

Supplementary Information:

PFAS Reduction During Biosolids Drying Correlates to Initial Moisture Content and is Accompanied by Detection of PFAS in Dryer Condensate

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Section S1. PFAS Analytes

Table S1. PFAS Analytes and Isotopes used for Analysis of Samples.

Class		PFAS Analyte	Cas. Num	Associated Isotope Dilution Analyte (IDA)	Cas. Num
Perfluoroalkyl acids (PFAA) [terminal]	Perfluoroalkyl carboxylic acids (PFCA) [terminal]	Perfluoropropionic (PFPrA)	422-64-0	13C3 PFPrA	STL03194
		Perfluorobutanoic acid (PFBA)	375-22-4	13C4 PFBA	STL00992
		Perfluoropentanoic acid (PFPeA)	2706-90-3	13C5 PFPeA	STL01893
		Perfluorohexanoic acid (PFHxA)	307-24-4	13C2 PFHxA	STL00993
		Perfluoroheptanoic acid (PFHpA)	375-85-9	13C4 PFHpA	STL01892
		Perfluorooctanoic acid (PFOA)	335-67-1	13C4 PFOA	STL00990
		Perfluorononanoic acid (PFNA)	375-95-1	13C5 PFNA	STL00995
		Perfluorodecanoic acid (PFDA)	335-76-2	13C2 PFDA	STL00996
		Perfluoroundecanoic acid (PFUnA)	2058-94-8	13C2 PFUnA	STL00997
		Perfluorododecanoic acid (PFDoA)	307-55-1	13C2 PFDoA	STL00998
		Perfluorotridecanoic acid (PFTrDA)	72629-94-8	13C2 PFDoA	STL00998
		Perfluorotetradecanoic acid (PFTeA)	376-06-7	13C2 PFTeDA	STL02116
		Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	13C2 PFHxDA	STL02115
		Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	13C2 PFHxDA	STL02115

Perfluoroalkyl acids (PFAA) [terminal]	Perfluoroalkyl sulfonic acids (PFSA) [terminal]	Perfluoropropanesulfonic acid (PFPrS)	423-41-6	13C3 PFBS	STL02337
		Perfluorobutanesulfonic acid (PFBS)	375-73-5	13C3 PFBS	STL02337
		Perfluoropentanesulfonic acid (PFPeS)	2706-91-4	13C3 PFBS	STL02337
		Perfluorohexanesulfonic acid (PFHxS)	355-46-4	18O2 PFHxS	STL00994
		Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	13C4 PFOS	STL00991
		Perfluorooctanesulfonic acid (PFOS)	1763-23-1	13C4 PFOS	STL00991
		Perfluorononanesulfonic acid (PFNS)	68259-12-1	13C4 PFOS	STL00991
		Perfluorodecanesulfonic acid (PFDS)	335-77-3	13C4 PFOS	STL00991
		Perfluorododecanesulfonic acid (PFDoS)	79780-39-5	13C4 PFOS	STL00991
		Perfluoroethylcyclohexanesulfonic acid (PFECHS)	133201-07-7	13C4 PFOA	STL00990
		PFECA G (PFPE-1)	801212-59-9	13C-6:2 FTCA	STL02802

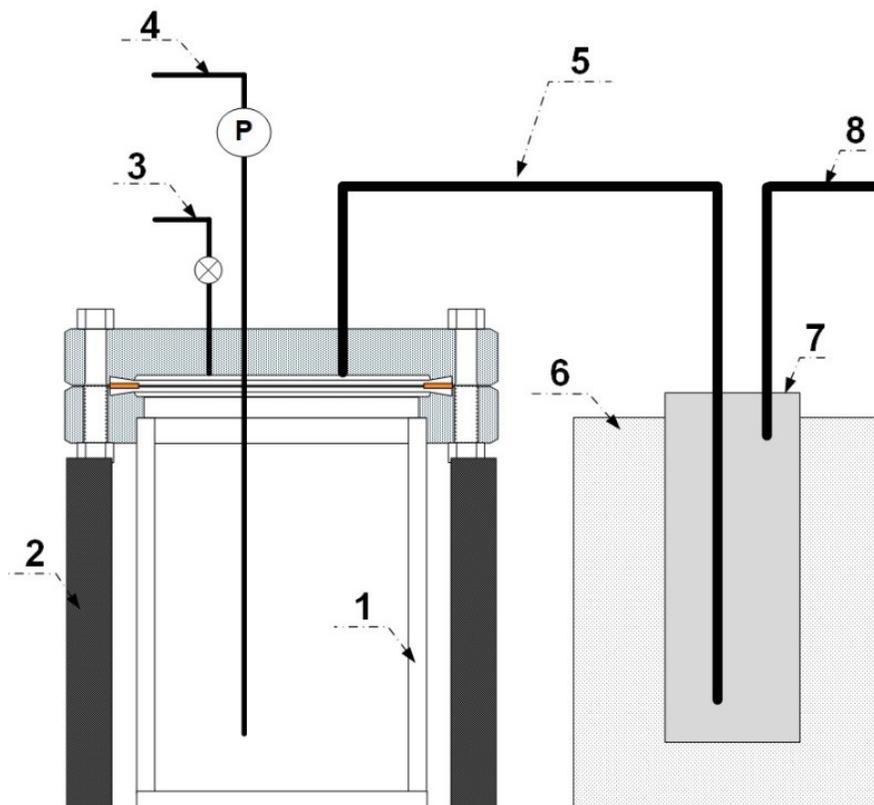
Perfluoroether carboxylic acids (PFECA) [terminal]	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	13C2 PFHxA	STL00993
	Perfluoro-4-methoxybutanoic acid (PFMBA)	863090-89-5	13C5 PFPeA	STL01893
	Perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	13C5 PFPeA	STL01893
	PFO4DA	39492-90-5	13C4 PFHpA	STL01892
	PFO3OA	39492-89-2	13C2 PFHxA	STL00993
	Hydro-EVE Acid	773804-62-9	13C4 PFHpA	STL01892
	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	13C4 PFOS	STL00991
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	13C3 HFPO-DA	STL02255
Branched isomers of PFECA [terminal]	PMPA	13140-29-9	13C4 PFBA	STL00992
	PEPA	267239-61-2	13C5 PFPeA	STL01893
Monocarboxylic acid [terminal]	PFMOAA	674-13-5	13C4 PFBA	STL00992
	PFO2HxA	39492-88-1	13C5 PFPeA	STL01893

Perfluoroether sulfonic acids (PFESA) [terminal]	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	113507-82-7	13C3 PFBS	STL02337
	Hydro-PS Acid	749836-20-2	13C4 PFHpA	STL01892
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	13C4 PFOS	STL00991
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	13C4 PFOS	STL00991
	NVHOS	1132933-86-8	13C4 PFBA	STL00992
Misc.	PFO5DA	39492-91-6	13C4 PFOA	STL00990
	R-PSDCA	2416366-21-5	13C4 PFHpA	STL01892
Perfluoroalkyl sulfonamides [precursors]	Perfluorooctanesulfonamide (FOSA)	754-91-6	13C8 FOSA	STL01056
	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2355-31-9	d3-NMeFOSAA	STL02118
	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2991-50-6	d5-NEtFOSAA	STL02117
	N-methylperfluoro-1-octanesulfonamide (NMeFOSA)	31506-32-8	d-N-MeFOSA-M	STL02275
	N-ethylperfluoro-1-octanesulfonamide (NEtFOSA)	4151-50-2	d-N-EtFOSA-M	STL02282
	2-(N-methylperfluoro-1-octanesulfonamido ethanol (NMeFOSE)	24448-09-7	d7-N-MeFOSE-M	STL02277
	2-(N-ethylperfluoro-1-octanesulfonamido ethanol (NEtFOSE)	1691-99-2	d9-N-EtFOSE-M	STL02278

Fluorotelomer substances (FTS) [precursors]	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	13C2-4:2 FTS	STL02395
	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	13C2-6:2 FTS	STL02279
	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	13C2-8:2 FTS	STL02280
	1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	13C2-10:2 FTS	STL02814
	3-Perfluoropropylpropanoic acid (3:3 FTCA)	356-02-5	13C3 PFBS	STL02337
	3-Perfluoropentylpropanoic acid (5:3 FTCA)	914637-49-3	13C-6:2 FTCA	STL02802
	3-Perfluoroheptylpropanoic acid (7:3 FTCA)	812-70-4	13C5 PFNA	STL02803
	6:2 FTCA (FHEA)	53826-12-3	13C-6:2 FTCA	STL02802
8:2 FTCA (FOEA)	27854-31-5	13C-8:2 FTCA	STL02803	

Authors' note: Adjusting the data to $\mu\text{mol F/kg}$ biosolids standardizes total PFAS calculations and homogenizes the contribution made to a sample's PFAS profile by PFAS species of different sizes.

