



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

September 25, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Jorge S. Rodriguez, P.E.
Assistant Director - Water
Miami-Dade Water & Sewer Department
3071 SW 38th Avenue
Miami, Florida 33146-1520

Re: DEP File No. 0250314-005-AC
Alexander Orr, Jr. WTP
Three Natural Gas Fueled Engine Driven Pump Sets and One Diesel Fueled Standby Generator

Dear Mr. Rodriguez:

Enclosed is one copy of the Draft air construction permit for the Alexander Orr, Jr. WTP, Three Natural Gas Fueled Engine Driven Pump Sets and One Diesel Fueled Standby Generator, located at 6800 SW 87 Avenue, Miami, Miami-Dade County. The Technical Evaluation and Preliminary Determination, the Department's Intent to Issue Air Construction Permit and the Public Notice of Intent to Issue Air Construction Permit are also included.

The Public Notice of Intent to Issue Air Construction Permit must be published one time only, as soon as possible, in the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to me at the above letterhead address. If you have any other questions, please contact Syed Arif, P.E. at 850/921-9528.

Sincerely,


A. A. Linero, P.E.
Bureau of Air Regulation

AAL/sa

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Received by (Please Print Clearly) J.S. MARTINEZ	B. Date of Delivery 10/2/02
1. Article Addressed to: Jorge S. Rodriguez, P.E. Assistant Director - Water Miami-Dade Water & Sewer Department 3071 SW 38th Avenue Miami, FL 33146-1520	C. Signature 	
2. / 7001 0320 0001 3692 7911	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
PS Form 3811, July 1999	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	<input type="checkbox"/> Agent <input type="checkbox"/> Addressee
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
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Sent To: Jorge S. Rodriguez Street, Apt. No., or PO # 3071 SW 38th Ave. City, State, ZIP+4 Miami, FL 33146-1520		
PS Form 3800, January 2001		See Reverse for Instructions

7911 3692 0001 0320 7001

In the Matter of an
Application for Permit by:

Mr. Jorge S. Rodriguez, P.E.,
Assistant Director – Water
Miami-Dade Water & Sewer Department
3071 SW 38th Avenue
Miami, Florida 33146-1520

DEP File No. 0250314-005-AC

Alexander Orr, Jr. WTP
Natural Gas Fueled Engine Driven Pump Sets
Miami-Dade County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of Draft permit attached) for the proposed project, detailed in the application specified above and the enclosed Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Miami-Dade Water & Sewer Department, applied on May 13, 2002, to the Department for an air construction permit for its Alexander Orr, Jr. Water Treatment Plant located at 6800 SW 87 Avenue, Miami, Miami-Dade County. The permit is for the replacement of five diesel fueled engine driven pump sets with three natural gas fueled engine driven pump sets and one diesel fueled standby generator.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a construction permit modification is required.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Construction Permit. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of Public Notice of Intent to Issue Air Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes

of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



A. A. Linero, P.E.
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction Permit Modification (including the Public Notice of Intent to Issue Air Construction Permit Modification, and the Draft permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 9/30/02 to the person(s) listed:

- Mr. Jorge S. Rodriguez, P.E., Miami-Dade WASD*
- Mr. Richard O'Rourke, P.E., WASD (via e-mail)
- Mr. Tom Tittle, DEP, SED
- Mr. Patrick Wong, DERM

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Victoria Gibem September 30, 2002
(Clerk) (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0250314-005-AC

Miami-Dade Water & Sewer Department
Alexander Orr, Jr. Water Treatment Plant
Miami-Dade County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Miami-Dade Water & Sewer Department, for the Alexander Orr, Jr. Water Treatment Plant located at 6800 SW 87 Avenue, Miami, Miami-Dade County. The permit is to remove existing pumps and engines numbers 1 and 2, replacing the (pump/generator) capacity of engine number 1 with a diesel fueled engine driven emergency generator set and to replace existing diesel fueled engine driven pump numbers 3, 4 and 5 with three natural gas fueled engine driven pumps. The applicant's mailing address is: 3071 SW 38th Avenue, Miami, Florida 33146-1520. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. and 40 CFR 52.21, Prevention of Significant Deterioration (PSD).

The existing pump engines are fuel oil fired. The replacement engines have significantly lower air pollutant emissions per unit of work. The replacement emergency generator is restricted to 500 hours of operation annually. This restriction will keep nitrogen oxides emissions below the PSD significance levels. With the exception of carbon monoxide, potential emissions from the new engines are not expected to significantly increase compared to the past actual emissions of the existing engines. Carbon monoxide emissions do not increase above the PSD significance levels. An air quality impact analysis was not required or conducted.

The original permitting was done in 1999. The units proposed in the previous permit were not installed, the emission increment was not consumed and this project replaces the previous one.

The Department will issue the Final permit modification with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit modification issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue PSD permit modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit modification and require, if applicable, another Public Notice.

The Department will issue the permit modification with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Protection
Bureau of Air Regulation
Suite 4, 111 S. Magnolia Drive
Tallahassee, Florida 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Dept. of Environmental Protection
Southeast District
400 North Congress Avenue
West Palm Beach, Florida 33401
Telephone: 561/681-6600

Dade County Department of
Environmental Resources Mgmt.
Suite 900, 33 Southwest 2nd Ave.
Miami, Florida 33130-1540
Telephone: 305/372-6925

The complete project file includes the application, technical evaluations, Draft permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Source Review Section, or the Department's reviewing engineer for this project, Syed Arif, P.E., at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

NOTICE TO BE PUBLISHED IN THE NEWSPAPER

**TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION**

**Miami-Dade Water & Sewer Department
Alexander Orr, Jr. WTP
Three Natural Gas Fueled Engine Driven Pump Sets & One Diesel Fueled Standby Generator
Miami-Dade County**

DEP File No. 0250314-005-AC

**Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation**

September 25, 2002

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. GENERAL INFORMATION

1.1 APPLICANT NAME AND ADDRESS

Miami-Dade Water & Sewer Department
 3071 SW 38th Avenue
 Miami, Florida 33146-1520

Authorized Representative: Mr. Jorge S. Rodriguez, P.E., Assistant Director - Water

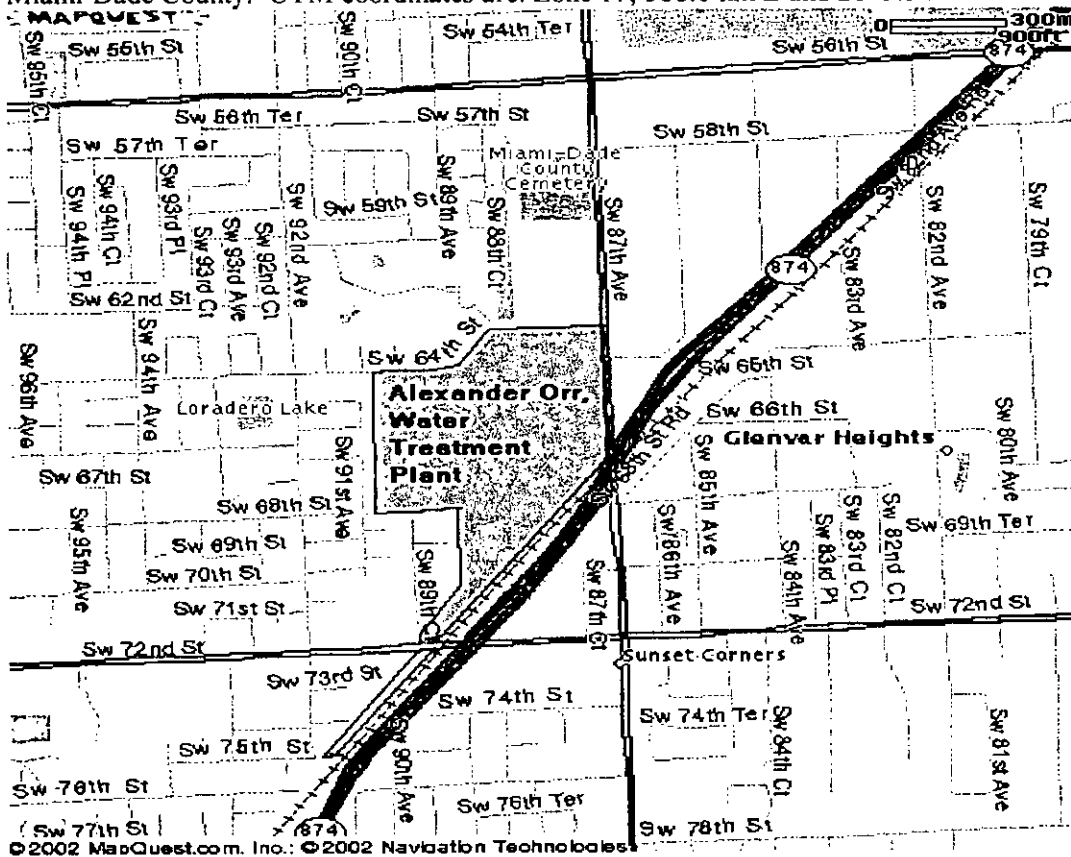
1.2 REVIEWING AND PROCESS SCHEDULE

05/13/02	Receipt of application
06/10/02	Department completeness request
08/05/02	Applicant's response to completeness request
08/05/02	Application complete
09/xx/02	Intent issued

2. FACILITY INFORMATION

2.1 FACILITY LOCATION

The facility is located at the Alexander Orr, Jr. Water Treatment Plant, 6800 SW 87 Avenue, Miami, Miami-Dade County. UTM coordinates are: Zone 17; 566.6 km E and 2843.5 km N.



2.2 STANDARD INDUSTRIAL CLASSIFICATION CODES (SIC)

Industry Group No.	49	Electric, Gas, and Sanitary Services
Industry No.	4941	Water Supply

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

2.3 FACILITY CATEGORY

The facility, Alexander Orr, Jr. Water Treatment Plant, is a municipally owned water treatment plant providing potable water to the public. The Miami-Dade Water and Sewer Department (WASD) is the sixth largest public utility in the United States, providing direct services to approximately 356,000 retail customers. Wholesale water service is provided to 14 municipalities and wholesale sewer service to 12 of the County's 29 municipalities. Miami-Dade County's current population of 2 million is expected to reach the 3 million mark by the year 2015.¹ The Alexander Orr, Jr. WTP supplies approximately half of the water supply of the WASD system.²

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

This facility is not within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 250 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

This project is exempt from the requirements of Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) as discussed in this Technical Evaluation and Preliminary Determination.

3.1 PROJECT SCOPE

The scope of this project is to remove existing engines and pumps numbers 1, 2, 3, 4 and 5 and to install new pumps with natural gas fired engines numbers 3, 4 and 5. Existing engine and pump number 1 also served as a prime mover for a 750 KW generator set. Emissions units that will be removed are 001 (engine and pump #1), 002 (engine and pump #2 which were previously taken out of service), 003 (engine and pump #3), 004 (engine and pump #4), and 005 (engine and pump #5).

