYSTEMS

PROJECT NO.
FILE NAME:
M



ELEVATION VIEW

NOTE: THIS VIEW IS FOR ELEVATION ONLY. FOR CORRECT ORIENTATION, SEE PLAN VIEWS.

NOTE: EQUIPMENT DETAIL AND ARRANGEMENT PROVIDE[D BY] CHEMCO EQUIPMENT CO. MONONGAHELA, PA.

PRELIMINARY

Scale: 3/8" = 1

REV. NO.	DATE	DRWN	CHKD	REMARKS

DATE: DEC 2002

CDM Camp Dresser & McKee

BAY COUNTY RESOURCE RECOVERY FACILITY
BAY COUNTY, FLORIDA
AIR POLLUTION CONTROL RETROFIT PROJECT

PROCESS GENERAL ARRANGEMENT ELEVATIONS
LIME AND CARBON STORAGE AND FEED SYSTEMS

M-

REVIEW OF MACT STATUS FOR BAY COUNTY
EVAULATION OF EMISSIONS VS. SUBPART BBBB GUIDELINES

Pollutant	Guideline for Class A Plants [Large Plant NSPS - Eb]	Bay County Permit Limits	Unit #1 Test Data	Unit #2 Test Data	Comments (Additional changes for Eb)
Dioxins & Furans	30 ng/dscm total mass @ 7% O2 [3, 4-hr avgs) Eb = 13 ng/dscm total mass *Annual test*	None	7/96 - 474 ng/dscm @7%02 total	7/96 - 638 ng/dscm @7%02 total	Retrofit ESP with upgraded controls (baghouse) (For Eb - similar changes will be needed +carbon injection)
Sulfur Dioxide	31 ppmv @ 7% O2, or 75% reduction [24-hr. geometric avg] Eb = 30 ppmv @ 7% O2 *CEM*	35.8 lbs/hr (135 ppm in stack) *Annual test*	May '89 Test - 13 13 lb/hr (54 ppmv @ 7% O2) December '93 Test - 24 76 lbs/hr (91.5 ppm @ 7% O2) 12/99 - 25 41 lbs/hr (~107ppm @7% O2)	May '89 Test - 31.87 lbs/hr (125 ppmv @ 7% O2) December '93 Test - 23 17 lb/hr (87.45 ppmv @ 7% O2) 12/99 - 25 28 lbs/hr (~91ppm @7% O2)	3hr averages indicate that 24-hr averages will be above EPA limit. Scrubber may be needed for SO2 (no additional changes needed for Eb)
Hydrogen Chloride	31 ppmv @ 7% O2, or 95% reduction Eb = 25 ppmv @ 7% O2 *Annual test*	None	May '89 Test - 55 78 lb/hr (462 5 ppmv @ 7% O2)	May '89 Test - 59.69 lb/hr (462.5 ppmv @ 7% O2)	Scrubber will be needed to meet HCl limits (no additional changes needed for Eb)
Total Particulate Matter	27 mg/dscm @ 7% O2 (0 012 gr/dcsf) Eb = 24 mg/dscm @ 7% O2 *Annual test*	6.8 lbs/r (0 03 gr/dscf in stack) *Annual test*	May '89 Test - 3 46 lb/hr (0 0195 gr/dscf @ 7% O2) December '93 Test - 5 58 lbs/hr (0.0240 gr/dscf @ 7% O2) 12/99 - 0.007 gr/dscf @ 7% O2	May '89 Test - 0 60 lb/hr (0 0038 gr/dscf @ 7% O2) December '93 Test - 3 82 lb/hr (0.0171 gr/dscf @ 7% O2) 12/99 - 0 017 gr/dscf @ 7% O2	PM is near/above MACT limits Upgrade ESP to baghouse in order to meet standard consistently. (no additional changes needed for Eb)
Opacity	10% (6 min) Eb is same as BBBB *COM & Annual test*	15% [6 min.] *COM & Annual V E.*	Qtr II '94 - <1% exceedances during quarter 12/99 - 1.4%	Qtr. II '94 - <1% exceedances during quarter 12/99 - 1.0%	O.K. (no additional changes needed for Eb)
Cadmium compounds	0 040 mg/dscm @ 7% O2 Eb = 0.020 mg/dscm @ 7% O2 *Annual test*	None	No data	No data	Conduct test to determine emission rate
Lead compounds	0.490 mg/dscm @ 7% O2 Eb = 0.20 mg/dscm @ 7% O2 *Annual test*	0.10 lbs/hr (0.93 mg/dscm in stack) *Test Once/ 5-years*	May '89 Test - 0.041 lb/hr 12/99 - 0.036 lbs/hr (~0.401 mg/dscm)	May '89 Test - 0.084 lb/hr 12/99 - 0 075 lbs/hr (~0 851 mg/dscm)	Pb is near/above MACT limits. Upgrade ESP to baghouse in order to meet standard consistently. (no additional changes needed for Eb)
Mercury compounds	0.070 mg/dscm @ 7% O2, or 80% reduction - State regulation 0.080 mg/dscm @ 7% O2, or 85% reduction - EPA limit Eb is same as BBBB *Annual test - EPA & State regs*	0.18 lb/hr (17 mg/dscm in stack) *Test Once/ 5-years*	May '89 Test - 0 024 lb/hr April '94 Test - 0 00845 lb/hr (3.79 *10-5 gr/dscf @ 7% O2) 12/99- 0 0058 lbs/hr (~0.066 mg/dscm @ 7% O2)	May '89 Test - 0 026 lb/hr April '94 Test - 0.0144 lb/hr (5 95 *10-5 gr/dscf @ 7% O2) 12/99 - 0 0062lbs/hr (~0.0637 mg/dscm @ 7% O2)	Units now close to State limits. Percent removal should be determined . (no additional changes needed for Eb)
