VERMONT

Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Main 2
Montpelier VT 05620-3522
www.watershedmanagement.vt.gov

Agency of Natural Resources

[phone] 802-828-1535
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June 8, 2015

Mr. Philip Swanson, Municipal Manager
Town of Woodstock
Town Hall
31 The Green
Woodstock, VT 05091

Re: Discharge Permit #3-1228

Dear Mr. Swanson:

Enclosed is your copy of the Discharge Permit No. 3-1228 which has been signed on behalf of the Commissioner of the Department of Environmental Conservation. This permit authorizes the discharge of treated wastewater from the Town of Woodstock's Main Wastewater Treatment Facility to the Ottauquechee River. Of note, this permit includes the requirements of EPA's Long Island Sound Nitrogen TMDL (See Condition I.B). The TMDL requires the Town to monitor for Total Nitrogen, develop and implement a Nitrogen Optimization Plan, assess the adequacy of the Plan, and annually report the Total Nitrogen discharged from your facility. Additionally, the permit requires the development of a Phosphorus Optimization Plan and new monitoring requirements of the phosphorus of both the effluent and receiving water.

During the public comment period on the draft permit, we received several comments which are addressed in the Responsiveness Summary.

Please review the permit carefully and make note of the effluent limitations, monitoring requirements, and other special conditions.

If you have questions regarding the permit, please contact Julia Butzler at (802) 490-6182.

Sincerely,

Ernest F Kelley, Manager
Wastewater Management Program

Enclosures (4)

cc:
Wayland Lord, Chief Operator
Jeff Fehrs, Wastewater Management Program VT DEC

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, MAIN BUILDING, 2nd FLOOR
MONTPELIER, VT 05620-3522

Permit No.: 3-1228
PIN: NS98-0021
NPDES No.: VT0100757

Name of Applicant: Town of Woodstock
Town Hall
31 The Green
Woodstock, VT 05091

Expiration Date: March 31, 2020

DISCHARGE PERMIT

In compliance with the provisions of the Vermont Water Pollution Control Act as amended (10 V.S.A. chapter 47), the Vermont Water Pollution Control Permit Regulations as amended, and the federal Clean Water Act as amended (33 U.S.C. § 1251 *et seq.*), the Town of Woodstock, Vermont (hereinafter referred to as the "Permittee") is authorized by the Secretary of Natural Resources (Secretary) to discharge from the Woodstock-Main Wastewater Treatment Facility to the Ottauquechee River in accordance with the following conditions.

This permit shall become effective on the date of signing.

David K. Mears, Commissioner
Department of Environmental Conservation

By: _____ Date: 6/9/15
Ernest F. Kelley, Program Manager
Wastewater and Residuals Management Program
Watershed Management Division

I. SPECIAL CONDITIONS

A. EFFLUENT LIMITS

1. Until March 31, 2020, the Permittee is authorized to discharge from outfall serial number S/N 001 of the Woodstock-Main Wastewater Treatment Facility (WWTF) to the Ottauquechee River, an effluent for which the characteristics shall not exceed the values listed below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS							
	Annual Average	Monthly Average	Weekly Average	Maximum Day	Monthly Average	Weekly Average	Maximum Day	Instantaneous Maximum
		Mass (**lbs/day**)			Concentration (**mg/L**)			
Flow	0.450 MGD							
Biochemical Oxygen Demand (5-day, 20° C) (BOD_5)		113	169		30	45	50	
Total Suspended Solids (TSS)		113	169		30	45	50	
Total Phosphorus (TP)							Monitor only	
Total Nitrogen (TN)[1,2]	See Special Condition I.B						Monitor only	
Total Kjeldahl Nitrogen (TKN)							Monitor only	
Nitrate/Nitrite Nitrogen (NO_x)							Monitor only	
Settleable Solids								1.0 mL/L
Escherichia coli								77/100 mL
Total Residual Chlorine								0.1 mg/L
pH					Between 6.5-8.5 Standard Units			

[1] TN = TKN + NO_x
[2] See Total Nitrogen Monitoring Report form WR-43-TN

2. The effluent shall not have concentrations or combinations of contaminants including oil, grease, scum, foam, or floating solids which would cause a violation of the Vermont Water Quality Standards.

3. The effluent shall not cause visible discoloration of the receiving waters.

4. The monthly average concentrations of Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS) in the effluent shall not exceed 15 percent of the monthly average concentrations of BOD_5 and TSS in the influent into the Permittee's WWTF. For the purposes of determining whether the Permittee is in compliance with this condition, samples from the effluent and the influent shall be taken with appropriate allowance for detention times.

5. If the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the permitted flow limitation, the Permittee shall submit to the Agency of Natural Resources (Agency) projected loadings and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

6. Any action on the part of the Agency in reviewing, commenting upon or approving plans and specifications for the construction of WWTFs shall not relieve the Permittee from the responsibility to achieve effluent limitations set forth in this permit and shall not constitute a waiver of, or act of estoppel against any remedy available to the Agency, the State of Vermont or the federal government for failure to meet any requirement set forth in this permit or imposed by state or federal law.

B. TOTAL NITROGEN

a. Optimization Plan

By **September 30, 2015,** the Permittee shall develop and submit to the Agency for review and approval a Nitrogen Removal Optimization Evaluation Plan for the evaluation of alternative methods of operating the existing WWTF to optimize the removal of nitrogen. The methods to be evaluated include: operational, process, equipment changes designed to enhance nitrification and denitrification (seasonal and year-round); incorporation of anoxic zones; septage receiving policies and procedures; and side stream management. The Permittee shall implement these recommended operational changes to maintain a mass discharge of total nitrogen (TN) lower than the existing mass loading of TN. The baseline annual average daily TN load discharge from this facility is estimated to be **approximately 56 lbs/day**.

This plan shall be developed by a qualified professional with experience in the operation and/or design of municipal WWTFs in conjunction with the Chief Operator of the facility.

This plan shall be provided to the Agency for review and approval prior to implementation and shall be revised by the Permittee upon the Agency's request to address equipment or operational changes.

Implementation of the plan shall commence within 30 days of its approval by the Agency.

b. Plan Evaluation

Within one year following the implementation, the Permitee shall evaluate the effectiveness of the Plan. The evaluation shall be conducted by a qualified professional with experience in the operation and/or design of municipal WWTFs in conjunction with the Chief Operator of the facility. The results of the evaluation shall be submitted to the Agency for review and approval within one year and six months following the implementation of the plan and shall be revised at the Agency's request. Actions to implement the approved nitrogen removal optimization practices, if any, shall be initiated within 90 days of the Agency's approval.

c. Reporting

Annually, beginning with the data from January 2016, the Permittee shall submit a report to the Agency as an attachment to the **December** Discharge Monitoring Report form WR-43 (DMR WR-43) that documents the annual average daily TN discharged (in pounds per day) from the facility, summarizes nitrogen removal optimization and efficiencies, and tracks trends relative to the previous year.

TN = Total Kjeldahl Nitrogen (TKN) + Nitrite/Nitrate (NO_x).

The TN pounds per day, annual average, shall be based on the sum of the Total Monthly Pounds of TN discharged for the calendar year and shall be calculated as follows:

1. Determine the Total Monthly TN in pounds:

Total Monthly TN pounds = (Monthly Average TN concentration (mg/L) x Total Monthly Flow (MGD)) x 8.34

2. Calculate the TN, pounds per day, annual average:

(Sum of the Total Monthly TN pounds for each month of the calendar year)/365 days

d. Wasteload Allocation

This permit does not establish a formal Waste Load Allocation for the facility nor does it convey any right to ownership of the facility's estimated baseline annual average TN load.

The Agency reserves the right to reopen and amend this permit to include an alternate TN limitation and/or additional monitoring requirements based on the monitoring data, the results of nitrogen optimization activities, or a formal Waste Load Allocation promulgated

under Vermont's Waste Load Allocation Rule for Total Nitrogen in the Connecticut River Watershed based on the Long Island Sound Total Nitrogen Total Maximum Daily Load.

C. TOTAL PHOSPHORUS

The Permittee shall operate the wastewater treatment facility, to the extent feasible, to optimize the removal of phosphorus.

1. **Within 180 days of the effective date of this permit,** the Permittee shall develop and implement an operational plan detailing the procedures to optimize phosphorus removal. This plan shall be developed by a qualified professional with experience in the operation and/or design of municipal WWTFs and biological nutrient removal in conjunction with the Chief Operator of the facility.

2. This plan shall be provided to the Agency for review upon request and shall be revised upon the Agency's request or by the Permittee to address equipment or operational changes.

3. Based upon the results of the effectiveness of the phosphorus removal optimization plan and the monitoring required by Special Conditions I.D and I.I.2 below, this permit may be amended to require instream biological monitoring.

D. INSTREAM MONITORING

The Permittee shall perform water quality monitoring in the Ottauquechee River above and below the Woodstock-Main WWTF outfall S/N 001. The Permittee shall submit a study plan, outlining the location of the collection, sampling methodology, and analysis of the data, to the Department's Monitoring, Assessment and Planning Program for approval before sampling begins.

The Permittee shall monitor TP, TN, pH and DO during the months of June through October. Sampling shall occur once per month. Streamflow characteristics shall be documented for each sample collection. The results of the sampling shall be submitted as an attachment to the **appropriate DMR WR-43**.

The Department reserves the right to reopen and amend this permit to include additional monitoring or effluent limitations.

E. WASTE MANAGEMENT ZONE

In accordance with 10 V.S.A. § 1252, this permit hereby establishes a waste management zone that extends from the outfall of the Woodstock-Main WWTF in the Ottauquechee River downstream one mile.

F. REAPPLICATION

If the Permittee desires to continue to discharge after the expiration of this permit, the Permittee shall reapply on the application forms then in use at least 180 days before this permit expires.

Reapply for a Discharge Permit by: September 30, 2019

G. OPERATING FEES

This discharge is subject to operating fees as required by 3 V.S.A. § 2822.

H. TOXICITY TESTING

1. **Whole Effluent Toxicity (WET) testing**. During **August or September 2017**, the Permittee shall conduct a two-species (*Pimephales promelas* and *Ceriodaphnia dubia*) acute WET test on a composite effluent sample collected from S/N 001. The results shall be submitted to the Agency by **December 31, 2017**.

   The WET tests shall be conducted according to the procedures and guidelines specified in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (October 2002 or, if a newer edition is available, the most recent edition) U.S. EPA document.

2. Based upon the results of the WET tests or any other toxicity tests conducted, the Agency reserves the right to reopen and amend this permit to require additional WET testing or a Toxicity Reduction Evaluation be conducted.

I. MONITORING AND REPORTING

1. Sampling and Analysis

The sampling, preservation, handling, and analytical methods used shall conform to the test procedures published in 40 C.F.R. Part 136.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. The Permittee shall identify the effluent sampling location used for each discharge.