Figure S1: Drying System Schematic



1. Reactor vessel 2. Radiative heater 3. Gas purge and release system 4. Thermocouple and pressure gauge 5. Transition tubing (short) 6. Ice bath 7. Impinger with methanol 8. Vent

Figures S2-S6: Full Data from All Sites

Figures S2 through S6 illustrate the PFAS profile of each site before and after the biosolids undergo drying. To calculate the concentration reduction percentages for each species and total detectable PFAS, as well as their associated statistical significance, complete triplicate data were

required. However, due to the heterogeneity of biosolids, not every species of PFAS is detected in every triplicate biosolids sample. Therefore, it was necessary to fill in the data with the reported reporting limit for each non-detect.

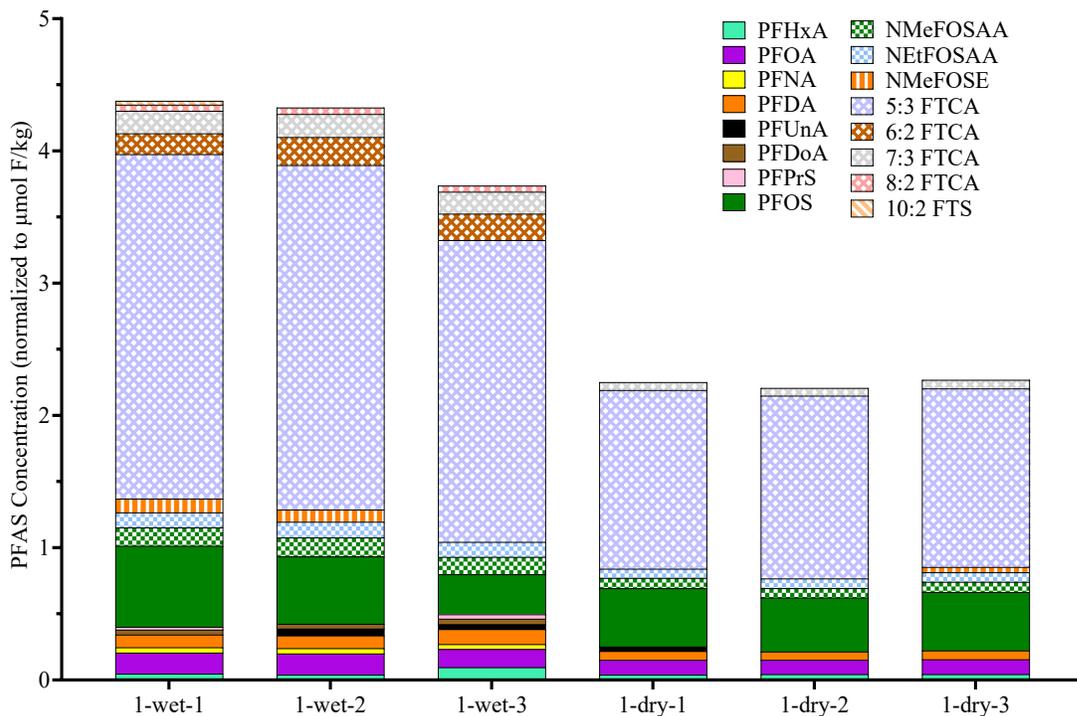


Figure S2: PFAS profile of biosolids from Source 1

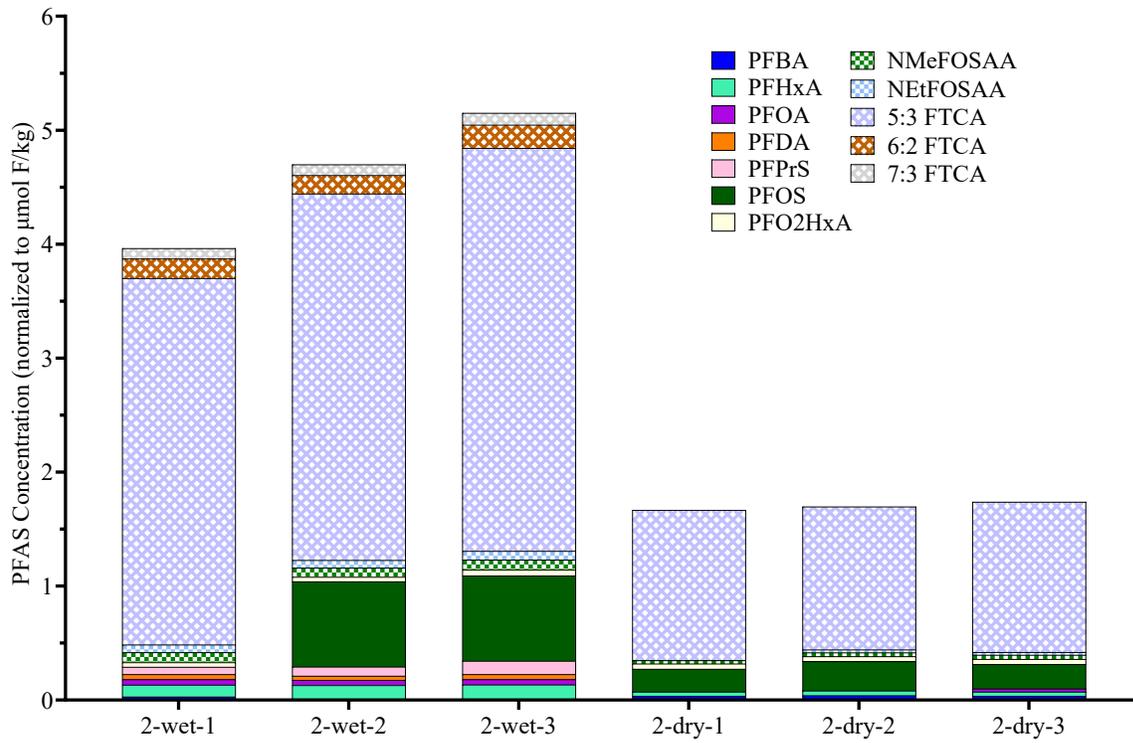


Figure S3: PFAS profile of biosolids from Source 2

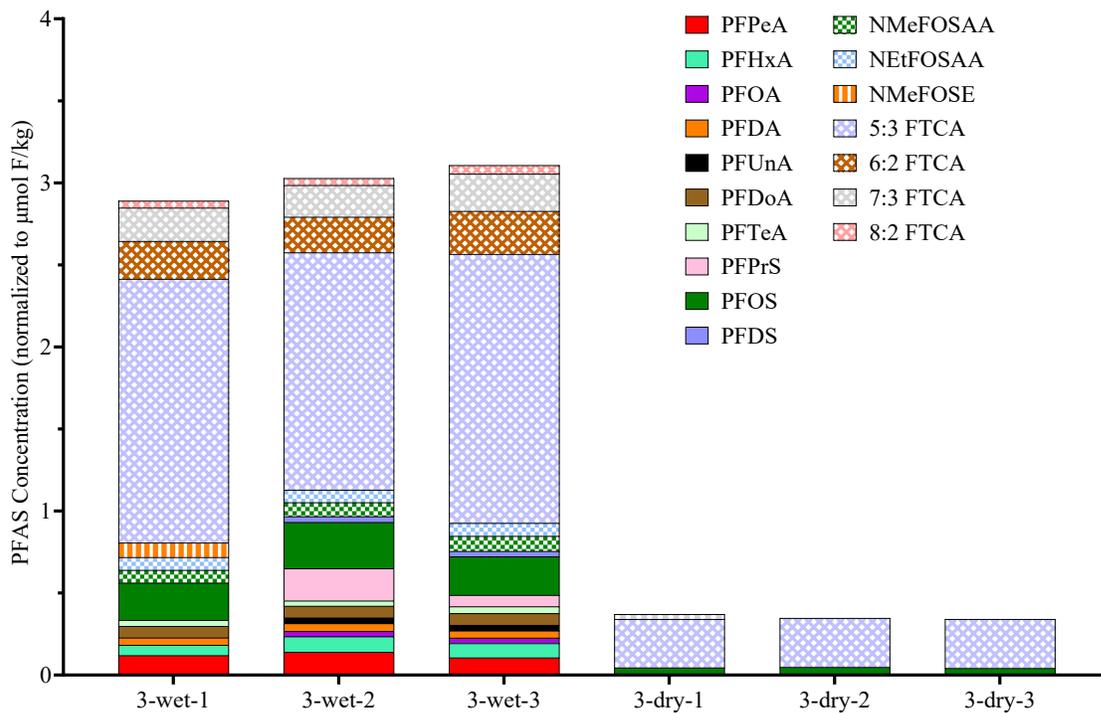


Figure S4: PFAS profile of biosolids from Source 3

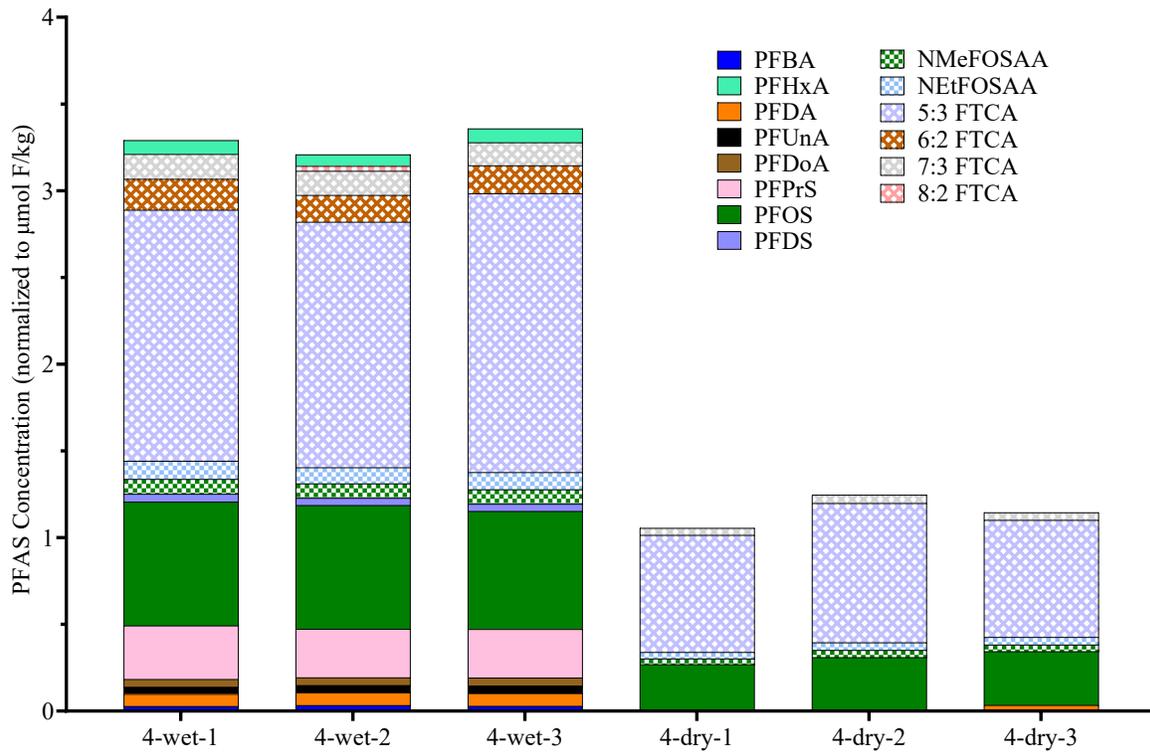


Figure S5: PFAS profile of biosolids from Source 4

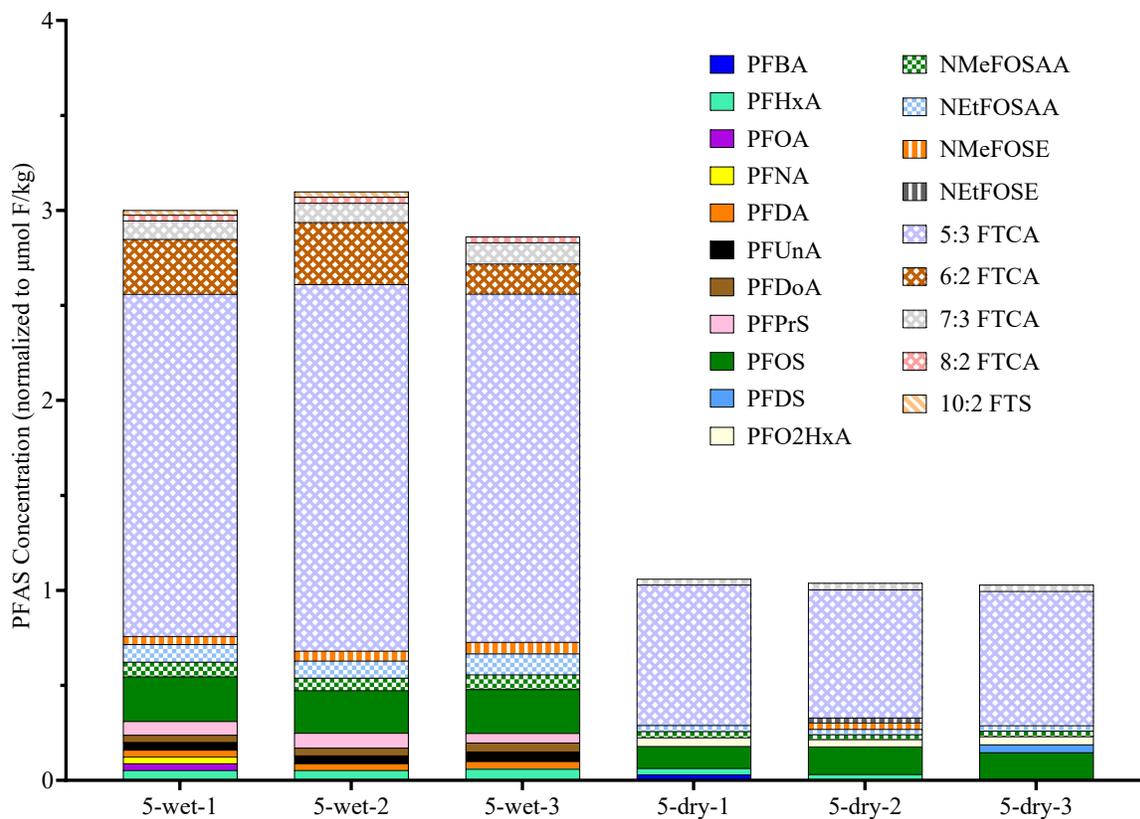


Figure S6: PFAS profile of biosolids from Source 5

Vapor Capture Biosolids Masses/Methanol Volumes:

Table S1: Dry biosolids mass and liquid volume (methanol + water) for vapor capture data

Triplicate	Dry biosolids mass (kg)	Liquid volume (L)
1	0.00777	0.031
2	0.00778	0.032
3	0.00817	0.0235

Table S2: Negative Controls Reported Results

Blank Sample	Species Detected	Concentration [μg/L]
Pure Methanol	N/A	N/A
Methanol Impinger	PFPrA	1.4

Table S4. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 1 (units of $\mu\text{mol F/kg}$ biosolids). Data are shown in Figure S2. BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” I qualifier: “Value is estimated maximum possible concentration.” *+ qualifier: “Laboratory control sample and/or laboratory control sample duplicate is outside acceptance limits, high biased.” Total row only includes species detected above reporting limits.

