CITY OF TALLAHASSEE

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City Auditor

December 22, 1997 Certified Mail No. P483-230 320

Hamilton S. Oven
Department of Environmental Protection
2720 Blairstone Road
Suite H
Tallahassee, FL. 32399

Subject: City of Tallahassee
Revised Pages of Site Certification

Dear Mr. Oven:

Please find enclosed, 18 sets of revised pages to the subject Site Certification. These pages were revised by exhibits received into evidence at the Site Certification Hearing. We are submitting these revised pages as a convenience to the users of the Site Certification.

Revised and additional text is italicized for ease of identification and a line marking the location of a change is included on the edge of the page. They may be substituted for existing pages as indicated on the instructions for replacing and adding pages.

Please call me at 891-8850 if you have any questions.

We wish you a Happy Holiday Season!

Sincerely,

Jennette Curtis
Environmental Administrator

jc

Enclosures

cc: Rob McGarrah (COT)
Gary Sams (HGSS)
Doug Fulle (FWENC)

c/winword/pp8team/ovenltr2.doc

Page(s) to be Removed	Replacement Page(s)	Reason for the Change	Hearing Exhibit Number
VOLUME 1			
Section 2.3.4			
2.3.4-58 (Table 2.3.4-4)	2.3.4-58 (Table 2.3.4-4)	Add data originally left out.	HAF-7
Section 3.5			
3.5-1	3.5-1	Correct withdrawal rate.	HAF-8
3.5-2 (Figure 3.5-1)	3.5-2 (Figure 3.5-1)	Correct evaporation and withdrawal rates.	HAF-3
3.5-3 (Figure 3.5-2)	3.5-3 (Figure 3.5-2)	Correct evaporation and withdrawal rates.	HAF-4
3.5-4 (Figure 3.5-3)	3.5-4 (Figure 3.5-3)	Correct evaporation and withdrawal rates.	HAF-5
3.5-5 (Table 3.5-1)	3.5-5 (Table 3.5-1)	Correct evaporation and withdrawal rates.	HAF-6
3.5-7	3.5-7	Table 3.5.1-1 changed, correct evaporation rates.	HAF-2
Section 3.8			
3.8-1	3.8-1	Add requirements for City of St. Marks Land Development Code.	HAF-10
Section 5.3			
5.3-1	5.3-1	Correct withdrawal rates.	HAF-9
Section 5.6			
5.6-15 (Table 5.6.1-11)	5.6-15 (Table 5.6.1-11)	Standards changed.	DJF-2
5.6-45 (Table 5.6.1-26)	5.6-45 (Table 5.6.1-26)	Transcription errors.	DJF-4
5.6-46 (Table 5.6.1-27)	5.6-46 (Table 5.6.1-27)	Transcription errors.	DJF-6
Section 6.2			
6.2-5 (Figure 6.2.4-2)	6.2-5 (Figure 6.2.4-2)	Corrected data on figure.	REM-5
VOLUME 2			
Section 10.1.5			
Attachment PGS-06			
3-2 (Table 3-1)	3-2 (Table 3-1)	Standards changed.	DJF-3
7-11 (Table 7-8)	7-11 (Table 7-8)	Transcription errors.	DJF-5
7-14 (Table 7-10)	7-14 (Table 7-10)	Transcription errors.	DJF-7

VOLUME 1

Table 2.3.4-4 Detected Water Quality Constituents

Parameters to be Sampled For	Constituent (units are mg/L unless otherwise stated)	Class III Limit in St. Marks River at Purdom Station (if applicable)	Lab Analytical Method (if applicable)	Results from 10/17/96 sampling episode	Results from 11/21/96 sampling episode
Physical					
	pH(standard units)	within 1 unit of natural background & between 6 and 8.5, or not less than natural nor more than 1 unit above natural if natural <6, and not more than natural nor less than 1 unit below natural if natural > 8.5	EPA 150.1	7.25	7.18
	Dissolved Oxygen	5 mg/l (minimum)	EPA 360.1	3.67	3.88
	Temperature-Deg C	see 62-302.520	EPA 170.1	21.2	20.3
	Total Dissolved Gases	110% of saturation value	field measurement	NT	NT
General Inorganics	Total Suspended Solids	tested for operational reasons	EPA 160.2	3	2
	Total Dissolved Solids	tested for operational reasons	EPA 160.1	124	346
	Hardness (as CaCO3)	calculating trace metal limits, abbr	EPA 130.2	93	162
	Alkalinity (as CaCO3)	20 mg/l as CaCO3(minimum)	EPA 310.1	77.1	119
	Specific Conductance (umhos/cm)	tested for operational reasons	EPA 120.1	163	583
	Nitrate (as N)	ot to imbalance natural population	EPA 353.2	<0.000	0.124
	Ammonia (as N)	nized) and not to imbalance natur	EPA 350.1	0.014	0.016
	Total Phosphorus (as P)	imbalance natural pop	EPA 365.4	0.049	<0.000
	Silica (as SiO2)	tested for operational reasons	SM-4500SiD	8.58	11.6
	Cyanide (as CN)	.0052 mg/l	EPA 335.4	0.017	<0.000
	Aluminum	tested for operational reasons	EPA 202.2	0.218	0.0291
Major Cations	Calcium	tested for operational reasons	EPA 215.1	25.8	40.4
	Magnesium	tested for operational reasons	EPA 242.1	4.42	13.4
	Sodium	tested for operational reasons	EPA 273.1	3.19	53.8
	Potassium	*tested for operational reasons*	*EPA 258.1*	*0.51*	*2.32*
Minor/Trace Elements	*Iron*	*1.0 mg/l*	*EPA 236.2*	*0.314*	*0.0656*
	Nickel	*e^(0.846[ln H]+1.1645) ug/l*	*EPA 249.2*	*<0.00015*	*0.0017*
Major Anions	*Chloride*	*tested for operational reasons*	*EPA 325.2*	*5.58*	*93*
	Bicarbonate	*tested for operational reasons*	*SM500-CO2D*	*76.96*	*118.8*
	Sulfate	*tested for operational reasons*	*EPA 375.2*	*7.15*	*21.7*
Microbio-logicals	*Fecal Coliform*	*multiple requirements*	*0/8/78-017 Section III C,*	*154 #/100 ml*	*170 #/100 ml*
	Total Coliform	*multiple requirements*	*0/8/78-017 Section III B,*	*533 #/100 ml*	*324 #/100 ml*
Biological Integrity	*Shannon-Weaver diversity index*	*75% of background levels*	*field measurement*	*NT1*	*NT1*
	Transparency	*not to be reduced more than 10 % of natural*	*field measurement*	*NT2*	*NT2*
	NT = Not Tested				

