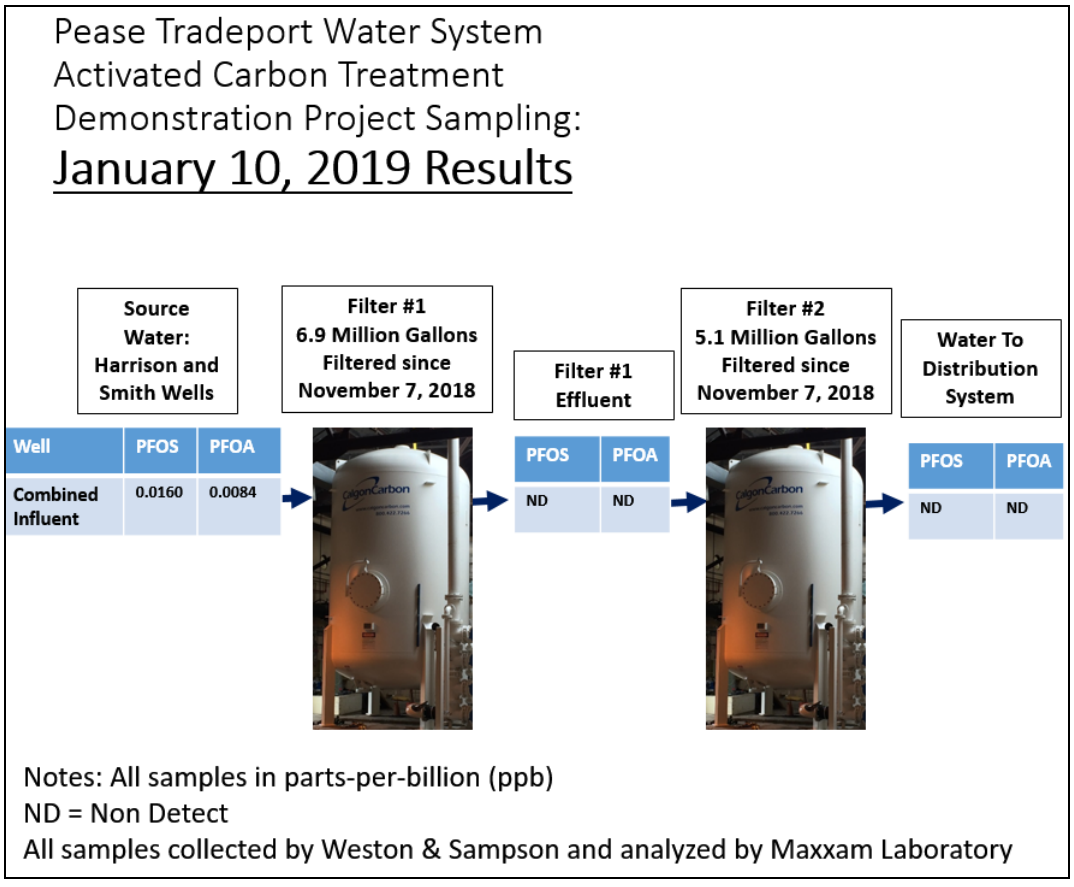
City of
Portsmouth
Department of Public Works

February 21, 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.



The activated carbon demonstration filters for the Harrison and Smith wells have been on line since September 2016. As of November 2, 2018, 344 million gallons of water from these two wells was treated through the activated carbon F400 Calgon Filtrasorb Filter media in Filter Number 1. New carbon was installed on Filter Number 2 during the week of March 26, 2018 due to sample result trends showing that some of the 23 PFAS compounds being sampled were beginning to pass through the first filter. This was an early indicator that the filter media was starting to reach its useful life. In early November 2018 both of the filters had the media replaced, therefore, the most recent sample results from January 2019 show non detect levels for all compounds going through the filters.

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.

