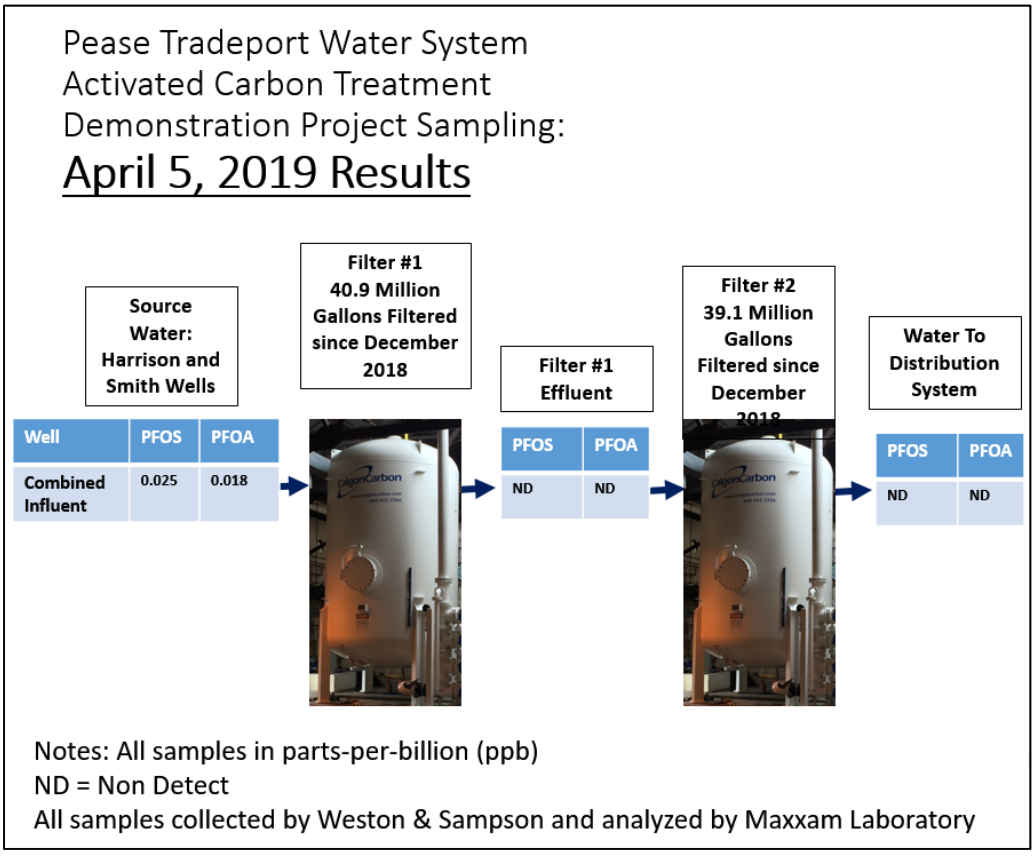
City of
Portsmouth
Department of Public Works

May 17, 2019

PEASE TRADEPORT WATER SUPPLY UPDATE

Demonstration Filter Performance

The activated carbon in both of the demonstration filters was changed out in November 2018. The City's engineering consultant continues to sample the performance of the activated carbon filters based on the amount of water treated. The graphic below shows the most recent source water sampling and treated filter water quality results for the PFOS and PFOA.



All samples collected are analyzed by Maxxam laboratories, the same laboratory that has been performing the Pease well PFAS analysis since 2014. Data for the Pease Well sampling is uploaded to the City's website when it is validated by the Air Force's consultant and sent to the City. A summary of the data for the Pease Well Carbon Treatment Demonstration Project is provided on the City's website. This update includes all data separated into two tables, Table 1 includes data from the start of the Demonstration project in September 2016 until the filter media changeout in December 2018. Table 2 includes data after that.

ONGOING WATER QUALITY MONITORING AND UPDATES

The Air Force's consultant continues to perform routine sampling of the water supply wells in the Pease water system. In addition to these water supply wells, the Air Force's consultant samples other monitoring wells in the surrounding area to track the aquifer and monitor for any PFAS moving toward the supply wells. Currently, with the demonstration filters on line, the supply wells are sampled monthly and eleven monitoring wells are sampled quarterly. Sampling data is posted on the City's website once it has been validated by the Air Force's engineering consultant. Information is also posted on the City's website for the City of Portsmouth's PFAS sampling program.

NON TARGET ANALYSIS STUDY

Testing for Pease continues to work with the City and our engineering consultant to periodically sample the water from the filters to identify "non target" PFAS compounds that might exist in the water but do not show up in the current sampling. Professors from the Colorado School of Mines and Northeastern are performing the work and the analysis. To date we have not received any analysis results, however, when received and verified we will include in our next update.

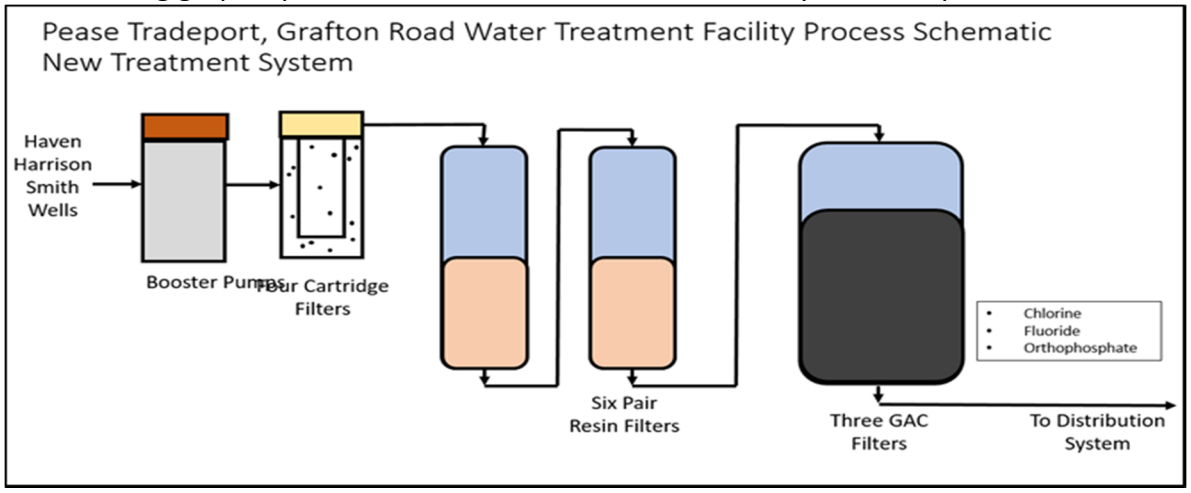
FINAL TREATMENT SYSTEM CONSTRUCTION

Rendering of Pease Drinking Water Treatment Facility Upgrade – Grafton Road

The City of Portsmouth and the United States Air Force entered into an agreement to treat perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) from water supplied by

the Smith, Harrison and Haven Wells serving the Pease Tradeport drinking water system. The agreement provides the City with up to $14.3 million to reimburse the cost of the construction and engineering administration of the final treatment system for all three wells, which will include a dual filtration system consisting of resin and granular activated carbon filters.

