

James Ehlers

Testimony to Senate Natural Resources & Energy Committee

March 17, 2021

CAUTION

COMBINED SEWER DISCHARGE POINT

This outlet may discharge stormwater mixed with untreated sewage during or following rain storms, and could contain bacteria that cause illness.

Avoid swimming, wading, boating, or fishing during and after rain storms!

If you see a discharge during **DRY** weather, please **CONTACT**:

- Your municipal office
- AND -
- The Vermont Department of Environmental Conservation

Email: ANR.WSMD@vermont.gov
Phone: 802-828-1535
OR Mail: VTDEC – Watershed Management Division
1 National Life Dr., Main 2
Montpelier, VT 05620



Wastewater Constituents

Microorganisms

Pathogenic bacteria, virus and worms eggs.
Risk when bathing and eating shellfish.

Biodegradable organic materials

Oxygen depletion in rivers, lakes and fjords.
fish death, odors.

Nutrients

Nitrogen, phosphorus, ammonium eutrophication
Oxygen depletion, toxic effect

Metals

Hg, Pb, Cd, Cr, Cu, Ni
Toxic effect, bioaccumulation.

Odour (and taste)

Hydrogen sulphide.
Aesthetic inconveniences, toxic effect.

Radioactivity

Toxic effect, accumulation.

Other organic materials

Detergents, pesticides, fat, oil and grease,
coloring, solvents, phenols, cyanide.
Toxic effect, aesthetic inconveniences,
bio accumulation in the food chain.

Other inorganic materials

Acids, for example hydrogen sulphide,
bases, corrosion, toxic effect.

Thermal effects

Hot water.
Changing living conditions for flora
and fauna.

Constituents present in domestic wastewater (based on Henze et al., 2001)

40 CFR § 131.12 - Antidegradation policy and implementation methods.

§ 131.12 Antidegradation policy and implementation methods.

(a) The State shall develop and adopt a statewide antidegradation policy. The antidegradation policy shall, at a minimum, be consistent with the following:

(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

(2) Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

Title 10 : Conservation And Development

Chapter 047 : Water Pollution Control

Subchapter 001 : Water Pollution Control

- **§ 1251a. Water pollution administration**

(c) **On or before July 1, 2016**, the Secretary of Natural Resources shall adopt by rule an implementation process for the antidegradation policy in the water quality standards of the State. The implementation process for the antidegradation policy shall be consistent with the State water quality policy established in section 1250 of this title, the Vermont Water Quality Standards, and any applicable requirements of the federal Clean Water Act. **The Secretary of Natural Resources shall apply the antidegradation implementation policy to all new discharges that require a permit under this chapter.**

(Added 1981, No. 222 (Adj. Sess.), § 25; amended 1985, No. 199 (Adj. Sess.), § 4, eff. May 17, 1986; 1989, No. 64, § 2, eff. May 24, 1989; 1997, No. 155 (Adj. Sess.), § 34; 2003, No. 115 (Adj. Sess.), § 25, eff. Jan. 31, 2005; 2007, No. 43, § 6a, eff. May 23, 2007; 2011, No. 138 (Adj. Sess.), § 27, eff. May 14, 2012; 2015, No. 64, § 30.)

VERMONT AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
INTERIM ANTI-DEGRADATION IMPLEMENTATION PROCEDURE

<https://dec.vermont.gov/sites/dec/files/wsm/Laws-Regulations-Rules/AntiDegredationImplementationProcedure-Interim.20101012.pdf>

HIGHLIGHTS

"Assimilative capacity" means a measure of the capacity of the receiving waters to assimilate wastes without lowering their quality below the applicable water quality criteria.

"Cumulative impact" means the impact on the receiving water that results from the **incremental impact of a discharge when added to other past and present legal discharges**. Cumulative impacts may result from individually minor but collectively significant actions taking place over a period of time.

Assessment of Cumulative Impacts

Any evaluation of whether a proposed discharge will result in a lowering of water quality shall include a consideration of cumulative impacts. Examples of factors that may be considered, include but are not limited to:

- i. classification and fishery designation of the receiving water;
- ii. existing physical, chemical, and biological data for the receiving water;
- iii. current authorized discharges in the affected receiving water;
- iv. effect of the proposed discharge on water quality, including but not limited to assimilative capacity, physical and chemical constituents; and
- v. impact of the proposed discharge on aquatic biota and aquatic habitat.

