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January 14, 1999

CERTIFIED: Z 427 642 149

RECEIVED RECEIPT

JAN 19 1999

**BUREAU OF
AIR REGULATION**

Mr. Syed Arif, P.E.
Air Quality Engineer
New Source Review Section
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: Comments and Revisions to Draft Construction Permits for Central District WWTP-
Diesel Engines (Permit No. PSD-FL-240)
Gas Engines (Permit No. 0250476-002-AC)

Dear Mr. Arif:

The Miami-Dade Water and Sewer Department has received a copy of the above referenced draft construction permit and technical evaluation issued by the Florida Department of Environmental Protection. In light of recent emissions test results for the Superior (gas) engines, we would like to request modifications to the draft permit before proceeding with public notice.

Emissions results for tests performed on the gas engines in April 1998 (following submittal of the PSD permit application) show that they may have trouble meeting the emission limits proposed. To address this problem, we request the following changes to the construction permit application:

- Increase emissions of NO_x from the Superior (gas) engines from 5.29 pounds per hour (lb/hr) to 7.60 lb/hr. The revised emissions limit corresponds to 3.83 g/s NO_x, or approximately 1.96 g/bhp-hr (150 parts per million NO_x dry basis). Annual emissions for continuous operation would increase from 92.6 tons NO_x to 133.2 tons Nox.
- Decrease annual emissions of NO_x from the EMD (diesel) engines from 375 tons to 267 tons. Annual fuel consumption would be reduced from 2,525,000 gallons to 1,800,000 gallons.

An emissions increase is requested for the gas engines to more closely reflect emissions typically observed from natural gas clean-burn engines. An emissions reduction is requested for the diesel engines in order to maintain PSD increment consumption levels below 25 micrograms per cubic meter (µg/m³). No other changes to the permit application are requested. Revised emissions calculations for the diesel engines are provided in Attachment A.

Mr. Syed Arif, P.E., January 14, 1999

Comments and Revisions to Draft Construction Permits for Central District WWTP

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Revised FDEP permit application form pages are provided in Attachment B. Since these changes constitute a net emissions decrease from the previously submitted construction permit application, no Class I air quality analysis, toxics analysis, or visibility analysis will be performed. However, a revised Class II air quality analysis has been performed to show that the allowable NO₂ PSD increment and national ambient air quality standard are not being violated near the plant. A Class II air quality modeling input file (year 1987) and output summaries for all 5 years (1987-1991) is included in Attachment C.

A marked-up version of the draft permit is provided in Attachment D for your reference. Our comments on the draft permit, including the modifications requested above, are as follows:

1. The facility description should be revised to read, "... presently consists of three nominal 2.5 megawatt (MW) diesel engine-driven generators, designated as Units 13, 14, and 15; four nominal 1.2 MW digester gas engine-driven generators, designated as Units 7, 9, 10, and 11; and one wastewater treatment plant, designated as Unit 8. This permit is to increase hours of operation for the seven generators..."
2. The maximum allowable NO_x emission rate stated in condition B.1 should be revised according to requested changes. NO_x emissions from Units 13, 14, and 15 should not exceed 58 lb/hr each and 267 tons per year combined.
3. The combined heat input rate of the three diesel engines is acceptable as stated in condition B.6. However, the rate should not be included as an operational limitation in a subsequent Title V operating permit because it describes the maximum physical heat input capacity of the units.
4. The maximum allowable fuel consumption stated in condition B.7 should be revised according to requested changes. #2 fuel oil consumption by Units 13, 14, and 15 should not exceed 1,800,000 gallons per year.
5. Condition B.9 should be modified to allow the facility to demonstrate compliance with SO₂ BACT by maintaining records from the fuel supplier that indicate diesel fuel sulfur content (e.g., fuel certifications, invoices, or bills of lading).
6. The maximum allowable NO_x emission rate stated in condition C.1 should be revised according to requested changes. NO_x emissions from Units 7, 9, 10, and 11 should not exceed 7.6 lb/hr each and 133 tons per year combined.

Mr. Syed Arif, P.E., January 14, 1999

Comments and Revisions to Draft Construction Permits for Central District WWTP

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7. The combined gas consumption volume of the four gas engines is acceptable as stated in condition C.5. However, this volume should not be included as an operational limitation in a subsequent Title V operating permit because it describes the maximum physical heat input capacity of the units.
8. Monitoring of gas consumption by the gas engines is unnecessary and should be deleted from condition C.6 of this permit because the engines will be permitted for continuous operation at full capacity.

We request that you issue a revised draft permit and technical evaluation. If you have any questions regarding the requested modification, please call Ms. Bertha M. Goldenberg, P.E. at (305) 669-5711 or Mr. David Lindberg, P.E. at (619) 687-0110.

Sincerely,



Robert C. Ready, P.E.
Assistant Director of Treatment Facilities

RCR/BMG/rmo

Attachments

cc: Isidore Goldman, FDEP Southeast District
Patrick Wong, Miami-Dade County DERM
David Lindberg, CH2M HILL

cc: C. Holladay, BAR
EPA
NPS

ATTACHMENT A
Revised Diesel Engine Emissions Calculations
Draft Permit No. PSD-FL-240
Central District Wastewater Treatment Plant

**NOx Emissions Calculations
Central District Wastewater Treatment Plant**

<u>Source</u>	<u>NOx Emissions</u>			<u>Emission Factors</u>		
	<u>tons/yr</u>	<u>Permit</u>	<u>lb/hr</u>	<u>lb/bhp-hr</u>	<u>g/bhp-hr</u>	<u>lb/MMBTU</u>
<i>Current Emissions Inventory</i>						
16GTLB Superior Engines	248.9	AO13-244408	18.3	0.0104	4.72	
Worthington SDR Blower (1996 &1997)	1.8	AO13-177237	23.0	0.0242	10.99	
Worthington CC Blowers (1996 &1997)	44.0	AO13-177237	12.6	0.0308	13.98	
Flares	15.3					
Subtotal	310.0	PSD Major Source				
PSD Major Source Threshold	250.0					
<i>Emissions Increase/Decrease</i>						
16GTLB Superior Engines	-115.7		7.6			
Worthington SDR Blower	-1.8	forfeit				
Worthington CC Blowers (2)	-44.0	forfeit				
Flares	0.0					
Standby Generators (20E4)	267.5		58.2	0.0162	7.34	2.15
Total Emissions Increase	105.9	Significant Net Emissions Increase				
Significant Net Emissions Increase	40.0					

Proposed Emissions

<u>Source</u>	<u>NOx Emissions</u> <u>tons/yr</u>	<u>Monitoring</u> <u>Frequency</u>	<u>Restrictions</u>
16GTLB Superior Engines	133.2	na	none
Worthington CC Blowers (2)	0.0	na	removed June 1998
Flares	15.3	na	none
Standby Generators (20E4)	267.5	<i>BACTed</i> daily	1,800,000 gallons 0.05 w
Central District WWTP	415.9		
PSD Major Source	250.0		