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

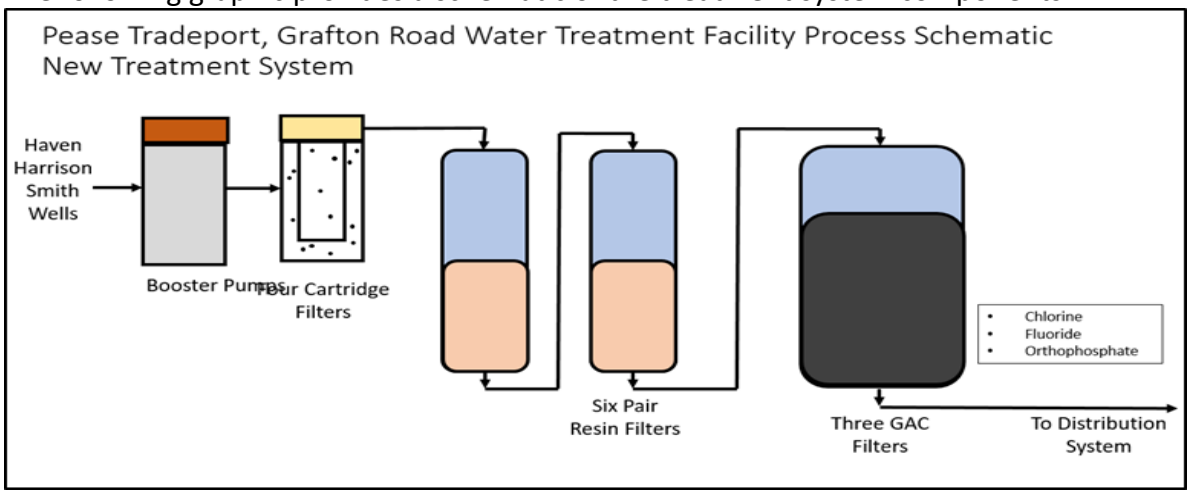
Testing for Pease approached the City of Portsmouth and the Air Force in 2018 to perform additional non-target analysis of PFAS compounds on the Pease water and treatment to provide a better understanding of bigger picture of PFAS in the Pease drinking water. They presented this information to the Portsmouth City Council on October 2, 2018. The Council agreed to participate in the study. A copy of their presentation is included in this update. Additionally, the City of Portsmouth performed additional sampling of PFAS compounds in late October 2018 utilizing both our current laboratory sampling for PFAS and Eurofins. A summary of those results and comparison of laboratory methods is attached. Though some of the compound results varied between the two labs, overall they were similar. Therefore, our engineering consultant recommended that "because these results are not significantly different, the Air Force has used Maxxam since 2014, and the City uses Maxxam for consistency, it is recommended that the City continue to use Maxxam Analytics for continuous monitoring and duplicate sampling of the demonstration filters."

FINAL TREATMENT SYSTEM DESIGN

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 project was bid late last year and five contractors submitted bids. Kinsmen Corporation from Hookset, New Hampshire was the low qualified bidder and the City is currently moving forward with getting them under contract. We anticipate work to begin early this spring.

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



REVIEW OF OTHER MUNICIPAL WATER SYSTEMS TREATING PFAS COMPOUNDS

The City's engineering consultant has been gathering information on drinking water systems located across the country that are dealing with Per- and Polyfluoroalkyl Substances (PFAS) contamination of their water supplies. Preliminary findings of their assessment were summarized in the City's April 2018 Pease Tradeport Water Supply Update.

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:"

PFAS	Proposed MCL and AGQS
PFOA	38 ppt
PFOS	70 ppt
PFOA & PFOS (combined)	70 ppt
PFHxS	85 ppt
PFNA	23 ppt

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

TESTING *for* PEASE

Pease PFAS Non Target Analysis Proposal

Portsmouth City Council Meeting| October 1, 2018

Andrea Amico | Alayna Davis | Michelle Dalton | Lindsey Carmichael

What is non target analysis?

- While targeted analyses using liquid chromatography - tandem mass spectrometry (LC-MS/MS) can capture and quantify many known PFASs, non-targeted high resolution mass spectrometry (HRMS), such as liquid chromatography quadrupole time-of-flight mass spectrometry (LC-QToF-MS), can simultaneously quantify pre-selected (and targeted) PFASs while also looking for PFASs for which no analytical standards are available.

