

## Understanding Lab Results

Some questions have been received at JAC regarding how to read laboratory test results and the meaning of a “J” flag for a reported concentration. This document explains some basics of the reporting and interpretation of lab results.

Here is an example lab result for PFOA and PFOS from the August 2022 sampling event:

Analyte	Results	RL	DL	Units	DF	Flag/Qual
Perfluorooctanoic acid (PFOA)	1.9	2.0	0.46	ng/L	1	J
Perfluorooctanesulfonic acid (PFOS)	20	2.0	0.63	ng/L	1	

The laboratory data table headings are:

- Results: The actual detected concentration.
- RL\*: The reporting limit, which is the smallest concentration (or amount) of the analyte that can be reported by the laboratory.
- DL\*: The detection limit (also called the Method Detection Limit, or MDL) is the smallest concentration of an analyte that can be measured and reported with 99-percent confidence that the concentration is greater than zero.
- Units: The concentration units that the results are being reported in. In this case ng/L or parts per trillion (ppt).
- DF: The dilution factor used in the analysis (1 indicates no dilution was required to analyze the sample).
- Flag/Qual: Coded flags that indicate if QA/QC criteria are not met.
- J: This flag indicates that the analyte was estimated in the analysis because it was between the RL and DL.

\* Note that RL and DL are not fixed numbers, and can vary by analyte, sample, and test date.

In the example above, PFOA was detected at 1.9 ng/L but was flagged with a J. It is estimated at 1.9 because it is below the RL of 2.0 mg/L but above the 0.46 ng/L DL. PFOS was detected at 20 ng/L and is not flagged because it is above the RL of 2.0 ng/L. If the Results column has an ND reported, then that indicates the analyte was not detected (i.e., below the DL).