EMD Model 20-645E4
 Central District Wastewater Treatment Plant (3)
 Miami-Dade Water and Sewer Department

bhp	% load	36 API Fuel Consumption-			NOx Emissions (uncontrolled)				NOx Emissions (controlled) ¹			
		lb/bhp-hr	lb/hr	MMBTU/hr	g/hr	lb/hr	lb/MMBTU	g/bhp-hr	g/hr	lb/hr	lb/MMBTU	g/bhp-hr
3958	110%	0.383	1516	29.7	40,052	88.2	2.97	10.12	28,837	63.5	2.14	7.29
3603	100%	0.383	1380	27.1	36,716	80.9	2.99	10.19	26,436	58.2	2.15	7.34
2705	75%	0.392	1060	20.8	23,589	52.0	2.50	8.72	16,984	37.4	1.80	6.28
1801	50%	0.425	765	15.0	18,366	40.5	2.69	10.20	13,224	29.1	1.94	7.34
891	25%	0.515	459	9.0	9,381	20.7	2.30	10.53	6,754	14.9	1.65	7.58
36 deg API		7.043 lb/gal 19620 BTU/lb (HHV)										

¹ NOx emissions reduction through combustion modifications (timing adjustment and turbocharger aftercoolers): 28%



EMD Model 20-645E4

Fuel Use and NOx Emissions Calculations

Central District Wastewater Treatment Plant (3)

Engine Load	Fuel Consumption (lb/hr)	(gal/hr)	(MMBTU/hr)
110 % load (3958 bhp)	0.383 lb fuel/bhp-hr * 3958 bhp = 1,516 lb/hr	1,516 lb/hr * gal 36-deg API/7.043 lb = 215.2 gal/hr	1,516 lb/hr * 0.0196 MMBTU/lb = 29.7 MMBTU/hr
100 % load (3603 bhp)	0.383 lb fuel/bhp-hr * 3603 bhp = 1,380 lb/hr	1,380 lb/hr * gal 36-deg API/7.043 lb = 195.9 gal/hr	1,380 lb/hr * 0.0196 MMBTU/lb = 27.1 MMBTU/hr
75 % load (2705 bhp)	0.392 lb fuel/bhp-hr * 2705 bhp = 1,060 lb/hr	1,060 lb/hr * gal 36-deg API/7.043 lb = 150.6 gal/hr	1,060 lb/hr * 0.0196 MMBTU/lb = 20.8 MMBTU/hr
50 % load (1801 bhp)	0.425 lb fuel/bhp-hr * 1801 bhp = 765 lb/hr	765 lb/hr * gal 36-deg API/7.043 lb = 108.7 gal/hr	765 lb/hr * 0.0196 MMBTU/lb = 15.0 MMBTU/hr
25 % load (891 bhp)	0.515 lb fuel/bhp-hr * 891 bhp = 459 lb/hr	459 lb/hr * gal 36-deg API/7.043 lb = 65.2 gal/hr	459 lb/hr * 0.0196 MMBTU/lb = 9.0 MMBTU/hr

Engine Load	NOx Emissions - Uncontrolled (lb/MMBTU)	NOx Emissions - Controlled (lb/MMBTU)
110 % load (3958 bhp)	10.12 g/bhp-hr * 3958 bhp * lb/454g * hr/29.7 MMBTU = 2.97 lb/MMBTU	7.29 g/bhp-hr * 3958 bhp * lb/454g * hr/29.7 MMBTU = 2.14
100 % load (3603 bhp)	10.19 g/bhp-hr * 3603 bhp * lb/454g * hr/27.1 MMBTU = 2.99 lb/MMBTU	7.34 g/bhp-hr * 3603 bhp * lb/454g * hr/27.1 MMBTU = 2.15
75 % load (2705 bhp)	8.72 g/bhp-hr * 2705 bhp * lb/454g * hr/20.8 MMBTU = 2.50 lb/MMBTU	6.28 g/bhp-hr * 2705 bhp * lb/454g * hr/20.8 MMBTU = 1.80
50 % load (1801 bhp)	10.20 g/bhp-hr * 1801 bhp * lb/454g * hr/15.0 MMBTU = 2.69 lb/MMBTU	7.34 g/bhp-hr * 1801 bhp * lb/454g * hr/15.0 MMBTU = 1.94
25 % load (891 bhp)	10.53 g/bhp-hr * 891 bhp * lb/454g * hr/9.0 MMBTU = 2.30 lb/MMBTU	7.58 g/bhp-hr * 891 bhp * lb/454g * hr/9.0 MMBTU = 1.65 lb

Engine Load	NOx Emissions Equivalent Hours of Operation
110 % load (3958 bhp)	1800000 gal/yr * 7.043 lb/gal * 0.0196 MMBTU/lb * hr/29.7 MMBTU = 8,363 hrs/yr
100 % load (3603 bhp)	1800000 gal/yr * 7.043 lb/gal * 0.0196 MMBTU/lb * hr/27.1 MMBTU = 9,187 hrs/yr
75 % load (2705 bhp)	1800000 gal/yr * 7.043 lb/gal * 0.0196 MMBTU/lb * hr/20.8 MMBTU = 11,956 hrs/yr
50 % load (1801 bhp)	1800000 gal/yr * 7.043 lb/gal * 0.0196 MMBTU/lb * hr/15.0 MMBTU = 16,563 hrs/yr
25 % load (891 bhp)	1712000 gal/yr * 7.043 lb/gal * 0.0196 MMBTU/lb * hr/9.0 MMBTU = 26,277 hrs/yr - 3 engines @ 25% load operating continuous.

(tons/yr)
 @ 2.15 lb/MMBTU
 Annual Fuel Consumption 2.15 lb NOx/MMBTU * 0.0196 MMBTU/lb fuel * 7.043 lb/gal * 1,800,000 gal/yr = 267.5 tons NOx/yr
 1,800,000 gallons

EMD Model 20-645E4

Emissions Calculations - All Pollutants - Based on information provided by EMD
Central District Wastewater Treatment Plant (3)

