

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
(October 2015)

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

PERMIT NO: 3-1154
PIN: NS95-0042
NPDES NO: VT0100374

NAME AND ADDRESS OF APPLICANT:

Town of Springfield
96 Main Street
Springfield, VT 05156

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Springfield Wastewater Treatment Facility
Charlestown Road
Springfield, Vermont

RECEIVING WATER: Black 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 March 31, 2003. 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 Springfield's Wastewater Treatment Facility (WWTF) to the Black 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 2-3 of 25
Monitoring Requirements:	Pages 8-10 of 25

IV. Receiving Water

The receiving water for this discharge is the Black River, a designated Warm Water Fish Habitat during the period of June 1 through September 30; the river is designated a Cold Water Fish Habitat for the period of October 1 through May 31. At the point of discharge, the river has a contributing drainage area of 190 square miles. The summer 7Q10 flow of the river is estimated to be 21.15 cubic feet per second (CFS) and the summer Low Median Monthly flow is estimated to be 59.53 CFS. The instream waste concentration at the summer 7Q10 flow is 0.149 (14.9%) and the instream waste concentration at the summer Low Median Monthly flow is 0.059 (5.9%).

V. Facility History and Background

The Town of Springfield owns and operates the Springfield WWTF, which is an activated sludge treatment system. The facility was upgraded in 2005, and consists of two primary clarifiers, four biological reactors and two secondary clarifiers. The flow from the secondary clarifiers is disinfected with UV and discharged to the Black River, a tributary of the Connecticut River.

VI. Permit Basis and Explanation of Effluent Limitation Derivation

Flow – The draft permit maintains the annual average flow limitation of 2.2 MGD. Following the completion of the Combined Sewer Overflow (CSO) abatement project, the flow limit shall be increased to 2.4 MGD, which is the design capacity of the upgraded facility.

Biochemical Oxygen Demand (BOD₅) – The effluent limitations for BOD₅ 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, BOD₅ 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 of 2.2 MGD. When the Permittee completes the CSO abatement project, and is

permitted a flow increase to 2.4 MGD, the mass limits will remain unchanged. The BOD₅ weekly 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 of 2.2 MGD. When the Permittee completes the CSO abatement project and is permitted a flow increase to 2.4 MGD, the mass limits will remain unchanged. The TSS weekly monitoring requirement is unchanged from the current permit.

Total Phosphorus (TP) – The limitation of 16 lbs per day, monthly average, and weekly monitoring from May 1 through October 31 remain unchanged from the current permit. This limit was established in recognition of the Springfield WWTF being a significant contributor to the nutrient enrichment in the Black River (impaired, 2000 303(d)). After establishment of this limit, the receiving water was removed from the 303(d) list as it meets Vermont Water Quality Standards.

The Permittee shall monitor the discharge for TP twice per month from November through April to be consistent with WWTF of similar size in Vermont.

The Agency recognizes that the biological assessments conducted since 2002 have consistently met or significantly exceeded Class B standards for aquatic biota and aquatic habitat uses for Warm Water Medium Gradient stream type. However, the projected increase in downstream TP concentration attributable to the facility operating at design (i.e., permitted) flow with an effluent concentration of 0.8 mg/L under low monthly median flow conditions is 0.047 mg/L (47 µg/L), a load that could potentially contribute excessive instream phosphorus concentrations. Therefore, per Section II.B.4 of the permit, the Agency reserves the right to modify this permit during its term for cause including a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

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 March 31, 2016. The plan shall be provided to the Agency before implementation. Beginning with the data collected 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. The sum of TKN and NO_x shall be used to derive TN. Weekly monitoring will be required for TKN and NO_x during the months of May through October; twice monthly monitoring will be required during the months of November through April.

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 and monitoring requirements are unchanged from the previous permit. A mixing zone of 200 feet downstream from the discharge point (the effluent weir of the UV disinfection structure) was established for *E. coli* when the facility was upgraded and UV disinfection installed. The Agency determined that a discharge limit of 160 colonies/100 mL would be sufficiently diluted by the receiving water to consistently achieve the 77 colonies/100 mL *E. coli* water quality standard at the end of the mixing zone. Monitoring is required weekly.

Seasonal disinfection, meaning the required use of chlorine or another disinfection method to kill effluent bacteria between April 1 and October 31 only, is authorized for this discharge, per agreement with the Vermont Department of Health. As a result, the *E. coli* monitoring and effluent limitation do not apply for the period of November 1 through March 31.

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.

Special Conditions

Special Condition I.A.10 addresses septage capacity. The draft permit retains the requirement that Permittee shall reserve 9,600 GPD and its equivalent BOD organic capacity for septage receiving.

Special Condition I.A.12 requires that certain spare parts be available for the secondary clarifier. The Agency believes that this provision is necessary since an adequate level of redundancy (i.e., a fourth clarifier) could not be included in the 2005 upgrade due to space limitations at the site. These spare parts must be available at all times.

Waste Management Zone (WMZ) – As defined under 10 V.S.A. §1251(16), a WMZ 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”.

On the basis of the Agency’s WMZ Length Determination Model, a WMZ in the Black River extending 3.1 miles downstream from the Springfield WWTF outfall was deemed appropriate. The current permit maintained a WMZ of 9.0 miles due to the possibility of the construction of two CSO treatment facilities within that 9 mile WMZ. These treatment facilities will not be constructed, and this additional length of WMZ is now known to be unnecessary. The draft permit reverts to the 3.1 mile WMZ downstream of the outfall in the Black River

Toxicity Testing – 40 CFR Part 122.44(d)(1) and 122.21(j) require 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. Per these federal requirements, the Permittee shall conduct WET testing and toxic pollutant analyses according to the schedule outlined in Section I.G of the draft permit.

If the results of these tests 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.H.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 (CSOs) – Discharges from combined storm and sanitary sewers do not meet the requirements of the Vermont Water Quality Standards. The Town of Springfield was issued 1272 Orders in 1989 and 1993 to assess the locations of potential CSOs. Reports detailing the assessment and recommended corrective actions were submitted as required. A 1272 Order was issued in 1994, outlining a 5-year CSO abatement plan; due to funding constraints, this timeline was revised in 1996 to lengthen the schedule to 10 years. A 1272 Order was issued in 2001 to disconnect the J&L #1 building and Bryant building roofdrains from the Town's sewer system.

To date, 16 of the 30 identified CSO locations have been eliminated, the roofdrains of the J&L building #2 have been disconnected from the combined sewer, and the roofdrains of the Bryant building have been plugged to prevent roof drainage from entering the combined sewer system. The remaining CSO locations are listed in Attachment B of the permit. A 1272 Order is being issued concurrently with this permit with a compliance schedule to complete the CSO abatement project such that these overflow locations conform to the Vermont's 1990 CSO Control Policy.

Additionally, the technology-based Minimum Controls established in the U.S. EPA's 1994 Combined Sewer Overflow Control Policy are included in Section I.I of the draft permit (note that the Minimum Control of the "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).

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.J 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 June 16, 2009; and for the collection system as approved by the Agency on September 30, 2010.

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 the draft permit was from **September 14 through October 15, 2015**. The Agency received no comments from the public concerning the draft permit.*