1 See Section 2.3.6 for values.

2 Tested at a different time. Values measured were 10 feet upstream of Purdom Plant, 11 feet downstream of Purdom Plant, and 7.33 feet at City of St. Marks Sewage Treatment Plant

3.5 PROJECT WATER USE

Purdom Unit 8 has been designed to minimize impacts to the St. Marks River watershed. The existing plant currently uses St. Marks River water for once-through cooling, Floridan aquifer water for process makeup and auxiliary cooling, and water from the City of St. Marks municipal system for potable water. The City of Tallahassee looked at potential sources of wastewater as the first choice for makeup to the proposed Unit 8. The National Pollutant Discharge Elimination System (NPDES) permits in the site vicinity were examined. Those discharges that dealt primarily with stormwater flows to the river (e.g., Seminole Refining) were eliminated from consideration. The discharge from Primex Technologies (formerly Olin Corporation) was examined, but neither the City of Tallahassee nor Primex could justify the economics of pursuing reuse of that waste stream. This process of elimination left only the discharges from the St. Marks Wastewater Treatment Facility and the non-cooling, non-stormwater outfalls from the Purdom Station itself, as discharges to the river containing pollutants but suitable for use as cooling tower makeup. The City of Tallahassee is committed to reuse of these two waste streams, to improve the quality of the river, and to support the State's commitment to reuse wastewater.

Based on historical analysis of groundwater quality from the City of Tallahassee's wells, it was concluded that the use of groundwater should be discontinued with the start-up of Unit 8 to help prevent any further saline intrusion. This left the St. Marks River as the only remaining water source. Since the maximum facility demand was predicted to be approximately *2.5* cfs, or about *0.7* percent of the 7Q10 (347 cfs) at the Purdom Station, it was concluded that the utilization of such a quantity of surface water from the river would not have significant hydrological impact. Therefore, the Project proposes such a use. As the facility is already connected to the City of St. Marks municipal water system, and the proposed Project does not require any additional staff, potable water will continue to be withdrawn from the municipal system.

Purdom Unit 8 is proposed to be a zero discharge facility with respect to the NPDES program. This means it will have no point source discharges of wastewaters or contaminated stormwater to surface waters. The key feature of this design is the zero discharge wastewater treatment system. The City of Tallahassee is presently evaluating two different designs for this system. The first design consists of a falling film, vapor compression evaporator and a steam-driven forced circulation crystallizer and solids separator. The second design includes the use of heat exchangers and wastewater evaporating cooling tower cells. It is likely that the final design will be some combination of the two. In any case, use of the zero discharge wastewater treatment system will allow Unit 8 to use the reclaimed water from the City of St. Marks Wastewater Treatment Facility and the recycled process wastewaters from Purdom Units 7 and 8 to minimize the withdrawal of St. Marks River water for makeup to the cooling tower and to both boilers. This allows the Purdom Station to discontinue the use of groundwater at the site.

Based on this design, a quantitative water balance for the unit is shown on Figure 3.5-1 for firing natural gas under average annual meteorological conditions, and on Figure 3.5-2 for firing number 2 fuel oil under extreme meteorological conditions. Expected average conditions are represented on Figure 3.5-1, while peak water use at the plant under any conditions is represented on Figure 3.5-2. Peak sustained water use is shown on Figure 3.5-3. Table 3.5-1 presents the

