

Vermont

Infrastructure & Wastewater

	2004 Data	2018 Data	
Total Number of WWTPs:	59 (survey), 87 CWNS	72 (survey), 88 POTWs	
WWTP & Biosolids Infrastructure Totals			
Number of Separate Preparers (in- or out-of-state, receiving solids from your state):	0	7	-----
Total number of your state's WWTPs sending to those Separate Preparers:	23	18	-----
Number of operating sludge incinerators in your state (total):	0	0	-----
Fluidized bed:	0	0	-----
Multiple hearth:	0	0	-----
Number of Part 258 landfills in your state accepting sewage sludge:	data not requested for 2004	1	-----
Number of WWTPs in your state with industrial pre-treatment programs:	data not requested for 2004	0	-----
Number of WWTPs in your state with sludge lagoons:	data not requested for 2004	2	-----
Wastewater Flow Totals			
Total statewide average daily wastewater flow (MGD):	data not requested for 2004	42	-----
Total statewide WWTP design capacity for wastewater flow (MGD):	data not requested for 2004	106	-----
Total statewide average daily dry weather flow (MGD):	data not requested for 2004	no data	-----
Other Totals			
Number of documented odor & nuisance complaints received by state in 2018 related to biosolids transportation and use or disposal outside of the gates of the WWTP:	data not requested for 2004	0	-----
Number of WWTPs involved in those complaints:	data not requested for 2004	0	-----
Percent of population served by on-site systems (e.g. septic systems):	53%	58%	-----

Data provided by state biosolids coordinators in the Watershed Management Division at the Vermont Department of Environmental Conservation (VT DEC). • There are POTWs (WRRFs) that are implementing pretreatment programs, but there are no municipalities with approved pretreatment programs as Vermont is under the delegation of a 403.10(e) state. • If "odor complaints" were to include within gates of a water resource recovery facility (WRRF), then there were three complaints at three separate facilities; otherwise there are no recorded in transit. • Calculated daily dry weather flow is not tracked by the Watershed Management Division of VT DEC.

Biosolids Use and Disposal

UNITS:	Dry U.S. tons	Dry U.S. tons	
BIOSOLIDS USED OR DISPOSED, 2018 (adjusted total): 10,400			
Summary			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To... Quantity of Biosolids
Beneficial Use (applied to soils, not including ADC)	21	6,316	29 6,168
Disposal & Alternative Dispositions	38	2,657	43 4,196
Other	0	0	0 0
TOTAL	59	8,973	72 10,364
Beneficial Use			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To... Quantity of Biosolids
Agricultural (EQ, Class A, & Class B)	12	813	26 6,006
Forestland (EQ, Class A, & Class B)	0	0	no data no data
Reclamation (EQ, Class A, & Class B)	0	0	no data no data
Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)	9	5,503	3 162
Beneficial Use Subtotal	21	6,316	29 6,168
Long-term storage	0	0	0 0
Number of acres to which biosolids were applied:		423	
			129.2
Disposal & Alternative Dispositions			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To... Quantity of Biosolids

NOTE: Quantity of sewage sludge or biosolids used or disposed means the quantity that goes out the gate of the WWTPs. Quantities are in the units (the form of measurement) indicated above.

A large number of WRRFs are transporting to an alternative facility to meet the standards of Class A biosolids. Class A biosolids in Vermont can be used unrestricted once the Class A treatment standards are met and it leaves the facility. Specific beneficial use and locations of Class A biosolids is not reported or tracked. • The number of acres applied to is only tracked for Class B biosolids: in 2018, 423 dt of Class B biosolids was applied to 129.2 acres.

Landfill (total)	21	2,323	43	4,196
Burial	data not requested for 2004	data not requested for 2004	no data	no data
Alternative daily (ADC), intermediate, or final cover	data not requested for 2004	data not requested for 2004	no data	no data
Surface Disposal (i.e. beneficial reuse)	0	0	0	0
Incineration	17	334	0	0
Cement kiln or industrial furnace	data not requested for 2004	data not requested for 2004	0	0
Deep well injection	data not requested for 2004	data not requested for 2004	0	0
Gasification	data not requested for 2004	data not requested for 2004	0	0
Pyrolysis	data not requested for 2004	data not requested for 2004	0	0
Disposal & Alternative Dispositions Subtotal	38	2,657	43	4,196
TOTAL	59	8,973	72	10,364

Where the solids are placed in the landfill (buried or used as ADC) is not known by VT DEC.