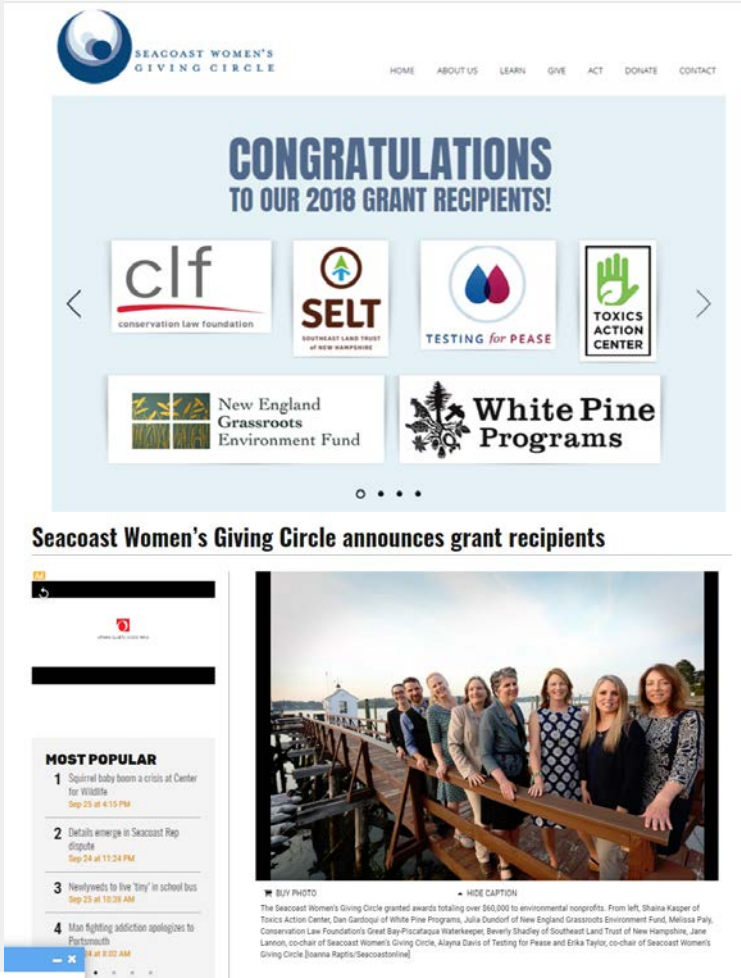
- LC-QToF-MS PFAS analyses look for:
  - known (targeted) PFASs;
  - suspect PFASs that may be in a sample;
  - true "unknown unknowns."

Brief History

- **Jun 2017** – paper published by Dr Chris Higgins & others on non target analysis and identifying other PFAS in water not normally tested for.
- **Nov 2017** – TFP members meet w/city officials to request city participate in non target analysis w/Dr Higgins. Mayor Blalock writes letter to EPA requesting technical assistance.
- **Dec 2017** – EPA responds and does not commit to providing technical assistance for non target analysis at Pease.
- **Jan 2018** – TFP applies for a local grant through Seacoast Women's Giving Circle (SWGC).

Brief History

- **Mar 2018** – TFP presents to City Council on non target analysis at Pease & advocates for school filters
- **May 2018** – TFP is awarded a $24,000 grant from Seacoast Women's Giving Circle and part of the funds can be used for non target analysis work
- **Jul 2018** – TFP meets with city DPW staff (Brian & Al) to discuss our Pease Non Target Analysis Proposal
- **Aug 2018** – TFP revises sampling schedule based on July meeting with the city and construction plans
- **Sept 2018** – TFP invited to present proposal to city council on 10/1



Community Questions

- What other PFAS are in the Pease drinking water that are not currently being sampled for?

- Is the current GAC system effective in filtering out all PFAS?