2. Effluent Monitoring

The Permittee shall monitor and record the quality and quantity of discharge(s) at outfall serial number S/N 001 of the Woodstock-Main WWTF, according to the following schedule and other provisions: until March 31, 2020

PARAMETER	MINIMUM FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow	Continuous	Daily Total, Max., Min.
Biochemical Oxygen Demand (BOD_5)	1 × month	composite[1]
Total Suspended Solids (TSS)	1 × month	composite[1]
Total Phosphorus (TP)	1 × month	composite[1]
Total Nitrogen (TN)	1 × month	[calculated[2,3]]
Total Kjeldahl Nitrogen (TKN)	1 × month	composite[1,3]
Nitrate/Nitrite Nitrogen (NO_x)	1 × month	composite[1,3]
Settleable Solids	1 × day	grab[4]
Escherichia coli	1 × month	grab[5]
Total Residual Chlorine	1 × day	grab[5,6]
pH	1 × day	grab

[1] Composite samples for BOD_5, TSS, TP, TKN and NO_x shall, at a minimum, be taken during the hours 6:00 AM to 6:00 PM, unless otherwise specified. Eight hours is the minimum period for the composite, 24 hours is the maximum for the composite.
[2] TN = TKN + NO_x
[3] Submit results on Total Nitrogen Monitoring Report form WR-43-TN.
[4] Settleable Solids samples shall be collected between 10:00 AM and 2:00 PM or during the period of peak flow.
[5] The monthly *E. coli* sample shall be collected at the same time and location as a daily Total Residual Chlorine sample. Samples shall be collected between the hours of 6:00 AM and 6:00 PM.
[6] Total Residual Chlorine shall be monitored and recorded both prior to and following dechlorination.

3. Annually, by December 31, the Permittee shall monitor S/N 001 and submit the results, including units of measurement, as an attachment to the DMR WR-43 for the month in which the samples were taken for the following parameters:

Temperature
Ammonia (as N)
Dissolved Oxygen
Oil & Grease
Total Dissolved Solids

Grab samples shall be used for Temperature, Ammonia, Dissolved Oxygen, and Oil & Grease; a composite sample shall be used for Total Dissolved Solids. Samples shall be representative of the seasonal variation in the discharge.

4. Influent Monitoring

The Permittee shall monitor the quality of the influent according to the following schedule and other provisions.

PARAMETER	MINIMUM FREQUENCY OF ANALYSIS	SAMPLE TYPE
Biochemical Oxygen Demand (BOD_5)	1 × month	composite[1]
Total Suspended Solids (TSS)	1 × month	composite[1]
Total Nitrogen (TN)	1 × quarter	[calculated[2,3]]
Total Kjeldahl Nitrogen (TKN)	1 × quarter	composite[1,3,4]
Nitrate/Nitrite Nitrogen (NO_x)	1 × quarter	composite[1,3,4]

[1] Composite samples for BOD_5, TSS, TKN and NO_x shall, at a minimum, be taken during the hours 6:00 AM to 6:00 PM, unless otherwise specified. Eight hours is the minimum period for the composite, 24 hours is the maximum for a composite.
[2] TN = TKN + NO_x
[3] Submit results on Total Nitrogen Monitoring Report form WR-43-TN.
[4] The influent TKN and NO_x sample shall be collected on the same day as an effluent TKN and NO_x sample.

5. Reporting

The Permittee is required to submit monthly reports of monitoring results on form DMR WR-43. Reports are due on the 15th day of each month, beginning with the month following the effective date of this permit.

If, in any reporting period, there has been no discharge, the Permittee must submit that information by the report due date.

Signed copies of these, and all other reports required herein, shall be submitted to the Secretary at the following address:

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Main Building, 2nd Floor
Montpelier, VT 05620-3522

All reports shall be signed:

a. In the case of corporations, by a principal executive officer of at least the level of vice president, or his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the

permit form originates and the authorization is made in writing and submitted to the Agency;

b. In the case of a partnership, by a general partner;

c. In the case of a sole proprietorship, by the proprietor; or

d. In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

In addition to the monitoring and reporting requirements given above, daily monitoring of certain parameters for operational control shall be submitted to the Agency on the DMR WR-43. Operations reports (reporting form WR-43) shall be submitted monthly.

6. Recording of Results

The Permittee shall maintain records of all information resulting from any monitoring activities required, including:

a. The exact place, date, and time of sampling or measurement;

b. The individual(s) who performed the sampling or measurements;

c. The dates and times the analyses were performed;

d. The individual(s) who performed the analyses;

e. The analytical techniques and methods used including sample collection handling and preservation techniques;

f. The results of such analyses;

g. The records of monitoring activities and results, including all instrumentation and calibration and maintenance records; and

h. The original calculation and data bench sheets of the operator who performed analysis of the influent or effluent pursuant to requirements of Section I.(A) of this permit.

The results of monitoring requirements shall be reported (in the units specified) on the Vermont reporting form DMR WR-43 or other forms approved by the Agency.

7. Additional Monitoring

If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR WR-43. Such increased frequency shall also be indicated.

J. COMBINED SEWER OVERFLOWS

The discharges from Manhole #3-9, the Kedron Brook Overflow (also known as the Benson Place CSO) are authorized by this permit during storm events only, provided that the discharges comply with the Vermont Water Quality Standards and contain no septage or holding tank waste. Additionally, the Permittee shall implement the following controls to abate the combined sewer overflow discharge and its effects on the quality of the receiving water:

a. Implementation of proper operation and regular maintenance programs for the sewer system and the combined sewer overflow such as routine catch-basin, sewer, and interceptor cleaning;

b. Maximizing the use of the collection system for storage;

c. Maximizing wet-weather flow to the wastewater treatment facility;

d. Elimination of any discharge from combined sewer overflow during dry weather;

e. Control of solid and floatable material in the combined sewer overflow;

f. Pollution prevention programs such as litter control and street sweeping to reduce the contaminants in the combined sewer overflow discharge;

g. Implementation of a public notification process to ensure that the public receives adequate notification of when and where a combined sewer overflow discharge occurs; and

h. Monitoring to characterize the impacts of the combined sewer overflow discharge and to determine the effectiveness of these controls.

The Permittee shall monitor the CSO outfall – Kedron Brook Overflow – in order to determine continued compliance with the Agency's 1990 CSO Control Policy. This shall be accomplished by, at a minimum, installing a tell-tale block in the overflow line, checking the block after each significant precipitation event, and documenting the results, including the total precipitation and storm intensity, if possible. **The results shall be submitted monthly as an attachment to the appropriate DMR WR-43. In addition, a report consolidating all the monitoring data shall be submitted with the permit application due September 30, 2019.**

K. DRY WEATHER FLOWS

Dry weather flows of untreated municipal wastewater from any sanitary or combined sewers are not authorized by this permit and are specifically prohibited by state and federal laws and regulations.

L. OPERATION, MANAGEMENT, AND EMERGENCY RESPONSE PLANS

1. The Permittee shall implement the Operation, Management, and Emergency Response Plan for the WWTF, pump stations, and stream crossings as approved by the Agency on July 9, 2009.

2. The Permittee shall implement the Operation, Management, and Emergency Response Plan for the wastewater collection system as approved by the Agency on January 6, 2011.

The Permittee shall revise these plans upon the Agency's request or on its own motion to reflect equipment or operational changes.

M. KEDRON BROOK SEWER LINE

The Permittee shall implement the following inspection and preventative maintenance plan for the sewer line located in Kedron Brook (see Attachment A):

a. External Observations.

i. Twice annually (once after spring runoff and once during low flow conditions), the entire length of sewer line in Kedron Brook will visually inspected, including the conditions of the stone armor, manholes and stream banks. Careful observations are to be made in the areas of known service laterals and tees, looking for exposed sections of pipe.

ii. After each significant storm event (>1″) and/or each period of high stream flow (>2′), the entire length of sewer line in Kedron Brook will be visually inspected. This inspection can be made from stream banks.

iii. Still pictures shall be produced and kept as permanent records.

b. Internal Inspection & Maintenance.

i. Annually, during the fall, an internal cleaning and fiber optic camera inspection of the designated sections below will be performed on a rotational basis, such that each section is inspected once every three years.

Sections	Length
MH 7-10 to MH K-2A	≈ 620′
MH K-2A to MH K-3	≈ 534′
MH K-3 to MH 3-4R	≈ 771′

ii. Still picture and video reports are to be produced and kept as permanent records. The analysis of the results shall be conducted by a qualified professional with experience in sewer line camera inspections. Any deficiencies will be noted and a schedule for repair/rehabilitation will be prepared. The work shall occur either within the next budget year or within 30 days, depending on the nature of the work required.

c. Annual Report.

Annually, by December 31, a report shall be submitted to the Agency. This report shall summarize the External and Internal Inspections, including any noted deficiencies and a schedule for repair/rehabilitation.

N. EMERGENCY ACTION - ELECTRIC POWER FAILURE

The Permittee shall indicate in writing to the Agency **within 30 days after the effective date of this permit** that the discharge shall be handled in such a manner that, in the event the primary source of electric power to the WWTF (including pump stations) fails, any discharge into the receiving waters will attempt to comply with the conditions of this permit, but in no case shall the wastes receive less than primary treatment (or in the case of ultraviolet light disinfection systems, not less than secondary treatment) plus disinfection.

The Permittee shall either provide an alternative source of power for the operation of its WWTF, or demonstrate that the treatment facility has the capacity to store the wastewater volume that would be generated over the duration of the longest power failure that would have affected the facility in the last five years, excluding catastrophic events.

The alternative power supply, whether from a generating unit located at the WWTF or purchased from an independent source of electricity, must be separate from the existing power source used to operate the WWTF. If a separate unit located at the WWTF is to be used, the Permittee shall certify in writing to the Agency when the unit is completed and prepared to generate power.

The determination of treatment system storage capacity shall be submitted to the Agency upon completion.

O. SEWER ORDINANCE

The Permittee shall have in effect a sewer use ordinance acceptable to the Agency which, at a minimum, shall

1. Prohibit the introduction by any person into the Permittee's sewerage system or WWTF of any pollutant which:

a. Is a toxic pollutant in toxic amounts as defined in standards issued from time to time under Section 307(a) of the Clean Water Act;

b. Creates a fire or explosion hazard in the Permittee's treatment works;

c. Causes corrosive structural damage to the Permittee's treatment works, including all wastes with a pH lower than 5.0;

d. Contains solid or viscous substances in amounts which would cause obstruction to the flow in sewers or other interference with proper operation of the Permittee's treatment works; or

e. In the case of a major contributing industry, as defined in this permit, contains an incompatible pollutant, as defined in this permit, in an amount or concentration in excess of that allowed under standards or guidelines issued from time to time pursuant to Sections 304, 306, and/or 307 of the Clean Water Act.

