

Virginia PFAS Workgroup

Sampling Training

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Before shipping samples, things to remember

- Ship samples on Monday - Thursday
 - Samples shipped on Friday will arrive on Monday, will be hot, and will be rejected!
- Write email address on chain of custody to receive laboratory report

What to expect after sampling

Laboratory turn-around time is 10 business days from receipt

Laboratory Reports:

- Laboratory reports (PDF) emailed to ODW and waterworks
- Electronic Data Deliverable (EDD) emailed to ODW

ODW will file PDF reports

ODW will maintain results in a searchable database

- Reports for Virginia PFAS Workgroup
- Not in the Safe Drinking Water Information System (SDWIS) database
- Not available on Drinking Water Watch on ODW's website

What to expect after sampling

ODW Envisions data will become public through:

- Freedom of Information Act (FOIA) Requests
 - ODW will notify utilities of data requests
- ODW's publicly-facing website
 - ODW will notify utilities in advance of making this public
 - Envisioning a clickable map that will display data
 - Possible PFD or Excel spreadsheet of data
- Report to the General Assembly
 - ODW will share the data table with utilities as part of the drafting
 - Draft by August

Data Handling

Quality Assurance Project Plan (QAPP)

- Specifies project quality assurance requirements

Should not use data that fails method quality control criteria

- Evaluate if data meets Quality Control (QC) criteria
- Evaluate usability and bias of data not meeting criteria

Data Validation

At a minimum for all laboratory reports ODW will:

- Compare laboratory report to database records (Electronic Data Deliverable)
- Review reports for:
 - data qualifiers indicating a data quality problem,
 - confirm field reagent blanks are clean, and
 - Surrogates/spikes are within tolerances.

ODW will conduct in-depth validation activities on all reports with data qualifiers indicating a data quality problem.

ODW will conduct in-depth validation activities on at least 5% of the samples.

All data will go through this data validation before it becomes public facing.

In-depth Data Validation

Reviewing laboratory records

Method 533 requirements:

- Preservation and holding times
- Instrument performance check
- Initial calibration
- Quality Control of Samples
- Continuing Calibration Check
- Field Duplicates
- Field Reagent Blanks
- Laboratory Fortified Sample Matrix
- Blanks
- Surrogate Analyte Standard percent recovery
- Laboratory Fortified Blank
- Matrix spike and matrix spike duplicate analysis
- Internal Standard
- Target Analyte Identification
- Target Analyte Quantification
- System Performance
- Performance Evaluation Sample
- Regional Quality Assurance and Quality Control
- Overall Assessment of Data

Data Reporting

EPA Method 533 - for each analyte:

Practical Quantitation Limit (PQL) is defined as the minimum concentration of an analyte that can be measured with a high degree of confidence that the analyte is present at the reported concentration. Concentrations at or above the PQL are accurate to within 10% of the true value.

Limit of Quantification (LOQ) = 4 ng/L The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specific degree of confidence. It is also the lowest concentration that produces a quantitative result within specified limits of precision and bias.

PQL is the LOQ for this project

Data Reporting

Minimum Reporting Level (MRL) = 1 ng/L - The minimum concentration that may be reported by a laboratory as a quantified value for a method analyte. For each method analyte, the concentration of the lowest calibration standard must be at or below the MRL and the laboratory must demonstrate its ability to meet the MRL per the criteria defined in this method.

Method Detection Limit (**MDL**) - The method detection limit (MDL) is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results.

MDL is the MRL for this project

Data Reporting

- Results in the range of PQL down to MDL or 1 to 4 ug/L will be “estimated” and will receive an I or J qualifier
- Results less than the MDL will receive a U qualifier
- Analyte in both sample and method blank will receive a V qualifier and is invalid

Laboratory Reports

Lab ID: J2101111001

Date Received: 01/22/21 10:54 Matrix: Drinking Water

Sample ID: Well Head Pre-Treatment

Date Collected: 01/21/21 09:49

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: E533 Analysis, Water								
Preparation Method: EPA 533								
Analytical Method: EPA 533								
PFOS	2.9	I	ng/L	1	3.4	0.84	1/29/2021 21:46	J
PFOA	1.3	I	ng/L	1	3.4	0.84	1/29/2021 21:46	J
13C4-PFBA (S)	67.86		%	1	50-150		1/29/2021 21:46	
13C5-PFPEA (S)	68.09		%	1	50-150		1/29/2021 21:46	
13C3-PFBS (S)	71.65		%	1	50-150		1/29/2021 21:46	
13C2-4:2FTS (S)	86.89		%	1	50-150		1/29/2021 21:46	
13C5-PFHXA (S)	69.17		%	1	50-150		1/29/2021 21:46	
13C4-PFHXA (S)	69.48		%	1	50-150		1/29/2021 21:46	

