

STATEMENT OF BASIS for BAYSHORE REGIONAL SEWERAGE AUTHORITY

TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 21753 / Permit Activity Number: BOP210008

I. FACILITY INFORMATION

Bayshore Regional Sewerage Authority is located at 100 Oak St., Union Beach, Monmouth County, NJ 07735 and consists of a wastewater treatment and disposal facility. The facility is owned and operated by Bayshore Regional Sewerage Authority.

The facility has obtained a Title V Operating Permit because the facility is subject to 40 CFR Part 62 Subpart LLL (Subpart LLL) Federal Plan requirements for existing sewage sludge incineration units. The facility does not exceed the major facility threshold based on its potential to emit criteria pollutants.

This permit allows individual hazardous air pollutants to be emitted at rates not to exceed: 11.8 pounds per year of arsenic, 7.88 pounds per year of beryllium, 31.6 pounds per year of cadmium, 99 pounds per year of chromium, 0.97 pounds per year of hexavalent chromium, 266 pounds per year of nickel, 10.3 pounds per year of mercury, 208 pounds per year of hydrogen chloride, 0.000117 pounds per year of dioxins/furans(total), 3.2 pounds per year of benzo(a)pyrene, 57 pounds per year of benzene, 454.8 pounds per year of formaldehyde, and 2.06 pounds per year of lead.

II. AREA ATTAINMENT CLASSIFICATION

The Federal Clean Air Act (CAA) sets National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate matter, ground-level ozone, carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and lead. The US Environmental Protection Agency (USEPA) also classifies areas as "attainment" or "nonattainment" for each criteria pollutant, based on the magnitude of an area's problem. Nonattainment classifications are used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment. Currently, the entire State of New Jersey is designated as nonattainment for the 8-hour ozone NAAQS. New Jersey is designated attainment for all other pollutants. For nonattainment classification refer to <https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information>.

III. BACKGROUND AND HISTORY

The equipment that emits air contaminants from this facility includes: Two fluidized bed sewage sludge incineration units U42 Niro and U43 Dorr Oliver. Emission unit U42 is equipped with venturi scrubber, wet electrostatic precipitator, and granular activated carbon adsorber to control mercury emissions. U43 is equipped with venturi scrubber and granular activated carbon adsorber to control mercury emissions. The facility also has two belt filter presses and four sludge concentration tanks that are controlled by packed tower scrubbers, three emergency generators and three 1500 kW natural gas engines.

Health Risk Assessment was conducted as part of the review of this permit application and health risk was determined to be negligible consistent with NJDEP Technical Manual 1003.

This is a Permit Modification and includes the following changes:

1. New emission unit U4 with operating scenarios OS1 to OS6 were created for three (3) 1500kW output natural gas engines currently permitted pursuant to GOP-004 for emergency use only. Each engine is equipped with Selective Catalytic Reduction (SCR)/Oxidation System to control emissions. Each engine has two (2) operating scenarios: Storm Anticipation/Demand Response, and Normal Testing & Maintenance. The U4 engines are subject to NSPS JJJJ Standard of Performance for Stationary Spark Ignition Internal Combustion Engines.
2. Insignificant Source (IS) IS80 Storage Tank with 1400 gallons capacity was added to IS inventory to store the SCR Urea reactant.
3. IS40 Parts Washer was deleted from the IS inventory and all of its applicable requirements were also deleted.

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This modification will also change the facility-wide emission limits as listed in the following table:

Allowable Emission Limits	Facility's Potential Emissions (tons per year)*									
	VOC (total)	NO _x	CO	SO ₂	TSP (total)	PM ₁₀ (total)	PM _{2.5} (total)	Pb	HAPs (total)	CO ₂ e (total)
Current Permit	1.36	16.4	11.0	5.50	2.50	2.46	2.37	0.00103	0.336	6759
Proposed Permit	2.15	16.9	13.2	5.76	2.60	2.56	2.48	0.00103	0.564	8422
Change (+ / -)	+0.79	+0.50	+2.2	+0.26	+0.10	+0.10	+0.11	0.0	+0.228	+1663

VOC Volatile Organic Compounds

NO_x Nitrogen Oxides

CO Carbon Monoxide

SO₂ Sulfur Dioxide

TSP Total Suspended Particulates

PM₁₀

Particulates under 10 microns

PM_{2.5}

Particulates under 2.5 microns

Pb

Lead

HAPs

Hazardous Air Pollutants

CO₂e

Carbon Dioxide equivalent

* Other Any other air contaminant regulated under the Federal Clean Air Act. This modification will change permitted ammonia emissions from 0.0 to 0.153 tons per year.

IV. CASE-BY-CASE DETERMINATIONS

No case-by-case determinations were required for this modification.

V. EMISSION OFFSET REQUIREMENTS

This modification is not subject to Emission Offset requirements.