The following graphic provides a schematic of the treatment system components:



Kinsmen Corporation from Hookset, New Hampshire was the selected contractor for this project and they began work in April. The initial phase of the project involves the demolition of old equipment in the existing building and excavation in the area to relocate pipes to allow for the construction of the final treatment system buildings. The following photos were taken in early May 2019:

EPA HEALTH ADVISORY AND NEW HAMPSHIRE DES REGULATIONS

In May 2016, the EPA issued a Lifetime Health Advisory of 0.070 µg/L (micrograms per liter) for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS). The State of New Hampshire is currently working on Setting/Reevaluating Standards (Drinking Water Maximum Contaminant Levels) for: – PFOA – PFOS – PFNA – PFHxS. According to information provided by the NHDES's website, "Using the most recent and best science available, NHDES is proposing the following drinking water standards that are protective of the most sensitive populations over a lifetime." Their initial proposed limits were as follows:

- PFOA – 38 ppt
- PFOS – 70 ppt
- PFOA & PFOS – 70 ppt
- PFHxS – 85 ppt
- PFNA – 23 ppt

An update on their website posted on February 21, 2019 noted that "New Information May Change NHDES Proposed PFAS Drinking Water Standards." The following information was provided:

> On December 31, 2018, the New Hampshire Department of Environmental Services (NHDES) initiated rulemaking to establish Maximum Contaminant Levels (MCLs) and Ambient Groundwater Quality Standards (AGQS) for four per- and polyfluoroalkyl substances (PFAS) – perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), perfluorononanoic acid (PFNA) and perfluorohexanesulfonic acid (PFHxS).
>
> After the initial proposal, new scientific information was evaluated by NHDES that may change the proposed drinking water standards. Specifically, a new assessment tool developed by the Minnesota Department of Health allows for a quantitative estimate of infant and child exposure to PFAS through breastmilk and/or formula. This peer-reviewed model was published at the beginning of January after NHDES filed its Initial Proposal. NHDES's assessment of the exposure model for the interaction of drinking water levels of PFAS and breastfeeding (Goeden et al, 2019) indicates that health-based drinking water or groundwater standards for PFOA and PFOS would potentially be lowered significantly below the initial proposal figures of 38 parts per trillion (ppt) and 70 ppt, respectively. NHDES is continuing to review the suitability of this assessment tool for PFHxS and PFNA based on this and other studies released in 2019. NHDES will need to complete a review of the technical and cost implications of these health-based calculations, and any public comment received, prior to issuance of the Final Proposal.

The NHDES website is providing updates and additional information regarding upcoming public meetings about these standards. This site can be accessed at:

https://www.des.nh.gov/organization/commissioner/max-contaminant-levels.htm

Additional information can be accessed at:

www.cityofportsmouth.com/publicworks/water/pease-tradeport-water-system

or by calling Al Pratt, Water Resources Manager, at: 603-520-0622 or Brian Goetz, Deputy Director of Public Works at: 603-766-1420

Table 2
Summary of PFAS Analytical Results
Demonstration Project
December 2018 to April 2019

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Method Detection Limit (MDL)						0.0065	0.0055	0.0053	0.0049	0.0040	0.0061	0.0019	0.0066	0.0043	0.0066	0.0057	0.0036	0.0047	0.0040	0.0046	0.0053	0.0046	0.0058	0.0033	0.0036	0.0052	0.0032	0.0037	
Reported Detection Limit (RDL)						0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	
GAC changed out in both vessels (11/7/2018)																													
Combined Raw	06-Dec-18	2.2	423	0.4	77	ND	ND	ND	ND	ND	ND	ND	0.0092 J	ND	ND	ND	ND	0.0140 J	0.0960	0.0360	0.0290	ND	ND	0.0470	0.0330	ND	ND	ND	0.0760
Filter 1- 25%	06-Dec-18	2.2	423	0.4	77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	10-Jan-19	6.9	1,320	5.1	973	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0280	0.0100 J	0.0084 J	ND	ND	0.0160 J	0.0100 J	ND	ND	ND	0.0244 J
Filter 1- 25%	10-Jan-19	6.9	1,320	5.1	973	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2-100%	10-Jan-19	6.9	1,320	5.1	973	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	07-Feb-19	18.0	3,430	16.2	3,083	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	0.0130 J	0.0600	0.0220	0.0180 J	ND	ND	0.0270	0.0210	ND	ND	ND	0.0450 J
Filter 1- 25%	07-Feb-19	18.0	3,430	16.2	3,083	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2-100%	07-Feb-19	18.0	3,430	16.2	3,083	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	07-Mar-19	29.0	5,590	27.2	5,243	ND	ND	ND	ND	ND	ND	0.0084 J	0.0130 J	ND	ND	ND	ND	0.0160 J	0.0920	0.0320	0.0280	ND	ND	0.0420	0.0310	ND	ND	ND	0.0700
Filter 1- 25%	07-Mar-19	29.0	5,590	27.2	5,243	ND	ND	ND	ND	ND	ND	ND	0.0089 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2-100%	07-Mar-19	29.0	5,590	27.2	5,243	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	05-Apr-19	40.9	7,816	39.1	7,469	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0091 J	0.0660	0.0210	0.0180 J	ND	ND	0.0250	0.0210	ND	ND	ND	0.0430 J
Filter 1- 25%	05-Apr-19	40.9	7,816	39.1	7,469	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0059 J	ND	ND	ND	ND
Filter 1- 50%	05-Apr-19	40.9	7,816	39.1	7,469	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2-100%	05-Apr-19	40.9	7,816	39.1	7,469	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
Grey text indicates the parameter was not analyzed or not detected.
All concentrations in µg/L - micrograms per liter (ppb)
J - The result is an estimated value.
B - Detected in Blank.

USEPA - Environmental Protection Agency
NA - Not Analysed or Not Applicable
ND - Not detected
— - No Health Advisory available

- Denotes 'B' value, detected in blank
- Denotes raw water influent sample
- Denotes short chain compound

