



# STATE BIOSOLIDS SURVEY

2018 data  
conducted 2020-2021  
biosolidsdata.org

## Colorado

### Infrastructure & Wastewater

	2004 Data	2018 Data	
Total Number of WWTPs:	200 (survey), 315 CWNS	455	
<b>WWTP &amp; Biosolids Infrastructure Totals</b>			
Number of Separate Preparers (in- or out-of-state, receiving solids from your state):	no data	9	-----
Total number of your state's WWTPs sending to those Separate Preparers:	no data	no data	-----
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	no data	-----
Number of WWTPs in your state with industrial pre-treatment programs:	data not requested for 2004	no data	-----
Number of WWTPs in your state with <i>sludge</i> lagoons:	data not requested for 2004	no data	-----
<b>Wastewater Flow Totals</b>			
Total statewide average daily wastewater flow (MGD):	data not requested for 2004	no data	-----
Total statewide WWTP <i>design</i> capacity for wastewater flow (MGD):	data not requested for 2004	no data	-----
Total statewide average daily <i>dry weather</i> flow (MGD):	data not requested for 2004	no data	-----
<b>Other Totals</b>			
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	1	-----
Number of WWTPs involved in those complaints:	data not requested for 2004	2	-----
Percent of population served by on-site systems (e.g. septic systems):	25%	no data	-----

The 9 separate preparers are mostly biosolids composting operations operating at landfills. One, however, is large biosolids composting operation by A1 Organics. • "no data" = CDPHE does not have this information readily available.

### Biosolids Use and Disposal

UNITS:	Dry metric tons	Dry metric tons	
<b>BIOSOLIDS USED OR DISPOSED, 2018 (adjusted total): 79,300</b>			
<b>Summary</b>			
	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)	164	78,500	131 68,097
Disposal & Alternative Dispositions	35	14,109	29 11,217
Other	1	10,303	0 0
<b>TOTAL</b>	<b>200</b>	<b>102,912</b>	<b>160</b> <b>79,314</b>
<b>Beneficial Use</b>			
	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)	144	64,309	94 54,625
Forestland (EQ, Class A, & Class B)	6	3,647	0 0
Reclamation (EQ, Class A, & Class B)	6	6,273	0 0
Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)	8	4,271	37 13,472
Beneficial Use Subtotal	164	78,500	131 68,097
Long-term storage	1	10,303	0 0
Number of <i>acres</i> to which biosolids were applied:		225,000	no data
<b>Disposal &amp; Alternative Dispositions</b>			
	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. Use the units (the form of measurement) you chose above.

Agricultural land application of Class B biosolids is done by Denver Metro (~27,00 dry metric tons) and most of the other large municipalities along the Front Range of the Rocky Mountains in central CO, such as Littleton-Englewood (South Platte Renew), Boulder, and Fort Collins. • CDPHE has data on the "number of acres to which biosolids were applied," but the data are not readily available.

Landfill (total)	33	9,860	28	7,297
Burial	data not requested for 2004	data not requested for 2004	28	7,297
Alternative daily (ADC), intermediate, or final cover	data not requested for 2004	data not requested for 2004	0	0
Surface Disposal	2	4,249	1	3,920
Incineration	0	0	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	35	14,109	29	11,217
<b>TOTAL</b>	<b>200</b>	<b>102,912</b>	<b>160</b>	<b>79,314</b>

Landfill disposal is used by Pueblo and many small facilities around the state. • The 1 WRRF using surface disposal in 2018 is Colorado Springs.

### Biosolids Quality Summary

	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids
Class A EQ	no data	4,271	37	13,472
Other Class A	no data	11,429	0	0
Class B	no data	62,800	94	54,625
Other (no data, etc.)	no data	24,412	29	11,217
<b>TOTAL</b>	<b>-</b>	<b>102,912</b>	<b>160</b>	<b>79,314</b>

NOTE: For "number of entities," the total may not match because some entities go to more than one use or disposal.