Emissions units proposed by this permit application are:

Table 1 - Proposed Emission Units

Emissions Unit No.	Emissions Unit Description
023	1332 brake hp diesel fired Caterpillar Model 3508 TA-130, a 4-cycle turbocharged diesel internal combustion (IC) engine driving an electric generator prime rating 900 kW. Maximum heat input rate is 9.2 mmBtu/hr.
018	810 brake hp natural gas fired Caterpillar Model G3512 LE-130 engine for pump 3. Maximum heat input rate is 6.00 mmBtu/hr. Pump has a designed 20 million gallons per day (MGD) water pumping capacity.
019	810 brake hp natural gas fired Caterpillar Model G3512 LE-130 engine for pump 4. Maximum heat input rate is 6.00 mmBtu/hr. Pump has a designed 20 MGD water pumping capacity.
020	2090 brake hp natural gas fired Caterpillar Model G3608 LE engine for pump 5. Maximum heat input rate is 13.70 mmBtu/hr. Pump has a designed 40 MGD water pumping capacity.

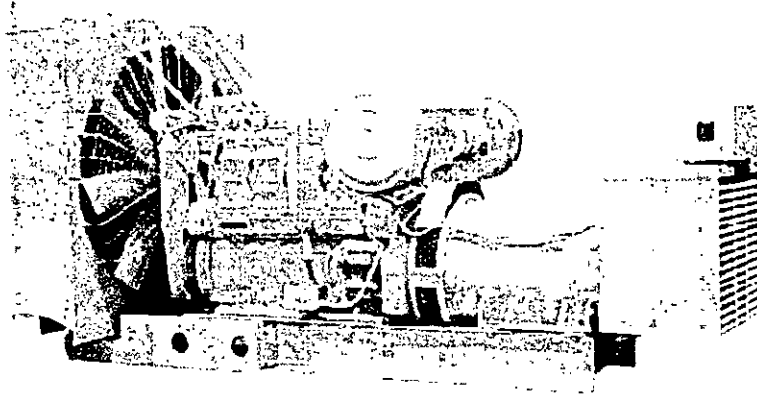
TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

3.2 REPLACEMENT EMISSION UNITS

3.2.1 REPLACEMENT OF PUMP / GENERATOR ENGINE 1

Pump engine number one (Emission unit ID No. 001) began service in August 1951 and was coupled to a 750 KW generator and could also be clutched in to drive a pump rated at 20 million gallons per day (MGD). Since this unit served two purposes, the primary of which was to provide the emergency power backup for the pump room, it was normally set up to generate emergency power and only occasionally used. This unit is to be removed and replaced by a Caterpillar Model 3508 TA-130 Series Engine and Generator.

The Model 3508 TA-130 is in Caterpillar's 3500 engine series that, according to Caterpillar are designed to operate reliably at 1800 rpm continuously. The Model 3508 TA-130 engine is a V 8 cylinder engine with a Bore & Stroke of 6.7 x 7.5 in. (170 x 190 mm) and displacement of 2105 cu. in. (34.5 liters). This is a turbocharged engine, and power output at the design aftercooler operating temperature of 130° F ranges from 379 to 1332 bhp at 1800 rpm. Following is a figure of a typical Model 3508 series engine generator package.³



Caterpillar 3508 Series Engine and Generator

3.2.2 REMOVAL OF PUMP ENGINE 2

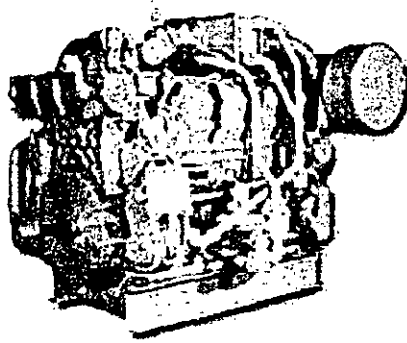
Pump engine two (E.U. ID No. 002) began service in August 1951, driving a 20 mgd pump. It has been out of service since early 1990s and parts removed for use to keep the remaining similar units in service. This engine and pump is to be removed and not replaced.

3.2.3 REPLACEMENT OF PUMP ENGINES 3 AND 4

Pump engine numbers 3 & 4 (E.U. ID Nos. 003-004) also began service in August 1951, driving 20 mgd pumps. These engines and pumps are to be removed and replaced by Caterpillar Model G3512 LE-130 engines coupled to Flowserve Model 16LNC28 high service pumps.

The Model G3512 is in Caterpillar's G3500 engine series that, according to Caterpillar are designed to operate reliably at 900 to 1400 rpm continuously. The Model G3512 LE-130 engine is a V 12 cylinder engine with a Bore & Stroke of 6.7 x 7.5 in. (170 x 190 mm) and displacement of 3158 cu. in. (51.8 liters). This is a turbocharged engine and power output at the design aftercooler operating temperature of 130° F ranges from 610 bhp to 945 bhp. Following is a figure of a typical 3500 series engine.⁴

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

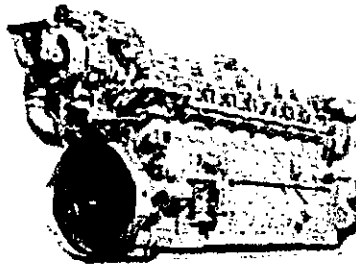


Caterpillar G3500 Series Engine

3.2.3 REPLACEMENT OF PUMP ENGINE 5

Pump engine number five (E.U. ID Nos. 005) began service in August 1951, driving a 40 mgd pump. This engines and pump is to be removed and replaced by Caterpillar Model G3608LE TA-130 engine and a Flowserve Model 600LNEC1150 high service pump rated at 40 million gallons per day.

The Model G3608LE TA-130 engine is an eight-cylinder engine in Caterpillar's G3600 series natural gas fueled engines. Caterpillar characterizes this series as high horsepower, high torque engines that are designed for reliable operation, fuel economy and low emissions. The Model G3608LE TA-130 has an in-line cylinder arrangement, with a bore and stroke of 11.81 x 11.81 in. (300 x 300 mm) and displacement of 10,350 cu. in (143 liters). This is a turbocharged engine, and power output at the design aftercooler operating temperature of 130° F ranges from 1555 bhp to 2225 bhp at 700 rpm to 1000 rpm. Following is a figure of a typical ATGL series engine.⁵



Typical Caterpillar G3600 Series Engine

4. PROJECT EMISSIONS

The emissions associated with this project are the typical pollutants from combustion of natural gas in internal combustion reciprocating engines. The primary pollutants associated with this project are NO_x and CO. Because this project essentially consists of replacing existing engines with new engines, a comparison of past actual to future potential emissions for the pollutants expected to be emitted from these engines was performed. The existing engines are fuel oil fired internal combustion reciprocating engines. With the exception of the pump/generator which will be replaced with a fuel oil fired standby generator, units will be replaced with natural gas fired internal combustion reciprocating engines, that are expected to emit much less NO_x and CO on a lb/hr basis than the existing engines. This is confirmed by the past

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

actual to future potential analysis, which also demonstrates that the project is not subject to the requirements of PSD.

4.1 ACTUAL EMISSIONS FOR EXISTING UNITS

A two-year period from April 1998 to March 2000 was used for the estimate of past actual emissions. This was the last period that all engines were operational, and is most reflective of operations prior to modifications to the east pump room. The existing engines operated far less than 8760 hours per year, average, in this period. As noted previously, engine and pump #2 were previously removed from service but are still on-site; for the period chosen this engine and pump set did not operate, so no emissions were estimated from engine #2. In the period chosen, pump engine #1 operated an average of 142.5 hours per year, pump engine #2 was zero, pump engine #3 was 1,306.3 hours per year, pump engine #4 was 1,543.0 hours per year, and pump engine #5 was 2,513.8 hours per year. Actual past emissions were estimated from fuel consumption, operating hours and past emission test results for these units.

4.1.1 MOST RECENT EMISSIONS TESTING FOR EXISTING UNITS

Emissions tests of the existing units were conducted in 1997 and 1998 for the determination of visible and nitrous oxides emissions. A summary of the nitrous oxides (NOx) emission results is included in the tabulation below:

Table 2 - Summary of Past Emissions Test Results
NOx Testing 1997 & 1998, Emissions in Lbs/MMBtu.

Pump Engine	No. 1	No. 3	No.4	No. 5
1997	2.12	1.83	2.95	2.60
1998	2.26	2.36	2.57	2.29
Average	2.19	2.10	2.76	2.45

The average value of test results for the two tests conducted will be used for the purpose of determining the annual NOx emissions of the existing units over the two year period being evaluated, as tests were also taken over a two year period, and more representative of operations than just one test result.

4.1.2 EXISTING UNIT OPERATIONS

Monthly operations of the existing units over a two-year period from April 1998 to March 2000 were selected for the estimate of past actual emissions. This was the last period that all engines were operational, and is most reflective of operations prior to modifications to the east pump room. A tabulation of the monthly fuel consumptions over this period used in the 1998, 1999 and 2000 Annual Operating Reports for Air Pollutant Emitting Facility, Alexander Orr, Jr. Water Treatment Plant is presented Table 3 below:

Table 3 - Fuel Consumption (10³ gallons Diesel)
Pump Room Engines 1 through 5

Month	Pump Engine #1	Pump Engine #3	Pump Engine #4	Monthly Total Engines 3&4	Pump Engine #5
Apr-98	0.543	2.806	4.449	7.255	3.480
May-98	-	0.992	5.921	6.913	4.620
Jun-98	-	0.589	5.301	5.890	8.280
Jul-98	0.233	0.605	4.464	5.069	3.900

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Aug-98	0.837	3.999	5.580	9.579	21.360
Sep-98	1.891	5.332	8.773	14.105	41.580
Oct-98	0.217	5.503	8.091	13.594	43.980
Nov-98	-	6.851	4.666	11.517	42.570
Dec-98	-	6.696	2.201	8.897	8.220
Jan-99	-	7.316	2.325	9.641	32.280
Feb-99	0.093	2.356	4.185	6.541	6.000
Mar-99	-	7.239	2.294	9.533	3.840
Apr-99	0.155	7.130	0.744	7.874	3.720
May-99	0.806	9.486	-	9.486	6.540
Jun-99	1.240	3.162	-	3.162	8.940
Jul-99	0.744	1.674	1.395	3.069	4.500
Aug-99	0.093	3.147	2.697	5.844	9.540
Sep-99	0.372	3.751	0.279	4.030	7.380
Oct-99	-	2.356	-	2.356	8.460
Nov-99	-	-	4.836	4.836	11.940
Dec-99	0.434	-	7.006	7.006	6.840
Jan-00	0.168	-	6.024	6.024	4.200
Feb-00	0.576	-	6.096	6.096	3.864
Mar-00	0.168	-	3.720	3.720	1.512
Annual Average Apr 98 - Mar 00	4.285	40.495	45.524	86.019	148.773

These annual average fuel consumptions for the two year period will be used with the average emission test results of each engine for NOx emissions and using emission factors obtained from the EPA Factor Inventory REtrieval (FIRE⁶)

4.1.3 ANNUAL EMISSIONS FOR EXISTING UNITS

The annual emissions for the existing units based average operations, emission tests and emission factors from the EPA FIRE database is provided in Table 4 below:

Table 4 - Existing Annual Pump Engine Emissions

	<u>Average Annual Operations</u>						Total Units & 5		
	<u>April 1998 - March 2000</u>								
	Pump / Gen Engine 1	Pump Engine 3	Pump Engine 4	Sum Pump Engines 3 & 4	Pump Engine 5				
Average Annual Fuel consumption (1000) gallons	4.285	40.495	45.524	86.019	148.773	234.8			
MMbtus based on 138 / SCC Unit (1000 gallons)	591	5,588	6,282	11,870.6	20,531	32,401			
Average Nitrogen Oxides (NOx) Emissions Test Results (Lbs/mmBTU)	2.19	2.10	2.76		2.45				
	Emission Factor	Units	Source or SCC ⁷	Annual Emissions in Tons					
Nitrogen Oxides (NOx)	-	-	Test Results	0.65	5.87	8.67	14.54	25.15	40.33
Carbon Monoxide (CO)	1.11E+02	Lbs/1000gals	20200401	0.24	2.25	2.53	4.77	8.26	13.27
PM, Total	9.55E+00	Lbs/1000gals	20200401	0.02	0.19	0.22	0.41	0.71	1.14

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PM ₁₀ , Total	7.85E+00	Lbs/1000gals	20200401	0.02	0.16	0.18	0.34	0.58	0.94
Sulfur Oxides (SO _x)	6.90E+00	Lbs/1000gals	20200401	0.00	0.01	0.01	0.01	0.03	0.04
VOC, Total	1.37E+01	Lbs/1000gals	20200401	0.03	0.28	0.31	0.59	1.02	1.64

Notes:

Emissions Factors based on Emissions Testing. EPA FIRE database Source Classification Codes
Emissions (tons/yr) = (emission factor [lbs/unit]) x (units) / 2000 lbs/ton

4.2 POTENTIAL EMISSIONS OF REPLACEMENT UNITS

Future potential emissions were estimated for the replacement engines based on operating at maximum capacity for 8760 hours per year, except for the emergency generator, which was limited to a maximum operation of 500 hours. Emissions were estimated using emission factors obtained from the EPA FIRE database and by interpolating manufacturer supplied factors for NO_x and CO for the anticipated operating loads.

4.2.1 OPERATIONAL CONSIDERATIONS OF REPLACEMENT UNIT LOADING

Due to the nature of emergency generator operations and the minimum number of hours of operation proposed a detailed analysis to determine potential operations at less than full load was not done. However, review of manufacturer supplied emission rates indicate that hourly emissions of the critical pollutants of concern decrease under lower loads.

Since the pump engine loads vary depending on the operational discharge pressures of the pump room and the specific test curves of the pump model being installed, historic hourly average discharge pressures for the pump room were obtained from the MDWASD Supervisory Control And Data Acquisition (SCADA) System. To better utilize this data in a manner that would provide a useful indicator of an average operating pressure (and thus engine loading) over a longer period of time, it was agreed by the FDEP that a 30 day rolling average discharge pressure could be used to determine the normal pump engine operation loads for the purpose of determining annual potential emissions.

Beginning in 2001, the rolling average discharge pressures dropped dramatically and variability increased. This is attributed to two abnormalities; Phase II drought restrictions were effective January 2001 until October 2001 (pressures were decreased to reduce water consumption and loss) and beginning in March 2001 pump engines 1 through 4 were taken out of service pending replacement.

Prior to this abnormal period of operations, the rolling average discharge pressure ranges between 75.2 psi and 72 psi over the two-year period from January 1, 1999 to December 31, 2000.

4.2.2 DETERMINATION OF PUMP LOADS

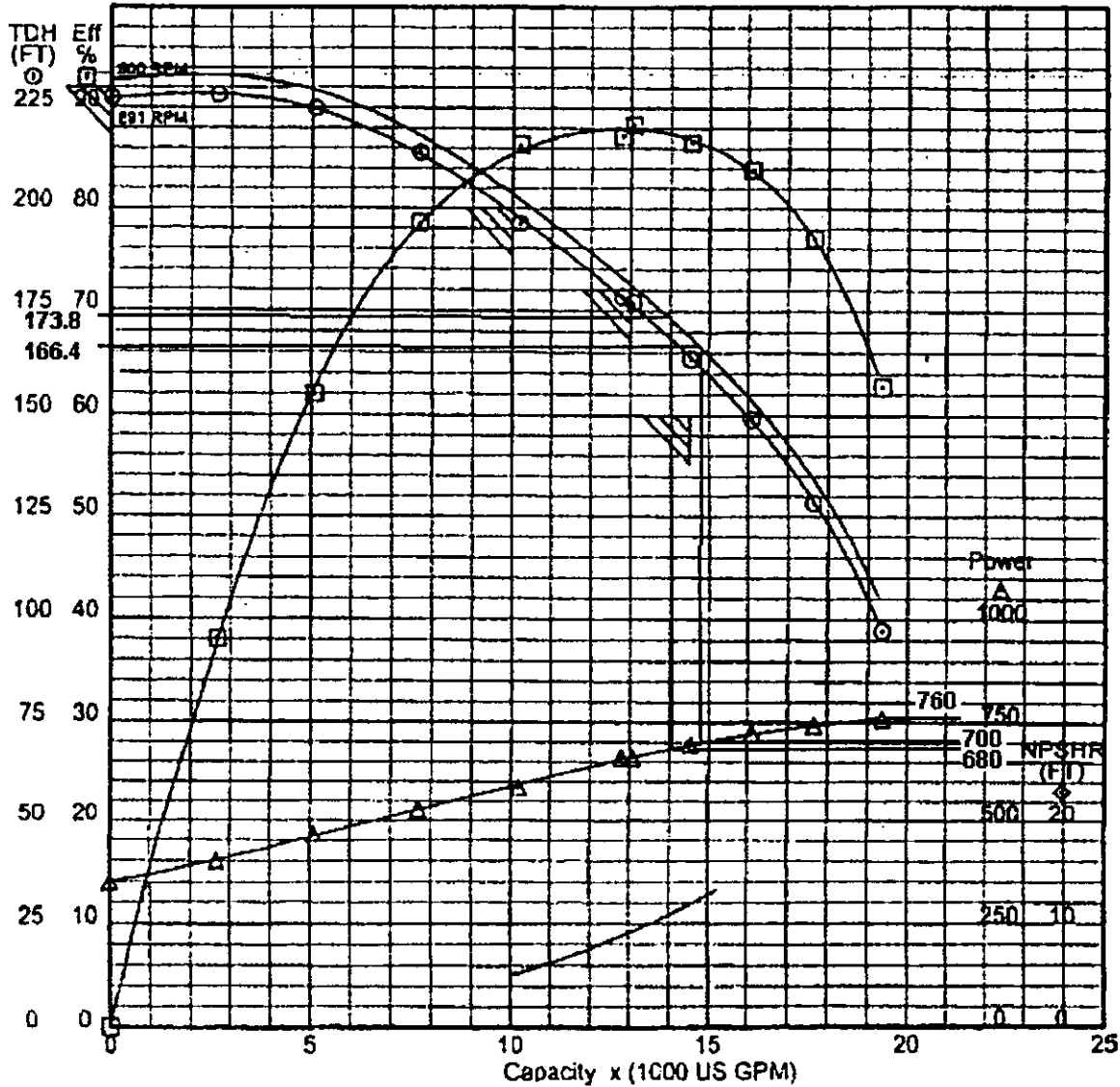
Because pump horsepower input requirements are dependent on the operational discharge pressures. The required horsepower inputs for normal operations was determined using the pump performance test curves for the pumps to be installed and the high and low rolling average discharge pressures of 75.2 and 72 psi (173.8 and 166.4 TDH respectively).

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4.2.2.1 PUMPS 3 AND 4

Pump numbers 3 and 4 are the same model, however slight differences in performance test curves required the analysis of both to obtain the horsepower input requirements.

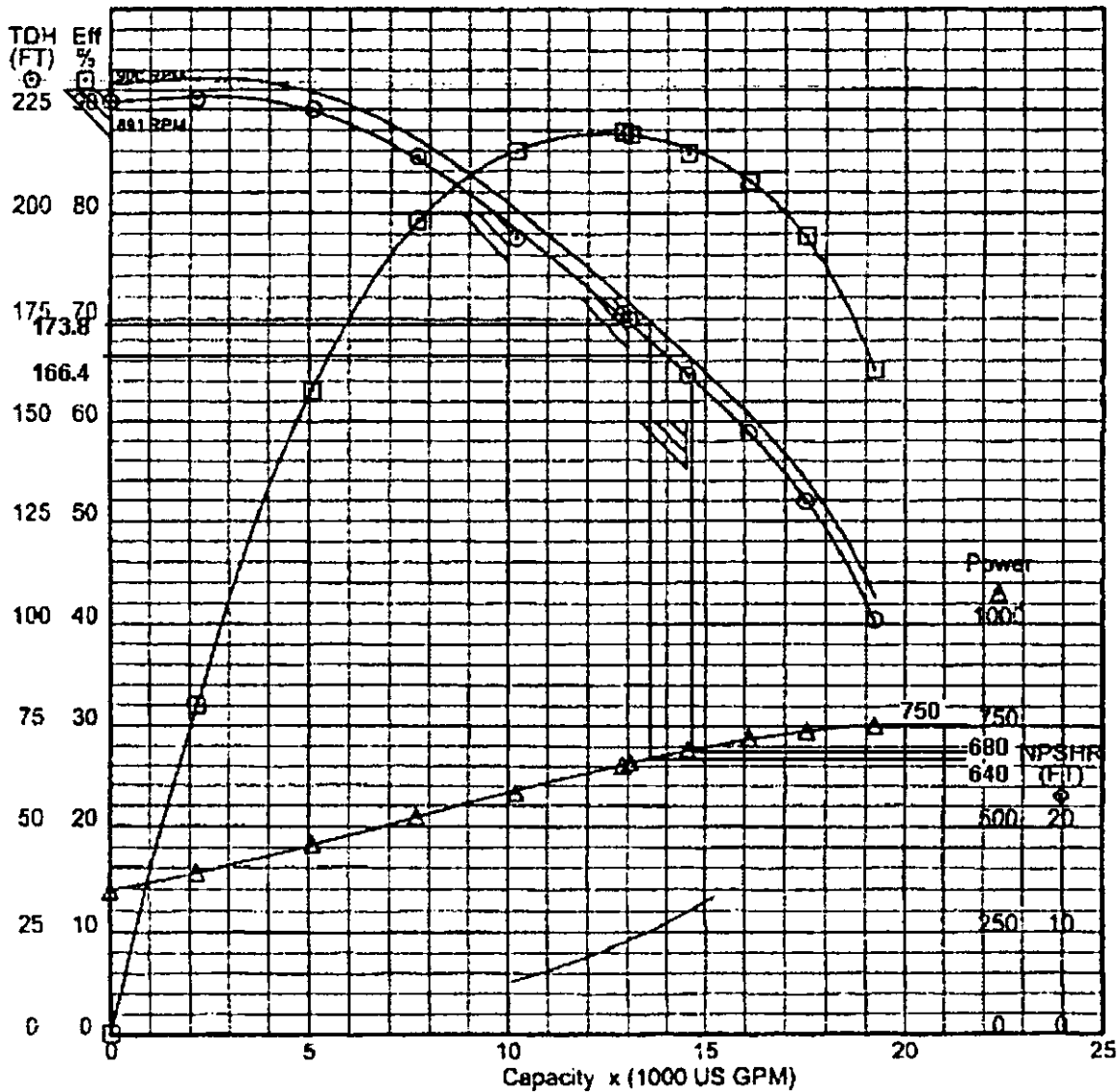
The performance test curves for these two pumps are provided in the following two figures:



Pump Curve 16LNC28 Pump Serial No. 0110MS001385-1

Based on this performance curve the maximum potential load occurring at pump run out occurs at 760 bhp. The normal operating range based on the high and low rolling average discharge pressures of 173.8 and 166.4 TDH is 700 and 680 bhp.

