8 July 2025

RANGITĪKEI
DISTRICT COUNCIL

[redacted]
Email: [redacted]

Dear [redacted]

Local Government Official Information Request

Thank you for your request for information from Council. All requests to the Council for information are required to be considered in accordance with the Local Government Official Information and Meetings Act 1987 (LGOIMA). More information about how the Council handles LGOIMA requests can be found in the Council's LGOIMA Request Policy which is available on the Council's website.

Your request for information was received on 9 June 2025 and requested some of our water testing results. Our response to your request is provided below:

1. Can you please provide me with the following details for dates between
   1st May – 1st June 2021
   1st May – 1st June 2022
   1st May – 1st June 2023
   1st May – 1st June 2024
   1st May – 1st June 2025
   All data needs to be reported in Micro Grams per Liter ug/L in an editable Excel format

   Response:
   Please find attached excel spreadsheet detailing all relevant water testing data. We are unable to rearrange this data into the format you have requested due to the time it would take to transfer the data to the requested form. We note a request for clarification of response regarding what was meant by synthetic nitrates was not responded to.

2. If the testing of these substances are not captured between these dates please specify why they were not and the alternative consistent dates they were tested, and provide that data.

   Response:
   All testing data has been provided in the excel spreadsheet released under question 1. This includes testing on dates outside of 1 May – 1 June each year. In addition, the PFAS testing was not done in this date range, however the data is supplied from 9 December 2024 and 15 September 2022. The testing was only done on these dates as this test was not mandatory and was done every two years. Only the Bulls supply was tested due to known PFAS in a nearby area. PDF results of the PFAS testing are attached.

3. The test point location should be clearly identified and an indication that this point remained unfiltered or screened prior to testing.

   Response:
   Each location is provided as part of the response, please confirm if address details of locations are required as part of this request.

4. Show where the publicly accessible common tap furthest downstream, from the Water treatment facility while still within the CBD Area (WS) a Surface Water Site (SW) and Well Site (MW) near the Water Treatment Facility.

   Response:
   Council has the following publicly accessible taps within CBD areas:
   - Near 15 Huia St, Taihape
   - Near 9 Linnot St, Taihape
   - Opposite 7 King St, Marton
   - Near 395 Wellington Road, beside Memorial Hall

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Please note that it is our policy to proactively release our responses to official information requests, where appropriate. Our response to your request will be published shortly at https://www.rangitikei.govt.nz/council/about/contact-us/official-information with your personal information removed.

If you wish to discuss this decision with us, please feel free to contact Alicia Hansen 06 327 0099.

Yours sincerely

Katrina Gray
Group Manager Strategy, Community & Democracy

Source	Sample Date		Result		
Bulls Bores 1-4	25/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Bulls Bore 4	25/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Bulls Bore 3	25/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Bulls Bore 2	25/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Calico Line Plant Raw	27/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Tutaenui Dam Raw	27/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Mangaweka Source	27/08/2021	Lead - Acid Soluble - g/m³	0.00009	< 0.001 g/m³	(.01 - .01)
Ratana Plant Raw	25/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Taihape Source	27/08/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Hunterville Source	27/08/2021	Lead - Acid Soluble - g/m³	0.000032	< 0.001 g/m³	(.01 - .01)
Bulls Bore 5	02/09/2021	Lead - Acid Soluble - g/m³	0	< 0.001 g/m³	(.01 - .01)
Bulls Bores 1-4	25/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.614	0.614 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 4	25/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	1.108	1.11 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 3	25/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.961	0.961 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 2	25/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.103	0.103 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant Raw	27/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.002	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam Raw	27/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.864	0.864 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	27/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.283	0.283 g/m³ NO3-N	(11.3 - 11.3)
Ratana Plant Raw	25/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.003	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Taihape Source	27/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.082	0.082 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Source	27/08/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.367	0.367 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	02/09/2021	Nitrate - Ion Chromatography - g/m³ NO3-N	0.002	< 0.005 g/m³ NO3-N	(11.3 - 11.3)

Source	Sample Date		Result		
Calico Line Plant Raw	02/11/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Source	02/11/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.545	0.545 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam Raw	02/11/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.34	0.340 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	02/11/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	1.131	1.13 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	02/11/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	04/11/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.009	0.009 g/m³ NO3-N	(11.3 - 11.3)
Taihape Source	04/11/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.07	0.070 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant Raw	02/12/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	02/12/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Source	02/12/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.416	0.416 g/m³ NO3-N	(11.3 - 11.3)
Taihape Source	02/12/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.076	0.076 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam Raw	02/12/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.125	0.125 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	02/12/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.743	0.743 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	02/12/2022	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)

Source	Sample Date		Result		
Tutaenui Dam Raw	04/01/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant Raw	04/01/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.004	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	04/01/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	06/01/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.371	0.371 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Source	06/01/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.458	0.458 g/m³ NO3-N	(11.3 - 11.3)
Taihape Source	06/01/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.062	0.062 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	01/02/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.058	0.058 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	01/02/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	01/02/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	03/02/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.084	0.084 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	03/02/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	03/02/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.27	0.270 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	08/02/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.018	0.018 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	06/03/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.021	0.021 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	06/03/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	06/03/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	08/03/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.374	0.374 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	08/03/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	08/03/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.54	0.540 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	08/03/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.063	0.063 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	18/04/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.027	0.027 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	18/04/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.003	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	18/04/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	24/04/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.256	0.256 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	26/04/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.375	0.375 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	26/04/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	26/04/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.106	0.106 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	17/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.101	0.101 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	22/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.568	0.568 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	22/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.001	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	22/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.004	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	24/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.457	0.457 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	24/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.003	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	24/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.272	0.272 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	25/05/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.499	0.499 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	19/06/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	1.111	1.11 g/m³ NO3-N	(11.3 - 11.3)