$\mu\text{mol F/kg}$ biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFHxA	0.046 ^{H,H3}	0.039 ^{H,H3}	0.095 ^{H,I,H3}	0.039 ^{H,H3}	0.042 ^{H,H3}	0.042 ^{H,H3}

PFOA	0.16 ^{H,H3}	0.16 ^{H,H3}	0.14 ^{H,H3}	0.11 ^{H,H3}	0.11 ^{H,H3}	0.11 ^{H,H3}
PFNA	0.040 ^{H,H3}	0.040 ^{H,H3}	0.036 ^{H,H3}	BRL	BRL	BRL
PFDA	0.096 ^{H,H3}	0.096 ^{H,H3}	0.11 ^{H,H3}	0.067 ^{H,H3}	0.063 ^{H,H3}	0.067 ^{H,H3}
PFOA	BRL	0.052 ^{H,H3}	0.037 ^{H,H3}	0.033 ^{H,H3}	BRL	BRL
PFDoA	0.037 ^{H,H3}	0.036 ^{H,H3}	0.041 ^{H,H3}	BRL	BRL	BRL
PFPoS	0.022 ^{H,H3}	BRL	0.034 ^{H,H3}	BRL	BRL	BRL
PFOS	0.61 ^{H,H3}	0.51 ^{H,H3}	0.30 ^{H,H3}	0.44 ^{H,H3}	0.41 ^{H,H3}	0.44 ^{H,H3}
NMeFOSAA	0.14 ^{H,H3}	0.14 ^{H,H3}	0.13 ^{H,H3}	0.077 ^{H,H3}	0.071 ^{H,H3}	0.077 ^{H,H3}
NEtFOSAA	0.11 ^{H,H3}	0.12 ^{H,H3}	0.11 ^{H,H3}	0.070 ^{H,H3}	0.073 ^{H,H3}	0.073 ^{H,H3}
NMeFOSE	0.10 ^{H,H3}	0.092 ^{H,H3}	BRL	BRL	BRL	0.040 ^{H,H3}
5:3 FTCA	2.6 ^{H,H3,*+}	2.6 ^{H,H3,*+}	2.3 ^{H,H3}	1.4 ^{H,H3}	1.4 ^{H,H3}	1.4 ^{H,H3}
6:2 FTCA	0.16 ^{H,H3}	0.21 ^{H,H3}	0.20 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	0.17 ^{H,H3}	0.17 ^{H,H3}	0.17 ^{H,H3}	0.061 ^{H,H3}	0.058 ^{H,H3}	0.064 ^{H,H3}
8:2 FTCA	0.046 ^{H,H3}	0.050 ^{H,H3}	0.046 ^{H,H3}	BRL	BRL	BRL
10:2 FTS	0.029 ^{H,I,H3}	BRL	BRL	BRL	BRL	BRL
Total:	4.38	4.33	3.74	2.25	2.21	2.27

Table S5. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 1 (units of $\mu\text{g}/\text{kg}$ biosolids). BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” I qualifier: “Value is estimated maximum possible concentration.” *+ qualifier: “Laboratory control sample and/or laboratory control sample duplicate is outside acceptance limits, high biased.” Total row only includes species detected above reporting limits.

