TITLE V OPERATING PERMIT RENEWAL

Program Interest (PI): 41702 / Permit Activity Number: BOP190001

I. FACILITY INFORMATION

Rahway Valley Sewerage Authority is located at 1050 E. Hazelwood Avenue, Rahway, NJ 07065 and consists of a sewerage treatment plant. The facility is owned and operated by Rahway Valley Sewerage Authority.

The facility is classified as a major facility based on its potential to emit 65.54 tons per year of Nitrogen Oxides (NO_x), and 475 tons per year of Methane.

This permit allows individual hazardous air pollutants to be emitted at a rate to not exceed: 0.404 tons per year of acrolein and 4.10 tons per year of Formaldehyde.

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 include: Sewage Sludge Processing Equipment including Digesters, Rotary Drum Thickeners, Dryers and Holding Tanks, Four Internal Combustion Engine-driven Electric Generators, firing Digester Gas and Natural Gas, One Thermal Indirect Hot Oil Heater (Natural Gas Fired), Four Boilers, firing Natural Gas or Digester Gas and Two Diesel-powered Emergency Generators.

Table 1 - Operating Permit Revision History (located at the end of this document) provides a summary of all the changes that have been incorporated into the operating permit through seven-day notice changes, administrative amendments, minor modifications, or significant modifications since the approval of the initial operating permit or the most recent renewal thereof. Please refer to the attached explanation sheet for the structure and configuration of conditions of approval, included in the Facility Specific Requirements section of this permit.

A Facility-Wide 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 Renewal and includes no changes.

IV. 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:

1. 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

2. 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.

3. 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.

V. APPLICABLE STATE AND FEDERAL RULES

The facility 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

The facility is also subject to Federal regulations listed below.

NSPS 40 CFR 60 Subpart A:	General Provisions
NSPS 40 CFR 60 Subpart Dc:	Small Industrial-Commercial-Institutional Steam Generating Units
NSPS 40 CFR 60 Subpart IIII:	Stationary Compression Ignition Internal Combustion Engines
MACT 40 CFR 63 Subpart ZZZZ:	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The Greenhouse Gas (GHG) emissions from this facility are 40,000 TPY CO2e and there is no GHG emissions increase. This renewal is not subject to PSD rules at 40 CFR 52.21

VI. 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.

The facility has submitted a timely and complete application to renew their operating permit and an application shield is in effect.

This operating permit also 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.

Also, prior to the expiration of the five-year period, the facility will be required to apply for a renewal of this operating permit, at which time the Department will evaluate the facility and issue a public notice with its findings.

VII. 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.

Table 1 - Operating Permit Revision History

New Jersey Department of Environmental Protection

Operating Permit Revision History

RAHWAY VALLEY SEWERAGE AUTH PI 41702

Permit Activity Number	Type of Revision	Description of Revision	Final Action Date
BOP220001	Minor Modification	The Rahway Valley Sewerage Authority (RVSA) proposes to increase the allowable annual hours of operation for their digester gas flares (U5, CD501 and CD502). Currently, the digester gas flares are permitted to operate for 4346 hours per year combined for both flares. RVSA proposes to increase the annual allowable hours of operation to 6519 hours. The RVSA recently experienced an equipment breakdown that has required an higher than normal amount of digester gas flaring. These requested additional hours of operation are needed to burn off excess digester gas while equipment that normally fires digester gas at the RVSA is repaired and upgraded. The proposed increase in potential hours of operation of the digester gas flares will also increase potential emissions from the flares. The digesters themselves operate in an anaerobic environment and technically have no emissions. The digesters produce methane gas that is either fired in facility equiipment or in the flares. The RVSA is not proposing any changes to the operation of equipment connected to the flares. The only proposed changes are to allowable operation of the digester gas flares, which are control devices. The RVSA proposes to revise U5, OS Summary, Reference Conditions #3 through #10 and U5, OS 501/502, Reference Condition #9. These Reference Conditions are proposed to change to potential emissions of 5.55 tons per year (tpy) of VOC, 2.7 tpy of NOx, 14.7 tpy of CO, 6.5 tpy of SO2, 9.95 tpy of TSP/PM10/PM2.5 and 86.85 tpy of methane, as well as, increased hours of operation to 6519 hours per year. The facility is requesting to reduce the operational rate (capacity) of the Sludge Gravity Thickeners and Rotary Drum Thickeners (RDTs) during compliance stack testing of the multistage scrubber to match the actual operating capability of the equipment. When the multistage scrubber and RDTs were originally added to the facility Title V Operating Permit, the processing rates established for testing purposes was at least 1600 gallons per minute for the combined operation of the sludge gravity thickeners and at least 1050 gallons per minute for the combined operation of the RDTs. Since installation and operation of the RDTs and multistage scrubber, the RDTs and the sludge gravity thickeners	2/6/2023