Calico Line Plant	19/06/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.004	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	19/06/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	19/06/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.127	0.127 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	22/06/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.6	0.600 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	22/06/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	22/06/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.447	0.447 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	19/07/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	1.198	1.20 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	19/07/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	19/07/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	19/07/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.141	0.141 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	20/07/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.62	0.620 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	20/07/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	20/07/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.628	0.628 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	04/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.332	0.332 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	18/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	1.149	1.15 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	18/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.004	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	18/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.002	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	18/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.125	0.125 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	21/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.699	0.699 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	21/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.003	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	21/08/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.713	0.713 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	19/09/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.838	0.838 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	19/09/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	19/09/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	19/09/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.085	0.085 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	21/09/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.623	0.623 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	21/09/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.011	0.011 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	21/09/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.868	0.868 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	02/10/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.844	0.844 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	02/10/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.122	0.122 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	04/10/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.568	0.568 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	04/10/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.361	0.361 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	04/10/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.697	0.697 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	04/10/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	04/10/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	01/11/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.395	0.395 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	01/11/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.469	0.469 g/m³ NO3-N	(11.3 - 11.3)

Calico Line Plant	01/11/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	03/11/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.568	0.568 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	03/11/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.009	0.009 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	03/11/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.009	0.009 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	03/11/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.101	0.101 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	01/12/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.617	0.617 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	01/12/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.605	0.605 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	01/12/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.42	0.420 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	01/12/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.245	0.245 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	01/12/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	01/12/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	01/12/2023	Nitrate - Ion Chromatography - g/m³ NO3-N	0.071	0.071 g/m³ NO3-N	(11.3 - 11.3)

Source	Sample Date		Result		
Tutaenui Dam	03/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.092	0.092 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	03/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	05/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.705	0.705 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	05/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.208	0.208 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	05/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.395	0.395 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	05/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.01	0.010 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	05/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.089	0.089 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	16/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.125	0.125 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	31/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.051	0.051 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	31/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.01	0.010 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	31/01/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	02/02/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.848	0.848 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	02/02/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.707	0.707 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	02/02/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.315	0.315 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	07/02/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.061	0.061 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	04/03/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.061	0.061 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	04/03/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.009	0.009 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	04/03/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.027	0.027 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	06/03/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.423	0.423 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	06/03/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.369	0.369 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	06/03/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.392	0.392 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	06/03/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.071	0.071 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	16/04/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.107	0.107 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	16/04/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	16/04/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.01	0.010 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	22/04/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.535	0.535 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	22/04/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	22/04/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.121	0.121 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	24/04/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.083	0.083 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	15/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.536	0.536 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	20/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.032	0.032 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	20/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	20/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	22/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.462	0.462 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	22/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	22/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.122	0.122 g/m³ NO3-N	(11.3 - 11.3)

Hunterville Raw	23/05/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.229	0.229 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	17/06/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.018	0.018 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	17/06/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.01	0.010 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	17/06/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.01	0.010 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	18/06/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.102	0.102 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	21/06/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.464	0.464 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	21/06/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.449	0.449 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	21/06/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.146	0.146 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	17/07/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.049	0.049 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	17/07/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	17/07/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	17/07/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.112	0.112 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	18/07/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.598	0.598 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	18/07/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.587	0.587 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	18/07/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.14	0.140 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	02/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.139	0.139 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	16/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.03	0.030 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	16/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	16/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.007	0.007 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	16/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.102	0.102 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	19/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.506	0.506 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	19/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.018	0.018 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	19/08/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.116	0.116 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	17/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.842	0.842 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	17/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	17/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	17/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.084	0.084 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	19/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	1.063	1.06 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	19/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.013	0.013 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	19/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.182	0.182 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	30/09/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.084	0.084 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	02/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.934	0.934 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	02/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.905	0.905 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	04/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.176	0.176 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	04/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.68	0.680 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	04/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	04/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.009	0.009 g/m³ NO3-N	(11.3 - 11.3)

Taihape Raw	04/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.093	0.093 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	30/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.52	0.520 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	30/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.041	0.041 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	30/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.189	0.189 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	30/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.294	0.294 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	30/10/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.013	0.013 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	01/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.013	0.013 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	01/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.088	0.088 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	29/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.974	0.974 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	29/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.845	0.845 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	29/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.213	0.213 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	29/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.119	0.119 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	29/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.009	0.009 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	29/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.005	0.005 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	29/11/2024	Nitrate - Ion Chromatography - g/m³ NO3-N	0.056	0.056 g/m³ NO3-N	(11.3 - 11.3)