Biosolids Quality Summary

	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	NOTE: For "number of entities," the total may not match because some entities go to more than one use or disposal.
Class A EQ	9	5,503	5	1,008	There are 17 WWTPs in Vermont that transfer to a separate preparer where the PSRP & VAR parameters are achieved to create biosolids for distribution. The remaining Class A products are made at the WRRFs whence they come. • In 2018, there were 3 WRRFs that usually produce Class B biosolids but did not do so that year; these three are included in the count of 11 WRRFs producing Class B.
Other Class A	0	0	24	4,677	
Class B	12	813	11	604	
Other (no data, etc.)	38	2,657	32	4,075	
TOTAL	59	8,973	72	10,364	

Biosolids Treatment Practices

	Estimated Number of WWTPs or Separate Preparers Using...	Estimated Quantity of Biosolids Produced Using...	Estimated Number of WWTPs or Separate Preparers Using...	Estimated Quantity of Biosolids Produced Using...	
Stabilization					Volume in dry tons. The Program does not retain a database of dewatering and thickening technologies utilized in the production of biosolids.
Aerobic Digestion (total)	4	101	4	145	
Class A (ATAD/Other)	data not requested for 2004	data not requested for 2004	2	99	
Class B	data not requested for 2004	data not requested for 2004	2	46	
Anaerobic digestion (AD) (total)	3	339	5	413	
Class A (e.g. thermophilic)	data not requested for 2004	data not requested for 2004	1	134	
Class B (mesophilic)	data not requested for 2004	data not requested for 2004	4	279	
WWTPs co-digesting (FOG, food, glycol, etc.)	data not requested for 2004	data not requested for 2004	no data	N/A	
Biogas used (heating, electricity, fuel, etc. scf/year)	data not requested for 2004	data not requested for 2004	no data	N/A	
Lime/Alkaline (total)	8	797	9	274	
Class A lime/alkaline	data not requested for 2004	data not requested for 2004	0	0	
Class B lime/alkaline	data not requested for 2004	data not requested for 2004	9	274	
Composting	4	591	2	126	
Thermal (e.g. heat drying, not incineration/gasificatn/pyrol)	0	0	0	0	
Gasification	data not requested for 2004	data not requested for 2004	0	0	
Pyrolysis	data not requested for 2004	data not requested for 2004	0	0	
Hydrolysis (thermal, chemical, etc.)	data not requested for 2004	data not requested for 2004	0	N/A	
Long-term (lagoons, reed beds, etc.)	0	0	2	N/A	
Oxidation ditch / extended aeration	data not requested for 2004	data not requested for 2004	0	N/A	
Other stabilization technology	1	11	0	0	
Dewatering					
Belt Filter Press	17	6,056	no data	no data	
Plate & Frame Press	0	0	no data	no data	
Screw Press	0	0	no data	no data	
Centrifuge	3	367	no data	no data	
Vacuum Filter	0	0	no data	no data	
Drying beds (open-air)	6	155	no data	no data	
Solar drying (e.g. in greenhouse)	data not requested for 2004	data not requested for 2004	no data	no data	
Other dewatering technology	3	55	no data	no data	
Thickening					
Gravity thickener	data not requested for 2004	data not requested for 2004	no data	no data	
Gravity belt thickener (GBT)	data not requested for 2004	data not requested for 2004	no data	no data	
Centrifuge	data not requested for 2004	data not requested for 2004	no data	no data	
Dissolved air flotation (DAF)	data not requested for 2004	data not requested for 2004	no data	no data	
Other thickening technology	data not requested for 2004	data not requested for 2004	no data	no data	
Other					
Biosolids sold in bags (explain at right what size bags)	data not requested for 2004	data not requested for 2004	0	0	

State Pollutant (trace metal, etc.) Concentration Limits in Biosolids Applied to Land, 2018

Numbers entered only where state limits differed in 2018 from U.S. EPA limits.