Socio-Economic Justification Test

(a) The Policy provides that a limited reduction in the existing higher quality of high quality waters may be allowed only when it is shown that:

- i. the adverse economic or social impacts on the people of the state specifically resulting from the maintenance of the higher quality waters would be substantial and widespread;
- ii. these adverse impacts would exceed the environmental, economic, social and other benefits of maintaining the higher water quality; and
- iii. **there shall be achieved the highest statutory and regulatory requirements for all new or existing point sources**, and all cost effective and reasonable accepted agricultural practices and best management practices, as appropriate for nonpoint source control, consistent with state law.

In reviewing an application for a new discharge, the Secretary shall determine whether the proposed discharge is consistent with the Policy and this Procedure by utilizing all credible and relevant information and the **best professional judgment of Agency staff**.

Excerpts from **Act 64 Findings and Purpose**

Vermont's surface **waters are vital assets** that provide the citizens of the State with clean water, recreation, and economic opportunity.

The federal Clean Water Act and the Vermont Water Quality Standards require that waters in the State **shall not be degraded**.

To prevent degradation of waters and to preserve the uses, benefits, and values of the lakes, rivers, and streams of Vermont, the Vermont Water Quality Standards provide that it is **the policy of the State to prevent, abate, or control all activities harmful to water**.

Despite the State and federal mandates to maintain and prevent degradation of State waters, multiple lakes, rivers, and streams in all regions of the State are impaired, at risk of impairment, or subject to water quality stressors, as indicated by the fact that:

- (A) there are **81 waters or segments** of waters in the State **that are impaired and require a total maximum daily load (TMDL) plan**;
- (B) there are **114 waters or segments** of waters in the State **that are impaired and that have been issued a TMDL**;
- (C) there are at least **115 waters or water segments in the State that are stressed**, meaning that there is one or more factor or influence that prohibits the water from maintaining a higher quality; and
- (D) there are at least 56 waters in the State that are altered due to aquatic nuisance species, meaning that one or more of the designated uses of the water is prohibited due to the presence of aquatic nuisance species.

Impairments and other alterations of water can significantly limit how a water is used and whether it can be maintained for traditional uses. For example:

- (A) **aquatic life is only fully supported in 59 percent of the State's inland lakes**; and
- (B) **swimming is only fully supported on 76 percent of the State's inland lakes**.

Without State action to improve the quality of State waters and prevent further degradation of the quality of existing waters, the State of Vermont will be at **risk of losing the valuable, if not necessary functions** and uses that the State's waters provide

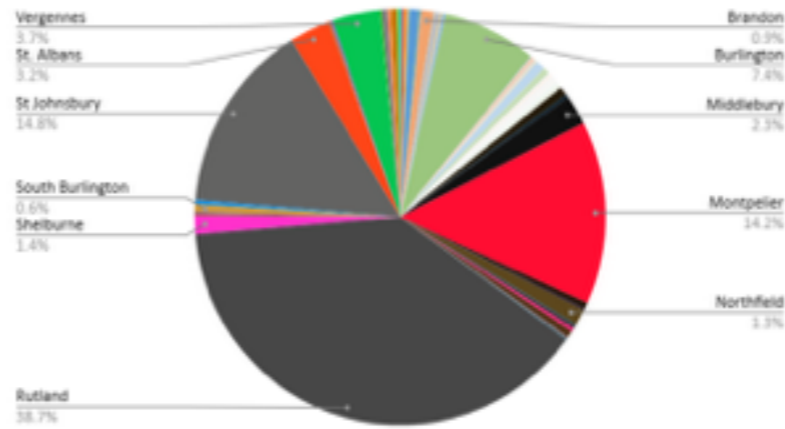
To protect the waters of the State and preserve the quality of life of the citizens of Vermont, the **State of Vermont should**:

- (A) **fully implement the antidegradation implementation policy in the Vermont Water Quality Standards**;
- (B) **enhance, implement, and enforce regulatory requirements for water quality**