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Pump Curve 16LNC28 Pump Serial No. 0110MS001385-2

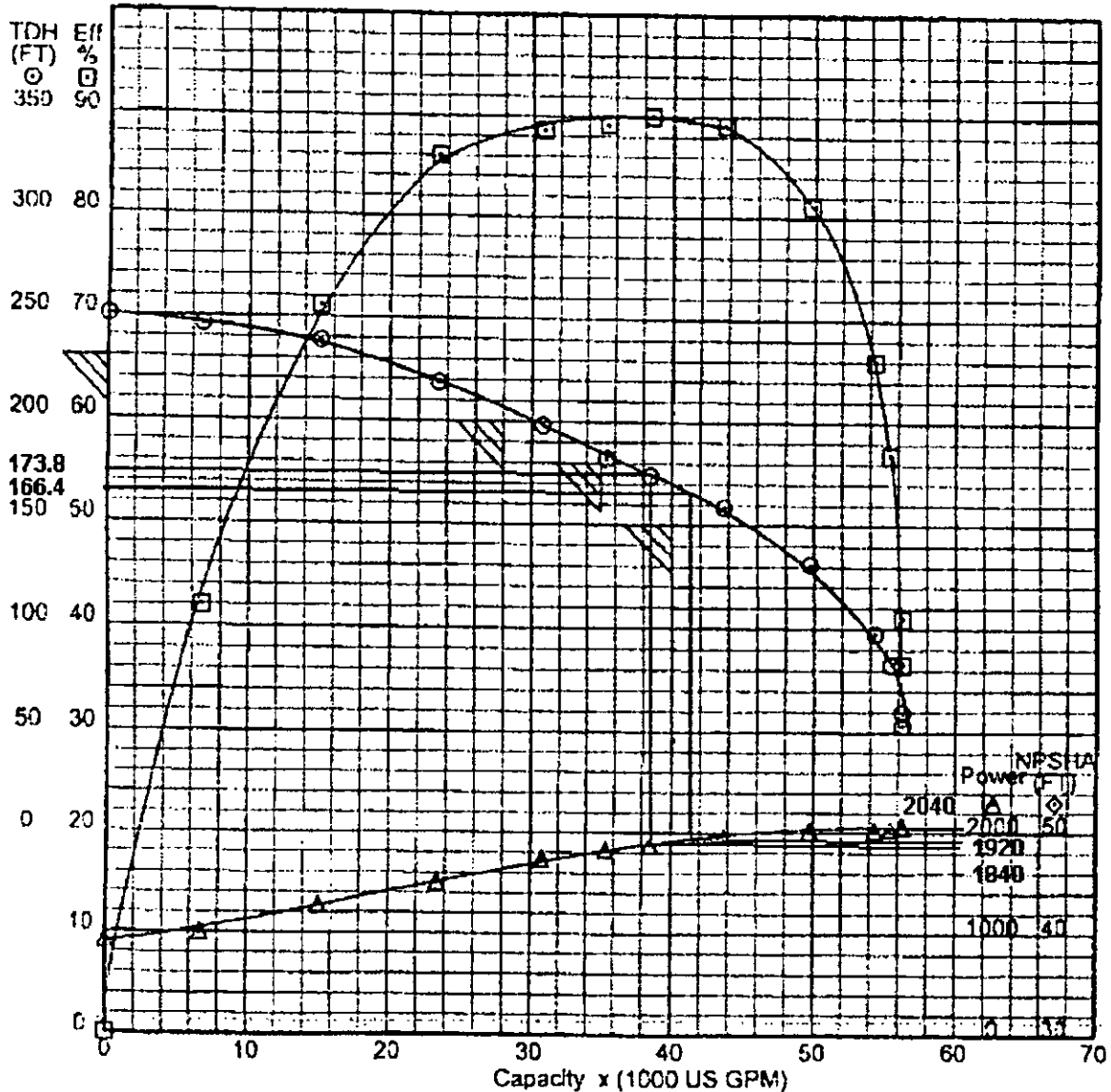
Based on this performance curve the maximum potential load occurring at pump run out occurs at 750 bhp. The normal operating range based on the high and low rolling average discharge pressures of 173.8 and 166.4 TDH is 680 and 640 bhp.

For the purposes of determining maximum and potential emissions, 760 bhp will be used for the maximum hourly load and the high of 700 bhp and low of 640 bhp will be used for the average loads to determine the annual potential emissions during operations.

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4.2.2.2 PUMP 5

The performance test curve used to obtain the horsepower input requirements for pump number 5 is provided in the following figure below:



Pump Curve 600LNEC1150 Pump Serial No. 0110MS001386-1

Based on this performance curve the maximum potential load occurring at pump run out at approximately 2020 bhp. The normal operating range based on the high and low rolling average discharge pressures of 173.8 and 166.4 TDH is approximately 1920 and 1840 bhp. For the purposes of determining maximum and potential emissions, 2020 bhp will be used for the maximum hourly load and the high of 1920 bhp and low of 1840 bhp will be used for the average loads to determine the annual potential emissions during operations.

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4.2.3 EFFECTS OF OPERATING AT OTHER THAN FULL LOADS ON EMISSIONS

Caterpillar provides operating parameters and certain pollutant emissions factors for specific engine loads. To further analyze the effects of operating the engines at other than full loads on emissions and other operating parameters at loads other than specifically provided, values were interpolated for the range of loads anticipated for each of the different replacement engines.

4.2.3.1 REPLACEMENT ENGINE NO. 1 - CATERPILLAR MODEL 3508

Table 5 summarizes the manufacturer supplied operating parameters for the Caterpillar 3508 Engine and Generator in regular text and interpolated values in italics:

Table 5
Replacement Engine No. 1 - Caterpillar Model 3508

Engine Rating Data	% load	100%	90.0%	85.0%	80.0%	75%	50%
Generator (w/ fan)	EKW	900	807	<i>761</i>	714	675	450
Engine Power	bhp	1332	1199	<i>1132</i>	1065	1009	691
Engine Data							
Specific Fuel Consumption (BSFC)	Gals/hr	66.5	60	56	53	49.8	35.2
Air Flow (Wet, @77 F, 28.8 in HG)	SCFM	2821	2662	2583	2503	2436	1886
Exhaust Stack Temperature	°F	884	840	<i>817</i>	795	776	723
Exhaust Gas Flow (Wet, @ stack temperature, 29.7 in Hg)	CFM	7327	6693	<i>6373</i>	6054	5787	4269
Engine Emissions Data							
Nitrous Oxides (NO ₂)	g/bhp-hr	12.77	13.50	<i>13.93</i>	14.42	14.88	16.87
	lb/hr	<u>37.46</u>	35.65	<i>34.74</i>	33.83	33.07	25.67
Carbon Monoxide (CO)	g/bhp-hr	0.72	0.66	<i>0.62</i>	0.59	0.55	0.55
	lb/hr	<u>2.10</u>	1.74	<i>1.56</i>	1.37	1.22	0.83
Total Hydrocarbons (THC)	g/bhp-hr	0.23	0.27	<i>0.30</i>	0.32	0.35	0.30
	lb/hr	0.68	0.72	<i>0.74</i>	0.75	<u>0.77</u>	0.46
Particulate Matter (PM)	g/bhp-hr	0.11	0.11	<i>0.11</i>	0.11	0.11	0.12
	lb/hr	<u>0.31</u>	0.29	<i>0.27</i>	0.26	0.25	0.19

The replacement generator is anticipated to operate between 100 to 75 percent load under normal conditions. Based on this range, the maximum emission rates of the pollutants provided in the table are underlined and will be used in determining the annual potential emissions for these units.

Table 6 summarizes the emissions from the Caterpillar 3508 Engine and Generator restricted to operating no more than 500 hours per year.

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Table 6 – Potential Annual Emissions 900 KW GenSet

		Hours of Operation	500	
		Fuel Consumption in 1000gals/hr	0.0665	
		Annual Fuel consumption in 1000gals	33.25	
		Annual Heat Input (mmBtus) based on or 138 /1000 gals	4,589	
	Emission Factor	Units	Source, SCC ^B	Annual Emissions in Tons
Nitrogen Oxides (NOx)	37.46	Lbs/Hr	Manufacturer	9.40
Carbon Monoxide (CO)	3.10	Lbs/Hr	Manufacturer	0.80
Particulate Matter (PM)	0.310	Lbs/Hr	Manufacturer	0.08
Particulate Matter (PM ₁₀)	0.310	Lbs/Hr	Manufacturer	0.08
Sulfur Oxides (SOx)	6.90E+00	Lbs/1000gals	20200401	0.11
Volatile Organic Compounds (VOC)	1.37E+01	Lbs/1000gals	20200401	0.20

Notes:

Emissions Factors based on Manufacturer. EPA FIRE database Source Classification Codes

Emissions (tons/yr) = (emission factor [lbs/unit]) x (units) / 2000 lbs/ton

4.2.3.2 REPLACEMENT PUMP ENGINES 3 AND 4 - CATERPILLAR G3512LE

Table 7 summarizes the manufacturer supplied operating parameters for the G3512LE TA-130 in regular text, with the interpolated values provided in italics for loads of 760, 700 and 640 bhp:

Table 7 - Replacement Pump Engines Nos. 3 and 4 - Caterpillar Model G3512LE

Engine Rating Data	% load	100%	93.8%	86.4%	79.0%	75%	50%
Engine Power (w/o fan)	bhp	810	760	700	640	607	405
Specific Fuel Consumption (BSFC)	BTU/bhp-hr	7407	7455	<u>7512</u>	7569	7600	7937
Air Flow (Wet, @77 F, 28.8 in HG)	SCFM	1668	1555	<u>1419</u>	1284	1209	827
Exhaust Stack Temperature	°F	801	797	793	788	786	777
Exhaust Gas Flow (Wet, @ stack temperature, 29.7 in Hg)	CFM	4260	3964	3610	3255	3060	2080
<u>Engine Emissions Data</u>							
Nitrous Oxides (NO ₂)	g/bhp-hr	2.00	2.32	2.70	3.09	3.30	3.30
	lb/hr	3.57	3.88	4.17	<u>4.35</u>	4.41	2.94
Carbon Monoxide (CO)	g/bhp-hr	1.60	1.62	1.65	1.68	1.70	1.90
	lb/hr	2.85	2.72	<u>2.55</u>	2.37	2.27	1.69
Total Hydrocarbons (THC)	g/bhp-hr	3.10	3.03	2.94	2.85	2.80	3.20
	lb/hr	5.53	5.07	<u>4.53</u>	4.02	3.74	2.85
Non-Methane Hydrocarbons (NMHC)	g/bhp-hr	0.47	0.46	0.44	0.43	0.42	0.48
	lb/hr	0.84	0.77	<u>0.68</u>	0.60	0.56	0.43

The replacement engines are anticipated to operate between 86.4 to 79.0 percent load on average under normal conditions. Based on this normal operating range, the maximum emission rates of the pollutants provided in the table are underlined and will be used in determining the annual potential emissions for these units. The bold values in the table are maximum values possible during transient pumping operations and are used for a maximum hour emission rate of a pollutant.