Exhibit HAF-3

Figure 3.5-1 Average Water Use

100% Capacity Firing Natural Gas
Under Average Meteorological Conditions

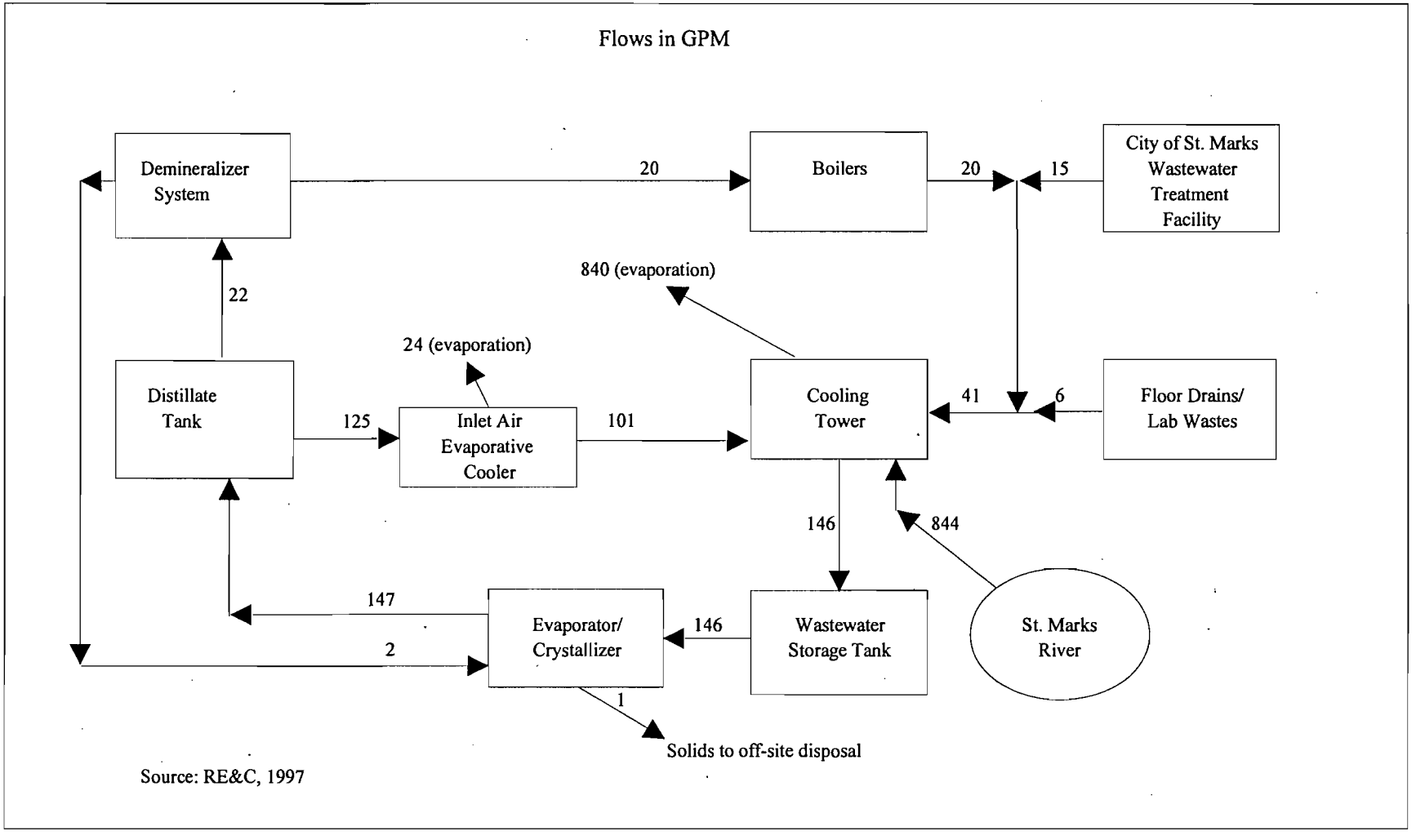


Figure 3.5-2 Peak Water Use

Exhibit HAF-4

100% Capacity Firing Oil During Summertime

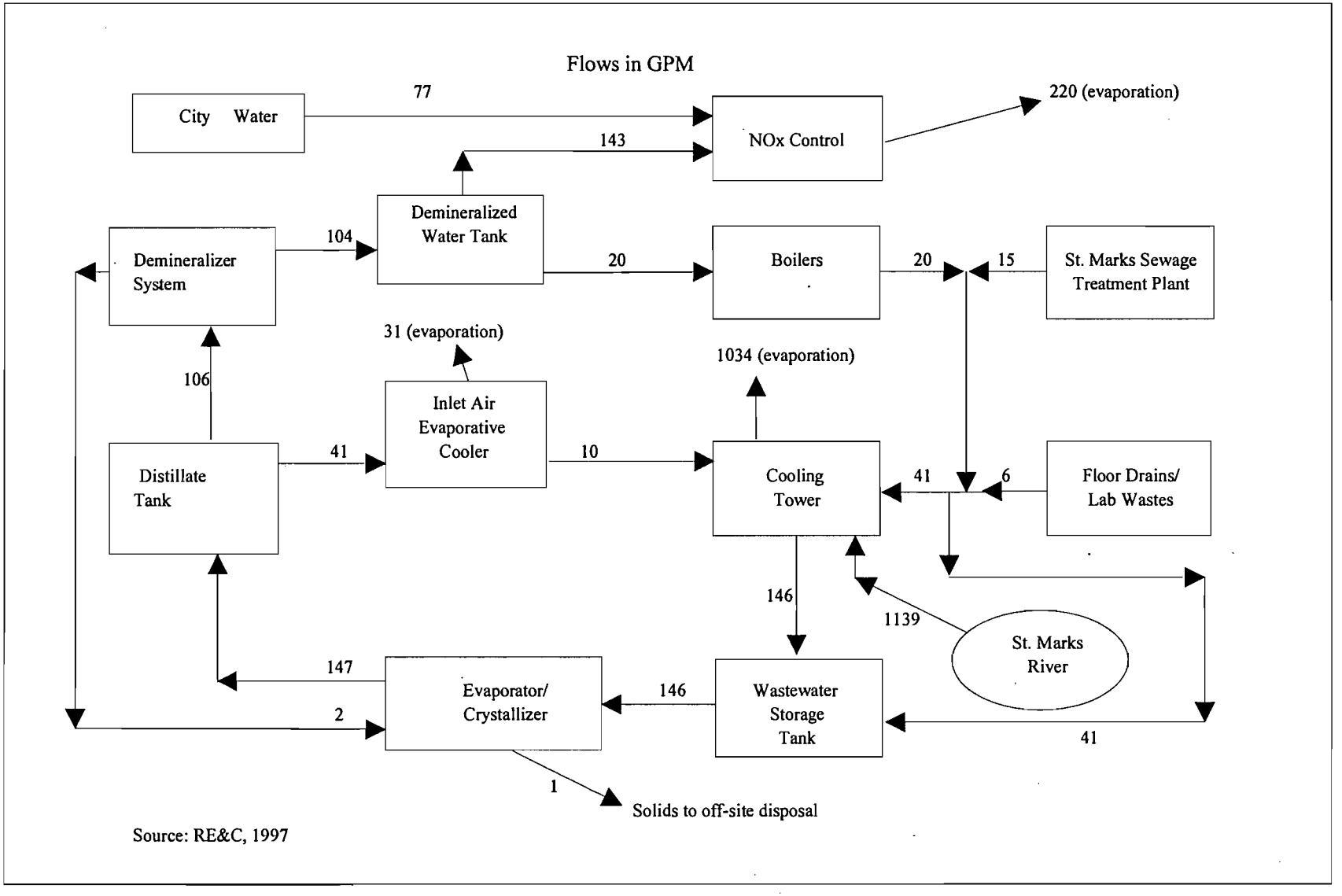


Figure 3.5-3 Peak Sustained Water Use

Exhibit HAF-5

100% Capacity Firing Gas During June

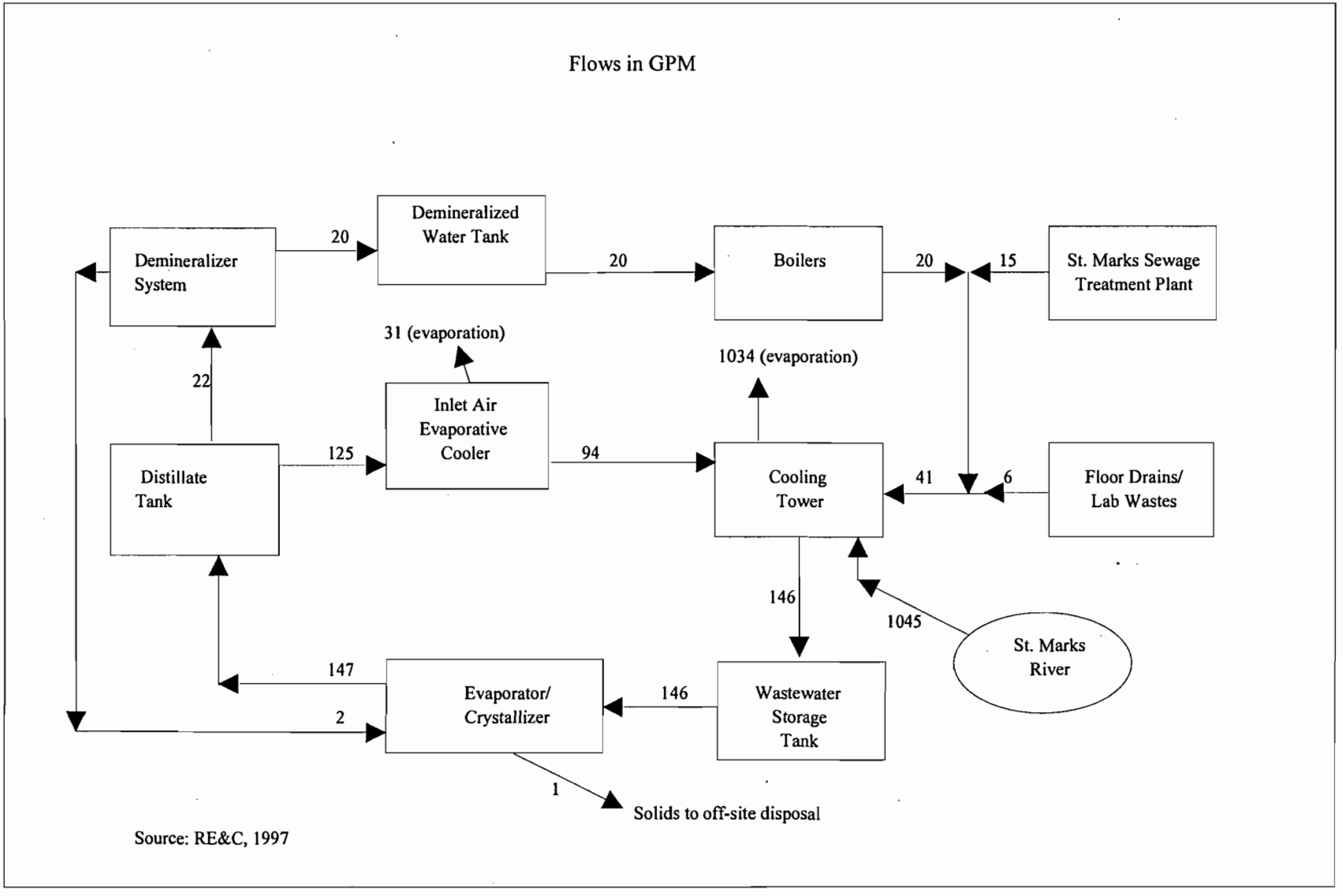


Exhibit HAF-6

Table 3.5-1. Existing and Proposed Water Use

		Existing	Existing	Existing	Existing		Proposed	Proposed	Proposed	Proposed
		Average Daily Flow - gallons	Maximum Daily Flow - gallons	Average Monthly Flow - gallons	Maximum Monthly Flow - gallons		Average Daily Flow - gallons	Maximum Daily Flow - gallons	Average Monthly Flow - gallons	Maximum Monthly Flow - gallons
Withdrawal Point										
#	Description									
SOP 6	Well	40,650	260,000	1,219,500	7,800,000		0	0	0	0
SOP 7	Well	40,650	260,000	1,219,500	7,800,000		0	0	0	0
SOP 8	Well	40,650	260,000	1,219,500	7,800,000		0	0	0	0
SOP 9	Well	40,650	260,000	1,219,500	7,800,000		0	0	0	0
	Total all Wells	162,600	432,000	4,878,000	12,960,000		0	0	0	0
SW 4	Unit 4 C.W.	1,400,000	7,200,000	42,000,000	216,000,000		0	0	0	0
SW 5	Unit 5 C.W.	19,879,315	34,560,000	596,379,452	1,036,800,000		0	0	0	0
SW 6	Unit 6 C.W.	17,224,932	34,560,000	516,747,945	1,036,800,000		0	0	0	0
SW 7	Unit 7 C.W.	58,426,751	60,624,000	1,752,802,521	1,818,720,000		58,426,751	60,624,000	1,752,802,521	1,818,720,000
SW GT	Gas Turbines	300,000	2,937,600	9,000,000	88,128,000		300,000	2,937,600	9,000,000	88,128,000