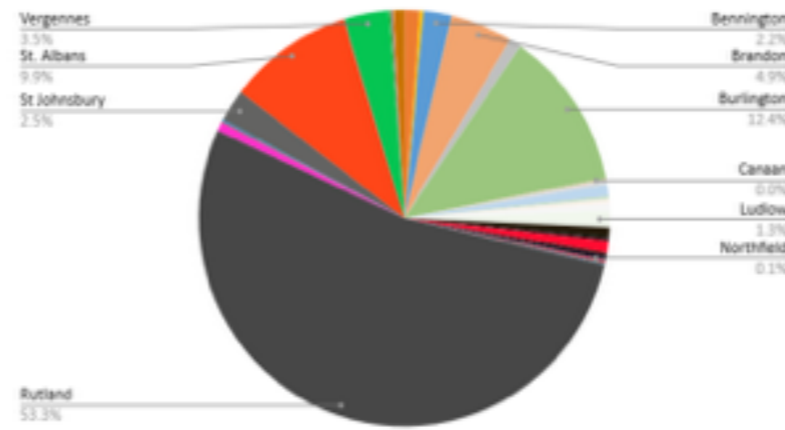
2015 - 2020 Sewage Diversions and Overflows into Vermont Rivers and Lakes

Town	Total Spills	Max Gallons
Arlington	2	18,000
Barre	4	2,161,000
Barton	1	10,000
Bellows Falls	1	500,000
Bennington	10	3,854,551
Berlin	1	9,000
Bethel	1	10,000
Brandon	11	8,600,000
Brattleboro	7	1,630,200
Bridgewater	1	1,000
Brighton	3	27,010
Burlington	87	21,819,842
Canaan	1	10,000
Cavendish	3	210,000
Chester	2	585,000
Enosburg Falls	1	10,000
Essex Junction	9	1,623,000
Fair Haven	6	331,000
Gilman	1	100,000
Hardwick	3	517,300
Hartford	5	1,002,258
Hinesburg	1	10,000
Jeffersonville	2	11,000
Ludlow	5	2,215,000
Lunenburg	8	1,330,000
Manchester	3	1,002
Middlebury	27	445,169
Montpelier	167	1,701,500
Newport	5	311,000
North Troy	2	600,000
Northfield	15	132,000
Orleans	1	30,000
Pawlet	3	20,099
Pittsford	3	201,000
Proctor	6	132,000
Putney	1	1,000
Randolph	1	100,000
Readsboro	1	137,800
Rutland	454	93,796,535
Shelburne	17	1,225,000
Sheldon Springs	2	174,000
Sherburne	1	1,000
South Burlington	7	14,198
Springfield	4	210,700
St. Johnsbury	174	4,449,000
St. Albans	37	17,361,200
Stowe	2	110,000
Troy & Jay	2	20,000
Vergennes	44	6,143,660
Wallingford	2	200,000
West Rutland	5	320,000
Williston	1	1,000
Wilmington	3	210,000
Windsor	5	1,404,000
Winooski	2	11,000
Woodstock	1	10,000

