



Department of  
Environmental  
Conservation

# State Pollutant Discharge Elimination System (SPDES) DISCHARGE PERMIT

SIC Code:	<b>4952</b>	NAICS Code:	<b>221320</b>	SPDES Number:	<b>NY0110281</b>
Discharge Class (CL):	<b>07</b>	DEC Number:	<b>3-1350-00059/00001</b>		
Toxic Class (TX):	<b>T</b>	Effective Date (EDP):	<b>EDP</b>		
Major-Sub Drainage Basin:	<b>13 - 01</b>	Expiration Date (ExDP):	<b>ExDP</b>		
Water Index Number:	<b>H-136-6</b>	Item No.:	<b>862 - 444</b>	Modification Dates (EDPM):	
Compact Area:	<b>-</b>				

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. ' 1251 et.seq.)

PERMITTEE NAME AND ADDRESS					
Name:	<b>Village of Rhinebeck</b>			Attention:	<b>Gary Bassett, Mayor</b>
Street:	<b>76 East Market Street</b>			State:	<b>NY</b>
City:	<b>Rhinebeck</b>	Zip Code:	<b>12572-1606</b>		
Email:	<b>MayorBassett@villageofrhinebeckny.gov</b>			Phone:	<b>(845) 876-7015</b>

is authorized to discharge from the facility described below:

FACILITY NAME, ADDRESS, AND PRIMARY OUTFALL									
Name:	<b>Village of Rhinebeck Wastewater Treatment Plant</b>								
Address / Location:	<b>56 Astor Drive, Building 1-2</b>				County:	<b>Dutchess</b>			
City:	<b>Rhinebeck</b>	State:	<b>NY</b>	Zip Code:	<b>12572-1949</b>				
Facility Location:	Latitude:	<b>41</b> °	<b>56</b> ' ,	<b>60</b> " N	& Longitude:	<b>73</b> °	<b>55</b> ' ,	<b>11</b> " W	
Primary Outfall No.:	<b>001</b>	Latitude:	<b>41</b> °	<b>56</b> ' ,	<b>01</b> " N	& Longitude:	<b>73</b> °	<b>55</b> ' ,	<b>23</b> " W
Outfall Description:	<b>Treated Sanitary</b>	Receiving Water:	<b>Rhinebeck Kill</b>		Class:	<b>C</b>	Standard:	<b>C</b>	

in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth in this permit; and 6 NYCRR Part 750-1 and 750-2.

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

**DISTRIBUTION:**

R3 Permit Coordinator  
R3 Permit Writer  
RWE  
RPA  
EPA Region II ([Region2\\_NPDES@epa.gov](mailto:Region2_NPDES@epa.gov))  
NYSEFC ([sara.tully@efc.ny.gov](mailto:sara.tully@efc.ny.gov))

Permit Administrator:		
Address:		
Signature	Date	

## DEFINITIONS

TERM	DEFINITION
7-Day Geo Mean	The highest allowable geometric mean of daily discharges over a calendar week.
7-Day Average	The average of all daily discharges for each 7-days in the monitoring period. The sample measurement is the highest of the 7-day averages calculated for the monitoring period.
12-Month Rolling Average (12 MRA)	The current monthly value of a parameter, plus the sum of the monthly values over the previous 11 months for that parameter, divided by the number of months for which samples were collected in the 12-month period.
30-Day Geometric Mean	The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of: the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
Action Level	Action level means a monitoring requirement characterized by a numerical value that, when exceeded, triggers additional permittee actions and DEC review to determine if numerical effluent limitations should be imposed.
Compliance Level / Minimum Level	A compliance level is an effluent limitation. A compliance level is given when the water quality evaluation specifies a Water Quality Based Effluent Limit (WQBEL) below the Minimum Level. The compliance level shall be set at the Minimum Level (ML) for the most sensitive analytical method as given in 40 CFR Part 136, or otherwise accepted by the DEC.
Daily Discharge	The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day.
Daily Maximum	The highest allowable Daily Discharge.
Daily Minimum	The lowest allowable Daily Discharge.
Effective Date of Permit (EDP or EDPM)	The date this permit is in effect.
Effluent Limitations	Effluent limitation means any restriction on quantities, quality, rates and concentrations of chemical, physical, biological, and other constituents of effluents that are discharged into waters of the state.
Expiration Date of Permit (ExDP)	The date this permit is no longer in effect.
Instantaneous Maximum	The maximum level that may not be exceeded at any instant in time.
Instantaneous Minimum	The minimum level that must be maintained at all instants in time.
Monthly Average	The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
Outfall	The terminus of a sewer system, or the point of emergence of any waterborne sewage, industrial waste or other wastes or the effluent therefrom, into the waters of the State.
Range	The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown.
Receiving Water	The classified waters of the state to which the listed outfall discharges.
Sample Frequency / Sample Type / Units	See NYSDEC's "DMR Manual for Completing the Discharge Monitoring Report for the SPDES" for information on sample frequency, type and units.

## PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL	LIMITATIONS APPLY	RECEIVING WATER	EFFECTIVE	EXPIRING
001	All Year	Rhinebeck Kill	EDP	ExDP

PARAMETER	EFFLUENT LIMITATION					MONITORING REQUIREMENTS				FN
	Type	Limit	Units	Limit	Units	Sample Frequency	Sample Type	Location		
								Inf.	Eff.	
Flow	Monthly Average	0.260	MGD			Continuous	Recorder	X		
pH	Daily Minimum	6.5	SU			Daily	Grab		X	
	Daily Maximum	8.5	SU							
Temperature	Daily Maximum	Monitor	°F			Daily	Grab		X	
BOD <sub>5</sub>	Daily Maximum	5.0	mg/L	11	lbs/d	Monthly	6-hr. Comp.	X	X	1, 2
Total Suspended Solids (TSS)	Daily Maximum	10	mg/L	22	lbs/d	Monthly	6-hr. Comp.	X	X	1
Settleable Solids	Daily Maximum	0.1	mL/L			Daily	Grab		X	
Dissolved Oxygen	Daily Minimum	7.0	mg/L			Monthly	Grab		X	
Ammonia (as N) June 1st - October 31st	Monthly Average	1.2	mg/L			Monthly	6-hr. Comp.		X	2
Ammonia (as N) November 1st - May 31st	Monthly Average	1.6	mg/L			Monthly	6-hr. Comp.		X	
Total Phosphorus (as P)	Monthly Average	Monitor	mg/L	Monitor	lbs/d	Monthly	6-hr. Comp.		X	
Thallium, Total	Daily Maximum	8	µg/L			Monthly	6-hr. Comp.		X	2
EFFLUENT DISINFECTION Required All Year		Limit	Units	Limit	Units	Sample Frequency	Sample Type	Inf.	Eff.	FN
Coliform, Fecal	30-Day Geometric Mean	200	No./100 mL			Monthly	Grab		X	
Coliform, Fecal	7-Day Geometric Mean	400	No./100 mL			Monthly	Grab		X	
Chlorine, Total Residual	Daily Maximum	0.03	mg/L			Daily	Grab		X	3, 4

### FOOTNOTES:

1. Effluent shall not exceed 15% and 15% of influent concentration values for BOD<sub>5</sub> & TSS respectively.
2. This is a final effluent limitation. See Schedule of Compliance for any applicable interim effluent limitations.
3. Sampling and reporting for total residual chlorine are only necessary if chlorine is used for disinfection, elsewhere in the treatment process, or the facility otherwise has reasonable potential to discharge chlorine. Otherwise, the permittee shall report NODI-9 on the DMR.
4. This is a Compliance Level. The calculated WQBEL is 0.005 mg/L.

## MERCURY MINIMIZATION PROGRAM (MMP) - Type IV

On 8/1/2023, the permittee submitted a Conditional Exclusion Certification, certifying that the facility does not have any of the mercury sources listed in Part III.A.3. of DOW 1.3.10.

1. **General** - The permittee must develop, implement, and maintain a mercury minimization program (MMP), containing the elements set forth below.
2. **MMP Elements** - The MMP must be a written document and must include any necessary drawings or maps of the facility and/or collection system. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. At a minimum, the MMP must include the following elements<sup>1</sup> as described in detail below:
  - a. **Conditional Exclusion Certification** - A certification (Appendix D of DOW 1.3.10), signed in accordance with 750-1.8 Signature of SPDES forms, must be submitted once every five (5) years the Regional Water Engineer and to the Bureau of Water Permits certifying that the facility is neither a mercury source nor receives flows from a mercury source. Criteria to determine if a facility has a mercury source are as follows:
    - The facility is or receives discharge from 1) individually permitted combined sewer overflow (CSOs)<sup>2</sup> communities and/or 2) Type II sanitary sewer overflow (SSO)<sup>3</sup> facilities;
    - One or more effluent samples which exceed 12 ng/L, including samples taken as a result of the SPDES application process;
    - Internal or tributary waste stream samples exceed the GLCA effluent limitation **AND** the final effluent samples are less than the GLCA due primarily to dilution by uncontaminated or less contaminated waste streams. Both components of this criterion may include samples taken as a result of the SPDES application process;
    - A permit application or other information indicates that mercury is handled on site and could be discharged through outfalls;
    - Outfalls which contain legacy mercury contamination;
    - The facility's collection system receives discharges from a dental and/or categorical industrial user (CIU)<sup>4</sup> that may discharge mercury;
    - The facility accepts hauled wastes; or,
    - The facility is defined as a categorical industry that may discharge mercury. This may also include dentists, universities, hospitals, or laboratories which have their own SPDES permit.
  - b. **Control Strategy** - The control strategy must contain the following minimum elements:
    - i. **Equipment and Materials** – Equipment and materials (e.g., thermometers, thermostats) used by the permittee, which may contain mercury, must be evaluated by the permittee. As equipment and materials containing mercury are updated/replaced, the permittee must use mercury-free alternatives, if possible.
    - ii. **Bulk Chemical Evaluation** – For chemicals, used at a rate which exceeds 1,000 gallons/year or 10,000 pounds/year, the permittee must obtain a manufacturer's certificate of analysis, a chemical analysis performed by a certified laboratory, and/or a notarized affidavit which describes the substances' mercury concentration and the detection limit achieved. If possible, the permittee must only use bulk chemicals utilized in the wastewater treatment process which contain <10 ppb mercury.

<sup>1</sup>Neither monitoring nor outreach is required for facilities meeting the criteria for MMP Type IV, but monitoring and/or outreach can be included in the permittee's control strategy.

<sup>2</sup>CSO permits are included under the 05 and 07 permit classifications.

<sup>3</sup>These are overflow retention facilities (ORFs) and are included under the 05 and 07 permit classifications.

<sup>4</sup>CIUs include those listed under Federal Regulation in 40 CFR Part 400.

## MERCURY MINIMIZATION PROGRAM (MMP) – Type IV (Continued)

- c. **Status Report** - An **annual** status report must be developed and maintained on site, in accordance with the [Schedule of Additional Submittals](#), summarizing:
- i. Review of criteria to determine if the facility has a potential mercury source;
    - a. If the permittee no longer meets the criteria for MMP Type IV, the permittee must notify the DEC for a permittee-initiated permit modification;
  - ii. All actions undertaken, pursuant to the control strategy, during the previous year; and
  - iii. Actions planned, pursuant to the control strategy, for the upcoming year.