SW 8	Unit 8 C.W.	0	0	0	0		1,215,360	1,640,160	36,460,800	49,204,800
	Total all Surface Water	97,230,997	139,881,600	2,916,929,918	4,196,448,000		59,942,111	65,201,760	1,798,263,321	1,956,052,800
	Total Withdrawal of Water	97,393,597	140,313,600	2,921,807,918	4,209,408,000		59,942,111	65,201,760	1,798,263,321	1,956,052,800
	Water Discharged to River	97,329,637	139,980,240	2,919,889,118	4,199,407,200		58,726,751	63,561,600	1,761,802,521	1,906,848,000

Note 1: C.W. is Circulating (Condenser Cooling) Water Recirculated to the river except for Unit 8

Note 2: Existing Average well flows based on monitoring data for March-December 1996

Note 3: Maximum single well pumpage is 260,000 gpd if only one well is being pumped. Normally two wells are pumped at a time, and the maximum pumpage from each well is then only 216,000 gpd

TABLE 3.5.1-1 AVERAGE AND PEAK MONTHLY COOLING TOWER EVAPORATION (100% LOAD)				
	Extreme Conditions		Average Conditions	
Month	Wet Bulb (°F)	Evaporation (gpm)	Wet Bulb (°F)	Evaporation (gpm)
January	66.4	*894*	46.0	*763*
February	65.1	*888*	48.5	*777*
March	68.9	*953*	55.0	*817*
April	68.4	*1,002*	60.2	*853*
May	72.1	*1,030*	67.1	*880*
June	75.9	*1,034*	72.3	*895*
July	77.4	*1,027*	75.0	*893*
August	77.7	*1,025*	75.0	*891*
September	75.9	*1,016*	71.3	*886*
October	72.5	*986*	62.0	*850*
November	69.1	*939*	54.4	*804*
December	68.5	*901*	48.7	*771*
	Peak = 77.7	*1,034*	Average = 61.3	*840*
Source: Foster Wheeler Environmental, 1996, RE&C, 1997				

