

How to Read and Interpret my PFAS Laboratory Data Report

Laboratory data reports may at first seem difficult to read and interpret. Although required information is included in the report, each laboratory may present the information in differing ways. In general, each laboratory report must include a cover page, a list defining abbreviations used in the report, a summary of issues that the laboratory may have had during sample analysis, a report of sample results including dates and times of sample collection, sample receipt, sample preparation and analysis, several sections summarizing laboratory quality control measurements, and a copy of the chain of custody form and related sample receipt documentation.

Example Report of Sample Results:

Parameter	Result	Units	Qualifier	RL	MDL	Dilution Factor
Perfluorooctanoic Acid (PFOA)	21.2	ng/L		1.95	0.230	1
Perfluorooctane Sulfonic Acid (PFOS)	ND	ng/L	U	1.95	0.491	1

Result = The concentration of the compound detected

This number is compared to Maine's Interim Drinking Water Standard, which is currently 20 parts per trillion

ND = Non-Detect

ND means the compound was not detected at a level high enough for the laboratory equipment to detect

RL = Reporting Limit

The RL is the limit to which the laboratory equipment can reliably report under normal laboratory conditions

MDL = Method Detection Limit

The MDL is the lowest concentration that the laboratory test equipment can detect a contaminant

Note: ng/L = Nanograms per liter or parts per trillion (ppt)



Laboratory Quality Control

A testing laboratory is required to implement a series of practices to ensure that results generated during the testing of samples are accurate and complete. Each laboratory report will include several pages of quality control information. This information can easily be confused with actual sample results. Actual sample results will be labelled as such and include a specific sample identification number, client identification number, and sample location. Quality control data will include terminology such as method blank analysis, batch quality control, lab quality control analysis, matrix spike analysis, and lab duplicate analysis. Each laboratory report is reviewed by qualified DEP staff prior to sending you the data to ensure that the data are of high quality and dependable. If not, DEP staff may ask to repeat the sampling and testing.

Common Laboratory Data Qualifiers

Each laboratory report should include a list defining abbreviations used in the report. Laboratories do not all use the same abbreviations, so it is important to check the list included in the report. The most common abbreviations, called data qualifiers, used by a laboratory are as follows:

Qualifier	Definition
B	The compound was detected in a blank sample. This is a quality control measure that defines whether there is uncertainty in the source of contamination. B qualifiers indicate the sample result may be biased high.
U	The compound was not detected at a level greater than the laboratory method detection limit (MDL).
J	The compound was detected at a level greater than the laboratory MDL and less than the reporting limit. J qualifiers indicate an unknown bias to the sample result.
E	The compound was detected at a level that exceeded the laboratory instrument calibration curve. E qualifiers generally indicate a low bias to the sample result. Compounds with an E qualifier will have another result reported for a diluted analysis to bring the compound within the laboratory calibration curve. This result is generally on a subsequent page in the report.
F, Q or I	F, Q or I qualifiers generally indicate a high bias to the sample result and the reported result should be considered a maximum concentration.

How is the Sum of 6 Calculated?

In June 2021, the Department began applying an interim standard of 20 ppt (ng/L) for the sum of 6 PFAS in drinking water. These compounds are PFOA, PFOS, PFNA, PFHpA, PFHxS and PFDA.

Results above the reporting limit are used in the calculation as reported in the laboratory report. Results reported with a “J” qualifier are below the reporting limit and above the laboratory method detection limit (MDL) and are used in the calculation as shown in the laboratory report. Non-detect (ND) results are below the laboratory MDL, and a value of zero is used in the calculation.

The table below illustrates how the Sum of 6 is calculated:

Compound	Result from Lab Report (ng/L)	Qualifier	Reporting Limit (ng/L)	Result used in Calculation (ng/L)
PFOA	170		1.8	170
PFOS	185	B	1.8	185
PFNA	10		1.8	10
PFHpA	142		1.8	142
PFHxS	0.242	J	1.8	0.242
PFDA	ND	U	1.8	0
			Calculated Sum of 6	507

Where can I find more information?

PFAS Laboratory Questions:

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General PFAS Inquiries: pfas.dep@maine.gov

Maine DEP PFAS webpage: www1.maine.gov/dep/spills/topics/pfas/index.html