The permittee must maintain a file with all MMP documentation. The file must be available for review by DEC representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

3. **MMP Modification** - The MMP must be modified whenever:
- a. Changes at the facility, or within the collection system, increase the potential for mercury discharges;
  - b. A letter from the Department identifies inadequacies in the MMP.

The DEC may use information in the annual status reports, in accordance with 2.c of this MMP, to determine if the permit limitations and MMP Type is appropriate for the facility.

### DEFINITIONS:

Potential mercury source – a source identified by the permittee that may reasonably be expected to have total mercury contained in the discharge. Some potential mercury sources include switches, fluorescent lightbulbs, cleaners, degreasers, thermometers, batteries, hauled wastes, universities, hospitals, laboratories, landfills, Brownfield sites, or raw material storage.

## DISCHARGE NOTIFICATION REQUIREMENTS

- (a) The permittee shall install and maintain identification signs at all outfalls to surface waters listed in this permit, unless the Permittee has obtained a waiver in accordance with the Discharge Notification Act (DNA). Such signs shall be installed before initiation of any new discharge location.
- (b) Subsequent modifications to or renewal of this permit does not reset or revise the deadline set forth in (a) above, unless a new deadline is set explicitly by such permit modification or renewal.
- (c) The Discharge Notification Requirements described herein do not apply to outfalls from which the discharge is composed exclusively of storm water, or discharges to ground water.
- (d) The sign(s) shall be conspicuous, legible and in as close proximity to the point of discharge as is reasonably possible while ensuring the maximum visibility from the surface water and shore. The signs shall be installed in such a manner to pose minimal hazard to navigation, bathing or other water related activities. If the public has access to the water from the land in the vicinity of the outfall, an identical sign shall be posted to be visible from the direction approaching the surface water.

The signs shall have **minimum** dimensions of eighteen inches by twenty-four inches (18" x 24") and shall have white letters on a green background and contain the following information:

<p><b>N.Y.S. PERMITTED DISCHARGE POINT</b></p> <p><b>SPDES PERMIT No.: NY _____</b></p> <p><b>OUTFALL No.: ____</b></p> <p>For information about this permitted discharge contact:</p> <p>Permittee Name: _____</p> <p>Permittee Contact: _____</p> <p>Permittee Phone: (    ) - ### - #####</p> <p>OR:</p> <p>NYSDEC Division of Water Regional Office Address:</p> <p>NYSDEC Division of Water Regional Phone: (    ) - ### - #####</p>
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- (e) Upon request, the permittee shall make available electronic or hard copies of the sampling data to the public. In accordance with the RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS page of your permit, each DMR shall be maintained (either electronically or as a hard copy) on record for a period of five years.
- (f) The permittee shall periodically inspect the outfall identification sign(s) in order to ensure they are maintained, are still visible, and contain information that is current and factually correct. Signs that are damaged or incorrect shall be replaced within 3 months of inspection.

## SCHEDULE OF COMPLIANCE

a) The permittee shall comply with the following schedule:

Outfall(s)	Compliance Action	Compliance Date <sup>5</sup>
001	PRELIMINARY ENGINEERING REPORT The permittee shall submit an approvable <sup>6</sup> Preliminary Engineering Report (PER) that meets the requirements of the EFC/DEC Engineering Report Outline ( <a href="https://www.dec.ny.gov/permits/6054.html">https://www.dec.ny.gov/permits/6054.html</a> ). The report shall describe treatment alternatives or other control mechanisms (i.e., pretreatment program / Sewer Use Law) that may be used to comply with the final effluent limitation(s) for BOD <sub>5</sub> , Ammonia (as N), and Total Thallium.	EDP + 12 Months
001	DESIGN DOCUMENTS The permittee shall submit approvable <sup>6</sup> Design Documents including a Basis of Design Report (BODR), Plans, Specifications, and Construction Schedule for the selected alternative that will ensure compliance with final effluent limitation(s) for BOD <sub>5</sub> , Ammonia (as N), and Total Thallium.	EDP + 24 Months
001	COMPLETE CONSTRUCTION The permittee shall provide a Construction Completion Certification <sup>7</sup> to the DEC that the disposal system has been fully completed in accordance with the approved Design Documents.	EDP + 54 Months
001	COMMENCE OPERATION Following receipt of DEC acceptance of the Construction Completion Certification, the permittee shall comply with the final effluent limitation(s) described in this permit for BOD <sub>5</sub> , Ammonia (as N), and Total Thallium.	Upon Department Acceptance
<b>Unless noted otherwise, the above actions are one-time requirements.</b>		

OUTFALL	PARAMETER	INTERIM EFFLUENT LIMIT					MONITORING REQUIREMENTS				Notes
		Type	Limit	Units	Limit	Units	Sample Frequency	Sample Type	Location		
									Inf.	Eff.	
001	CBOD <sub>5</sub>	Daily Maximum	5.0	mg/L	11	lbs/d	Monthly	6-hr. Comp.	-	X	1
001	Ammonia (as N)	Daily Maximum	1.6	mg/L			Monthly	6-hr. Comp.	-	X	
001	Thallium, Total	Daily Maximum	Monitor	µg/L			Monthly	6-hr. Comp.	-	X	
Notes:	1. Effluent shall not exceed 15% of influent concentration values for CBOD <sub>5</sub> .										

- b) The permittee shall submit a [Report of Non-Compliance Event](#) form with each of the above schedule dates no later than 14 days following each elapsed date, unless conditions require more immediate notice as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2. All notifications shall be sent to the locations listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS. Each notice of non-compliance shall include the following information:
1. A short description of the non-compliance;
  2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirements without further delay and to limit environmental impact associated with the non-compliance;
  3. Any details which tend to explain or mitigate an instance of non-compliance; and
  4. An estimate of the date the permittee will comply with the elapsed schedule requirement and an assessment

<sup>5</sup> 6 NYCRR 750-1.14 (a)

<sup>6</sup> 6 NYCRR 750 1.2 (a)(8)

<sup>7</sup> 6 NYCRR 750-2.10 (c)

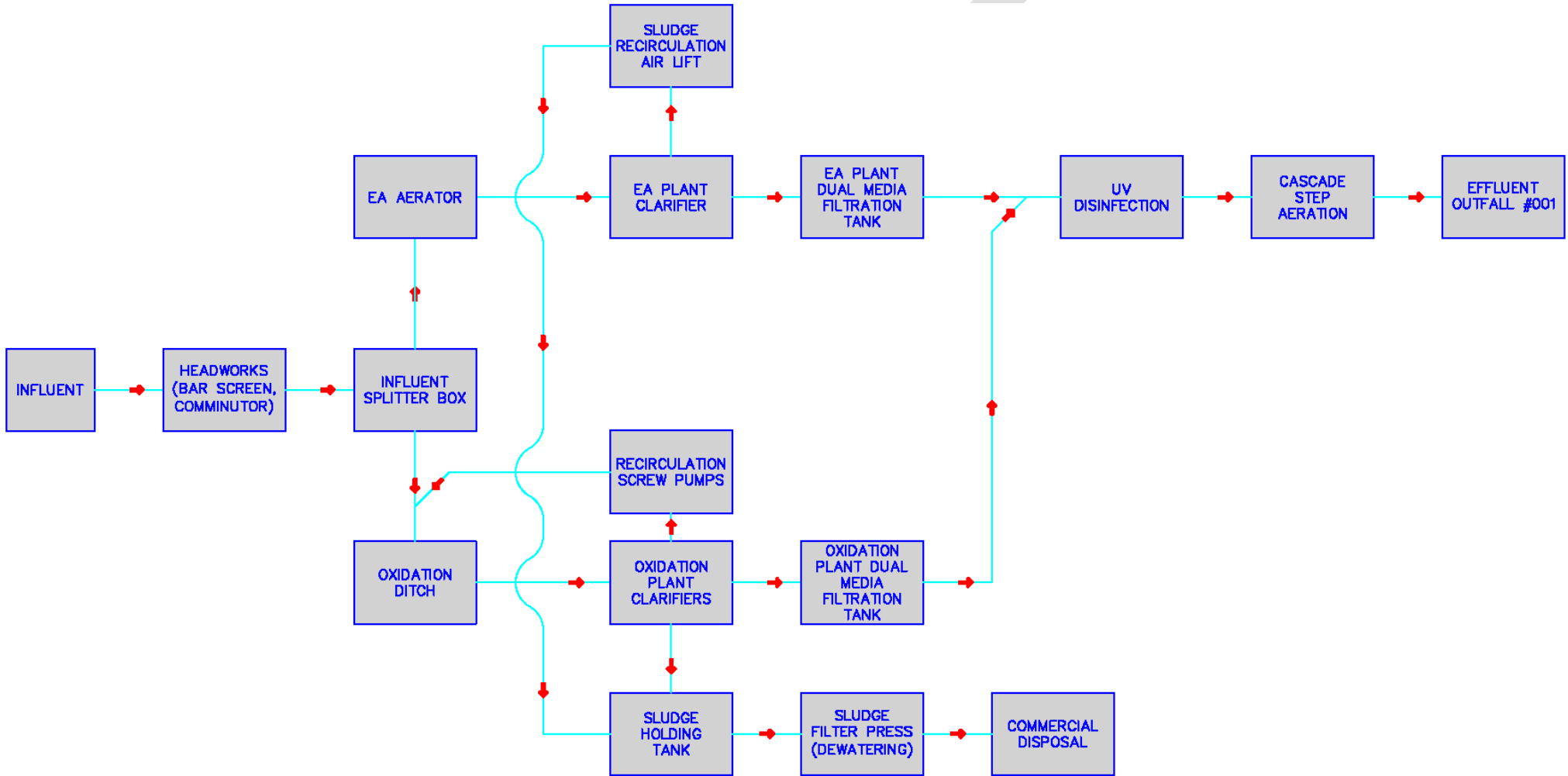
- of the probability that the permittee will meet the next scheduled requirement on time.
- c) The permittee shall submit copies of any document required by the above schedule of compliance to the DEC Regional Water Engineer and to the Bureau of Water Permits.