CO		
100 % load (3,603 bhp)	4.05 lb CO/hr	tons CO/yr = gal/yr * lb fuel/gal * MMBTU/lb fuel * lb CO/hr * hr/MMBTU * ton/2000 lb tons CO/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 4.05lb CO/hr * hr/27.07MMBTU * ton/2000 lb = 18.6 tons CO/yr
75 % load (2,705 bhp)	2.50 lb CO/hr	tons CO/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 2.50lb CO/hr * hr/20.80MMBTU * ton/2000 lb = 15.0 tons CO/yr
50 % load (1,801 bhp)	2.34 lb CO/hr	tons CO/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 2.34lb CO/hr * hr/15.02MMBTU * ton/2000 lb = 19.4 tons CO/yr
25 % load (891 bhp)	2.85 lb CO/hr	tons CO/yr = 1712000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 2.85lb CO/hr * hr/9.00MMBTU * ton/2000 lb = 37.4 tons CO/yr
NOx (controlled)		
100 % load (3,603 bhp)	2.15 lb NOx/MMBTU	tons NOx/yr = gal/yr * lb fuel/gal * MMBTU/lb fuel * lb NOx/MMBTU * ton/2000 lb tons NOx/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 2.15lb NOx/MMBTU * ton/2000 lb = 267 tons NOx/yr
75 % load (2,705 bhp)	1.80 lb NOx/MMBTU	tons NOx/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 1.80lb NOx/MMBTU * ton/2000 lb = 224 tons NOx/yr
50 % load (1,801 bhp)	1.94 lb NOx/MMBTU	tons NOx/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 1.94lb NOx/MMBTU * ton/2000 lb = 241 tons NOx/yr
25 % load (891 bhp)	1.65 lb NOx/MMBTU	tons NOx/yr = 1712000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 1.65lb NOx/MMBTU * ton/2000 lb = 195 tons NOx/yr
SO2 (0.05 weight % fuel sulfur content)		
100 % load (3,603 bhp)	0.05 weight % S	tons SO2/yr = gal/yr * lb fuel/gal * 0.0005 lb S/lb fuel * 2 lb SO2/lb S * ton/2000 lb tons SO2/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.0005 lb S/lb fuel * 2 lb SO2/lb S * ton/2000 lb = 6.3 tons SO2/yr
75 % load (2,705 bhp)	0.05 weight % S	tons SO2/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.0005 lb S/lb fuel * 2 lb SO2/lb S * ton/2000 lb = 6.3 tons SO2/yr
50 % load (1,801 bhp)	0.05 weight % S	tons SO2/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.0005 lb S/lb fuel * 2 lb SO2/lb S * ton/2000 lb = 6.3 tons SO2/yr
25 % load (891 bhp)	0.05 weight % S	tons SO2/yr = 1712000 gal/yr * 7.043lb fuel/gal * 0.0005 lb S/lb fuel * 2 lb SO2/lb S * ton/2000 lb = 6.0 tons SO2/yr
PM-10 (controlled)		
100 % load (3,603 bhp)	0.057 lb PM-10/MMBTU	tons PM-10/yr = gal/yr * lb fuel/gal * MMBTU/lb fuel * lb PM-10/MMBTU * ton/2000 lb tons PM-10/yr = 1800000 gal/yr * 7.043 lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.057 lb PM-10/MMBTU * ton/2000 lb = 7.1 tons PM-10/yr
75 % load (2,705 bhp)	0.057 lb PM-10/MMBTU	tons PM-10/yr = 1800000 gal/yr * 7.043 lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.057 lb PM-10/MMBTU * ton/2000 lb = 7.1 tons PM-10/yr
50 % load (1,801 bhp)	0.057 lb PM-10/MMBTU	tons PM-10/yr = 1800000 gal/yr * 7.043 lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.057 lb PM-10/MMBTU * ton/2000 lb = 7.1 tons PM-10/yr
25 % load (891 bhp)	0.057 lb PM-10/MMBTU	tons PM-10/yr = 1712000 gal/yr * 7.043 lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.057 lb PM-10/MMBTU * ton/2000 lb = 6.8 tons PM-10/yr
NMHC		
100 % load (3,603 bhp)	0.08 lb NMHC/MMBTU	tons NMHC/yr = gal/yr * lb fuel/gal * MMBTU/lb fuel * lb NMHC/MMBTU * ton/2000 lb tons NMHC/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.080 lb NMHC/MMBTU * ton/2000 lb = 9.9 tons NMHC/yr
75 % load (2,705 bhp)	0.08 lb NMHC/MMBTU	tons NMHC/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.080 lb NMHC/MMBTU * ton/2000 lb = 9.9 tons NMHC/yr
50 % load (1,801 bhp)	0.08 lb NMHC/MMBTU	tons NMHC/yr = 1800000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.080 lb NMHC/MMBTU * ton/2000 lb = 9.9 tons NMHC/yr
25 % load (891 bhp)	0.08 lb NMHC/MMBTU	tons NMHC/yr = 1712000 gal/yr * 7.043lb fuel/gal * 0.01962 MMBTU/lb fuel * 0.080 lb NMHC/MMBTU * ton/2000 lb = 9.5 tons NMHC/yr

ATTACHMENT B
FDEP Permit Application Form 62-210.900 (revised pages only)
Draft Permit No. PSD-FL-240
Draft Permit No. 0250476-002-AC
Central District Wastewater Treatment Plant

**Department of
Environmental Protection**

DIVISION OF AIR RESOURCES MANAGEMENT

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Identification of Facility Addressed in This Application

1. Facility Owner/Company Name : Miami-Dade Water & Sewer Department	
2. Site Name : Central District Wastewater Treatment Pl	
3. Facility Identification Number : 130476	<input type="checkbox"/> Unknown
4. Facility Location : Central District WWTP Street Address or Other Locator : Virginia Key City : Miami County : Dade Zip Code : 33146-	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

I. Part 1 - 1

**D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

Emissions Unit Information Section 1
3 Standby Generator Sets (20E4)

Rule Applicability Analysis

The Miami-Dade WASD is requesting an emissions increase of ²⁶⁷~~375~~ tons NOx per year from this emissions unit. This emissions unit constitutes a major source, in of itself. Therefore, PSD new source review applies to this emissions unit (Chapter 62-212.400, FAC)

III. Part 6a - 1

DEP Form No. 62-210.900(1) - Form
Effective : 3-21-96

**D. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)**

Emissions Unit Information Section 4
4 Superior 16GTLB Cogeneration Engines

Rule Applicability Analysis

The Miami-Dade WASD is requesting a modification to the construction permit for this source. A large discrepancy exists between current permitted emissions and emissions typically observed from this type of engine (and recommended by the manufacturer). ~~Improved maintenance procedures being implemented by the plant will most likely reduce emissions below requested levels (past actual emissions have varied significantly).~~ This project will result in a decrease in emissions of ~~unquantifiable extent~~. Therefore, general preconstruction review applies to this emissions unit (Chapter 62-212.300, FAC).

115.8 tons per year NO_x.

III. Part 6a - 4

DEP Form No. 62-210.900(1) - Form
Effective : 3-21-96

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 1

3 Standby Generator Sets (20E4)

Pollutant Potential/Estimated Emissions : Pollutant 1

1. Pollutant Emitted : NOX		
2. Total Percent Efficiency of Control :	28.00	%
3. Potential Emissions :	58.20	lb/hour 375.00 267.4 tons/year
4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5. Range of Estimated Fugitive/Other Emissions: <p align="right">to tons/year</p>		
6. Emissions Factor :	10.19 g/bhp-hr	
Reference :	Manufacturers Data	
7. Emissions Method Code : 5		
8. Calculations of Emissions :		
$\text{lb/hr} = (10.19 \text{ g/bhp-hr})(0.72 \text{ NOx reduction})(3,600 \text{ hp})(\text{lb}/454 \text{ g}) = 58.2 \text{ lb/hr}$ $\text{tons/year} = (10.19 \text{ g/bhp-hr})(0.72)(46,410,000 \text{ bhp-hr/year})(\text{lb}/454 \text{ g})(\text{ton}/2,000 \text{ lb}) = 375 \text{ tons/year}$ $(2.15 \text{ lb/MMBtu})(0.0196 \text{ MMBtu/lb fuel})(7.043 \text{ lb/gal})(1.8 \text{ MMgal})(\text{ton}/2,000 \text{ lb}) = 267.4$		
9. Pollutant Potential/Estimated Emissions Comment :		
<p>BACT = engine timing adjustment (fuel injection timing retardation) + combustion air precooling = 28% NOx reduction</p>		

III. Part 9b - 1

F. SEGMENT (PROCESS/FUEL) INFORMATION

Emissions Unit Information Section 1

3 Standby Generator Sets (20E4)

Segment Description and Rate : Segment 1

1. Segment Description (Process/Fuel Type and Associated Operating Method/Mode) :	
Diesel fueled internal combustion engines (emissions related to thousand gallons burned or horsepower-hours run)	
2. Source Classification Code (SCC) : 2-02-004-01	
3. SCC Units : Thousand Gallons Burned (all liquid fuels)	
4. Maximum Hourly Rate : 0.18	5. Maximum Annual Rate : 2,486.00 1,800.00
6. Estimated Annual Activity Factor :	
7. Maximum Percent Sulfur : 0.05	8. Maximum Percent Ash :
9. Million Btu per SCC Unit : 132	
10. Segment Comment :	
Maximum hourly and annual fuel rates are based on a brake-specific fuel consumption (BSFC) rate of 0.375 lb/bhp-hr at full load and total power output of 46,410,000 bhp-hr (32,230,000 kW-hr).	

H. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units Only - Emissions Limited Pollutants Only)

Emissions Unit Information Section 4
 4 Superior 16GTLB Cogeneration Engines

Pollutant Potential/Estimated Emissions : Pollutant 1

1. Pollutant Emitted : NOX	
2. Total Percent Efficiency of Control :	%
3. Potential Emissions :	5.29 7.60 lb/hour 92.60 133.2 tons/year
4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive/Other Emissions: <div style="text-align: right;">to tons/year</div>	
6. Emissions Factor : 1.96 g/bhp-hr (approx. 150 ppmvd @ 15% O ₂ , 70% fuel CH ₄) Reference : Cooper-Superior	
7. Emissions Method Code : 5	
8. Calculations of Emissions : $\text{lb/hr} = \frac{(1.96 \text{ g/bhp/hr})(1760 \text{ bhp})}{454 \text{ g/lb}} = 7.60 \text{ lb/hr NOx}$ $\text{tons/yr (each)} = (7.60 \text{ lb/hr})(8760 \text{ hrs/yr})(\text{ton}/2000 \text{ lb}) = 33.3 \text{ tons/yr NOx}$ $\text{tons/yr (total)} = (33.3 \text{ tons/yr})(4 \text{ units}) = 133.1 \text{ tons/yr NOx}$	
9. Pollutant Potential/Estimated Emissions Comment : Emission factor provided for combustion of digester gas fuel.	

Emissions Unit Information Section 1
3 Standby Generator Sets (20E4)

Pollutant Information Section 1

Allowable Emissions 1

1. Basis for Allowable Emissions Code :	AMBIENT
2. Future Effective Date of Allowable Emissions :	
3. Requested Allowable Emissions and Units :	375.00 267.4 tons/yr
4. Equivalent Allowable Emissions :	58.20 lb/hour 375.00 267.4 tons/year
5. Method of Compliance :	Annual stack testing using EPA Method 7 or equivalent
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) :	PSD increment consumption at highest receptor is ^{24.} 23.8 µg/cu.m. Hourly monitoring of engine operating parameters, daily monitoring of power output fuel consumption.

III. Part 9c - 1

Emissions Unit Information Section 4
4 Superior 16GTLB Cogeneration Engines

Pollutant Information Section 1

Allowable Emissions 1

1. Basis for Allowable Emissions Code :	AMBIENT
2. Future Effective Date of Allowable Emissions :	
3. Requested Allowable Emissions and Units :	2.00 gAWhr
4. Equivalent Allowable Emissions :	5.29 7.60 lb/hour 92.66 133.2 tons/year
5. Method of Compliance :	Daily monitoring and annual testing by EPA Method 7 or 7E
6. Pollutant Allowable Emissions Comment (Desc. of Related Operating Method/Mode) :	Daily monitoring of power output and engine operating parameters.

III. Part 9c - 2

ATTACHMENT C
Class II Area Air Quality Impact Analysis - NO₂
Summary Tables of Corrected ISCST3 Results for PSD Increment Consumption and Ambient
Concentration
ISCST3 version 98356 Input File (for year 1987)
ISCST3 Output Summaries (1987 - 1991)

Summary of Maximum Predicted PSD Increment Consumption - NO₂
Run 7: Horizontal Superior Exhaust
Central District WWTP
Miami-Dade Water and Sewer Department

	Maximum Predicted Offsite Concentration (µg/m ³)				
	1987	1988	1989	1990	1991
Maximum Predicted Impact	24.46	24.88	24.12	23.16	22.10
PSD Increment	25.00	25.00	25.00	25.00	25.00
Location	(174 m, 216 deg.)	(447 m, 146 deg.)	(150 m, 317 deg.)	(150 m, 317 deg.)	(150 m, 317 deg.)

Q_s = 7.706 g/s NO_x standby generators
Q_s = 3.834 g/s NO_x superior engines - horizontal exhaust
Concentration NO₂ = 0.75*Concentration NO_x

* PM10 emissions do not exceed PSD significant emission rates.

Summary of Maximum Predicted Ambient NO₂ Concentrations - Annual Average
ISC Run 7: Horizontal Superior Exhaust, No Blowers
Central District WWTP
Miami-Dade Water and Sewer Department

Maximum Predicted Impact 1996 Background - Virginia Key Maximum Predicted Concentration NAAQS Location	Maximum Predicted Offsite Concentration (µg/m ³)				
	1987	1988	1989	1990	1991
	26.51	27.04	25.99	25.32	24.55
	12.00	12.00	12.00	12.00	12.00
	38.51	39.04	37.99	37.32	36.55
	100.00 (174 m, 216 deg)	100.00 (447 m, 146 deg)	100.00 (150 m, 317 deg)	100.00 (150 m, 317 deg)	100.00 (150 m, 317 deg)

Q_s = 7.706 g/s NO_x standby generators
Q_s = 3.834 g/s NO_x superior engines - horizontal
*Concentration NO₂ = 0.75*Concentration NO_x*

* PM10 emissions do not exceed significant emission rates.

NO ECHO

CO STARTING

TITLEONE Standby Generator Sets - NAAQS & PSD Class II Increment - NO2 - 1987

TITLETWO Miami-Dade Water and Sewer Department Central District WWTP

MODELOPT DEFAULT CONC RURAL

TERRHGTS FLAT

AVERTIME PERIOD

POLLUTID NO2

RUNORNOT RUN

CO FINISHED

SO STARTING

** LOCATION SRC-ID TYPE X- Easting (m) Y- Northing (m) Z (m)

** PSD Increment Consuming Sources

LOCATION CDGENS POINT 584959.1 2847789.6 0.00
LOCATION CDCOGENS POINT 585116.0 2847661.6 0.00
LOCATION AOGENS POINT 566590.0 2843380.0 0.00
LOCATION HPGENS POINT 571492.0 2857105.0 0.00
LOCATION SBROWRRF POINT 579600.0 2883300.0 0.00
LOCATION NBROWRRF POINT 583600.0 2907600.0 0.00
LOCATION TARMAC1 POINT 562900.0 2861700.0 0.00
LOCATION TARMAC2 POINT 562900.0 2861700.0 0.00
LOCATION TARMAC3 POINT 562900.0 2861700.0 0.00
LOCATION DCRRF12 POINT 564390.0 2857390.0 0.00
LOCATION DCRRF34 POINT 564360.0 2857390.0 0.00
LOCATION DCRRF5 POINT 564300.0 2857400.0 0.00
LOCATION FPLF14 POINT 580100.0 2883300.0 0.00