2. Require 45 days prior notification to the Permittee by any person or persons of a:

a. Proposed substantial change in volume or character of pollutants over that being discharged into the Permittee's treatment works at the time of issuance of this permit;

b. Proposed new discharge into the Permittee's treatment works of pollutants from any source which would be a new source as defined in Section 306 of the Clean Water Act if such source were discharging pollutants; or

c. Proposed new discharge into the Permittee's treatment works of pollutants from any source which would be subject to Section 301 of the Clean Water Act if it were discharging such pollutants.

3. Require any industry discharging into the Permittee's treatment works to perform such monitoring of its discharge as the Permittee may reasonably require, including the installation, use, and maintenance of monitoring equipment and monitoring methods, keeping records of the results of such monitoring, and reporting the results of such monitoring to the Permittee. Such records shall be made available by the Permittee to the Agency upon request.

4. Authorize the Permittee's authorized representatives to enter into, upon, or through the premises of any industry discharging into the Permittee's treatment works to have access to and copy any records, to inspect any monitoring equipment or method required under subsection 3 above, and to sample any discharge into the Permittee's treatment works.

The Permittee shall notify the Agency of any discharge specified in subsection 2 above within 30 days of the date on which the Permittee is notified of such discharge. This permit may be modified accordingly.

II. GENERAL CONDITIONS

A. MANAGEMENT REQUIREMENTS

1. Facility Modification / Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties pursuant to 10 V.S.A. chapters 47, 201, and/or 211. Any anticipated facility alterations or expansions or process modifications which will result in new, different, or increased discharges of any pollutants must be reported by submission of a

new permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the Agency of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

In addition, the Permittee shall provide notice to the Agency of the following:

a. Any new introduction of pollutants into the treatment works from a source which would be a new source as defined in Section 306 of the Clean Water Act if such source were discharging pollutants;

b. Except for such categories and classes of point sources or discharges specified by the Agency, any new introduction of pollutants into the treatment works from a source which would be subject to Section 301 of the Clean Water Act if such source were discharging pollutants; and

c. Any substantial change in volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into such works at the time of issuance of the permit.

The notice shall include:

i. The quality and quantity of the discharge to be introduced into the system, and

ii. The anticipated impact of such change in the quality or quantity of the effluent to be discharged from the WWTF.

2. Noncompliance Notification

The Permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

In the event the Permittee is unable to comply with any of the conditions of this permit due, among other reasons, to:

a. Breakdown or maintenance of waste treatment equipment (biological and physical-chemical systems including all pipes, transfer pumps, compressors, collection ponds or tanks for the segregation of treated or untreated wastes, ion exchange columns, or carbon absorption units);

b. Accidents caused by human error or negligence;

c. Any unanticipated bypass or upset which exceeds any effluent limitation in the permit;

d. Violation of a maximum day discharge limitation for any of the pollutants listed by the Agency in this permit; or

e. Other causes such as acts of nature,

the Permittee shall notify the Agency within 24 hours of becoming aware of such condition and shall provide the Agency with the following information, in writing, within five days:

i. Cause of non-compliance;

ii. A description of the non-complying discharge including its impact upon the receiving water;

iii. Anticipated time the condition of non-compliance is expected to continue or, if such condition has been corrected, the duration of the period of non-compliance;

iv. Steps taken by the Permittee to reduce and eliminate the non-complying discharge; and

v. Steps to be taken by the Permittee to prevent recurrence of the condition of non-compliance.

3. Operation and Maintenance

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

a. The Permittee shall, at all times, maintain in good working order and operate as efficiently as possible all treatment and control facilities and systems (and related appurtenances) installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the Permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

b. The Permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and testing functions required to insure compliance with the conditions of this permit; and

c. The operation and maintenance of this facility shall be performed only by qualified personnel. The personnel shall be certified as required under the Vermont Wastewater Treatment Facility Operator Certification Rule.

4. Quality Control

The Permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at regular intervals to ensure accuracy of measurements, or shall ensure that both activities will be conducted.

The Permittee shall keep records of these activities and shall provide such records upon request of the Agency.

The Permittee shall demonstrate the accuracy of the effluent flow measurement device weekly and report the results on the monthly report forms. The acceptable limit of error is ± 10%.

The Permittee shall analyze any additional samples as may be required by the Agency to ensure analytical quality control.

5. Bypass

The bypass of facilities (including pump stations) is prohibited, except where authorized under the terms and conditions of an Emergency Pollution Permit issued pursuant to 10 V.S.A. § 1268. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the activity in order to maintain compliance with the conditions of this permit.

6. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any adverse impact to waters of the State resulting from non-compliance with any condition specified in this permit, including accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, all calibration and maintenance of instrumentation records and all original chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit shall be retained for a minimum of three years, and shall be submitted to the Agency upon request. This period shall be extended during the course of unresolved litigation regarding the discharge of pollutants or when requested by the Agency.

8. Solids Management

Collected screenings, sludges, and other solids removed in the course of treatment and control of wastewaters shall be stored, treated and disposed of in accordance with 10 V.S.A. chapter 159 and with the terms and conditions of any certification, interim or final, transitional operation authorization or order issued pursuant to 10 V.S.A. chapter 159 that is in effect on the effective date of this permit or is issued during the term of this permit.

9. Emergency Pollution Permits

Maintenance activities, or emergencies resulting from equipment failure or malfunction, including power outages, which result in an effluent which exceeds the effluent limitations specified herein, shall be considered a violation of the conditions of this permit, unless the Permittee immediately applies for, and obtains, an emergency pollution permit under the

provisions of 10 V.S.A. § 1268. The Permittee shall notify the Agency of the emergency situation by the next working day.

10 V.S.A. § Section 1268 reads as follows:

> When a discharge permit holder finds that pollution abatement facilities require repairs, replacement or other corrective action in order for them to continue to meet standards specified in the permit, he may apply in the manner specified by the secretary for an emergency pollution permit for a term sufficient to effect repairs, replacements or other corrective action. The permit may be issued without prior public notice if the nature of the emergency will not provide sufficient time to give notice; provided that the secretary shall give public notice as soon as possible but in any event no later than five days after the effective date of the emergency pollution permit. No emergency pollution permit shall be issued unless the applicant certifies and the secretary finds that:
>
> (1) there is no present, reasonable alternative means of disposing of the waste other than by discharging it into the waters of the state during the limited period of time of the emergency;
>
> (2) the denial of an emergency pollution permit would work an extreme hardship upon the applicant;
>
> (3) the granting of an emergency pollution permit will result in some public benefit;
>
> (4) the discharge will not be unreasonably harmful to the quality of the receiving waters;
>
> (5) the cause or reason for the emergency is not due to wilful or intended acts or omissions of the applicant.

Application shall be made to the Secretary at the following address: Agency of Natural Resources, Department of Environmental Conservation, One National Life Drive, Main Building, 2nd Floor, Montpelier VT 05620-3522.

B. RESPONSIBILITIES

1. Right of Entry

The Permittee shall allow the Agency or authorized representative, upon the presentation of proper credentials:

a. To enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. To have access to and copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;

c. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. To sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

2. Transfer of Ownership or Control

This permit is not transferable without prior written approval of the Agency. All application and operating fees must be paid in full prior to transfer of this permit. In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the Permittee shall provide a copy of this permit to the succeeding owner or controller and shall send written notification of the change in ownership or control to the Agency **at least 30 days in advance of the proposed transfer date**. The notice to the Agency shall include a written agreement between the existing and new Permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them. The Permittee shall also inform the prospective owner or operator of their responsibility to make an application for transfer of this permit.

This request for transfer application must include as a minimum:

a. A properly completed application form provided by the Agency and the applicable processing fee.

b. A written statement from the prospective owner or operator certifying:

i. The conditions of the operation that contribute to, or affect, the discharge will not be materially different under the new ownership;

ii. The prospective owner or operator has read and is familiar with the terms of the permit and agrees to comply with all terms and conditions of the permit; and

iii. The prospective owner or operator has adequate funding to operate and maintain the treatment system and remain in compliance with the terms and conditions of the permit.

c. The date of the sale or transfer.

The Agency may require additional information dependent upon the current status of the facility operation, maintenance, and permit compliance.

3. Confidentiality

Pursuant to 10 V.S.A. § 1259(b):

> Any records, reports or information obtained under this permit program shall be available to the public for inspection and copying. However, upon a showing satisfactory to the secretary that any records, reports or information or part thereof, other than effluent data, would, if made public, divulge methods or processes entitled to protection as trade secrets, the secretary shall treat and protect those records, reports or information as confidential. Any records, reports or information accorded confidential treatment will be disclosed to authorized representatives of the state and the United States when relevant to any proceedings under this chapter.

Claims for confidentiality for the following information will be denied:

a. The name and address of any permit applicant or Permittee.

b. Permit applications, permits, and effluent data.

c. Information required by application forms, including information submitted on the forms themselves and any attachments used to supply information required by the forms.

4. Permit Modification, Suspension, and Revocation

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance shall not stay any permit condition.

The Permittee shall provide to the Agency, within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Agency upon request, copies of records required to be kept by this permit.

5. Toxic Effluent Standards

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Clean Water Act for a toxic pollutant which is present in the Permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, then this permit shall be modified or revoked and reissued in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under 10 V.S.A. § 1281.

7. Other Materials

Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

a. They are not:

i. Designated as toxic or hazardous under provisions of Sections 307 and 311, respectively, of the Clean Water Act, or

ii. Known to be hazardous or toxic by the Permittee, except that such materials indicated in (a) and (b) above may be discharged in certain limited amounts with the written approval of, and under special conditions established by, the Agency or his designated representative, if the substances will not pose any imminent hazard to the public health or safety;

b. The discharge of such materials will not violate the Vermont Water Quality Standards; and

c. The Permittee is not notified by the Agency to eliminate or reduce the quantity of such materials entering the watercourse.

8. Navigable Waters

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

9. Civil and Criminal Liability

Except as provided in "Emergency Action – Electric Power Failure" (Section I.K), "Bypass" (Section II.A.5), and "Emergency Pollution Permits" (Section II.A.9), nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for

noncompliance. Civil and criminal penalties for non-compliance are provided for in 10 V.S.A. Chapters 47, 201, and 211.

10. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

11. Property Rights

Issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

12. Other Information

If the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Agency, it shall promptly submit such facts or information.

13. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

14. Authority

This permit is issued under authority of 10 V.S.A. §§1258 and 1259 of the Vermont Water Pollution Control Act, the Vermont Water Pollution Control Permit Regulation, and Section 402 of the Clean Water Act, as amended.

