

Certificate of Analysis

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Client:	Otago Regional Council	Lab No:	4064996	SPv1
Contact:	[REDACTED]	Date Received:	24-Dec-2025	
		Date Reported:	06-Jan-2026	
		Quote No:	[REDACTED]	
		Order No:	[REDACTED]	
		Client Reference:	N25.0273	
		Submitted By:	[REDACTED]	

Sample Type: Aqueous

Sample Name:	GT782 ORC - 200m D/S Discharge to Shotover River 23-Dec-2025 10.43 am	GT84 ORC - U/S of Kawarau River 23-Dec-2025 11:15 am	GT783 ORC - D/S of Kawarau River 23-Dec-2025 11:38 am
Lab Number:	4064996.1	4064996.2	4064996.3
Turbidity	NTU	139	1.08
pH	pH Units	7.4	7.7
Total Suspended Solids	g/m³	290	< 3
Total Nitrogen	g/m³	1.20	< 0.11
Total Ammoniacal-N	g/m³	0.033	< 0.010
Nitrite-N	g/m³	0.004	< 0.002
Nitrate-N	g/m³	0.82	0.035
Nitrate-N + Nitrite-N	g/m³	0.82	0.035
Total Kjeldahl Nitrogen (TKN)	g/m³	0.37	< 0.10
Total Phosphorus	g/m³	0.98	< 0.002
Total Biochemical Oxygen Demand (TBOD ₅)	g O ₂ /m³	< 2	< 2
Escherichia coli	cfu / 100mL	270	2 #1
			200 #1

Analyst's Comments

It was noted that security tape was applied to the bin and/or samples and this was intact on receipt at the laboratory. 0355098

The sample temperature on arrival (taken from a randomly selected sample from within the batch) was 8°C.

The customer has indicated that the sampling time was recorded as NZ Standard Time (NZST). The sampling time has been reported as supplied in NZST. It should be noted any other times reported by Hill Laboratories will have been corrected for New Zealand Daylight Saving Time (NZDT), where applicable.

#1 Statistically estimated count based on the theoretical countable range for the stated method.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous	Method Description	Default Detection Limit	Sample No
Filtration, Unpreserved	Sample filtration through 0.45 µm membrane filter. Analysed at Hill Laboratories - Chemistry, Unit 1, 17 Print Place, Middleton, Christchurch.	-	1-3
Turbidity	Analysis by Turbidity meter. Analysed at Hill Laboratories - Chemistry, Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1-3



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Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
pH	pH meter. Analysed at Hill Laboratories - Chemistry, Unit 1, 17 Print Place, Middleton, Christchurch. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1-3
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5 µm), gravimetric determination. Analysed at Hill Laboratories - Chemistry, Unit 1, 17 Print Place, Middleton, Christchurch. APHA 2540 D (modified) : Online Edition.	3 g/m ³	1-3
Total Nitrogen	Calculation: TKN + Nitrate-N + Nitrite-N. Please note: The Default Detection Limit of 0.05 g/m ³ is only attainable when the TKN has been determined using a trace method utilising duplicate analyses. In cases where the Detection Limit for TKN is 0.10 g/m ³ , the Default Detection Limit for Total Nitrogen will be 0.11 g/m ³ . In-house calculation.	0.05 g/m ³	1-3
Total Ammoniacal-N	Filtered Sample from Christchurch. Phenol/hypochlorite colourimetry. Flow injection analyser. (NH ₄ -N = NH ₄ ⁺ -N + NH ₃ -N). APHA 4500-NH ₃ H (modified) : Online Edition.	0.010 g/m ³	1-3
Nitrite-N	Filtered sample from Christchurch. Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO ₂ I (modified) : Online Edition.	0.002 g/m ³	1-3
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N. In-House.	0.0010 g/m ³	1-3
Nitrate-N + Nitrite-N	Filtered sample from Christchurch. Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO ₃ I (modified) : Online Edition.	0.002 g/m ³	1-3
Total Kjeldahl Nitrogen (TKN)	Total Kjeldahl digestion, automated phenol/hypochlorite colorimetry. APHA 4500-N _{org} D (modified) : Online Edition.	0.10 g/m ³	1-3
Total Phosphorus	Total phosphorus digestion, automated ascorbic acid colorimetry. Flow Injection Analyser. APHA 4500-P H (modified) : Online Edition.	0.002 g/m ³	1-3
Total Biochemical Oxygen Demand (TBOD ₅)	Incubation 5 days, DO meter, no nitrification inhibitor added, seeded. Analysed at Hill Laboratories - Chemistry, Unit 1, 17 Print Place, Middleton, Christchurch. APHA 5210 B (modified) : Online Edition.	2 g O ₂ /m ³	1-3
Escherichia coli	Membrane filtration, count on CCA agar, incubated at 44.5°C for 21-24 hours. Analysed at Hill Laboratories - Microbiology, Unit 1, 17 Print Place, Middleton, Christchurch. APHA 9222 I (modified) : Online Edition.	1 cfu / 100mL	1-3

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 24-Dec-2025 and 06-Jan-2026. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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[REDACTED]