

PFAS in New Zealand

PFAS

Eurofins | Environment Testing's PFAS centre-of-excellence laboratory in Brisbane has extended its NATA accreditation to the measurement of the full PFAS list encompassing 30 compounds in soils, waters, and biotic matrices using isotope dilution & LC-MS/MS.

Method Summary

Eurofins | Environment Testing's in-house methodology is derived from US EPA Method 537 version 1.1. Labelled internal standards are spiked directly into samples prior to SPE extraction. Labelled compounds are used to quantify unlabelled target compounds and perform recovery correction, one of the principle advantages. Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available. Internal standard calibration is applied to the determination of the native compounds that do not have exact labelled analogues, and that are not being quantified by isotope dilution. Internal standard calibration is also used to quantify the labelled compounds themselves.

The higher quality data outweighs the added cost of the isotopically labelled compounds, demonstrated by Eurofins | Environment Testing's NMI AQA proficiency results: zero outliers across all matrices and compounds over the last three years, the only commercial laboratory to do so. See below for reporting limits.

Biota

Biota can be a difficult set of matrices to analyse because of different matrix effects but by employing isotope dilution LC-MS/MS and QuEChERS extraction for quantitative recoveries together with a secondary SPE clean-up for the accurate determination of sub-parts per billion levels of 30 PFAS biotic matrices is achieved. Combined with the requirements of QSM 5.3 to minimise signal enhancement/ suppression, our

results can be trusted especially when the data is being used for demanding ecological and human health risk assessments. Please note; approval to import food samples is expected soon.

Fingerprinting

Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QToF-MS) identifies the regular 30 PFAS as well as their precursors and common degradation compounds such as 5:3 FTCA. This compound and other unknown unknowns are confirmed based upon their accurate mass, isotopic pattern, retention time plus accumulated data contained in the PCDL (Personal Compound Database & Library) compiled from legacy AFFF products.

TAT

PFAS analysis of New Zealand samples is serviced by Eurofins | Environment Testing's PFAS centre-of-excellence laboratory in Brisbane. The laboratory is a DAWR approved biosecurity containment facility, receiving samples directly from New Zealand and offering 5-day standard TAT. Regional and international courier fees are included in analysis pricing.

Contact

To discuss logistical details or quotations of your PFAS projects, please contact; [Swati Shahaney](#) or [Michael Ritchie](#)

To discuss technical details, please contact; [Dr. Bob Symons](#).

For more information on PFAS see; [EnviroNote 1076 – PFAS in Food and Biotic Matrices](#)
[EnviroNote 1079 – PFAS Fingerprinting](#)
[EnviroNote 1080 – TOF & PFAS Investigations](#)