15. Definitions

For purposes of this permit, the following definitions shall apply.

Agency – The Vermont Agency of Natural Resources

Annual Average - The highest allowable average of daily discharges calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar year divided by the number of daily discharges measured during that year.

Average - The arithmetic means of values taken at the frequency required for each parameter over the specified period.

Bypass – the intentional diversion of waste streams from any portion of the treatment facility.

The Clean Water Act - The federal Clean Water Act, as amended (33 U.S.C. § 1251, *et seq.*).

Composite Sample - A sample consisting of a minimum of one grab sample per hour collected during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportionally to flow over that same time period.

Daily Discharge - The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

For pollutants with limitations expressed in pounds the daily discharge is calculated as the total pounds of pollutants discharged over the day.

For pollutants with limitations expressed in mg/L the daily discharge is calculated as the average measurement of the pollutant over the day.

Discharge – Any wastes, directly or indirectly, that are placed, deposited or emitted into waters of the state.

Grab Sample - An individual sample collected in a period of less than 15 minutes.

Incompatible Substance – Any waste being discharged into the treatment works which interferes with, passes through without treatment, or is otherwise incompatible with said works or would have a substantial adverse effect on the works or on water quality. This includes all pollutants required to be regulated under the Clean Water Act.

Instantaneous Maximum - A value not to be exceeded in any grab sample.

Major Contributing Industry - One that: (1) has a flow of 50,000 gallons or more per average work day; (2) has a flow greater than five percent of the flow carried by the municipal system receiving the waste; (3) has in its wastes a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Clean Water Act; or (4) has a significant impact, either singly or in combination with other contributing industries, on a publicly owned treatment works or on the quality of effluent from that treatment works.

Maximum Day (maximum daily discharge limitation) - The highest allowable "daily discharge" (mg/L, lbs or gallons).

Mean - The mean value is the arithmetic mean.

Monthly Average (Average monthly discharge limitation) - The highest allowable average of daily discharges (mg/L, lbs or gallons) over a calendar month, calculated as the sum of

all daily discharges (mg/L, lbs or gallons) measured during a calendar month divided by the number of daily discharges measured during that month.

NPDES - The National Pollutant Discharge Elimination System.

Secretary - The Secretary of the Agency of Natural Resources

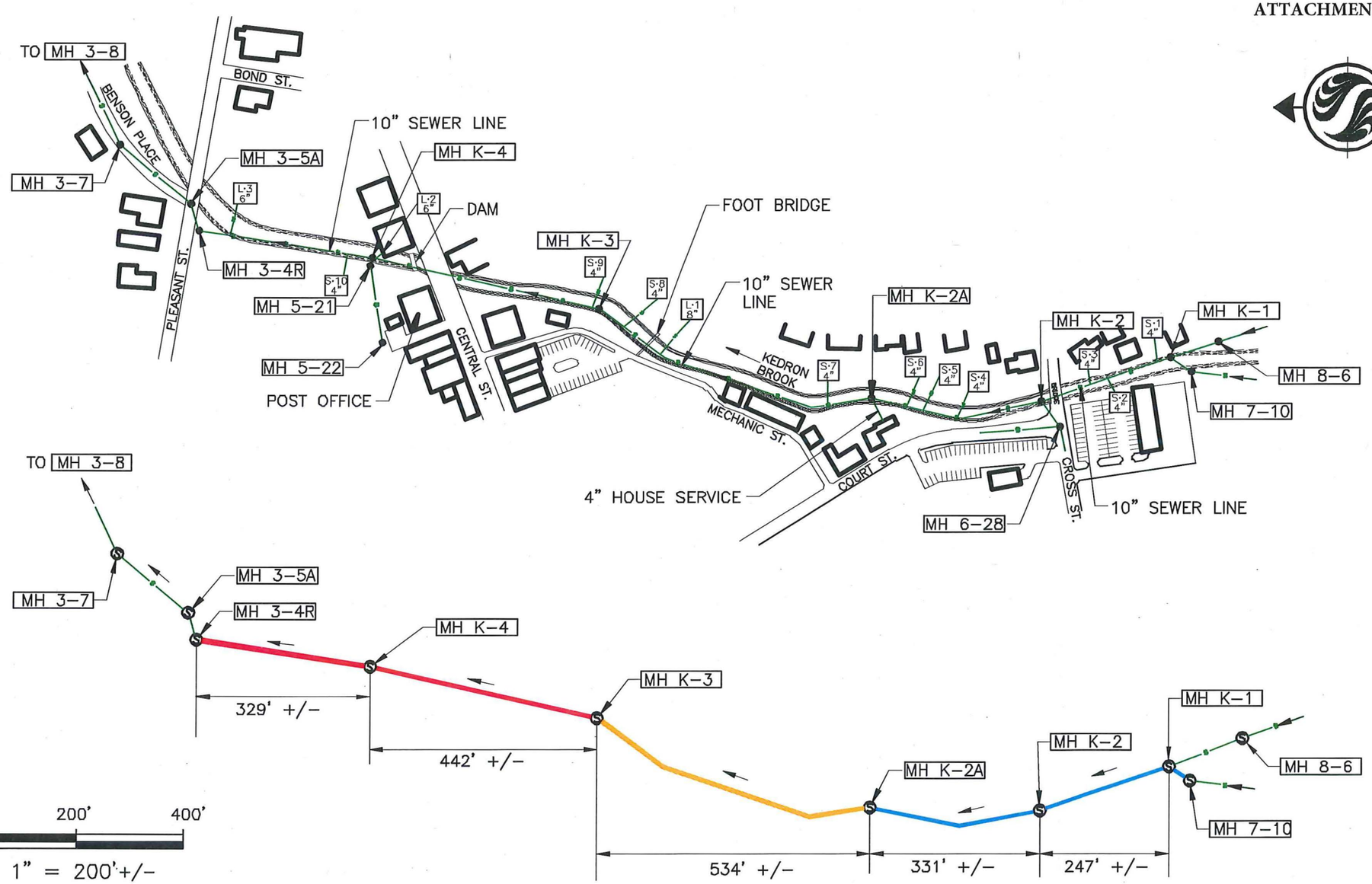
State Certifying Agency Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Main Building, 2nd Floor

Waste – effluent, sewage or any substance or material, liquid, gaseous, solid or radioactive, including heated liquids, whether or not harmful or deleterious to waters.

Waste Management Zone – a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist due to the authorized discharge.

Weekly Average - (Average weekly discharge limitation) - The highest allowable average of daily discharges (mg/L, lbs or gallons) over a calendar week, calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar week divided by the number of daily discharges measured during that week.

PERMIT NO.: 3-1228
ATTACHMENT A



AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, MAIN BUILDING, 2ND FLOOR
MONTPELIER, VT 05620-3522

FACT SHEET
(June 2015)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

PERMIT NO: 3-1228
PIN: NS98-0021
NPDES NO: VT0100757

NAME AND ADDRESS OF APPLICANT:

Town of Woodstock
Town Hall
31 The Green
Woodstock, VT 05091

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Woodstock-Main Wastewater Treatment Facility
Mayhem Way
Woodstock, Vermont

RECEIVING WATER: Ottauquechee River

CLASSIFICATION: Class B with a waste management zone. Class B waters are suitable for swimming and other forms of water-based recreation and irrigation of crops and other agricultural uses without treatment; good aesthetic value; aquatic biota and wildlife sustained by high quality aquatic habitat; suitable for boating, fishing, and other recreational uses; acceptable for public water supply with filtration and disinfection. A waste management zone is a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings.

I. Proposed Action, Type of Facility, and Discharge Location

The Vermont Agency of Natural Resources (Agency) received a renewal application for the permit to discharge into the designated receiving water from the above named applicant on April 1, 2008. At this time the Agency has made a tentative decision to reissue the discharge permit. The facility is engaged in the treatment of municipal wastewater. The discharge is from the outfall of the Town of Woodstock's Main Wastewater Treatment Facility (WWTF) to the Ottauquechee River.

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters is based on state and federal laws and regulations, the discharge permit application, and the recent self-monitoring data.

III. Limitations and Conditions

The effluent limitations of the draft permit, the monitoring requirements, and any implementation schedule (if required), may be found on the following pages of the draft permit:

Effluent Limitations:	Page 2 of 23
Monitoring Requirements:	Pages 6-8 of 23

IV. Receiving Water

The receiving water for this discharge is the Ottauquechee River, a designated Cold Water Fish Habitat. At the point of discharge, the river has a contributing drainage area of 150 square miles. The summer 7Q10 flow of the river is estimated to be 20.82 cubic feet per second (CFS) and the summer Low Median Monthly flow is estimated to be 60.02 CFS. The instream waste concentration at the summer 7Q10 flow is 0.032 (3.2%) and the instream waste concentration at the summer Low Median Monthly flow is 0.011 (1.1%).

V. Facility History and Background

The Town of Woodstock owns and operates the Woodstock-Main WWTF. The facility consists of two aeration basins and two secondary clarifiers, followed by chlorine disinfection and dechlorination prior to discharge to the Ottauquechee River. A 20-year Engineering Evaluation of the facility, including the collection system, was completed by Dufresne-Henry in 2005.

The collection system consists of approximately 8.5 miles of sewer, one combined sewer overflow, 10 stream and brook crossings and one pump station. The Town of Woodstock has actively pursued elimination of combined sewer overflows: two of the three original overflow locations – West Woodstock Pump Station and MH 2-14 – have been plugged; a reduction in the infiltration/inflow has eliminated unauthorized discharges from Manhole #3-9 Kedron Brook Overflow, also known as the Benson Place CSO.

One of the 10 stream "crossings" is the Kedron Brook Sewer – a sewer line that is located within the stream channel of Kedron Brook for approximately 2500 feet. In 2006, a regular inspection and maintenance schedule was implemented to assure the sewer line remains intact and in good working order in the future.

VI. Permit Basis and Explanation of Effluent Limitation Derivation

Flow – The effluent flow limitation remains at 0.450 MGD, annual average, based on the facility's design flow. The facility maintains a continuous discharge.

Biochemical Oxygen Demand (BOD_5) – The effluent limitations for BOD_5 remain unchanged from the current permit. The monthly average (30 mg/L) and weekly average (45 mg/L) reflect the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133.102. In addition, the draft permit contains a 50 mg/L, maximum day, BOD_5 limitation. This is the Agency standard applied to all such discharges pursuant to 13.4 c. of the Vermont Water Pollution Control Permit Regulations. The Agency implements the limit to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple weekly and monthly sampling events which would enable a discharger to comply with the weekly average and monthly average permit limitations. Mass limits (113 lbs/day, monthly average and 169 lbs/day, weekly average) are derived by multiplying the concentration limits by the permitted flow. The BOD_5 monthly monitoring requirement is unchanged from the current permit.

