

Figure 1. Map of Wisconsin River PFAS Surface Water Sampling Sites around Rhinelander, WI. Sampled June 2023. Results shown for only PFOS and PFOA in ng/L (ppt). Current WI PFAS surface water standards are PFOS = 8.0 ng/L (ppt) and PFOA = 95 ng/L (ppt). See Table 1 for full list of compounds analyzed.

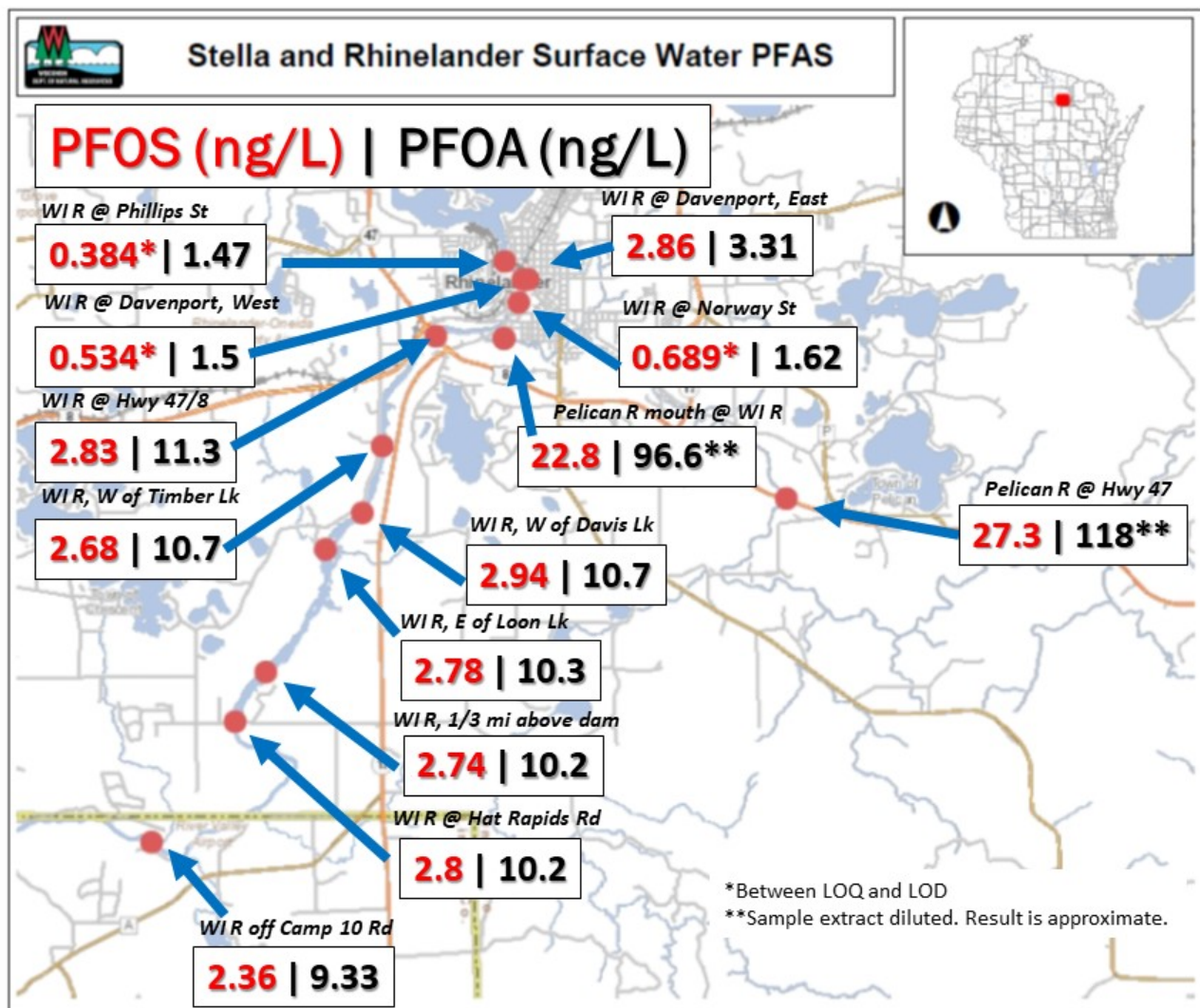


Figure 2. Map of Town of Stella Area Watershed PFAS Surface Water Sampling Sites. Sampled June and August 2023. Results shown for only PFOS and PFOA in ng/L (ppt). Current WI PFAS surface water standards are PFOS = 8.0 ng/L (ppt) and PFOA = 95 ng/L (ppt). Results highlighted in yellow are above standards. See Table 2 for full list of compounds analyzed.