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Method Detection Limit (MDL)						0.0065	0.0055	0.0053	0.0049	0.0040	0.0061	0.0019	0.0066	0.0043	0.0066	0.0057	0.0036	0.0047	0.0040	0.0046	0.0053	0.0046	0.0058	0.0033	0.0036	0.0052	0.0032	0.0037	
Reported Detection Limit (RDL)						0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	
Harrison Well	13-Sep-16	---	---	---	---	ND	ND	NA	NA	NA	NA	0.0029 B	ND	NA	NA	NA	ND	ND	0.0260 B	0.0071 J	0.006 J	ND	ND	0.022 B	0.008 B	NA	NA	NA	0.028
Smith Well	19-Sep-16	---	---	---	---	ND	ND	NA	NA	NA	NA	0.0072 J	0.0067 J	NA	NA	NA	ND	ND	0.0150 J	0.0053 J	0.006 J	ND	ND	0.013 J	0.007 J	NA	NA	NA	0.019 J
Harrison Well	26-Sep-16	1	249	1	248	ND	ND	NA	NA	NA	NA	0.0040 J	ND	NA	NA	NA	0.0042 J	ND	0.0340	0.0100 J	ND	ND	ND	0.024	0.014 J	NA	NA	NA	0.024
Smith Well	26-Sep-16	1	249	1	248	ND	ND	NA	NA	NA	NA	0.0029 J	ND	NA	NA	NA	0.0036 J	ND	0.0140 J	0.0050 J	ND	ND	ND	0.010 J	0.008 J	NA	NA	NA	0.010 J
Harrison Well	19-Oct-16	6	1,238	6	1,149	ND	ND	NA	NA	NA	NA	0.0038 J	0.0069 J	NA	NA	NA	ND	0.0057 J	0.0320	0.0059 J	ND	ND	ND	0.022	0.009 J	NA	NA	NA	0.022
Smith Well	19-Oct-16	6	1,238	6	1,149	ND	ND	NA	NA	NA	NA	0.0035 J	ND	NA	NA	NA	ND	ND	0.0130 J	ND	ND	ND	ND	0.010 J	0.005 J	NA	NA	NA	0.010 J
Harrison Well	17-Nov-16	18	3,358	17	3,269	ND	ND	NA	NA	NA	NA	0.0026 J	0.0072 J	NA	NA	NA	ND	0.0059 J	0.0350	0.0085 J	0.006 J	ND	ND	0.026	0.013 J	NA	NA	NA	0.032
Smith Well	17-Nov-16	18	3,358	17	3,269	ND	ND	NA	NA	NA	NA	0.0020 J	ND	NA	NA	NA	ND	ND	0.0140 J	ND	ND	ND	ND	0.011 J	0.008 J	NA	NA	NA	0.011 J
Harrison Well	14-Dec-16	24	4,491	23	4,402	ND	ND	NA	NA	NA	NA	0.0062 J	0.0068 J	NA	NA	NA	ND	ND	0.0350	0.0120 J	0.0078 J	ND	ND	0.026	0.012 J	NA	NA	NA	0.034
Smith Well	14-Dec-16	24	4,491	23	4,402	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	0.0150 J	0.0065 J	ND	ND	ND	0.012 J	0.0059 J	NA	NA	NA	0.012 J
Smith Well (Dup)	14-Dec-16	24	4,491	23	4,402	ND	ND	NA	NA	NA	NA	0.0055 J	ND	NA	NA	NA	ND	ND	0.0150 J	0.0057 J	ND	ND	ND	0.012 J	0.006 J	NA	NA	NA	0.012 J
Harrison Well	11-Jan-17	31	5,845	30	5,809	ND	ND	NA	NA	NA	NA	0.0090 J	0.008 J	NA	NA	NA	ND	0.006 J	0.0380	0.0180 J	0.009 J	ND	ND	0.024	0.0160 J	NA	NA	NA	0.033
Smith Well	11-Jan-17	31	5,845	30	5,809	ND	ND	NA	NA	NA	NA	0.0080 J	ND	NA	NA	NA	ND	ND	0.0170	0.0100 J	ND	ND	ND	0.012 J	0.0080 J	NA	NA	NA	0.012 J
Harrison Well	17-Feb-17	39	7,388	38	7,299	ND	ND	NA	NA	NA	NA	0.0020 J	ND	NA	NA	NA	ND	ND	0.0360	0.0060 J	0.009 J	ND	ND	0.027	0.0130 J	NA	NA	NA	0.036
Smith Well	17-Feb-17	39	7,388	38	7,299	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	0.0100 J	ND	ND	ND	ND	0.013 J	0.0070 J	NA	NA	NA	0.013 J
Harrison Well	23-Mar-17	50	9,568	50	9,479	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	0.0270	0.0052 J	ND	ND	ND	0.0210	0.0095 J	NA	NA	NA	0.021
Smith Well	23-Mar-17	50	9,568	50	9,479	ND	ND	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	0.0093 J	ND	ND	ND	ND	0.0072 J	ND	NA	NA	NA	0.007 J
Filter 2 Effluent	22-Sep-16	0	70	0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	#VALUE!
Filter 1 - 25%	06-Oct-16	3	646	3	557	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	#VALUE!
Filter 2 Effluent	06-Oct-16	3	646	3	557	ND	ND	ND	ND	0.0065 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	14-Oct-16	5	996	5	907	ND	ND	ND	ND	ND	ND	0.0022 B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	14-Oct-16	5	996	5	907	ND	ND	ND	ND	ND	ND	0.0021 B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	14-Oct-16	5	996	5	907	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0053 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	20-Oct-16	7	1,325	6	1,236	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	20-Oct-16	7	1,325	6	1,236	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	20-Oct-16	7	1,325	6	1,236	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	28-Oct-16	10	2,002	10	1,913	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0082 J	ND	ND	ND	0.0062 J	ND	0.0052 J	ND	ND	ND	ND	0.0082 J	0.0084 J	ND
Filter 1 Effluent	28-Oct-16	10	2,002	10	1,913	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0049 J	ND	ND	ND	ND	0.0078 J	0.0081 J	ND
Filter 2 Effluent	28-Oct-16	10	2,002	10	1,913	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0040 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	10-Nov-16	16	3,066	16	2,977	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	10-Nov-16	16	3,066	16	2,977	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	28-Nov-16	20	3,795	19	3,706	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	28-Nov-16	20	3,795	19	3,706	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	27-Dec-16	27	5,143	26	5,054	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	27-Dec-16	27	5,143	26	5,054	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	16-Jan-17	32	6,056	31	5,967	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	16-Jan-17	32	6,056	31	5,967	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	10-Feb-17	37	7,117	37	7,028	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	10-Feb-17	37	7,117	37	7,028	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	07-Mar-17	43	8,206	43	8,117	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Filter 1 Effluent	07-Mar-17	43	8,206	43	8,117	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	20-Mar-17	48	9,235	48	9,146	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	20-Mar-17	48	9,235	48	9,146	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 25%	27-Mar-17	52	9,886	51	9,797	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 50%	27-Mar-17	52	9,886	51	9,797	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0056 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	27-Mar-17	52	9,886	51	9,797	ND	ND	0.0097 J	ND	ND	0.0052 J	ND	ND	ND	ND	ND	ND	ND	0.0068 J	ND	ND	ND	ND	0.0036 J	ND	ND	0.0033 J	ND	0.0036 J
Filter 1 Effluent Rerun	27-Mar-17	52	9,886	51	9,797	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Method Detection Limit (MDL)						0.0032	0.0036	0.0058	0.0063	0.0041	0.0043	0.0048	0.0066	0.0046	0.0040	0.0028	0.0048	0.0033	0.0034	0.0029	0.0046	0.0046	0.0036	0.0026	0.0027	0.0038	0.0033	0.0043	
Reported Detection Limit (RDL)						0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	
Filter 1 - 25%	21-Apr-17	64	12,273	64	12,184	ND	ND	ND	ND	ND	ND	ND	0.0068 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND
Filter 1 Effluent	21-Apr-17	64	12,273	64	12,184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0052 J	ND	ND	ND	ND	0.0052 J
Filter 1 Effluent	21-Apr-17	64	12,273	64	12,184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	24-Apr-17	66	12,521	65	12,432	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0240	0.0064 J	0.0049 J	ND	ND	0.0150 J	0.0053 J	ND	ND	ND	0.0199 J
Filter 1 - 25%	01-May-17	69	13,169	69	13,079	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	01-May-17	69	13,169	69	13,079	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	01-May-17	69	13,169	69	13,079	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	12-May-17	75	14,263	74	14,174	ND	ND	ND	ND	ND	ND	ND	0.0071 J	ND	ND	ND	ND	0.0040 J	0.0270	0.0087 J	0.0081 J	ND	ND	0.0190 J	0.0084 J	ND	ND	ND	0.0271
Filter 1 - 25%	12-May-17	75	14,263	74	14,174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0067 J	ND	ND	ND	ND
Filter 1 Effluent	12-May-17	75	14,263	74	14,174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	12-May-17	75	14,263	74	14,174	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	22-May-17	80	15,254	79	15,165	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0055 J	0.0280	0.0072 J	0.0088 J	ND	ND	0.0230	0.0089 J	ND	ND	ND	0.0318
Filter 1 - 25%	22-May-17	80	15,254	79	15,165	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0048 J	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	22-May-17	80	15,254	79	15,165	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	22-May-17	80	15,254	79	15,165	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	02-Jun-17	85	16,282	85	16,193	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0280	0.0090 J	0.0081 J	ND	ND	0.0200 J	0.0077 J	ND	ND	ND	0.0281