Source	Sample date		Result		
Bulls Plant	24/04/2025	Lead - Total - g/m³	0.000058	< 0.001 g/m³	(0.01 - 0.01)
Marton Town - 2	28/04/2025	Lead - Total - g/m³	0.000185	< 0.001 g/m³	(0.01 - 0.01)
Ratana Town - 1	28/04/2025	Lead - Total - g/m³	0.000151	< 0.001 g/m³	(0.01 - 0.01)
Bulls Town - 1	30/04/2025	Lead - Total - g/m³	0.00025	< 0.001 g/m³	(0.01 - 0.01)
Hunterville Town - 2	30/04/2025	Lead - Total - g/m³	0.000286	< 0.001 g/m³	(0.01 - 0.01)
Taihape Town - 1	30/04/2025	Lead - Total - g/m³	0.000066	< 0.001 g/m³	(0.01 - 0.01)
Bulls Plant	02/05/2025	Lead - Total - g/m³	0.000076	< 0.001 g/m³	(0.01 - 0.01)
Marton Plant	02/05/2025	Lead - Total - g/m³	0.000013	< 0.001 g/m³	(0.01 - 0.01)
Taihape Plant	02/05/2025	Lead - Total - g/m³	0.000011	< 0.001 g/m³	(0.01 - 0.01)
Bulls Bores 1-4	14/05/2025	Lead - Total - g/m³	0.000086	< 0.001 g/m³	(0.01 - 0.01)
Bulls Bore 5	14/05/2025	Lead - Total - g/m³	0	< 0.001 g/m³	(0.01 - 0.01)
Mangaweka Town - 2	22/05/2025	Lead - Total - g/m³	0.000226	< 0.001 g/m³	(0.01 - 0.01)
Tutaenui Dam	06/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	06/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	07/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.555	0.555 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	07/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.048	0.048 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	07/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.219	0.219 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	07/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	07/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.081	0.081 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	16/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.14	0.140 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	31/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.126	0.126 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Plant	31/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.006	0.006 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	31/01/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	03/02/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.551	0.551 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	03/02/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	03/02/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.194	0.194 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	07/02/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.037	0.037 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	05/03/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.049	0.049 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Raw	05/03/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	05/03/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0	< 0.005 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	07/03/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.497	0.497 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	07/03/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.252	0.252 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	07/03/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.139	0.139 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	07/03/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.014	0.014 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	17/04/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.033	0.033 g/m³ NO3-N	(11.3 - 11.3)

Calico Line Raw	17/04/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	17/04/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.037	0.037 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	23/04/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.489	0.489 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	23/04/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.008	0.008 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	23/04/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.24	0.240 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	24/04/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.085	0.085 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.58	0.580 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.011	0.011 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.195	0.195 g/m³ NO3-N	(11.3 - 11.3)
Mangaweka Source	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.181	0.181 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.031	0.031 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Raw	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.015	0.015 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.02	0.020 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	14/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.118	0.118 g/m³ NO3-N	(11.3 - 11.3)
Taihape Raw	16/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.114	0.114 g/m³ NO3-N	(11.3 - 11.3)
Tutaenui Dam	21/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.044	0.044 g/m³ NO3-N	(11.3 - 11.3)
Calico Line Raw	21/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.027	0.027 g/m³ NO3-N	(11.3 - 11.3)
Ratana Bore	21/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.02	0.020 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bores 1-4	22/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.524	0.524 g/m³ NO3-N	(11.3 - 11.3)
Bulls Bore 5	22/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.178	0.178 g/m³ NO3-N	(11.3 - 11.3)
Hunterville Raw	26/05/2025	Nitrate - Ion Chromatography - g/m³ NO3-N	0.163	0.163 g/m³ NO3-N	(11.3 - 11.3)

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NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **923701-W_INT**
Project name
Project ID W02550100
Received Date Sep 15, 2022

Client Sample ID			**PLANT**	**WELL**	**BORE 1**	**BORE 2**
Sample Matrix			**TOP - Water**	**TOP - Water**	**TOP - Water**	**TOP - Water**
Eurofins Sample No.			**K22-Se0032669**	**K22-Se0032670**	**K22-Se0032671**	**K22-Se0032672**
Date Sampled			**Sep 06, 2022**	**Sep 06, 2022**	**Sep 06, 2022**	**Sep 06, 2022**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	0.02	0.02	0.02
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.29	0.30	0.30	0.31
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.02	0.02	0.01	0.02
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	58	52	56	53
13C5-PFPeA (surr.)	1	%	84	68	72	78
13C5-PFHxA (surr.)	1	%	93	76	72	78
13C4-PFHpA (surr.)	1	%	97	72	64	74
13C8-PFOA (surr.)	1	%	92	63	55	81
13C5-PFNA (surr.)	1	%	82	54	47	77
13C6-PFDA (surr.)	1	%	103	56	53	86
13C2-PFUnDA (surr.)	1	%	108	49	49	78
13C2-PFDoDA (surr.)	1	%	89	42	46	67
13C2-PFTeDA (surr.)	1	%	45	46	53	80
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	111	46	58	94
D3-N-MeFOSA (surr.)	1	%	78	23	43	60

Client Sample ID			PLANT	WELL	BORE 1	BORE 2
Sample Matrix			TOP - Water	TOP - Water	TOP - Water	TOP - Water
Eurofins Sample No.			K22-Se0032669	K22-Se0032670	K22-Se0032671	K22-Se0032672
Date Sampled			Sep 06, 2022	Sep 06, 2022	Sep 06, 2022	Sep 06, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	67	22	48	64
D7-N-MeFOSE (surr.)	1	%	50	27	42	56
D9-N-EtFOSE (surr.)	1	%	48	25	38	51
D5-N-EtFOSAA (surr.)	1	%	38	44	48	73
D3-N-MeFOSAA (surr.)	1	%	99	33	36	58
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.02	[N09]0.02	[N09]0.02	[N09]0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	[N09]0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	95	127	110	109
18O2-PFHxS (surr.)	1	%	88	124	94	119
13C8-PFOS (surr.)	1	%	109	80	70	109
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	61	76	61	62
13C2-6:2 FTSA (surr.)	1	%	55	76	53	70
13C2-8:2 FTSA (surr.)	1	%	52	50	51	86
13C2-10:2 FTSA (surr.)	1	%	101	32	39	55
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.02	0.03	0.02	0.02
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.02	0.03	0.02	0.02
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.35	0.37	0.35	0.37
Sum of PFASs (n=30)*	0.1	ug/L	0.35	0.37	0.35	0.37

