



Hawaii

Infrastructure & Wastewater

	2004 Data	2018 Data	
Total Number of WWTPs:	18 (survey), 21 CWNS	27	
WWTP & Biosolids Infrastructure Totals			
Number of Separate Preparers (in- or out-of-state, receiving solids from your state):	2	3	-----
Total number of your state's WWTPs sending to those Separate Preparers:	9	7	-----
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	4	-----
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	-----
Wastewater Flow Totals			
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	-----
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):	50%	50%	-----

Data included here are from 24 WRRFs ranging in size from 0.11 to 67 MGD. • Three separate preparers are Synagro Sand Island heat-drying facility, Maui EKO Compost, and Barbers Point Compost. All produced Class A EQ products which went to land application for agriculture, municipal lands, golf courses, parks, etc. • There are no operating sewage sludge incinerators (SSIs) in HI, but there are at least two municipal solid waste incinerators that incinerate some sewage sludge. Some biosolids are disposed of in county landfills.

Biosolids Use and Disposal

UNITS:	Dry metric tons	Dry metric tons	
BIOSOLIDS USED OR DISPOSED, 2018 (adjusted total):		11,400	
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)	9	8,491	4 5,950
Disposal & Alternative Dispositions	9	11,110	12 4,717
Other	0	0	1 765
TOTAL	18	19,601	17 11,432
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)	0	0	4 595
Forestland (EQ, Class A, & Class B)	0	0	0 0
Reclamation (EQ, Class A, & Class B)	0	0	1 1,785
Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)	9	8,491	several 3,570
Beneficial Use Subtotal	9	8,491	5 5,950
Long-term storage	0	0	1 706
Number of <i>acres</i> to which biosolids were applied:	no data		no data
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
Landfill (total)	9	11,110	12 1,806
Burial	data not requested for 2004	data not requested for 2004	12 1,806
Alternative daily (ADC), intermediate, or final cover	data not requested for 2004	data not requested for 2004	0 0

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.

Other includes solids stored (706 dmt) and those for which use/disposal is unknown (59 dmt).

NBDP estimates that 60% of the biosolids beneficially used in HI in 2018 was used for landscaping, horticulture, or home gardens, either through public distribution or managed by municipal property staff ("Class A EQ Distribution"); another 30% was used to reclaim sugar plantation acreage (Maui EKO Compost); and 10% went to large-scale agriculture. • One composter, Barbers Point, stored 706 dmt in 2018. NBDP thinks this product was land applied in 2020. Barbers Point is owned and operated by the U.S. Navy and only distributes to Department of Defense (DOD) properties.

Surface Disposal	0	0	0	0
Incineration	0	0	8	2,911
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	9	11,110	20	4,717
TOTAL	18	19,601	26	11,373

Minor facilities not counted here likely also send their solids to landfills for disposal, though perhaps only occasionally, after lagoon clean-outs. • Seven of Honolulu's nine WRRFs used both landfill burial and incineration as disposal methods. The incineration facility is HPOWER, a waste-to-energy facility where biosolids are co-incinerated with municipal solid waste.

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	2	8,491	4	5,950	
Other Class A	0	0	0	0	
Class B	0	0	0	0	
Other (no data, etc.)	9	11,110	20	5,482	In 2018, Class A EQ biosolids were produced by three composting operations and the Synagro Sand Island drying & pelletizing facility. All other biosolids went to landfill or incineration, so quality was not tested or not tracked.
TOTAL	11	19,601	24	11,432	

Biosolids Treatment Practices

	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				
Aerobic Digestion (total)	no data	no data	0	0
Class A (ATAD/Other)	data not requested for 2004	data not requested for 2004	0	0
Class B	data not requested for 2004	data not requested for 2004	0	0
Anaerobic digestion (AD) (total)	no data	no data	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	0	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)	no data	no data	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
Composting	2	8,491	3	3,507
Thermal (e.g. heat drying, not incineration/gasification/pyroly)	no data	no data	1	2,602
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.)	no data	no data	several small WWTPs	N/A
Oxidation ditch / extended aeration	data not requested for 2004	data not requested for 2004	no data	N/A
Other stabilization technology	no data	no data	0	0
Dewatering				
Belt Filter Press	no data	no data	no data	no data
Plate & Frame Press	no data	no data	no data	no data
Screw Press	no data	no data	no data	no data
Centrifuge	no data	no data	no data	no data
Vacuum Filter	no data	no data	no data	no data
Drying beds (open-air)	no data	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	no data	no data	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	1 or 2	some

These data are not tracked. • Some of the Sand Point heat-dried biosolids is sold in bags.

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

Data provided show 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)	same as below	same as below	same as below	same as below	same as below	same as below	same as below	same as below	same as below	same as below
State high quality (lower number) limit (mg/kg)	20	15	200	1500	300	10	25	420	25	2000
State CPLR (kg/ha)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State APLR (kg/ha/365days)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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		yes		
Other metals (boron, silver...)	no				
Dioxins/furans	no				
PCBs	no				
Priority pollutants (https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf)	no				
Other organic compounds (e.g. PDBEs, pharmaceutical)	no				
Radioactive isotopes (alpha, beta, Ra 226, etc.)	no				
Nutrients (NPK)	no				
Pathogen reduction (Class A or B)	no				
Vector attraction reduction (VAR)	no				
PFAS (as of 2018)	no				
Microplastics (as of 2018)	no				
TCLP (toxicity characteristic leaching procedure)	no				
Paint Filter Liquids Test	yes			as required by landfill	

Paint Filter Liquids Test only as required by landfills.

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			
Part 503 metals (As, Cu, Hg, etc.)	yes				
Other metals (boron, silver...)	no				
Dioxins/furans	no				
PCBs	yes				
Priority pollutants (https://www.epa.gov/sites/production/files/2015-09/documents/priority-pollutant-list-epa.pdf)	no				
Other organic compounds (e.g. PDBEs, pharmaceutical)	no				
Radioactive isotopes (alpha, beta, Ra 226, etc.)	no				
Nutrients (NPK)	no				
Cumulative Pollutant Loading Rates (CPLR)	no				
How biosolids achieve Class A or Class B	yes				
How biosolids achieve vector attraction reduction (VAR)	yes				
Solids stabilization process(es) used	no				
Other biosolids treatments	no				
End use or disposal practice	yes				
PFAS (as of 2018)	no				
Microplastics (as of 2018)	no				
TCLP (toxicity characteristic leaching procedure)	yes				
Paint Filter Liquids Test	yes				