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# MONITORING LOCATIONS

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:



EXISTING PROCESS FLOW DIAGRAM

## GENERAL REQUIREMENTS

- A. The regulations in 6 NYCRR Part 750 are hereby incorporated by reference and the conditions are enforceable requirements under this permit. The permittee shall comply with all requirements set forth in this permit and with all the applicable requirements of 6 NYCRR Part 750 incorporated into this permit by reference, including but not limited to the regulations in paragraphs B through I as follows:
- B. General Conditions
- |  |   |
|--|---|
| 1. Duty to comply                                | 6 NYCRR 750-2.1(e) & 2.4                |
| 2. Duty to reapply                               | 6 NYCRR 750-1.16(a)                     |
| 3. Need to halt or reduce activity not a defense | 6 NYCRR 750-2.1(g)                      |
| 4. Duty to mitigate                              | 6 NYCRR 750-2.7(f)                      |
| 5. Permit actions                                | 6 NYCRR 750-1.1(c), 1.18, 1.20 & 2.1(h) |
| 6. Property rights                               | 6 NYCRR 750-2.2(b)                      |
| 7. Duty to provide information                   | 6 NYCRR 750-2.1(i)                      |
| 8. Inspection and entry                          | 6 NYCRR 750-2.1(a) & 2.3                |
- C. Operation and Maintenance
- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| 1. Proper Operation & Maintenance | 6 NYCRR 750-2.8                      |
| 2. Bypass                         | 6 NYCRR 750-1.2(a)(17), 2.8(b) & 2.7 |
| 3. Upset                          | 6 NYCRR 750-1.2(a)(94) & 2.8(c)      |
- D. Monitoring and Records
- |                           |  |
|---------------------------|--|
| 1. Monitoring and records | 6 NYCRR 750-2.5(a)(2), 2.5(a)(6), 2.5(c)(1), 2.5(c)(2), & 2.5(d) |
| 2. Signatory requirements | 6 NYCRR 750-1.8 & 2.5(b)   |
- E. Reporting Requirements
- |   |                             |
|---|-----------------------------|
| 1. Reporting requirements                     | 6 NYCRR 750-2.5, 2.7 & 1.17 |
| 2. Anticipated noncompliance                  | 6 NYCRR 750-2.7(a)          |
| 3. Transfers                                  | 6 NYCRR 750-1.17            |
| 4. Monitoring reports                         | 6 NYCRR 750-2.5(e)          |
| 5. Compliance schedules                       | 6 NYCRR 750-1.14(d)         |
| 6. 24-hour reporting                          | 6 NYCRR 750-2.7(c) & (d)    |
| 7. Other noncompliance                        | 6 NYCRR 750-2.7(e)          |
| 8. Other information                          | 6 NYCRR 750-2.1(f)          |
| 9. Additional conditions applicable to a POTW | 6 NYCRR 750-2.9             |
- F. Planned Changes
1. The permittee shall give notice to the DEC as soon as possible of planned physical alterations or additions to the permitted facility when:
    - a. The alteration or addition to the permitted facility may meet any of the criteria for determining whether facility is a new source in 40 CFR §122.29(b); or
    - b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject either to effluent limitations in the permit, or to notification requirements under 40 CFR §122.42(a)(1); or
    - c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

In addition to the DEC, the permittee shall submit a copy of this notice to the United States Environmental Protection Agency at the following address: U.S. EPA Region 2, Clean Water Regulatory Branch, 290 Broadway, 24th Floor, New York, NY 10007-1866.

## GENERAL REQUIREMENTS (continued)

### 2. Notification Requirement for POTWs

All POTWs shall provide adequate notice to the Department and the USEPA of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; or
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this paragraph, adequate notice shall include information on:
  - i. the quality and quantity of effluent introduced into the POTW, and
  - ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

POTWs shall submit a copy of this notice to the United States Environmental Protection Agency, at the following address:

U.S. EPA Region 2, Clean Water Regulatory Branch, 290 Broadway, 24th Floor, New York, NY 10007-1866

### G. Sludge Management

The permittee shall comply with all applicable requirements of 6 NYCRR Part 360.

### H. SPDES Permit Program Fee

The permittee shall pay to the Department an annual SPDES permit program fee within 30 days of the date of the first invoice, unless otherwise directed by the DEC, and shall comply with all applicable requirements of ECL 72-0602 and 6 NYCRR Parts 480, 481 and 485. Note that if there is inconsistency between the fees specified in ECL 72-0602 and 6 NYCRR Part 485, the ECL 72-0602 fees govern.

### I. Water Treatment Chemicals (WTCs)

New or increased use and discharge of a WTC requires prior DEC review and authorization. At a minimum, the permittee must notify the DEC in writing of its intent to change WTC use by submitting a completed *WTC Notification Form* for each proposed WTC. The DEC will review that submittal and determine if a SPDES permit modification is necessary or whether WTC review and authorization may proceed outside of the formal permit administrative process. The majority of WTC authorizations do not require SPDES permit modification. In any event, use and discharge of a WTC shall not proceed without prior authorization from the DEC. Examples of WTCs include biocides, coagulants, conditioners, corrosion inhibitors, defoamers, deposit control agents, flocculants, scale inhibitors, sequestrants, and settling aids.

1. WTC use shall not exceed the rate explicitly authorized by this permit or otherwise authorized in writing by the DEC.
2. The permittee shall maintain a logbook of all WTC use, noting for each WTC the date, time, exact location, and amount of each dosage, and, the name of the individual applying or measuring the chemical. The logbook must also document that adequate process controls are in place to ensure that excessive levels of WTCs are not used.
3. The permittee shall submit a completed WTC Annual Report Form each year that they use and discharge WTCs. This form shall be submitted in electronic format and attached to either the December DMR or the annual monitoring report required below. The *WTC Notification Form and WTC Annual Report Form* are available from the DEC's website at: <http://www.dec.ny.gov/permits/93245.html>

## RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

- A. The monitoring information required by this permit shall be retained for a period of at least five years from the date of the sampling for subsequent inspection by the DEC or its designated agent.
- B. Discharge Monitoring Reports (DMRs): Completed DMR forms shall be submitted for each 1 month reporting period in accordance with the DMR Manual available on DEC's website.

DMRs must be submitted electronically using the electronic reporting tool (NetDMR) specified by DEC. Instructions on the use of NetDMR can be found at <https://www.dec.ny.gov/chemical/8461.html>. **Hardcopy paper DMRs will only be accepted if a waiver from the electronic submittal requirements has been granted by DEC to the facility.**

Attach the monthly "Wastewater Facility Operation Report" (form 92-15-7) and any required DMR attachments electronically to the DMR or with the hardcopy submittal.

The first monitoring period begins on the effective date of this permit, and, unless otherwise required, the reports are due no later than the 28th day of the month following the end of each monitoring period.

- C. Additional information required to be submitted by this permit shall be summarized and reported to the Regional Water Engineer and Bureau of Water Permits at the following addresses:

Department of Environmental Conservation  
Regional Water Engineer, Region 3  
21 South Putt Corners Road  
New Paltz, New York 12561-1620

Phone: (845) 256-3000  
Email: [dow.r3@dec.ny.gov](mailto:dow.r3@dec.ny.gov)

Department of Environmental Conservation  
Division of Water, Bureau of Water Permits  
625 Broadway  
Albany, New York 12233-3505

Phone: (518) 402-8111

- D. Bypass and Sewage Pollutant Right to Know Reporting: In accordance with the Sewage Pollutant Right to Know Act (ECL § 17-0826-a), Publicly Owned Treatment Works (POTWs) are required to notify DEC and Department of Health within two hours of discovery of an untreated or partially treated sewage discharge and to notify the public and adjoining municipalities within four hours of discovery. Information regarding reporting and other requirements of this program may be found on the DEC's website. In addition, POTWs are required to provide a five-day incident report and supplemental information to the DEC in accordance with Part 750-2.7(d) by utilizing the Division of Water Report of Noncompliance Event form unless waived by DEC on a case-by-case basis.

- E. Schedule of Additional Submittals:

The permittee shall submit the following information to the Regional Water Engineer and to the Bureau of Water Permits, unless otherwise instructed:

<b>SCHEDULE OF ADDITIONAL SUBMITTALS</b>		
<b>Outfall(s)</b>	<b>Required Action</b>	<b>Due Date</b>
001	<p><u><b>EMERGING CONTAMINANT SHORT-TERM MONITORING PROGRAM</b></u>  The permittee shall collect grab samples of both the influent and effluent from the facility's treatment system(s) associated with the identified outfall for Per-and Polyfluoroalkyl Substances (PFAS) and 1,4-Dioxane (1,4-D), unless permittee receives written notification from the DEC during this time that sampling can be discontinued. Samples must be analyzed utilizing EPA draft analytical method 1633 and EPA Method 8270D SIM or 8270E SIM, respectively. The samples must represent normal discharge conditions and treatment operations and shall be obtained on a quarterly basis for at least 4 consecutive quarters, unless written notification from the DEC indicates otherwise.  The results shall be reported through the "Emerging Contaminants Survey for POTWs" found at: <a href="https://www.dec.ny.gov/chemical/127939.html">https://www.dec.ny.gov/chemical/127939.html</a>.</p> <p>The permittee shall initiate track down of potential sources by completing the "Emerging Contaminants Investigation Checklist for POTWs" available at the above link.  The DEC may periodically request updates or additional monitoring to check progress on track down investigations. Elements of the checklist may be used as permit conditions in future permit modifications.</p>	<p>EDP + 18 months</p> <p>Within 90 days of DEC written notification</p>
001	<p><u><b>ANNUAL FLOW CERTIFICATION</b></u>  The permittee shall submit an Annual Flow Certification form each year in accordance with 750-2.9(C)(4). The form shall be attached to the February DMR or submitted through nForm.</p>	<p>February DMR (March 28<sup>th</sup>)</p>
001	<p><u><b>SHORT-TERM HIGH-INTENSITY MONITORING PROGRAM</b></u>  The permittee shall collect 10 samples representative of normal discharge conditions and treatment operations over 2 months for Nitrite (as N) and Total Zinc parameters. The permittee shall use approved EPA analytical method with the lowest possible detection limit as promulgated under 40CFR Part 136 for the determination of the concentrations of parameters listed. The permittee shall submit a summary of the results.</p>	<p>EDP + 2 months</p>
001	<p><u><b>MERCURY - CONDITIONAL EXCLUSION CERTIFICATION</b></u>  Permittee must submit a mercury conditional exclusion certification every five years in order to maintain MMP Type IV status. As part of the certification the permittee will be required to sample the effluent and measure &lt;12 ng/L.</p>	<p>8/1/2023, and every 5 years thereafter</p>
001	<p><u><b>MERCURY MINIMIZATION PLAN</b></u>  The permittee must complete and maintain onsite an annual mercury minimization status report in accordance with the requirements of this permit.</p>	<p><b>Maintained Onsite</b>  EDP + 12 months, annually thereafter</p>
<b>Unless noted otherwise, the above actions are one-time requirements.</b>		

- F. Monitoring and analysis shall be conducted using sufficiently sensitive test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.
- G. More frequent monitoring of the discharge(s), monitoring point(s), or waters of the State than required by the permit, where analysis is performed by a certified laboratory or where such analysis is not required to be performed by a certified laboratory, shall be included in the calculations and recording of the data on the corresponding DMRs.
- H. Calculations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

- I. Unless otherwise specified, all information recorded on the DMRs shall be based upon measurements and sampling carried out during the most recently completed reporting period.
- J. Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section 502 of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be directed to the New York State Department of Health, Environmental Laboratory Accreditation Program.