Client Sample ID			BORE 3	BORE 5	BORE 3A
Sample Matrix			TOP - Water	TOP - Water	TOP - Water
Eurofins Sample No.			K22-Se0032673	K22-Se0032674	K22-Se0032675
Date Sampled			Sep 06, 2022	Sep 06, 2022	Sep 06, 2022
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	0.02	0.03
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.34	0.38	0.37
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.02	0.02	0.02
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01

Client Sample ID			BORE 3	BORE 5	BORE 3A
Sample Matrix			TOP - Water	TOP - Water	TOP - Water
Eurofins Sample No.			K22-Se0032673	K22-Se0032674	K22-Se0032675
Date Sampled			Sep 06, 2022	Sep 06, 2022	Sep 06, 2022
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	53	INT	56
13C5-PFPeA (surr.)	1	%	76	91	75
13C5-PFHxA (surr.)	1	%	76	107	76
13C4-PFHpA (surr.)	1	%	73	102	68
13C8-PFOA (surr.)	1	%	88	127	68
13C5-PFNA (surr.)	1	%	75	106	59
13C6-PFDA (surr.)	1	%	86	126	65
13C2-PFUnDA (surr.)	1	%	73	119	57
13C2-PFDoDA (surr.)	1	%	71	110	49
13C2-PFTeDA (surr.)	1	%	89	131	46
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	91	128	67
D3-N-MeFOSA (surr.)	1	%	54	123	29
D5-N-EtFOSA (surr.)	1	%	51	123	30
D7-N-MeFOSE (surr.)	1	%	57	83	40
D9-N-EtFOSE (surr.)	1	%	52	82	37
D5-N-EtFOSAA (surr.)	1	%	76	143	53
D3-N-MeFOSAA (surr.)	1	%	57	112	41
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.02	[N09]0.02	[N09]0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.01	< 0.01	[N09]0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	109	113	107
18O2-PFHxS (surr.)	1	%	116	120	102
13C8-PFOS (surr.)	1	%	107	116	87

Client Sample ID			BORE 3	BORE 5	BORE 3A
Sample Matrix			TOP - Water	TOP - Water	TOP - Water
Eurofins Sample No.			K22-Se0032673	K22-Se0032674	K22-Se0032675
Date Sampled			Sep 06, 2022	Sep 06, 2022	Sep 06, 2022
Test/Reference	LOR	Unit			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	76	106	72
13C2-6:2 FTSA (surr.)	1	%	76	120	64
13C2-8:2 FTSA (surr.)	1	%	79	149	56
13C2-10:2 FTSA (surr.)	1	%	51	113	37
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	0.03	0.02	0.03
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.01	< 0.01	0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.03	0.02	0.03
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.41	0.44	0.45
Sum of PFASs (n=30)*	0.1	ug/L	0.41	0.44	0.45

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Sep 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Sep 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Sep 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Sep 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

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Company Name: Pattle Delamore Partners Ltd - NI
Address: PDP House Level 4, 235 Broadway
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Auckland New Zealand 1023

Project Name:
Project ID: W02550100

Order No.:
Report #: 923701
Phone: 0011 64 9 523 6900
Fax: 0011 64 9 523 6901

Received: Sep 15, 2022 2:00 PM
Due: Sep 22, 2022
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Total Oxidisable Precursor	Per- and Polyfluoroalkyl Substances (PFASs)
Auckland Laboratory - IANZ# 1327							
Christchurch Laboratory - IANZ# 1290							
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	PLANT	Sep 06, 2022		TOP - Water	K22-Se0032669	X	X
2	WELL	Sep 06, 2022		TOP - Water	K22-Se0032670	X	X
3	BORE 1	Sep 06, 2022		TOP - Water	K22-Se0032671	X	X
4	BORE 2	Sep 06, 2022		TOP - Water	K22-Se0032672	X	X
5	BORE 3	Sep 06, 2022		TOP - Water	K22-Se0032673	X	X
6	BORE 5	Sep 06, 2022		TOP - Water	K22-Se0032674	X	X
7	BORE 3A	Sep 06, 2022		TOP - Water	K22-Se0032675	X	X
Test Counts						7	7