Filter 1 - 25%	02-Jun-17	85	16,282	85	16,193	ND	ND	0.0089 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	02-Jun-17	85	16,282	85	16,193	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	02-Jun-17	85	16,282	85	16,193	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	14-Jun-17	92	17,512	91	17,423	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0230	0.0063 J	0.0055 J	ND	ND	0.0190 J	0.0068 J	ND	ND	ND	0.0245
Filter 1 - 25%	14-Jun-17	92	17,512	91	17,423	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0052 J	ND	ND	ND	ND
Filter 1 Effluent	14-Jun-17	92	17,512	91	17,423	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	14-Jun-17	92	17,512	91	17,423	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	28-Jun-17	99	18,951	99	18,972	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0280	0.0080 J	ND	ND	ND	0.0170 J	0.0086 J	ND	ND	ND	0.0170 J
Filter 1 - 25%	28-Jun-17	99	18,951	99	18,972	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0035 J	ND	ND	ND	ND	0.0065 J	ND	ND	ND	ND
Filter 1 Effluent	28-Jun-17	99	18,951	99	18,972	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0058 J	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	28-Jun-17	99	18,951	99	18,972	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	07-Jul-17	104	19,916	104	19,827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0240	0.0110 J	0.0064 J	ND	ND	0.0210	0.0085 J	ND	ND	ND	0.0274
Filter 1 - 25%	07-Jul-17	104	19,916	104	19,827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0075 J	ND	ND	ND	ND
Filter 1 - 50%	07-Jul-17	104	19,916	104	19,827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	07-Jul-17	104	19,916	104	19,827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	07-Jul-17	104	19,916	104	19,827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	19-Jul-17	112	21,313	111	21,224	Sample damaged during shipping; analysis not possible.																							
Filter 1 - 25%	19-Jul-17	112	21,313	111	21,224	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0052 J	ND	ND	ND	ND
Filter 1 Effluent	19-Jul-17	112	21,313	111	21,224	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Filter 2 Effluent	19-Jul-17	112	21,313	111	21,224	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	26-Jul-17	116	22,162	116	22,073	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0034 J	0.0250	0.0076 J	ND	ND	ND	0.0130 J	0.0073 J	ND	ND	ND	0.0130 J
Filter 1 - 25%	26-Jul-17	116	22,162	116	22,073	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0038 J	ND	ND	ND	ND	0.0062 J	ND	ND	ND	ND
Filter 1 Effluent	26-Jul-17	116	22,162	116	22,073	ND	ND	ND	ND	ND	ND	ND	0.0047 J	ND	ND	ND	ND	0.0049 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	26-Jul-17	116	22,162	116	22,073	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0036 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	02-Aug-17	121	23,021	121	23,056	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0300	0.0099 J	0.0077 J	ND	ND	0.0190 J	0.0120 J	ND	ND	ND	0.0267
Filter 1 - 25%	02-Aug-17	121	23,021	121	23,056	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0069 J	ND	ND	ND	ND	0.0092 J	ND	ND	ND	ND
Filter 1 Effluent	02-Aug-17	121	23,021	121	23,056	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	02-Aug-17	121	23,021	121	23,056	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	18-Aug-17	131	24,999	131	24,910	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0310	0.0120 J	0.0140 J	ND	ND	0.0240	0.0130 J	ND	ND	ND	0.0380
Filter 1 - 25%	18-Aug-17	131	24,999	131	24,910	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0100 J	0.0110 J	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND
Filter 1 - 50%	18-Aug-17	131	24,999	131	24,910	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0068 J	ND	ND	ND	ND
Filter 1 Effluent	18-Aug-17	131	24,999	131	24,910	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	18-Aug-17	131	24,999	131	24,910	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0170 J	ND	ND	ND	ND	ND
Combined Raw	25-Aug-17	135	25,806	135	25,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0066 J	0.0310	0.0130 J	ND	ND	ND	0.0190 J	ND	ND	ND	ND	0.0190 J
Filter 1 - 25%	25-Aug-17	135	25,806	135	25,717	ND	ND	ND	ND	ND	ND	ND	0.0160 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 50%	25-Aug-17	135	25,806	135	25,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0053 J	ND	ND	ND	ND
Filter 1 Effluent	25-Aug-17	135	25,806	135	25,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	25-Aug-17	135	25,806	135	25,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	01-Sep-17	140	26,644	139	26,555	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0410	0.0088 J	0.0087 J	ND	ND	0.0210	0.0130 J	ND	ND	ND	0.0297
Filter 1 - 25%	01-Sep-17	140	26,644	139	26,555	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0065 J	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Filter 1 - 50%	01-Sep-17	140	26,644	139	26,555	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	01-Sep-17	140	26,644	139	26,555	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	01-Sep-17	140	26,644	139	26,555	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	12-Sep-17	146	27,795	145	27,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0042 J	0.0340	0.0098 J	0.0069 J	ND	ND	0.0220	0.0140 J	ND	ND	ND	0.0289
Filter 1 - 25%	12-Sep-17	146	27,795	145	27,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0062 J	0.0064 J	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 1 - 50%	12-Sep-17	146	27,795	145	27,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 75%	12-Sep-17	146	27,795	145	27,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	12-Sep-17	146	27,795	145	27,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	12-Sep-17	146	27,795	145	27,717	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	21-Sep-17	151	28,783	150	28,694	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0240	0.0075 J	0.0065 J	ND	ND	0.0130 J	0.0078 J	ND	ND	ND	0.0195 J
Filter 1 - 25%	21-Sep-17	151	28,783	150	28,694	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0088 J	0.0075 J	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND
Filter 1 - 50%	21-Sep-17	151	28,783	150	28,694	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0089 J	ND	ND	ND	ND
Filter 1 Effluent	21-Sep-17	151	28,783	150	28,694	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0071 J	ND	ND	ND	ND
Filter 2 Effluent	21-Sep-17	151	28,783	150	28,694	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	02-Oct-17	157	29,951	156	29,861	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0110 J	0.0340	0.0110 J	0.0130 J	ND	ND	0.0210	0.0150 J	ND	ND	ND	0.0340
Filter 1 - 25%	02-Oct-17	157	29,951	156	29,861	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0120 J	0.0100 J	ND	ND	ND	ND	0.0150 J	ND	ND	ND	ND
Filter 1 - 50%	02-Oct-17	157	29,951	156	29,861	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND
Filter 1 Effluent	02-Oct-17	157	29,951	156	29,861	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	02-Oct-17	157	29,951	156	29,861	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	13-Oct-17	163	31,126	163	31,037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0490	0.0150 J	0.0088 J	ND	ND	0.0250	0.0100 J	ND	ND	ND	0.0338
Filter 1 - 25%	13-Oct-17	163	31,126	163	31,037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0048 J	0.0038 J	ND	ND	ND	ND	0.0087 J	ND	ND	ND	ND
Filter 1 - 50%	13-Oct-17	163	31,126	163	31,037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0098 J	ND	ND	ND	ND	0.0074 J	ND	ND	ND	ND
Filter 1 - 75%	13-Oct-17	163	31,126	163	31,037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0042 J	ND	ND	ND	ND