$\mu\text{g}/\text{kg}$ biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3

PFHxA	1.3 ^{H,H3}	1.1 ^{H,H3}	2.7 ^{H,I,H3}	1.1 ^{H,H3}	1.2 ^{H,H3}	1.2 ^{H,H3}
PFOA	4.4 ^{H,H3}	4.4 ^{H,H3}	3.8 ^{H,H3}	3.1 ^{H,H3}	3 ^{H,H3}	3.1 ^{H,H3}
PFNA	1.1 ^{H,H3}	1.1 ^{H,H3}	0.99 ^{H,H3}	BRL	BRL	BRL
PFDA	2.6 ^{H,H3}	2.6 ^{H,H3}	3.1 ^{H,H3}	1.8 ^{H,H3}	1.7 ^{H,H3}	1.8 ^{H,H3}
PFUnA	BRL	1.4 ^{H,H3}	0.99 ^{H,H3}	0.89 ^{H,H3}	BRL	BRL
PFDoA	0.99 ^{H,H3}	0.97 ^{H,H3}	1.1 ^{H,H3}	BRL	BRL	BRL
PFPrS	0.78 ^{H,H3}	BRL	1.2 ^{H,H3}	BRL	BRL	BRL
PFOS	18 ^{H,H3}	15 ^{H,H3}	8.9 ^{H,H3}	13 ^{H,H3}	12 ^{H,H3}	13 ^{H,H3}
NMeFOSAA	4.7 ^{H,H3}	4.8 ^{H,H3}	4.4 ^{H,H3}	2.6 ^{H,H3}	2.4 ^{H,H3}	2.6 ^{H,H3}
NEtFOSAA	3.9 ^{H,H3}	4.1 ^{H,H3}	3.9 ^{H,H3}	2.4 ^{H,H3}	2.5 ^{H,H3}	2.5 ^{H,H3}
NMeFOSE	3.4 ^{H,H3}	3 ^{H,H3}	BRL	BRL	BRL	1.3 ^{H,H3}
5:3 FTCA	81 ^{H,H3,*+}	81 ^{H,H3,*+}	71 ^{H,H3}	42 ^{H,H3}	43 ^{H,H3}	42 ^{H,H3}
6:2 FTCA	4.6 ^{H,H3}	6.2 ^{H,H3}	5.8 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	5.0 ^{H,H3}	5.1 ^{H,H3}	4.9 ^{H,H3}	1.8 ^{H,H3}	1.7 ^{H,H3}	1.9 ^{H,H3}
8:2 FTCA	1.3 ^{H,H3}	1.4 ^{H,H3}	1.3 ^{H,H3}	BRL	BRL	BRL
10:2 FTS	0.88 ^{H,I,H3}	BRL	BRL	BRL	BRL	BRL
Total:	134	132	114	68.7	67.5	69.4

Table S6. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 2 (units of $\mu\text{mol F/kg}$ biosolids). Data are shown in Figure S3. BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” CI qualifier: “The peak identified by the data system exhibited chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.” I qualifier: “Value is estimated maximum possible concentration.” Total row only includes species detected above reporting limits.

μmol F/kg biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFBA	0.028 ^{H,H3}	BRL	BRL	0.033 ^{H,H3}	0.039 ^{H,H3}	0.033 ^{H,H3}
PFHxA	0.11 ^{H,H3}	0.13 ^{H,I,H3}	0.13 ^{H,I,H3}	0.039 ^{H,H3}	0.042 ^{H,H3}	0.039 ^{H,H3}
PFOA	0.047 ^{H,H3}	0.043 ^{H,H3}	0.047 ^{H,H3}	BRL	BRL	0.028 ^{H,H3}
PFDA	0.044 ^{H,H3}	0.037 ^{H,H3}	0.044 ^{H,H3}	BRL	BRL	BRL
PFPrS	0.064 ^{H,H3}	0.081 ^{H,H3}	0.12 ^{H,H3}	BRL	BRL	BRL
PFOS	BRL	0.75 ^{H,I,H3}	0.75 ^{H,I,H3}	0.20 ^{H,I,H3}	0.26 ^{H,H3}	0.21 ^{H,I,H3}
PFO2HxA	0.040 ^{H,H3,CI}	0.040 ^{H,H3,CI}	0.051 ^{H,H3,CI}	0.046 ^{H,H3,CI}	0.043 ^{H,H3,CI}	0.046 ^{H,H3,CI}
NMeFOSAA	0.089 ^{H,H3}	0.080 ^{H,H3}	0.089 ^{H,H3}	0.030 ^{H,H3}	0.033 ^{H,H3}	0.036 ^{H,H3}
NEtFOSAA	0.067 ^{H,H3}	0.067 ^{H,H3}	0.076 ^{H,H3}	BRL	0.027 ^{H,I,H3}	0.025 ^{H,I,H3}
5:3 FTCA	3.2 ^{H,H3}	3.2 ^{H,H3}	3.5 ^{H,H3}	1.3 ^{H,H3}	1.3 ^{H,H3}	1.3 ^{H,H3}
6:2 FTCA	0.17 ^{H,I,H3}	0.16 ^{H,I,H3}	0.20 ^{H,I,H3}	BRL	BRL	BRL
7:3 FTCA	0.092 ^{H,H3}	0.095 ^{H,H3}	0.11 ^{H,H3}	BRL	BRL	BRL
Total:	3.96	4.70	5.15	1.67	1.70	1.74

Table S7. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 2 (units of μg/kg biosolids). BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” CI qualifier: “The peak identified by the data system exhibited chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.” I qualifier: “Value is estimated maximum possible concentration.” Total row only includes species detected above reporting limits.

μg/kg biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3

PFBA	0.85 ^{H,H3}	BRL	BRL	1.0 ^{H,H3}	1.2 ^{H,H3}	1.0 ^{H,H3}
PFHxA	3.0 ^{H,H3}	3.7 ^{H,I,H3}	3.8 ^{H,I,H3}	1.1 ^{H,H3}	1.2 ^{H,H3}	1.1 ^{H,H3}
PFOA	1.3 ^{H,H3}	1.2 ^{H,H3}	1.3 ^{H,H3}	BRL	BRL	0.77 ^{H,H3}
PFDA	1.2 ^{H,H3}	1.0 ^{H,H3}	1.2 ^{H,H3}	BRL	BRL	BRL
PFPrS	2.3 ^{H,H3}	2.9 ^{H,H3}	4.2 ^{H,H3}	BRL	BRL	BRL
PFOS	BRL	22 ^{H,I,H3}	22 ^{H,I,H3}	5.9 ^{H,I,H3}	7.6 ^{H,H3}	6.3 ^{H,I,H3}
PFO2HxA	1.4 ^{H,H3,CI}	1.4 ^{H,H3,CI}	1.8 ^{H,H3,CI}	1.6 ^{H,H3,CI}	1.5 ^{H,H3,CI}	1.6 ^{H,H3,CI}
NMeFOSAA	3.0 ^{H,H3}	2.7 ^{H,H3}	3.0 ^{H,H3}	1.0 ^{H,H3}	1.1 ^{H,H3}	1.2 ^{H,H3}
NEtFOSAA	2.3 ^{H,H3}	2.3 ^{H,H3}	2.6 ^{H,H3}	BRL	0.93 ^{H,I,H3}	0.85 ^{H,I,H3}
5:3 FTCA	100 ^{H,H3}	100 ^{H,H3}	110 ^{H,H3}	41 ^{H,H3}	39 ^{H,H3}	41 ^{H,H3}
6:2 FTCA	5.0 ^{H,I,H3}	4.7 ^{H,I,H3}	5.9 ^{H,I,H3}	BRL	BRL	BRL
7:3 FTCA	2.7 ^{H,H3}	2.8 ^{H,H3}	3.1 ^{H,H3}	BRL	BRL	BRL
Total:	123	145	159	51.6	52.5	53.8

Table S8. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 3 (units of $\mu\text{mol F/kg}$ biosolids). Data are shown in Figure S4. BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” I qualifier: “Value is estimated maximum possible concentration.” Total row only includes species detected above reporting limits.