DRAFT

Permittee: Village of Rhinebeck  
Facility: Rhinebeck-V Wastewater Treatment Plant  
SPDES Number: NY0110281  
USEPA Non-Major/Class 07 Municipal

Date: April 30, 2024 v.1.21  
Permit Writer: H. Joe Fung  
Water Quality Reviewer: Edward Schneider  
Full Technical Review

# **SPDES Permit Fact Sheet**

## **Village of Rhinebeck**

### **Rhinebeck-V Wastewater**

#### **Treatment Plant**

##### **NY0110281**

DRAFT



Department of  
Environmental  
Conservation

## Contents

Summary of Permit Changes.....	3
Administrative History.....	3
Facility Information.....	4
Site Overview.....	4
Enforcement History.....	5
Existing Effluent Quality.....	5
Receiving Water Information.....	5
Impaired Waterbody Information.....	7
Critical Receiving Water Data & Mixing Zone.....	7
Permit Requirements.....	7
Whole Effluent Toxicity (WET) Testing.....	7
Anti-backsliding.....	7
Antidegradation.....	7
Discharge Notification Act Requirements.....	8
Mercury.....	8
Schedule(s) of Compliance.....	8
Emerging Contaminant Monitoring.....	8
Schedule(s) of Additional Submittals.....	9
OUTFALL AND RECEIVING WATER SUMMARY TABLE.....	10
POLLUTANT SUMMARY TABLE.....	10
Outfall 001.....	10
Appendix: Regulatory and Technical Basis of Permit Authorizations.....	15
Regulatory References.....	15
Outfall and Receiving Water Information.....	15
Existing Effluent Quality.....	16
Permit Requirements.....	16



## Summary of Permit Changes

A State Pollutant Discharge Elimination System (SPDES) EBPS permit renewal with changes requested by the permittee has been drafted for the Rhinebeck-V Wastewater Treatment Plant. The changes to the permit are summarized below:

- Updated permit format, definitions, and general conditions
- Updated facility address
- Updated toxic class from non-toxic to toxic for the inclusion of Total Thallium parameter
- Added daily maximum effluent Temperature monitoring for informational purposes consistent with 6 NYCRR 750-1.13(a)
- Updated effluent limit for parameter of CBOD<sub>5</sub> to BOD<sub>5</sub> consistent with ISEL in TOGS 1.3.1B
- Reduced the number of significant figures of the BOD<sub>5</sub> and TSS mass loading limits to two to be consistent with ISEL in TOGS 1.3.1B
- Reduced limit for summer Ammonia (as N) from June 1<sup>st</sup> to October 31<sup>st</sup> from 1.6 to 1.2 mg/L according to the calculated WQBEL
- Added monthly average effluent Total Phosphorus (as P) monitoring for informational purposes consistent with TOGS 1.3.6
- Added a Total Thallium effluent limitation according to the calculated WQBEL because the one-time effluent sampling reported in the NY-2A application indicates a reasonable potential to cause or contribute to a WQS violation
- Added Mercury Minimization Program (MMP) - Type IV requirements consistent with TOGS 1.3.10
- Added a Schedule of Compliance for attainment of final effluent limits at Outfall 001 for BOD<sub>5</sub>, Ammonia (as N), and Total Thallium
- Updated the process flow diagram
- Updated address for the Regional Water Engineer
- Added a Schedule of Additional Submittals which includes a requirement for emerging contaminant monitoring

**This fact sheet summarizes the information used to determine the effluent limitations (limits) and other conditions contained in the permit. General background information including the regulatory basis for the effluent limitations and other conditions are in the [Appendix](#) linked throughout this fact sheet.**

## Administrative History

3/1/2008 The last full technical review was performed and the SPDES permit became effective with a new five-year term and expiration date of 11/5/2013. The 2008 permit has formed the basis of this permit.

The permit was administratively renewed in 2013, 2018 and again in 2023. The current permit administrative renewal is effective until 2/29/2028.

3/6/2023 The Village of Rhinebeck submitted a request to modify the permit to replace and upgrade treatment units at the end of their design life.

3/1/2023 The Village of Rhinebeck submitted a NY-2A permit application.

The Notice of Complete Application, published in the [Environmental Notice Bulletin](#) and newspapers, contains information on the public notice process.

## Facility Information

This facility is a publicly owned treatment works that receives flow from domestic users, with effluent consisting of treated sanitary sewage. The collection system consists of separate sewers. The facility does not have any significant industrial users (SIUs).

The current 0.260 MGD treatment plant consists of:

- Preliminary Treatment: Screening, Comminutor
- Secondary Treatment: Activated Sludge, Final Clarifier
- Tertiary Treatment: Sand Filtration, Effluent Re-oxygenation
- Disinfection: Ultraviolet

Sludge is pressed and hauled.

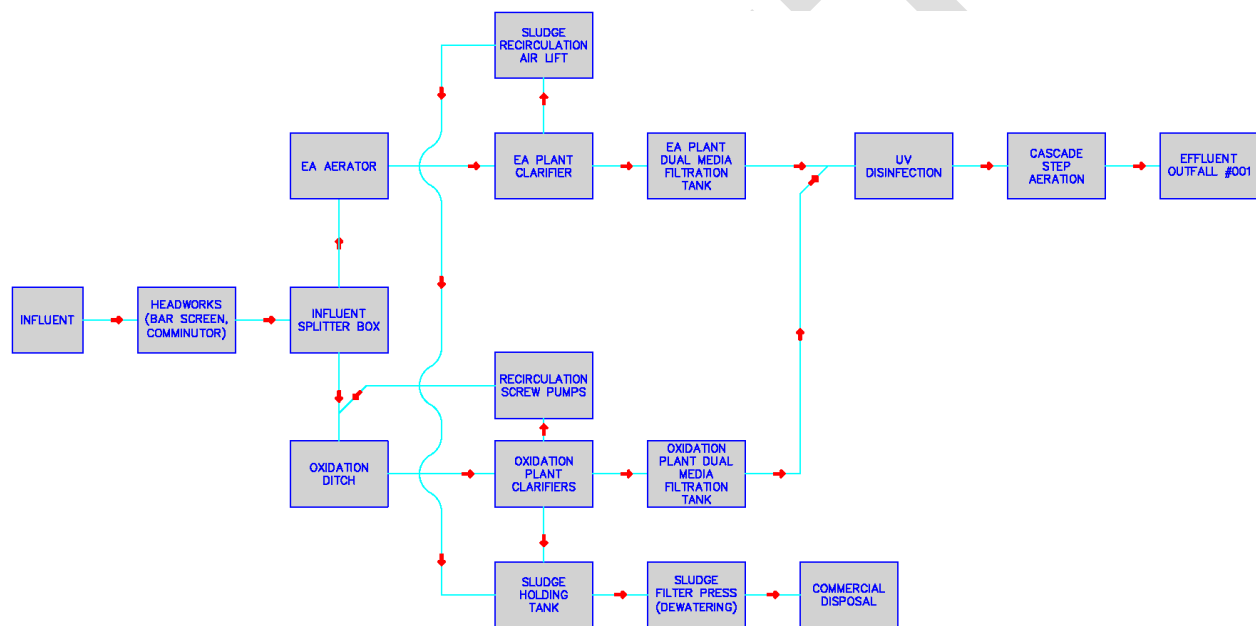
The primary outfall (Outfall 001) is 3.00 ft wide x 2.0 ft deep x 7.5 ft long channel discharge to waterbody at bank.

The facility is planning the following upgrades/improvements:

- New Mechanical Screen
- Upgrades to the Oxidation Ditch and Clarifiers system
- Upgrades to the Sand Filters
- Instrumentation upgrades
- Electrical upgrades
- Pump Station back up power and alarms
- Sewer rehabilitation

## Site Overview





EXISTING PROCESS FLOW DIAGRAM

### Enforcement History

Compliance and enforcement information can be found on the EPA's [Enforcement and Compliance History Online \(ECHO\)](#) website.

### Existing Effluent Quality

The [Pollutant Summary Table](#) presents the existing effluent quality and effluent limitations. The existing effluent quality was determined from Discharge Monitoring Reports and the application submitted by the permittee for the period 2/1/2019 to 7/31/2023. [Appendix Link](#)

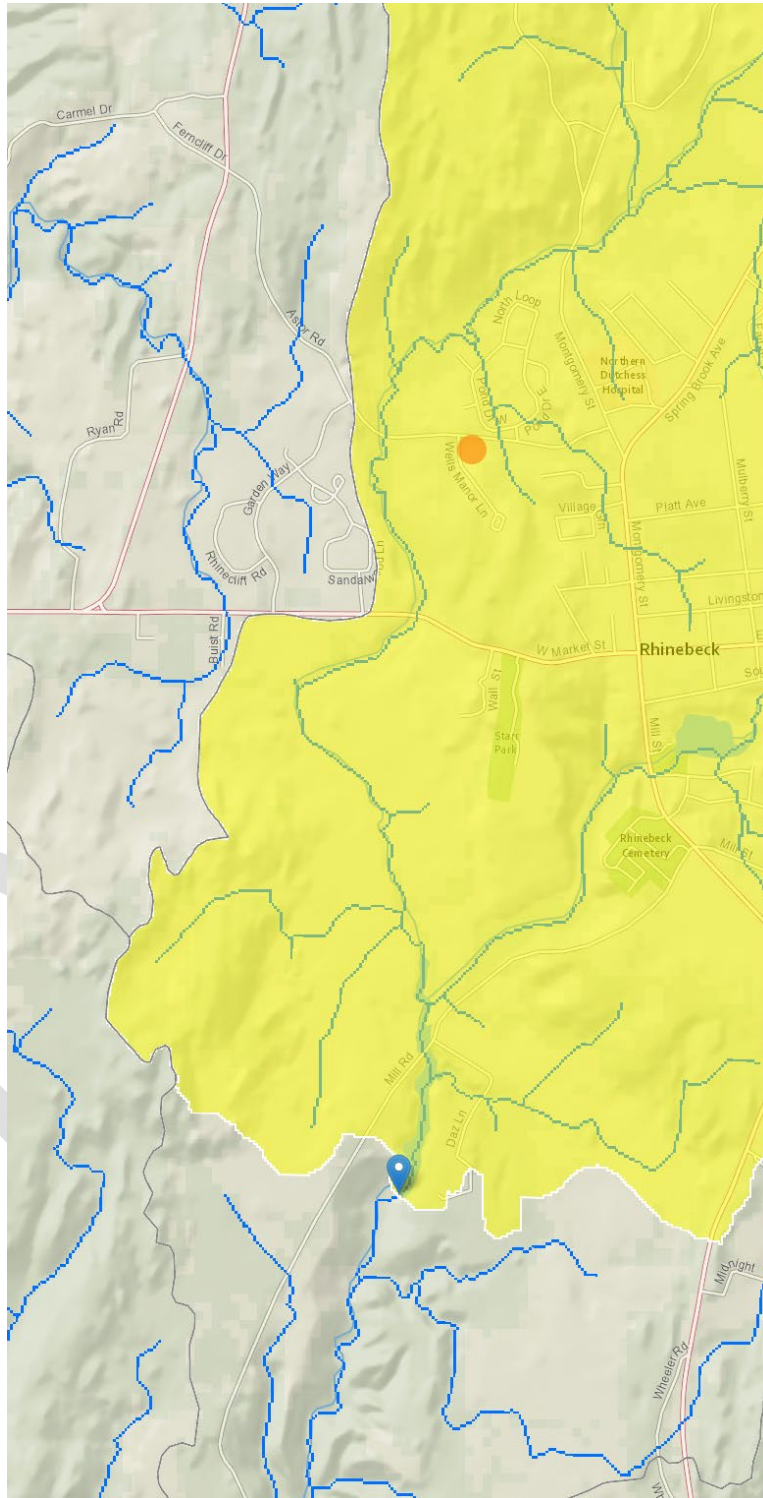
### Receiving Water Information

The facility discharges via the following outfalls:

Outfall No.	SIC Code	Wastewater Type	Receiving Water
-------------	----------	-----------------	-----------------

001	4952	Treated Sanitary Sewage	Rhinebeck Kill, Class C
-----	------	-------------------------	-------------------------

**Reach Description:** The segment of Rhinebeck Kill at the point of discharge is tributary to an unnamed pond (H-136-P441) approximately 2 miles downstream of the discharge and part of the lake watershed.



