

# New PFAS Analytical Method

## EPA RELEASES DRAFT METHOD 1633

The United States Environmental Protection Agency (EPA) recently released its draft Method 1633 to test for 40 PFAS in eight different media including non-potable water, soil, other solids and tissue. The method was developed in partnership with Department of Defense (DoD) and has undergone single-laboratory study, but is not finalized, with the multi-laboratory validation expected to be completed sometime in 2022.

Method 1633 is EPA's first draft method to test PFAS in soil, biosolids, tissue, groundwater, surface water and wastewater. GSI's opinion is that this is a complex method, with multiple steps depending upon the matrix; however, the draft method is quite robust and very detailed. **We recommend that our clients start folding this method into environmental projects, as appropriate.**

### What this mean for environmental investigations and sampling projects?

**Recommended, Not Required** - As a draft method, it is not required until EPA has promulgated it through rulemaking and validation. However, EPA is already recommending its use in applications, including National Pollutant Discharge Elimination System (NPDES) permits, and the method contains all the required quality control procedures for a Clean Water Act (CWA) method.

**State Agency Adoption** - GSI anticipates that, upon validation and finalization in late 2022, DoD and State agencies will also require its use as soon as labs can get accredited for the method, for example through the DoD Environmental Laboratory Accreditation Program (ELAP).

**Laboratories Will Likely Soon Offer** - We expect that commercial laboratories will be able to offer this method soon since many are already following similar, "modified", protocols.

**Estimated Costs** - GSI foresees the costs for each matrix under this method to be similar to the current cost of modified 537.1/533 PFAS analysis (up to \$400 per sample). Each matrix is handled differently, so costs may vary slightly based on matrix.

### Additional Items to Note

Based on the results of the single-lab study, the breakdown of minimum detection limits (MDLs) are as follows:

**Groundwater/surface water/wastewater:** Below 1 ppt for 32 of the 40 compounds, and below 10 ppt for all compounds.

**Soil:** Below 100 ppt for 31 of the 40 compounds, and below 500 ppt for all compounds.

	Minimum Detection Limits					
	parts per trillion (ppt)				parts per billion (ppb)	
	0-1	1-10	10-100	100-500	0.5-1	1-10
Aqueous	32	8	--	--	--	--
Solids	--	--	31	9	--	--
Tissue	--	--	15	18	3	4

\* Number indicates the number of PFAS analytes that have MDL in the particular range



### Additional Items to Note (continued)

We continue to recommend careful review and attention to laboratory standard operation procedures (SOPs) and data validation packages to ensure the validity of data generated.

- Though Method 1633 lists 40 PFAS analytes and includes isotope dilution, isotopically labelled internal standards are only available for 24 of the 40 PFAS analytes. This creates some concern regarding the accuracy and quantitation of some of the analytes that do not have isotopically labelled internal standards.
- This method is a performance-based analysis so leaves open the possibility of “modifications” to the method.

Internal standard recoveries are not finalized, but, provisionally, there is mention of 70-130% range for native and isotopically labeled compounds.

Comparison of how Method 1633 stacks up against other EPA methods for potable and non-potable water.

Method	Date Published	Matrix	Pros	Cons
<b>Method 537.1</b>	November 2018	Aqueous (Potable)	<ul style="list-style-type: none"> <li>• Promulgated EPA method</li> </ul>	<ul style="list-style-type: none"> <li>• Drinking water only</li> <li>• Does not use isotope dilution (added in 2020 update)</li> <li>• 18 PFAS only</li> </ul>
<b>Method 533</b>	December 2019	Aqueous (Potable)	<ul style="list-style-type: none"> <li>• Promulgated EPA method</li> <li>• Isotope dilution</li> </ul>	<ul style="list-style-type: none"> <li>• Targets some short chain PFAS</li> <li>• 25 PFAS only</li> </ul>
<b>Method 8327</b>	June 2019	Aqueous (Non-Potable)	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Will not meet DoD requirements and is not recommended</li> <li>• Does not use isotope dilution</li> <li>• No solid-phase extraction (SPE) so likely high detection limits</li> </ul>
<b>Method 1633</b>	September 2021 (Draft)	Aqueous (Non-Potable), solid (soil, biosolids, sediment) and tissue	<ul style="list-style-type: none"> <li>• Isotope dilution</li> <li>• Expanded suite of analytes</li> </ul>	<ul style="list-style-type: none"> <li>• 40 PFAS only</li> <li>• Isotopically labelled internal standards are only available for 24 of the 40 PFAS</li> </ul>

## CONTACT US

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