3.5.1.2 Source of Cooling Water

The main source of cooling water will be the St. Marks River. Its temperature range is described in Section 2.3.4.1. Minimum average cooling water quality characteristics to operate the heat dissipation system as proposed are estimated to be:

Silicon Dioxide	< 18 mg/l
Calcium	< 15 mg/l
Sulfate	< 12 mg/l
Iron	< 0.5 mg/l
Manganese	< 0.5 mg/l
Aluminum	< 0.125 mg/l
Sulfides	< 0.625 mg/l
Magnesium	< 54 mg/l
Total Dissolved Solids (TDS)	≤ 2500 mg/l
Source: RE&C, 1997	

3.5.1.3 Dilution System

There will be no dilution system associated with the heat dissipation system.

3.5.1.4 Blowdown, Screened Organisms, and Trash Disposal

The heat dissipation system will have no blowdown; it will be a zero discharge system. Wash water for the existing traveling water screens is supplied by screen-wash pumps which withdraw water from within the pump structure. The discharge from the screens is flushed into a collecting box where debris is retained for off-site disposal, and flush water is drained back to the source.

3.8 ON-SITE DRAINAGE SYSTEM

3.8.1 Environmental Regulations

On-site drainage is regulated by federal, state, and local regulations. Federal regulation is accomplished through general NPDES stormwater permits. As part of the operational general permit, the facility is required to update the plant Stormwater Pollution Prevention Plan (SWPPP) annually. Areas subject to construction activities are covered under a construction general permit, which calls for an erosion and sedimentation control plan to be implemented during construction.

State regulations are encoded in Chapter 62-25, F.A.C., rules of the FDEP. These rules generally require retention, or detention with filtration, of the first half-inch of runoff for projects such as this which affect less than 100 acres; or percolation of the runoff from a 3-year 1-hour storm. They also encourage the prevention of increasing flows or pollution loadings to existing stormwater management facilities.

Local regulations require the use of a 25-year 24-hour design storm, *retention of the first 3/4 inch of runoff,* and the implementation of an erosion and sedimentation control plan during construction.

The Northwest Florida Water Management District (NWFWMD) has not been delegated authority by FDEP for stormwater management.

3.8.2 Design Parameters

Existing site drainage has been described in Section 2.3.4-1. The six drainage areas that comprise the site are shown on Figure 3.8.2-1 . Areas I, II, and III are unaffected by industrial activity, and drain respectively to outfalls OSN 007, OSN 010, and OSN 008 as described in Section 2.3.4-1. Area IV runoff is also unaffected by industrial activity, and drains mainly as sheet flow to the intake and discharge canals, and to the St. Marks River. Areas V and VI are the secondary containments for oil storage tanks. Runoff from Area V is detained and released through valved pipes, if it meets water quality limits, to the St. Marks River. Runoff from Area VI is similarly released to Wetlands Number VI (see Figure 2.3.4-41). The areas which will be affected by the Project are I, II, III and IV for construction, and II and III during operation. Based on the regulatory parameters discussed in Subsection 3.8.1, the design storm is the 24-hour event with a 25-year return frequency. This storm is about 9 inches (see Section 2.3.7). The design detention/retention volume is the first *3/4* inch of runoff. Based on the Unit 8 footprint area of about 2.4 acres, this volume is about *6,525* cubic feet. Drawdown of the detained volume will be through the use of an outlet filter drain as shown in Appendix 10.6.4.

3.8.3 Construction Phase Stormwater Runoff

Construction runoff in Area I will be that associated with the installation of the new effluent pipeline, the relocation of the gas yard, and the upgrading of the gas line (if required) along the plant road. Construction runoff in Area II will be that associated with the installation of the new effluent pipeline, the upgrading of the gas line (if required), the relocation of the gas yard, and the installation of the new unit. Construction runoff in Area III will be that associated with the installation of the new unit. Construction runoff in Area IV will be that associated with

5.3 IMPACTS ON WATER SUPPLIES

5.3.1 Surface Water

The withdrawal of up to *1,139* gpm (*2.5* cubic feet per second (cfs)) of surface water from the St. Marks River represents *0.7* % of the 7 consecutive day low flow with a 10 year recurrence interval (7Q10). That 7Q10 was presented in Section 2.3.4.1 as 347 cfs (155,734 gpm). The impact of this withdrawal on river discharge and aquatic resources downstream of the Purdom Station will be insignificant.

The on-site drainage system (see Section 3.8) is designed to maintain existing stormwater runoff volumes at approximately the existing rate, while keeping peak runoff flows at or below existing levels. Therefore, no measurable changes to surface water flows in and out of on-site wetlands, or to off-site waterbodies, are expected.

5.3.2 Groundwater

Construction and operation of Purdom Unit 8 will have no adverse impacts to groundwater resources in the study area. During the last year, the Purdom Station utilized approximately 162,200 gallons per day (gpd) of groundwater for boiler makeup, service water, and small equipment auxiliary cooling. The water is withdrawn from the Upper Floridan aquifer system by two wells operating in tandem. To reduce groundwater impacts in the vicinity of their wellfield, the Purdom Station rotates the usage of wells 6 and 8 with wells 7 and 9 on a monthly basis. This groundwater withdrawal will be eliminated when Purdom Unit 8 is constructed. The existing Purdom Station wellfield will be retired from service and properly abandoned with operation of Purdom Unit 8. This reduction in groundwater use by the Purdom Station will have a positive impact on local groundwater resources and help to preserve the fresh groundwater resources which are available locally.

Although Purdom Unit 8 will be constructed in a recharge area for the Floridan aquifer system, the site is presently classified as industrial and the construction activities at the Purdom Station will not result in a significant increase in the paved acreage. A surface water recharge swale will be constructed to capture any additional site runoff and allow it to enter the ground as recharge and to prevent any significant new discharges to surface water bodies. Thus, there will not be a loss in aquifer recharge or a significant increase in surface water runoff due to construction of this new facility. The only waste storage facility will be a natural gas liquids storage tank (see Section 3.3). This tank will have impervious secondary containment to protect the groundwater (see Section 3.7).