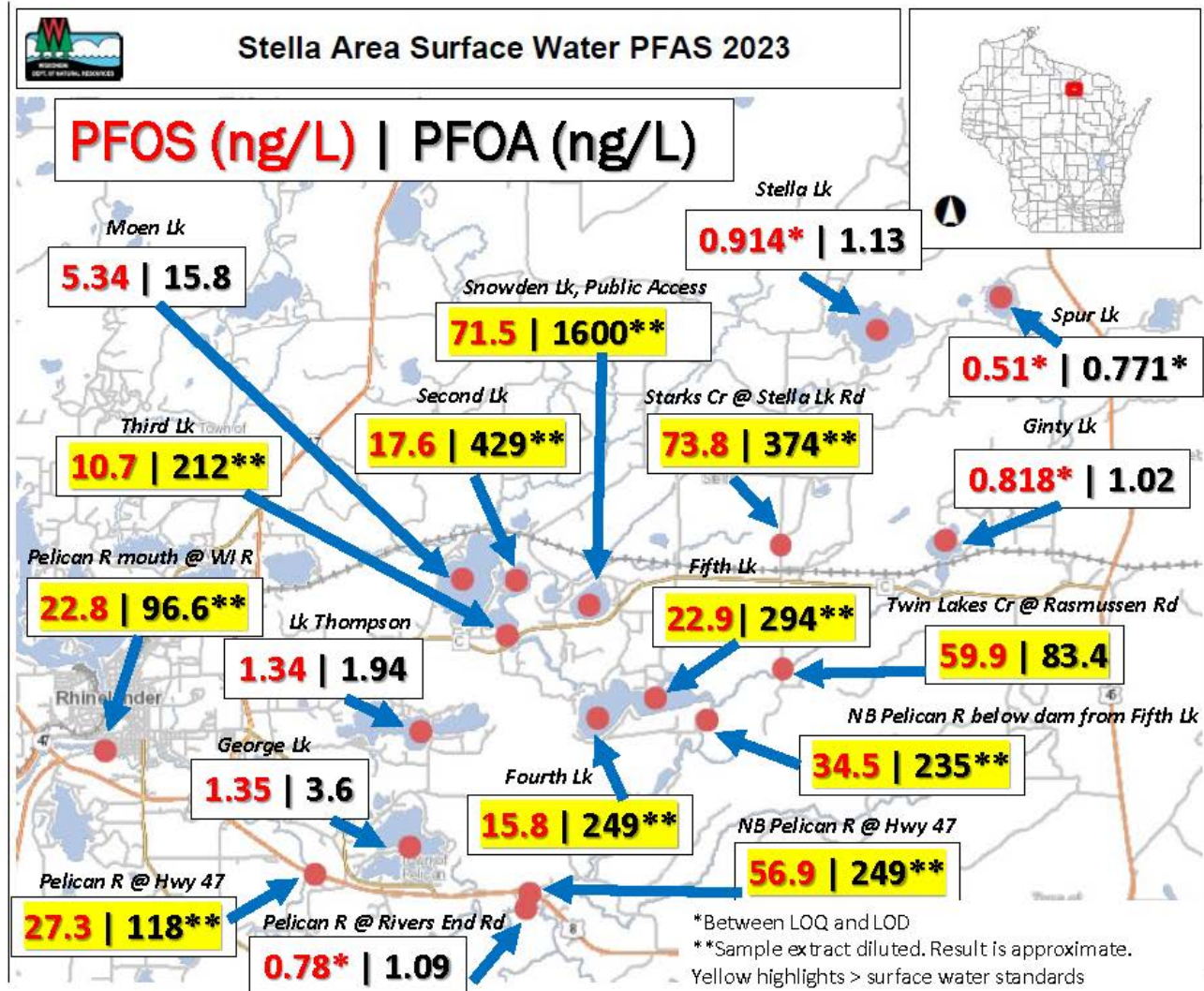


Figure 3. Map of Snowden Lake PFAS Surface Water Sampling Sites, 07/27/23. Results shown for only PFOS and PFOA in ng/L (ppt). Current WI PFAS surface water standards are PFOS = 8.0 ng/L (ppt) and PFOA = 95 ng/L (ppt). See Table 3 for full list of compounds analyzed.