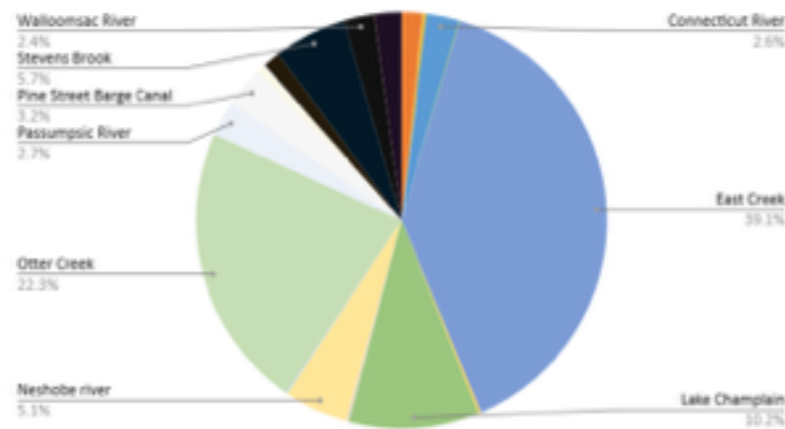
Total Spills per Municipality



Maximum Gallons Diverted



Rough share of the pollution



STATE OF VERMONT

2020

303(d) LIST OF IMPAIRED WATERS

PART A. IMPAIRED SURFACE WATERS IN NEED OF TMDL

Approved by EPA Region 1: September 17, 2020

**Vermont Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620-3522**

www.watershedmanagement.vt.gov

STATE OF VERMONT

2020

LIST OF PRIORITY SURFACE WATERS

PART D. IMPAIRED SURFACE WATERS WITH A TMDL

**Vermont Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620-3522**

www.watershedmanagement.vt.gov

Table 8-4: Summary of CSO/WWTF-related Bacteria-Impaired Segments.

Waterbody Name	Waterbody ID	Towns	Impairment
Basin 2: Poultney-Mettawee			
Castleton River, Fair Haven	VT02-03	Fairhaven	<i>E.coli</i>
Basin 3: Otter Creek, Little Otter Creek, and Lewis Creek			
Lower Otter Creek, Below Vergennes WWTF (approx 7 miles)	VT03-01	Vergennes, Panton, Ferrisburg	<i>E.coli</i>
Otter Creek below Rutland City WWTF	VT03-05	Rutland City	<i>E.coli</i>
East Creek, mouth to 0.2 mi (below CS) drainage pts #2 and #9)	VT03-14	Rutland City	<i>E.coli</i>
Basin 8: Winooski			
Winooski River above Montpelier WWTF discharge	VT08-05	Montpelier	<i>E.coli</i>
Lower North Branch, Winooski River (approx 1 mile)	VT08-13	Montpelier	<i>E.coli</i>
Basin 10: Ottauquechee, Black			
Black River, from mouth to 2.5 miles upstream (Springfield)	VT10-11	Springfield	<i>E.coli</i>
Basin 15: Passumpsic			
Passumpsic River from Pierce Mills Dam to 5 miles below Passumpsic Dam	VT15-01	St. Johnsbury, Waterford, Barnet	<i>E.coli</i>
Lower Sleepers River in St. Johnsbury	VT15-04	St. Johnsbury	<i>E.coli</i>



Advertisement

**Poster: A Look Inside a Tumor**

Mechanisms of tumor evasion and immunosuppression in the tumor microenvironment.

[Download r](#)[See all >](#)
[25 Citations](#)[See all >](#)
[40 References](#)[↓](#) [Down](#)

The Impact of Combined Sewage Overflows on the Viral Contamination of Receiving Waters

Article in [Food and Environmental Virology](#) 4(1):34-40 · March 2012 with 229 Reads ⓘ

DOI: [10.1007/s12580-011-9078-3](https://doi.org/10.1007/s12580-011-9078-3) · Source: [PubMed](#)

[↓](#) [Cite this publication](#)

**Roberto Rodriguez**

iD 26.58 · University of Texas Health Science Center at Houst...

**Patricia M Gundy**

iD 17.72 · The University of Arizona

**Geeta K Rijal****Charles Gerba**

iD 49.19 · The University of Arizona

Abstract

The contribution of combined sewer overflows (CSO) to the viral contamination of receiving waters was determined. Adenovirus concentrations were determined using the Primary Liver Carcinoma (PLC/PRF/5) cell line and confirmed by Polymerase Chain Reaction (PCR). Norovirus concentration was determined using the Most Probable Number (MPN) and Reverse Transcription-Polymerase Chain Reaction (RT-PCR). Seventy-five water samples were collected during dry weather and 50 samples were collected during wet weather. CSO events significantly increased the concentration

CAUTION

COMBINED SEWER DISCHARGE POINT

This outlet may discharge stormwater mixed with untreated sewage during or following rain storms, and could contain bacteria that cause illness.

Avoid swimming, wading, boating, or fishing during and after rain storms!

If you see a discharge during **DRY** weather, please **CONTACT**:

- Your municipal office
- AND -
- The Vermont Department of Environmental Conservation
Email: ANR.WSMD@vermont.gov
Phone: 802-828-1535
OR Mail: VTDEC – Watershed Management Division
1 National Life Dr., Main 2
Montpelier, VT 05620

