

Analytical Results for PFAS in 2018-2019 Dairy Sampling (Parts Per Trillion)

Note: Samples were collected by the State of New Mexico near an Air Force Base with contaminated ground water in Clovis, New Mexico in 2018 and 2019 and sent to FDA for analysis. Milk from "Farm A" was determined to be a potential human health concern and all milk from the farm was discarded.

Samples	Measured Concentrations in parts per trillion (ppt=ng/kg)															
	PFOA	PFOS	PFBA	PFHpS	PFPeA	PFHxA	PFHxS	PFHpA	PFBS	PFPeS	NaDONA	HFPO-DA	PFDA	PFNA	11CI-PF3OUdS	9CI-PF3ONs
Farm A																
Milk Farm A- collection 1- sample 1	36	1620	<LLOQ	48	9.2	<LLOQ	295	<LLOQ	1.2	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 2- sample 1	<LLOQ	5440	148	239	<LLOQ	<LLOQ	1140	<LLOQ	1.0	8.6	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 2- sample 2	<LLOQ	3670	14	151	<LLOQ	<LLOQ	734	<LLOQ	0.2	6.3	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 2- sample 3	<LLOQ	5680	70	202	<LLOQ	<LLOQ	1170	<LLOQ	1.4	7.7	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 2- sample 4	<LLOQ	5210	86	210	<LLOQ	<LLOQ	1110	<LLOQ	1.9	6.0	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 2- sample 5	<LLOQ	5330	79	235	<LLOQ	<LLOQ	1090	<LLOQ	0.3	8.0	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 3- sample 1	14	2770	<LLOQ	108	20.0	25.0	551	<LLOQ	7.7	4.1	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 4- sample 1	169	4920	220	181	89.4	108	1270	29.5	68.6	75.9	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 5- sample 1	53	2220	<LLOQ	88	<LLOQ	14.9	704	4.3	4.4	3.9	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Milk Farm A- collection 6- sample 1	99	4710	<LLOQ	195	<LLOQ	59.3	1940	9.9	27.9	30.9	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Farm B																
Milk Farm B- collection 1- sample 1	25.4	74.6	<LLOQ	0.2	6.4	<LLOQ	43.2	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Quality Control Samples																
Retail milk - collection 2	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	1.6	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Control milk - collection 2	<LLOQ	2.5	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	0.42	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Retail milk - collection 5	27.3	4.2	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Control milk- collection 5	30.9	3.3	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Retail milk- collection 6	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Control milk-collection 6	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Cheese samples associated with Farm A																
Cheese-collection 1- sample 1	617	164	NR	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Cheese-collection 1- sample 2	562	833	NR	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Quality Control Samples																
Control Cheese-collection 1	<LLOQ	<LLOQ	NR	<LLOQ	<LLOQ	213	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ
Retail Cheese-collection 1	<LLOQ	<LLOQ	NR	<LLOQ	<LLOQ	903	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ	<LLOQ

Retail Milk - Milk samples purchased at retail outlets in the area.

Control Milk - Non-implicated product purchased and used as a field blank.

NR - Components of the sample interfered with the analytical result. No data is reported.

EDF Note: Yellow highlighted numbers in this FDA's June 11, 2019 version of results were reported as below the method detection limit in FDA's October 31, 2019 version at <https://www.fda.gov/food/chemicals-and-polyfluoroalkyl-substances-pfas>. The two numbers with red strike-out were changed to "NR" in October 31, 2019 version because FDA reported that the components of the sample interfered with the analytical results. Therefore, no data was reported.

Legend

Acronym	Name	CAS	Formula	Nominal Mass
PFOA	Perfluorooctanoic acid	335-67-1	C ₈ HF ₁₅ O ₂	414
PFOS	Perfluorooctanesulfonic acid	1763-23-1	C ₈ HF ₁₇ O ₃ S	500
PFBA	Perfluorobutanoate	375-22-4	C ₄ F ₇ O ₂	214
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	C ₇ HF ₁₅ O ₃ S	450
PFPeA	Perfluoropentanoic acid	2706-90-3	C ₅ HF ₉ O ₂	264
PFHxA	Perfluorohexanoic acid	307-24-4	C ₆ HF ₁₁ O ₂	314
PFHxS	Perfluorohexanesulfonic acid	355-46-4	C ₆ HF ₁₃ O ₃ S	400
PFHpA	Perfluoroheptanoic acid	375-85-9	C ₇ HF ₁₃ O ₂	364
PFBS	Perfluorobutanesulfonic acid	375-73-5	C ₄ HF ₉ O ₃ S	300
PFPeS	1,1,2,2,3,3,4,4,5,5,5-Undecafluoro-1-pentanesulfonic acid	2706-91-4	C ₅ HF ₁₁ O ₃ S	350
NaDONA	Sodium dodecafluoro-3H-4, 8-dioxanonoate	958445-44-8	C ₇ H ₅ F ₁₂ NO ₄	395
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	C ₆ HF ₁₁ O ₃	330
PFDA	Perfluorodecanoic acid	335-76-2	C ₁₀ HF ₁₉ O ₂	514
PFNA	Perfluorononanoic acid	375-95-1	C ₉ HF ₁₇ O ₂	464
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	C ₁₀ HClF ₂₀ O ₄ S	632
9Cl-PF3ONs	Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	73606-19-6	C ₈ ClF ₁₆ KO ₄ S	570

CAS = Chemical Abstract Service Number

LLOQ = Lower Limit of Quantitation