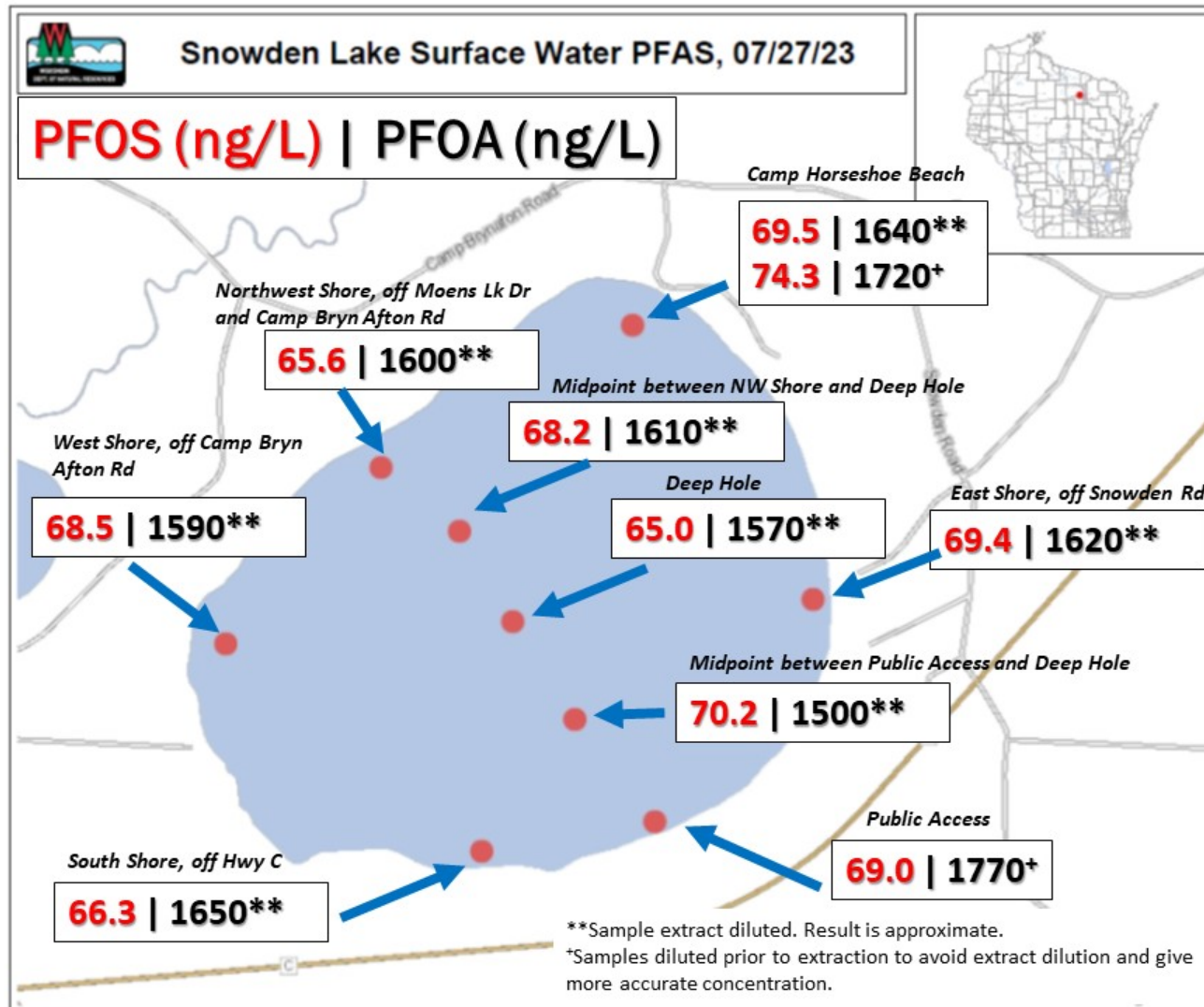


Table 1. Rhinelander Area Wisconsin River PFAS Surface Water Results 2023. Complete list PFAS analyzed by the WI State Lab of Hygiene.