Our team

- Dr Chris Higgins – *Colorado School of Mines*
- Dr Carrie McDonough – *Colorado School of Mines*
- Dr Loretta Fernandez – *Northeastern University*
- Dr Phil Brown – *Northeastern University*
- Dr Laurel Schaider – *Silent Spring Institute*

Dr Phil Brown, PhD

Dr Laurel Schaider, PhD

Dr Chris Higgins, PhD

Dr Carrie McDonough, PhD

Dr Loretta Fernandez, PhD

Our team

- Shaina Kasper – *Toxics Action Center*
- Andrea Amico – *Testing for Pease*
- Alayna Davis – *Testing for Pease*
- Michelle Dalton – *Testing for Pease*
- Lindsey Carmichael – *Portsmouth Resident*

Shaina Kasper

(L to R): Lindsey, Alayna, Andrea, & Michelle

Pease Non Target Analysis Plan

- 2 samples from the current GAC system (influent + effluent)
- 9 paired samples of the new GAC system (influent + 1/4 through bed), starting when they change over, and then approximately every 4 weeks (or monthly, i.e., Oct, Nov, Dec, Jan, Feb, Mar, Apr)
- 2 samples from the site 8 treatment plant (influent + effluent) ***to be coordinated with the US AF***
- All samples will be collected by Dr Fernandez from Northeastern University. All samples to be analyzed at Dr Higgin's lab at the Colorado School of Mines.

Report back

- Dr Higgins will provide a mid-project interim report & final report.
- Dr Brown & Dr Schaider are highly experienced with report back to communities with uncertain information and will assist with writing the reports to the community.
- City of Portsmouth can review reports to community before we make them public.

Benefits to Non Target Analysis Project

- Better understanding of bigger picture of PFAS in the Pease drinking water.
- Another opportunity for Pease to be a leader on work around PFAS and contribute to the science.
- Silent Spring Institute is the acknowledged leader in reporting back environmental health data and has much success in doing with high comprehension and without creating alarm.
- This approach generates much trust from residents towards science & government and is beneficial to all parties.

TESTING *for* PEASE

Our commitment

- We are committed to releasing the project information in a **responsible** and **meaningful** way.
- Scientists are highly respected professionals with years of experience and publications on PFAS.
- Advocates are experienced, trusted, and respected in the community for work on PFAS.

TOXICS ACTION CENTER

Northeastern University

COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT

SILENT SPRING INSTITUTE
Researching the Environment and Women's Health

Questions/Discussion….

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has."

~ Margaret Mead

For more information, please visit:

www.testingforpease.com

facebook.com/TestingforPease

Weston & Sampson

5 Centennial Drive, Peabody, MA 01960 (HQ)
Tel: 978.532.1900

MEMORANDUM

TO: Mr. Brian Goetz, Mr. Terry Desmarais, Mr. Al Pratt

FROM: Blake Martin, Margaret McCarthy, Kyle Hay

DATE: December 12, 2018

SUBJECT: DRAFT – Duplicate Sampling of the Demonstration Filters

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On October 26th, 2018, Dr. Loretta Fernandez from Northeastern University collected samples from the raw water and the final effluent of the temporary GAC filters feeding the Pease Tradeport water system. At the same time, Weston & Sampson collected raw and final effluent samples to be analyzed by Eurofins Scientific, and collected samples from all of the ports for analysis by Maxxam Analytics. Results from the two labs are shown in the attached table. A few items to highlight from these results:

- Eurofins uses lower detection limits than Maxxam. These lower detection limits showed 3 PFAS compounds (PFBS, PFHpS, and PFNA) that were identified as non-detect by Maxxam.
- Eurofins ran their analyses for 32 compounds compared to Maxxam which analyzed for 23 compounds. Of these nine additional compounds, only PFPeS was identified in the raw water sample at 0.012 µg/L.
- In the raw water, Eurofins identified 11 compounds for a total PFAS of 0.103 µg/L while Maxxam identified 7 compounds for a total PFAS of 0.135 µg/L.
- Eurofins and Maxxam both identified two compounds (PFBA and PFPeA) in the final filter effluent.

Because these results are not significantly different, the Air Force has used Maxxam since 2014, and the City uses Maxxam for consistency, it is recommended that the City continue to use Maxxam Analytics for continuous monitoring and duplicate sampling of the demonstration filters.