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Filter 1 Effluent	13-Oct-17	163	31,126	163	31,037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0058 J	ND	ND	ND	ND
Filter 2 Effluent	13-Oct-17	163	31,126	163	31,037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	30-Oct-17	171	32,619	170	32,530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0089 J	0.0470	0.0140 J	0.0110 J	ND	ND	0.0280	0.0150 J	ND	ND	ND	0.0390
Filter 1 - 25%	30-Oct-17	171	32,619	170	32,530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0076 J	ND	ND	ND	ND	0.0087 J	ND	ND	ND	ND
Filter 1 - 50%	30-Oct-17	171	32,619	170	32,530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0095 J	ND	ND	ND	ND
Filter 1 - 75%	30-Oct-17	171	32,619	170	32,530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	30-Oct-17	171	32,619	170	32,530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	30-Oct-17	171	32,619	170	32,530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Method Detection Limit (MDL)						0.0066	0.0066	0.0100	0.0079	0.0130	0.0120	0.0054	0.0055	0.0060	0.0061	0.0050	0.0080	0.0074	0.0056	0.0035	0.0033	0.0087	0.0034	0.0060	0.0075	0.0027	0.0038	0.0025	
Reported Detection Limit (RDL)						0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	
Combined Raw	14-Nov-17	177	33,846	177	33,867	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0330	0.0093 J	0.0110 J	ND	ND	0.0190	ND	ND	ND	ND	0.0300
Filter 1 - 25%	14-Nov-17	177	33,846	177	33,867	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0067 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 50%	14-Nov-17	177	33,846	177	33,867	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 75%	14-Nov-17	177	33,846	177	33,867	ND	ND	ND	ND	ND	ND	ND	0.0057 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	14-Nov-17	177	33,846	177	33,867	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 50%	14-Nov-17	177	33,846	177	33,867	ND	ND	ND	ND	ND	ND	ND	0.0056 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	14-Nov-17	177	33,846	177	33,867	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	27-Nov-17	183	34,959	183	34,870	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0330	0.0043 J	0.0055 J	ND	ND	0.0120 J	ND	ND	ND	ND	0.0175 J
Filter 1 - 25%	27-Nov-17	183	34,959	183	34,870	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0056 J	0.0037 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 50%	27-Nov-17	183	34,959	183	34,870	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 75%	27-Nov-17	183	34,959	183	34,870	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 Effluent	27-Nov-17	183	34,959	183	34,870	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 50%	27-Nov-17	183	34,959	183	34,870	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	27-Nov-17	183	34,959	183	34,870	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0086 J	ND	ND	ND	ND	ND	0.0330	0.0140 J	0.0083 J	ND	ND	0.0160 J	0.0120 J	ND	ND	ND	0.0243
Filter 1 - 25%	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0090 J	ND	ND	ND	ND	ND	0.0100 J	0.0130 J	0.0047 J	ND	ND	ND	0.0140 J	ND	ND	ND	0.0047 J
Filter 1 - 50%	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0091 J	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 1 - 75%	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND
Filter 1 Effluent	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND
Filter 2 - 25%	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 50%	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 75%	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 Effluent	08-Dec-17	188	35,903	188	35,814	ND	ND	ND	ND	ND	ND	ND	0.0095 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	26-Dec-17	193	37,215	194	37,117	ND	ND	ND	ND	ND	ND	0.0057 J	0.0056 J	ND	ND	ND	ND	ND	0.0160 J	0.0076 J	0.0059 J	ND	ND	0.0110 J	ND	ND	ND	ND	0.0169 J
Filter 1 - 25%	26-Dec-17	193	37,215	194	37,117	ND	ND	ND	ND	ND	ND	0.0059 J	0.0056 J	ND	ND	ND	ND	ND	0.0100 J	0.0110 J	0.0042 J	ND	ND	ND	0.0100 J	ND	ND	ND	0.0042 J
Filter 1 - 50%	26-Dec-17	193	37,215	194	37,117	ND	ND	ND	ND	ND	ND	ND	0.0058 J	ND	ND	ND	ND	ND	ND	0.0088 J	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Filter 1 - 75%	26-Dec-17	193	37,215	194	37,117	ND	ND	ND	ND	ND	ND	ND	0.0075 J	ND	ND	ND	ND	ND	ND	0.0054 J	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 2 - 50%	26-Dec-17	193	37,215	194	37,117	ND	ND	ND	ND	ND	ND	ND	0.0097 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 75%	26-Dec-17	193	37,215	194	37,117	ND	ND	ND	ND	ND	ND	ND	0.0093 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	10-Jan-18	199	38,386	200	38,087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0098 J	ND	ND	ND	ND	0.0076 J	ND	ND	ND	ND	0.0076 J
Filter 1 - 25%	10-Jan-18	199	38,386	200	38,087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 50%	10-Jan-18	199	38,386	200	38,087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 75%	10-Jan-18	199	38,386	200	38,087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 1 - 100%	10-Jan-18	199	38,386	200	38,087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Filter 2 - 50%	10-Jan-18	199	38,386	200	38,087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	10-Jan-18	199	38,386	200	38,087	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	25-Jan-18	206	39,311	206	39,235	ND	ND	ND	ND	ND	ND	ND	0.0063 J	ND	ND	ND	0.0084 J	0.0110 J	0.0400	0.0150 J	0.0055 J	ND	ND	0.0130 J	0.0130 J	ND	ND	ND	0.0185 J
Filter 1 - 25%	25-Jan-18	206	39,311	206	39,235	ND	ND	ND	ND	ND	ND	ND	0.0064 J	ND	ND	ND	ND	0.0081 J	0.0120 J	0.0130 J	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 50%	25-Jan-18	206	39,311	206	39,235	ND	ND	ND	ND	ND	ND	ND	0.0069 J	ND	ND	ND	ND	ND	ND	0.0088 J	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 75%	25-Jan-18	206	39,311	206	39,235	ND	ND	ND	ND	ND	ND	ND	0.0071 J	ND	ND	ND	ND	ND	ND	0.0041 J	ND	ND	ND	ND	0.0098 J	ND	ND	ND	ND
Filter 1 - 100%	25-Jan-18	206	39,311	206	39,235	ND	ND	ND	ND	ND	ND	ND	0.0069 J	ND	ND	ND	ND	ND	ND	0.0048 J	ND	ND	ND	ND	0.0087 J	ND	ND	ND	ND
Filter 2 - 50%	25-Jan-18	206	39,311	206	39,235	ND	ND	ND	ND	ND	ND	ND	0.0074 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	25-Jan-18	206	39,311	206	39,235	ND	ND	ND	ND	ND	ND	ND	0.0074 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	15-Feb-18	214	40,868	214	40,784	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0074 J	0.0350	0.0110 J	0.0085 J	ND	ND	0.0170 J	0.0110 J	ND	ND	ND	0.0255 J
Filter 1 - 25%	15-Feb-18	214	40,868	214	40,784	ND	ND	ND	ND	ND	ND	ND	0.0063 J	ND	ND	ND	ND	ND	0.0120 J	0.0120 J	0.0051 J	ND	ND	ND	0.0130 J	ND	ND	ND	0.0051 J
Filter 1 - 50%	15-Feb-18	214	40,868	214	40,784	ND	ND	ND	0.0110 J	ND	0.0140 J	ND	0.0084 J	ND	ND	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND
Filter 1 - 75%	15-Feb-18	214	40,868	214	40,784	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	0.0088 J	0.0038 J	ND	ND	ND	0.0160 J	ND	ND	ND	0.0038 J
Filter 1 - 100%	15-Feb-18	214	40,868	214	40,784	ND	ND	ND	ND	ND	ND	ND	0.0071 J	ND	ND	ND	ND	ND	ND	0.0043 J	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Filter 2 - 50%	15-Feb-18	214	40,868	214	40,784	ND	ND	ND	0.0082 J	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	0.0047 J	ND	ND	ND	ND	0.0084 J	ND	ND	ND	ND
Filter 2 - 100%	15-Feb-18	214	40,868	214	40,784	ND	ND	ND	ND	ND	ND	ND	0.0056 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	01-Mar-18	220	41,910	219	41,782	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0460	0.0160 J	0.0095 J	ND	ND	0.0180 J	0.0150 J	ND	ND	ND	0.0275 J