$\mu\text{mol F/kg}$ biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFPeA	0.12 ^{H,H3}	0.14 ^{H,H3}	0.11 ^{H,H3}	BRL	BRL	BRL

PFHxA	0.063 ^{H,I,H3}	0.095 ^{H,I,H3}	0.088 ^{H,I,H3}	BRL	BRL	BRL
PFOA	BRL	0.032 ^{H,H3}	0.033 ^{H,H3}	BRL	BRL	BRL
PFDA	0.044 ^{H,H3}	0.048 ^{H,H3}	0.044 ^{H,H3}	BRL	BRL	BRL
PFUnA	BRL	0.034 ^{H,H3}	0.034 ^{H,H3}	BRL	BRL	BRL
PFDaA	0.071 ^{H,H3}	0.071 ^{H,H3}	0.071 ^{H,H3}	BRL	BRL	BRL
PFTeA	0.036 ^{H,H3}	0.033 ^{H,H3}	0.042 ^{H,H3}	BRL	BRL	BRL
PFPrS	BRL	0.20 ^{H,H3}	0.070 ^{H,H3}	BRL	BRL	BRL
PFOS	0.23 ^{H,I,H3}	0.28 ^{H,H3}	0.23 ^{H,H3}	0.044 ^{H,H3}	0.048 ^{H,H3}	0.041 ^{H,H3}
PFDS	BRL	0.035 ^{H,H3}	0.033 ^{H,H3}	BRL	BRL	BRL
NMeFOSAA	0.077 ^{H,H3}	0.086 ^{H,H3}	0.092 ^{H,H3}	BRL	BRL	BRL
NEtFOSAA	0.078 ^{H,H3}	0.076 ^{H,H3}	0.078 ^{H,H3}	BRL	BRL	BRL
NMeFOSE	0.088 ^{H,H3}	BRL	BRL	BRL	BRL	BRL
5:3 FTCA	1.6 ^{H,H3}	1.4 ^{H,H3}	1.6 ^{H,H3}	0.30 ^{H,H3}	0.30 ^{H,H3}	0.30 ^{H,H3}
6:2 FTCA	0.23 ^{H,I,H3}	0.22 ^{H,I,H3}	0.26 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	0.20 ^{H,H3}	0.19 ^{H,H3}	0.23 ^{H,H3}	0.030 ^{H,H3}	BRL	BRL
8:2 FTCA	0.043 ^{H,H3}	0.043 ^{H,H3}	0.053 ^{H,H3}	BRL	BRL	BRL
Total:	2.89	3.03	3.11	0.370	0.347	0.340

Table S9. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 3 (units of µg/kg biosolids). BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” I qualifier: “Value is estimated maximum possible concentration.” Total row only includes species detected above reporting limits.

µg/kg biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFPeA	3.5 ^{H,H3}	4.1 ^{H,H3}	3.1 ^{H,H3}	BRL	BRL	BRL

PFHxA	1.8 ^{H,I,H3}	2.7 ^{H,I,H3}	2.5 ^{H,I,H3}	BRL	BRL	BRL
PFOA	BRL	0.89 ^{H,H3}	0.9 ^{H,H3}	BRL	BRL	BRL
PFDA	1.2 ^{H,H3}	1.3 ^{H,H3}	1.2 ^{H,H3}	BRL	BRL	BRL
PFUnA	BRL	0.92 ^{H,H3}	0.91 ^{H,H3}	BRL	BRL	BRL
PFDoA	1.9 ^{H,H3}	1.9 ^{H,H3}	1.9 ^{H,H3}	BRL	BRL	BRL
PFTeA	0.95 ^{H,H3}	0.86 ^{H,H3}	1.1 ^{H,H3}	BRL	BRL	BRL
PFPrS	BRL	7.0 ^{H,H3}	2.5 ^{H,H3}	BRL	BRL	BRL
PFOS	6.7 ^{H,I,H3}	8.3 ^{H,H3}	6.9 ^{H,H3}	1.3 ^{H,H3}	1.4 ^{H,H3}	1.2 ^{H,H3}
PFDS	BRL	1.0 ^{H,H3}	0.95 ^{H,H3}	BRL	BRL	BRL
NMeFOSAA	2.6 ^{H,H3}	2.9 ^{H,H3}	3.1 ^{H,H3}	BRL	BRL	BRL
NEtFOSAA	2.7 ^{H,H3}	2.6 ^{H,H3}	2.7 ^{H,H3}	BRL	BRL	BRL
NMeFOSE	2.9 ^{H,H3}	BRL	BRL	BRL	BRL	BRL
5:3 FTCA	50 ^{H,H3}	45 ^{H,H3}	51 ^{H,H3}	9.2 ^{H,H3}	9.3 ^{H,H3}	9.3 ^{H,H3}
6:2 FTCA	6.7 ^{H,I,H3}	6.3 ^{H,I,H3}	7.6 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	6.0 ^{H,H3}	5.7 ^{H,H3}	6.7 ^{H,H3}	0.89 ^{H,H3}	BRL	BRL
8:2 FTCA	1.2 ^{H,H3}	1.2 ^{H,H3}	1.5 ^{H,H3}	BRL	BRL	BRL
Total:	88.2	92.7	94.6	11.4	10.7	10.5

Table S10. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 4 (units of $\mu\text{mol F/kg}$ biosolids). Data are shown in Figure S5. BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” I qualifier: “Value is estimated maximum possible concentration.” Total row only includes species detected above reporting limits.

$\mu\text{mol F/kg}$ biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFBA	0.027 ^{H,H3}	0.033 ^{H,H3}	0.028 ^{H,H3}	BRL	BRL	BRL

PFHxA	0.081 ^{H,I,H3}	0.067 ^{H,H3}	0.081 ^{H,I,H3}	BRL	BRL	BRL
PFDA	0.070 ^{H,H3}	0.074 ^{H,H3}	0.074 ^{H,H3}	BRL	BRL	0.034 ^{H,H3}
PFUnA	0.041 ^{H,H3}	0.041 ^{H,H3}	0.041 ^{H,H3}	BRL	BRL	BRL
PFDoA	0.045 ^{H,H3}	0.045 ^{H,H3}	0.049 ^{H,H3}	BRL	BRL	BRL
PFPoS	0.31 ^{H,H3}	0.28 ^{H,H3}	0.28 ^{H,H3}	BRL	BRL	BRL
PFOS	0.71 ^{H,H3}	0.71 ^{H,H3}	0.68 ^{H,H3}	0.27 ^{H,H3}	0.31 ^{H,H3}	0.31 ^{H,H3}
PFDS	0.045 ^{H,H3}	0.042 ^{H,H3}	0.042 ^{H,H3}	BRL	BRL	BRL
NMeFOSAA	0.086 ^{H,H3}	0.083 ^{H,H3}	0.083 ^{H,H3}	0.033 ^{H,H3}	0.042 ^{H,H3}	0.039 ^{H,H3}
NEtFOSAA	0.10 ^{H,H3}	0.093 ^{H,H3}	0.099 ^{H,H3}	0.038 ^{H,H3}	0.044 ^{H,H3}	0.044 ^{H,H3}
5:3 FTCA	1.4 ^{H,H3}	1.4 ^{H,H3}	1.6 ^{H,H3}	0.68 ^{H,H3}	0.80 ^{H,H3}	0.68 ^{H,H3}
6:2 FTCA	0.18 ^{H,H3}	0.15 ^{H,H3}	0.16 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	0.14 ^{H,H3}	0.14 ^{H,H3}	0.13 ^{H,H3}	0.041 ^{H,H3}	0.047 ^{H,H3}	0.044 ^{H,H3}
8:2 FTCA	BRL	0.029 ^{H,H3}	BRL	BRL	BRL	BRL
Total:	3.29	3.21	3.36	1.05	1.25	1.14

Table S11. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 4 (units of µg/kg biosolids). BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” I qualifier: “Value is estimated maximum possible concentration.” Total row only includes species detected above reporting limits.

µg/kg biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFBA	0.84 ^{H,H3}	1.0 ^{H,H3}	0.87 ^{H,H3}	BRL	BRL	BRL

PFHxA	2.3 ^{H,I,H3}	1.9 ^{H,H3}	2.3 ^{H,I,H3}	BRL	BRL	BRL
PFDA	1.9 ^{H,H3}	2.0 ^{H,H3}	2.0 ^{H,H3}	BRL	BRL	0.91 ^{H,H3}
PFUnA	1.1 ^{H,H3}	1.1 ^{H,H3}	1.1 ^{H,H3}	BRL	BRL	BRL
PFDoA	1.2 ^{H,H3}	1.2 ^{H,H3}	1.3 ^{H,H3}	BRL	BRL	BRL
PFPrS	11 ^{H,H3}	10 ^{H,H3}	10 ^{H,H3}	BRL	BRL	BRL
PFOS	21 ^{H,H3}	21 ^{H,H3}	20 ^{H,H3}	7.9 ^{H,H3}	9.1 ^{H,H3}	9.1 ^{H,H3}
PFDS	1.3 ^{H,H3}	1.2 ^{H,H3}	1.2 ^{H,H3}	BRL	BRL	BRL
NMeFOSAA	2.9 ^{H,H3}	2.8 ^{H,H3}	2.8 ^{H,H3}	1.1 ^{H,H3}	1.4 ^{H,H3}	1.3 ^{H,H3}
NEtFOSAA	3.6 ^{H,H3}	3.2 ^{H,H3}	3.4 ^{H,H3}	1.3 ^{H,H3}	1.5 ^{H,H3}	1.5 ^{H,H3}
5:3 FTCA	45 ^{H,H3}	44 ^{H,H3}	50 ^{H,H3}	21 ^{H,H3}	25 ^{H,H3}	21 ^{H,H3}
6:2 FTCA	5.2 ^{H,H3}	4.5 ^{H,H3}	4.7 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	4.2 ^{H,H3}	4.1 ^{H,H3}	3.9 ^{H,H3}	1.2 ^{H,H3}	1.4 ^{H,H3}	1.3 ^{H,H3}
8:2 FTCA	BRL	0.81 ^{H,H3}	BRL	BRL	BRL	BRL
Total:	102	98.8	104	32.5	38.4	35.1

Table S12. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 5 (units of $\mu\text{mol F/kg biosolids}$). Data are shown in Figure S6. BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” *+ qualifier: “Laboratory control sample and/or laboratory control sample duplicate is outside acceptance limits, high biased.” I qualifier: “Value is estimated maximum possible concentration.” CI qualifier: “The peak identified by the data system exhibited chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.” Total row only includes species detected above reporting limits.