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	92			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	92			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	86			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	90			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	90			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	84			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	74			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	93			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	68			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	75			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	69			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	72			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	72			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	84			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	94			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	88			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	87			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	84			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	95			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	92			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	107			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	65			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	95			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	74			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	K22-Se0032671	CP	%	108			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	K22-Se0032671	CP	%	102			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	K22-Se0032671	CP	%	108			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	K22-Se0032671	CP	%	107			50-150	Pass	
Perfluorooctanoic acid (PFOA)	K22-Se0032671	CP	%	107			50-150	Pass	
Perfluorononanoic acid (PFNA)	K22-Se0032671	CP	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	K22-Se0032671	CP	%	90			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	K22-Se0032671	CP	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	K22-Se0032671	CP	%	84			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	K22-Se0032671	CP	%	70			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	K22-Se0032671	CP	%	94			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	K22-Se0032671	CP	%	98			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	K22-Se0032671	CP	%	88			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	K22-Se0032671	CP	%	86			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	K22-Se0032671	CP	%	99			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	K22-Se0032671	CP	%	84			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	K22-Se0032671	CP	%	80			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	K22-Se0032671	CP	%	74			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	K22-Se0032671	CP	%	102			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	K22-Se0032671	CP	%	79			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	K22-Se0032671	CP	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	K22-Se0032671	CP	%	100			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	K22-Se0032671	CP	%	108			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	K22-Se0032671	CP	%	110			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	K22-Se0032671	CP	%	96			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	K22-Se0032671	CP	%	55			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	K22-Se0032671	CP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	K22-Se0032671	CP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	K22-Se0032671	CP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	K22-Se0032671	CP	%	88			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	K22-Se0032669	CP	ug/L	0.02	0.02	4.3	30%	Pass	
Perfluorohexanoic acid (PFHxA)	K22-Se0032669	CP	ug/L	0.29	0.29	2.4	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	K22-Se0032669	CP	ug/L	0.02	0.02	3.8	30%	Pass	
Perfluorooctanoic acid (PFOA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	K22-Se0032669	CP	ug/L	0.02	0.02	3.8	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	K22-Se0032669	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	K22-Se0032669	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	K22-Se0032670	CP	ug/L	0.02	0.03	27	30%	Pass	
Perfluorohexanoic acid (PFHxA)	K22-Se0032670	CP	ug/L	0.30	0.31	4.5	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	K22-Se0032670	CP	ug/L	0.02	0.02	8.9	30%	Pass	
Perfluorooctanoic acid (PFOA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	K22-Se0032670	CP	ug/L	0.02	0.02	6.5	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	K22-Se0032670	CP	ug/L	0.01	0.01	8.7	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	K22-Se0032670	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	K22-Se0032670	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
N16	Analysis performed by Eurofins Environment Testing Australia

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS

[redacted]

[redacted]

General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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CENTRAL ENVIRONMENTAL LABORATORIES

Analytical Report

COA No: 24/09458-1

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Rangitikei District Council
Private Bag 1102
Marton 4741

Compliance of samples tested are assessed according to 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022'

Date received: 09/12/2024 **Time received:** 12:14 **RDC Sampler:** [redacted]
Sample date: 09/12/2024 **Order no.:** PO 154777

Sample	Test	Result	Units	Comments	Uncertainty
24/09458-01	**Sample time:** 09:36		**Sample type:** Source		
Bulls WTP Reticulation Well	PFAS **	Outsourced results appended			
	pH - Onsite Reading *	6.8			
	Temperature - Onsite Reading *	16.3	°C		
	Turbidity - Onsite Reading *	0.22	NTU		
24/09458-02	**Sample time:** 09:10		**Sample type:** Source		
Bulls Bores 1-4 G00041	PFAS **	Outsourced results appended			
	pH - Onsite Reading *	6.4			
	Temperature - Onsite Reading *	15.5	°C		
	Turbidity - Onsite Reading *	0.57	NTU		
24/09458-03	**Sample time:** 09:20		**Sample type:** Source		
Bulls Bore 2 G00041	PFAS **	Outsourced results appended			
	pH - Onsite Reading *	6.6			
	Temperature - Onsite Reading *	15.2	°C		
	Turbidity - Onsite Reading *	0.89	NTU		
24/09458-04	**Sample time:** 09:15		**Sample type:** Source		
Bulls Bore 3 G00041	PFAS **	Outsourced results appended			
	pH - Onsite Reading *	6.6			
	Temperature - Onsite Reading *	15.4	°C		
	Turbidity - Onsite Reading *	0.69	NTU		
24/09458-05	**Sample time:** 09:05		**Sample type:** Source		
Bulls Bore 5 G00041	PFAS **	Outsourced results			

Sample	Test	Result	Units	Comments	Uncertainty
		appended			
	pH - Onsite Reading *	6.9			
	Temperature - Onsite Reading *	15.4	°C		
	Turbidity - Onsite Reading *	0.39	NTU		

24/09458-06 **Sample time:** 09:00 **Sample type:** Source

Bulls WTP Treatment plant outlet (Raw)	PFAS **	Outsourced results appended			
	pH - Onsite Reading *	6.5			
	Temperature - Onsite Reading *	15.4	°C		
	Turbidity - Onsite Reading *	1.67	NTU		

24/09458-07 **Sample time:** 08:52 **Sample type:** Treated

Bulls Plant TP00061	PFAS **	Outsourced results appended			
	Chlorine -Free Available Onsite Reading *	1.08	g/m³ Cl2		
	pH - Onsite Reading *	6.7			
	Temperature - Onsite Reading *	16.8	°C		
	Turbidity - Onsite Reading *	0.11	NTU		

< is less than > is more than, g/m³ is equivalent to mg/L and ppm, MAV - Maximum Acceptable Value. GV - Guideline Value

Notes: * Non Accredited Test

** This test has been outsourced. Subcontracted reports can be supplied on request.

Test Methodology:

Test Code	Test	Methodology	Detection Limit
CL2.962	Chlorine -Free Available Onsite Reading	Portable HACH or Exact Micro. Non-endorsed onsite reading by Rangitikei DC	g/m³ Cl2
PFAS.683	PFAS	LCMSMS in accordance with in-house procedure	
pH.962	pH - Onsite Reading	Portable HACH or Exact Micro. Non-endorsed onsite reading by Rangitikei DC.	
Temp.962	Temperature - Onsite Reading	Non-endorsed onsite reading by Rangitikei DC.	°C
Turb.962	Turbidity - Onsite Reading	Portable HACH. Non-endorsed onsite reading by Rangitikei DC.	NTU

Test analysis was initiated between 09/12/2024 and 16/12/2024. For start dates of individual analyses please contact the laboratory.