Filter 1 - 25%	01-Mar-18	220	41,910	219	41,782	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0130 J	0.0130 J	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 50%	01-Mar-18	220	41,910	219	41,782	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 75%	01-Mar-18	220	41,910	219	41,782	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Filter 1 - 100%	01-Mar-18	220	41,910	219	41,782	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 50%	01-Mar-18	220	41,910	219	41,782	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	01-Mar-18	220	41,910	219	41,782	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	14-Mar-18	225	42,877	224	42,791	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0390	0.0083 J	ND	ND	ND	0.0130 J	0.0095 J	ND	ND	ND	0.0130 J
Filter 1 - 25%	14-Mar-18	225	42,877	224	42,791	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0110 J	0.0056 J	ND	ND	ND	ND	0.0097 J	ND	ND	ND	ND
Filter 1 - 50%	14-Mar-18	225	42,877	224	42,791	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0050 J	ND	ND	ND	ND	0.0080 J	ND	ND	ND	ND
Filter 1 - 75%	14-Mar-18	225	42,877	224	42,791	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0077 J	ND	ND	ND	ND
Filter 1 - 100%	14-Mar-18	225	42,877	224	42,791	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 50%	14-Mar-18	225	42,877	224	42,791	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	14-Mar-18	225	42,877	224	42,791	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GAC changed out in filter 2																													
Combined Raw	26-Apr-18	234	44,680	3	542	ND	ND	ND	ND	ND	ND	ND	0.0060 J	ND	ND	ND	ND	0.0086 J	0.0480	0.0160 J	0.0130 J	ND	ND	0.0210	0.0150 J	ND	ND	ND	0.0340 J
Filter 1 - 25%	26-Apr-18	234	44,680	3	542	ND	ND	ND	ND	ND	ND	ND	0.0061 J	ND	ND	ND	ND	ND	0.0210	0.0140 J	0.0066 J	ND	ND	ND	0.0150 J	ND	ND	ND	0.0066 J
Filter 1 - 50%	26-Apr-18	234	44,680	3	542	ND	ND	ND	ND	ND	ND	ND	0.0068 J	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	0.0150 J	ND	ND	ND	ND
Filter 1 - 75%	26-Apr-18	234	44,680	3	542	ND	ND	ND	ND	ND	ND	ND	0.0063 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 1 - 100%	26-Apr-18	234	44,680	3	542	ND	ND	ND	ND	ND	ND	ND	0.0076 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 2 - 50%	26-Apr-18	234	44,680	3	542	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	26-Apr-18	234	44,680	3	542	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	09-May-18	240	45,720	8	1,593	ND	ND	ND	ND	ND	ND	ND	0.0180 J	ND	ND	ND	ND	0.0099 J	0.0430	0.0170 J	0.0150 J	ND	ND	0.0200	0.0190 J	ND	ND	ND	0.0350 J
Filter 1 - 25%	09-May-18	240	45,720	8	1,593	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	0.0270	0.0150 J	0.0091 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0091 J
Filter 1 - 50%	09-May-18	240	45,720	8	1,593	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	0.0100 J	0.0130 J	0.0067 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0067 J
Filter 1 - 75%	09-May-18	240	45,720	8	1,593	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	0.0074 J	ND	ND	ND	ND	0.0180 J	ND	ND	ND	ND
Filter 1 - 100%	09-May-18	240	45,720	8	1,593	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	0.0069 J	ND	ND	ND	ND	0.0150 J	ND	ND	ND	ND
Filter 2 - 50%	09-May-18	240	45,720	8	1,593	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Filter 2 - 100%	09-May-18	240	45,720	8	1,593	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	24-May-18	247	47,190	16	3,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0430	0.0130 J	0.0049 J	ND	ND	0.0200 J	0.0140 J	ND	ND	ND	0.0249 J
Filter 1 - 25%	24-May-18	247	47,190	16	3,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0240	0.0140 J	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 1 - 50%	24-May-18	247	47,190	16	3,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0068 J	0.0120 J	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 1 - 75%	24-May-18	247	47,190	16	3,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0075 J	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 100%	24-May-18	247	47,190	16	3,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0063 J	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Filter 2 - 50%	24-May-18	247	47,190	16	3,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	24-May-18	247	47,190	16	3,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	13-Jun-18	258	49,310	27	5,180	ND	ND	ND	ND	ND	ND	0.0055 J	0.0093 J	ND	ND	ND	ND	0.0100 J	0.0440	0.0160 J	0.0130 J	ND	ND	0.0250	0.0160 J	ND	ND	ND	0.0380 J
Filter 1 - 25%	13-Jun-18	258	49,310	27	5,180	ND	ND	ND	ND	ND	ND	0.0055 J	0.0092 J	ND	ND	ND	ND	0.0088 J	0.0290	0.0150 J	0.0100 J	ND	ND	0.0120 J	0.0160 J	ND	ND	ND	0.0220 J
Filter 1 - 50%	13-Jun-18	258	49,310	27	5,180	ND	ND	ND	ND	ND	ND	ND	0.0093 J	ND	ND	ND	ND	0.0080 J	0.0150 J	0.0150 J	0.0071 J	ND	ND	ND	0.0160 J	ND	ND	ND	0.0071 J
Filter 1 - 75%	13-Jun-18	258	49,310	27	5,180	ND	ND	ND	ND	ND	ND	ND	0.0095 J	ND	ND	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND	0.0170 J	ND	ND	ND	ND
Filter 1 - 100%	13-Jun-18	258	49,310	27	5,180	ND	ND	ND	ND	ND	ND	ND	0.0093 J	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	0.0160 J	ND	ND	ND	ND
Filter 2 - 50%	13-Jun-18	258	49,310	27	5,180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	13-Jun-18	258	49,310	27	5,180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	28-Jun-18	268	51,060	37	6,930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0340	0.0097 J	0.0085 J	ND	ND	0.0170 J	0.0096 J	ND	ND	ND	0.0255 J
Filter 1 - 25%	28-Jun-18	268	51,060	37	6,930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0280	0.0110 J	0.0079 J	ND	ND	0.0085 J	0.0110 J	ND	ND	ND	0.0164 J
Filter 1 - 50%	28-Jun-18	268	51,060	37	6,930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0160 J	0.0120 J	0.0051 J	ND	ND	ND	0.0120 J	ND	ND	ND	0.0051 J
Filter 1 - 75%	28-Jun-18	268	51,060	37	6,930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0093 J	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 100%	28-Jun-18	268	51,060	37	6,930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0079 J	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 2 - 50%	28-Jun-18	268	51,060	37	6,930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	28-Jun-18	268	51,060	37	6,930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	11-Jul-18	275	52,520	44	8,390	ND	ND	ND	ND	ND	ND	ND	0.0086 J	ND	ND	ND	ND	0.0089 J	0.0410	0.0170 J	0.0160 J	ND	ND	0.0230	0.0150 J	ND	ND	ND	0.0390 J
Filter 1 - 25%	11-Jul-18	275	52,520	44	8,390	ND	ND	ND	ND	ND	ND	ND	0.0087 J	ND	ND	ND	ND	0.0084 J	0.0310	0.0160 J	0.0130 J	ND	ND	0.0140 J	0.0160 J	ND	ND	ND	0.0270 J
Filter 1 - 50%	11-Jul-18	275	52,520	44	8,390	ND	ND	ND	ND	ND	ND	0.0055 J	0.0098 J	ND	ND	ND	ND	0.0082 J	0.0190 J	0.0170 J	0.0110 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0110 J
Filter 1 - 75%	11-Jul-18	275	52,520	44	8,390	ND	ND	ND	ND	ND	ND	ND	0.0089 J	ND	ND	ND	ND	ND	ND	0.0150 J	ND	ND	ND	ND	0.0160 J	ND	ND	ND	ND
Filter 1 - 100%	11-Jul-18	275	52,520	44	8,390	ND	ND	ND	ND	ND	ND	ND	0.0091 J	ND	ND	ND	ND	ND	0.0058 J	0.0140 J	ND	ND	ND	ND	0.0160 J	ND	ND	ND	ND
Filter 2 - 50%	11-Jul-18	275	52,520	44	8,390	ND	ND	ND	ND	ND	ND	ND	0.0075 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	11-Jul-18	275	52,520	44	8,390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	0.0061 J	ND	ND	ND	ND	ND	0.0390	0.0140 J	0.0130 J	ND	ND	0.0180 J	0.0140 J	ND	ND	ND	0.0310 J
Filter 1 - 25%	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	0.0064 J	ND	ND	ND	ND	0.0077 J	0.0310	0.0150 J	0.0110 J	ND	ND	0.0081 J	0.0140 J	ND	ND	ND	0.0191 J
Filter 1 - 50%	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	0.0066 J	ND	ND	ND	ND	ND	0.0160 J	0.0150 J	0.0075 J	ND	ND	ND	0.0150 J	ND	ND	ND	0.0075 J