** Baseline Sources

LOCATION TARMAC3B POINT 562900.0 2861700.0 0.00
LOCATION DCRRF12B POINT 564390.0 2857390.0 0.00
LOCATION DCRRF34B POINT 564360.0 2857390.0 0.00
LOCATION FPLF112 POINT 580100.0 2883300.0 0.00
LOCATION FPLF1324 POINT 580100.0 2883300.0 0.00
LOCATION FPLF45B POINT 580100.0 2883300.0 0.00
LOCATION FPLC5 POINT 570400.0 2834900.0 0.00
LOCATION FPLC6 POINT 570400.0 2834900.0 0.00
LOCATION FPLPE12 POINT 587400.0 2875300.0 0.00
LOCATION FPLPE34 POINT 587400.0 2875300.0 0.00
LOCATION FPLPE112 POINT 587400.0 2875300.0 0.00
LOCATION FPLTP12 POINT 567200.0 2831200.0 0.00
LOCATION RINKER12 POINT 558200.0 2851300.0 0.00
LOCATION SFCOGEN POINT 580500.0 2850900.0 0.00

** SRCPARAM SRC-ID EMIS Hgt temp,X,sy vel,y,sz dia,ang

** PSD Increment Consuming Sources

SRCPARAM CDGENS 7.7060 6.40 663.0 16.50 0.91
SRCPARAM CDCOGENS 3.8340 7.62 741.0 0.10 7.85
SRCPARAM AOGENS 5.9200 3.50 608.0 0.10 11.32
SRCPARAM HPGENS 10.6800 8.80 608.0 45.19 0.53
SRCPARAM SBROWRRF 68.5500 59.44 381.0 17.98 3.96
SRCPARAM NBROWRRF 64.0000 58.50 381.0 18.01 3.96
SRCPARAM TARMAC1 21.1400 60.96 465.0 12.80 2.44
SRCPARAM TARMAC2 12.8900 60.96 422.0 9.11 2.44
SRCPARAM TARMAC3 68.1800 60.96 450.0 11.03 4.57
SRCPARAM DCRRF12 35.3800 76.20 405.4 15.86 3.66
SRCPARAM DCRRF34 35.3800 76.20 405.4 15.86 3.66
SRCPARAM DCRRF5 13.2400 76.20 399.8 15.74 2.97
SRCPARAM FPLF14 135.7000 46.00 422.0 14.63 4.27

** Baseline Sources

SRCPARAM TARMAC3B -60.8000 60.96 472.0 10.78 4.57
SRCPARAM DCRRF12B -22.5000 45.72 472.0 12.20 2.74
SRCPARAM DCRRF34B -22.5300 45.72 472.0 12.20 2.74
SRCPARAM FPLF112 508.0100 13.72 733.0 21.34 5.49
SRCPARAM FPLF1324 508.0100 13.29 733.0 21.34 5.49
SRCPARAM FPLF45B -70.6000 46.00 422.0 14.63 4.27

SRCPARAM	FPLC5	51.1500	45.72	408.0	11.58	4.57		
SRCPARAM	FPLC6	86.8200	45.72	408.0	14.33	4.57		
SRCPARAM	FPLPE12	313.7800	104.85	416.0	18.59	4.27		
SRCPARAM	FPLPE34	508.2700	104.55	408.0	19.20	5.52		
SRCPARAM	FPLPE112	498.9500	15.54	733.0	21.34	5.49		
SRCPARAM	FPLTP12	475.2400	121.92	408.0	19.20	5.52		
SRCPARAM	RINKER12	20.1900	41.76	400.0	7.62	4.57		
SRCPARAM	SFCOGEN	6.2100	39.60	389.0	16.46	2.74		
SO	BUILDHGT	CDGENS	5.49	5.49	5.49	3.65	3.65	3.65
SO	BUILDHGT	CDGENS	3.65	3.65	3.65	3.65	3.65	3.65
SO	BUILDHGT	CDGENS	12.19	12.19	12.19	8.84	8.84	5.49
SO	BUILDHGT	CDGENS	5.49	5.49	5.49	3.65	3.65	3.65
SO	BUILDHGT	CDGENS	3.65	3.65	3.65	3.65	3.65	3.65
SO	BUILDHGT	CDGENS	5.49	5.49	5.49	5.49	5.49	5.49
SO	BUILDWID	CDGENS	19.85	25.39	30.16	13.10	14.80	16.05
SO	BUILDWID	CDGENS	16.81	17.07	16.80	17.07	16.81	16.05
SO	BUILDWID	CDGENS	25.78	25.78	25.00	14.81	12.14	13.70
SO	BUILDWID	CDGENS	19.85	25.39	30.16	13.10	14.80	16.05
SO	BUILDWID	CDGENS	16.81	17.07	16.80	17.07	16.81	16.05
SO	BUILDWID	CDGENS	36.84	34.02	30.16	25.39	19.85	13.70
SO	BUILDHGT	CDCOGENS	10.66	10.66	10.66	10.66	10.66	10.66
SO	BUILDHGT	CDCOGENS	10.66	10.66	10.66	10.66	10.66	10.66
SO	BUILDHGT	CDCOGENS	10.66	10.66	10.66	10.66	10.66	10.66
SO	BUILDHGT	CDCOGENS	10.66	10.66	10.66	10.66	10.66	10.66
SO	BUILDHGT	CDCOGENS	10.66	10.66	10.66	10.66	10.66	10.66
SO	BUILDHGT	CDCOGENS	10.66	10.66	10.66	10.66	10.66	10.66
SO	BUILDWID	CDCOGENS	53.51	55.10	55.01	53.25	49.87	44.98
SO	BUILDWID	CDCOGENS	38.72	31.29	22.90	31.29	38.72	44.98
SO	BUILDWID	CDCOGENS	49.87	53.25	55.01	55.10	53.51	50.30
SO	BUILDWID	CDCOGENS	53.51	55.10	55.01	53.25	49.87	44.98
SO	BUILDWID	CDCOGENS	38.72	31.29	22.90	31.29	38.72	44.98
SO	BUILDWID	CDCOGENS	49.87	53.25	55.01	55.10	53.51	50.30
SO	BUILDHGT	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	AOGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	HPGENS	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	SBROWRRF	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	SBROWRRF	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	SBROWRRF	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	SBROWRRF	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	SBROWRRF	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDHGT	SBROWRRF	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	SBROWRRF	0.00	0.00	0.00	0.00	0.00	0.00

SO BUILDWID RINKER12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID RINKER12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID RINKER12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID RINKER12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID RINKER12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDHGT SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO BUILDWID SFCOGEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SRCGROUP GENS CDGENS