Results You Can Trust

Local Support

Swati Shahaney
Michael Ritchie

+64 95 26 45 51
+64 21 44 42 75

Technical Support

Dr Bob Symons

+61 2 9900 8400

Laboratories

Auckland
Christchurch

Offices

Wellington
Hamilton
Katikati, Bay of Plenty
Dunedin

Limits of Reporting

Per- and Polyfluoroalkyl Substances	PFASs	CAS No.	Water (µg/L)		Soil (µg/kg)	
			Standard	Trace	Standard	Trace
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid	PFBA	375-22-4	0.05	0.005	5	1
Perfluoropentanoic acid	PFPeA	2706-90-3	0.01	0.001	5	1
Perfluorohexanoic acid	PFHxA	307-24-4	0.01	0.001	5	1
Perfluoroheptanoic acid	PFHpA	375-85-9	0.01	0.001	5	1
Perfluorooctanoic acid	PFOA	335-67-1	0.01	0.001	5	1
Perfluorononanoic acid	PFNA	375-95-1	0.01	0.001	5	1
Perfluorodecanoic acid	PFDA	335-76-2	0.01	0.001	5	1
Perfluoroundecanoic acid	PFUnA	2058-94-8	0.01	0.001	5	1
Perfluorododecanoic acid	PFDoA	307-55-1	0.01	0.001	5	1
Perfluorotridecanoic acid	PFTriDA	72629-94-8	0.01	0.001	5	1
Perfluorotetradecanoic acid	PFTeDA	376-06-7	0.01	0.001	5	1
Perfluoroalkane sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid	PFBS	375-73-5	0.01	0.001	5	1
Perfluoropentane sulfonic acid	PFPeS	2706-91-4	0.01	0.001	5	1
Perfluorohexane sulfonate	PFHxS	355-46-4	0.01	0.001	5	1
Perfluorononanesulfonic acid	PFNS	375-73-5	0.01	0.001	5	1
Perfluoroheptane sulfonate	PFHpS	375-92-8	0.01	0.001	5	1
Perfluorooctane sulfonate	PFOS	1763-23-1	0.01	0.001	5	1
Perfluoropropanesulfonic acid	PFPrS	423-41-6	0.01	0.001	5	1
Perfluorodecanesulfonic acid	PFDS	67906-42-7	0.01	0.001	5	1
Perfluoroalkane sulfonamides (FASAs)						
Perfluorooctane sulfonamide	PFOSA	754-91-6	0.05	0.005	10	1
N-methylperfluoro-1-octane sulfonamide	N-MeFOSA	31506-32-8	0.05	0.005	5	1
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	4151-50-2	0.05	0.005	5	1
Perfluoroalkane sulfonamido ethanols and N-alkyl perfluoroalkane sulfonamido ethanols (FASEs, MeFASEs, EtFASEs)						
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	N-MeFOSE	24448-09-7	0.01	0.001	5	1
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	N-EtFOSE	1691-99-2	0.01	0.001	5	1
Perfluoroalkane sulfonamido acetic acids and N-alkyl perfluoroalkane sulfonamido acetic acids (FASAAs, MeFASAAs, EtFASAAs)						
N-ethyl-perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6	0.05	0.005	10	1
N-methyl-perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9	0.05	0.005	10	1
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2 FTSA	757124-72-4	0.01	0.001	5	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2 FTSA	27619-97-2	0.05	0.005	10	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2 FTSA	39108-34-4	0.01	0.001	5	1
1H, 1H, 2H, 2H-perfluorododecane sulfonate	10:2 FTSA	120226-60-0	0.01	0.001	5	1

Results You Can Trust

Local Support

Swati Shahaney
Michael Ritchie

+64 95 26 45 51
+64 21 44 42 75

Technical Support

Dr Bob Symons

+61 2 9900 8400

Laboratories

Auckland
Christchurch

Offices

Wellington
Hamilton
Katikati, Bay of Plenty
Dunedin

Tests / Suites

PFAS Test	Method Reference	Water (µg/L)		Soil (µg/kg)	
		Standard	Trace	Standard	Trace
NEMP Total Oxidisable Precursor Assay (TOPA) – 30 PFAS	NEMP 1.0 Feb 2018	0.01- 0.05		0.01- 0.05*	
Total Organo Fluorine (TOF) using Combustion Ion Chromatography (CIC) Analysis	In House Method	0.1		50	
Perfluorooctanoic acid (PFOA) / Perfluorooctanesulfonic acid (PFOS) / 1H,1H,2H,2H- perfluorooctansulfonic acid (6:2 FTS) / 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS)	In-House Method based on US EPA Method 537 V1.1	0.01-0.05	0.001-0.005	5	1
30 PFAS including PFOA/PFOS and 6:2 FTS	In-House Method based on US EPA Method 537 V 1.1	0.01-0.05	0.001-0.005	5	1
PFAS linear and branched isomers: L-PFHxS, mono-PFHxS & Total PFHxS and L-PFOS, mono-PFOS, di-PFOS & Total PFOS	In-House Method based on US EPA Method 537 V1.1	0.01-0.05	0.001-0.005	5	1
Ultra-Trace Perfluorooctanesulfonic acid (PFOS)	In-House Method based on US EPA Method 537 V1.1		0.0001		0.1

* Reported as (ug/L)

Results You Can Trust

Local Support

 Swati Shahaney
 Michael Ritchie

 +64 95 26 45 51
 +64 21 44 42 75

Technical Support

Dr Bob Symons

+61 2 9900 8400

Laboratories

 Auckland
 Christchurch

Offices

 Wellington
 Hamilton
 Katikati, Bay of Plenty
 Dunedin