See the [Outfall and Receiving Water Summary Table](#) and [Appendix](#) for additional information.

### Impaired Waterbody Information

The Rhinebeck Kill and tribs segment (PWL No. 1301-0210) is not listed on the 2018 [New York State Section 303\(d\) List](#) of Impaired/TMDL Waters, and therefore, there are no applicable wasteload allocations (WLAs) for this discharge.

### Critical Receiving Water Data & Mixing Zone

The low flow condition for the Rhinebeck Kill was obtained from a drainage basin ratio analysis with USGS gage station 01372020, Landsman Kill near Rhinecliff. The 7Q10 flow and drainage area at the gage were found from the USGS/NYSDEC Bulletin 74, 1979. The 1Q10 flow was estimated as half the 7Q10 and the 30Q10 flow was estimated as 1.2 x 7Q10.

Gage Name: Landsman Kill Near Rhinecliff  
 Gage ID: 01372020  
 Drainage Area at Gage (mi<sup>2</sup>): 22.7  
 Drainage Area at Facility (mi<sup>2</sup>): 8.1  
 7Q10 Flow at Gage (CFS): 0.2 Source: Bulletin 74  
 Calculated 7Q10 Flow at Facility (CFS): 0.071  
 Estimated 1Q10 (CFS): 0.035  
 Estimated 30Q10 (CFS): 0.085

Outfall No.	Acute Dilution Ratio A(A)	Chronic Dilution Ratio A(C)	Human, Aesthetic, Wildlife Dilution Ratio (HEW)	Basis
001	1:1	1:1	1:1	TOGS 1.3.1 ISEL Limits

The 7Q10 low-flow condition of the Rhinebeck Kill was found to be 0.071 CFS. Consistent with TOGS 1.3.1, intermittent stream effluent limits apply for flows <0.1 CFS, and the water quality standards will be applied as end-of-pipe limitations with no mixing or dilution.

Critical receiving water data are listed in the [Pollutant Summary Table](#) at the end of this fact sheet. [Appendix Link](#)

### Permit Requirements

The technology based effluent limitations ([TBELs](#)), water quality-based effluent limitations ([WQBELs](#)), [Existing Effluent Quality](#) and a discussion of the selected effluent limitation for each pollutant present in the discharge are provided in the [Pollutant Summary Table](#).

### Whole Effluent Toxicity (WET) Testing

None of the seven criteria that are indicative of potential toxicity are applicable to this facility; therefore, WET testing is not included in the permit. [Appendix Link](#)

### Anti-backsliding

The limitations contained in the permit are at least as stringent as the previous permit limits and there are no instances of backsliding. [Appendix Link](#)

### Antidegradation

The permit contains effluent limitations which ensure that the best usages of the receiving waters will be maintained. The Notice of Complete Application published in the Environmental Notice

Bulletin contains information on the State Environmental Quality Review (SEQR)<sup>1</sup> determination.  
[Appendix Link](#)

### Discharge Notification Act Requirements

In accordance with the Discharge Notification Act (ECL 17-0815-a), the permittee is required to post a sign at each point of wastewater discharge to surface waters, unless a waiver is obtained. This requirement is updated from the previous permit.

Additionally, the permit contains a requirement to make the DMR sampling data available to the public upon request. This requirement is updated from the previous permit.

### Mercury<sup>2</sup>

The multiple discharge variance (MDV) for mercury provides the framework for NYSDEC to require mercury monitoring and mercury minimization programs (MMPs), through SPDES permitting. [Appendix Link](#)

The facility is not located in the Great Lakes Basin and does not have a mercury source. On 8/1/2023, the permittee submitted a Conditional Exclusion Certification, certifying that the facility does not have any of the mercury sources listed in Part III.A.3. of DOW 1.3.10 and the effluent measured <12 ng/L. Therefore, consistent with DOW 1.3.10, the permit includes requirements for the implementation of MMP Type IV and does not include mercury effluent limitations. The [Schedule of Additional Submittals](#) includes a mercury minimization plan annual status report (maintained onsite), and re-certification of the exclusion every five years. As part of the re-certification, the effluent must be sampled and continue to measure <12 ng/L. This requirement is new.

### Schedule(s) of Compliance

A Schedule of Compliance is being included<sup>3</sup> for the following items ([Appendix Link](#)):

- Compliance period for attainment of final effluent limits at Outfall 001 for summer Ammonia (as N). The limit was reduced and a major modification to the treatment facility or operations may be needed and will take a significant amount of time to properly plan, design, fund, and build.
- Submittal of approvable engineering design documents, including a basis of design report, with the details of the upgrades needed to comply with the final effluent limitations. The effluent limitations for BOD<sub>5</sub> and Total Thallium at Outfall 001 are a new requirements and the permittee cannot immediately comply with the WQBEL.

### Emerging Contaminant Monitoring

Emerging Contaminants, such as Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), and 1,4-Dioxane (1,4-D), have been used in a wide variety of consumer and industrial product as well as in manufacturing processes for decades. These contaminants do not break down easily, therefore their presence in wastewater can remain a concern for years following their discontinued use. As the science surrounding these contaminants is still evolving, additional monitoring is needed to better understand potential sources and background levels. For more information on emerging contaminants, please see the DEC Division of Water web page: <https://www.dec.ny.gov/chemical/127939.html>.

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<sup>1</sup> As prescribed by 6 NYCRR Part 617

<sup>2</sup> In accordance with DOW 1.3.10 Mercury – SPDES Permitting & Multiple Discharge Variance (MDV), December 30, 2020.

<sup>3</sup> Pursuant to 6 NYCRR 750-1.14

Permittee: Village of Rhinebeck  
Facility: Rhinebeck-V Wastewater Treatment Plant  
SPDES Number: NY0110281  
USEPA Non-Major/Class 07 Municipal

Date: April 30, 2024 v.1.21  
Permit Writer: H. Joe Fung  
Water Quality Reviewer: Edward Schneider  
Full Technical Review

Pursuant to 6 NYCRR Part 750-1.13(b), the permit includes a short-term monitoring program listed in the Schedule of Additional Submittals to evaluate the influent and effluent discharge levels of Per- and Polyfluoroalkyl Substances (PFAS) and 1,4-Dioxane. This monitoring program is consistent with guidance released in EPA guidance memos dated April 28, 2022, and December 5, 2022.

The DEC will review the monitoring results and pursuant to 6 NYCRR 750-2.1(i) may notify the permittee of the need for further monitoring to identify potential sources as specified in the Emerging Contaminants Investigation Checklist for POTWs to determine whether cause exists to modify the permit to incorporate a pollutant minimization program per 6 NYCRR 750-1.14(f).

The DEC will consider this information and progress made to track down and reduce or eliminate the source of the identified pollutants in determining if a permit modification is needed.

#### Schedule(s) of Additional Submittals

A schedule of additional submittals has been included for the following ([Appendix Link](#)):

- Emerging Contaminant Short Term Monitoring
- Annual Flow Certification
- Short-term, High-intensity Monitoring Program for Nitrite (as N) and Total Zinc
- Mercury Conditional Exclusion Certification
- Mercury Minimization Program Annual Status Report (maintained onsite)

## OUTFALL AND RECEIVING WATER SUMMARY TABLE

Outfall	Latitude	Longitude	Receiving Water Name	Water Class	Water Index No. / Priority Waterbody Listing (PWL) No.	Major / Sub Basin	Hardness (mg/l)	1Q10 (MGD)	7Q10 (MGD)	30Q10 (MGD)	Critical Effluent Flow (MGD)	Dilution Ratio		
												A(A)	A(C)	HEW
001	41° 56' 01" N	73° 55' 23" W	Rhinebeck Kill	C	H-136-6 PWL: 1301-0210	13 / 01	170 <sup>4</sup>	0.022	0.046	0.055	0.260	1:1	1:1	1:1

## POLLUTANT SUMMARY TABLE

### Outfall 001

Outfall #	001	Description of Wastewater: Treated Sanitary Sewage													
		Type of Treatment: Screening, Comminutor, Activated Sludge, Final Clarifier, Sand Filtration, Ultraviolet Disinfection, and Effluent Re-oxygenation													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality <sup>5</sup>	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL		
<b>General Notes:</b> Existing discharge data from 2/1/2019 to 7/31/2023 was obtained from Discharge Monitoring Reports and the application provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	MGD	Monthly Avg	0.260	0.129 Actual Average	54 / 0	<b>0.260</b>	Design Flow	Narrative: No alterations that will impair the waters for their best usages.				703.2	-	TBEL	
Consistent with TOGS 1.3.3, a monthly average flow limitation equal to the average daily design capacity of the treatment plant is specified.															
pH	SU	Minimum	6.5	6.7 Actual Min	54 / 0	6.0	TOGS 1.3.3	7.3 <sup>6</sup>	-	6.5 – 8.5	Range	<b>6.5 - 8.5</b>	703.3	-	WQBEL
		Maximum	8.5	7.8 Actual Max	54 / 0	9.0									
Consistent with TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. Given the available dilution, an effluent limitation equal to the WQS is appropriate.															
Temperature	°F	Daily Max	-	25.5 °C Actual Max	7 / 0	<b>Monitor</b>	750-1.13 Monitor	-	Narrative (Non-Trout): The water temperature at the surface of a stream shall not be raised to more than 90F at any point and... shall not be raised or lowered to more than 5F over the temperature that existed before the addition				704.2	-	Monitor

<sup>4</sup> Ambient hardness data obtained from effluent as stream is ISEL.

<sup>5</sup> Existing Effluent Quality: Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

<sup>6</sup> Ambient pH obtained from effluent as stream is ISEL.



