

Granular Activated Carbon (GAC) Study			Sampling Date:	05/03/18				05/16/18				05/30/18			06/13/18			06/27/18			07/11/18			07/26/18			08/08/18			08/22/18			09/05/18			10/03/18		
Location 48: GAC system installed 4/12/18			Flowmeter Reading (gallons):	4106.4				6667.4				9924.8			12262.8			14220.2			16449.7			19194.9			21129.2			23731.5			25712.3			30640.6		
GAC Treatment Stages:			Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *	Raw	Pre	Mid	Post *
Chemical Name	CASN	Estimated Concentration	Reporting Units:			ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (PFPrOPrA, "GenX")	13252-13-6		187	185	-	-	159	155	-	-	204	-	-	180	-	-	174	-	-	162	-	-	187	-	-	158	-	-	177	-	-	155	-	-	216	-	-	
Perfluoro-2-methoxyacetic acid (PFMOAA)	674-13-5	X	78	77.9	-	-	51.6	58.2	-	-	38.5	-	-	106	-	-	104	-	-	108	-	-	97.9	-	-	95.6	-	-	94.2	-	-	96.9 J	4.82	1.70 J	108	-	-	
Perfluoro-3-methoxy-propanoic acid (PFMOPrA)	377-73-1	X	413	408	-	-	311	324	-	-	484	-	-	446	-	-	452	3.71	-	354	3.77 J	-	426	-	-	373	2.89 J	-	491	3.95	-	410	4.42	-	411	2.75 J	-	
Perfluoro-4-methoxy-butanolic acid (PFMOBA)	863090-89-5	X	112	108	-	7.01 *	97	94.8	-	-	117	-	-	116	-	-	106	-	-	111	-	-	98.2	-	-	98.4	-	-	100	-	-	94.3 J	-	-	104	-	-	
Perfluoro-(3,5-dioxahexanoic) acid (PFO2HxA)	39492-88-1	X	88.2	92.2	-	-	82.1	79	-	-	108	-	-	100 J	-	-	103	-	-	103	-	-	92.9	-	-	88.5	-	-	97.5	-	-	91.7 J	5.16	-	121	-	-	
Perfluoro-(3,5,7-trioxaoctanoic) acid (PFO3OA)	39492-89-2	X	15.1	13.8	-	-	8.48	10.3	-	-	14.9	-	-	10.8	-	-	13.3	-	-	15.2	-	-	14.1	-	-	12.7	-	-	13.4	-	-	11.2	2.49 J	-	22.4	-	-	
Perfluoro-(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	39492-90-5	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.24 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.30 J	-	-	1.86 J	-	-
Nafion Byproduct 1	29311-67-9	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nafion Byproduct 2	749836-20-2	X	9.67	9.33	-	-	6.21	6.52	-	-	8.24	-	-	8.84	-	-	8.1	-	-	9.26	-	-	8.78	-	-	7.6	-	-	8.53	-	-	7.77	-	-	7.71	-	-	
Perfluoro-butane-sulfonate (PFBS)	375-73-5		6.25	6.14	-	-	5.85	6.07	-	-	6.74	-	-	6.18	-	-	6.63	-	-	5.52	-	-	7.43	-	-	6.13	-	-	5.57	-	-	6.08	-	-	5.69	-	-	
Perfluoro-butyric acid (PFBA)	375-22-4		8.42	7.58	-	-	7.46	7.53	-	-	7.44 J	-	-	7.83	-	-	7.42	-	-	-	-	-	8.72	-	-	7.63	-	-	7.6	-	-	7.43	-	-	7.59	-	-	
Perfluoro-pentanoic acid (PFPeA)	2706-90-3		9.16	9.64	-	-	8.83	9.15	-	-	9.65	-	-	9.51	-	-	9.05	-	-	8.69	-	-	12.3	-	-	10.1	-	-	9.19	-	-	9.75	-	-	8.48	-	-	
Perfluoro-pentane-sulfonate (PFPeS)	2706-91-4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-hexanesulfonate (PFHxS)	355-46-4		5.16	5.53	-	-	4.55	4.54	-	-	5.18	-	-	4.62	-	-	4.79	-	-	4.61	-	-	5.13	-	-	4	-	-	4.48	-	-	4.68	-	-	5.12	-	-	
Perfluoro-hexanoic acid (PFHxA)	307-24-4		5.2	4.15	-	-	4.04	4.44	-	-	4.09	-	-	4.63	-	-	4.11	-	-	3.74	-	-	5.18	-	-	4.22	-	-	4.35	-	-	4.57	-	-	4.33	-	-	
Perfluoro-heptanesulfonate (PFHpS)	375-92-8		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-heptanoic acid (PFHpA)	375-85-9		1.31 J	1.39 J	-	-	1.19 J	1.22 J	-	-	1.67 J	-	-	1.64 J	-	-	1.23 J	-	-	1.17 J	-	-	2.03	-	-	1.47 J	-	-	1.43 J	-	-	1.54 J	-	-	1.68 J	-	-	
