



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- REVISED

PERMITTEE

Metropolitan Water Reclamation District
Attn: Director of Maintenance and Operations
100 East Erie Street
Chicago, Illinois 60611

Application No.: 75060004

I.D. No.: 031820AAC

Applicant's Designation:

Date Received: October 17, 2019

Subject: John E. Egan Water Reclamation Plant

Date Issued: December 31, 2019

Expiration Date: April 16, 2025

Location: 550 South Meacham Road, Schaumburg, Cook County 60193

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of four (4) 21.0 mmBtu/hour natural/digester gas-fired boilers, two (2) 30.78 mmBtu/hour digester gas flares as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued :
 - i. To limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for Carbon Monoxide (CO), Sulfur Dioxide (SO₂), and 50 tons/year for Nitrogen Oxides (NO_x)). As a result the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
 - ii. To establish federally enforceable production and operating limitations, which restrict the potential to emit for NO_x to less than 50 tons per year so that the source is not subject to the requirements of 35 Ill. Adm. Code Part 217 Subpart E (Industrial Boilers).
- b. Prior to initial issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permit(s) for this location.
- 2a. The four boilers and two digester gas flares are subject to 35 Ill. Adm. Code Part 212 Subpart B (Visible Emissions). Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.

- b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
3. The two digester gas flares are subject to 35 Ill. Adm. Code Part 214 Subpart K (Process Emission Sources). Pursuant to 35 Ill. Adm. Code 214.301, , except as further provided by 35 Ill. Adm. Code Part 214, no person shall cause or allow the emissions of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm.
4. The four natural/digester gas-fired boilers are subject to 35 Ill. Adm. Code Part 216 Subpart B (Fuel Combustion Emission Sources). Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm, corrected to 50 percent excess air.
5. The source is subject to 35 Ill. Adm. Code Part 215 Subpart C (Organic Emissions from Miscellaneous Equipment). Pursuant to 35 Ill. Adm. Code 218.141(a), no person shall use any single or multiple compartment effluent water separator which receives effluent water containing 757 l/day (200 gal/day) or more of organic material from any equipment processing, refining, treating, storing or handling organic material unless such effluent water separator is equipped with air pollution control equipment capable of reducing by 85 percent or more the uncontrolled organic material emitted to the atmosphere. Exception: If no odor nuisance exists the limitations of 35 Ill. Adm. Code 218.141(a) shall not apply if the vapor pressure of the organic material is below 17.24 kPa (2.5 psia) at 294.3°K (70°F).
- 6a. This permit is issued based on the source not being subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63 Subpart DDDDD because this source is not or is part of, a major source of HAP as defined in 40 CFR 63.2.
- b. This permit is issued based on the boilers at this source not being subject to the requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63 Subpart JJJJJJ. Pursuant to 40 CFR 63.11195(e), gas-fired boilers (includes any boiler that burns gaseous fuels) are not subject to 40 CFR 63 Subpart JJJJJJ.
- 7a. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to

minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the nuisance.

- b. The flares shall be in operation at all times with a flame present whenever there is flow to the flares.
 - c. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on all the flares such that the flares are kept in proper working condition and not cause a violation of the Environmental Protection Act or regulations promulgated therein.
 - d. This permit is issued based on the use of only natural gas or digester gas as the fuels in the four 21.0 mmBtu/hr boilers. The use of any other fuel in any of the 21.0 mmBtu/hr boilers requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
 - e. The Hydrogen Sulfide concentration of the digester gas shall not exceed 0.1 volume percent based on monthly testing of the digester gas.
- 8a. Emissions from and operation of the the four 21.0 mmBtu/hour natural/digester gas-fired boilers shall not exceed the following limits:

Pollutant	Fuel Usage		Emission Factor (lbs/10 ⁶ scf)	Emissions	
	(10 ⁶ scf/Month)	(10 ⁶ scf/Year)		(Tons/Month)	(Tons/Year)
CO	80.7	806.4	84.0	3.39	33.87
NO _x			100.0	4.04	40.32
PM			7.6	0.31	3.05
SO ₂			169.0	6.82	68.14
VOM			5.5	0.23	2.22

These limits are based on maximum fuel usage and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998). SO₂ emissions are based on the complete combustion of H₂S in digester gas at a concentration of 0.1% by volume.

- b. Emission from and operation of the two 30.78 mmBtu/hour digester gas flares shall not exceed the following limits:

Pollutant	Fuel Usage		Emission Factor (lbs/mmscf)	Emissions	
	(mmscf/Month)	(mmscf/Year)		(Tons/Month)	(Tons/Year)
CO	34.6	346	7.2	.13	1.25
NO _x			9.0	.16	1.56
PM			18.0	.32	3.11
SO ₂			169.0	2.92	29.21
VOM			4.2	.08	.73

These limits are based on the maximum fuel usage and submitted factors for digester gas combustion. SO₂ emissions are based on the complete combustion of H₂S in digester gas at a concentration of 0.1% by volume

- c. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 months total).
9. This permit is issued based on the Potential to Emit (PTE) for Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act being less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program (CAAPP) Permit.
- 10a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
 - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
 - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
- b. Testing required by Condition 11 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
11. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter

emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.

12. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.
13. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- 14a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
 - i. Natural gas usage in the boilers (mmscf/month, mmscf/year);
 - ii. Amount of digester gas burned in the boilers (mmscf/month, mmscf/year);
 - iii. Amount of digester gas flared (mmscf/month, mmscf/year);

- iv. Percent concentration of the hydrogen sulfide concentration of the digester gas; and
 - v. Monthly and annual emissions of CO, NO_x, PM, SO₂, VOM and HAPs from the source, with supporting calculations (tons/month and tons/year).
- b. All records and logs required by Condition 14(a) of this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
15. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
- 16a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit or otherwise, the Permittee shall submit a report to the Illinois EPA's Bureau of Air Compliance Section in Springfield, Illinois within thirty (30) days after the exceedance or deviation. The report shall identify the duration and the emissions impact of the exceedance or deviation, a copy of the relevant records and information to resolve the exceedance or deviation, and a description of the efforts to reduce emissions from, and the duration of exceedance or deviation, and to prevent future occurrences of any such exceedance or deviation.
- b. One (1) copy of required reports and notifications shall be sent to:
- Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

It should be noted that this permit has been revised so as to remove the three (3) Ozone Generators from this permit, the ozone generators decommissioned out of service in 2015.

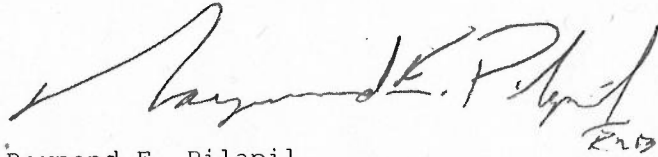
It should also be noted that the 50,000 Btu/hr natural gas-fired furnace, the three (3) natural gas-fired burners one (1) rated at 194,000 Btu/hr and two (2) rated at 115,000 Btu/hr and the residential-type natural gas-fired furnace, the 310 kW (3.22 mmBtu/hour) natural gas-powered emergency generator, the two

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(2) 500 gallon gasoline storage tanks, are exempt from permitting pursuant to 35 Ill. Adm. Code 201.146(c),(d) and (i) (1), respectively.

Please note that the renewal of this permit is not necessary at this time since the original permit is still valid until April 16, 2025.

If you have any questions on this, please call Joseph Odele at 217/785-1705.

A handwritten signature in black ink, appearing to read "Raymond E. Pilapil". The signature is written in a cursive style with a large initial "R".

Raymond E. Pilapil
Manager, Permit Section
Bureau of Air

REP:JBO:tan

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions of water reclamation plant operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (e.g. 100 tons/year for CO and SO₂ and 50 tons/year for NO_x) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Equipment</u>	<u>E M I S S I O N S (Tons/Year)</u>				
	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>
4 Boilers	33.87	40.32	3.05	68.14	2.22
2 Digester Flares	1.25	1.56	3.11	29.21	0.73
Totals:	35.12	41.88	6.16	97.35	2.95

JBO:tan



STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL
P. O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

STANDARD CONDITIONS
FOR
OPERATING PERMITS

May, 1993

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. The issuance of this permit does not release the Permittee from compliance with state and federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or with applicable local laws, ordinances and regulations.
2. The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under 35 Ill. Adm. Code 201.166.
3.
 - a. The Permittee shall not authorize, cause, direct or allow any modification, as defined in 35 Ill. Adm. Code 201.102, of equipment, operations or practices which are reflected in the permit application as submitted unless a new application or request for revision of the existing permit is filed with the Illinois EPA and unless a new permit or revision of the existing permit(s) is issued for such modification.
 - b. This permit only covers emission sources and control equipment while physically present at the indicated plant location(s). Unless the permit specifically provides for equipment relocation, this permit is void for an item of equipment on the day it is removed from the permitted location(s) or if all equipment is removed, notwithstanding the expiration date specified on the permit.
4. The Permittee shall allow any duly authorized agent of the Illinois EPA, upon the presentation of credentials, at reasonable times:
 - a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit;
 - b. To have access to and to copy any records required to be kept under the terms and conditions of this permit;
 - c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit;
 - d. To obtain and remove samples of any discharge or emission of pollutants; and
 - e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring or recording any activity, discharge or emission authorized by this permit.
5. The issuance of this permit:
 - a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are located;

- b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the facilities;
 - c. Does not take into consideration or attest to the structural stability of any unit or part of the project; and
 - d. In no manner implies or suggests that the Illinois EPA (or its officers, agents, or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. The facilities covered by this permit shall be operated in such a manner that the disposal of air contaminants collected by the equipment shall not cause a violation of the Environmental Protection Act or regulations promulgated thereunder.
 7. The Permittee shall maintain all equipment covered under this permit in such a manner that the performance of such equipment shall not cause a violation of the Environmental Protection Act or regulations promulgated thereunder.
 8. The Permittee shall maintain a maintenance record on the premises for each item of air pollution control equipment. These records shall be made available to any agent of the Environmental Protection Agency at any time during normal working hours and/or operating hours. At a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.
 9. No person shall cause or allow continued operation during malfunction, breakdown or startup of any emission source or related air pollution control equipment if such operation would cause a violation of an applicable emission standard or permit limitation. Should a malfunction, breakdown or startup occur, which results in emissions in excess of any applicable standard or permit limitation, the Permittee shall:
 - a. Immediately report the incident to the Illinois EPA's Regional Field Operations Section Office by telephone, telegraph or other method as constitutes the fastest available alternative, and shall comply with all reasonable directives of the Illinois EPA with respect to the incident;
 - b. Maintain the following records for a period of no less than two (2) years:
 - i. Date and duration of malfunction, breakdown, or startup,
 - ii. Full and detailed explanation of the cause,
 - iii. Contaminants emitted and an estimate of quantity of emissions,
 - iv. Measures taken to minimize the amount of emissions during the malfunction, breakdown or startup, and
 - v. Measures taken to reduce future occurrences and frequency of incidents.
 10. If the permit application contains a compliance program and project completion schedule, the Permittee shall submit a project completion status report within thirty (30) days of any date specified in the compliance program and project completion schedule or at six month intervals, whichever is more frequent.
 11. The Permittee shall submit an Annual Emission Report as required by 35 Ill. Adm. Code 201.302 and 35 Ill. Adm. Code Part 254.