Total Suspended Solids (TSS) – The effluent limitations for TSS remain unchanged from the current permit. The monthly average (30 mg/L) and weekly average (45 mg/L) reflect the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133.102. In addition, the draft permit contains a 50 mg/L, maximum day, TSS limitation. This is the Agency standard applied to all such discharges pursuant to 13.4 c. of the Vermont Water Pollution Control Permit Regulations. The Agency implements the limit to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple weekly and monthly sampling events which would enable a discharger to comply with the weekly average and monthly average permit limitations. Mass limits (113 lbs/day, monthly and 169 lbs/day, weekly average) are derived by multiplying the concentration limits by the permitted flow. The TSS monthly monitoring requirement is unchanged from the current permit.

Total Phosphorus (TP) – In 2012 and 2013, this discharge was monitored for TP by the Agency. The results of this monitoring indicated that TP in the discharge ranges between 1.8 and 3.5 mg/L. Using an effluent phosphorus concentration of 3.5 mg/L – the highest value observed – the instream phosphorus concentration at low monthly median flow due to the discharge would be 0.040 mg/L (40 µg/L). Furthermore, instream water chemistry data collected by the Agency show that TP is significantly and consistently higher below the outfall in comparison to above the outfall. Based on this data and the theoretical instream phosphorus concentration at summer low flows, this discharge could contribute excessive instream phosphorus concentrations.

To help limit the discharge of phosphorus from the WWTF and ensure that the Vermont Water Quality Standards will continue to be met, Special Condition I.C has been included in the permit. This condition requires that the WWTF be operated to optimize to remove phosphorus.

If the results of this monitoring indicate a reasonable potential to cause an instream excursion above the water quality criteria, the Department may reopen and amend this permit to include additional effluent limitations

Phosphorus monitoring of the effluent will be required once per month.

Total Nitrogen (TN) – On November 10, 2011, a letter from the EPA (Region I) to the Agency indicated that Vermont must establish TN limitations in permits such that the TN load from all facilities in the Connecticut River watershed is consistent with the requirements of the Long Island Sound Total Maximum Daily Load (TMDL).

Section I.B in this draft permit requires the Permittee have a qualified consultant develop and submit a Nitrogen Removal Optimization Plan by September 30, 2015. The plan shall be provided to the Agency before implementation. Beginning in January 2016, an annual report will be due to the Agency documenting the pounds of TN discharged as well as removal optimization and efficiencies. In addition, this Condition contains as clause that allows the Agency to reopen the permit to include a wasteload allocation for this facility based on the LIS TMDL.

TN is a calculated value based on Total Kjeldahl Nitrogen (TKN) and Nitrate/Nitrite (NO_x) Nitrogen. Monthly monitoring will be required for TKN and NO_x. The sum of TKN and NO_x shall be used to derive TN.

Settleable Solids – The limitation of 1.0 mL/L instantaneous maximum and daily monitoring remain unchanged from the current permit. This numeric limit was established in support of the narrative standard in Section 3-01 B.5 of the Vermont Water Quality Standards.

Escherichia coli – The *E. coli* limitation is 77 colonies/100 mL as specified in Section 3-04 B.3, Vermont Water Quality Standards. Monthly monitoring remains the same as in the current permit.

Total Residual Chlorine – The draft permit includes a Total Residual Chlorine effluent limitation of 0.1 mg/L, instantaneous maximum. This limit is a modification of the current permit limits of 0.41 mg/L, weekly average, and 0.70 mg/L, instantaneous maximum.

The instream water quality acute and chronic chlorine criteria for the protection of aquatic biota are 0.019 mg/L and 0.011 mg/L, respectively, as stated in the Vermont Water Quality Standards. Updated analyses estimate a lower hydrologically-based flow than was used to determine the current permit limits. The proposed limit is based on meeting the instream water quality acute and chronic chlorine criteria considering the updated hydrologic flow estimate, as well as on the ability of the facility to reduce the Total Residual Chlorine to 0.1 mg/L through dechlorination. Monitoring requirement remains daily.

pH – The pH limitation remains at 6.5 - 8.5 Standard Units as specified in Section 3-01 B.9. in the Vermont Water Quality Standards. Monitoring remains at daily.

Instream Monitoring – The draft permit includes instream water quality monitoring above and below the outfall. There is a significant increase of instream phosphorus due to the discharge from this facility (see Memorandum: MAPP Reasonable Potential Determinations for the Woodstock-Main Wastewater Treatment Facility). Therefore, several nutrient response conditions shall be monitored to ensure continued compliance with the narrative standard presented in § 3-01.B.2 of the Vermont Water Quality Standards. If the results of this monitoring indicate a reasonable potential to cause an instream excursion above the water quality criteria, the Department may reopen and amend this permit to include additional effluent limitations and/or additional monitoring requirements.

Waste Management Zone – As defined under 10 V.S.A. §1251(16), a waste management zone is "a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings.

Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist due to the authorized discharge".

The draft permit retains the existing waste management zone that extends downstream from the outfall for approximately one mile in the Ottauquechee River.

Toxicity Testing – 40 CFR Part 122.44(d)(1) requires the Agency to assess whether the discharge causes, or has the reasonable potential to cause or contribute to an excursion above any narrative or numeric water quality criteria. This facility was designated a Tier 1, Priority 3 discharge in the Vermont Toxic Discharge Control Strategy (1994) due to the size of the facility and the dilution of the receiving water. The draft permit includes a requirement to conduct a two-species WET test in August of September of 2017. If the results of this test indicate a reasonable potential to cause an instream toxic impact, the Agency may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

Monitoring and Reporting – For all facilities with a design flow of greater than 0.1 MGD, 40 CFR § 122.21(j) requires the submittal of effluent monitoring data for those parameters identified in Section I.F.3 of the draft permit. Samples must be collected once annually such that by the end of the term of the permit, all quarters have been sampled at least once, and the results will be submitted by December 31 of each year.

Combined Sewer Overflows – Discharges from combined storm and sanitary sewers must conform to the Vermont Combined Sewer Overflow Control Policy of 1990, as well as the EPA Combined Sewer Overflow Policy of 1994. The Town of Woodstock was issued 1272 Orders in 1988 and 1993 to assess and address the locations of potential discharges from combined sewer overflows. Reports detailing the assessment and corrective actions taken were submitted as required. Two of the three original overflow locations – West Woodstock Pump Station and MH 2-14 – were plugged; and a reduction in the infiltration/inflow eliminated unauthorized discharges from Manhole #3-9 Kedron Brook Overflow, also known as the Benson Place CSO.
The Kedron Brook Overflow has been monitored for both storm-related and dry weather flows since 1993. Data submitted to the Agency indicate that overflows at the Kedron Brook Overflow do not occur during storm-related events less than the 24 hour 2.5 inch storm identified in the Agency's CSO Control Policy as the minimum storm event.

The draft permit includes continued monitoring and reporting requirements of overflow events utilizing tell-tells. Additionally, the Nine Minimum Controls (NMC) -- technology-based controls established in the EPA Policy – are included in Section I.G of the draft permit (note that NMC #3: review and modification of pretreatment requirements to assure CSO impacts are minimized has been omitted because the administration of the federal pretreatment program is not the responsibility of individual Vermont municipalities since it was delegated to the State of Vermont, Agency of Natural Resources in 1982).

Dry Weather Flows – Due to the extensive infiltration/inflow remediation, and the lack of any evidence of dry weather flows since remediation, the draft permit proposes to eliminate the requirement to monitor dry weather flow on a quarterly basis.

Operation, Management, and Emergency Response Plans – As required by the revisions to 10 V.S.A. Section 1278, promulgated in the 2006 legislative session, Section I.I. has been included in

the draft permit. This condition requires that the Permittee implement the Operation, Management and Emergency Response Plans for the WWTF, sewage pump/ejector stations, and stream crossings as approved by the Agency on July 9, 2009; and for the collection system as approved by the Agency on January 6, 2011.

Kedron Brook Sewerline - In 2006, a regular inspection and maintenance schedule was implemented to assure the sewer line remains intact and in good working order in the future. The draft permit includes an ongoing inspection and maintenance schedule for the sewer line located in Kedron Brook. This schedule shall remain place until the sewer line is relocated out of the stream channel.

Electric Power Failure – Within 30 days of the effective date of the permit, the Permittee must submit to the Agency updated documentation addressing how the discharge will be handled in the event of an electric power outage. The effluent must receive a minimum of primary treatment (or in the case of ultraviolet light disinfection systems, not less than secondary treatment) plus disinfection.

VII. Procedures for Formulation of Final Determinations

*The public comment period for receiving comments on this draft permit ran from **March 23 through April 23, 2015**. Several comments concerning the draft permit were submitted. The Agency's response is provided in the Responsiveness Summary.*

Agency of Natural Resources
Department of Environmental Conservation

Watershed Management Division
1 National Life Drive 2 Main
802-828-1535

MEMORANDUM

To: Ernie Kelley, Manager, Wastewater Management Program (WWM)

From: Neil Kamman, Manager, Monitoring, Assessment and Planning Program (MAPP)

Cc: Pete LaFlamme, Director, Watershed Management Division (WSMD)
Rick Levey, MAPP
Julia Butzler, WWM

Date: January 06, 2015

Subject: MAPP Reasonable Potential Determination for the Woodstock-Main Wastewater Treatment Facility (WWTF).

MAPP has evaluated the draft permit limits for the Woodstock-Main WWTF in Woodstock, Vermont pursuant to the 2012 procedure outlining WWM-WSMD roles and responsibilities. This memo provides MAPP's concurrence with the permit limits set forth by the draft permit for Woodstock-Main WWTF prepared by the WWM.

Facility:
Woodstock-Main Wastewater Treatment Facility
Permit No. 3-1228
NPDES No. VT0100757

Hydrology for Woodstock WWTF used in this evaluation:
Design Flow: 0.450 MGD = 0.696 CFS
7Q10 = 20.8 CFS
LMM = 60.0 CFS
IWC-7Q10 =0.032 (<10%)
IWC-LMM= 0.011 (>1%)

Receiving Water:
Ottauquechee River, VT
Facility Location: Lat. 43.63043 Long. 72.50967 (NAD 83)

The Ottauquechee River downstream of the Woodstock-Main WWTF is classified as Class B and is designated as Cold Water Fish Habitat (Vermont Water Quality Standards). At the point of discharge, the river has a contributing drainage area of approximately 150 square miles. The proposed permit retains the existing waste management zone (WMZ) in the Ottauquechee River beginning at the outfall of this

WWTF and extending downstream for 1.0 mile. There are two permitted discharges upstream of this discharge, Bridgewater WWTF (0.043 MGD) and Sherburne Fire District #2 WWTF (0.3 MGD).