[redacted]

Report released by [redacted] **Date: 17 December 2024**

Principal Analyst

Key Technical Person:

[redacted]

This Laboratory is accredited by International Accreditation New Zealand.
Tests and sampling procedures have been performed in accordance with the conditions of our accreditation.
Where not supplied test methods, detection limits and uncertainties are available on request.
When samples are collected by the client or an agent of the client, results reported apply only to samples as received at the Laboratory.
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CERTIFICATE OF ANALYSIS

Central Environmental Laboratories
Module 2, Batchelar Centre
Palmerston North 4472

Attention: [redacted]
Phone: [redacted]
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Sampling Site:

Lab Reference: 24-37949
Submitted by:
Date Received: 11/12/2024
Testing Initiated: 11/12/2024
Date Completed: 16/12/2024
Order Number:
Reference: 2409458

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at ALS NZ (or at the subcontracted laboratories, when applicable). Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

PFAS in Water

	Client Sample ID		24/09458-01, Bulls WTP, Reticulation Well	24/09458-02, Bulls Bores 1-4, G00041	24/09458-03, Bulls Bore 2, G00041	24/09458-04, Bulls Bore 3, G00041	24/09458-05, Bulls Bore 5, G00041
	Date Sampled		9/12/2024	9/12/2024	9/12/2024	9/12/2024	9/12/2024
Analyte	Unit	*Reporting Limit*	24-37949-1	24-37949-2	24-37949-3	24-37949-4	24-37949-5
Perfluorinated Sulfonic Acids (PFSA)							
PFPrS (linear)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFBS (linear)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFPeS (linear)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFHxS (linear)	µg/L	*0.0010*	0.0040	0.0042	0.0023	0.0042	<0.0010
PFHxS (mono-branched)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFHxS (di-branched)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFHxS (Total)	µg/L	*0.0010*	0.0040	0.0042	0.0023	0.0042	<0.0010
PFHpS (linear)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFOS (linear)	µg/L	*0.0010*	0.0036	0.0011	0.0020	0.0036	<0.0010
PFOS (mono-branched)	µg/L	*0.0010*	0.0023	0.0022	0.0017	0.0024	<0.0010
PFOS (di-branched)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFOS (Total)	µg/L	*0.0010*	0.0059	0.0033	0.0037	0.0060	<0.0010
PFNS (linear)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFDS (linear)	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Perfluoroalkyl carboxylic Acids							
PFBA	µg/L	*0.010*	<0.010	<0.010	<0.010	<0.010	<0.010
PFPeA	µg/L	*0.010*	<0.010	<0.010	<0.010	<0.010	<0.010
PFHxA	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFHpA	µg/L	*0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

PFAS in Water

			Client Sample ID	24/09458-01, Bulls WTP, Reticulation Well	24/09458-02, Bulls Bores 1-4, G00041	24/09458-03, Bulls Bore 2, G00041	24/09458-04, Bulls Bore 3, G00041	24/09458-05, Bulls Bore 5, G00041
			Date Sampled	9/12/2024	9/12/2024	9/12/2024	9/12/2024	9/12/2024
PFOA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	0.0013	<0.0010
PFNA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	0.0013	<0.0010
PFDA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFUnDA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFDoDA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFTrDA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFTeDA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Perfluorinated Sulfonamides								
PFOSA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
N-EtFOSA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
N-MeFOSA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Perfluorinated sulfonamidoacetic acids								
N-EtFOSAA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
N-MeFOSAA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Perfluoroalkyl sulfonamidoethanols								
N-EtFOSE	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
N-MeFOSE	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Fluorotelomer Sulfonates								
4:2 FTS	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
6:2 FTS	µg/L	*0.0050*		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
8:2 FTS	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Other								
HFPO-DA	µg/L	*0.0010*		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
PFAS Summations								
Sum (PFHxS (Total) + PFOS (Total))*	µg/L			0.0099	0.0075	0.0060	0.010	N/A
Sum (PFOS (Total) + PFOA (Total))*	µg/L			0.0059	0.0033	0.0037	0.0073	N/A
Sum (PFHxS (Total) + PFOS (Total) + PFOA)*	µg/L			0.0099	0.0075	0.0060	0.012	N/A
Sum of PFAS (n=10)*	µg/L			0.0099	0.0075	0.0060	0.012	N/A
Sum of PFAS (n=30)*	µg/L			0.0099	0.0075	0.0060	0.013	N/A
Internal Standards / Surrogates								
13C3-PFBS-Na	%	*1*		94	100	88	86	93
13C3-PFHxS-Na	%	*1*		90	92	84	81	89
13C8-PFOS-Na	%	*1*		89	95	77	78	82
13C4-PFBA	%	*1*		97	110	99	95	100
13C5-PFPeA	%	*1*		98	100	92	94	100
13C5-PFHxA	%	*1*		98	100	98	93	99
13C4-PFHpA	%	*1*		100	100	96	91	100
13C8-PFOA	%	*1*		96	98	90	84	91
13C9-PFNA	%	*1*		97	98	90	85	94
13C6-PFDA	%	*1*		97	100	89	84	93
13C7-PFUdA	%	*1*		97	97	86	83	89
13C2-PFDoDA	%	*1*		88	88	77	73	79
13C2-PFTeDA	%	*1*		72	76	57	57	61
13C8-FOSA	%	*1*		96	99	85	86	90
D5-N-EtFOSA-M	%	*1*		73	76	66	60	64
D3-N-MeFOSA-M	%	*1*		74	79	67	64	67