Filter 1 - 100%	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	0.0070 J	ND	ND	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND	0.0160 J	ND	ND	ND	ND
Filter 2 - 25%	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	0.0085 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 50%	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	0.0063 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 75%	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	18-Jul-18	279	53,330	48	9,200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	30-Jul-18	287	54,720	56	10,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0380	0.0110 J	0.0053 J	ND	ND	0.0150 J	0.0100 J	ND	ND	ND	0.0203 J
Filter 1 - 50%	30-Jul-18	287	54,720	56	10,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0120 J	0.0110 J	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND
Filter 1 - 100%	30-Jul-18	287	54,720	56	10,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0088 J	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 2 - 25%	30-Jul-18	287	54,720	56	10,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 50%	30-Jul-18	287	54,720	56	10,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 75%	30-Jul-18	287	54,720	56	10,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	30-Jul-18	287	54,720	56	10,590	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
	USEPA Health Advisory (HA):					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Combined Raw	10-Aug-18	293	55,970	62	11,940	Samples delivered to incorrect location; analysis not possible.																							
Combined Raw	17-Aug-18	297	56,780	68	12,750	ND	ND	ND	ND	ND	ND	ND	0.0089 J	ND	ND	ND	ND	0.0084 J	0.0420	0.0160 J	0.0130 J	ND	ND	0.0210	0.0140 J	ND	ND	ND	0.0340 J
Filter 1 - 50%	17-Aug-18	297	56,780	68	12,750	ND	ND	ND	ND	ND	ND	ND	0.0098 J	ND	ND	ND	ND	0.0082 J	0.0200 J	0.0170 J	0.0100 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0100 J
Filter 1 - 100%	17-Aug-18	297	56,780	68	12,750	ND	ND	ND	ND	ND	ND	ND	0.0097 J	ND	ND	ND	ND	ND	ND	0.0150 J	0.0054 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0054 J
Filter 2 - 25%	17-Aug-18	297	56,780	68	12,750	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0150 J	ND	ND	ND	ND
Filter 2 - 50%	17-Aug-18	297	56,780	68	12,750	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 75%	17-Aug-18	297	56,780	68	12,750	ND	ND	ND	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	17-Aug-18	297	56,780	68	12,750	ND	ND	ND	ND	ND	ND	ND	0.0092 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	27-Aug-18	304	57,930	75	13,900	ND	ND	ND	ND	ND	ND	ND	0.0077 J	ND	ND	ND	ND	0.0083 J	0.0500	0.0180 J	0.0130 J	ND	ND	0.0230	0.0170 J	ND	ND	ND	0.0360 J
Filter 1 - 50%	27-Aug-18	304	57,930	75	13,900	ND	ND	ND	ND	ND	ND	ND	0.0075 J	ND	ND	ND	ND	ND	0.0210	0.0160 J	0.0091 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0091 J
Filter 1 - 100%	27-Aug-18	304	57,930	75	13,900	ND	ND	ND	ND	ND	ND	ND	0.0075 J	ND	ND	ND	ND	ND	ND	0.0150 J	0.0036 J	ND	ND	ND	0.0180 J	ND	ND	ND	0.0036 J
Filter 2 - 25%	27-Aug-18	304	57,930	75	13,900	ND	ND	ND	ND	ND	ND	ND	0.0086 J	ND	ND	ND	ND	ND	ND	0.0054 J	ND	ND	ND	ND	0.0170 J	ND	ND	ND	ND
Filter 2 - 50%	27-Aug-18	304	57,930	75	13,900	ND	ND	ND	ND	ND	ND	ND	0.0097 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 75%	27-Aug-18	304	57,930	75	13,900	ND	ND	ND	ND	ND	ND	ND	0.0091 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	27-Aug-18	304	57,930	75	13,900	ND	ND	ND	ND	ND	ND	ND	0.0084 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	30-Aug-18	305	58,280	76	14,250	ND	ND	ND	ND	ND	ND	ND	0.0069 J	ND	ND	ND	ND	0.0080 J	0.0480	0.0170 J	0.0140 J	ND	ND	0.0210	0.0160 J	ND	ND	ND	0.0350 J
Filter 1 - 100%	30-Aug-18	305	58,280	76	14,250	ND	ND	ND	ND	ND	ND	ND	0.0083 J	ND	ND	ND	ND	ND	0.0062 J	0.0150 J	ND	ND	ND	ND	0.0180 J	ND	ND	ND	ND
Filter 2 - 100%	30-Aug-18	305	58,280	76	14,250	ND	ND	ND	ND	ND	ND	ND	0.0082 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	05-Sep-18	309	58,950	80	14,920	ND	ND	ND	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND	0.0100 J	0.0460	0.0180 J	0.0160 J	ND	ND	ND	0.0180 J	ND	ND	ND	0.0160 J
Filter 1 - 50%	05-Sep-18	309	58,950	80	14,920	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	0.0950 J	0.0230	0.0170 J	0.0100 J	ND	ND	ND	0.0190 J	ND	ND	ND	0.0100 J
Filter 1 - 100%	05-Sep-18	309	58,950	80	14,920	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	ND	0.0086 J	0.0150 J	ND	ND	ND	ND	0.0190 J	ND	ND	ND	ND
Filter 2 - 25%	05-Sep-18	309	58,950	80	14,920	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0180 J	ND	ND	ND	ND
Filter 2 - 50%	05-Sep-18	309	58,950	80	14,920	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Filter 2 - 75%	05-Sep-18	309	58,950	80	14,920	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	05-Sep-18	309	58,950	80	14,920	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	13-Sep-18	314	59,860	85	15,830	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0540	0.0140 J	0.0089 J	ND	ND	0.0180 J	0.0130 J	ND	ND	ND	0.0269 J
Filter 1 - 50%	13-Sep-18	314	59,860	85	15,830	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0230	0.0110 J	0.0039 J	ND	ND	ND	0.0120 J	ND	ND	ND	0.0039 J
Filter 1 - 100%	13-Sep-18	314	59,860	85	15,830	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0069 J	0.0100 J	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND
Filter 2 - 25%	13-Sep-18	314	59,860	85	15,830	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND
Filter 2 - 50%	13-Sep-18	314	59,860	85	15,830	ND	ND	ND	ND	ND	ND	ND	0.0057 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 75%	13-Sep-18	314	59,860	85	15,830	ND	ND	ND	ND	ND	ND	ND	0.0062 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	13-Sep-18	314	59,860	85	15,830	ND	ND	ND	ND	ND	ND	ND	0.0058 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	24-Sep-18	321	61,110	92	17,080	ND	ND	ND	ND	ND	ND	ND	0.0082 J	ND	ND	ND	ND	0.0110 J	0.0580	0.0170 J	0.0130 J	ND	ND	0.0220	0.0180 J	ND	ND	ND	0.0350 J
Filter 1 - 50%	24-Sep-18	321	61,110	92	17,080	ND	ND	ND	ND	ND	ND	ND	0.0079 J	ND	ND	ND	ND	0.0088 J	0.0230	0.0140 J	0.0073 J	ND	ND	ND	0.0150 J	ND	ND	ND	0.0133 J
Filter 1 - 100%	24-Sep-18	321	61,110	92	17,080	ND	ND	ND	ND	ND	ND	ND	0.0085 J	ND	ND	ND	ND	ND	0.0580	0.0140 J	ND	ND	ND	ND	0.0180 J	ND	ND	ND	ND
Filter 2 - 25%	24-Sep-18	321	61,110	92	17,080	ND	ND	ND	ND	ND	ND	ND	0.0089 J	ND	ND	ND	ND	ND	0.0087 J	0.0081 J	ND	ND	ND	ND	0.0180 J	ND	ND	ND	ND
Filter 2 - 50%	24-Sep-18	321	61,110	92	17,080	ND	ND	ND	ND	ND	ND	ND	0.0098 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND
Filter 2 - 75%	24-Sep-18	321	61,110	92	17,080	ND	ND	ND	ND	ND	ND	ND	0.0096 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	24-Sep-18	321	61,110	92	17,080	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	02-Oct-18	325	62,010	96	17,980	ND	ND	ND	ND	ND	ND	ND	0.0073 J	ND	ND	ND	ND	0.0093 J	0.0430	0.0190 J	0.0150 J	ND	ND	0.0220	0.0160 J	ND	ND	ND	0.0370 J
Filter 1 - 50%	02-Oct-18	325	62,010	96	17,980	ND	ND	ND	ND	ND	ND	ND	0.0084 J	ND	ND	ND	ND	0.0080 J	0.0260	0.0180 J	0.0100 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0160 J
Filter 1 - 100%	02-Oct-18	325	62,010	96	17,980	ND	ND	ND	ND	ND	ND	ND	0.0080 J	ND	ND	ND	ND	ND	0.0110 J	0.0160 J	0.0044 J	ND	ND	ND	0.0180 J	ND	ND	ND	0.0104 J
Filter 2 - 25%	02-Oct-18	325	62,010	96	17,980	ND	ND	ND	ND	ND	ND	ND	0.0093 J	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	0.0200	ND	ND	ND	ND
Filter 2 - 50%	02-Oct-18	325	62,010	96	17,980	ND	ND	ND	ND	ND	ND	ND	0.0098 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0150 J	ND	ND	ND	ND