SRCGROUP MDWASDCD CDGENS CDCOGENS

SRCGROUP PSD2INCR CDGENS CDCOGENS AOGENS HPGENS SBROWRRF NBROWRRF

SRCGROUP PSD2INCR TARMAC1 TARMAC2 TARMAC3 TARMAC3B DCRRF12 DCRRF34

SRCGROUP PSD2INCR DCRRF12B DCRRF34B DCRRF5 FPLF14 FPLF45B

SRCGROUP NAAQS CDGENS CDCOGENS AOGENS HPGENS SBROWRRF

SRCGROUP NAAQS NBROWRRF TARMAC1 TARMAC2 TARMAC3 DCRRF12 DCRRF34

SRCGROUP NAAQS DCRRF5 FPLF14 FPLF112 FPLF1324 FPLC5 FPLC6

SRCGROUP NAAQS FPLPE12 FPLPE34 FPLPE112 FPLTP12 RINKER12 SFCOGEN

SO FINISHED

RE STARTING

GRIDPOLR POL1 STA

GRIDPOLR POL1 ORIG 584959.08442548 2847789.56629077

GRIDPOLR POL1 DIST 700 800 900 1000 1250

GRIDPOLR POL1 DIST 1500 1750 2000 2250 2500

GRIDPOLR POL1 DIST 3000 3500 4000 4500 5000

GRIDPOLR POL1 DIST 6000 7000 8000

GRIDPOLR POL1 GDIR 36 10 10

GRIDPOLR POL1 END

** Receptors at fence line, r = 200 m, 300 m, 400 m, 500 m, and 600 m

RE DISCCART	584859.1	2847616.4
RE DISCCART	584830.5	2847636.4
RE DISCCART	584805.9	2847661.0
RE DISCCART	584785.9	2847689.6
RE DISCCART	584771.1	2847721.2
RE DISCCART	584762.1	2847754.8
RE DISCCART	584759.1	2847789.6
RE DISCCART	584762.1	2847824.3
RE DISCCART	584771.1	2847858.0
RE DISCCART	584785.9	2847889.6
RE DISCCART	584805.9	2847918.1
RE DISCCART	584830.5	2847942.8
RE DISCCART	584859.1	2847962.8
RE DISCCART	584856.5	2847507.7
RE DISCCART	584809.1	2847529.8
RE DISCCART	584766.2	2847559.8
RE DISCCART	584729.3	2847596.7
RE DISCCART	584699.3	2847639.6
RE DISCCART	584677.2	2847687.0
RE DISCCART	584663.6	2847737.5
RE DISCCART	584659.1	2847789.6
RE DISCCART	584663.6	2847841.7
RE DISCCART	584677.2	2847892.2
RE DISCCART	584699.3	2847939.6
RE DISCCART	584729.3	2847982.4
RE DISCCART	584766.2	2848019.4

RE DISCCART	584809.1	2848049.4
RE DISCCART	584856.5	2848071.5
RE DISCCART	585095.9	2847413.7
RE DISCCART	585028.5	2847395.6
RE DISCCART	584959.1	2847389.6
RE DISCCART	584889.6	2847395.6
RE DISCCART	584822.3	2847413.7
RE DISCCART	584759.1	2847443.2
RE DISCCART	584702.0	2847483.1
RE DISCCART	584652.7	2847532.5
RE DISCCART	584612.7	2847589.6
RE DISCCART	584583.2	2847652.8
RE DISCCART	584565.2	2847720.1
RE DISCCART	584559.1	2847789.6
RE DISCCART	584565.2	2847859.0
RE DISCCART	584583.2	2847926.4
RE DISCCART	584612.7	2847989.6
RE DISCCART	584652.7	2848046.7
RE DISCCART	584702.0	2848096.0
RE DISCCART	584759.1	2848136.0
RE DISCCART	584822.3	2848165.4
RE DISCCART	584959.1	2848289.6
RE DISCCART	585045.9	2848282.0
RE DISCCART	585130.1	2848259.4
RE DISCCART	585209.1	2848222.6
RE DISCCART	585280.5	2847406.5
RE DISCCART	585209.1	2847356.6
RE DISCCART	585130.1	2847319.7
RE DISCCART	585045.9	2847297.2
RE DISCCART	584959.1	2847289.6
RE DISCCART	584872.3	2847297.2
RE DISCCART	584788.1	2847319.7
RE DISCCART	584709.1	2847356.6
RE DISCCART	584637.7	2847406.5
RE DISCCART	584576.1	2847468.2
RE DISCCART	584526.1	2847539.6
RE DISCCART	584489.2	2847618.6
RE DISCCART	584466.7	2847702.7
RE DISCCART	584459.1	2847789.6
RE DISCCART	584466.7	2847876.4
RE DISCCART	584489.2	2847960.6
RE DISCCART	584526.1	2848039.6
RE DISCCART	584576.1	2848111.0
RE DISCCART	584637.7	2848172.6
RE DISCCART	584709.1	2848222.6
RE DISCCART	584788.1	2848259.4
RE DISCCART	584872.3	2848282.0
RE DISCCART	584959.1	2848389.6
RE DISCCART	585063.3	2848380.5
RE DISCCART	585164.3	2848353.4
RE DISCCART	585259.1	2848309.2
RE DISCCART	585344.8	2848249.2
RE DISCCART	585522.9	2847994.8
RE DISCCART	585550.0	2847893.8
RE DISCCART	585559.1	2847789.6
RE DISCCART	585550.0	2847685.4
RE DISCCART	585418.7	2847403.9
RE DISCCART	585344.8	2847329.9
RE DISCCART	585259.1	2847270.0
RE DISCCART	585164.3	2847225.8
RE DISCCART	585063.3	2847198.7
RE DISCCART	584959.1	2847189.6
RE DISCCART	584854.9	2847198.7

RE DISCCART	584753.9	2847225.8
RE DISCCART	584659.1	2847270.0
RE DISCCART	584573.4	2847329.9
RE DISCCART	584499.5	2847403.9
RE DISCCART	584439.5	2847489.6
RE DISCCART	584395.3	2847584.4
RE DISCCART	584368.2	2847685.4
RE DISCCART	584359.1	2847789.6
RE DISCCART	584368.2	2847893.8
RE DISCCART	584395.3	2847994.8
RE DISCCART	584439.5	2848089.6
RE DISCCART	584499.5	2848175.2
RE DISCCART	584573.4	2848249.2
RE DISCCART	584659.1	2848309.2
RE DISCCART	584753.9	2848353.4
RE DISCCART	584854.9	2848380.5
RE DISCCART	584857.0	2848199.5
RE DISCCART	584857.0	2848149.5
RE DISCCART	584857.0	2848099.5
RE DISCCART	584857.0	2848049.5
RE DISCCART	584857.0	2847999.5
RE DISCCART	584857.0	2847949.5
RE DISCCART	584857.0	2847899.5
RE DISCCART	584857.0	2847849.5
RE DISCCART	584857.0	2847799.5
RE DISCCART	584857.0	2847749.5
RE DISCCART	584857.0	2847699.5
RE DISCCART	584857.0	2847649.5
RE DISCCART	584857.0	2847599.5
RE DISCCART	584857.0	2847549.5
RE DISCCART	584857.0	2847499.5
RE DISCCART	584857.0	2847449.5
RE DISCCART	584857.0	2847417.7
RE DISCCART	584907.0	2847417.7
RE DISCCART	584957.0	2847417.7
RE DISCCART	585007.0	2847417.7
RE DISCCART	585057.0	2847417.7
RE DISCCART	585107.0	2847417.7
RE DISCCART	585157.0	2847417.7
RE DISCCART	585207.0	2847417.7
RE DISCCART	585257.0	2847417.7
RE DISCCART	585307.0	2847417.7
RE DISCCART	585357.0	2847417.7
RE DISCCART	585407.0	2847417.7
RE DISCCART	585413.2	2847417.7
RE DISCCART	585453.1	2847447.0
RE DISCCART	585493.4	2847475.6
RE DISCCART	585527.5	2847502.5
RE DISCCART	585527.5	2847552.5
RE DISCCART	585527.5	2847602.5
RE DISCCART	585527.5	2847652.5
RE DISCCART	585527.5	2847702.5
RE DISCCART	585527.5	2847752.5
RE DISCCART	585527.5	2847802.5
RE DISCCART	585527.5	2847852.5
RE DISCCART	585527.5	2847902.5
RE DISCCART	585527.5	2847952.5
RE DISCCART	585527.5	2848002.5
RE DISCCART	585527.5	2848052.5
RE DISCCART	585527.5	2848102.5
RE DISCCART	585527.5	2848152.5
RE DISCCART	585527.5	2848199.5
RE DISCCART	585477.5	2848199.5