		have been incapable of achieving their permitted processing rates and the most reasonable rates that the RVSA can achieve for stack testing are at least 1050 gallons per minute for the combined operation of the sludge gravity thickeners and at least 700 gallons per minute for the combined operation of the RDTs. Therefore, the RVSA proposes to reduce the combined sludge flow rate to the sludge gravity thickeners during compliance testing or the multistage scrubber (U180001, OS Summary, Reference Conditions #1 and #2). This modifiication proposes changes to Reference Conditions #1 and #2 of the U180001 OS Summary to reduce the sludge flowrate to the gravity thickeners during compliance testing from at least 1600 gallons per minute to at least 1050 gallons per minute and for the RDTs during compliance stack testing from at least 1050 gallons per minute to at least 700 gallons per minute. This modification will also involve a change to reduce the maximum sludge flow rate specified in the Applicable Requirement of Reference #3, Emission Unit U180001, Operating Scenarios OS4, OS5, OS6, and OS7, from 1200 gallons per minute to 700 gallons per minute. Since this is a change in operation of equipment or a control device that will not result in an increase in emissions. The decrease in allowable maximum sludge flow rate will not result in an increase in potential and actual emissions from the equipment. Since there will not be an increase in emissions, SOTA does not apply.	
BOP200001	Minor Modification	The Rahway Valley Sewerage Authority (RVSA) repurposed one of the facility gravity sludge thickening tanks to hold organic vegetative waste for input to the sludge digesters. The RVSA accepts high quality pure organic vegetative food waste processed by a local vendor and stores this material in the designated sludge thickening tank. This vegetative waste is beneficial to the anaerobic digestion that occurs in the facility Sludge Digesters. This results in improved sludge digestion in the sludge digesters and it produces a better qualithy digester gas. The purpose of the Minor Modification is to establish additional Operating Scenarios for sludge thickening tank 1, which stores the vegetative waste, to allow venting of the thickener directly to atmosphere and/or to vent to the atmosphere through forced ventilation as the other thickeners have. The thickener storing the vegetative waste currently operates under just one operating scenario, which is exhausting through the facility multi-stage scrubber. At times, it is necessary to vent the thickener to atmosphere and operating scenarios for that were inadvertently left out in the original permit. This Minor Mod adds those operating scenarios.	2/19/2021

BOP170002	Significant Modification	The Rahway Valley Sewerage Authority (RVSA) requests changes to a number of permit compliance conditions at noted below (See attached cover letter): 1) Revise U5, OS Summary, Reference Condition #10 to remove reference to a "continuous spark igniter" and replace with "continuous pilot flame." 2) Please delete the Monitoring and Record Keeping Requirements for U8001, OS8002 Reference Conditions #3 and #5. The Pump and Blower Building Boiler now fires digester gas treated to remove sulfur. 3) Please delete Reference Conditions #24 and #25 for U240001, OS Summary. Digester gas fired in the CAT engines are treated to remove sulfur to pipeline gas levels. 4) Revise U240001, OS Summary Reference Condition #26 to change periodic monitoring from monthly to quarterly and remove reference to "shakedown periods." Also delete reference to digester gas/natural gas blending. 5) Revise the Applicable Requirement of U24001, OS Summary Reference Condition #30 from 140 MMft3 to 400 MMft3. Also remove references to "shakedown periods." 6) Revise the Applicable Requirement for U240001, OS Summary Reference Condition #32 to increase the time for startup from 30 minutes to one hour. 7) Please delete Reference Condition #9 for U290001, OS Summary because digester gas fired in the Service Building Boiler is treated to remove sulfur and emissions will be de minimis.. 8) Please delete Reference Condition #4 for U290001, OS1 because digester gas fired in the Service Building Boiler is treated to remove sulfur and emissions wil be de minimis. 9) Please delete the Monitroing and Record keeping Requrements of Reference Condition #7 for U290001, OS1 because the digester gas fired in the Service Building Boiler is treated to remove sulfur.	10/9/2018

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