Outfall #	001	Description of Wastewater: Treated Sanitary Sewage													
		Type of Treatment: Screening, Comminutor, Activated Sludge, Final Clarifier, Sand Filtration, Ultraviolet Disinfection, and Effluent Re-oxygenation													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality <sup>5</sup>	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL		
Consistent with 6 NYCRR 750-1.13(a), monitoring is required and may be used to inform future permitting decisions. This requirement is new.															
5-day Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/L	Daily Max	5.0 CBOD <sub>5</sub>	9.3 CBOD <sub>5</sub>	13 / 40 CBOD <sub>5</sub>	30 Monthly Average	TOGS 1.3.3	-	See Dissolved Oxygen			5.0	TOGS 1.3.1	-	ISEL
	lbs/d	Daily Max	10.8 CBOD <sub>5</sub>	12.8 CBOD <sub>5</sub>	13 / 40 CBOD <sub>5</sub>	65 Monthly Average	TOGS 1.3.3					10.8			
	% Rem	Minimum	85 CBOD <sub>5</sub>	97 CBOD <sub>5</sub> Actual Min	20 / 0 CBOD <sub>5</sub>	85	TOGS 1.3.3					-			
Consistent with TOGS 1.3.1, intermittent stream effluent limits (ISEL) are applied to effluent discharges to streams where little or no streamflow is available for dilution. These limits represent the highest degree of treatment that can reasonably be achieved by a wastewater treatment facility treating domestic type waste.															
Total Suspended Solids (TSS)	mg/L	Daily Max	10.0	6.06	27 / 27	30 Monthly Average	TOGS 1.3.3	-	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. (703.2)			10	TOGS 1.3.1	-	ISEL
	lbs/d	Daily Max	21.6	6.48	28 / 26	65 Monthly Average	TOGS 1.3.3								
	% Rem	Minimum	85	97 Actual Min	29 / 0	85	TOGS 1.3.3								
Consistent with TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. Consistent with TOGS 1.3.1, intermittent stream effluent limits (ISEL) are applied to effluent discharges to streams where little or no streamflow is available for dilution.															
Settleable Solids	mL/L	Daily Max	0.1	< 0.1 Actual Min	0 / 54	0.1	TOGS 1.3.3	-	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. (703.2)			0.1	TOGS 1.3.1B	-	ISEL
	Consistent with TOGS 1.3.1.B discharges to intermittent streams should receive the highest degree of treatment that can reasonably be achieved by practical technology. An effluent limitation equal to 0.1 mL/L daily max is therefore appropriate.														
Dissolved Oxygen (DO)	mg/L	Daily Min	7.0	7.0 Actual Min All Year	54 / 0 All Year	-	-	-	-	(Non-Trout) 4.0 mg/L	Narrative	7.0	TOGS 1.3.1	-	ISEL
	Consistent with TOGS 1.3.1, intermittent stream effluent limits (ISEL) are applied to effluent discharges to streams where little or no streamflow is available for dilution. These limits represent the highest degree of treatment that can reasonably be achieved by a wastewater treatment facility treating domestic type waste.														

Outfall #	001	Description of Wastewater: Treated Sanitary Sewage													
		Type of Treatment: Screening, Comminutor, Activated Sludge, Final Clarifier, Sand Filtration, Ultraviolet Disinfection, and Effluent Re-oxygenation													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality <sup>5</sup>	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL		
Nitrogen, Ammonia (as N) June 1 <sup>st</sup> – Oct. 31 <sup>st</sup>	mg/L	Monthly Avg	2.0 (as NH <sub>3</sub> ) Daily Max	1.1 (as NH <sub>3</sub> ) Daily Max All Year	17 / 35 All Year	-	-	-	-	1.2	A(C)	1.2	703.5	-	WQBEL
	Ib/d	Monthly Avg	-	-	- / -	-	-	-	-	-	-	2.6			
The WQBEL was calculated using the water quality standard, pH of 7.3 SU, temperature of 25°C, and application of the HEW dilution ratio. The existing permit limit is greater than the calculated WQBEL and is being decreased to equal the WQBEL to protect water quality.															
Reporting for Ammonia has been changed from (as NH <sub>3</sub> ) to (as N) for simpler data reporting, as this is consistent with the laboratory reporting units. Values can be converted using the equation: Ammonia (as N) = Ammonia (as NH <sub>3</sub> ) x 0.8224.															
Nitrogen, Ammonia (as N) Nov. 1 <sup>st</sup> – May 31 <sup>st</sup>	mg/L	Monthly Avg	2.0 (as NH <sub>3</sub> ) Daily Max	1.1 (as NH <sub>3</sub> ) Daily Max All Year	17 / 35 All Year	1.6	Antibacksliding	-	-	1.9	A(C)	1.9	703.5	-	Antibacksliding
	Ib/d	Monthly Avg	-	-	- / -	-	-	-	-	-	-	4.1			
The WQBEL was calculated using the water quality standard, pH of 7.3 SU, temperature of 10°C, and application of the HEW dilution ratio. The existing permit limit is less than the calculated WQBEL and is protective of water quality and will remain.															
Reporting for Ammonia has been changed from (as NH <sub>3</sub> ) to (as N) for simpler data reporting, as this is consistent with the laboratory reporting units. Values can be converted using the equation: Ammonia (as N) = Ammonia (as NH <sub>3</sub> ) x 0.8224.															
Total Phosphorus	mg/L	Monthly Avg	-	4.2 Actual Avg	3	Monitor	TOGS 1.3.6	-	-	Narrative: None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.	-	-	-	-	Monitor
	Ib/d	Monthly Avg	-	-	- / -	Monitor	TOGS 1.3.6	-	-		-				
	Ib/mon	Monthly Avg	-	-	- / -	-	-	-	-		-				
	Ib/yr	12 Month Load	-	-	- / -	-	-	-	-		-				
The segment of Rhinebeck Kill at the point of discharge is tributary of an unnamed pond (H-136-P 441) approximately 2 miles downstream of the discharge and part of the lake watershed. Consist with TOGS 1.3.6 for permit renewals without flow expansion, phosphorus removal should be required only if a detailed analysis conducted by the Lake Services Section shows removal to be necessary. Consist with TOGS 1.3.6 for discharges over 10,000 gpd either to lakes or in lake watersheds, at least the effluent flow and total phosphorus should be required to be monitored at an appropriate interval, for compliance purposes.															

Outfall #	001	Description of Wastewater: Treated Sanitary Sewage																											
		Type of Treatment: Screening, Comminutor, Activated Sludge, Final Clarifier, Sand Filtration, Ultraviolet Disinfection, and Effluent Re-oxygenation																											
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement														
			Permit Limit	Existing Effluent Quality <sup>5</sup>	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL																
Total Mercury	ng/L	Daily Max	-	2.4	3 / 0	50	ILCA	-	-	0.7	H(FC)	50	GLCA	-	<b>DOW 1.3.10</b>														
	ng/L	12 MRA	-	1.4	3 / 0	-	EEQ	-	-	0.7	H(FC)	12	-	-	<b>DOW 1.3.10</b>														
See <a href="#">Mercury section of this fact sheet</a> .																													
Coliform, Fecal	#/100 ml	30d Geo Mean	200	40.3	16 / 38	<b>200</b>	TOGS 1.3.3	-	Narrative: The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.				703.4	-	TBEL														
		7d Geo Mean	400	59.8	15 / 39	<b>400</b>	TOGS 1.3.3	-																					
Consistent with TOGS 1.3.3, effluent disinfection is required year-round because it is necessary to protect public health. Fecal coliform effluent limitations equal to the TBEL are specified.																													
Total Residual Chlorine (TRC)	mg/L	Daily Max	-	-	- / -	2.0	TOGS 1.3.3	-	-	0.005	A(C)	0.005	703.5	<b>0.03</b>	ML														
Effluent disinfection is currently required year-round and will remain a permit requirement. Due to the low dilution, the calculated WQBEL is less than the TBEL and less than the minimum level of detection. Therefore, an effluent limitation equal to the minimum level of detection of 0.030 mg/L is appropriate.																													
<b>Additional Pollutants Detected</b>																													
Hardness (as CaCO <sub>3</sub> )	mg/L	Daily Max	-	170	1	-	-	-	-	-	-	-	-	-	<b>No Limitation</b>														
																A numeric water quality standard for Hardness (as CaCO <sub>3</sub> ) does not exist for Class C waterbodies. Therefore, no WQBEL is specified.													
Nitrate (as N)	mg/L	Monthly Avg	-	31 Actual Max	3	-	-	-	-	-	-	-	-	-	<b>No Limitation</b>														
																A numeric water quality standard for Nitrate (as N) does not exist for Class C waterbodies. Therefore, no WQBEL is specified.													
Nitrite (as N)	mg/L	Monthly Avg	-	0.046 Actual Avg	3	-	-	-	0.138	0.1	A(C)	0.1	703.5	-	<b>No Limitation</b>														
																Nitrite (as N) was detected in the effluent as reported in the NY-2A application. A comparison of the projected instream concentration to the WQS indicates a reasonable potential to cause or contribute to a WQS violation and therefore a WQBEL is specified.													
																Short term high intensity monitoring can be conducted to determine if WQBEL is needed.													
Total Nitrogen (as N)	mg/L	Monthly Avg	-	26 Actual Avg	3	-	-	-	-	-	-	-	-	-	<b>No Limitation</b>														
																A numeric water quality standard for Total Nitrogen (as N) does not exist for Class C waterbodies. Therefore, no WQBEL is specified.													
Thallium, total recoverable	µg/L	Daily Max	-	14	1	-	-	0	87	8	A(C)	<b>8</b>	703.5	-	WQBEL														

Permittee: Village of Rhinebeck  
 Facility: Rhinebeck-V Wastewater Treatment Plant  
 SPDES Number: NY0110281  
 USEPA Non-Major/Class 07 Municipal

Date: April 30, 2024 v.1.21  
 Permit Writer: H. Joe Fung  
 Water Quality Reviewer: Edward Schneider  
 Full Technical Review

Outfall #	001	Description of Wastewater: Treated Sanitary Sewage														
		Type of Treatment: Screening, Comminutor, Activated Sludge, Final Clarifier, Sand Filtration, Ultraviolet Disinfection, and Effluent Re-oxygenation														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement	
			Permit Limit	Existing Effluent Quality <sup>5</sup>	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL			
			Thallium was detected in the effluent as reported in the NY-2A application. A comparison of the projected instream concentration to the WQS indicates a reasonable potential to cause or contribute to a WQS violation and therefore a WQBEL is specified.													
Zinc, total recoverable	µg/L	Daily Max	-	48	1	-	-	0	293	130	A(C)	131.3	703.5	-	<b>No Limitation</b>	
			<p>Zinc was detected in the effluent as reported in the NY-2A application.</p> <p>The projected instream concentration was calculated using the maximum (reported or measured) effluent concentration of 48 mg/L and an ambient upstream concentration of 0. A multiplier, as recommended in EPA's Technical Support Document Chapter 3.3, of 6.2 was applied to the projected effluent to account for the number of samples. A metals translator of 1.014 was applied to convert between the total and dissolved form in accordance with the EPA Document 823-B-96-007. A comparison of the projected instream concentration to the WQS indicates a reasonable potential to cause or contribute to a WQS violation and therefore a WQBEL is specified.</p> <p>Short term high intensity monitoring can be conducted to determine if WQBEL is needed.</p>													
Total phenolic compounds	mg/L	Daily Max	-	0.015	1	-	-	-	-	-	-	-	-	-	<b>No Limitation</b>	
			A numeric water quality standard for Total phenolic compounds does not exist for Class C waterbodies. Therefore, no WQBEL is specified.													