RE DISCCART 585427.5 2848199.5
RE DISCCART 585377.5 2848199.5
RE DISCCART 585327.5 2848199.5
RE DISCCART 585277.5 2848199.5
RE DISCCART 585227.5 2848199.5
RE DISCCART 585177.5 2848199.5
RE DISCCART 585127.5 2848199.5
RE DISCCART 585077.5 2848199.5
RE DISCCART 585027.5 2848199.5
RE DISCCART 584977.5 2848199.5
RE DISCCART 584927.5 2848199.5
RE DISCCART 584877.5 2848199.5
RE FINISHED
ME STARTING
 INPUTFIL 1283987.met
 ANEMHGHT 10 METERS
 SURFDATA 12839 1987
 UAIRDATA 12844 1987
ME FINISHED
OU STARTING
 RECTABLE ALLAVE FIRST
 MAXTABLE ALLAVE 50
 PLOTFILE PERIOD PSD2INCR CD87incr.PLT 40
 PLOTFILE PERIOD NAAQS CD87ambi.PLT 42
OU FINISHED

*** ISCST3 - VERSION 98356 ***

*** Standby Generator Sets - NAAQS & PSD Class II Increment - NO2 - 1987 ***

01/12/99

*** Miami-Dade Water and Sewer Department Central District WWTP ***

10:20:41

**MODELOPTs: CONC

RURAL FLAT

DEFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF NO2 IN MICROGRAMS/M**3

**

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF	TYPE	NETWORK GRID-ID
GENS	1ST HIGHEST VALUE IS	8.29481 AT (585207.00,	2847417.75,	0.00,	0.00)	DC NA
	2ND HIGHEST VALUE IS	8.02699 AT (585157.00,	2847417.75,	0.00,	0.00)	DC NA
	3RD HIGHEST VALUE IS	7.60335 AT (585209.13,	2847356.50,	0.00,	0.00)	DC NA
	4TH HIGHEST VALUE IS	7.59907 AT (585257.00,	2847417.75,	0.00,	0.00)	DC NA
	5TH HIGHEST VALUE IS	7.18128 AT (585280.50,	2847406.50,	0.00,	0.00)	DC NA
MDWASDCD	1ST HIGHEST VALUE IS	31.98318 AT (584857.00,	2847649.50,	0.00,	0.00)	DC NA
	2ND HIGHEST VALUE IS	29.61957 AT (584857.00,	2847699.50,	0.00,	0.00)	DC NA
	3RD HIGHEST VALUE IS	29.39866 AT (584859.13,	2847616.50,	0.00,	0.00)	DC NA
	4TH HIGHEST VALUE IS	28.02130 AT (584857.00,	2847599.50,	0.00,	0.00)	DC NA
	5TH HIGHEST VALUE IS	27.35901 AT (584830.50,	2847636.50,	0.00,	0.00)	DC NA
PSD2INCR	1ST HIGHEST VALUE IS	32.61916 AT (584857.00,	2847649.50,	0.00,	0.00)	DC NA
	2ND HIGHEST VALUE IS	30.25495 AT (584857.00,	2847699.50,	0.00,	0.00)	DC NA
	3RD HIGHEST VALUE IS	30.03505 AT (584859.13,	2847616.50,	0.00,	0.00)	DC NA
	4TH HIGHEST VALUE IS	28.65785 AT (584857.00,	2847599.50,	0.00,	0.00)	DC NA
	5TH HIGHEST VALUE IS	27.99541 AT (584830.50,	2847636.50,	0.00,	0.00)	DC NA
NAAQS	1ST HIGHEST VALUE IS	35.34290 AT (584857.00,	2847649.50,	0.00,	0.00)	DC NA
	2ND HIGHEST VALUE IS	32.98147 AT (584857.00,	2847699.50,	0.00,	0.00)	DC NA
	3RD HIGHEST VALUE IS	32.75732 AT (584859.13,	2847616.50,	0.00,	0.00)	DC NA
	4TH HIGHEST VALUE IS	31.37882 AT (584857.00,	2847599.50,	0.00,	0.00)	DC NA
	5TH HIGHEST VALUE IS	30.71460 AT (584830.50,	2847636.50,	0.00,	0.00)	DC NA

*** ISCST3 - VERSION 98356 ***

*** Standby Generator Sets - NAAQS & PSD Class II Increment - NO2 - 1988 ***

01/12/99

*** Miami-Dade Water and Sewer Department Central District WWTP ***

10:35:55

**MODELOPTs: CONC

RURAL FLAT

DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF NO2 IN MICROGRAMS/M**3

**

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
GENS	1ST HIGHEST VALUE IS	11.42989 AT (	584857.00,	2847899.50,	0.00,	0.00)	DC	NA
	2ND HIGHEST VALUE IS	10.70758 AT (	585157.00,	2847417.75,	0.00,	0.00)	DC	NA
	3RD HIGHEST VALUE IS	10.40062 AT (	585207.00,	2847417.75,	0.00,	0.00)	DC	NA
	4TH HIGHEST VALUE IS	9.96905 AT (	585209.13,	2847356.50,	0.00,	0.00)	DC	NA
	5TH HIGHEST VALUE IS	8.75889 AT (	585259.13,	2847270.00,	0.00,	0.00)	DC	NA
MDWASDCD	1ST HIGHEST VALUE IS	32.58506 AT (	585207.00,	2847417.75,	0.00,	0.00)	DC	NA
	2ND HIGHEST VALUE IS	31.33990 AT (	584857.00,	2847649.50,	0.00,	0.00)	DC	NA
	3RD HIGHEST VALUE IS	30.23764 AT (	584859.13,	2847616.50,	0.00,	0.00)	DC	NA
	4TH HIGHEST VALUE IS	29.22906 AT (	584857.00,	2847599.50,	0.00,	0.00)	DC	NA
	5TH HIGHEST VALUE IS	28.37215 AT (	584857.00,	2847699.50,	0.00,	0.00)	DC	NA
PSD2INCR	1ST HIGHEST VALUE IS	33.17551 AT (	585207.00,	2847417.75,	0.00,	0.00)	DC	NA
	2ND HIGHEST VALUE IS	31.93721 AT (	584857.00,	2847649.50,	0.00,	0.00)	DC	NA
	3RD HIGHEST VALUE IS	30.83643 AT (	584859.13,	2847616.50,	0.00,	0.00)	DC	NA
	4TH HIGHEST VALUE IS	29.82878 AT (	584857.00,	2847599.50,	0.00,	0.00)	DC	NA
	5TH HIGHEST VALUE IS	28.96697 AT (	584857.00,	2847699.50,	0.00,	0.00)	DC	NA
NAAQS	1ST HIGHEST VALUE IS	36.04779 AT (	585207.00,	2847417.75,	0.00,	0.00)	DC	NA
	2ND HIGHEST VALUE IS	34.79552 AT (	584857.00,	2847649.50,	0.00,	0.00)	DC	NA
	3RD HIGHEST VALUE IS	33.69486 AT (	584859.13,	2847616.50,	0.00,	0.00)	DC	NA
	4TH HIGHEST VALUE IS	32.68711 AT (	584857.00,	2847599.50,	0.00,	0.00)	DC	NA
	5TH HIGHEST VALUE IS	31.82529 AT (	584857.00,	2847699.50,	0.00,	0.00)	DC	NA