Nitrogen Oxides (mass burn rotary waterwall)	171 ppmv @ 7% O2 [24 hr.] Eb = 150 ppmv @ 7% O2 [24 hr.] *CEM*	26.9 lb/hr *Annual Test*	May '89 Test - 15 96 lb/hr (93 ppmv @ 7% O2) December '93 Test - 23 04 lbs/hr (118 5 ppm @ 7% O2) 12/99 test - 16 58 lbs/hr (~94 ppm @ 7% O2)	May '89 Test - 19 24 lbs/hr (105 ppmv @ 7% O2) December '93 Test - 18 2 lb/hr (95.79 ppmv @ 7% O2) 12/99 test - 21.79 lbs/hr (~92 ppm @ 7% O2)	O K (For Eb - SNCR could be added to provide additional operating margin but it does not appear to be mandatory)
Carbon Monoxide (mass burn rotary waterwall) Rev 3/13/2003	250 ppmv @ 7% O2 [24 hr.] Eb = 100 ppmv @ 7% O2 [24 hr.] *CEM*	92 8 lb/hr (800 ppm in stack) *CEM & Annual Test*	May '89 Test - 15.96 lb/hr (93 ppmv @ 7% O2) Qtr. II '94 - <1% exceedances during quarter 12/99 test - 42.28 lb/hr (~339 ppm @ 7% O2)	May '89 Test - 19 8 lb/hr (163 ppmv @ 7% O2) Qtr. II '94 - <1% exceedances during quarter 12/99 test - 38 17 lb/hr (~311 ppm @ 7% O2)	Install combustion controls - secondary air fan and nozzles. (For Eb - smilar controls needed, however, lower limit may also cause some additional load restrictions during wet fuel season)
Beryllium compounds	n/a	5 * 10 ^-6 lbs/hr *Test Once/ 5-years*	May '89 Test - 1.04 * 10^-6 lb/hr 12/99 - <2.5E-6 lbs/hr	May '89 Test - <5 0*10^-8 lb/hr 12/99 - <2.5E-6 lbs/hr	O.K.
Fluorides	n/a	0.15 lbs/hr *Test Once/ 5-years*	May '89 Test - 0.084 lb/hr (1.2 ppmv @ 7% O2) 12/99- <0.0077 lbs/hr	May '89 Test - 0.051 lb/hr (0.7 ppmv @ 7% O2) 12/99- <0.0073 lbs/hr	O.K.
Volatile organic compounds	n/a	7.1 lbs/hr *Test Once/ 5-years*	May '89 Test - 0 21 lb/hr (0 7 ppmv @ 7% O2) 12/99- 0.50 lbs/hr	May '89 Test - 0.45 lb/hr (1.3 ppmv @ 7% O2) 12/99- 0.66 lbs/hr	O.K.
Operating Practices					
Max. Load	110% of load during last dioxin/ furan test [4 hr.] Eb is same as BBBB *Continuous Monitoring*	110% of 68,000 lb/hr steam production (Note A)	110% of 68,000 lb/hr steam production [7-day average] *Continuous Monitoring*	--	O.K.
Baghouse Inlet Temperature	30 degree F. above max. temp. during last dioxin/furan stack test [4-hr] Eb is same as BBBB *Continuous Monitoring*		< or = 300 degree F. [4 hr.]	–	Evaluate operating temperature ranges
Fugitive Emissions	No visible emissions from buildings, ash transfer points or ash handling areas for more than 5% of the time Eb is same as BBBB *Annual test*		no limit	--	Impact of fugitive emissions to be determined. Ash Transfer area sited in 97 ash building required
Combustion Gas Temperature	no limit	Flue gas temp. @ exit of furnace > or = 673 degrees F. (Note B) *Continuous Monitoring*	-	--	No EPA limit
Operator Training	(1) -ASME certification of chief operator & shift supervisors (2) - Site-specific training manual & training for all employees. Eb is same as BBBB		ASME certification of operator (ASME QRO-1989)	--	Develop operator training manual Evaluate additional training & certification needed
Carbon Usage (if used to meet dioxin/ furan or mercury limit)	(1) Feedrate is > or = level during Hg test or during dioxin/furan test [8-hr block] (2) Amount purchased is > or = required quarterly usage [quarter total] *Continuous Monitoring*		n/a	n/a	--

Notes:
"[ ]" - Refers to averaging period on which emission limit is based. If averaging period is not stated the limit is applied as a maximum not to be exceeded over the averaging period specified in the test method
All emission limits stated in concentration (i e , ppmv, or mass per unit volume) are corrected to 7% excess oxygen
* - Each comubstion unit must comply with most restrictive of limits (pre-April 1995 or post-April 1995) after April 1, 1995
APCD - Air Pollution Control Device
(A) - The Title V permit which will be issued will reduce the steam load to 66,667 lbs/hr of a 4-hour block average, and 65,333 lbs/hr on a 24-hour rolling
(B) - This limit is the surrogate for demonstrating that the furnace is at or above 1800 degrees F. for 1 second

FIGURE 6-1

APC RETROFIT PROJECT IMPLEMENTATION SCHEDULE