PFAS in Water

	Client Sample ID		24/09458-01, Bulls WTP, Reticulation Well	24/09458-02, Bulls Bores 1-4, G00041	24/09458-03, Bulls Bore 2, G00041	24/09458-04, Bulls Bore 3, G00041	24/09458-05, Bulls Bore 5, G00041
	Date Sampled		9/12/2024	9/12/2024	9/12/2024	9/12/2024	9/12/2024
D5-N-EtFOSAA	%	*1*	89	92	73	76	79
D3-N-MeFOSAA	%	*1*	86	90	79	77	82
D9-N-EtFOSE-M	%	*1*	94	93	84	77	81
D7-N-MeFOSE-M	%	*1*	95	98	91	80	85
13C2-4:2 FTS-Na	%	*1*	92	92	88	83	94
13C2-6:2 FTS-Na	%	*1*	82	78	75	66	73
13C2-8:2 FTS-Na	%	*1*	80	76	74	69	75
13C3-HFPO-DA	%	*1*	99	96	88	81	94

PFAS in Water

	Client Sample ID		24/09458-06, Bulls WTP, Treatment plant outlet (Raw)	24/09458-07, Bulls Plant, TP00061
	Date Sampled		9/12/2024	9/12/2024
Analyte	Unit	*Reporting Limit*	24-37949-6	24-37949-7
Perfluorinated Sulfonic Acids (PFSA)				
PFPrS (linear)	µg/L	*0.0010*	<0.0010	<0.0010
PFBS (linear)	µg/L	*0.0010*	<0.0010	<0.0010
PFPeS (linear)	µg/L	*0.0010*	<0.0010	<0.0010
PFHxS (linear)	µg/L	*0.0010*	0.0037	0.0036
PFHxS (mono-branched)	µg/L	*0.0010*	<0.0010	<0.0010
PFHxS (di-branched)	µg/L	*0.0010*	<0.0010	<0.0010
PFHxS (Total)	µg/L	*0.0010*	0.0037	0.0036
PFHpS (linear)	µg/L	*0.0010*	<0.0010	<0.0010
PFOS (linear)	µg/L	*0.0010*	0.0023	0.0021
PFOS (mono-branched)	µg/L	*0.0010*	0.0021	0.0021
PFOS (di-branched)	µg/L	*0.0010*	<0.0010	<0.0010
PFOS (Total)	µg/L	*0.0010*	0.0044	0.0042
PFNS (linear)	µg/L	*0.0010*	<0.0010	<0.0010
PFDS (linear)	µg/L	*0.0010*	<0.0010	<0.0010
Perfluoroalkyl carboxylic Acids				
PFBA	µg/L	*0.010*	<0.010	<0.010
PFPeA	µg/L	*0.010*	<0.010	<0.010
PFHxA	µg/L	*0.0010*	<0.0010	<0.0010
PFHpA	µg/L	*0.0010*	<0.0010	<0.0010
PFOA	µg/L	*0.0010*	<0.0010	<0.0010
PFNA	µg/L	*0.0010*	<0.0010	<0.0010
PFDA	µg/L	*0.0010*	<0.0010	<0.0010
PFUnDA	µg/L	*0.0010*	<0.0010	<0.0010
PFDoDA	µg/L	*0.0010*	<0.0010	<0.0010
PFTrDA	µg/L	*0.0010*	<0.0010	<0.0010
PFTeDA	µg/L	*0.0010*	<0.0010	<0.0010
Perfluorinated Sulfonamides				
PFOSA	µg/L	*0.0010*	<0.0010	<0.0010
N-EtFOSA	µg/L	*0.0010*	<0.0010	<0.0010
N-MeFOSA	µg/L	*0.0010*	<0.0010	<0.0010

PFAS in Water

			Client Sample ID	24/09458-06, Bulls WTP, Treatment plant outlet (Raw)	24/09458-07, Bulls Plant, TP00061
			Date Sampled	9/12/2024	9/12/2024
Perfluorinated sulfonamidoacetic acids					
N-EtFOSAA	µg/L	*0.0010*		<0.0010	<0.0010
N-MeFOSAA	µg/L	*0.0010*		<0.0010	<0.0010
Perfluoroalkyl sulfonamidoethanols					
N-EtFOSE	µg/L	*0.0010*		<0.0010	<0.0010
N-MeFOSE	µg/L	*0.0010*		<0.0010	<0.0010
Fluorotelomer Sulfonates					
4:2 FTS	µg/L	*0.0010*		<0.0010	<0.0010
6:2 FTS	µg/L	*0.0050*		<0.0050	<0.0050
8:2 FTS	µg/L	*0.0010*		<0.0010	<0.0010
Other					
HFPO-DA	µg/L	*0.0010*		<0.0010	<0.0010
PFAS Summations					
Sum (PFHxS (Total) + PFOS (Total))*	µg/L			0.0081	0.0078
Sum (PFOS (Total) + PFOA (Total))*	µg/L			0.0044	0.0042
Sum (PFHxS (Total) + PFOS (Total) + PFOA)*	µg/L			0.0081	0.0078
Sum of PFAS (n=10)*	µg/L			0.0081	0.0078
Sum of PFAS (n=30)*	µg/L			0.0081	0.0078
Internal Standards / Surrogates					
13C3-PFBS-Na	%	*1*		96	98
13C3-PFHxS-Na	%	*1*		92	99
13C8-PFOS-Na	%	*1*		93	95
13C4-PFBA	%	*1*		100	110
13C5-PFPeA	%	*1*		100	110
13C5-PFHxA	%	*1*		100	100
13C4-PFHpA	%	*1*		100	100
13C8-PFOA	%	*1*		98	100
13C9-PFNA	%	*1*		100	98
13C6-PFDA	%	*1*		100	96
13C7-PFUdA	%	*1*		100	95
13C2-PFDoDA	%	*1*		90	91
13C2-PFTeDA	%	*1*		78	77
13C8-FOSA	%	*1*		98	100
D5-N-EtFOSA-M	%	*1*		80	77
D3-N-MeFOSA-M	%	*1*		80	80
D5-N-EtFOSAA	%	*1*		95	93
D3-N-MeFOSAA	%	*1*		89	95
D9-N-EtFOSE-M	%	*1*		96	95
D7-N-MeFOSE-M	%	*1*		100	98
13C2-4:2 FTS-Na	%	*1*		100	96
13C2-6:2 FTS-Na	%	*1*		78	83
13C2-8:2 FTS-Na	%	*1*		82	79
13C3-HFPO-DA	%	*1*		100	96