Description	Acronym	Phillips St	Davenport, West	Davenport, East	Norway St	Hwy 47/8	W of Timber Lk	W of Davis Lk	E of Loon Lk	1/3 mi above dam	Hat Rapids Rd	Off Camp 10 Rd
Perfluoro-n-butanoic acid	PFBA	1.91	2.15	2.57	2.18	2.96	3.15	3.43	2.93	3.06	3.03	2.92
Perfluoro-n-pentanoic acid	PFPeA	0.932*	1.33	2.2	1.37	3.73	4.84	5.19	4.37	4.35	4.31	4.5
Perfluoro-n-hexanoic acid	PFHxA	1.12	1.54	2.48	1.64	4.05	5.1	5.4	4.65	4.72	4.86	4.85
Perfluoro-n-heptanoic acid	PFHpA	1.11	1.13	2.17	1.2	4.43	4.52	4.65	4.09	4.16	4.27	4.17
Perfluoro-n-octanoic acid	PFOA	1.47	1.5	3.31	1.62	11.3	10.7	10.7	10.3	10.2	10.2	9.33
Perfluoro-n-nonanoic acid	PFNA	0.381*	0.356*	0.736*	0.38*	0.877*	0.91*	0.869*	0.746*	0.745*	0.793*	0.682*
Perfluoro-n-decanoic acid	PFDA	<0.272	<0.257	<0.267	<0.274	<0.261	<0.275	<0.262	<0.268	<0.267	<0.280	<0.264
Perfluoro-n-undecanoic acid	PFUnA	<0.245	<0.231	<0.240	<0.247	<0.234	<0.248	<0.236	<0.241	<0.240	<0.252	<0.237
Perfluoro-n-dodecanoic acid	PFDoA	<0.249	<0.235	<0.244	<0.250	<0.238	<0.252	<0.240	<0.245	<0.244	<0.256	<0.241
Perfluoro-n-tridecanoic acid	PFTriDA	<0.379	<0.358	<0.372	<0.382	<0.363	<0.384	<0.366	<0.373	<0.372	<0.390	<0.368
Perfluoro-n-tetradecanoic acid	PFTeDA	<0.252	<0.237	<0.247	<0.253	<0.241	<0.255	<0.243	<0.248	<0.247	<0.259	<0.244
Perfluoro-n-butananesulfonic acid	PFBS	0.261*	0.262*	0.43*	0.305*	0.34*	0.36*	0.378*	0.333*	0.346*	0.388*	0.356*
Perfluoro-n-pentanesulfonic acid	PFPeS	<0.181	<0.171	<0.178	<0.183	<0.174	<0.184	<0.175	<0.179	<0.178	<0.186	<0.176
Perfluoro-n-hexanesulfonic acid	PFHxS	<0.177	<0.167	0.99	<0.179	0.285*	0.362*	0.404*	0.338*	0.462*	0.506*	0.46*
Perfluoro-n-heptanesulfonic acid	PFHpS	<0.214	<0.201	<0.209	<0.215	<0.204	<0.216	<0.206	<0.210	<0.210	<0.219	<0.207
Perfluoro-n-octanesulfonic acid	PFOS	0.384*	0.534*	2.86	0.689*	2.83	2.68	2.94	2.78	2.74	2.8	2.36
Perfluoro-n-nonanesulfonic acid	PFNS	<0.184	<0.174	<0.181	<0.186	<0.176	<0.187	<0.178	<0.181	<0.181	<0.189	<0.179
Perfluoro-n-decanesulfonic acid	PFDS	<0.291	<0.275	<0.286	<0.294	<0.279	<0.295	<0.281	<0.287	<0.286	<0.300	<0.283
Perfluoro-n-dodecanesulfonic acid	PFDoS	<0.386	<0.364	<0.378	<0.389	<0.370	<0.391	<0.372	<0.380	<0.379	<0.397	<0.374
4:2 Fluorotelomer sulfonic acid	4:2 FTS	<0.208	<0.196	<0.204	<0.209	<0.199	<0.210	<0.200	<0.204	<0.204	<0.213	<0.201
6:2 Fluorotelomer sulfonic acid	6:2 FTS	<0.237	<0.223	<0.232	<0.239	<0.227	<0.240	<0.228	<0.233	<0.233	<0.244	<0.230
8:2 Fluorotelomer sulfonic acid	8:2 FTS	<0.144	<0.136	<0.141	<0.145	<0.138	<0.146	<0.139	<0.142	<0.142	<0.148	<0.140
Perfluorooctanesulfonamide	PFOSA	<0.178	<0.168	<0.175	<0.180	<0.171	<0.181	<0.172	<0.176	<0.175	<0.183	0.214*
N-Ethyl perfluorooctanesulfonamidoethanol	NETFOSE	<0.358	<0.338	<0.351	<0.360	<0.343	<0.362	<0.345	<0.352	<0.351	<0.368	<0.347
N-Methyl perfluorooctanesulfonamidoethanol	NMeFOSE	<0.228	<0.215	<0.224	<0.230	<0.218	<0.231	<0.220	<0.225	<0.224	<0.235	<0.221
N-ethyl perfluorooctanesulfonamide	NETFOSA	<0.324	<0.305	<0.317	<0.326	<0.310	<0.328	<0.312	<0.319	<0.318	<0.333	<0.314
N-methyl perfluorooctanesulfonamide	NMeFOSA	<0.378	<0.357	<0.371	<0.381	<0.362	<0.383	<0.365	<0.372	<0.372	<0.389	<0.367
N-ethyl perfluorooctanesulfonamidoacetic acid	NETFOSAA	<0.194	<0.183	<0.190	<0.195	0.261*	0.408*	0.89*	1.35	2.82	3.83	3.03