The operation of Purdom Unit 8 will generate several waste streams as discussed in Sections 3.6 and 3.7. These wastes will include waste oil, steam generator blowdown, solvent parts cleaning waste, floor and laboratory drain waste, demineralizer regeneration waste, and solid waste such as dry filter cake from the zero discharge facility and air filters. Only the solid waste (dry filter cake) from the zero discharge wastewater treatment system is a new waste. All of the solid wastes will be temporarily stored on site in safe storage areas until they can be scheduled for pick-up and delivered off site to an approved disposal facility. Waste oil and solvent parts

TABLE 5.6.1-11
AMBIENT AIR QUALITY STANDARDS
AND PSD INCREMENTS

Pollutant	Averaging Time	Federal NAAQS ($\mu g/m^3$)	Florida FAAQS ($\mu g/m^3$)	Class I PSD Increment ($\mu g/m^3$)	Class II PSD Increment ($\mu g/m^3$)
Carbon Monoxide (CO)	1-hour [2]	40,000	40,000	N/A	N/A
	8-hour [2]	10,000	10,000	N/A	N/A
Nitrogen Dioxide (NO_2)	Annual	100	100	2.5	25
Sulfur Dioxide (SO_2)	3-hour [2]	1,300	1,300	25	512
	24-hour [2]	365	260	5	91
	Annual	80	60	2	20
Particulate Matter (PM_{10})	24-hour [3]	150	150	8	30
	Annual	50	50	4	17
Particulate Matter ($PM_{2.5}$) [5]	*24-hour* [4]	*65* [4]	*N/F*	*N/A*	*N/A*
	Annual	*15*	*N/F*	*N/A*	*N/A*
Ozone (O_3) [1]	1-hour [6]	235	235	N/A	N/A
	8-hour [6]	*157*	*N/F*	*N/A*	*N/A*
Lead (Pb)	Calendar Quarter	1.5	1.5	N/A	N/A

(1) Ozone values are associated with emissions of VOCs and NO_x.

(2) Short-term standards and increments (i.e., those with averaging times less than quarterly) can be exceeded once per year and still be in compliance.

(3) *NAAQS compliance based on 99th percentile 24-hour concentration.*

(4) *NAAQS compliance based on 98th percentile 24-hour concentration.*

(5) *NAAQS for particulated matter was changed on July 18, 1997 (62 FR 38652).*

(6) *NAAQS for ozone was changed from a 1-hour standard (.12 ppm = 235 $\mu g/m^3$) to an 8-hour standard (.08 ppm = 157 $\mu g/m^3$) on July 18, 1997 (62 FR 38856).*

N/A = No PSD increments exist for these pollutants.
N/F = No comparable Florida AAQS yet.
$\mu g/m^3$ = micrograms per cubic meter

Sources: 40 CFR 50; Rule 62-204.260, F.A.C.; Rule 62-204.240, F.A.C.

Exhibit DJF-4

TABLE 5.6.1-26
SUMMARY OF BRADWELL BAY NWA CLASS I PSD INCREMENT ANALYSIS

					Receptor Location[4]		Preliminary Maximum[1] Concentration by Year				
Pollutant	Avg Period	Max[1] Refined Conc ($\mu g/m^3$)	Class I PSD Increment[2] ($\mu g/m^3$)	Period (yymmddhh)	East (m)	North (m)	1985 ($\mu g/m^3$)	1986 ($\mu g/m^3$)	1987 ($\mu g/m^3$)	1988 ($\mu g/m^3$)	1989 ($\mu g/m^3$)
Sulfur Dioxide (SO_2)	3-hr	16.9	25	*87020521*	*738500*	3343500	8.2	15.6	16.2	11.1	10.7
Sulfur Dioxide (SO_2)	24-hr	4.9	5	86113024	*733100*	*3336400*	1.8	4.9	4.5	3.0	1.9
Sulfur Dioxide (SO_2)	Annual	<0.00001[3]	2	NA	NA	NA	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Particulate Matter (PM_{10})	24-hr	0.0023	8	85080224	*735500*	*3346200*	0.0023	0.0019	0.0013	0.0020	0.00039
Particulate Matter (PM_{10})	Annual	0.16	4	87	741500	3341100	0.030	0.10	0.15	0.12	0.066
Nitrogen Dioxide (NO_2)	Annual	0.57	2.5	87	741500	*3341500*	0.16	0.37	0.54	0.45	0.25

(1) Short-term values are highest second high values for this analysis.
(2) Rule 62-204.260, F.A.C.
(3) Maximum impact zero or negative due to increment expanding sources.
(4) Unit 8 stack location 769,611 m East, 3,339,767 m North.