*** ISCST3 - VERSION 98356 ***

*** Standby Generator Sets - NAAQS & PSD Class II Increment - NO2 - 1989 ***

01/12/99

*** Miami-Dade Water and Sewer Department Central District WWTP ***

10:52:18

**MODELOPTs: CONC

RURAL FLAT

DEFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF NO2 IN MICROGRAMS/M**3

**

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
GENS	1ST HIGHEST VALUE IS	12.96259 AT (584857.00, 2847899.50,	0.00, 0.00) DC	NA
	2ND HIGHEST VALUE IS	10.06226 AT (584857.00, 2847949.50,	0.00, 0.00) DC	NA
	3RD HIGHEST VALUE IS	9.90547 AT (584830.50, 2847942.75,	0.00, 0.00) DC	NA
	4TH HIGHEST VALUE IS	8.92020 AT (585207.00, 2847417.75,	0.00, 0.00) DC	NA
	5TH HIGHEST VALUE IS	8.75363 AT (585157.00, 2847417.75,	0.00, 0.00) DC	NA
MDWASDCD	1ST HIGHEST VALUE IS	31.68472 AT (584857.00, 2847899.50,	0.00, 0.00) DC	NA
	2ND HIGHEST VALUE IS	28.93282 AT (585207.00, 2847417.75,	0.00, 0.00) DC	NA
	3RD HIGHEST VALUE IS	25.68176 AT (584857.00, 2847849.50,	0.00, 0.00) DC	NA
	4TH HIGHEST VALUE IS	25.59011 AT (584830.50, 2847942.75,	0.00, 0.00) DC	NA
	5TH HIGHEST VALUE IS	25.49984 AT (584857.00, 2847949.50,	0.00, 0.00) DC	NA
PSD2INCR	1ST HIGHEST VALUE IS	32.16607 AT (584857.00, 2847899.50,	0.00, 0.00) DC	NA
	2ND HIGHEST VALUE IS	29.41246 AT (585207.00, 2847417.75,	0.00, 0.00) DC	NA
	3RD HIGHEST VALUE IS	26.16333 AT (584857.00, 2847849.50,	0.00, 0.00) DC	NA
	4TH HIGHEST VALUE IS	26.07164 AT (584830.50, 2847942.75,	0.00, 0.00) DC	NA
	5TH HIGHEST VALUE IS	25.98105 AT (584857.00, 2847949.50,	0.00, 0.00) DC	NA
NAAQS	1ST HIGHEST VALUE IS	34.65335 AT (584857.00, 2847899.50,	0.00, 0.00) DC	NA
	2ND HIGHEST VALUE IS	31.95226 AT (585207.00, 2847417.75,	0.00, 0.00) DC	NA
	3RD HIGHEST VALUE IS	28.65263 AT (584857.00, 2847849.50,	0.00, 0.00) DC	NA
	4TH HIGHEST VALUE IS	28.55490 AT (584830.50, 2847942.75,	0.00, 0.00) DC	NA
	5TH HIGHEST VALUE IS	28.46661 AT (584857.00, 2847949.50,	0.00, 0.00) DC	NA

*** ISCST3 - VERSION 98356 ***

*** Standby Generator Sets - NAAQS & PSD Class II Increment - NO2 - 1990 ***

01/12/99

*** Miami-Dade Water and Sewer Department Central District WWTP ***

11:06:49

**MODELOPTs: CONC RURAL FLAT DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
GENS	1ST HIGHEST VALUE IS	11.44596 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	8.44277 AT (584830.50,	2847942.75,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	7.16051 AT (584857.00,	2847949.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	6.91784 AT (584805.88,	2847918.00,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	6.16620 AT (584702.00,	2848096.00,	0.00,	0.00)	DC	NA	
MDWASDCD	1ST HIGHEST VALUE IS	30.32534 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	26.87408 AT (584857.00,	2847699.50,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	25.63951 AT (584857.00,	2847749.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	25.36486 AT (584857.00,	2847849.50,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	25.03329 AT (584857.00,	2847649.50,	0.00,	0.00)	DC	NA	
PSD2INCR	1ST HIGHEST VALUE IS	30.87592 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	27.43083 AT (584857.00,	2847699.50,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	26.19470 AT (584857.00,	2847749.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	25.91691 AT (584857.00,	2847849.50,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	25.59162 AT (584857.00,	2847649.50,	0.00,	0.00)	DC	NA	
NAAQS	1ST HIGHEST VALUE IS	33.76273 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	30.31060 AT (584857.00,	2847699.50,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	29.07644 AT (584857.00,	2847749.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	28.80215 AT (584857.00,	2847849.50,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	28.46926 AT (584857.00,	2847649.50,	0.00,	0.00)	DC	NA	

*** ISCST3 - VERSION 98356 ***

*** Standby Generator Sets - NAAQS & PSD Class II Increment - NO2 - 1991 ***

01/12/99

*** Miami-Dade Water and Sewer Department Central District WWTP ***

11:22:03

**MODELOPTs: CONC

RURAL FLAT

DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF NO2

IN MICROGRAMS/M**3

**

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
GENS	1ST HIGHEST VALUE IS	9.28459 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	6.81979 AT (584830.50,	2847942.75,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	6.70707 AT (584857.00,	2847949.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	6.46354 AT (584805.88,	2847918.00,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	6.01227 AT (584859.13,	2847962.75,	0.00,	0.00)	DC	NA	
MDWASDCD	1ST HIGHEST VALUE IS	28.88797 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	25.87196 AT (584857.00,	2847849.50,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	23.98278 AT (584857.00,	2847699.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	23.91616 AT (584857.00,	2847749.50,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	23.64334 AT (584857.00,	2847799.50,	0.00,	0.00)	DC	NA	
PSD2INCR	1ST HIGHEST VALUE IS	29.46374 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	26.44977 AT (584857.00,	2847849.50,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	24.56868 AT (584857.00,	2847699.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	24.49898 AT (584857.00,	2847749.50,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	24.22345 AT (584857.00,	2847799.50,	0.00,	0.00)	DC	NA	
NAAQS	1ST HIGHEST VALUE IS	32.73771 AT (584857.00,	2847899.50,	0.00,	0.00)	DC	NA	
	2ND HIGHEST VALUE IS	29.72257 AT (584857.00,	2847849.50,	0.00,	0.00)	DC	NA	
	3RD HIGHEST VALUE IS	27.83953 AT (584857.00,	2847699.50,	0.00,	0.00)	DC	NA	
	4TH HIGHEST VALUE IS	27.77040 AT (584857.00,	2847749.50,	0.00,	0.00)	DC	NA	
	5TH HIGHEST VALUE IS	27.49549 AT (584857.00,	2847799.50,	0.00,	0.00)	DC	NA	

ATTACHMENT D
Mark-Up Copy of Draft Permit
Central District Wastewater Treatment Plant