N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	<0.329	<0.310	<0.322	<0.331	<0.315	<0.333	<0.317	<0.323	<0.323	<0.338	<0.319
4,8-Dioxa-3H-perfluorononanoic acid	HFPO-DA	<0.289	<0.272	<0.283	<0.291	<0.276	<0.292	<0.278	<0.284	<0.283	<0.297	<0.280
Hexafluoropropylene oxide dimer acid	DONA	<0.219	<0.207	<0.215	<0.221	<0.210	<0.222	<0.211	<0.216	<0.215	<0.225	<0.213
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	<0.186	<0.176	<0.183	<0.188	<0.178	<0.188	<0.180	<0.183	<0.183	<0.191	<0.181
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	<0.181	<0.171	<0.178	<0.183	<0.174	<0.184	<0.175	<0.179	<0.178	<0.186	<0.176

All concentrations in ng/L. Values with (<) are below the LOD.

*Value between Limit of Detection (LOD) and Limit of Quantitation (LOQ)

**Sample extract diluted. True isotope dilution was not achieved. Result is approximate.

Table 2. Town of Stella Area PFAS Surface Water Results 2023. Complete list of PFAS analyzed by the WI State Lab of Hygiene.

Acronym	Spur Lk	Stella Lk	Ginty Lk	Lk Thompson	George Lk	Moен Lk	Snowdon Lk	Starks Cr @ Stella Lk Rd	Second Lk	Third Lk	Fourth Lk	Fifth Lk	Twin Lakes Cr @ Rasmussen Rd	NB Pelican R below dam from Fifth Lk	NB Pelican R HWY 47	Pelican R @ Rivers End Rd	Pelican R @ Hwy 47	Pelican R mouth @ WI R
PFBA	3.28	2.77	2.45	2.75	3.02	3.17	209	18.7	48.6	22.7	29.3	26.2	7.58	23.1	22.8	3.86	12.8	11.1
PFPeA	<0.275	<0.266	0.616*	1.88	2.56	1.62	679**	57.3	157**	76.1	125	104	11.6	71.2	69.9	0.873*	36	29.2
PFHxA	0.616*	0.78*	0.552*	1.51	2.16	2.74	734**	82.3	147**	87.3	89.8**	131	13.9	76.6	74.5	0.829*	37.8	32.1
PFHpA	0.927*	0.882*	0.758*	1.15	1.95	4.05	886**	105**	173**	92.7	89.9**	120	19.2	89.5	86.5	1.03	46.8	38.9
PFOA	0.771*	1.13	1.02	1.94	3.6	15.8	1600**	374**	429**	212**	249**	294**	83.4	235**	249**	1.09	118**	96.6**
PFNA	0.422*	0.536*	0.417*	0.582*	0.623*	0.544*	15.1	2.24	5.86	2.93	4.74	6.65	7.84	9.91	13	0.448*	6.52	5.28
PFDA	<0.271	<0.262	<0.257	<0.257	<0.254	<0.262	1.72	0.293*	0.348*	<0.266	0.354*	0.438*	<0.270	0.422*	0.357*	<0.259	<0.255	<0.268
PFUnA	<0.244	<0.236	<0.231	<0.231	<0.229	<0.236	<0.244	<0.233	<0.242	<0.240	<0.234	<0.235	<0.243	<0.245	<0.234	<0.233	<0.229	<0.241
PFDoA	<0.248	<0.240	<0.235	<0.235	<0.232	<0.239	<0.248	<0.237	<0.246	<0.244	<0.237	<0.239	<0.246	<0.249	<0.238	<0.236	<0.233	<0.245