### 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...
<b>Stabilization</b>				
<b>Aerobic Digestion (total)</b>	109	16,507	no data	no data
Class A (ATAD/Other)	data not requested for 2004	data not requested for 2004	no data	no data
Class B	data not requested for 2004	data not requested for 2004	no data	no data
<b>Anaerobic digestion (AD) (total)</b>	33	67,341	no data	no data
Class A (e.g. thermophilic)	data not requested for 2004	data not requested for 2004	no data	no data
Class B (mesophilic)	data not requested for 2004	data not requested for 2004	no data	no data
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
<b>Lime/Alkaline (total)</b>	3	84	no data	no data
Class A lime/alkaline	data not requested for 2004	data not requested for 2004	no data	no data
Class B lime/alkaline	data not requested for 2004	data not requested for 2004	no data	no data
<b>Composting</b>	22	10,588	17	13,472
<b>Thermal (e.g. heat drying, not incineration/gasification/pyrolysis)</b>	0	0	no data	no data
Gasification	data not requested for 2004	data not requested for 2004	no data	no data
Pyrolysis	data not requested for 2004	data not requested for 2004	no data	no data
Hydrolysis (thermal, chemical, etc.)	data not requested for 2004	data not requested for 2004	no data	N/A
Long-term (lagoons, reed beds, etc.)	6	no data	no data	N/A
Oxidation ditch / extended aeration	data not requested for 2004	data not requested for 2004	no data	N/A
Other stabilization technology	0	0	no data	no data
<b>Dewatering</b>				
Belt Filter Press	20	7,894	no data	no data
Plate & Frame Press	0	0	no data	no data
Screw Press	0	0	no data	no data
Centrifuge	29	53,707	no data	no data
Vacuum Filter	1	no data	no data	no data
Drying beds (open-air)	29	no data	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	0	0	no data	no data
<b>Thickening</b>				
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
<b>Other</b>				
Biosolids sold in bags (explain at right what size bags)	data not requested for 2004	data not requested for 2004	no data	no data

As used here, "no data" mostly means that CDPHE has most of this detailed information in paper annual reports, but the data are not readily available; they have not been entered into a computer.

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

Enter numbers 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)	75	85		4300	840	57	75	420	100	7500
State high quality (lower number) limit (mg/kg)	41	39		1500	300	17		420	100	2800
State CPLR (kg/ha)	41	39		1500	300	17		420	100	2800
State APLR (kg/ha/365days)	2	2		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.)	no	yes	yes		
Other metals (boron, silver...)	no	no	not applicable (N/A)		
Dioxins/furans	no	no	not applicable (N/A)		
PCBs	no	no	not applicable (N/A)		
Priority pollutants ( <a href="https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf">https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf</a> )	no	no	not applicable (N/A)		
Other organic compounds (e.g. PDBEs, pharmaceutical)	(please select)	(please select)	(please select)		
Radioactive isotopes (alpha, beta, Ra 226, etc.)	no	no	not applicable (N/A)		
Nutrients (NPK)	no	yes	yes		
Pathogen reduction (Class A or B)	no	yes	yes		
Vector attraction reduction (VAR)	no	yes	yes		
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)	no	no	not applicable (N/A)		
Paint Filter Liquids Test	no	no	not applicable (N/A)		

### 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	no
Part 503 metals (As, Cu, Hg, etc.)	yes	yes		paper	no
Other metals (boron, silver...)	no	not applicable (N/A)		not applicable (N/A)	no
Dioxins/furans	no	not applicable (N/A)		not applicable (N/A)	no
PCBs	no	not applicable (N/A)		not applicable (N/A)	no
Priority pollutants ( <a href="https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf">https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf</a> )	no	not applicable (N/A)		not applicable (N/A)	no
Other organic compounds (e.g. PDBEs, pharmaceutical)	no	not applicable (N/A)		not applicable (N/A)	no
Radioactive isotopes (alpha, beta, Ra 226, etc.)	no	not applicable (N/A)		not applicable (N/A)	no
Nutrients (NPK)	yes	yes		paper	no
Cumulative Pollutant Loading Rates (CPLR)	yes	yes		paper	no
How biosolids achieve Class A or Class B	yes	yes		paper	no
How biosolids achieve vector attraction reduction (VAR)	yes	yes		paper	no
Solids stabilization process(es) used	yes	yes		paper	no
Other biosolids treatments	yes	yes		paper	no
End use or disposal practice	yes	yes		paper	no
PFAS (as of 2018)	no	no		not applicable (N/A)	no
Microplastics (as of 2018)	no	no		not applicable (N/A)	no
TCLP (toxicity characteristic leaching procedure)	no	no		not applicable (N/A)	no
Paint Filter Liquids Test	no	no		not applicable (N/A)	no