## Appendix: Regulatory and Technical Basis of Permit Authorizations

The Appendix is meant to supplement the fact sheet for multiple types of SPDES permits. Portions of this Appendix may not be applicable to this specific permit.

### Regulatory References

The provisions of the permit are based largely upon 40 CFR 122 subpart C and 6 NYCRR Part 750 and include monitoring, recording, reporting, and compliance requirements, as well as general conditions applicable to all SPDES permits. Below are the most common citations for the requirements included in SPDES permits:

- Clean Water Act (CWA) 33 section USC 1251 to 1387
- Environmental Conservation Law (ECL) Articles 17 and 70
- Federal Regulations
  - 40 CFR, Chapter I, subchapters D, N, and O
- State environmental regulations
  - 6 NYCRR Part 621
  - 6 NYCRR Part 750
  - 6 NYCRR Parts 700 - 704 – Best use and other requirements applicable to water classes
  - 6 NYCRR Parts 800 – 941 - Classification of individual surface waters
- NYSDEC water program policy, referred to as Technical and Operational Guidance Series (TOGS)
- USEPA Office of Water Technical Support Document for Water Quality-based Toxics Control, March 1991, Appendix E

The following is a quick guide to the references used within the fact sheet:

SPDES Permit Requirements	Regulatory Reference
Anti-backsliding	6 NYCRR 750-1.10(c)
Best Management Practices (BMPS) for CSOs	6 NYCRR 750-2.8(a)(2)
Environmental Benefits Permit Strategy (EBPS)	6 NYCRR 750-1.18, NYS ECL 17-0817(4), TOGS 1.2.2 (revised January 25,2012)
Exceptions for Type I SSO Outfalls (bypass)	6 NYCRR 750-2.8(b)(2), 40 CFR 122.41
Mercury Multiple Discharge Variance	Division of Water Program Policy 1.3.10 (DOW 1.3.10)
Mixing Zone and Critical Water Information	TOGS 1.3.1 & Amendments
PCB Minimization Program	40 CFR Part 132 Appendix F Procedure 8, 6 NYCRR 750-1.13(a) and 750-1.14(f), and TOGS 1.2.1
Pollutant Minimization Program (PMP)	6 NYCRR 750-1.13(a), 750-1.14(f), TOGS 1.2.1
Schedules of Compliance	6 NYCRR 750-1.14
Sewage Pollution Right to Know (SPRTK)	NYS ECL 17-0826-a, 6 NYCRR 750-2.7
State Administrative Procedure Act (SAPA)	State Administrative Procedure Act Section 401(2), 6 NYCRR 621.11(l)
State Environmental Quality Review (SEQR)	6 NYCRR Part 617
USEPA Effluent Limitation Guidelines (ELGs)	40 CFR Parts 405-471
USEPA National CSO Policy	33 USC Section 1342(q)
Whole Effluent Toxicity (WET) Testing	TOGS 1.3.2
General Provisions of a SPDES Permit Department Request for Additional Information	NYCRR 750-2.1(i)

### Outfall and Receiving Water Information

#### Impaired Waters

The [NYS 303\(d\) List of Impaired/TMDL Waters](#) identifies waters where specific best usages are not fully supported. The state must consider the development of a Total Maximum Daily Load (TMDL) or other strategy to reduce the input of the specific pollutant(s) that restrict waterbody uses, in order to restore and protect such uses. SPDES permits must include effluent limitations necessary to implement a WLA of an EPA-approved TMDL (6 NYCRR 750-1.11(a)(5)(ii)), if applicable. In accordance with 6 NYCRR 750-1.13(a), permittees discharging to waters which are on the list but do not yet have a TMDL developed may be required to perform additional monitoring for the parameters causing the impairment. Accurate monitoring data is needed to

determine the existing capabilities of the wastewater treatment plants and to assure that wasteload allocations (WLAs) are allocated equitably.

### Existing Effluent Quality

The existing effluent quality is determined from a statistical evaluation of effluent data in accordance with TOGS 1.2.1 and the USEPA Office of Water, Technical Support Document for Water Quality-based Toxics Control, March 1991, Appendix E (TSD). The existing effluent quality is equal to the 95<sup>th</sup> (monthly average) and 99<sup>th</sup> (daily maximum) percentiles of the lognormal distribution of existing effluent data. When there are greater than three non-detects, a delta-lognormal distribution is assumed, and delta-lognormal calculations are used to determine the monthly average and daily maximum pollutant concentrations. Statistical calculations are not performed for parameters where there are less than ten data points. If additional data is needed, a monitoring requirement may be specified either through routine monitoring or a short-term high intensity monitoring program. The [Pollutant Summary Table](#) identifies the number of sample data points available.

### Permit Requirements

#### Basis for Effluent Limitations

Sections 101, 301, 304, 308, 401, 402, and 405 of the CWA and Titles 5, 7, and 8 of Article 17 ECL, as well as their implementing federal and state regulations, and related guidance, provide the basis for the effluent limitations and other conditions in the permit.

When conducting a full technical review of an existing permit, the previous effluent limitations form the basis for the next permit. Existing effluent quality is evaluated against the existing effluent limitations to determine if these should be continued, revised, or deleted. Generally, existing limitations are continued unless there are changed conditions at the facility, the facility demonstrates an ability to meet more stringent limitations, and/or in response to updated regulatory requirements. Pollutant monitoring data is also reviewed to determine the presence of additional contaminants that should be included in the permit based on a reasonable potential analysis to cause or contribute to a water quality standards violation.

#### Anti-backsliding

Anti-backsliding requirements are specified in the CWA sections 402(o) and 303(d)(4), ECL 17-0809, and regulations at 40 CFR 122.44(f) and 6 NYCRR 750-1.10(c) and (d). Generally, the relaxation of effluent limitations in permits is prohibited unless one of the specified exceptions applies, which will be cited on a case-by-case basis in this fact sheet. Consistent with current case law<sup>7</sup> and USEPA interpretation<sup>8</sup> anti-backsliding requirements do not apply should a revision to the final effluent limitation take effect before the scheduled date of compliance for that final effluent limitation.

#### Antidegradation Policy

New York State implements the antidegradation portion of the CWA based upon two documents: (1) Organization and Delegation Memorandum #85-40, "Water Quality Antidegradation Policy" (September 9, 1985); and, (2) TOGS 1.3.9, "Implementation of the NYSDEC Antidegradation Policy – Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985) (undated)." The permit for the facility contains effluent limitations which ensure that the existing best usage of the receiving waters will be maintained. To further support the antidegradation policy, SPDES applications have been reviewed in accordance with the State Environmental Quality Review Act (SEQR) as prescribed by 6 NYCRR Part 617.

#### Effluent Limitations

In developing a permit, the Department determines the technology-based effluent limitations (TBELs) and then evaluates the water quality expected to result from technology controls to determine if any exceedances of water quality criteria in the receiving water might result. If there is a reasonable potential for exceedances of water quality criteria to occur, water quality-based effluent limitations (WQBELs) are developed. A WQBEL is designed

<sup>7</sup> American Iron and Steel Institute v. Environmental Protection Agency, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997)

<sup>8</sup> U.S. EPA, Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; 65 Fed. Reg. 31682, 31704 (May 18, 2000); Proposed Water Quality Guidance for the Great Lakes System, 58 Fed. Reg. 20802, 20837 & 20981 (April 16, 1993)

to ensure that the water quality standards of receiving waters are met. In general, the CWA requires that the effluent limitations for a particular pollutant are the more stringent of either the TBEL or WQBEL.

#### *Technology-based Effluent Limitations (TBELs) for Industrial Facilities*

A TBEL requires a minimum level of treatment for industrial point sources based on currently available treatment technologies and/or Best Management Practices (BMPs). CWA sections 301(b) and 402, ECL sections 17-0509, 17-0809 and 17-0811, and 6 NYCRR 750-1.11 require technology-based controls on effluents. TBELs are set based upon an evaluation of New Source Performance Standards (NSPS), Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), Best Practicable Technology Currently Available (BPT), and/or Best Professional Judgment (BPJ).

#### *USEPA Effluent Limitation Guidelines (ELGs) Applicable to Facility*

In many cases, BPT, BCT, BAT and NSPS limitations are based on effluent guidelines developed by USEPA for specific industries, as promulgated under 40 CFR Parts 405-471. Applicable guidelines, pollutants regulated by these guidelines, and the effluent limitation derivation for facilities subject to these guidelines is in the [USEPA Effluent Limitation Guideline Calculations Table](#).

#### *Best Professional Judgement (BPJ)*

For substances that are not explicitly limited by regulations, the permit writer is authorized to use BPJ in developing TBELs. Consistent with section 402(a)(1) of the CWA, and NYS ECL section 17-0811, the Department is authorized to issue a permit containing "any further limitations necessary to ensure compliance with water quality standards adopted pursuant to state law". BPJ limitations may be set on a case-by-case basis using any reasonable method that takes into consideration the criteria set forth in 40 CFR 125.3. Applicable state regulations include 6 NYCRR 750-1.11. The BPJ limitation considers the existing technology present at the facility, the statistically calculated existing effluent quality for that parameter, and any unique or site-specific factors relating to the facility. Technology limitations generally achievable for various treatment technologies are included in TOGS 1.2.1, Attachment C. These limitations may be used for the listed parameters when the technology employed at the facility is listed.

#### *Technology-based Effluent Limitations (TBELs)*

CWA sections 301(b)(1)(B) and 304(d)(1), 40 CFR 133.102, ECL section 17-0509, and 6 NYCRR 750-1.11 require technology-based controls, known as secondary treatment. These and other requirements are summarized in TOGS 1.3.3. Where the TBEL is more stringent than the WQBEL, the TBEL is applied as a limit in accordance with TOGS 1.3.3. Equivalent secondary treatment, as defined in 40 CFR 133.105, allow for effluent limitations of the more stringent of the consistently achievable concentrations or monthly/weekly averages of 45/65 mg/l, and the minimum monthly average of at least 65% removal. Consistently achievable concentrations are defined in 40 CFR 133.101(f) as the 95th percentile value for the 30-day (monthly) average effluent quality achieved by the facility in a period of two years. The achievable 7-day (weekly) average value is equal to 1.5 times the 30-day average value calculated above. Equivalent secondary treatment applies to those facilities where the principal treatment process is either a trickling filter or a waste stabilization pond; the treatment works provides significant biological treatment of municipal wastewater; and, the effluent concentrations consistently achievable through proper operation and maintenance of the facility cannot meet traditional secondary treatment requirements. There are no federal technology-based standards for toxic pollutants from POTWs. A statistical analysis of existing effluent data, as described in TOGS 1.2.1, may be used to establish other performance-based TBELs.