Source: Foster Wheeler Environmental, 1997

Exhibit DJF-6

TABLE 5.6.1-27
SUMMARY OF FAAQS ANALYSIS

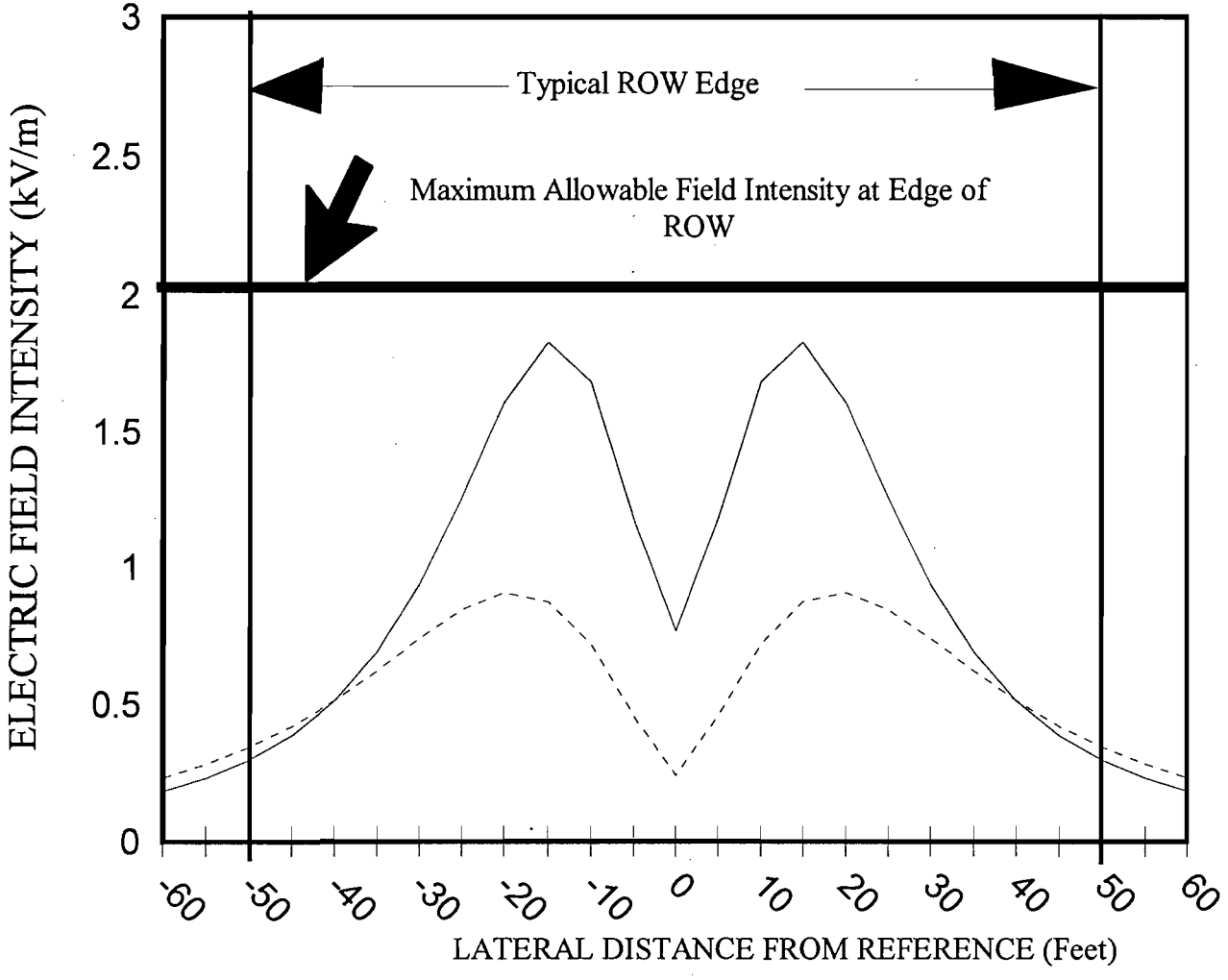
Pollutant	Avg Period	Max[1] Refined Conc ($\mu g/m^3$)	Background ($\mu g/m^3$)	Max[1] Modelled + Background ($\mu g/m^3$)	FAAQS[2] ($\mu g/m^3$)	Period (yymmddhh)	Receptor Location[3] East (m)	Receptor Location[3] North (m)	Preliminary Maximum[1] Concentration by Year 1985 ($\mu g/m^3$)	1986 ($\mu g/m^3$)	1987 ($\mu g/m^3$)	1988 ($\mu g/m^3$)	1989 ($\mu g/m^3$)
Sulfur Dioxide (SO_2)	3-hr	402.1	183	585	1300	86031203	767338	*3342831*	296.6	306.9	289.3	304.9	253.6
Sulfur Dioxide (SO_2)	24-hr	137.2	71	208	260	86051824	767438	3342731	88.9	98.2	94.9	96.0	92.6
Sulfur Dioxide (SO_2)	Annual	25.7	9	35	60	87	768943	3339624	11.6	15.1	21.0	19.4	14.9
Particulate Matter (PM_{10})	24-hr	83.8	47	131	150	89061024	767881	3342365	40.0	40.1	42.0	49.7	51.4
Particulate Matter (PM_{10})	Annual	19.1	22.4	42	50	87	767611	*3341995*	5.6	5.5	6.6	5.6	6.5
Nitrogen Dioxide (NO_2)	Annual	21.4	14	35	100	87	767511	3341895	5.1	7.4	10.4	9.1	6.8
Carbon Monoxide (CO)	1 hr	103.1	8050	8153	40000	85090112	769362	3339793	103.1	28.2	28.1	27.0	28.7
Carbon Monoxide (CO)	8-hr	*16.6*	5290	*5307*	10000	86072916	767460	3342348	8.3	13.3	10.1	11.6	8.7
Lead (Pb)	24-hr	0.011	0.03	0.04	1.5	87062724	769610	3338267	0.0064	0.010	0.011	0.011	0.0084

(1) Short-term values are highest second high values for this analysis.
(2) Rule 62-204.240, F.A.C.
(3) Unit 8 stack location 769,611 m East, 3,339,767 m North.

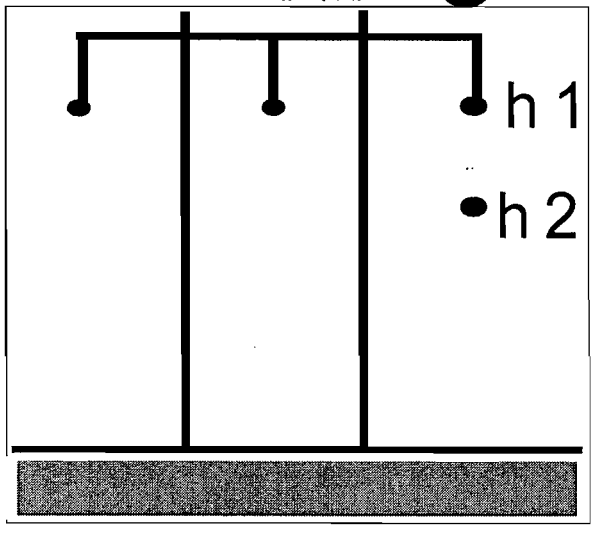
Source: Foster Wheeler Environmental, 1997

Exhibit REM-5

11/97
Rev. 2



6.2-5



h1 = 41 feet
h2 = 29 feet (477 ACSR)
19 feet (4/0 Copper)

—4/0 - Existing
- - 477 ACSR - Future

NOTE: Modeled worst case values. Actual values are likely to be lower.
0 -- Center of Structure
SOURCE: CITY OF TALLAHASSEE, 1997

h1 -- height of conductor attachment to structure
h2 -- minimum conductor height

CITY OF TALLAHASSEE

Lines 1A and 2A
H - Frame Structures
Electric Fields
PURDOM UNIT 8 PROJECT - St. MARKS, FLORIDA

