

BURLINGTON DRINKING WATER SUPPLY PFAS SAMPLING - All results are expressed as PPT

JD Mackintosh Water Treatment Plant

LAB	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	Enthalpy	GEL	Enthalpy	GEL	Enthalpy
Sample date time	Mack Fin 4/16/2020 1045	Mack Raw 4/16/2020 1045	Mack Fin 5/15/2020 1240	Mack Raw 5/15/2020 1240	Mack Fin 6/10/2020 1350	Mack Raw 6/10/2020 1350	Mack Fin 8/10/2021 1010	Mack Raw 8/10/2021 1005	Mack Fin 7/13/2022 1118	Mack Raw 7/13/2022 1117	Mack Fin* 9/21/2022 1024	Mack Fin DEQ* 9/21/2022	Mack Raw* 9/21/2022 1021	Mack Raw DEQ* 9/21/2022	Mack Fin* 10/12/2022 0653
PFOA	2.54	2.79	2.84	2.52	0	0	0	0	3.23	3.48	2.30	2.18	3.76	3.46	2.56
PFOS	5.29	6.20	1.97	5.92	0	7.41	0.00	9.76	5.7	6.99	3.23	3.63	6.46	7.67	4.74
PFBA	0	0	0	0	0	0	0	0	0	2.07	2.72	3.09	3.31	4.46	0
PFPeA	0	0	0	0	0	0	0	0	1.56	1.28	1.68	1.47	2.05	1.55	1.62
PFHxA	1.16	1.09	0.00	0.00	0.00	0.00	0.00	0.00	1.78	1.64	1.71	1.61	2.09	1.93	1.45
PFHpA	0.85	0.93	0	0	0	0	0	0	1.32	1.27	1.11	1.29	1.55	2.11	1.05
PFNA	0.35	0.41	0	0	0	0	0	0	0.549	0.591	0	0	0.772	0.755	0
PFDA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFUnA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFDoA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFTroDA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFTA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFBS	0	0	0	0	0	0	0	0	1.33	1.49	1.25	1.40	1.91	1.86	1.47
PFPeS	0	0	0	0	0	0	0	0	0.537	0.542	0	0	0	0	0
PFHxS	1.81	2.10	0.00	3.13	0.00	0.00	0.00	0.00	1.78	2.15	1.42	1.46	2.24	2.08	0.00
PFHpS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFNS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFDS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFOSA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N-MeFOSAA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N-EtFOSAA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11Cl-PF3OUds													0	0	0
9Cl-PF3ONS													0	0	0
ADONA													0	0	0
NFDHA													0	0	0
PFEESA													0	0	0
PFMBA													0	0	0
PFMPA													0	0	0
PMPA													0	0	0
PFPrA												10.4		1.92	
4:2 FTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6:2 FTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8:2 FTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFPO-DA (GenX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOA + PFOS	7.83	8.99	4.81	8.44	0.00	7.41	0.00	9.76	8.97	10.47	5.53	5.81	10.22	11.13	7.30
SUM ALL	12.00	13.51	4.81	11.57	0.00	7.41	0.00	9.76	17.83	21.50	15.42	26.53	24.14	27.80	12.89
PFDA + PFOS removal %	12.9		43.0		100.0		100.0		14.3		45.9				24.9
Total PFAS removal %	11.2		58.4		100.0		100.0		17.1		36.1				21.6

Raw water = water from lake prior to treatment

Finished water = treated water

*DEQ sampled also -analysis by GEL Labs, unknown method

Samples analyzed by Enthalpy unless noted - proprietary isotope dilution method

Samples analyzed 11/9/2022 and after are by PACE Analytical using EPA Method 533 (draft).

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LAB	Enthalpy	Enthalpy	GEL	Enthalpy	*PACE Analytical	GEL	Enthalpy	*PACE Analytical	GEL	*PACE Analytical	*PACE Analytical	Mackintosh Average	Mackintosh Average
Sample date time	Mack Fin DEQ* 10/12/2022	Mack Raw* 10/12/2022	Mack Raw DEQ* 10/12/2022	Mack Fin* 11/9/2022	Mack Fin* 11/9/2022	Mack Fin DEQ* 11/9/2022	Mack Raw* 11/9/2022	Mack Raw* 11/9/2022	Mack Raw DEQ* 11/9/2022	Mack Fin 1/23/2023	Mack Raw 1/23/2023	Finished Water	Raw Water
		0651		1042	1042		1049	1049		1330	1332		
PFOA	3.94	3.10	3.79	2.61	2.20	3.10	2.60	2.40	3.20	2.50	2.40	2.31	2.58
PFOS	5.74	6.62	8.88	4.90	4.70	5.74	7.15	5.60	8.26	3.10	5.50	3.75	7.11
PFBA	2.82	0	3.80	2.34	2.5	1.75	3.34	2.6	3.28	2.4	2.2	1.36	1.93
PFPeA	1.95	1.46	1.96	1.38	0	2.07	2.49	0	1.89	0	0	0.90	0.98
PFHxA	2.40	1.92	2.72	1.59	0	1.68	2.07	0	2.33	0	0	1.03	1.21
PFHpA	2.46	1.25	2.59	1.53	0	1.35	1.47	0	1.66	0	0	0.84	0.99
PFNA	1.71	0.666	1.8	0	0	0	0	0	0.775	0	0	0.20	0.44
PFDA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFUnA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFDoA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFTTrDA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFTA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFBS	1.92	1.43	2.20	1.38	0	2.15	1.79	0	2.14	0	2.80	0.84	1.20
PFPeS	0	0	0	0	0	0	0	0	0	0	0	0.04	0.04
PFHxS	2.04	0.00	2.26	1.55	0	1.95	1.55	0	2.18	2.10	0	1.09	1.36
PFHpS	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFNS	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFDS	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFOSA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
N-MeFOSAA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
N-EtFOSAA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
11Cl-PF3OUds	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
9Cl-PF3ONS	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
ADONA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
NFDHA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFEESA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFMBA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFMPA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PMPA	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
PFPrA	19.4		2.32			15.9			2.25			15.23	2.16
4:2 FTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00
6:2 FTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.00	0.00	4.00
8:2 FTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HFPO-DA (GenX)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFOA + PFOS	9.68	9.72	12.67	7.51	6.90	8.84	9.75	8.00	11.46	5.60	7.90	6.06	9.69
SUM ALL	44.38	16.45	32.32	17.28	9.40	35.69	22.46	10.60	27.97	10.10	64.90	15.87	22.34
PFDA + PFOS removal %				23.0		13.8						37.4	
Total PFAS removal %				23.1		11.3						28.9	

Raw water = water from lake prior to treatment

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