General Assessment – VTDEC Assessment Database:
MAPP maintains the VTDEC assessment database, an EPA-required database which describes the conditions of Vermont's surface waters with respect to their attainment of VWQS. For the Ottauquechee River segment to which this facility discharges, the database indicates full support of all designated uses.

Ambient Chemistry Data for the Ottauquechee River above and below the Woodstock WWTF:
There is ambient chemistry data available from sampling conducted during bioassessments in 2014 and from the VTDEC 2010 and 2012 Wastewater Treatment Facility Studies that characterized the water quality and chemistry above and below wastewater facilities in Vermont. Results of water chemistry measures for the following parameters: pH, hardness, conductivity, dissolved oxygen, turbidity, total phosphorus (TP), dissolved phosphorus (DP), total nitrogen (TN), nitrate + nitrite (NOX) and ammonia (NH3) are summarized in Table 1.

Table 1: Concentrations of surface-water chemistry above and below the Woodstock-Main Wastewater Treatment Facility (River Mile 14.8 and 14.9 refer to stations below and above outfall respectively).

Date	River Mile	pH	Total Hardness mg/L	Cond umhos	DO mg/L	DO %	Turb NTU	TP ug/L	DP ug/L	TN mg-N/L	NOX mg-N/L	TNH3 mg-N/L
8/20/2010	14.9	7.97	59.6	183	8.1	93.8	0.95	7.6	5.16	0.1	0.11	<0.05
	14.8	8.05	59.4	199	8.2	94.3	0.93	108	101	0.67	0.7	<0.05
9/15/2010	14.9	8.02	56	183	10.2	103	0.45	8.1	7.35	0.21	0.12	<0.05
	14.8	8.21	56	181	10.7	110	0.98	24.6	22.4	0.22	0.13	<0.05
11/16/2010	14.9	7.60	-	120	8.4*	71.1*	0.88	7.64	6.25	0.17	0.12	<0.05
	14.8	7.64	-	120	7.3*	**61.4***	1.2	22.8	21.8	0.28	0.19	<0.05
7/12/2012	14.9	8.09	-	225	-	-	0.65	6.1	-	0.34	0.25	<0.05
	14.8	8.2	-	230	-	-	0.52	36.1	-	0.57	0.49	<0.05
8/21/2012	14.9	7.85	-	247	-	-	0.6	6.1	-	0.18	0.10	<0.05
	14.8	7.81	-	259	-	-	0.8	46.9	-	0.48	0.39	<0.05
9/20/2012	14.9	7.93	-	193	9.73	97	1.7	13.8	-	0.27	0.2	<0.05
	14.8	7.95	-	197	9.89	98.4	1.9	30.6	-	0.39	0.31	<0.05
9/10/2014	14.9	8.13	-	202	8.46	87.1	0.44	8.0	-	0.30	-	-
	14.8	7.95	73	204	10.24	101	0.42	23.2	-	0.30	-	-

*) Measurements are suspect.

Total Phosphorus (TP) values above the outfall ranged from 6.1 ug/L to 13.8 ug/L. TP values below the outfall ranged from 23.2 ug/L to 108 ug/L illustrating a significant increase of up to 100 ug/L –TP in one case, nearly all of which was attributable to an increase in dissolved phosphorus.

Total Nitrogen (TN) values above the outfall ranged from 0.1 mg/L – 0.34 mg/L. TN values below the outfall ranged from 0.22 mg/L – 0.67 mg/L, indicating a slight increase below the outfall ranging from 0.01 mg/L to 0.57 mg/L.

Turbidity, Dissolved Oxygen, pH:
Turbidity values above the outfall ranged from 0.93 – 1.2 Nephelometric Turbidity (NTU). Turbidity values below the outfall ranged from 0.42 – 0.98 NTU, well below the 10 NTU criteria. Dissolved Oxygen ranged from 8.1 mg/L – 10.2 mg/L above the outfall and ranged from7.3 mg/L – 10.7 mg/L below the outfall. The percent saturation below the outfall on 11/16/2010 was 61.4% which is below the minimum saturation of 70% for Coldwater Fish Habitat. This was the only value recorded that was below the minimum VTWQS for Coldwater Fish Habitat of "not less than 6 mg/L and 70% saturation at all

times." That value is considered suspect given that no concurrent upstream – downstream data for other parameters indicate the type of water quality changes that would result in low dissolved oxygen. Further, upstream concentration and saturation values of dissolved oxygen for that sampling event are quite low for an otherwise cold sampling period (water temperature was 7.1°C), and further suggest sampling issues with those oxygen results. Values for pH above and below the outfall were very similar and ranged from 7.6 – 8.21 (stnd units).

Biological Assessments:
Biological assessments conducted below the outfall (Table 2) have scored between "very good" and "good to fair" over time. The biological condition has met Class B standards for aquatic biota and aquatic habitat uses for the Medium High Gradient (MHG) stream type consistently, though not all metrics are always consistently achieving their respective thresholds values for full support. Only one year (2010) was the river sampled above and below the WWTF. The last three assessments which have resulted in good-fair biological integrity determinations have indicated to varying degrees an enrichment stress. In 2010 the community was rated as good, but also showed an increase in nutrient tolerant taxa compared to the above site 15.0. The last two assessments showed very similar density, richness and EPT taxa present (which were lower than in 2010). This stream did incur significant damage during tropical storm Irene, which may explain some of change noted between 2010, 2012, and 2014. The 2012 assessment showed clear signs of enrichment stress with an elevated BI value and high levels of macroscopic algae cover. In 2014 the bio index was not as elevated and the two most dominant taxa were water quality-sensitive ones, indicating improvement. The functional feeding groups here show a significant alteration from the MHG model. Field observations indicate that the macroscopic and microscopic periphyton cover indices were both lower in 2014 compared to 2012, suggesting reduced nutrient enrichment.

Total Nitrogen:
Total Nitrogen - EPA, in a November 10, 2011 letter to the Agency indicated that Vermont must establish total nitrogen limitations in permits such that the total nitrogen load from all facilities in the Connecticut River watershed is consistent with the requirements of the Long Island Sound Total Maximum Daily Load (TMDL). At this time, aerated lagoons and RBC facilities are exempt from an actual nitrogen limitation. Monthly monitoring will be required for Total Kjeldahl Nitrogen and Nitrate/Nitrite (NOx) Nitrogen. The sum of TKN and NOx shall be calculated in order to determine TN.

Instream Nitrogen Concentrations were calculated using the low monthly median flow (LMM) of 60 CFS at design flow of 0.69 CFS (0.45 MGD) and using the effluent nitrogen concentration of 27.2 mg/L which was the highest value observed from VTDEC 2012 & 2013 effluent monitoring. The calculated nitrogen concentration at these conditions attributable to discharge was 0.31 mg/L, which is a minor augmentation of instream ambient nitrogen concentrations in receiving waters. Data presented in Table 2 shows receiving water increases of 0.2 – 0.4 mg/L-TN, which would be consistent with the facility operating at design flow.

In addition, the permittee shall have a qualified consultant develop a Nitrogen Removal Optimization Plan within 180 days of the effective date of the permit (see Condition I.A.2.). The plan shall be provided to the Agency before implementation. Beginning in January 2014, an annual report will be due to the Agency documenting the pounds of Total Nitrogen discharged as well as removal optimization and efficiencies. There is a 'reopener clause' in the permit that allows the Agency to reopen the permit to include a wasteload allocation for the facility based on the Long Island Sound Total Nitrogen Total Maximum Daily Load (TMDL).

Table 2. Results of biological monitoring for macroinvertebrates, downstream of the Woodstock WWTF discharge.

Macroinvertebrate Site Summary

Location:	Ottauquechee River	**Location ID:**	501342
Town:	Woodstock	**Bio Site ID:**	120000000148
Description:	Located below WWTF 300m. Below a tractor path crossing of river.	**WBID:**	VT10-01

Date	Sample Method	Density	Richness	EPT Richness	PMA O	BI	Oligo.	EPT / EPT + C	PPCSF	Community Assessment	Attainment Status
9/9/2002	KN	2520	42.0	20.0	75.2	5.10	0.32	0.53	36.9	Good / Fair	Meets WQS
10/2/2003	KN	3588	52.0	23.0	85.9	4.26	1.23	0.80	59.1	Good	Meets WQS
9/24/2007	KN	2856	49.0	26.0	71.9	4.56	0.00	0.86	42.8	Good	Meets WQS
9/15/2010 Upstream	KN	3576	58.0	35.0	75.4	4.01	0.45	0.96	42.9	Very Good	Meets WQS
9/15/2010 Dnstream	KN	5080	62.0	37.0	74.3	4.58	0.00	0.77	51.5	Good	Meets WQS
9/20/2012	KN	2752	49.0	26.0	70.0	4.97	0.00	0.71	52.7	Good / Fair	Meets WQS
9/10/2014	KN	2820	47.0	28.0	82.1	4.32	0.43	0.77	36.6	Good / Fair	Meets WQS
Full Support		> 350	> 32	> 20	> 50%	< 4.85	< 9.5%	> 0.47	> 45%		
Meets Threshold		≥ 300	≥ 30	≥ 18	≥ 45%	≤ 5.00	≤ 12	≥ 0.45	≥ 40 %		
Near Threshold		≥ 250	≥ 28	≥ 16	≥ 40%	≤ 5.15	≤ 14.5%	≥ 0.43	≥ 35%		
		< 250	< 28	< 16	< 40%	> 5.15	>14.5%	< 0.43	< 35%		

Total Phosphorus:

Instream Phosphorus Concentrations were calculated using the low monthly median flow (LMM) of 60 CFS at design flow of 0.696 CFS (.45 MGD) and using the effluent phosphorus concentration of 3.5 mg/L which was the highest value observed from VTDEC 2012 & 2013 effluent monitoring. The calculated phosphorus concentration at these conditions attributable to discharge was 0.040 mg/L (40 ug/L) a significant increase. Data collected VTDEC (Table 1) above and below the outfall show a preponderance of TP increases in the 20-30 ug/L range which would be consistent with the facility operating at ½ design flow.

The potential impacts of phosphorus discharges from this facility to the receiving water have been assessed in relation to the narrative criteria in §3-01.B.2 of the 2011 VWQS, which states:

> *In all waters, total phosphorous loadings shall be limited so that they will not contribute to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that prevents the full support of uses.*

To interpret this standard, MAPP relies on a framework which examines TP concentrations in relation to existing response criteria in the water quality standards. Under the framework, MAPP can make a positive finding of compliance with the narrative standard when specific nutrient response variables; pH, Turbidity, Dissolved Oxygen, and aquatic life use, display compliance with their respective criteria in the Water Quality Standards.

