



# Annual Class A EQ Biosolids Quality Report

**Sampled Year** 2023

All results are reported as "dry weight" unless otherwise noted

Parameter	Range of Detection			Regulatory Limits	Units
	Minimum	Average	Maximum		
Fecal Coliform	< 2.0	9.4	180.0	1000.0	MPN/g
Arsenic	5.4	7.0	8.6	41.0	mg/kg
Cadmium	< 2.1	< 2.1	< 2.1	39.0	mg/kg
Chromium	35.9	47.4	67.4	1200.0	mg/kg
Copper	168	188	211	1500	mg/kg
Lead	10.9	15.8	20.8	300.0	mg/kg
Mercury	0.180	0.230	0.300	17.000	mg/kg
Molybdenum	8.9	10.5	12.6	NA	mg/kg
Nickel	22.0	27.0	35.1	420.0	mg/kg
Selenium	3.7	5.1	7.0	36.0	mg/kg
Zinc	476	514	552	2800	mg/kg
Manganese	1182	1542	1824	NA	mg/kg
Magnesium	2409	2812	3169	NA	mg/kg
Sodium	341	395	460	NA	mg/kg
Potassium	1428	1916	2419	NA	mg/kg
Ammonia	669	1537	2602	NA	mg/kg
Iron	22091	27210	32342	NA	mg/kg
Boron	28.1	34.1	39.5	NA	mg/kg
% Solid	92.8	95.0	97.4	90.0	%
% Nitrogen	3.6	4.1	4.6	NA	%
% Phosphorus	1.8	2.3	2.8	NA	%
% Potassium	0.05	0.11	0.14	NA	%
% Calcium	2.4	3.3	4.2	NA	%

Polychlorinated Biphenols (PCBs) - Required Every Five Years			
Sampled Year		2022	
Parameter	Results	Regulatory Limit <sup>†</sup>	Units
Aroclor 1016	< 0.8630	10.0	mg/kg
Aroclor 1221	< 0.8630	10.0	mg/kg
Aroclor 1232	< 0.8630	10.0	mg/kg
Aroclor 1242	< 0.8630	10.0	mg/kg
Aroclor 1248	< 0.8630	10.0	mg/kg
Aroclor 1254	< 0.8630	10.0	mg/kg
Aroclor 1260	< 0.8630	10.0	mg/kg

<sup>†</sup> Regulatory limit = sum of all PCB compounds not to exceed 10 mg/kg

## Toxicity Characteristics - Required Every Three Years\*

**Sampled Year** 2022

Parameter	Results	Regulatory Limits	Units
Arsenic TCLP	< 0.250	5.0	mg/L
Barium TCLP	< 0.250	100	mg/L
Cadmium TCLP	< 0.05	1.0	mg/L
Chromium TCLP	< 0.100	5.0	mg/L
Lead TCLP	< 0.100	5.0	mg/L
Mercury TCLP	< 0.020	0.2	mg/L
Selenium TCLP	< 0.500	1.0	mg/L
Silver TCLP	< 0.050	5.0	mg/L
Benzene TCLP	< 0.010	0.5	mg/L
Carbon Tetrachloride TCLP	< 0.010	0.5	mg/L
Chlorobenzene TCLP	< 0.010	100	mg/L
1,4-Dichlorobenzene TCLP	< 0.010	7.5	mg/L
1,2-Dichloroethane TCLP	< 0.050	0.5	mg/L
Methyl Ethyl Ketone TCLP	< 0.20	200	mg/L
Tetrachloroethene TCLP	< 0.010	0.7	mg/L
Vinyl Chloride TCLP	< 0.010	0.2	mg/L
2-Methylphenol TCLP	< 0.020	200	mg/L
3&4 Methylphenol TCLP	< 0.040	200	mg/L
2,4-Dinitrotoluene TCLP	< 0.020	0.1	mg/L
Hexachlorobenzene TCLP	< 0.020	0.1	mg/L
Hexachlorobutadiene TCLP	< 0.020	0.5	mg/L
Hexachloroethane TCLP	< 0.020	3.0	mg/L
Nitrobenzene TCLP	< 0.020	2.0	mg/L
Pentachlorophenol TCLP	< 0.040	100	mg/L
Pyridine TCLP	< 0.020	5.0	mg/L
2,4,5-Trichlorophenol TCLP	< 0.020	400	mg/L
2,4,6-Trichlorophenol TCLP	< 0.020	2.0	mg/L
Paint Filter	PASS	FAIL	PASS or FAIL
Reactive Cyanide	< 0.125	NA	mg/kg
Reactive Sulfide	< 25.4	NA	mg/kg
Flash Point	> 96.0	60.0	°C

\*Toxicity Characteristics Leaching Procedure (TCLP) required testing is completed every three years. This procedure is designed to mimic any leaching of contaminants that may occur when solid materials are applied to land or landfill over a period of time. TCLP Testing results are all reported as mg/L.