PFTTrDA	<0.378	<0.366	<0.358	<0.358	<0.355	<0.365	<0.378	<0.361	<0.375	<0.372	<0.362	<0.364	<0.376	<0.379	<0.363	<0.361	<0.355	<0.373
PFTeDA	<0.251	<0.243	<0.237	<0.237	<0.235	<0.242	<0.250	<0.240	<0.249	<0.246	<0.240	<0.241	<0.249	<0.252	<0.241	<0.239	<0.236	<0.248
PFBS	0.271*	0.289*	0.279*	0.388*	0.42*	0.297*	3.9	1.66	0.655*	0.485*	0.527	0.534*	0.364*	0.461*	0.48*	0.295*	0.431*	0.538*
PFPeS	<0.181	<0.175	<0.171	<0.171	<0.170	<0.175	2.28	0.523*	0.223*	<0.178	<0.173	<0.174	<0.180	<0.181	<0.173	<0.172	<0.170	<0.179
PFHxS	<0.177	<0.171	<0.167	<0.168	0.363*	0.228*	22.2	6.62	3.19	1.68	1.91	1.74	1.04	1.8	1.98	<0.169	1.08	1.03
PFHpS	<0.213	<0.206	<0.201	<0.202	<0.200	<0.206	4.16	1.71	0.748*	0.383*	0.556*	0.676*	1.72	1.1	2.01	<0.203	0.884*	0.762*
PFOS	0.51*	0.914*	0.818*	1.34	1.35	5.34	71.5	73.8	17.6	10.7	15.8	22.9	59.9	34.5	56.9	0.78*	27.3	22.8
PFNS	<0.184	<0.178	<0.174	<0.174	<0.172	<0.177	<0.183	<0.175	<0.182	<0.181	<0.176	<0.177	<0.183	<0.184	<0.176	<0.175	<0.173	<0.181
PFDS	<0.291	<0.281	<0.275	<0.275	<0.273	<0.281	<0.290	<0.278	<0.288	<0.286	<0.278	<0.280	<0.289	<0.291	<0.279	<0.277	<0.273	<0.287
PFDoS	<0.385	<0.372	<0.364	<0.364	<0.361	<0.372	<0.384	<0.368	<0.382	<0.378	<0.368	<0.371	<0.383	<0.386	<0.369	<0.367	<0.362	<0.380
4:2 FTS	<0.207	<0.200	<0.196	<0.196	<0.194	<0.200	<0.207	<0.198	<0.205	<0.203	<0.198	<0.199	<0.206	<0.208	<0.199	<0.197	<0.195	<0.204
6:2 FTS	<0.236	<0.229	<0.223	<0.224	<0.222	<0.228	11.7	1.3	32.6	31.2	4.64	2.87	1.53	7.38	4.38	<0.225	1.25	0.862*
8:2 FTS	<0.144	<0.139	<0.136	<0.136	<0.135	<0.139	<0.144	<0.137	<0.143	<0.141	<0.138	<0.138	<0.143	<0.144	<0.138	<0.137	<0.135	<0.142
PFOSA	0.374*	<0.172	<0.168	0.353	0.278*	<0.172	0.658*	0.486*	0.201*	<0.175	0.209*	0.185*	<0.177	0.32*	<0.171	0.213*	<0.167	0.181*
NEtFOSE	<0.357	<0.345	<0.338	<0.338	<0.335	<0.344	<0.356	<0.341	<0.354	<0.350	<0.341	<0.343	<0.355	<0.358	<0.342	<0.340	<0.335	<0.352
NMeFOSE	<0.227	<0.220	<0.215	<0.215	<0.213	<0.220	<0.227	<0.217	<0.226	<0.223	<0.218	<0.219	<0.226	<0.228	<0.218	<0.217	<0.214	<0.225
NEtFOSA	<0.323	<0.312	<0.305	<0.306	<0.303	<0.312	<0.322	<0.308	<0.320	<0.317	<0.309	<0.311	<0.321	<0.324	<0.310	<0.308	<0.303	<0.319
NMeFOSA	<0.377	<0.365	<0.357	<0.357	<0.354	<0.364	<0.377	<0.360	<0.374	<0.371	<0.361	<0.363	<0.375	<0.378	<0.362	<0.360	<0.354	<0.372