#### *Water Quality-Based Effluent Limitations (WQBELs)*

In addition to the TBELs, permits must include additional or more stringent effluent limitations and conditions, including those necessary to protect water quality. CWA sections 101 and 301(b)(1)(C), 40 CFR 122.44(d)(1), and 6 NYCRR Parts 750-1.11 require that permits include limitations for all pollutants or parameters which are or may be discharged at a level which may cause or contribute to an exceedance

of any State water quality standard adopted pursuant to NYS ECL 17-0301. Additionally, 6 NYCRR Part 701.1 prohibits the discharge of pollutants that will cause impairment of the best usages of the receiving water as specified by the water classifications at the location of discharge and at other locations that may be affected by such discharge. Water quality standards can be found under 6 NYCRR Parts 700-704. The limitations must be stringent enough to ensure that water quality standards are met at the point of discharge and in downstream waters and must be consistent with any applicable WLA which may be in effect through a TMDL for the receiving water. These and other requirements are summarized in TOGS 1.1.1, 1.3.1, 1.3.2, 1.3.5 and 1.3.6. The Department considers a mixing zone analysis, critical flows, and reasonable potential analysis when developing a WQBEL.

#### Mixing Zone Analyses

In accordance with TOGS 1.3.1., the Department may perform additional analysis of the mixing condition between the effluent and the receiving waterbody. Mixing zone analyses using plume dispersion modeling are conducted in accordance with the following:

“EPA Technical Support Document for Water Quality-Based Toxics Control” (March 1991); EPA Region VIII’s “Mixing Zones and Dilution Policy” (December 1994); NYSDEC TOGS 1.3.1, “Total Maximum Daily Loads and Water Quality-Based Effluent Limitations” (July 1996); “CORMIX v11.0” (2019).

#### Critical Flows

In accordance with TOGS 1.2.1 and 1.3.1, WQBELs are developed using dilution ratios that relate the critical low flow condition of the receiving waterbody to the critical effluent flow. The critical low flow condition used in the dilution ratio will be different depending on whether the limitations are for aquatic or human health protection. For chronic aquatic protection, the critical low flow condition of the waterbody is typically represented by the 7Q10 flow and is calculated as the lowest average flow over a 7-day consecutive period within 10 years. For acute aquatic protection, the critical low flow condition is typically represented by the 1Q10 and is calculated as the lowest 1-day flow within 10 years. However, NYSDEC considers using 50% of the 7Q10 to be equivalent to the 1Q10 flow. For the protection of human health, the critical low flow condition is typically represented by the 30Q10 flow and is calculated as the lowest average flow over a 30-day consecutive period within 10 years. However, NYSDEC considers using  $1.2 \times 7Q10$  to be equivalent to the 30Q10. The 7Q10 or 30Q10 flow is used with the critical effluent flow to calculate the dilution ratio. The critical effluent flow can be the maximum daily flow reported on the permit application, the maximum of the monthly average flows from discharge monitoring reports for the past three years, or the facility design flow. When more than one applicable standard exists for aquatic or human health protection for a specific pollutant, a reasonable potential analysis is conducted for each applicable standard and corresponding critical flow to ensure effluent limitations are sufficiently stringent to ensure all applicable water quality standards are met as required by 40 CFR 122.44(d)(1)(i). For brevity, the pollutant summary table reports the results of the most conservative scenario.

#### Reasonable Potential Analysis (RPA)

The Reasonable Potential Analysis (RPA) is a statistical estimation process, outlined in the 1991 USEPA Technical Support Document for Water Quality-based Toxics Control (TSD), Appendix E. This process uses existing effluent quality data and statistical variation methodology to project the maximum amounts of pollutants that could be discharged by the facility. This projected instream concentration (PIC) is calculated using the appropriate ratio and compared to the water quality standard (WQS). When the RPA process determines the WQS may be exceeded, a WQBEL is required. The procedure for developing WQBELs includes the following steps:

- 1) identify the pollutants present in the discharge(s) based upon existing data, sampling data collected by the permittee as part of the permit application or a short-term high intensity monitoring program, or data gathered by the Department;
- 2) identify water quality criteria applicable to these pollutants;



3) determine if WQBELs are necessary (i.e. reasonable potential analysis (RPA)). The RPA will utilize the procedure outlined in Chapter 3.3.2 of EPA's Technical Support Document (TSD). As outlined in the TSD, for parameters with limited effluent data the RPA may include multipliers to account for effluent variability; and,

4) calculate WQBELs (if necessary). Factors considered in calculating WQBELs include available dilution of effluent in the receiving water, receiving water chemistry, and other pollutant sources.

The Department uses modeling tools to estimate the expected concentrations of the pollutant in the receiving water and develop WQBELs. These tools were developed in part using the methodology referenced above. If the estimated concentration of the pollutant in the receiving water is expected to exceed the ambient water quality standard or guidance value (i.e. numeric interpretation of a narrative water quality standard), then there is a reasonable potential that the discharge may cause or contribute to an exceedance of any State water quality standard adopted pursuant to NYS ECL 17-0301. If a TMDL is in place, the facility's WLA for that pollutant is applied as the WQBEL.

For carbonaceous and nitrogenous oxygen demanding pollutants, the Department uses a model which incorporates the Streeter-Phelps equation. The equation relates the decomposition of inorganic and organic materials along with oxygen reaeration rates to compute the downstream dissolved oxygen concentration for comparison to water quality standards.

The Division of Water has been using the TMDL approach in permit limit development for the control of toxic substances. Since the early 1980's, the loading capacity for specific pollutants has been determined for each drainage basin. Water quality-limiting segments and pollutants have been identified, TMDLs, wasteload allocations and load allocations have been developed, and permits with water quality-based effluent limits have been issued. In accordance with TOGS 1.3.1, the Division of Water implements a Toxics Reduction Strategy which is committed to the application of the TMDL process using numeric, pollutant-specific water quality standards through the Watershed Approach. The Watershed Approach accounts for the cumulative effect of multiple discharges of conservative toxic pollutants to ensure water quality standards are met in downstream segments.

#### *Whole Effluent Toxicity (WET) Testing:*

WET tests use small vertebrate and invertebrate species to measure the aggregate toxicity of an effluent. There are two different durations of toxicity tests: acute and chronic. Acute toxicity tests measure survival over a 96-hour test exposure period. Chronic toxicity tests measure reductions in survival, growth, and reproduction over a 7-day exposure. TOGS 1.3.1 includes guidance for determining when aquatic toxicity testing should be included in SPDES permits. The authority to require toxicity testing is in 6NYCRR 702.9. TOGS 1.3.2 describes the procedures which should be followed when determining whether to include toxicity testing in a SPDES permit and how to implement a toxicity testing program. Per TOGS 1.3.2, WET testing may be required when any one of the following seven criteria are applicable:

1. There is the presence of substances in the effluent for which ambient water quality criteria do not exist.
2. There are uncertainties in the development of TMDLs, WLAs, and WQBELs, caused by inadequate ambient and/or discharge data, high natural background concentrations of pollutants, available treatment technology, and other such factors.
3. There is the presence of substances for which WQBELs are below analytical detectability.
4. There is the possibility of complex synergistic or additive effects of chemicals, typically when the number of metals or organic compounds discharged by the permittee equals or exceeds five.
5. There are observed detrimental effects on the receiving water biota.
6. Previous WET testing indicated a problem.
7. POTWs which exceed a discharge of 1 MGD. Facilities of less than 1 MGD may be required to test, e.g., POTWs <1 MGD which are managing industrial pretreatment programs.

### **Minimum Level of Detection**

Pursuant to 40 CFR 122.44(i)(1)(iv) and 6 NYCRR 750-2.5(d), SPDES permits must contain monitoring requirements using sufficiently sensitive test procedures approved under 40 CFR Part 136. A method is “sufficiently sensitive” when the method’s minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant parameter; or the lowest ML of the analytical methods approved under 40 CFR Part 136. The ML represents the lowest level that can be measured within specified limitations of precision and accuracy during routine laboratory operations on most effluent matrices. When establishing effluent limitations for a specific parameter (based on technology or water quality requirements), it is possible that the calculated limitation will fall below the ML established by the approved analytical method(s). In these instances, the calculated limitation is included in the permit with a compliance level set equal to the ML of the most sensitive method.

### **Monitoring Requirements**

CWA section 308, 40 CFR 122.44(i), 6 NYCRR 750-1.13, and 750-2.5 require that monitoring be included in permits to determine compliance with effluent limitations. Additional effluent monitoring may also be required to gather data to determine if effluent limitations may be required. The permittee is responsible for conducting the monitoring and reporting results on Discharge Monitoring Reports (DMRs). The permit contains the monitoring requirements for the facility. Monitoring frequency is based on the minimum sampling necessary to adequately monitor the facility’s performance and characterize the nature of the discharge of the monitored flow or pollutant. Variable effluent flows and pollutant levels may be required to be monitored at more frequent intervals than relatively constant effluent flow and pollutant levels (6 NYCRR 750-1.13). For industrial facilities, sampling frequency is based on guidance provided in TOGS 1.2.1. For municipal facilities, sampling frequency is based on guidance provided in TOGS 1.3.3.

### **Other Conditions**

#### **Mercury**

The multiple discharge variance (MDV) for mercury was developed in accordance with 6 NYCRR 702.17(h) “to address widespread standard or guidance value attainment issues including the presence of a ubiquitous pollutant or naturally high levels of a pollutant in a watershed.” The first MDV was issued in October 2010, and subsequently revised and reissued in 2015; each subsequent iteration of the MDV is designed to build off the previous version, to make reasonable progress towards the water quality standard (WQS) of 0.7 ng/L dissolved mercury. The MDV is necessary because human-caused conditions or sources of mercury prevent attainment of the WQS and cannot be remedied (i.e., mercury is ubiquitous in New York waters at levels above the WQS and compliance with a water quality based effluent limitation (WQBEL) for mercury cannot be achieved with demonstrated effluent treatment technologies). The Department has determined that the MDV is consistent with the protection of public health, safety, and welfare. During the effective period of this MDV, any increased risks to human health are mitigated by fish consumption advisories issued periodically by the NYSDOH.

All surface water SPDES permittees are eligible for authorization by the MDV provided they meet the requirements specified in DOW 1.3.10.

### **Schedules of Compliance**

Schedules of compliance are included in accordance with 40 CFR Part 132 Attachment F, Procedure 9, 40 CFR 122.47 and 6 NYCRR 750-1.14. Schedules of compliance are intended to, in the shortest reasonable time, achieve compliance with applicable effluent standards and limitations, water quality standards, and other applicable requirements. Where the time for compliance is more than nine months, the schedule of compliance must include interim requirements and dates for their achievement. If the time necessary to complete the interim milestones is more than nine months, and not readily divisible into stages for completion, progress reports must be required.

### **Schedule(s) of Additional Submittals**

Schedules of Additional Submittals are used to summarize the deliverables required by the permit not identified in a separate Schedule of Compliance.