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Table 8 summarizes the emissions from the Replacement Pump Engines Nos. 3 and 4 - Caterpillar Model G3512LE TA-130 with no operating restrictions placed on the units, operating under average annual loading and pumping conditions.

Table 8 – Potential Annual Emissions Replacement Pump Engines 3 and 4

				Pump Engine 3 G3512	Pump Engine 4 G3512	Sum Pump Engines 3 & 4
	Hours of Operation			8,760	8,760	17,520
	Fuel Consumption in MCF/hr			5.258	5.258	
	Annual Fuel consumption in MMCF			43.87	43.87	87.74
	Annual Heat Input (mmBtus) based on 1050/ MMCF			46,061	46,061	92,122
	Emission Factor	Units	Source, SCC ^a	Annual Emissions in Tons		
Nitrogen Oxides (NOx)	4.35	Lbs/Hr	Manufacturer	19.10	19.10	38.20
Carbon Monoxide (CO)	2.55	Lbs/Hr	Manufacturer	11.20	11.20	22.40
PM, Filterable	1.00E+01	Lbs/MMCF	20300201	0.22	0.22	0.44
PM ₁₀ , Filterable	1.00E+01	Lbs/MMCF	20300201	0.22	0.22	0.44
Sulfur Oxides (SOx)	6.00E-01	Lbs/MMCF	20300201	0.01	0.01	0.02
Volatile Organic Compounds (VOC)	1.16E+02	Lbs/MMCF	20300201	2.50	2.50	5.00

Notes:

Emissions Factors based on Manufacturer. EPA FIRE database Source Classification Codes

Emissions (tons/yr) = (emission factor [lbs/unit]) x (units) / 2000 lbs/ton

4.2.3.3 REPLACEMENT PUMP ENGINE 5 - CATERPILLAR G3608LE

Table 9 summarizes the manufacturer supplied operating parameters for the G3608LE TA-130 in regular text, with the interpolated values provided in italics for loads of 2020, 1920 and 1840 bhp:

Table 9 - Replacement Pump Engine No. 5 - Caterpillar Model G3608 LE

Engine Rating Data	% load	100%	91.7%	86.3%	82.7%	75%	50%
Engine Power (w/o fan)	bhp	2225	2040	1920	1840	1669	1113
BSFC	BTU/bhp-hr	6810	6885	<u>6933</u>	6966	7035	7550
Air Flow (scfm @ 77°F, 13.9 psia)		6136	5663	<u>5356</u>	5152	4715	3143
Exh Flow (cfm @ stack T, 14.5 psia)		14867	13783	<u>13080</u>	12612	11610	8048
Exhaust Stack Temp (F°)		847	854	859	862	868	918
Fuel Flow (scfh 4 @ 60°F, 14.7 psia)		16743	15488	<u>14674</u>	14132	12972	9281
<u>Engine Emissions Data</u>							
NOx (as NO ₂)	g/bhp-hr	0.70	<i>0.70</i>	<i>0.70</i>	<i>0.70</i>	0.70	0.70
	lb/hr	3.43	3.15	<u>2.96</u>	2.84	2.57	1.72
CO	g/bhp-hr	1.90	<i>1.90</i>	<i>1.90</i>	<i>1.90</i>	1.90	1.90
	lb/hr	9.31	8.54	<u>8.04</u>	7.70	6.98	4.66
HC (Total)	g/bhp-hr	5.95	<i>6.07</i>	<i>6.14</i>	<i>6.19</i>	6.30	6.50
	lb/hr	29.16	27.26	<u>25.97</u>	25.10	23.16	15.94
HC(Non-Methane)	g/bhp-hr	0.89	<i>0.91</i>	<i>0.92</i>	<i>0.93</i>	0.95	0.98
	lb/hr	4.36	4.09	<u>3.90</u>	3.78	3.49	2.40

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The replacement engine is anticipated to operate between 86.3 to 82.7 percent load on average under normal conditions. Based on this normal operating range, the maximum emission rates of the pollutants provided in the table are underlined and will be used in determining the annual potential emissions for these units. The bold values in the table are maximum values possible during transient pumping operations and are used for a maximum hour emission rate of a pollutant.

Table 10 summarizes the emissions from the Replacement Pump Engine No. 5 - Caterpillar Model G3608 LE TA-130 with no operating restrictions placed on the unit, operating under average annual loading and pumping conditions.

Table 10 - Potential Annual Emissions Replacement Pump Engine 5

		Hours of Operation	8,760	
		Fuel Consumption in MCF/hr	13.312	
		Annual Fuel consumption in MMCF	111.06	
		Annual Heat Input (mmBtus) based on 1050/ MMCF	116,615	
	Emission Factor	Units	Source, SCC ¹⁰	Annual Emissions in Tons
Nitrogen Oxides (NOx)	2.96	Lbs/Hr	Manufacturer	13.00
Carbon Monoxide (CO)	8.04	Lbs/Hr	Manufacturer	35.20
PM, Filterable	1.00E+01	Lbs/MMCF	20300201	0.56
PM ₁₀ , Filterable	1.00E+01	Lbs/MMCF	20300201	0.56
Sulfur Oxides (SOx)	6.00E-01	Lbs/MMCF	20300201	0.03
Volatile Organic Compounds (VOC)	1.16E+02	Lbs/MMCF	20300201	6.40

Notes:

Emissions Factors based on Manufacturer. EPA FIRE database Source Classification Codes

Emissions (tons/yr) = (emission factor [lbs/unit]) x (units) / 2000 lbs/ton

4.2.4 ANNUAL POTENTIAL EMISSIONS OF REPLACEMENT UNITS

Table 11 summarizes the annual potential emissions for all replacement units

Table 11 - Annual Potential Emissions of Replacement Units

	900 KW GenSet	Pump Engines 3 & 4	Pump Engine 5	Total 900 KW GenSet & Pump Engines 3,4 & 5
Nitrogen Oxides (NOx)	9.40	38.20	13.00	60.60
Carbon Monoxide (CO)	0.80	22.40	35.20	58.40
PM	0.08	0.44	0.56	1.08
PM ₁₀	0.08	0.44	0.56	1.08
Sulfur Oxides (SOx)	0.11	0.02	0.03	0.16
Volatile Organic Compounds (VOC)	0.20	5.00	6.40	11.60

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4.3 SUMMARY OF PAST ACTUAL TO FUTURE EMISSIONS

Table 12 summarizes the potential maximum emissions increases of air pollutants, comparing past actual to future potential emissions in TPY:

Table 12
Summary of Past Actual to Future Emissions in Tons per Year

Pollutant	Past Actual Existing Engines	Future Potential New Engines	Maximum Emissions Change	PSD Significance Levels ¹¹	Subject to PSD Review?
NOx	40.33	60.60	20.27	40	No
CO	13.27	58.40	45.13	100	No
PM	1.14	1.08	(0.06)	25	No
PM ₁₀	0.94	1.08	0.14	15	No
SO ₂	0.04	0.16	0.12	40	No
VOC	1.64	11.60	9.96	40	No

The proposed project results in net emissions decreases or less-than-significant increases in PSD pollutants. Emission decreases will occur for sulfur dioxide (PM). Emission increases of carbon monoxide (CO), particulate matter (PM₁₀), volatile organic compounds (VOC), and nitrogen oxides (NOx) will be less than the significant emission levels per Table 62-212.400-2, F.A.C. This project will emit negligible quantities of sulfuric acid mist (H₂SO₄ mist or SAM), fluorides, beryllium, mercury and lead. Therefore the modification is not subject to PSD.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-214, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).

This facility is located in an area designated, in accordance with Rule 62-204.340, F.A.C., as attainment for the criteria pollutants ozone, PM₁₀, carbon monoxide, sulfur dioxide, and nitrogen dioxide; designated as unclassifiable for lead; and also designated as a maintenance area for ozone.

The proposed project is not subject to review under Rule 62-212.400., F.A.C., Prevention of Significant Deterioration (PSD) as discussed above.

Rule 62-4.030, F.A.C., prohibits modification of any existing emissions unit without first receiving a permit. It further specifies that a permitted installation may only be modified in a manner that is consistent with the terms of such a permit. Rule 62-210.200, F.A.C., defines "modification" to mean generally a change that results in an increase in actual emissions of air pollutants. As discussed above, emissions will increase, although not significantly. Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C., also reiterate the requirement for construction permits. As noted above, future potential emissions were estimated based on unrestricted operation of the new engines. Since future potential emissions were estimated with no restrictions on operating hours or fuel consumption, such limits are not required in the construction permit for this project. There is no unit-specific emission limiting standards applicable to the natural gas fired internal combustion units under Rule 62-296.570(4)(b)9, F.A.C. The NOx RACT requirement under Rule 62-296.570(4)(b)7, F.A.C. does apply to the oil-fired diesel generator unit. Therefore, the permit will authorize installation of the new engines to replace the existing engines, but will not subject the new natural gas engines to unit-specific limitations on emissions or operation. The Department will require only initial testing on two of the three natural gas engines for NOx to verify the emission numbers provided in the.

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application. The diesel fueled generator unit will be subject to unit-specific RACT NO_x emission limitation of 4.75 lb/million BTU.

The emission units affected by this permit shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules.

5.1 STATE REGULATIONS

Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.200	Definitions
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-296.320	General Pollutant Emission Limiting Standards

6. AIR POLLUTION CONTROL TECHNIQUES

Emissions from this project are those that typically result from combustion of natural gas and diesel fuel in four-cycle internal combustion reciprocating engines: NO_x, PM/PM₁₀, CO, VOC and SO₂. SO₂ is not a pollutant emitted in significant quantity by natural gas fuel engines. Combustion control is the technique used to control emissions from these proposed replacement engines. Combustion controlled by electronic engine controls, which are discussed in more detail below.

6.1 AIR POLLUTANTS¹²

6.1.1 NITROGEN OXIDES (NO_x) EMISSIONS

Nitrogen oxides are formed through three fundamentally different mechanisms. The principal mechanism of NO_x formation with gas-fired engines is thermal NO_x. The thermal NO_x mechanism occurs through the thermal dissociation and subsequent reaction of nitrogen (N₂) and oxygen (O₂) molecules in the combustion air. Most NO_x formed through the thermal NO_x mechanism occurs in high-temperature regions in the cylinder where combustion air has mixed sufficiently with the fuel to produce the peak temperature fuel/air interface. The second mechanism, called prompt NO_x, occurs through early reactions of nitrogen molecules in the combustion air and hydrocarbon radicals from the fuel. Prompt NO_x reactions occur within the flame and are usually negligible compared to the level of NO_x formed through the thermal NO_x mechanism. The third mechanism, fuel NO_x, stems from the evolution and reaction of fuel-bound nitrogen compounds with oxygen. Most distillate oils, have no chemically bound, and natural gas has negligible chemically bound fuel N₂ and essentially all NO_x formed is thermal NO_x.