μmol F/kg biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFBA	BRL	BRL	BRL	0.028 ^{H,H3}	BRL	BRL
PFHxA	0.053 ^{H,H3}	0.053 ^{H,H3}	0.060 ^{H,H3}	0.035 ^{H,H3}	0.032 ^{H,H3}	BRL
PFOA	0.036 ^{H,H3}	BRL	BRL	BRL	BRL	BRL
PFNA	0.034 ^{H,H3}	BRL	BRL	BRL	BRL	BRL
PFDA	0.037 ^{H,H3}	0.036 ^{H,H3}	0.041 ^{H,H3}	BRL	BRL	BRL
PFUnA	0.041 ^{H,H3}	0.041 ^{H,H3}	0.048 ^{H,H3}	BRL	BRL	BRL
PFDoA	0.037 ^{H,H3}	0.041 ^{H,H3}	0.049 ^{H,H3}	BRL	BRL	BRL
PFPrS	0.073 ^{H,H3}	0.078 ^{H,H3}	0.050 ^{H,H3}	BRL	BRL	BRL
PFOS	0.23 ^{H,H3}	0.22 ^{H,H3}	0.23 ^{H,H3}	0.12 ^{H,H3}	0.15 ^{H,I,H3}	0.15 ^{H,I,H3}
PFDS	BRL	BRL	BRL	BRL	BRL	0.042 ^{H,I,H3}
PFO2HxA	BRL	BRL	BRL	0.046 ^{H,H3,CI}	0.037 ^{H,H3,CI}	0.043 ^{H,H3,CI}
NMeFOSAA	0.077 ^{H,H3}	0.065 ^{H,H3}	0.077 ^{H,H3}	0.033 ^{H,H3}	0.027 ^{H,H3}	0.028 ^{H,H3}
NEtFOSAA	0.093 ^{H,H3}	0.090 ^{H,H3}	0.11 ^{H,H3}	0.032 ^{H,H3}	0.028 ^{H,H3}	0.029 ^{H,H3}
NMeFOSE	0.043 ^{H,H3}	0.052 ^{H,H3}	0.061 ^{H,H3}	BRL	0.034 ^{H,H3}	BRL
NEtFOSE	BRL	BRL	BRL	BRL	0.026 ^{H,H3}	BRL
5:3 FTCA	1.8 ^{H,H3,*+}	1.9 ^{H,H3,*+}	1.8 ^{H,H3,*+}	0.74 ^{H,H3}	0.68 ^{H,H3}	0.71 ^{H,H3}
6:2 FTCA	0.29 ^{H,H3}	0.33 ^{H,H3}	0.16 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	0.098 ^{H,H3}	0.10 ^{H,H3}	0.11 ^{H,H3}	0.032 ^{H,H3}	0.034 ^{H,H3}	0.034 ^{H,H3}
8:2 FTCA	0.030 ^{H,H3}	0.032 ^{H,H3}	0.031 ^{H,H3}	BRL	BRL	BRL
10:2 FTS	0.025 ^{H,I,H3}	0.028 ^{H,H3}	BRL	BRL	BRL	BRL
Total:	3.00	3.10	2.86	1.06	1.04	1.03

Table S13. PFAS concentrations for pre-drying and post-drying samples from lab-scale oven for Source 5 (units of μg/kg biosolids). BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” *+ qualifier: “Laboratory control sample and/or laboratory control sample duplicate is outside acceptance limits, high biased.” I qualifier: “Value is estimated maximum possible concentration.” CI qualifier: “The peak identified by the data system exhibited chromatographic interference that could not be resolved.

There is reason to suspect there may be a high bias.” Total row only includes species detected above reporting limits.

µg/kg biosolids	Pre-drying			Lab-scale oven post-drying		
	1	2	3	1	2	3
PFBA	BRL	BRL	BRL	0.87 ^{H,H3}	BRL	BRL
PFHxA	1.5 ^{H,H3}	1.5 ^{H,H3}	1.7 ^{H,H3}	1.0 ^{H,H3}	0.90 ^{H,H3}	BRL
PFOA	1.0 ^{H,H3}	BRL	BRL	BRL	BRL	BRL
PFNA	0.94 ^{H,H3}	BRL	BRL	BRL	BRL	BRL
PFDA	0.99 ^{H,H3}	0.98 ^{H,H3}	1.1 ^{H,H3}	BRL	BRL	BRL
PFUnA	1.1 ^{H,H3}	1.1 ^{H,H3}	1.3 ^{H,H3}	BRL	BRL	BRL
PFDoA	1.0 ^{H,H3}	1.1 ^{H,H3}	1.3 ^{H,H3}	BRL	BRL	BRL
PFPPrS	2.6 ^{H,H3}	2.8 ^{H,H3}	1.8 ^{H,H3}	BRL	BRL	BRL
PFOS	6.9 ^{H,H3}	6.6 ^{H,H3}	6.8 ^{H,H3}	3.4 ^{H,H3}	4.3 ^{H,I,H3}	4.3 ^{H,I,H3}
PFDS	BRL	BRL	BRL	BRL	BRL	1.2 ^{H,I,H3}
PFO2HxA	BRL	BRL	BRL	1.6 ^{H,H3,CI}	1.3 ^{H,H3,CI}	1.5 ^{H,H3,CI}
NMeFOSAA	2.6 ^{H,H3}	2.2 ^{H,H3}	2.6 ^{H,H3}	1.1 ^{H,H3}	0.90 ^{H,H3}	0.95 ^{H,H3}
NEtFOSAA	3.2 ^{H,H3}	3.1 ^{H,H3}	3.8 ^{H,H3}	1.1 ^{H,H3}	0.97 ^{H,H3}	1.0 ^{H,H3}
NMeFOSE	1.4 ^{H,H3}	1.7 ^{H,H3}	2.0 ^{H,H3}	BRL	1.1 ^{H,H3}	BRL
NEtFOSE	BRL	BRL	BRL	BRL	0.87 ^{H,H3}	BRL
5:3 FTCA	56 ^{H,H3,*+}	60 ^{H,H3,*+}	57 ^{H,H3,*+}	23 ^{H,H3}	21 ^{H,H3}	22 ^{H,H3}
6:2 FTCA	8.4 ^{H,H3}	9.5 ^{H,H3}	4.6 ^{H,H3}	BRL	BRL	BRL
7:3 FTCA	2.9 ^{H,H3}	3.0 ^{H,H3}	3.3 ^{H,H3}	0.93 ^{H,H3}	1.0 ^{H,H3}	1.0 ^{H,H3}
8:2 FTCA	0.83 ^{H,H3}	0.91 ^{H,H3}	0.87 ^{H,H3}	BRL	BRL	BRL
10:2 FTS	0.76 ^{H,I,H3}	0.83 ^{H,H3}	BRL	BRL	BRL	BRL
Total:	92.1	95.3	88.2	33.0	32.3	32.0

Table S14. PFAS concentrations for pre-drying biosolids, post-drying biosolids, and vapor capture samples from lab-scale oven for Source 5 (units of $\mu\text{mol F/kg}$ biosolids for pre-drying and post-drying samples; units of nmol F/L methanol for vapor capture samples).

Note that values for the mass of biosolids and volumes of methanol can be found in Table S1.

BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3

qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” *+ qualifier: “Laboratory control sample and/or laboratory control sample

duplicate is outside acceptance limits, high biased.” I qualifier: “Value is estimated maximum possible concentration.” CI qualifier: “The peak identified by the data system exhibited

chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.” Total row only includes species detected above reporting limits.