Table 1
Summary of PFAS Analytical Results
Demonstration Project
September 2016 to November 2018

Sample Location	Collection Date	Filter 1 Volume (MG)	Filter 1 Bed Volumes	Filter 2 Volume (MG)	Filter 2 Bed Volumes	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl Perfluorooctane Sulfonamide (MEFOSA)	N-Methyl Perfluorooctane Sulfonamidoethanol (MEFOSE)	Perfluorobutanesulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	PFOS+PFOA
USEPA Health Advisory (HA):						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	0.07	-	-	-	-	0.07
Filter 2 - 75%	02-Oct-18	325	62,010	96	17,980	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	02-Oct-18	325	62,010	96	17,980	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Combined Raw	11-Oct-18	331	63,030	102	19,000	ND	ND	ND	ND	ND	ND	ND	0.0069 J	ND	ND	ND	ND	0.0075 J	0.0480	0.0160 J	0.0130 J	ND	ND	0.0220	0.0160 J	ND	ND	ND	0.0350 J
Filter 1 - 50%	11-Oct-18	331	63,030	102	19,000	ND	ND	ND	ND	ND	ND	ND	0.0086 J	ND	ND	ND	ND	ND	0.0260	0.0170 J	0.0082 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0142 J
Filter 1 - 100%	11-Oct-18	331	63,030	102	19,000	ND	ND	ND	ND	ND	ND	ND	0.0078 J	ND	ND	ND	ND	ND	0.0059 J	0.0140 J	0.0036 J	ND	ND	ND	0.0170 J	ND	ND	ND	0.0096 J
Filter 2 - 25%	11-Oct-18	331	63,030	102	19,000	ND	ND	ND	ND	ND	ND	ND	0.0081 J	ND	ND	ND	ND	ND	ND	0.0086 J	ND	ND	ND	ND	0.0170 J	ND	ND	ND	ND
Filter 2 - 50%	11-Oct-18	331	63,030	102	19,000	ND	ND	ND	ND	ND	ND	ND	0.0088 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND
Filter 2 - 75%	11-Oct-18	331	63,030	102	19,000	ND	ND	ND	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Filter 2 - 100%	11-Oct-18	331	63,030	102	19,000	ND	ND	ND	ND	ND	ND	ND	0.0097 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0110 J	0.0110 J	ND	ND
Combined Raw	26-Oct-18	340	64,730	111	20,700	ND	ND	ND	ND	ND	ND	ND	0.0099 J	ND	ND	ND	ND	0.0100 J	0.0440	0.0180 J	0.0160 J	ND	ND	0.0200 J	0.0170 J	ND	ND	ND	0.0360 J
Filter 1 - 50%	26-Oct-18	340	64,730	111	20,700	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	0.0110 J	0.0280	0.0220	0.0130 J	ND	ND	0.0100 J	0.0210	ND	ND	ND	0.0230 J
Filter 1 - 100%	26-Oct-18	340	64,730	111	20,700	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	0.0080 J	0.0110 J	0.0190 J	0.0091 J	ND	ND	ND	0.0220	ND	ND	ND	0.0151 J
Filter 2 - 25%	26-Oct-18	340	64,730	111	20,700	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	0.0140 J	ND	ND	ND	ND	0.0210	ND	ND	ND	ND
Filter 2 - 50%	26-Oct-18	340	64,730	111	20,700	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0180 J	ND	ND	ND	ND
Filter 2 - 75%	26-Oct-18	340	64,730	111	20,700	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Filter 2 - 100%	26-Oct-18	340	64,730	111	20,700	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND
Combined Raw	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0084 J	ND	ND	ND	ND	0.0110 J	0.0620	0.0210	0.0180 J	ND	ND	0.0260	0.0210	ND	ND	ND	0.0440 J
Filter 1 - 25%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0088 J	ND	ND	ND	ND	0.0100 J	0.0450	0.0200	0.0140 J	ND	ND	0.0170 J	0.0220	ND	ND	ND	0.0310 J
Filter 1 - 50%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0086 J	ND	ND	ND	ND	0.0096 J	0.0300	0.0200	0.0099 J	ND	ND	ND	0.0220	ND	ND	ND	0.0159 J
Filter 1 - 75%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0090 J	ND	ND	ND	ND	0.0080 J	0.0100 J	0.0180 J	0.0062 J	ND	ND	ND	0.0220	ND	ND	ND	0.0122 J
Filter 1 - 100%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0089 J	ND	ND	ND	ND	ND	0.0086 J	0.0160 J	ND	ND	ND	ND	0.0200	ND	ND	ND	ND
Filter 2- 25%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0100 J	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	0.0240	ND	ND	ND	ND
Filter 2- 50%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0110 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0200	ND	ND	ND	ND
Filter 2 - 75%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0130 J	ND	ND	ND	ND
Filter 2 - 100%	02-Nov-18	344	65,530	115	21,500	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0120 J	ND	ND	ND	ND

Notes:
Grey text indicates the parameter was not analyzed or not detected.
All concentrations in µg/L - micrograms per liter (ppb)
J - The result is an estimated value.
B - Detected in Blank.

USEPA - Environmental Protection Agency
NA - Not Analysed or Not Applicable
ND - Not detected
— - No Health Advisory available

- Denotes 'B' value, detected in blank
- Denotes raw water influent sample
- Denotes short chain compound