NEtFOSAA	<0.193	<0.187	<0.183	<0.183	<0.181	<0.187	2.72	0.499*	<0.192	<0.190	<0.185	<0.186	<0.192	<0.194	<0.186	<0.184	<0.182	<0.191
NMeFOSAA	<0.328	<0.317	<0.310	<0.310	<0.307	<0.316	<0.327	<0.313	<0.325	<0.322	<0.314	<0.315	<0.326	<0.329	<0.314	<0.312	<0.308	<0.323
HFPO-DA	<0.288	<0.278	<0.272	<0.272	<0.270	<0.278	<0.287	<0.275	<0.285	<0.283	<0.275	<0.277	<0.286	<0.289	<0.276	<0.274	<0.270	<0.284
DONA	<0.219	<0.212	<0.207	<0.207	<0.205	<0.211	<0.218	<0.209	<0.217	<0.215	<0.209	<0.211	<0.217	<0.219	<0.210	<0.209	<0.205	<0.216
9Cl- PF3ONS	<0.186	<0.180	<0.176	<0.176	<0.174	<0.179	<0.185	<0.177	<0.184	<0.182	<0.178	<0.179	<0.185	<0.186	<0.178	<0.177	<0.174	<0.183
11Cl- PF3OUdS	<0.181	<0.175	<0.171	<0.171	<0.170	<0.175	<0.181	<0.173	<0.179	<0.178	<0.173	<0.174	<0.180	<0.181	<0.173	<0.172	<0.170	<0.179

All concentrations in ng/L. Values with (<) are below the LOD.

*Value between Limit of Detection (LOD) and Limit of Quantitation (LOQ)

**Sample extract diluted. True isotope dilution was not achieved. Result is approximate.

Table 3. PFAS Surface Water sampling results from Snowden Lake, 07/27/2023. Complete list of PFAS analyzed by the WI State Lab of Hygiene.

