

# STATEMENT OF BASIS for BAYSHORE REGIONAL SEWERAGE AUTHORITY

## TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 21753 / Permit Activity Number: BOP210001

### I. FACILITY INFORMATION

Bayshore Regional Sewerage Authority is located at 100 Oak St., Union Beach, Monmouth County, NJ, 07735 and consists of 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 pollutant to be emitted at a rate to not 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, 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 (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), 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 include: 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, and three emergency generators.

A Facility-Wide Risk Assessment will be conducted during the next Operating Permit Renewal process. Health Risk Assessment was not conducted with this permit modification, since only reductions were made to Air Toxics (including HAPs) emissions.

This is a permit modification and includes the following changes:

1. U42 Niro Fluidized Bed Incinerator OS2 - Operating scenario Emissions controlled by Scrubber (CD5501), WESP (CD5502) only was removed from permit.
2. U42 Niro Fluidized Bed Incinerator established the operating parameter limits based on Subpart LLL performance tests conducted on June 15 - 18, 2020. The updated limits were based on the lowest 4-hour average data measured in performance tests.
3. The U42 emission limits were reduced for NO<sub>x</sub>, CO, SO<sub>2</sub>, Lead, Cadmium, Mercury and Hydrogen Chloride based on the Subpart LLL concentration emission limits and N.J.A.C. 7:27-19.28(a) limit of NO<sub>x</sub> 2.5 lb/ton dry sludge input. PTE annual limits decreased for NO<sub>x</sub> from 14.5 to 12.3 tpy, CO from 10.7 to 10.0 tpy, SO<sub>2</sub> from 10.6 to 5.37 tpy, Cadmium from 0.0158 to 0.000215 tpy, Lead from 0.217 to 0.000995 tpy, Mercury from 0.063 to 0.00497 tpy and Hydrogen Chloride from 1.88 to 0.104 tpy. The U42 OS1

**STATEMENT OF BASIS for BAYSHORE REGIONAL SEWERAGE AUTHORITY**

**TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION**

Program Interest (PI): 21753 / Permit Activity Number: BOP210001

short-term emission rates (lb/hr) for NO<sub>x</sub>, CO, SO<sub>2</sub>, Lead, Cadmium, Mercury and Hydrogen Chloride were also reduced accordingly.

4. U42 stack testing frequency for VOC, PM-10, Arsenic, Beryllium, Chromium, Nickel, Benzo(A) Pyrene, and Benzene were updated to once every 5 years to be consistent with U43 Dorr Oliver Fluidized Bed Incinerator, and other SSI facilities.

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 <sub>x</sub>	CO	SO <sub>2</sub>	TSP (total)	PM <sub>10</sub> (total)	PM <sub>2.5</sub> (total)	Pb	HAPs (total)	CO <sub>2e</sub> (total)
Current Permit	1.36	18.6	11.7	10.7	2.50	2.46	2.37	0.217	2.40	6759
Proposed Permit	1.36	16.4	11.0	5.5	2.50	2.46	2.37	0.00103	0.336	6759
Change (+ / -)	0.0	-2.2	-0.7	-5.2	0.0	0.0	0.0	-0.216	-2.06	0.0

VOC	Volatile Organic Compounds	PM <sub>10</sub>	Particulates under 10 microns
NO <sub>x</sub>	Nitrogen Oxides	PM <sub>2.5</sub>	Particulates under 2.5 microns
CO	Carbon Monoxide	Pb	Lead
SO <sub>2</sub>	Sulfur Dioxide	HAPs	Hazardous Air Pollutants
TSP	Total Suspended Particulates	CO <sub>2e</sub>	Carbon Dioxide equivalent

\* Other Any other air contaminant regulated under the Federal Clean Air Act. There is no change to any other air pollutant emissions.

**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 the U42 Niro Sludge Incinerator, the facility monitors the sludge feed rate continuously; and sludge samples are taken daily and composited monthly. The sludge samples are analyzed for solids content and metals concentration. These sludge feed monitoring requirements are used as the surrogate for the long-term (TPY) and short-term (lb/hr) emissions limits for Arsenic, Beryllium, Cadmium, Chromium, Mercury, Nickel and Lead. The facility monitors the fuel use continuously as the surrogate for the long-term (TPY) emissions limits for NO<sub>x</sub>, CO, PM-10 and PM-2.5.

- In some cases, direct periodic monitoring of emissions and/or surrogate parameters is not required due to one or more of the following:

# STATEMENT OF BASIS for BAYSHORE REGIONAL SEWERAGE AUTHORITY

## TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 21753 / Permit Activity Number: BOP210001

- 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.

### 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 O:	Standards of Performance for Sewage Treatment Plants
NESHAP Subpart A:	General Provisions
NESHAP Subpart C:	National Emission Standard for Beryllium
NESHAP Subpart E:	National Emission Standard for Mercury
Part 62 Subpart LLL:	Federal Plan Requirements for Existing Sewage Sludge Incineration Units
Part 503 Subpart E:	Standards for the Use or Disposal of Sewage Sludge by Incineration

The Greenhouse Gas (GHG) emissions from this facility are 6,759 TPY CO<sub>2</sub>e and there is no GHG emission increase.

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.

### 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**