Perfluorooctane-sulfonate (PFOS)	1763-23-1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.33 J	1.11 J	-	-	
Perfluoro-octanoic acid (PFOA)	335-67-1		1.85	1.74 J	-	-	1.71 J	1.70 J	-	-	2.19	5.69	-	1.82 J	-	-	1.65 J	-	-	1.74 J	-	-	2.26	-	-	2.21	-	-	1.78 J	-	-	2.23	-	-	2.45	-	-	
Perfluoro-nonane-sulfonate (PFNS)	68259-12-1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-nonanoic acid (PFNA)	375-95-1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-decanesulfonate (PFDS)	335-77-3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-decanoic acid (PFDA)	335-76-2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-undecanoic acid (PFUdA)	2058-94-8		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-dodecanoic acid (PFDoA)	307-55-1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-tridecanoic acid (PFTrDA)	72629-94-8		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-tetradecanoic acid (PFTeDA)	376-06-7		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Fluorotelomer sulfonate 4:2 (4:2 FTS)	757124-72-4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Fluorotelomer sulfonate 6:2 (6:2 FTS)	27619-97-2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Fluorotelomer sulfonate 8:2 (8:2 FTS)	39108-34-4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perfluoro-octane-sulfonamide (PFOSA)	754-91-6		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
N-methylperfluoro-1-octane-sulfon-amidoacetic acid (N-MeFOSAA)	2355-31-9		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
N-ethylperfluoro-1-octane-sulfon-amidoacetic acid (N-EtFOSAA)	2991-50-6		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

GAC Treatment Stages: Raw = Untreated well water; Pre = Sediment & iron-filtered water; Mid = After 1st carbon tank & before the 2nd carbon tank; Post = After all GAC system treatment stages, "finished" water.

X = The reported PFAS concentrations are estimated for this compound. Samples were quantified using a non-certified calibration standard because a certified standard for this PFAS was not available at the time of.

ng/L = Nanograms per liter, "parts-per-trillion".

J = Estimated concentration is greater than the analytical method detection limit and less than the sample-specific reporting limit.

- = Not detected. Sample reporting limits (RLs) are typically in the range of approximately 1 - 5 ng/L for treated water (Mid and Post). RLs may be higher (up to approximately 200 ng/L) for untreated water (Raw and Pre) when dilutions are required.

\* = Laboratory analysis of the first bottle collected for the Post sample on 5/03/18 showed evidence of sample contamination. A second back-up bottle collected at the same time was analyzed and those results are reported here. For additional information, please contact the DEQ Division of Waste Management at 919-707-8200.

\*\* = Duplicate samples are periodically collected to evaluate the consistency of results. This is in addition to the back-up bottle that is stored in case the sample needs to be re-analyzed.