Description	Acronym	Camp Horseshoe Beach	Camp Horseshoe Beach (Dup) ⁺	Public Access ⁺⁺	E Shore - off Snowden Rd	S Shore - off Hwy C	W Shore - off Camp Bryn Afton Rd	NW Shore - off Moens Lk Dr and Camp Bryn Afton Rd	Midpoint between NW Shore and DH	Deep Hole (DH)	Midpoint between Public Access and DH
Perfluoro-n-butanoic acid	PFBA	220	195	230	226	223	212	211	223	222	241
Perfluoro-n-pentanoic acid	PFPeA	702	780	819	691	712	703	708	681	689	675
Perfluoro-n-hexanoic acid	PFHxA	817	860	865	791	782	767	807	741	778	763
Perfluoro-n-heptanoic acid	PFHpA	888	959	1020	893	955	884	920	890	900	868
Perfluoro-n-octanoic acid	PFOA	1640**	1720	1770	1620**	1650**	1590**	1600**	1610**	1570**	1500**
Perfluoro-n-nonanoic acid	PFNA	15.9	14.6	16.2	16.2	15.7	15.1	15.5	15.5	15	16.5
Perfluoro-n-decanoic acid	PFDA	1.63	<6.93	1.56	1.61	1.59	1.63	1.51	1.52	1.37	1.65
Perfluoro-n-undecanoic acid	PFUnA	<0.256	<6.23	<0.243	<0.255	<0.241	<0.244	<0.251	<0.259	<0.237	<0.250
Perfluoro-n-dodecanoic acid	PFDoA	<0.260	<6.33	<0.247	<0.259	<0.245	<0.248	<0.255	<0.263	<0.241	<0.253
Perfluoro-n-tridecanoic acid	PFTTrDA	<0.397	<9.66	<0.377	<0.395	<0.373	<0.378	<0.389	<0.401	<0.368	<0.387
Perfluoro-n-tetradecanoic acid	PFTeDA	<0.263	<6.41	<0.250	<0.262	<0.248	<0.251	<0.258	<0.266	<0.244	<0.256
Perfluoro-n-butanefulfonic acid	PFBS	4.29	7.25	4.41	4.23	4.26	4.24	4.03	4.16	4.31	4.5
Perfluoropentanesulfonic acid	PFPeS	2.39	<4.62	2.38	2.44	2.39	2.3	2.48	2.41	2.54	2.59
Perfluoro-n-hexanesulfonic acid	PFHxS	23.7	33.8	23.9	24.9	24.1	22.3	23.3	24.3	24.5	26
Perfluoro-n-heptanesulfonic acid	PFHpS	3.62	<5.44	3.65	3.57	3.41	3.41	3.43	3.51	3.33	3.81
Perfluoro-n-octanesulfonic acid	PFOS	69.5	74.3	69	69.4	66.3	68.5	65.6	68.2	65	70.2
Perfluorononanesulfonic acid	PFNS	<0.193	<4.69	<0.183	<0.192	<0.181	<0.184	<0.189	<0.195	<0.179	<0.188
Perfluoro-n-decanesulfonic acid	PFDS	<0.305	<7.42	<0.290	<0.303	<0.287	<0.291	<0.299	<0.308	<0.283	<0.297
Perfluorododecanesulfonic acid	PFDoS	<0.404	<9.83	<0.384	<0.402	<0.380	<0.385	<0.396	<0.408	<0.374	<0.394
4:2 Fluorotelomer sulfonic acid	4:2 FTS	<0.217	<5.29	<0.207	<0.216	<0.204	<0.207	<0.213	<0.220	<0.201	<0.212
6:2 Fluorotelomer sulfonic acid	6:2 FTS	4.85	10.4	10.1	7.86	7.26	3.46	4.64	4.55	4.88	6.43
8:2 Fluorotelomer sulfonic acid	8:2 FTS	<0.151	<3.67	<0.144	<0.150	<0.142	<0.144	<0.148	<0.153	<0.140	<0.147
Perfluorooctanesulfonamide	PFOSA	0.437*	<4.54	0.449*	0.597*	0.409*	0.637*	0.577*	0.406*	0.433*	0.419*
N-Ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	<0.374	<9.11	<0.356	<0.372	<0.352	<0.357	<0.367	<0.378	<0.347	<0.365
N-Methyl perfluorooctanesulfonamidoethanol	NMeFOSE	<0.239	<5.81	<0.227	<0.237	<0.224	<0.227	<0.234	<0.241	<0.221	<0.233

N-ethyl perfluorooctanesulfonamide	NEtFOSA	<0.339	<8.24	<0.322	<0.337	<0.319	<0.323	<0.332	<0.342	<0.314	<0.330
N-methyl perfluorooctanesulfonamide	NMeFOSA	<0.396	<9.63	<0.376	<0.394	<0.372	<0.377	<0.388	<0.400	<0.367	<0.386
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	3.27	<4.94	2.97	2.65	2.93	3.32	2.44	2.62	2.45	2.48
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	<0.344	<8.37	<0.327	<0.342	<0.323	<0.327	<0.337	<0.347	<0.319	<0.335
4,8-Dioxa-3H-perfluorononanoic acid	HFPO-DA	<0.302	<7.35	<0.287	<0.300	<0.284	<0.288	<0.296	<0.305	<0.280	<0.294
Hexafluoropropylene oxide dimer acid	DONA	<0.230	<5.59	<0.218	<0.228	<0.216	<0.219	<0.225	<0.232	<0.213	<0.224
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	<0.195	<4.74	<0.185	<0.194	<0.183	<0.186	<0.191	<0.197	<0.181	<0.190
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	<0.190	<4.62	<0.180	<0.189	<0.178	<0.181	<0.186	<0.192	<0.176	<0.185

All concentrations in ng/L. Values with (<) are below the LOD.

*Value between Limit of Detection (LOD) and Limit of Quantitation (LOQ)

**Sample extract diluted. True isotope dilution was not achieved. Result is approximate.

*Sample diluted 20x prior to extraction to bring high concentrations within analytical range but may have caused compounds with low concentration to become non detectable. Refer to non-dup sample for low concentrations.

**Results are a combination of two analyses. Sample diluted 20x prior to extraction and extracted non-diluted. Results represent both extractions to obtain full range of detectable concentrations.