

WAC 173-308-140 Biosolids sampling and analytical methods. (1) **Sampling.** Samples that are collected and analyzed must be representative of the biosolids that are applied to the land.

(2) **Analytical methods.**

(a) The most current version of the publications listed in this subsection are incorporated by reference. These publications are available for review during normal working hours at the Washington State Department of Ecology headquarters located at 300 Desmond Drive in Olympia, Washington. Copies may be obtained from the standard producer or publisher.

(b) Unless otherwise stipulated by the department, the following methods (or methods in 40 C.F.R. Part 136 or 40 C.F.R. Part 503) must be used to analyze samples of biosolids or sewage sludge.

ANALYTICAL METHODS

Parameter	Analytical Method
Arsenic	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7010 SW-846 Method 7061
Cadmium	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7000B SW-846 Method 7010
Copper	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7000B SW-846 Method 7010
Lead	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7000B SW-846 Method 7010
Mercury	SW-846 Method 7470 SW-846 Method 7471
Molybdenum	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7000B SW-846 Method 7010
Nickel	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7000B SW-846 Method 7010
Selenium	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7010 SW-846 Method 7741
Zinc	SW-846 Method 6010 SW-846 Method 6020 SW-846 Method 7000B SW-846 Method 7010
Fecal Coliform	SM 9221 C or E

Parameter	Analytical Method
	SM 9222 D Appendix F, EPA/625/ R-92/013 EPA 1680 EPA 1681
Salmonella Bacteria	SM 9260 D Appendix G, EPA/625/ R-92/013 EPA 1682
Helminth Ova	Appendix I, EPA/625/ R-92/013
Enteric Viruses	ASTM Designation: D 4994-89 Appendix H, EPA/625/ R-92/013
Total Kjeldahl Nitrogen (TKN)	SM Method 4500, N _{org} B SM Method 4500, N _{org} C
Nitrate (as N)	SM Method 4500-NO ₃ E, F, or H
Nitrite (as N)	SM Method 4500-NO ₂ B
Ammonia (as N)	SM Method 4500-NH ₃ B + C, D, E, or G
Organic Nitrogen	Value calculated as TKN minus NH ₃ -N
Total Phosphorus	SM Method 4500-P B + E or F
Total Solids, Fixed Solids, or Volatile Solids	SM Method 2540 G
Volatile Solids Reduction	Appendix C, EPA/625/ R-92/013
Additional Volatile Solids Reduction for Anaerobically Digested Solids	Appendix D (1), EPA/625/ R-92/013
Additional Volatile Solids Reduction for Aerobically Digested Solids	Appendix D (3), EPA/625/ R-92/013
Specific Oxygen Update Rate	SM Method 2710 B
(SOUR)	Appendix D (2), EPA/625/ R-92/013
pH	SW-846 Method 9045D
TCLP	SW-846 Method 1311
Paint Filter Test	SW-846 Method 9095B
Where: ASTM = "Standard Practice for Recovery of Viruses From Wastewater Sludges," Annual Book of ASTM Standards: Section 11-Water and Environmental Technology, ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.	

Parameter	Analytical Method
EPA/625/R-92/013 =	<p data-bbox="716 186 1114 321"><i>"Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge (Including Domestic Septage) Under 40 C.F.R. Part 503,"</i></p> <p data-bbox="716 331 1101 493">U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, Center for Environmental Research Information, Cincinnati, OH 45268.</p>
EPA 1680 =	<p data-bbox="716 501 1110 716">USEPA. Method 1680: Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation Using Lauryl-Tryptose Broth (LTB) and EC Medium. U.S. Environmental Protection Agency, Office of Water, Washington, DC EPA-821-R-06-012.</p>
EPA 1681 =	<p data-bbox="716 724 1115 913">USEPA. Method 1681: Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using A-1 Medium. U.S. Environmental Protection Agency, Office of Water, Washington, DC EPA-821-R-06-013.</p>
EPA 1682 =	<p data-bbox="716 921 1097 1110">USEPA. Method 1682: <i>Salmonella</i> in Sewage Sludge (Biosolids) by Modified Semisolid Rappaport-Vassiliadis (MSRV) Medium. U.S. Environmental Protection Agency, Office of Water, Washington, DC EPA-821-R-06-014.</p>
SM =	<p data-bbox="716 1119 1110 1255"><i>"Standard Methods for the Examination of Water and Wastewater,"</i> American Public Health Association, 1015 15th Street NW, Washington, DC 20005.</p>
SW-846 =	<p data-bbox="716 1264 1110 1419"><i>"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,"</i> EPA publication SW-846. Available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.</p>

[Statutory Authority: Chapters 70.95J and 70.95 RCW. WSR 07-12-010 (Order 06-06), § 173-308-140, filed 5/24/07, effective 6/24/07. Statutory Authority: RCW 70.95J.020 and 70.95.255. WSR 98-05-101 (Order 97-30), § 173-308-140, filed 2/18/98, effective 3/21/98.]