Post-drying [$\mu\text{mol F/kg}$]	Captured vapor [nmol F/L]		
	2	3	1 2 3
BRL	BRL	BRL	BRL BRL BRL
BRL	0.11 ^{H,H3}	BRL	BRL BRL BRL
BRL	0.070 ^{H,H3}	BRL	BRL BRL BRL
BRL	BRL	BRL	BRL BRL BRL
BRL	BRL	BRL	BRL BRL BRL
BRL	BRL	BRL	BRL BRL BRL
BRL	BRL	BRL	BRL BRL BRL
BRL	BRL	BRL	BRL BRL BRL
BRL	BRL	BRL	BRL BRL BRL
0.11 ^{H,I,H3}	0.18 ^{H,H3}	BRL	BRL BRL BRL
0.059 ^{H,I,H3}	0.094 ^{H,I,H3}	BRL	BRL BRL BRL
0.26 ^{H,I,H3}	BRL	BRL	BRL BRL BRL
0.028 ^{H,H3,CI}	0.065 ^{H,H3,CI}	BRL	BRL BRL BRL
BRL	0.039 ^{H,H3}	BRL	BRL BRL BRL
BRL	0.044 ^{H,H3}	BRL	BRL BRL BRL
BRL	BRL	7.0 ^{H,H3}	5.5 ^{H,H3} 14 ^{H,H3}
BRL	BRL	3.3 ^{H,H3}	BRL BRL
0.48 ^{H,H3}	0.96 ^{H,H3}	64 ^{H,H3}	119 ^{H,H3} 93 ^{H,H3}
BRL	BRL	BRL	BRL BRL BRL
BRL	0.058 ^{H,H3}	11 ^{H,H3}	20 ^{H,H3} 14 ^{H,H3}
BRL	BRL	BRL	BRL BRL BRL
0.943	1.62	85.8	144 122

	Pre-drying [$\mu\text{mol F/kg biosolids}$]			
	1	2	3	
PFBA	BRL	BRL	BRL	0.085 ^{H,H3}
PFPeA	BRL	BRL	BRL	0.10 ^{H,H3}
PFHxA	0.049 ^{H,H3}	0.053 ^{H,H3}	0.053 ^{H,H3}	BRL
PFOA	BRL	0.030 ^{H,H3}	BRL	BRL
PFNA	BRL	BRL	0.029 ^{H,H3}	BRL
PFDA	0.037 ^{H,H3}	0.041 ^{H,H3}	0.037 ^{H,H3}	BRL
PFUnA	0.041 ^{H,H3}	0.045 ^{H,H3}	0.045 ^{H,H3}	BRL
PFDoA	0.041 ^{H,H3}	0.041 ^{H,H3}	0.041 ^{H,H3}	BRL
PFPrS	0.024 ^{H,H3}	0.031 ^{H,H3}	0.059 ^{H,H3}	BRL
PFOS	0.21 ^{H,H3}	0.21 ^{H,H3}	0.24 ^{H,H3}	0.12 ^{H,H3}
PFDS	BRL	BRL	BRL	0.080 ^{H,H3}
PFDoS	BRL	BRL	BRL	BRL
PFO2HxA	BRL	BRL	BRL	BRL
NMeFOSAA	0.071 ^{H,H3}	0.083 ^{H,H3}	0.080 ^{H,H3}	BRL
NEtFOSAA	0.099 ^{H,H3}	0.10 ^{H,H3}	0.084 ^{H,H3}	BRL
NMeFOSE	0.043 ^{H,H3}	0.046 ^{H,H3}	0.043 ^{H,H3}	BRL
NEtFOSE	BRL	BRL	BRL	BRL
5:3 FTCA	1.6 ^{H,H3,*+}	1.7 ^{H,H3,*+}	1.8 ^{H,H3,*+}	0.45 ^{H,H3}
6:2 FTCA	0.23 ^{H,H3}	0.26 ^{H,H3}	0.25 ^{H,H3}	BRL
7:3 FTCA	0.098 ^{H,H3}	0.095 ^{H,H3}	0.095 ^{H,H3}	BRL
10:2 FTS	BRL	0.029 ^{H,H3}	0.028 ^{H,H3}	BRL
Total:	2.52	2.74	2.85	0.833

Table S15. PFAS concentrations for pre-drying biosolids, post-drying biosolids, and vapor capture samples from lab-scale oven for Source 5 (units of $\mu\text{g/kg}$ biosolids for pre-drying and post-drying samples; units of ng/L methanol for vapor capture samples). Note that values for the mass of biosolids and volumes of methanol can be found in Table S1. BRL: species concentration was “below reporting limit”. H qualifier: “Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.” H3 qualifier: “Sample was received and analyzed past holding time. This does not meet regulatory requirements.” *+ qualifier: “Laboratory control sample and/or laboratory control sample duplicate is outside acceptance limits, high biased.” I qualifier: “Value is estimated maximum possible concentration.” CI qualifier: “The peak identified by the data system exhibited

chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.” Total row only includes species detected above reporting limits.

Post-drying [$\mu\text{g}/\text{kg}$]		Captured vapor [ng/L]		
2	3	1	2	3
BRL	BRL	BRL	BRL	BRL
BRL	3.2 ^{H,H3}	BRL	BRL	BRL
BRL	2.0 ^{H,H3}	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
BRL	BRL	BRL	BRL	BRL
3.3 ^{H,H3}	5.2 ^{H,H3}	BRL	BRL	BRL
1.7 ^{H,H3}	2.7 ^{H,H3}	BRL	BRL	BRL
7.3 ^{H,H3}	BRL	BRL	BRL	BRL
1.0 ^{H,H3,Cl}	2.3 ^{H,H3,Cl}	BRL	BRL	BRL
BRL	1.3 ^{H,H3}	BRL	BRL	BRL
BRL	1.5 ^{H,H3}	BRL	BRL	BRL
BRL	BRL	230 ^{H,H3}	180 ^{H,H3}	470 ^{H,H3}
BRL	BRL	110 ^{H,H3}	BRL	BRL
15 ^{H,H3}	30 ^{H,H3}	2000 ^{H,H3}	3700 ^{H,H3}	2900 ^H
BRL	BRL	BRL	BRL	BRL
BRL	1.7 ^{H,H3}	330 ^{H,H3}	580 ^{H,H3}	420 ^{H,H3}
BRL	BRL	BRL	BRL	BRL
28.3	49.9	2670	4460	3790

	Pre-drying [$\mu\text{g}/\text{kg}$ biosolids]			
	1	2	3	
PFBA	BRL	BRL	BRL	2.6 ^{H,H3}
PFPeA	BRL	BRL	BRL	3.0 ^{H,H3}
PFHxA	1.4 ^{H,H3}	1.5 ^{H,H3}	1.5 ^{H,H3}	BRL
PFOA	BRL	0.82 ^{H,H3}	BRL	BRL
PFNA	BRL	BRL	0.79 ^{H,H3}	BRL
PFDA	1.0 ^{H,H3}	1.1 ^{H,H3}	1.0 ^{H,H3}	BRL
PFUnA	1.1 ^{H,H3}	1.2 ^{H,H3}	1.2 ^{H,H3}	BRL
PFDoA	1.1 ^{H,H3}	1.1 ^{H,H3}	1.1 ^{H,H3}	BRL
PFPrS	0.84 ^{H,H3}	1.1 ^{H,H3}	2.1 ^{H,H3}	BRL
PFOS	6.3 ^{H,H3}	6.2 ^{H,H3}	7.0 ^{H,H3}	3.4 ^{H,H3}
PFDS	BRL	BRL	BRL	2.3 ^{H,H3}
PFDoS	BRL	BRL	BRL	BRL
PFO2HxA	BRL	BRL	BRL	BRL
NMeFOSAA	2.4 ^{H,H3}	2.8 ^{H,H3}	2.7 ^{H,H3}	BRL
NEtFOSAA	3.4 ^{H,H3}	3.6 ^{H,H3}	2.9 ^{H,H3}	BRL
NMeFOSE	1.4 ^{H,H3}	1.5 ^{H,H3}	1.4 ^{H,H3}	BRL
NEtFOSE	BRL	BRL	BRL	BRL
5:3 FTCA	49 ^{H,H3,*+}	52 ^{H,H3,*+}	55 ^{H,H3,*+}	14 ^{H,H3}
6:2 FTCA	6.6 ^{H,H3}	7.5 ^{H,H3}	7.3 ^{H,H3}	BRL
7:3 FTCA	2.9 ^{H,H3}	2.8 ^{H,H3}	2.8 ^{H,H3}	BRL
10:2 FTS	BRL	0.88 ^{H,H3}	0.85 ^{H,H3}	BRL
Total:	77.4	84.1	87.6	25.3

Table S16. Reporting limits for PFAS detected in any samples at Source 1. Pre-drying samples indicated with “wet” and post-drying samples indicated with “dry”. These data were used to fill in gaps in the triplicate data where noted. Note: units are in $\mu\text{g}/\text{kg}$, but calculations and statistics were run after units were converted to $\mu\text{mol F}/\text{kg}$.