Figure 6.2.4-2

VOLUME 2

TABLE 3-1
AMBIENT AIR QUALITY STANDARDS
AND PSD INCREMENTS

Pollutant	Averaging Time	Federal NAAQS ($\mu g/m^3$)	Florida FAAQS ($\mu g/m^3$)	Class I PSD Increment ($\mu g/m^3$)	Class II PSD Increment ($\mu g/m^3$)
Carbon Monoxide (CO)	1-hour [2]	40,000	40,000	N/A	N/A
	8-hour [2]	10,000	10,000	N/A	N/A
Nitrogen Dioxide (NO_2)	Annual	100	100	2.5	25
Sulfur Dioxide (SO_2)	3-hour [2]	1,300	1,300	25	512
	24-hour [2]	365	260	5	91
	Annual	80	60	2	20
Particulate Matter (PM_{10})	24-hour [3]	150	150	8	30
	Annual	50	50	4	17
Particulate Matter ($PM_{2.5}$) [5]	*24-hour* [4]	*65* [4]	*N/F*	*N/A*	*N/A*
	Annual	*15*	*N/F*	*N/A*	*N/A*
Ozone (O_3) [1]	1-hour [6]	235	235	N/A	N/A
	8-hour[6]	*157*	*N/F*	*N/A*	*N/A*
Lead (Pb)	Calendar Quarter	1.5	1.5	N/A	N/A

(1) Ozone values are associated with emissions of VOCs and NO_x.

(2) Short-term standards and increments (i.e., those with averaging times less than quarterly) can be exceeded once per year and still be in compliance.

(3) *NAAQS compliance based on 99th percentile 24-hour concentration.*

(4) *NAAQS compliance based on 98th percentile 24-hour concentration.*

(5) *NAAQS for particulated matter was changed on July 18, 1997 (62 FR 38652).*

(6) *NAAQS for ozone was changed from a 1-hour standard (.12 ppm = 235 $\mu g/m^3$) to an 8-hour standard (.08 ppm = 157 $\mu g/m^3$) on July 18, 1997 (62 FR 38856).*

N/A = No PSD increments exist for these pollutants.
N/F = No comparable Florida AAQS yet.
$\mu g/m^3$ = micrograms per cubic meter

Sources: 40 CFR 50; Rule 62-204.260, F.A.C.; Rule 62-204.240, F.A.C.

TABLE 7-8
SUMMARY OF BRADWELL BAY NWA CLASS I PSD INCREMENT ANALYSIS

					Receptor Location[4]		Preliminary Maximum[1] Concentration by Year				
Pollutant	Avg Period	Max[1] Refined Conc ($\mu g/m^3$)	Class I PSD Increment[2] ($\mu g/m^3$)	Period (yymmddhh)	East (m)	North (m)	1985 ($\mu g/m^3$)	1986 ($\mu g/m^3$)	1987 ($\mu g/m^3$)	1988 ($\mu g/m^3$)	1989 ($\mu g/m^3$)
Sulfur Dioxide (SO_2)	3-hr	16.9	25	*87020521*	*738500*	3343500	8.2	15.6	16.2	11.1	10.7
Sulfur Dioxide (SO_2)	24-hr	4.9	5	86113024	*733100*	*3336400*	1.8	4.9	4.5	3.0	1.9
Sulfur Dioxide (SO_2)	Annual	<0.00001[3]	2	NA	NA	NA	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Particulate Matter (PM_{10})	24-hr	0.0023	8	85080224	*735500*	*3346200*	0.0023	0.0019	0.0013	0.0020	0.00039
Particulate Matter (PM_{10})	Annual	0.16	4	87	741500	3341100	0.030	0.10	0.15	0.12	0.066
Nitrogen Dioxide (NO_2)	Annual	0.57	2.5	87	741500	*3341500*	0.16	0.37	0.54	0.45	0.25

(1) Short-term values are highest second high values for this analysis.
(2) Rule 62-204.260, F.A.C.
(3) Maximum impact zero or negative due to increment expanding sources.
(4) Unit 8 stack location 769,611 m East, 3,339,767 m North.

Source: Foster Wheeler Environmental, 1997

TABLE 7-10
SUMMARY OF FAAQS ANALYSIS

Pollutant	Avg Period	Max[1] Refined Conc ($\mu g/m^3$)	Background ($\mu g/m^3$)	Max[1] Modelled + Background ($\mu g/m^3$)	FAAQS[2] ($\mu g/m^3$)	Period (yymmddhh)	Receptor Location[3] East (m)	Receptor Location[3] North (m)	Preliminary Maximum[1] Concentration by Year 1985 ($\mu g/m^3$)	1986 ($\mu g/m^3$)	1987 ($\mu g/m^3$)	1988 ($\mu g/m^3$)	1989 ($\mu g/m^3$)
Sulfur Dioxide (SO_2)	3-hr	402.1	183	585	1300	86031203	767338	*3342831*	296.6	306.9	289.3	304.9	253.6
Sulfur Dioxide (SO_2)	24-hr	137.2	71	208	260	86051824	767438	3342731	88.9	98.2	94.9	96.0	92.6
Sulfur Dioxide (SO_2)	Annual	25.7	9	35	60	87	768943	3339624	11.6	15.1	21.0	19.4	14.9
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Particulate Matter (PM_{10})	Annual	19.1	22.4	42	50	87	767611	*3341995*	5.6	5.5	6.6	5.6	6.5
Nitrogen Dioxide (NO_2)	Annual	21.4	14	35	100	87	767511	3341895	5.1	7.4	10.4	9.1	6.8
Carbon Monoxide (CO)	1 hr	103.1	*8050*	*8153*	40000	85090112	769362	3339793	103.1	28.2	28.1	27.0	28.7
Carbon Monoxide (CO)	8-hr	*16.6*	5290	*5307*	10000	86072916	767460	3342348	8.3	13.3	10.1	11.6	8.7
Lead (Pb)	24-hr	0.011	0.03	0.04	1.5	87062724	769610	3338267	0.0064	0.010	0.011	0.011	0.0084

(1) Short-term values are highest second high values for this analysis.
(2) Rule 62-204.240, F.A.C.
(3) Unit 8 stack location 769,611 m East, 3,339,767 m North.

Source: Foster Wheeler Environmental, 1997