Laboratory Reports

Lab ID: J2101111003

Sample ID: FRB

Date Received: 01/22/21 10:54

Matrix: Drinking Water

Date Collected: 01/21/21 10:20

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: E533 Analysis, Water								
Preparation Method: EPA 533								
Analytical Method: EPA 533								
PFOS	0.96	U	ng/L	1	3.9	0.96	1/29/2021 20:47	J
PFOA	0.96	U	ng/L	1	3.9	0.96	1/29/2021 20:47	J
13C4-PFBA (S)	73.07		%	1	50-150		1/29/2021 20:47	
13C5-PFPEA (S)	72.07		%	1	50-150		1/29/2021 20:47	
13C3-PFBS (S)	75.43		%	1	50-150		1/29/2021 20:47	
13C2-4:2FTS (S)	91.05		%	1	50-150		1/29/2021 20:47	
13C5-PFHXA (S)	71.03		%	1	50-150		1/29/2021 20:47	
13C4-PFHXA (S)	74.36		%	1	50-150		1/29/2021 20:47	
13C3-PFHXS (S)	75.77		%	1	50-150		1/29/2021 20:47	
13C2-6:2FTS (S)	80.96		%	1	50-150		1/29/2021 20:47	
13C8-PFOA (S)	71.53		%	1	50-150		1/29/2021 20:47	
13C9-PFNA (S)	70.19		%	1	50-150		1/29/2021 20:47	
13C8-PFOS (S)	71.51		%	1	50-150		1/29/2021 20:47	
13C2-8:2FTS (S)	76.19		%	1	50-150		1/29/2021 20:47	

Lab ID: J2100638002
Sample ID: TYN0112-1 BLANK

Date Received: 01/13/21 09:53 Matrix: Water
Date Collected: 01/12/21 09:27

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: PFAS Analysis, Water								
Preparation Method: AEL SOP-041/LCMSMS								
Analytical Method: AEL SOP-041/LCMSMS								
4:2 FTS	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
6:2 FTS	2.4	I	ng/L	1	4.0	1.0	1/15/2021 01:10	J
8:2 FTS	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
NEtFOSAA	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
NMeFOSAA	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFBS	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFBA	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFDS	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFDA	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFDaA	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFHpS	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFHpA	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J
PFHxS	1.0	U	ng/L	1	4.0	1.0	1/15/2021 01:10	J

Laboratory Reports

Parameter	CAS Number	Results	Q	DL	LOD	LOQ	Units
11-Cl-PF3OUdS	763051-92-9	1.8	U	0.88	1.8	3.5	ng/L
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	39108-34-4	1.8	U	0.88	1.8	3.5	ng/L
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	757124-72-4	1.8	U	0.88	1.8	3.5	ng/L
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	27619-97-2	1.8	U	0.88	1.8	3.5	ng/L
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	1.8	U	0.88	1.8	3.5	ng/L
9Cl-PF3ONS	756426-58-1	1.8	U	0.88	1.8	3.5	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	113507-82-7	1.8	U	0.88	1.8	3.5	ng/L
Perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	1.8	U	0.88	1.8	3.5	ng/L
Perfluoro-4-methoxybutanoic acid(PFMBA)	863090-89-5	1.8	U	0.88	1.8	3.5	ng/L
Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.5		0.88	1.8	3.5	ng/L
Perfluorobutanoic acid (PFBA)	375-22-4	3.1	J	0.88	1.8	3.5	ng/L
Perfluorodecanoic acid (PFDA)	335-76-2	1.8	U	0.88	1.8	3.5	ng/L

Electronic Data Deliverable

	Method	CAS	Parameter	Dilution	Adjusted Detection Limit	Adjusted Reporting Limit	Final Result	Units	Qualifier_Only	Qualifiers	Spike
64	EPA 533	919005-14-4	ADONA	1	0.88	3.5	0.88 ng/L	U			
65	EPA 533	13252-13-6	HFPO-DA	1	0.88	3.5	0.88 ng/L	U			
66	EPA 533	151772-58-6	NFDHA	1	0.88	3.5	0.88 ng/L	U			
67	EPA 533	375-22-4	PFBA	1	0.88	3.5	3.103 ng/L	I			
68	EPA 533	375-73-5	PFBS	1	0.88	3.5	5.5 ng/L				
69	EPA 533	335-76-2	PFDA	1	0.88	3.5	0.88 ng/L	U			
70	EPA 533	307-55-1	PFDaA	1	0.88	3.5	0.88 ng/L	U			
71	EPA 533	113507-82-7	PFEESA	1	0.88	3.5	0.88 ng/L	U			
72	EPA 533	375-85-9	PFHpA	1	0.88	3.5	1.2 ng/L	I			
73	EPA 533	375-92-8	PFHpS	1	0.88	3.5	0.88 ng/L	U			
74	EPA 533	307-24-4	PFHxA	1	0.88	3.5	2.5 ng/L	I			
75	EPA 533	355-46-4	PFHxS	1	0.88	3.5	0.93 ng/L	I			
76	EPA 533	863090-89-5	PFMBA	1	0.88	3.5	0.88 ng/L	U			
77	EPA 533	377-73-1	PFMPA	1	0.88	3.5	0.88 ng/L	U			
78	EPA 533	375-95-1	PFNA	1	0.88	3.5	0.88 ng/L	U			
79	EPA 533	335-67-1	PFOA	1	0.88	3.5	2.3 ng/L	I			
80	EPA 533	1763-23-1	PFOS	1	0.88	3.5	3.2 ng/L	I			
81	EPA 533	2706-90-3	PFPeA	1	0.88	3.5	6 ng/L				
82	EPA 533	2706-91-4	PFPeS	1	0.88	3.5	0.88 ng/L	U			
83	EPA 533	2058-94-8	PFUnA	1	0.88	3.5	0.88 ng/L	U			
84	EPA 533	763051-92-9	11Cl-PF3OUdS	1	0.84	3.4	0.84 ng/L	U			
85	EPA 533	13624-35-5	13C2 4:2ETS	1							

Have any Question, Comment or Suggestion, contact Us

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