Essentially all NO_x formed in natural gas-fired reciprocating engines occurs through the thermal NO_x mechanism. The formation of NO_x through the prompt NO_x mechanism may be significant only under

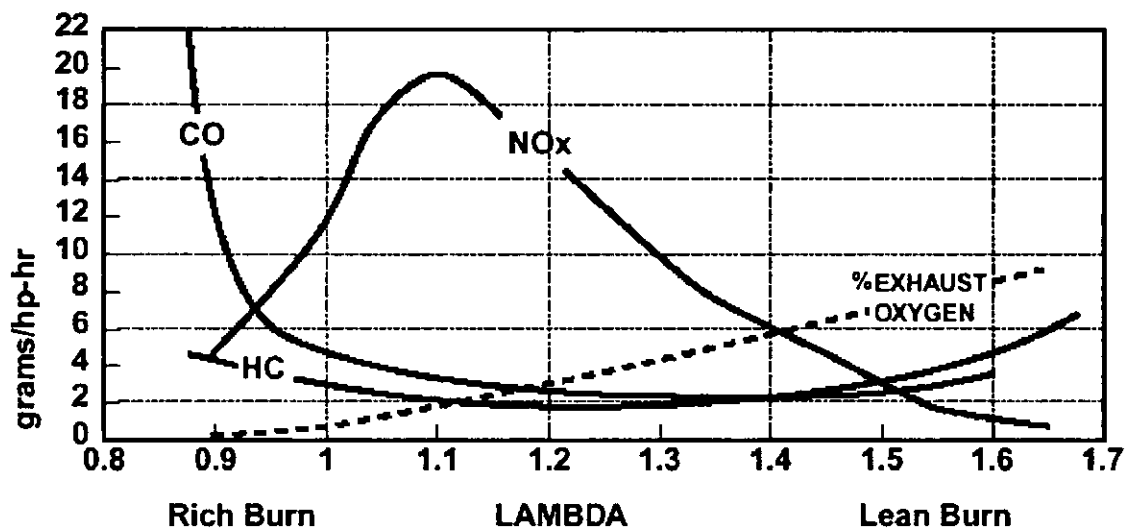
TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

highly controlled situations in rich-burn engines when the thermal NO_x mechanism is suppressed. The rate of NO_x formation through the thermal NO_x mechanism is highly dependent upon the stoichiometric ratio, combustion temperature, and residence time at the combustion temperature. Maximum NO_x formation occurs through the thermal NO_x mechanism near the stoichiometric air-to-fuel mixture ratio since combustion temperatures are greatest at this air-to-fuel ratio.

Nitrogen oxides form in the combustion process as a result of the dissociation of molecular nitrogen and oxygen to their atomic forms and subsequent recombination into seven different oxides of nitrogen. Thermal NO_x forms as a result of high temperatures in the combustion chamber (cylinders in IC engines). Increased combustion temperatures lead to increased NO_x formation. In internal combustion engines, combustion temperature is dependent upon the inlet temperature of the intake air used in combustion, the ratio of air to fuel, and the formation of thermal NO_x is highly dependent on this ratio.

Fuel NO_x is formed when fuels containing chemically bound nitrogen are burned. This phenomenon is not important when combusting natural gas because natural gas has little or no fuel nitrogen. Because natural gas will be the only fuel used in the pump engines, the fuel NO_x phenomenon is not important for this portion of the project.

The following figure illustrates the effect of the air/fuel ratio on emissions of NO_x in natural gas fired internal combustion engines. To the rich side of the stoichiometric ratio, NO_x decreases because of a lack of oxygen in the combustion chamber and lower combustion temperatures. Fuel quenching occurs under these conditions, which keeps combustion temperatures low. To the lean side of the stoichiometric ratio, NO_x reaches a peak where combustion temperature is high and ample oxygen exists for thermal NO_x formation. As conditions become leaner (air/fuel ratio increases) the combustion temperature decreases because of air quenching. The lowest NO_x emissions occur under the leanest combustion conditions.



$$\text{LAMBDA} = (\text{A/F actual}) / (\text{A/F stoich})$$

Exhaust Emissions from Natural Gas Engines (grams/hp-hr vs. Lambda)¹³

Prestratified charge combustion is a retrofit system that is limited to 4-stroke carbureted natural gas engines. In this system, controlled amounts of air are introduced into the intake manifold in a specified sequence and quantity to create a fuel-rich and fuel-lean zone. This stratification provides both a fuel-rich ignition zone and rapid flame cooling in the fuel-lean zone, resulting in reduced formation of NO_x.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.1.2 PARTICULATE MATTER (PM/PM10) EMISSIONS

White, blue, and black smoke may be emitted from IC engines. Liquid particulates appear as white smoke in the exhaust during an engine cold start, idling, or low load operation. These are formed in the quench layer adjacent to the cylinder walls, where the temperature is not high enough to ignite the fuel. Blue smoke is emitted when lubricating oil leaks, often past worn piston rings, into the combustion chamber and is partially burned. Proper maintenance is the most effective method of preventing blue smoke emissions from all types of IC engines. The primary constituent of black smoke is agglomerated carbon particles (soot). Particulate matter is formed in internal combustion engines primarily through combustion of fuel oil and lubricating oil. The particulate matter emitted from IC engines will mainly be less than 10 microns in diameter (PM10). PM emissions from natural gas fired engines are very low because natural gas is efficiently combusted and contains no ash. Combustion of natural gas under lean fuel conditions results in low PM and PM10 emissions.

6.1.3 CARBON MONOXIDE (CO) EMISSIONS

Carbon monoxide is a colorless, odorless, relatively inert gas formed as an intermediate combustion product that appears in the exhaust when the reaction of CO to CO₂ cannot proceed to completion. This situation occurs if there is a lack of available oxygen near the hydrocarbon (fuel) molecule during combustion, if the gas temperature is too low, or if the residence time in the cylinder is too short. The oxidation rate of CO is limited by reaction kinetics and, as a consequence, can be accelerated only to a certain extent by improvements in air and fuel mixing during the combustion process.

Carbon monoxide is emitted from combustion processes due to incomplete fuel combustion. Incomplete combustion occurs when insufficient oxygen exists near the fuel molecule or when quenching of combustion occurs, thus preventing complete conversion of fuel carbon-to-carbon dioxide. Proper combustion design and operation ensure that CO emissions are minimized. The previous figure also illustrates the effect of fuel to air ratio on CO emissions. CO emissions are lowest under combustion conditions that are slightly lean of the stoichiometric ratio because sufficient oxygen is present for complete oxidation of the fuel carbon while temperature is at its greatest. Under fuel rich conditions, there is not sufficient oxygen for complete combustion. CO emissions increase slightly under the leanest combustion conditions because of lower combustion temperatures and lower fuel mixture flammability.

6.1.4 VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS

In natural gas fired IC engines, hydrocarbon emissions are present in exhaust gas because of incomplete combustion of fuel. Natural gas is composed of several gaseous hydrocarbons including methane, ethane, propane, butane and heavier hydrocarbons. A portion of these will pass through the combustion chamber without reacting and will be found in the engine exhaust. Regulated volatile organic compounds (VOC) are comprised of the non-methane portion of the total hydrocarbons, because methane is considered to be not photochemically reactive. Emissions of VOC are similar to CO emissions: higher at operating conditions richer and leaner than the stoichiometric ratio. This is illustrated in the previous figure.

6.1.5 SULFUR OXIDES (SOX) EMISSIONS

Sulfur oxide emissions are a function of only the sulfur content in the fuel rather than any combustion variables. In fact, during the combustion process, essentially all the sulfur in the fuel is oxidized to sulfur dioxide (SO₂). The oxidation of SO₂ yields sulfur trioxide (SO₃), which reacts with water to give sulfuric acid (H₂SO₄), a contributor to acid rain. Sulfuric acid also reacts with basic substances to give sulfates, which are fine particulates that contribute to PM-10 and visibility reduction.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.2 EMISSION CONTROLS¹⁴

Caterpillar controls emissions by controlling combustion process. In all the proposed engine replacements, Caterpillar uses inlet air coolers (also referred to as an intercooler or aftercooler when used to cool compressed air charge from either a turbocharger or blower) to reduce the temperature of the intake air used in combustion to reduce the formation of thermal NOx emissions.

Caterpillar uses electronic controls to operate the natural gas fueled engines under lean air/fuel combustion conditions. Operation in the lean combustion range results in the lowest NOx emissions, with minimal CO and VOC emissions. Although CO and VOC emissions are lower under conditions just leaner than the stoichiometric ratio, emissions of these pollutants do not substantially increase under the leanest conditions. Operation under the leanest conditions results in a good compromise between dramatically reducing emissions of NOx and slightly increasing emissions of CO and VOC.

The Caterpillar Model G3608 engine is equipped with precombustion chambers. The engine uses a spark plug to ignite a small volume of near stoichiometric air/fuel mixture in a precombustion chamber. This combustion in the precombustion chamber rapidly expands through holes in the prechamber nozzle to ignite the very lean mixture in the main chamber or cylinder. The prechamber provides a high temperature, high speed ignition source for the combustion process which, overall is very lean ($\lambda > 2.0$). Effectively, the prechamber pushes out the lean limit observed for open chamber engines. Prechambers have the capability to operate at higher efficiency and lower NOx levels than open chamber engines. CO and HC levels will be somewhat higher than open chamber engines due to the larger quench (cool) zone around the cylinder wall.

To insure proper ignition, Caterpillar uses an Electronic Ignition System (EIS) on both the Model G3500 and G3600 series spark ignition natural gas engines to provide detonation protection and precision spark control for each cylinder. Detonation is controlled as it occurs and timing is retarded only as much and as long as necessary to prevent engine damage. The system consists of three basic groups: the control module, ignition transformers and sensors. The control module monitors engine operation through a series of sensors. The control module uses input from the sensors and the control panel settings to determine ignition timing. Detonation sensors (RHDS and LHDS) monitor the engine for excessive detonation (vibration). A speed/timing sensor provides accurate spark timing information for the control module. A manifold air pressure sensor provides engine load information to the EIS Control Module. The EIS system allows improved operation; economy, lower emission levels and also protects the engine from detonation and costly downtime, and maximizes power availability under adverse conditions.

Caterpillar's Industrial Air/Fuel Ratio Control System provides air/fuel ratio control (exhaust emissions control and performance tolerance to fuel BTU changes) and engine speed governing. Contains two subsystems, air-to-fuel ratio control and speed governing control that work together to maintain optimum engine operation throughout various operating conditions.

The Model G3608 is also fitted with Caterpillar's Engine Supervisory System (ESS). The ESS integrates several control systems installed on the engine. The ESS communicates with the Engine Control System that controls the air/fuel ratio, the ignition timing, and the limiting of power.