Method Summary

Poly- and Perfluorinated Alkyl Substances in Water

The whole PFAS container is extracted and the sample container rinsed with extraction solution. The sample is pre-concentrated by SPE using a mixed mode reversed phase/weak anion exchange phase. Heavily labelled internal standards are added at the start of the extraction and absolute recoveries reported. Final analysis of the extracts is performed by LCMSMS using an internal standardisation calibration protocol. In accordance with in-house procedure.
A PFAS Summation result of N/A indicates that none of the individual analytes being summed were present at a level equal to or above the stated reporting limit.

PFAS Summation	Calculation
Sum of PFAS (N=10)	PFBA + PFPeA + PFHxA + PFHpA + PFOA + PFBS (linear) + PFHxS (total) + PFOS (total) + 6:2 FTS + 8:2 FTS
Sum of PFAS (N=30)	PFPrS (linear) + PFBS (linear) + PFPeS (linear) + PFHxS (total) + PFHpS (linear) + PFOS (total) + PFNS (linear) + PFDS (linear) + PFBA + PFPeA + PFHxA + PFHpA + PFOA + PFNA + PFDA + PFUnDA + PFDoDA + PFTrDA + PFTeDA + PFOSA + N-EtFOSA + N-MeFOSA + N-EtFOSAA + N-MeFOSAA + N-EtFOSE + N-MeFOSE + 4:2 FTS + 6:2 FTS + 8:2 FTS + HFPO-DA

Short-hand Name	Full name
PFPrS (linear)	Perfluoro-1-propanesulfonic acid
PFBS (linear)	Perfluoro-1-butanesulfonic acid
PFPeS (linear)	Perfluoro-1-pentanesulfonic acid
PFHxS (linear)	Perfluoro-1-hexanesulfonic acid
PFHxS (mono-branched)	Trifluoromethylperfluoropentanesulfonic acid
PFHxS (di-branched)	Di(trifluoromethyl)perfluorobutanesulfonic acid
PFHxS (total)	*Sum of linear, mono-branched and di-branched*
PFHpS (linear)	Perfluoro-1-heptanesulfonic acid
PFOS (linear)	Perfluoro-1-octanesulfonic acid
PFOS (mono-branched)	Trifluoromethylperfluoroheptanesulfonic acid
PFOS (di-branched)	Di(trifluoromethyl)perfluorohexanesulfonic acid
PFOS (total)	*Sum of linear, mono-branched and di-branched*
PFNS (linear)	Perfluoro-1-nonanesulfonic acid
PFDS (linear)	Perfluoro-1-decanesulfonic acid
PFBA	Perfluoro-n-butanoic acid
PFPeA	Perfluoro-n-pentanoic acid
PFHxA	Perfluoro-n-hexanoic acid
PFHpA	Perfluoro-n-heptanoic acid
PFOA	Perfluoro-n-octanoic acid
PFNA	Perfluoro-n-nonanoic acid
PFDA	Perfluoro-n-decanoic acid
PFUdA	Perfluoro-n-undecanoic acid
PFDoA	Perfluoro-n-dodecanoic acid
PFTrDA	Perfluoro-n-tridecanoic acid
PFTeDA	Perfluoro-n-tetradecanoic acid
PFOSA	Perfluoro-1-octanesulfonamide
N-EtFOSA	N-ethylperfluoro-1-octanesulfonamide
N-MeFOSA	N-methylperfluoro-1-octansulfonamide
N-EtFOSAA	N-ethylperfluoro-1-octanesulfonamidoacetic acid
N-MeFOSAA	N-methylperfluoro-1-octanesulfonamidoacetic acid
N-EtFOSE	2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol
N-MeFOSE	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol
4:2 FTS	1H,1H,2H,2H-perfluoro-1-hexanesulfonic acid
6:2 FTS	1H,1H,2H,2H-perfluoro-1-octanesulfonic acid
8:2 FTS	1H,1H,2H,2H-perfluoro-1-decanesulfonic acid
HFPO-DA	Tetrafluoro-2-heptafluoropropoxy-propanoic acid

[redacted]

[redacted]
Senior Technologist