**Sampled Year 2023**

PFAS/PFOS Compounds	Abbrev.	Limits**	CAS#	Results	Units
Perfluorobutanoic acid	PFBA	NA	375-22-4	< 1.540	ng/g
Perfluoropentanoic acid	PFPeA	NA	2706-90-3	0.630	ng/g
Perfluorohexanoic acid	PFHxA	NA	307-24-4	1.240	ng/g
Perfluoroheptanoic acid	PFHpA	NA	375-85-9	0.266	ng/g
Perfluorooctanoic acid	PFOA	NA	335-67-1	1.460	ng/g
Perfluorononanoic acid	PFNA	NA	375-95-1	0.510	ng/g
Perfluorodecanoic acid	PFDA	NA	335-76-2	4.520	ng/g
Perfluoroundecanoic acid	PFUnA	NA	2058-94-8	0.852	ng/g
Perfluorododecanoic acid	PFDoA	NA	307-55-1	2.380	ng/g
Perfluorotridecanoic acid	PFTrDA	NA	72629-94-8	< 0.164	ng/g
Perfluorotetradecanoic acid	PFTeDA	NA	376-06-7	0.506	ng/g
Perfluorobutanesulfonic acid	PFBS	NA	375-73-5	< 0.168	ng/g
Perfluoropentanesulfonic acid	PFPeS	NA	2706-91-4	< 0.116	ng/g
Perfluorohexanesulfonic acid	PFHxS	NA	355-46-4	1.540	ng/g
Perfluoroheptanesulfonic acid	PFHpS	NA	375-92-8	< 0.106	ng/g
Perfluorooctanesulfonic acid	PFOS	NA	1763-23-1	14.200	ng/g
Perfluorononanesulfonic acid	PFNS	NA	68259-12-1	< 0.144	ng/g
Perfluorodecanesulfonic acid	PFDS	NA	335-77-3	< 0.134	ng/g
Perfluorododecanesulfonic acid	PFDoS	NA	79780-39-5	< 0.194	ng/g
Perfluorooctanesulfonamide	PFOSA	NA	754-91-6	4.020	ng/g
4:2 Fluorotelomer sulfonic acid	4:2 FTS	NA	757124-72-4	< 0.446	ng/g
6:2 Fluorotelomer sulfonic acid	6:2 FTS	NA	27619-97-2	< 0.600	ng/g
8:2 Fluorotelomer sulfonic acid	8:2 FTS	NA	39108-34-4	< 2.088	ng/g
N-methylperfluorooctanesulfonamide	N-MeFOSA	NA	31506-32-8	< 0.652	ng/g
N-Ethylperfluorooctanesulfonamide	N-EtFOSA	NA	4151-50-2	0.348	ng/g
N-methylperfluorooctane sulfonamidoacetic acid	N-MeFOSAA	NA	2355-31-9	7.600	ng/g
N-ethylperfluorooctane sulfonamidoacetic acid	N-EtFOSAA	NA	2991-50-6	17.400	ng/g
N-Methylperfluorooctanesulfonamidoethanol	N-MeFOSE	NA	24448-09-7	17.740	ng/g
N-Ethyl-N-(2-hydroxyethyl)perfluorooctylsulfonamide	N-EtFOSE	NA	1691-99-2	68.600	ng/g
3:3 Fluorotelomer carboxylic acid	3:3FTCA	NA	356-02-5	< 0.630	ng/g
2H,2H,3H,3H-Perfluorooctanoic acid	5:3FTCA	NA	914637-49-3	59.600	ng/g
2H,2H,3H,3H-Perfluorodecanoic acid	7:3FTCA	NA	812-70-4	16.400	ng/g
2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoic acid	HFPO-DA	NA	13252-13-6	< 0.216	ng/g
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	NA	919005-14-4	< 0.260	ng/g
perfluoromethoxypropionic acid	PFMPA	NA	377-73-1	< 0.276	ng/g
Perfluoro-4-methoxybutanoic acid	PFMBA	NA	863090-89-5	< 0.320	ng/g
nonafluoro-3,6-dioxaheptanoic acid	NFDHA	NA	151772-58-6	< 0.486	ng/g
Perfluoro(2-((6-chlorohexyl)oxy)ethanesulfonic acid)	9Cl-PF3ONS	NA	756426-58-1	0.242	ng/g
11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUDS	NA	763051-92-9	< 0.255	ng/g
1,1,1,2-Tetrafluoro-2-(perfluoroethoxy)ethanesulfonic acid	PFEESA	NA	113507-82-7	< 0.166	ng/g

\*\* Regulatory Limits for Per- and Polyfluoroalkyl Substances (PFAS) have yet to be established by the Environmental Protection Agency (EPA) or Tennessee Department of Environment and Conservation (TDEC).

*Units and abbreviations*

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

ng/g = nanogram per gram

°C = Celsius

NA = Not Applicable, no established limits for the specified contaminant