These electronic engine controls optimize engine operation by continually balancing power output, fuel economy and air/fuel ratio. While not specifically designed for emissions control, these controls work to maintain lean combustion conditions, which result in the lowest emissions, while maintaining a large operating range for the engines.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.3 COMPLIANCE PROCEDURES

There are no specific compliance requirements for the natural gas fueled pump engines because there are no unit-specific limitations on emissions or operation. The diesel fueled generator is subject to an operating limit of 500 hours per year and NOx RACT emission limitation of 4.75 lb/million BTU. The engines are subject to the general visible emissions limitation of less than 20% opacity of Rule 62-296.320(4)(b), F.A.C.

7. SOURCE IMPACT ANALYSIS

An impact analysis was not required for this project because it is not subject to the requirements of PSD.

8. CONCLUSION

Based on the foregoing technical evaluation and other available information, a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations. The Department will issue a draft permit to MDWASD that allows removal and replacement of the existing engine driven pumps #1 through #5 with a new diesel fueled engine driven generator and natural gas fuel engine driven pumps 3, 4 and 5.

The new engines will be subject to the requirements of the facility-wide specific conditions of Section II of the permit. The diesel fueled engine driven generator will be subject to an operating limit of 500 hours per year and NOx RACT emission limitation of 4.75 lb/million BTU, but the natural gas fueled pump engines will not be subject to any unit-specific emission limits. The natural gas fueled pump engines will be subject to an initial testing for NOx on two of the three engines.

This evaluation was prepared by:

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TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

REFERENCES

- ¹ Provided by WASD at <http://www.co.miami-dade.fl.us/wasd/about.htm>.
- ² Application, April 2002.
- ³ Information and photo from Caterpillar's promotional and technical information found at www.cat.com.
- ⁴ Information and photo from Caterpillar's promotional and technical information found at www.cat.com.
- ⁵ Information and photo from Caterpillar's promotional and technical information found at www.cat.com.
- ⁶ Factor Information REtrieval (FIRE) Data System is a database containing EPA's recommended emission estimation factors for criteria and hazardous air pollutants.
- ⁷ Source Classification Code, 20200401 is SCC for Internal Combustion Engines, Industrial, Large Bore Engine, Diesel
- ⁸ Source Classification Code, 20200401 is SCC for Internal Combustion Engines, Industrial, Large Bore Engine, Diesel
- ⁹ Source Classification Code, 20300201 is SCC for Internal Combustion Engines, Commercial/Institutional, Natural Gas, Reciprocating
- ¹⁰ Source Classification Code, 20300201 is SCC for Internal Combustion Engines, Commercial/Institutional, Natural Gas, Reciprocating
- ¹¹ Florida Administrative Code 212.400-2
- ¹² Text of this section is adapted from *Compilation of Air Pollutant Emission Factors (AP- 42)*, Volume I. Stationary Point and Area Sources, Chapter 3 Stationary Internal Combustion Sources, Fifth Edition.
- ¹³ Excerpted from Caterpillar Brochure LEKQ7261 *Gas Engines Application and Installation Guide G3600-G3300* © 1997 Caterpillar Inc.
- ¹⁴ Information excerpted from Caterpillar product brochures, LEKQ7261, *Gas Engines Application and Installation Guide G3600-G3300* © 1997 Caterpillar Inc., LEKQ7257, *Gas Engines Application and Installation Guide G3500-G3300* © 1998 Caterpillar Inc., LEKQ7518, *G3500 Engine Basics*, © 1999 Caterpillar Inc., and LEKQ9085, *G3600 Engine Basics*, © 1999 Caterpillar Inc.

PERMITTEE

Miami-Dade Water & Sewer Department
Alexander Orr, Jr. WTP

3071 SW 38th Avenue
Miami, Florida 33146-1520

Authorized Representative:

Mr. Jorge S. Rodriguez, P.E.
Assistant Director – Water

PROJECT AND LOCATION

The permit authorizes Miami-Dade Water & Sewer Department to remove existing pumps and engines numbers 1 and 2, replacing the (pump/generator) capacity of engine number 1 with a diesel fueled engine driven emergency generator set and to replace existing diesel fueled engine driven pump numbers 3, 4 and 5 with three natural gas fueled engine driven pumps.

This facility is located at the Alexander Orr, Jr. Water Treatment Plant, 6800 SW 87 Avenue, Miami, Miami-Dade County. UTM coordinates are: Zone 17, 566.6 km E and 2843.5 km N.

STATEMENT OF BASIS

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and the Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297. The above named permittee is authorized to perform the construction in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

APPENDIX

The attached appendix is a part of this permit:

Appendix GC General Permit Conditions

Permit No.	0250314-005-AC
Project	Three Natural Gas Fueled Engine Driven Pump Sets
SIC No.	4941
Expires:	December 31, 2003

Howard L. Rhodes, Director
Division of Air Resources
Management

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SECTION I. FACILITY INFORMATION

FACILITY DESCRIPTION

This facility consists of a municipally owned water treatment plant providing potable water to the public.

PROJECT DETAILS

This permitting action is to remove existing pumps and engines numbers 1 and 2, replacing the (pump/generator) capacity of engine number 1 with a diesel fueled engine driven emergency generator set and to replace existing diesel fueled engine driven pump numbers 3, 4 and 5 with three natural gas fueled engine driven pumps. Emissions units that will be removed are 001 (engine and pump #1), 002 (engine and pump #2 which were previously removed from service), 003 (engine and pump #3), 004 (engine and pump #4), and 005 (engine and pump #5). Emissions units addressed by this permit are:

Emissions Unit No.	Emissions Unit Description
023 ¹	1332 brake hp diesel fired Caterpillar Model 3508 TA-130 a 4-cycle turbocharged diesel internal combustion (IC) engine driving an electric generator prime rating 900 kW. Maximum heat input rate is 9.2 mmBtu/hr.
018 ²	810 brake hp natural gas fired Caterpillar Model G3512 LE-130 engine for pump 3. Maximum heat input rate is 6.00 mmBtu/hr. Pump has a designed 20 million gallons per day (MGD) water pumping capacity.
019 ²	810 brake hp natural gas fired Caterpillar Model G3512 LE-130 engine for pump 4. Maximum heat input rate is 6.00 mmBtu/hr. Pump has a designed 20 MGD water pumping capacity.
020 ²	2090 brake hp natural gas fired Caterpillar Model G3608 LE engine for pump 5. Maximum heat input rate is 13.70 mmBtu/hr. Pump has a designed 40 MGD water pumping capacity.

1 – New Emission Unit

2 – Previously Permitted Emission Units

REGULATORY CLASSIFICATION

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

This facility is not within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 250 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

This project is exempt from the requirements of Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) as discussed in the Technical Evaluation and Preliminary Determination dated September 25, 2002.

The emission unit 023 in this project is subject to the Reasonable Available Control Technology (RACT) requirements of 62-296.570(4)(b)7 which limits the emissions of NO_x to 4.75 lb/MMBtu from oil fired diesel generator.

SECTION I. FACILITY INFORMATION

The emissions units (18, 19 and 20) included in this project are not subject to any unit-specific emission limiting standard (considered "unregulated" for purposes of Title V permitting).

PERMIT SCHEDULE

- 05/13/02 Received application for construction permit
- 08/05/02 Permit application deemed complete
- 09/xx/02 Distributed Notice of Intent to Issue permit
- 10/xx/02 Notice of Intent published in _____

RELEVANT DOCUMENTS

The documents listed below are the basis of the permit. They are specifically related to this permitting action. These documents are on file with the Department.

- Application received at the Bureau of Air Regulation on May 13, 2002
- Department's letter dated June 10, 2002
- Applicant's response received August 5, 2002
- Department's Technical Evaluation and Preliminary Determination dated September 25, 2002
- Department's Intent to Issue and public notice information dated September xx, 2002

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SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

The following specific conditions apply to all emissions units at this facility addressed by this permit.

ADMINISTRATIVE

1. **Regulating Agencies:** All documents related to applications for permits to construct, operate or modify an emissions unit should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, phone number 850/488-0114. All documents related to reports, tests, minor modifications and notifications shall be submitted to the Department's Southeast District office at PO Box 15425, West Palm Beach, Florida, 33416-5425, and phone number 561/681-6600. Copies of all documents should be sent also to the Air Quality Management Division, Miami-Dade County Department of Environmental Resources Management, Suite 900 33 SW Second Avenue, Miami, Florida 33130-1540.
2. **General Conditions:** The owner and operator is subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
3. **Terminology:** The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
4. **Applicable Regulations, Forms and Application Procedures:** Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of Chapter 403, F.S. and Florida Administrative Code Chapters 62-4, 62-110, 62-204, 62-212, 62-213, 62-296, 62-297 and the Code of Federal Regulations Title 40, Part 60, adopted by reference in the Florida Administrative Code (F.A.C.) regulations. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. **New or Additional Conditions:** Pursuant to Rule 62-4.080, F.A.C., for good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. **Expiration:** This air construction permit shall expire on **December 31, 2003**. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation prior to 60 days before the expiration of the permit. [Rules 62-210.300(1), 62-4.070(4), 62-4.080, and 62-4.210, F.A.C.]
7. **Modifications:** No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit must be obtained prior to the beginning of construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. **Title V Operation Permit Required:** This permit authorizes construction and/or installation of the permitted emissions unit and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The owner

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

or operator shall apply for and receive a Title V operation permit prior to expiration of this permit. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's Southeast District office. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

EMISSION LIMITING STANDARDS

9. General Visible Emissions Standard: Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer, or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as Number 1 on the Ringelmann Chart (20% opacity). The test method for visible emissions shall be EPA Method 9, incorporated and adopted by reference in Chapter 62-297, F.A.C. Test procedures shall meet all applicable requirements of Chapter 62-297, F.A.C. [Rule 62-296.320(4)(b)1, F.A.C.]
10. General Pollutant Emission Limiting Standards: [Rule 62-296.320(2), F.A.C.]

No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.

[Note: An objectionable odor is defined in Rule 62-210.200(198), F.A.C., as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.]

OPERATIONAL REQUIREMENTS

11. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by hazard of fire, wind or by other cause, the permittee shall immediately notify the Department's district office and, if applicable, appropriate local program. The notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. [Rule 62-4.130, F.A.C.]
12. Circumvention: No person shall circumvent any air pollution control device or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]
13. Excess Emissions:
- (a) Excess emissions resulting from start-up, shutdown or malfunction of any emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
 - (b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

COMPLIANCE MONITORING AND TESTING REQUIREMENTS

14. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20 percent below the allowable emission limiting standards. [Rule 62-297.310(1), F.A.C.]
15. Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emission shall be conducted with the emission unit operation at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emission unit may be tested at less than the minimum permitted capacity; in this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]
16. Calculation of Emission Rate: The indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule.
17. Test Procedures shall meet all applicable requirements of Rule 62-297.310(4), F.A.C. [Rule 62-297.310(4), F.A.C.]
18. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions units and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]
19. Determination of Process Variables.
- (a) Required Equipment. The owner or operator of an emission unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emission data to determine the compliance of the emission unit with applicable emission limiting standards.