Source 1	1-wet	2-wet	3-wet	1-dry	2-dry	3-dry
PFHxA	0.68	0.71	0.71	0.88	0.93	1.0
PFOA	0.68	0.71	0.71	0.88	0.93	1.0
PFNA	0.68	0.71	0.71	0.88	0.93	1.0
PFDA	0.68	0.71	0.71	0.88	0.93	1.0
PFUnA	0.68	0.71	0.71	0.88	0.93	1.0
PFDoA	0.68	0.71	0.71	0.88	0.93	1.0
PFPrS	0.68	0.71	0.71	0.88	0.93	1.0
PFOS	0.68	0.71	0.71	0.88	0.93	1.0
NMeFOSAA	0.68	0.71	0.71	0.88	0.93	1.0

NEtFOSAA	0.68	0.71	0.71	0.88	0.93	1.0
NMeFOSE	3.4	0.71	7.1	0.88	0.93	1.0
5:3 FTCA	3.4	3.6	0.71	0.88	0.93	1.0
6:2 FTCA	1.0	1.1	1.1	1.3	1.4	1.5
7:3 FTCA	0.68	0.71	0.71	0.88	0.93	1.0
8:2 FTCA	0.68	0.71	0.71	0.88	0.93	1.0
10:2 FTS	0.68	0.71	7.1	0.88	0.93	1.0

Table S17. Reporting limits for PFAS detected in any samples at Source 2. Pre-drying samples indicated with “wet” and post-drying samples indicated with “dry”. These data were used to fill in gaps in the triplicate data where noted. Note: units are in $\mu\text{g}/\text{kg}$, but calculations and statistics were run after units were converted to $\mu\text{mol F}/\text{kg}$.

Source 2	1-wet	2-wet	3-wet	1-dry	2-dry	3-dry
PFBA	0.81	0.81	0.85	0.90	0.91	0.76
PFHxA	0.81	0.81	0.85	0.90	0.91	0.76
PFOA	0.81	0.81	0.85	0.90	0.91	0.76
PFDA	0.81	0.81	0.85	0.90	0.91	0.76
PFPrS	0.81	0.81	0.85	0.90	0.91	0.76
PFOS	8.1	7.7	9.0	0.90	0.91	0.76
PFO2HxA	0.81	0.81	0.85	0.90	0.91	0.76
NMeFOSAA	0.81	0.81	0.85	0.90	0.91	0.76
NEtFOSAA	0.81	0.81	0.85	0.90	0.91	0.76
5:3 FTCA	8.1	8.1	8.5	0.90	0.91	0.76

6:2 FTCA	1.2	1.2	1.3	1.4	1.4	1.1
7:3 FTCA	0.81	0.81	0.85	0.90	0.91	0.76

Table S18. Reporting limits for PFAS detected in any samples at Source 3. Pre-drying samples indicated with “wet” and post-drying samples indicated with “dry”. These data were used to fill in gaps in the triplicate data where noted. Note: units are in $\mu\text{g}/\text{kg}$, but calculations and statistics were run after units were converted to $\mu\text{mol F}/\text{kg}$.

Source 3	1-wet	2-wet	3-wet	1-dry	2-dry	3-dry
PFPeA	0.92	0.86	0.88	0.84	0.94	0.98
PFHxA	0.92	0.86	0.88	0.84	0.94	0.98
PFOA	0.92	0.86	0.88	0.84	0.94	0.98
PFDA	0.92	0.86	0.88	0.84	0.94	0.98
PFUnA	0.92	0.86	0.88	0.84	0.94	0.98
PFDoA	0.92	0.86	0.9	0.84	0.94	0.98
PFTeA	0.92	0.86	0.88	0.84	0.94	0.98
PFPrS	0.92	0.86	0.88	0.84	0.94	0.98
PFOS	0.92	0.86	0.88	0.84	0.94	0.98
PFDS	0.92	0.86	0.88	0.84	0.94	0.98
NMeFOSAA	0.92	0.86	0.88	0.84	0.94	1.0
NEtFOSAA	0.92	0.86	0.88	0.84	0.94	0.98

NMeFOSE	0.9	8.5	8.3	0.84	0.94	0.98
5:3 FTCA	0.92	0.86	0.88	0.84	0.94	1.0
6:2 FTCA	1.4	1.3	1.3	1.3	1.4	1.5
7:3 FTCA	0.92	0.86	0.88	0.84	0.94	1.0
8:2 FTCA	0.92	0.86	0.88	0.84	0.94	1.0

Table S19. Reporting limits for PFAS detected in any samples at Source 4. Pre-drying samples indicated with “wet” and post-drying samples indicated with “dry”. These data were used to fill in gaps in the triplicate data where noted. Note: units are in $\mu\text{g}/\text{kg}$, but calculations and statistics were run after units were converted to $\mu\text{mol F}/\text{kg}$.

Source 4	1-wet	2-wet	3-wet	1-dry	2-dry	3-dry
PFBA	0.76	0.76	0.79	0.81	0.93	0.90
PFHxA	0.76	0.76	0.79	0.81	0.93	0.90
PFDA	0.76	0.76	0.79	0.81	0.93	0.90
PFUnA	0.76	0.76	0.79	0.81	0.93	0.90
PFDoA	0.76	0.76	0.79	0.81	0.93	0.90
PFPrS	0.76	0.76	0.79	0.81	0.93	0.90
PFOS	0.76	0.76	0.79	0.81	0.93	0.90
PFDS	0.76	0.76	0.79	0.81	0.93	0.90
NMeFOSAA	0.76	0.76	0.79	0.81	0.93	0.90
NEtFOSAA	0.76	0.76	0.79	0.81	0.93	0.90
5:3 FTCA	0.76	0.76	0.79	0.81	0.93	0.90

6:2 FTCA	1.1	1.1	1.2	1.20	1.4	1.40
7:3 FTCA	0.76	0.76	0.79	0.81	0.93	0.90
8:2 FTCA	0.76	0.76	0.79	0.81	0.93	0.90

Table S20. Reporting limits for PFAS detected in any samples at Source 5. Pre-drying samples indicated with “wet” and post-drying samples indicated with “dry”. These data were used to fill in gaps in the triplicate data where noted. Note: units are in $\mu\text{g}/\text{kg}$, but calculations and statistics were run after units were converted to $\mu\text{mol F}/\text{kg}$.

Source 5	1-wet	2-wet	3-wet	1-dry	2-dry	3-dry
PFBA	0.76	0.82	0.84	0.84	0.86	0.92
PFHxA	0.76	0.82	0.84	0.84	0.86	0.92
PFOA	0.76	0.82	0.84	0.84	0.86	0.92
PFNA	0.76	0.82	0.84	0.84	0.86	0.92
PFDA	0.76	0.82	0.84	0.84	0.86	0.92
PFUnA	0.76	0.82	0.84	0.84	0.86	0.92
PFDoA	0.76	0.82	0.84	0.84	0.86	0.92
PFPrS	0.76	0.82	0.84	0.84	0.86	0.92
PFOS	0.76	0.82	0.84	0.84	0.86	0.92
PFDS	0.76	0.82	0.84	0.84	0.86	0.92

PFO2HxA	0.76	0.82	0.84	0.84	0.86	0.92
NMeFOSAA	0.76	0.82	0.84	0.84	0.86	0.92
NEtFOSAA	0.76	0.82	0.84	0.84	0.86	0.92
NMeFOSE	0.76	0.82	0.84	0.84	0.86	0.92
NEtFOSE	0.76	0.82	0.84	0.84	0.86	0.92
5:3 FTCA	0.76	0.82	0.84	0.84	0.86	0.92
6:2 FTCA	1.1	1.2	1.3	1.3	1.3	1.4
7:3 FTCA	0.76	0.82	0.84	0.84	0.86	0.92
8:2 FTCA	0.76	0.82	0.84	0.84	0.86	0.92
10:2 FTS	0.76	0.82	0.84	0.84	0.86	0.92

Table S20. Reporting limits for PFAS detected in any samples for the vapor capture experiment with Source 5 biosolids. Pre-drying samples indicated with “wet”, post-drying samples indicated with “dry”, and vapor capture samples indicated with “vap”. These data were used to fill in gaps in the triplicate data where noted. Note: units are in $\mu\text{g}/\text{kg}$ or ng/L but calculations and statistics were run after units were converted to $\mu\text{mol F}/\text{kg}$ or $\text{nmol F}/\text{L}$.

Source 5 vapor capture	1-wet	2-wet	3-wet	1-dry	2-dry	3-dry	1-vap	2-vap	3-vap
PFBA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFPeA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFHxA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFOA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFNA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFDA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100

PFU _n A	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFDoA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFPrS	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFOS	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFDS	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
PFDoS	0.80	0.77	0.77	0.95	0.78	0.85	--	--	--
PFO ₂ H _x A	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
NMeFOSAA	0.80	0.77	0.77	0.95	0.78	0.85	1000	1000	1000
NEtFOSAA	0.80	0.77	0.77	0.95	0.78	0.85	1000	1000	1000
NMeFOSE	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
NEtFOSE	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
5:3 FTCA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
6:2 FTCA	1.2	1.2	1.2	1.4	1.2	1.3	100	100	100
7:3 FTCA	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100
10:2 FTS	0.80	0.77	0.77	0.95	0.78	0.85	100	100	100