	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
EPA Table 1 (mg/kg)	75	85		4300	840	57	75	420	100	7500
EPA Table 3 (mg/kg) & CPLR (kg/ha)	41	39		1500	300	17		420	36 (CPLR = 100)	2800
State ceiling limit (higher limit) (mg/kg)	15	21	1200	1500	300	10	75	420	100	2800
State high quality (lower number) limit (mg/kg)										
State CPLR (kg/ha)	41	39	3000	1500	300	17		420	100	2800
State APLR (kg/ha/365days)	2	2	150	75	15	1		21	5	140

TESTING

For each of the following constituents, indicate if testing is required by your state, as of 2018.	Is testing required for all sewage sludge or biosolids?	Or is testing required only for biosolids being beneficially used as fertilizers and soil amendments?	Frequency of testing (indicate how often testing must be done for each parameter):		If frequency depends on wastewater flow or amount of biosolids used or disposed of, please explain:
			In accordance with Part 503 requirements	In accordance with other frequency required by state (if applicable, please specify)	
Part 503 metals (As, Cu, Hg, etc.)	yes	no	yes		
Other metals (boron, silver...)	yes	no	yes		
Dioxins/furans	no	no	not applicable (N/A)		
PCBs	yes	no	yes		
Priority pollutants (https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf)	yes	yes	yes		
Other organic compounds (e.g. PDBEs, pharmaceutical)	no	no	not applicable (N/A)		
Radioactive isotopes (alpha, beta, Ra 226, etc.)	no	no	not applicable (N/A)		
Nutrients (NPK)	no	yes	not applicable (N/A)		Sampled by batch intended for land application or distribution.
Pathogen reduction (Class A or B)	no	yes	not applicable (N/A)		Sampled by batch intended for land application or distribution.
Vector attraction reduction (VAR)	no	yes	not applicable (N/A)		Sampled by batch intended for land application or distribution.
PFAS (as of 2018)	no	no	not applicable (N/A)		
Microplastics (as of 2018)	no	no	not applicable (N/A)		
TCLP (toxicity characteristic leaching procedure)	yes	no	not applicable (N/A)		
Paint Filter Liquids Test	no	no	not applicable (N/A)		

Priority Pollutants monitored are those identified in Vermont Solid Waste Rules for metals and PCBs.

REPORTING

For each of the following, indicate what WWTPs and/or biosolids preparers must report to the state:	Is reporting to the state required for these parameters?	Frequency of reporting (indicate how often testing must be done for each parameter):		How are these data stored by the state?	Are data compiled by the state in reports or summaries? If so, please attach.
		In accordance with Part 503 requirements	In accordance with other frequency required (if applicable, please specify)		
The amounts of biosolids/ sewage sludge used or disposed	yes	yes		electronic	yes
Part 503 metals (As, Cu, Hg, etc.)	yes	yes		electronic	yes
Other metals (boron, silver...)	yes	yes		electronic	yes

Dioxins/furans	no	not applicable (N/A)		not applicable (N/A)	no
PCBs	yes	yes		electronic	yes
Priority pollutants (https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf)	yes	yes		electronic	yes
Other organic compounds (e.g. PDBEs, pharmaceutical)	no	no		not applicable (N/A)	no
Radioactive isotopes (alpha, beta, Ra 226, etc.)	no	no		not applicable (N/A)	no
Nutrients (NPK)	yes	yes		electronic	yes
Cumulative Pollutant Loading Rates (CPLR)	yes	yes		electronic	yes
How biosolids achieve Class A or Class B	yes	yes		electronic	yes
How biosolids achieve vector attraction reduction (VAR)	yes	yes		electronic	yes
Solids stabilization process(es) used	yes	yes		electronic	yes
Other biosolids treatments	no	not applicable (N/A)		not applicable (N/A)	no
End use or disposal practice	yes	yes		electronic	yes
PFAS (as of 2018)	no	not applicable (N/A)		not applicable (N/A)	no
Microplastics (as of 2018)	no	not applicable (N/A)		not applicable (N/A)	no
TCLP (toxicity characteristic leaching procedure)	yes	yes		electronic	no
Paint Filter Liquids Test	no	not applicable (N/A)		not applicable (N/A)	no