Notwithstanding the observed increase in total phosphorus attributable to the facility, the stream complies with all identified response variables, and thus the narrative standard presented in §3-01.B.2 of the VWQS is supported (Table 3). As described below, for facilities where there are increases in phosphorus attributable to the discharge, and biological monitoring results do not consistently indicate attainment of all thresholds, MAPP recommends that ambient monitoring be conducted for phosphorus concentrations and all nutrient response conditions at sites affected by permitted discharges.

Table 3. Assessment of phosphorus response variables for Woodstock. The relevant target values are referenced to the appropriate section of the VWQS.

Response variable (VWQS reference)	Target Value	River-mile 14.9 (Upstream)	River-mile 14.8 (Downstream)
pH (§3-01.B.9)	<8.5 s.u.	8.13	7.95
Turbidity (§3-04.B.1)	< 10 NTU at low mean annual flow	0.44	0.42
Dissolved Oxygen (min) (§3-04.B.2)	>6 mg/L and 70% saturation	8.1 (93.8)	8.2 (94.3)
Aquatic biota, based on macroinvertebrates, (§3-04-B.4), also see Table 2.	Attaining an assessment of good, or better.	Meets WQS (2010)	Meets WQS (all sampling events)

Whole Effluent Toxicity (WET) and Priority Pollutant Testing:
40 CFR Part 122.44(d) (1) requires the Agency to assess whether the discharge causes, or has the reasonable potential to cause or contribute to an excursion above any narrative or numeric water quality criteria. This facility was designated a Tier 1, Priority 3 discharge in the Vermont Toxic Discharge Control Strategy (1994) due to the size of the facility and the dilution of the receiving water. The draft permit includes a requirement to conduct a two-species WET test in August of September of 2017. If the results of this test indicate a reasonable potential to cause an instream toxic impact, the Department may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

Sediment, Hardness, and Metals:
Instream total suspended solids were calculated using the 7Q10 of 20.8 CFS at design flow of 0.69 CFS (0.45 MGD), assuming the maximum permitted daily concentration of 50 mg/L. The calculated suspended sediment concentration at these conditions was 1.6 mg/l, indicating a minor augmentation of instream ambient suspended sediment concentrations in receiving waters.

The hardness of the Ottauquechee River below the Woodstock outfall was recorded to be 73 mg/l CaCO3. The below data is utilized to determine compliance with Vermont's aquatic biota based metals criteria as specified in Section 3-01 B.10.c. and Appendix C of the Vermont Water Quality Standards. Due to the moderate dilution of the receiving waters and the domestic nature of this discharge there are no concerns for metals exceeding criteria. VTDEC 2014 priority metal chemistry data above and below the outfall (Table 4) did not detect any exceedances and most analytes were below detection.

Table 4. Ottauquechee River Metals (Total) Water Chemistry – above and below Woodstock WWTF outfall.

Date	9/10/2014	
Site (River Mile)	Above (14.9)	Below (14.8)
Calcium (mg/l)	23.1	22.6
Magnesium (mg/l)	4.0	3.98
Sodium (mg/l)	13.6	13.7
Potassium (mg/l)	1.1	1.1

Date	9/10/2014	
Site (River Mile)	Above (14.9)	Below (14.8)
Aluminum (µg/l)	<50	<50
Antimony (µg/l)	<10	<10
Arsenic (µg/l)	<1	<1
Cadmium (µg/l)	<1	<1
Chromium (µg/l)	<5	<5
Copper (µg/l)	<10	<10
Iron (µg/l)	70	68
Lead (µg/l)	<1	<1
Manganese (µg/l)	17	16
Nickel (µg/l)	<5	<5
Selenium (µg/l)	<5	<5
Silver (µg/l)	<1	<1
Zinc (µg/l)	<50	<50

Recommended Biological and Water Quality Monitoring:
In light of the variation noted in the biological monitoring results, MAPP suggests to the Wastewater Program inclusion in the permit of one or more types conditions to ensure continued attainment of water quality standards. These may include: 1) water quality monitoring for TP, TN, pH, turbidity and DO as described below; 2) macroinvertebrate assessments to be collected as described below; 3) alternative permit conditions designed to ensure continuing biological attainment.

Should monitoring requirements be conditioned by the permit, the collection and analysis of the data should comply with procedures established by MAPP. The permittee/contractor should submit a study plan to MAPP for approval before sampling begins. All data should be submitted electronically on excel type spreadsheets. Taxonomic data should be submitted using VT taxonomic codes. MAPP can provide to the operators any technical assistance needed in this regard, as we have with other operators.

Should the permit contain conditions for water quality assessment, samples for TP, TN, pH, and turbidity should be collected monthly for the period of June through October during the years 2015, 2016, and 2017. A sample should be collected both upstream (RM 14.9) and downstream (RM 14.8) of the discharge. For dissolved oxygen monitoring, an appropriate sampling strategy and location should account for the modeled oxygen depletion.

Should the permit contain conditions for macroinvertebrate assessment, these should occur in September 2015 and in September 2017. Sampling locations should include:

a. a site located at RM 14.9, upstream of the WWTF outfall; and
b. a site located at RM 14.8, below the outfall.

The results of the 2015 assessment would thus be submitted by March 31, 2016, and the results of the 2017 assessment would be submitted by March 31, 2018.
Streamflow characteristics should be documented for each sample collection, and sampling should be targeted to low flow conditions, as determined using the relevant US Geological Survey streamflow gauges located along the Ottauquechee River.

Conclusion:
The available data indicate that this discharge does not cause, have a reasonable potential to cause, or contribute to an instream toxic impact or instream excursion above the water quality criteria, and as such, the development of a WQBEL's will not be necessary. The water quality monitoring (chemical and biological) conducted above and below the Woodstock WWTF discharge to date supports this conclusion.

With respect to nutrients, to ensure continued compliance with the Water Quality Standards, MAPP recommends that the WW Program consider the proposed monitoring activities or other conditions as outlined above. The results of these types of assessments would provide important data to confirm the ongoing protectiveness of the effluent limitations and conditions set forth by the permit.

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, MAIN-2
MONTPELIER, VT 05620-3522

RESPONSE SUMMARY
FOR
DRAFT DISCHARGE PERMIT No. 3-1228
for
Woodstock-Main Wastewater Treatment Facility
(June 2015)

A draft permit renewing the authorization for the Town of Woodstock Main Wastewater Treatment Facility (WWTF) to discharge 0.450 million gallons per day (annual average) to the Ottauquechee River was placed on notice for public comment from March 23 through April 23, 2015. The draft permit included the requirements of EPA's Long Island Sound (LIS) Nitrogen Total Maximum Daily Load (TMDL). The LIS TMDL requires the Town to monitor for Total Nitrogen (TN), develop and implement a Nitrogen Optimization Plan, assess the adequacy of the Plan, and annually report the TN discharged from the facility. Additionally, the draft required the development and implementation of a plan to optimize the removal of total phosphorus (TP), and water quality monitoring in the Ottauquechee River.

Comments were received during the public notice by the Town of Woodstock and the U.S. Environmental Protection Agency (EPA). The following is a summary of the comments, and the Agency's response to the comments.

COMMENTS FROM THE TOWN OF WOODSTOCK

Comment 1: The phrase [in Section I.C, stating that the facility should optimize the removal of phosphorus] "*to the extent feasible*" is ambiguous. Currently, no influent phosphorus data is available. Additionally, the influent sampling schedule does not require TP sampling. As a result in the absence of influent TP information, the concept of optimizing to the extent feasible cannot be met.

> **Response 1:** Typically, influent phosphorus concentration of raw domestic wastewater with limited industrial or chemical users is less than 10 mg/L, and averages between 6-8 mg/L. The Agency will not require the influent to be monitored for TP, but fully supports the decision of the facility to sample of their own volition if it is deemed necessary to achieve optimization.
>
> The Agency expects that the facility shall evaluate current biological processes to operate at maximum efficiency for phosphorus removal. While desirable and helpful, influent phosphorus data is not absolutely necessary; the Agency expects the facility to be able to evaluate whether it is taking the necessary steps to remove phosphorus by how it operates the step-feed aeration tanks.

Comment 2: The Fact Sheet contains the statement, "*there is a significant increase of instream phosphorus due to the discharge from the facility*". While the sampling results clearly indicate an increase in phosphorus, the Town feels strongly that there is not data to support the statement "*due to the discharge from the facility.*" Town employees have witnessed substantial manure spreading on the Billings Farm fields, which could in fact be a reason for this increase. [T]he agriculture practices at the farm are not subject to [the various requirements of our solid waste certification] . . . certain accounts report spreading of manure in locations that are forbidden in the Town's certification as well of other reports that certain agricultural best nutrient management practices are not followed. The Town feels strongly that attributing [the increase of instream phosphorus] solely to the facility is not a fact.

Response 2: The Agency maintains that the increase of instream phosphorus is largely due to the discharge from the facility for the following reasons:

1. *The sampling sites are located to isolate the facility effects from the background conditions.* The Agency utilizes data collected and analyzed by the Monitoring, Assessment and Planning Program (MAPP) to determine if there is a reasonable potential for a wastewater treatment facility discharge to cause or contribute to water quality violations in the receiving water. Water quality attributes are quantified upstream and downstream of the discharge point to characterize the effect of the discharge on the receiving water. Sample collection sites for this wastewater treatment facility are located at River Mile 14.9 and River Mile 14.8 (upstream and downstream of outfall, respectively; see Figure 1).