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			Eurofins					Maxxam			
	Compound	Abbreviation	MDL (RAW)	MDL (PV2-100)	RL	Raw	PV2-100	Raw	PV2-100	MDL	RL
Original 23 PFAS	6:2 fluorotelomersulfonate	6:2 FTS	0.87	0.93	2.0	ND	ND	ND	ND	6.6	20
	8:2 fluorotelomersulfonate	8:2 FTS	1.7	1.9	6.0	ND	ND	ND	ND	6.6	20
	NEtPFOSA	NEtPFOSA	2.6	2.8	9.0	ND	ND	ND	ND	10	20
	NEtPFOSAE	NEtPFOSAE	1	1.1	3.0	ND	ND	ND	ND	7.9	20
	NMePFOSA	NMePFOSA	2.6	2.8	9.0	ND	ND	ND	ND	13	20
	NMePFOSAE	NMePFOSAE	0.87	0.93	3.0	ND	ND	ND	ND	12	20
	Perfluorobutanesulfonate	PFBS	0.26	0.28	1.0	2.1	ND	ND	ND	5.4	20
	Perfluorobutanoic acid	PFBA	1.7	1.9	6.0	4.6 J	7.4	9.9 J	12 J	5.5	20
	Perfluorodecanesulfonate	PFDS	0.52	0.56	2.0	ND	ND	ND	ND	6	20
	Perfluorodecanoic acid	PFDA	0.78	0.84	2.0	ND	ND	ND	ND	6.1	20
	Perfluorododecanoic acid	PFDoA	0.44	0.47	2.0	ND	ND	ND	ND	5	20
	Perfluoroheptanesulfonate	PFHpS	0.35	0.37	2.0	0.64 J	ND	ND	ND	8	20
	Perfluoroheptanoic acid	PFHpA	0.35	0.37	1.0	5	ND	10 J	ND	7.4	20
	Perfluorohexanesulfonate	PFHxS	0.35	0.37	2.0	35	ND	44	ND	5.6	20
	Perfluorohexanoic acid	PFHxA	0.35	0.37	2.0	13	ND	18 J	ND	3.5	20
	Perfluorononanoic acid	PFNA	0.35	0.37	2.0	0.39 J	ND	ND	ND	8.7	20
	Perfluorooctanesulfonamide	PFOSA	0.44	0.47	3.0	ND	ND	ND	ND	3.4	20
	Perfluoro-octanesulfonate	PFOS	0.35	0.37	2.0	18	ND	20 J	ND	6	20
	Perfluorooctanoic acid	PFOA	0.26	0.28	1.0	10	ND	16 J	ND	3.3	20
	Perfluoropentanesulfonate	PFPeA	0.35	0.37	2.0	2.4	5.6	17 J	11 J	7.5	20
	Perfluorotetradecanoic acid	PFPeDA	0.26	0.28	1.0	ND	ND	ND	ND	2.7	20
	Perfluorotridecanoic acid	PFTrDA	0.35	0.37	1.0	ND	ND	ND	ND	3.8	20
	Perfluoroundecanoic acid	PFUnA	0.35	0.37	2.0	ND	ND	ND	ND	2.5	20
9 New PFAS	10:2-fluorotelomersulfonate	10:2 FTS	0.87	0.93	3.0	ND	ND	-	-	-	-
	4:2 fluorotelomersulfonate	4:2 FTS	0.87	0.93	3.0	ND	ND	-	-	-	-
	NEtFOSAA	NEtFOSAA	0.87	0.93	3.0	ND	ND	-	-	-	-
	NMeFOSAA	NMeFOSAA	0.87	0.93	3.0	ND	ND	-	-	-	-
	Perfluorododecanesulfonate	PFDoS	0.26	0.28	1.0	ND	ND	-	-	-	-
	Perfluorohexadecanoic acid		0.26	0.28	1.0	ND	ND	-	-	-	-
	Perfluorononanesulfonate	PFNS	0.52	0.56	2.0	ND	ND	-	-	-	-
	Perfluorooctadecanoic acid		0.44	0.47	2.0	ND	ND	-	-	-	-
	Perfluoropentanoic acid	PFPeS	1.7	1.9	6.0	12	ND	-	-	-	-
					PFOS + PFOA	28	ND	36	ND		
					Total PFAS	103	13	135	23		

* All results reported in ng/L (ppt)

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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 - 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
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	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.																							

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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 - 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
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

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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 - 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
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

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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 - 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
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
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
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

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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 - 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
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

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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 - 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
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

Table 1
Summary of PFC Analytical Results
Demonstration Project
Former Pease Air Force Base, New Hampshire

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%	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
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
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
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

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