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

- (b) Accuracy of Equipment: Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. [Rule 62-297.310(5), F.A.C.]
20. Required Stack Sampling Facilities: Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. Sampling facilities shall also conform to the requirements of Rule 62-297.310(6), F.A.C. See Appendix SS-1, Stack Sampling Facilities. [Rule 62-297.310(6), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

21. Test Notification: The owner or operator shall notify the Department's Southeast District office, Air Program and, if applicable, appropriate local program, at least 15 days prior to the date on which each formal compliance test is to begin. Notification shall include the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]
22. Duration of Record Keeping: Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least five years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule. [Rules 62-4.160(14)(a)&(b) and 62-213.440(1)(b)2.b., F.A.C.]
23. Test Reports: The owner or operator of an emission unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emission unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.]
24. Excess Emissions Report: If excess emissions occur, the owner or operator shall notify the Department within one working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident. Pursuant to the New Source Performance Standards, excess emissions shall also be reported in accordance with 40 CFR 60.7, Subpart A. [Rule 62-4.130, F.A.C.]

SECTION II. FACILITY-WIDE SPECIFIC CONDITIONS

25. Excess Emissions Report - Malfunctions: In case of excess emissions resulting from malfunctions, each owner or operator shall notify the Department or the appropriate local program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report if requested by the Department. [Rule 62-210.700(6), F.A.C.]
26. Annual Operating Report for Air Pollutant Emitting Facility: The Annual Operating Report for Air Pollutant Emitting Facility shall be completed each year and shall be submitted to the Department's Southeast District office and, if applicable, the appropriate local program by March of the following year. [Rule 62-210.370(3), F.A.C.]

DRAFT

09/25/12

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

The following specific conditions apply to the following emission unit after construction:

Emissions Unit No.	Emissions Unit Description
023	1332 brake hp diesel fired Caterpillar Model 3508 TA-130, a 4-cycle turbocharged diesel internal combustion (IC) engine driving an electric generator prime rating 900 kW. Maximum heat input rate is 9.2 mMBtu/hr.

[Note: This emission unit is subject to the NO_x RACT requirements of 62-296.570, F.A.C.]

OPERATIONAL REQUIREMENTS

1. Hours of Operation: The emission unit may operate for 500 hours/year. [Rule 62-210.200, F.A.C., Definitions-potential to emit (PTE)]
2. Fuel: The emission unit shall be fired with diesel fuel with a maximum sulfur content of 0.05 percent, by weight. Fuel consumption shall not exceed 33,250 gallons of diesel fuel in any consecutive 12-month period. The owner or operator shall keep monthly records of total fuel consumption for the emission unit. [Rule 62-210.200, F.A.C., Definitions-potential to emit (PTE)]
3. Operating Procedures: The emission unit shall be properly operated and maintained at all times in a condition to minimize emissions of air pollutants. The owner and operator shall ensure that all facility staff responsible for the emission unit is trained in the operation and maintenance in accordance with the guidelines and procedures as established by the equipment manufacturers. [Rule 62-4.070(3), F.A.C.]

EMISSION LIMITATIONS AND STANDARDS

4. Visible Emission: These emission units are subject to the General Visible Emission Standards. See condition 9 in Section II, Facility-Wide Specific Conditions. [Rule 62-296.320(4)(b), F.A.C.]
5. Nitrogen Oxides (NO_x) Emission: Emission of NO_x shall not exceed 4.75 lb/MMBtu. [Rule 62-296.570(4)(b)7, F.A.C.]

COMPLIANCE MONITORING AND TESTING REQUIREMENTS

6. Visible Emission: Compliance with the visible emission limitation shall be determined each federal fiscal year (Oct. 1-Sept. 30) using EPA Method 9 contained in 40 CFR 60, Appendix A and adopted by reference in Rule 62-297, F.A.C. The minimum requirements for stationary point sources emission test procedures and reporting shall be in accordance with Rule 62-297, F.A.C. and 40 CFR 60 Appendix A. [Rule 62-297, F.A.C.]
7. Nitrogen Oxide (NO_x) Emission Tests: Compliance with the emission limits for NO_x of this permit shall be demonstrated each federal fiscal year (Oct. 1-Sept. 30), if applicable, by using EPA Method 7 or 7E, as described in 40 CFR 60, Appendix A, adopted by reference in Rule 62-204.800, F.A.C., and adopted in Rule 62-297.401, F.A.C. Sampling of the exhaust gas shall be via a rake probe placed into the engine exhaust outlet. [Rules 62-4.070(3), 62-204.800, 62-297.310, and 62-297.401, F.A.C.]
8. Fuel Sulfur Content Tests: The owner or operator shall determine the sulfur content of each delivery of diesel fuel received for these emission units using ASTM D 4057-88, Standard Practice for

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

Manual Sampling of Petroleum and Petroleum Products and one of the following test methods for sulfur in petroleum products: ASTM D 129-91, ASTM D 2622-94, or ASTM D 4294-90. These methods are adopted by Rule 62-297.440, F.A.C. The owner or operator may comply with this requirement by receiving records from the fuel supplier that indicate the sulfur content of the fuel delivered complies with the sulfur limit of specific condition 2. [Rules 62-4.070(3), 62-297.440, F.A.C.]

9. Fuel Consumption: The owner or operator shall monitor fuel consumption by metering the fuel between the storage tank and the emission unit. [Rule 62-4.070(3), F.A.C.]

REPORTING AND RECORDKEEPING REQUIREMENTS

10. Meter Fuel Calibration: Calibration of the fuel meter shall be conducted in accordance with manufacturer's schedule and recommendation. [Rule 62-4.070(3), F.A.C.]
11. Fuel Sulfur Content Records: The owner or operator shall maintain records of sulfur content of each delivery of diesel fuel received for the emission unit. [Rule 62-4.070(3), F.A.C.]
12. Records of Maintenance: The owner or operator shall make and maintain records of maintenance sufficient to demonstrate compliance with the operating procedure requirements of specific condition 3 of this permit. [Rule 62-4.070(3), F.A.C.]

SECTION III. EMISSIONS UNITS SPECIFIC CONDITIONS

The following specific conditions apply to the following emissions units after construction:

Emissions Unit No.	Emissions Unit Description
018	810 brake hp natural gas fired Caterpillar Model G3512 LE-130 engine for pump 3. Maximum heat input rate is 6.00 mmBtu/hr. Pump has a designed 20 million gallons per day (MGD) water pumping capacity.
019	810 brake hp natural gas fired Caterpillar Model G3512 LE-130 engine for pump 4. Maximum heat input rate is 6.00 mmBtu/hr. Pump has a designed 20 MGD water pumping capacity.
020	2090 brake hp natural gas fired Caterpillar Model G3608 LE engine for pump 5. Maximum heat input rate is 13.70 mmBtu/hr. Pump has a designed 40 MGD water pumping capacity.

Note: These emissions units are not subject to any unit-specific applicable requirements. They are subject to the requirements of Section II, Facility-Wide Specific Conditions, of this permit. This permit was written to authorize removal of emissions units 003 through 005 and installation of these emissions units. The Waukesha units permitted in 1999 (0250314-003-AC) were not installed and are being replaced by the Caterpillar units. However, uncontrolled potential emissions are not significantly greater than past actual emissions for purposes of PSD. The Department is requiring initial tests for NOx emissions on both Unit No. 18 or 19 and Unit No. 20 for demonstration purposes only.

OPERATIONAL REQUIREMENTS

- Hours of Operation:** These emissions units may operate continuously, i.e., 8,760 hours/year. [Rule 62-210.200, F.A.C., Definitions-potential to emit (PTE)]
- Fuel:** The emission unit shall be fired with natural gas. Fuel consumption shall not exceed 88 million standard cubic feet (MMscf) in any consecutive 12-month period for Units 018 and 019 combined. Annual fuel consumption shall not exceed 111 MMscf in any consecutive 12-month period for Unit 020. The owner or operator shall keep monthly records of total fuel consumption for these emissions units. [Rule 62-210.200, F.A.C., Definitions-potential to emit (PTE)]
- Operating Procedures:** The emission unit shall be properly operated and maintained at all times in a condition to minimize emissions of air pollutants. The owner and operator shall ensure that all facility staff responsible for the emission unit is trained in the operation and maintenance in accordance with the guidelines and procedures as established by the equipment manufacturers. [Rule 62-4.070(3), F.A.C.]
- Nitrogen Oxide (NOx) Initial Emission Tests:** Initial NOx emissions tests shall be conducted on either Unit No. 18 or 19 and Unit No. 20. NOx emissions from Unit No. 18 or 19 shall not exceed 4.4 lb/hr. NOx emissions from Unit No. 20 shall not exceed 3.2 lb/hr. NOx emissions shall be demonstrated by using EPA Method 7 or 7E, as described in 40 CFR 60, Appendix A, adopted by reference in Rule 62-204.800, F.A.C., and adopted in Rule 62-297.401, F.A.C. Sampling of the exhaust gas shall be via a rake probe placed into the engine exhaust outlet. Test report shall be submitted to the Bureau of Air Regulation in Tallahassee. [Rule 62-210.200, F.A.C., Definitions-potential to emit (PTE)]

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
- Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

APPENDIX GC
GENERAL PERMIT CONDITIONS [RULE 62-4.160, F.A.C.]

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology ();
 - (b) Determination of Prevention of Significant Deterioration (); and
 - (c) Compliance with New Source Performance Standards ().
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Memorandum

Florida Department of Environmental Protection

TO: Al Linero

FROM: Syed Arif *Syed Arif 9/24*

DATE: September 24, 2002

SUBJECT: Miami-Dade Water & Sewer Department
Alexander Orr, Jr. WTP
Three Natural Gas Fueled Engine Driven Pump Sets & One Diesel Fueled
Standby Generator

Attached for approval and signature is the construction permit for MDWASD's Alexander Orr, Jr. Water Treatment Plant. The permit is to remove existing pumps and engines numbers 1 and 2, replacing the (pump/generator) capacity of engine number 1 with a diesel fueled engine driven emergency generator set and to replace existing diesel fueled engine driven pump numbers 3, 4 and 5 with three natural gas fueled engine driven pumps.

The existing pump engines are fuel oil fired. The replacement engines have significantly lower air pollutant emissions per unit of work. The replacement emergency generator is restricted to 500 hours of operation annually. This restriction will keep nitrogen oxides emissions below the PSD significance levels. With the exception of carbon monoxide, potential emissions from the new engines are not expected to significantly increase compared to the past actual emissions of the existing engines. Carbon monoxide emissions do not increase above the PSD significance levels. An air quality impact analysis was not required or conducted.

The original permitting was done in 1999. The units proposed in the previous permit were not installed, the emission increment was not consumed and this project replaces the previous one.

September 24 is Day 50 of the project.

I recommend your approval and signature.

Attachments

/sa



Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

P.E. Certification Statement

Miami-Dade Water & Sewer Department
Alexander Orr, Jr. WTP
Three Natural Gas Fueled Engine Driven Pump Sets
and One Diesel Fueled Standby Generator


DEP File No.: 0250314-005-AC
Facility ID No.: 0250314

Project: Air Construction Permit

I HEREBY CERTIFY that the engineering features described in the above referenced application and related additional information submittals, if any, and subject to the proposed permit conditions, provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical, structural, hydrological, and geological features).

I conducted this review.

(Seal)



Syed Arif, P.E.

Registration Number: 51861

9/24/02
Date

Permitting Authority:

Florida Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation
New Source Review Section
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Telephone: 850/921-9528
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