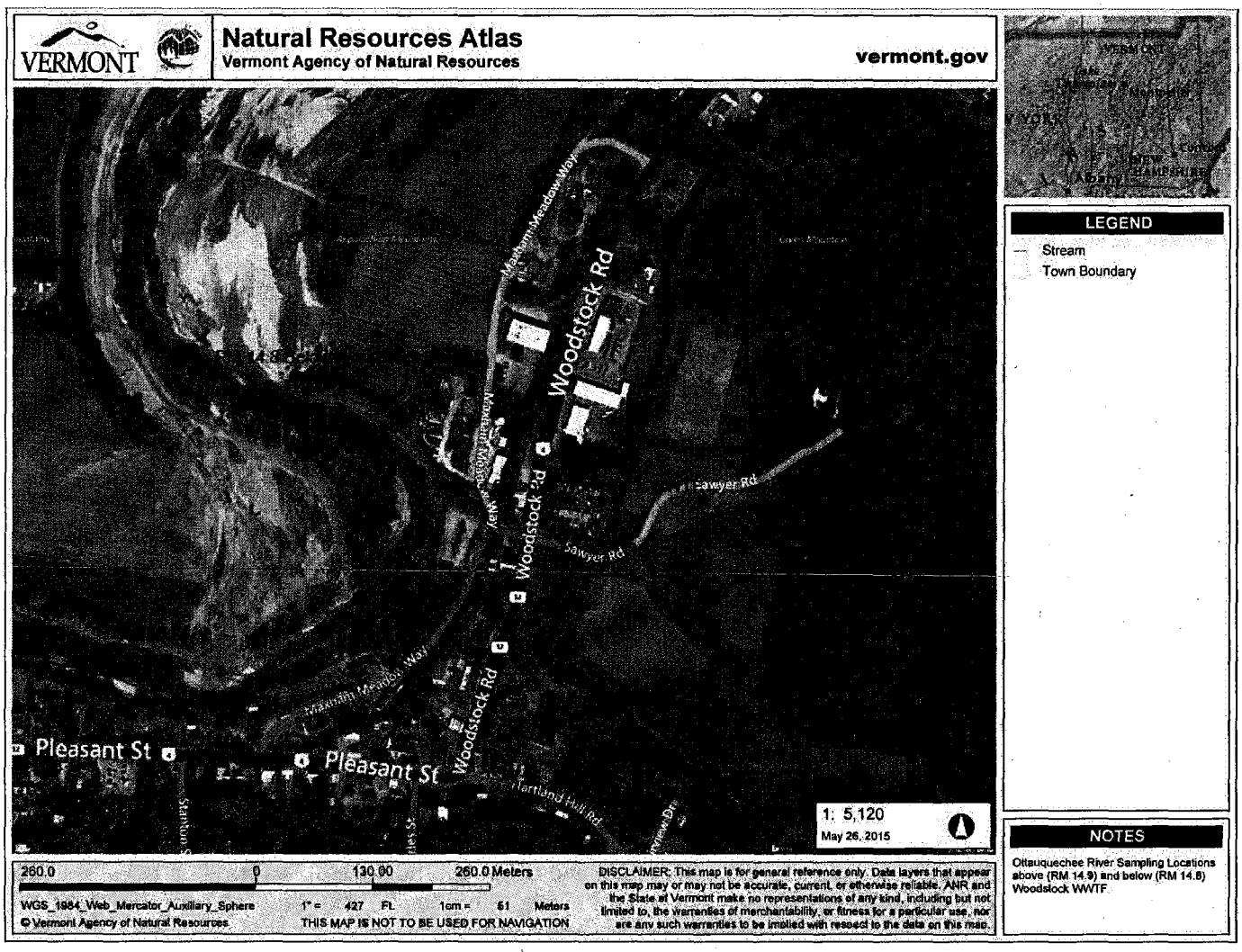


Figure 1. Sample collection sites for this wastewater treatment facility are located at River Mile 14.9 and River Mile 14.8 (upstream and downstream of the outfall, respectively).

The commenter did not specify to which fields the manure is being applied, nor where/how the manure might be entering the stream to cause the observed increase in instream phosphorus. However, the upstream and downstream sampling locations tightly bracket the facility, significantly reducing the potential for other factors – such as agricultural manure application – to have an effect on the water quality parameters of concern.

2. *Dry conditions eliminate any rain event runoff from the nearby agricultural land.* The water quality sampling events were scheduled during periods of low flow (the flow of the stream during prolonged dry weather). Employing a sampling strategy to avoid recent rain events reduces the risk of surface runoff and the transport of water pollutants from land into the river. All turbidity values during the instream sampling were less than 2.0 NTU (Table 1), which further indicates the absence of agricultural runoff.

Table 1. Concentrations of surface-water chemistry above and below the Woodstock-Main Wastewater Treatment Facility (River Mile 14.8 and 14.9 refer to stations below and above outfall respectively).

Date	River Mile	pH	Total Hardness mg/L	Cond umhos	DO mg/L	DO %	Turb NTU	TP ug/L	DP ug/L	TN mg-N/L	NOX mg-N/L	TNH3 mg-N/L
8/20/2010	14.9	7.97	59.6	183	8.1	93.8	0.95	7.6	5.16	0.1	0.11	<0.05
	14.8	8.05	59.4	199	8.2	94.3	0.93	**108**	101	0.67	0.7	<0.05
9/15/2010	14.9	8.02	56	183	10.2	103	0.45	8.1	7.35	0.21	0.12	<0.05
	14.8	8.21	56	181	10.7	110	0.98	*24.6*	22.4	0.22	0.13	<0.05
11/16/2010	14.9	7.60	-	120	8.4	71.1	0.88	7.64	6.25	0.17	0.12	<0.05
	14.8	7.64	-	120	7.3	**61.4**	1.2	*22.8*	21.8	0.28	0.19	<0.05
7/12/2012	14.9	8.09	-	225	-	-	0.65	6.1	-	0.34	0.25	<0.05
	14.8	8.2	-	230	-	-	0.52	36.1	-	0.57	0.49	<0.05
8/21/2012	14.9	7.85	-	247	-	-	0.6	6.1	-	0.18	0.10	<0.05
	14.8	7.81	-	259	-	-	0.8	46.9	-	0.48	0.39	<0.05
9/20/2012	14.9	7.93	-	193	9.73	97	1.7	13.8	-	0.27	0.2	<0.05
	14.8	7.95	-	197	9.89	98.4	1.9	30.6	-	0.39	0.31	<0.05
9/10/2014	14.9	8.13	-	202	8.46	87.1	0.44	8.0	-	0.30	-	-
	14.8	7.95	73	204	10.24	101	0.42	23.2	-	0.30	-	-

3. *The instream levels reflect the effluent concentration under current operating conditions.* Using low monthly median flow conditions (60 cubic feet per second) and an effluent concentration of 3.5 mg/L (the highest observed value from VTDEC 2012-2013 effluent monitoring), the instream phosphorus concentration attributable to facility at the current operation of half design capacity is calculated to be approximately 20 µg/L. This is consistent with what is observed in the stream: the phosphorus levels downstream of the outfall during low flow are measured to be, on average, 20-30 µg/L higher than upstream.

Comment 3: The Town has grave reservations that this new requirement for monthly in-stream collection and sampling would present a safety hazard to WWTF staff. The attached photographs illustrate the access difficulties in that area. The tractor crossing referenced as the collection site in the macroinvertebrate site summary no longer exists. The next nearest downstream access point is 1000 ft from the outfall.

Response 3: The Agency agrees that safe working conditions are important and necessary. Although the permit stipulates an upstream and downstream site, the instream sampling locations are not fixed. The Agency requires only that the upstream site must be above the outfall; if possible, the downstream site should be located below the 'mixing zone' (200 feet below the discharge point [Vermont Water Quality Standards 2011]) and where no additional influences are expected. The Agency encourages the Town to contact MAPP for assistance in identifying safe, representative sampling locations.

COMMENTS FROM THE EPA

Comment 4: The projected downstream concentration is a 40 µg/L increase over the upstream concentrations that ranged from 6-14 µg/L and the Fact Sheet indicates that the "discharge could contribute to excessive instream phosphorus concentrations". However, the permit is based on a finding of no Reasonable Potential and contains a

phosphorus optimization requirement but no phosphorus limit. The basis for this "no Reasonable Potential" conclusion needs to be clarified or reassessed.

Response 4: The phosphorus discharge from this facility was assessed for the potential to contribute "to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that prevents the full support of uses" (Vermont Water Quality Standards 2011). Despite an observed increase of instream phosphorus attributable to the discharge, none of the specific nutrient response variables (pH, Turbidity, Dissolved Oxygen and aquatic life use) displayed non-compliance with their respective criteria downstream of the outfall.

To wit, an observed increase by approximately 40 µg/L in downstream phosphorus concentration was observed in 2012, equal to the projected increase in downstream concentration by 40 µg/L from operating at design flow, and 3.5 mg/L effluent concentration. Also observed in 2012 was a minor shift in biotic index, and full support of all other biometrics and attainment of biocriteria.

Therefore, the MAPP Reasonable Potential Analysis found that the available data indicated that this discharge does not cause, have a reasonable potential to cause, or contribute to an instream toxic impact or instream excursion about the water quality criteria.

Cognizant of an observed increase of instream phosphorus attributable to the discharge, the Agency has included requirements to optimize phosphorus removal at the facility and instream sampling to monitor several water quality parameters. These additional conditions have been included to ensure continued compliance with the Water Quality Standards.

Comment 5: Presumably, the rationale for finding no Reasonable Potential is that at the current instream phosphorus concentrations downstream of the discharge (monthly values for 2012-2014 range from 23-47 µg/L), the response variable data indicates that standards are currently attained. However, attaining standards currently does not negate the requirement for a water quality-based limit based on the permitted, not current, flow. Where there is Reasonable Potential that a permitted discharge load could cause or contribute to a water quality standards impairment, a water quality-based effluent limit is needed. This appears to be the case here, if VT is using its draft criteria in determining Reasonable Potential at setting water quality-based effluent limits. Please clarify.

Response 5.1: The projected increase in downstream concentration of phosphorus attributable to the facility operating at design (i.e., permitted) flow with an effluent concentration of 3.5 mg/L under low monthly median flow conditions is 40 µg/L. A downstream increase of 40 µg/L was documented in 2012, as was full support of all nutrient criteria as required in the 2011 Vermont Water Quality Standards. This, and other data, indicates that the discharge does not cause, have a reasonable potential to cause, or contribute to an instream toxic impact or instream excursion of the water quality criteria.

Also, as a general matter and as applied to this permit, it is not clear in the application of the draft criteria, whether a water quality-based limit would be based on the target values for this particular waterbody or would be based on not letting current ambient concentrations increase.

Response 5.2: The status of the receiving water with respect to compliance with the Vermont Water Quality Standards (2011) and the potential for the discharge to cause or contribute to a water quality violation is evaluated by the Agency. If it is determined that the discharge has a reasonable potential to cause or contribute to a water quality violation, water quality-based effluent limitations are developed. Effluent limitations are developed to ensure the attainment of the water quality standards.

Comment 6: The permit contains requirements for instream monitoring but this does not appear to include instream bioassessment monitoring recommended as part of the Reasonable Potential analysis. Our understanding is that the instream bioassessment and the response variables are fundamental components of determining WQS attainment using the proposed criteria. Thus, the instream bioassessment monitoring should be required in the permit, or otherwise attained, to monitor for compliance and to support the next permit issuance.

Response 6: The Reasonable Potential Determination found that "this discharge does not cause, have the reasonable potential to cause, or contribute ', and therefore does not require the development of water quality based effluent limits. The recommended biological and water quality monitoring outlined in the RPD are suggested as additional conditions to ensure continued attainment of water quality standards. At this point, the Agency considers the additional conditions of a phosphorus optimization plan and the monitoring of instream chemical parameters to be sufficient for ensuring continued attainment of water quality standards. The permit includes a reopener clause that allows for the amendment of the permit to include additional monitoring or effluent limitations if warranted.