VI. BASIS FOR MONITORING AND RECORDKEEPING REQUIREMENTS

The facility's operating permit includes monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's continued compliance with the applicable requirements consistent with the following:

- Provisions to implement the testing and monitoring requirements of N.J.A.C. 7:27-22.18, the recordkeeping and reporting requirements of N.J.A.C. 7:27-22.19, and all emissions monitoring and analysis procedures or compliance assurance methods required under the applicable requirements, including any procedures and methods promulgated pursuant to 40 CFR 64; and
- Where the applicable requirement does not require direct periodic monitoring of emissions, the Department requires periodic monitoring of surrogate parameters sufficient to yield reliable data from the relevant time period that are representative of the facility's compliance with the permit.

For stationary reciprocating engines in U4, the facility monitors the hours of operation as the surrogate for the long-term (TPY) emission limits for VOC, NO_x, CO, TSP, PM-10, PM-2.5, and formaldehyde. Surrogate monitoring for the short-term (lb/hr) emission limits are combustion process adjustment and periodic monitoring for NO_x and CO.

- In some cases, direct periodic monitoring of emissions and/or surrogate parameters is not required due to one or more of the following:
 - Equipment size and capacity limitations,
 - Subject equipment being permitted at the maximum rated capacity,
 - There is no specific state or Federal standard that applies to this piece of equipment,
 - Not a pollutant of concern for this piece of equipment,
 - Agreements with EPA on the frequency of testing and monitoring for combustion sources.

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VII. APPLICABLE STATE AND FEDERAL RULES

This modification is subject to New Jersey Air Pollution Control Regulations, codified in N.J.A.C. 7:27-1 through 34, as applicable. A complete text of these regulations is available at:

<http://www.nj.gov/dep/aqm/rules27.html>

This modification is also subject to Federal regulations listed below.

NSPS Subpart A: General Provisions

NSPS Subpart JJJJ: Spark Ignition Internal Combustion Engines

The Greenhouse Gas (GHG) emissions from this facility are 8422 TPY CO₂e and GHG emissions increase are 1663 TPY CO₂e. This modification is not subject to PSD rules at 40 CFR 52.21.

VIII. FACILITY'S COMPLIANCE STATUS

The Responsible Official at the facility has certified that the facility currently meets all applicable requirements of the Federal Clean Air Act and the New Jersey Air Pollution Control Act. Based on this certification, the Department's evaluation of the information included in the facility's application, and a review of the facility's compliance status, the Department has concluded that this air pollution control operating permit should be approved.

This operating permit includes a permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. A permit shield provides that compliance with the relevant conditions of the operating permit shall be deemed compliance with the specific applicable requirements that are in effect on the date of issuance of the draft operating permit, and which form the basis for the conditions in the operating permit.

Prior to the expiration of the Operating Permit's five-year term, the facility will be required to apply for a renewal, at which time the Department will evaluate the facility and issue a public notice with its findings.

IX. EXEMPT ACTIVITIES

The facility's operating permit does not include exempt activities such as office and interior maintenance activities, maintenance shop activities, food preparation facilities, cafeterias and dining rooms, etc. A complete list of exempt activities, as allowed by the Operating Permit rule, can be found at N.J.A.C. 7:27-22.1.

FACILITY NAME (FACILITY ID NUMBER)
BOP050001

Activity Number assigned
by the Department

New Jersey Department of Environmental Protection Facility Specific Requirements

Emission Unit Number
assigned by the Facility

Brief description of
emission unit

Emission Unit: U40 Sewage Sludge Incinerators
Operating Scenario: OS Summary

OR

OS2 Fluidized Bed Incinerator

OS Summary lists all rules and requirements that apply to an emission unit. An emission unit may contain one or more pieces of equipment and corresponding operating scenarios.

OSX denotes the operating scenario number and lists the rules and requirements that apply to a scenario. An operating scenario represents various ways (or scenarios) a piece of equipment is permitted to operate.

Item
Number

Description of applicable
requirement

Monitoring method to
ensure compliance

Recordkeeping to show
facility's compliance

Actions and submittals
required for the facility

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	The permittee shall conduct an annual performance test for each pollutant in Table 2 of 40CFR62 Subpart LLL between 11 and 13 calendar months after the previous performance test or within 60 days of a process change. [40 CFR 62.16000(a)]	Other: Conduct the performance test using the test methods, averaging methods and minimum sampling volumes or durations as specified in 40CFR62 Subpart LLL and according to the testing, monitoring and calibration requirements specified in 40 CFR 62.16015(a). [40 CFR 62.16000(a)].	Other: (1) Maintain records of the results of initial, annual and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable. [40 CFR 62.16025(e)].	Submit a report: Annually to the Administrator and to the Department. The permittee shall submit an annual compliance report as specified in 40 CFR 62. [40 CFR 62.16000(d)]

Rule citation for
applicable requirement

Rule citation for
monitoring requirement

Rule citation for
recordkeeping requirement

Rule citation for submittal/
action requirement

Explanation Sheet for Facility Specific Requirements