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Certificate of Analysis

Client:	Western Addition Limited	**Lab No:**	3444731 SPv1
Contact:	Brigitte Schween	**Date Received:**	16-Jan-2024
	C/- Western Addition Limited	**Date Reported:**	19-Jan-2024
	PO Box 47396	**Quote No:**	48003
	Ponsonby	**Order No:**	2401 - QF
	Auckland 1144	**Client Reference:**	
		Submitted By:	Brigitte Schween

Sample Type: Potable Water

		Sample Name:	WA 1 Gal 24015 15-Jan-2024 7:56 am
		Lab Number:	3444731.1
pH	pH Units		8.1
Total Alkalinity	g/m³ as $CaCO_3$		66
Bicarbonate	g/m³ at 25°C		79
Free Carbon Dioxide	g/m³ at 25°C		< 1.0
Total Hardness	g/m³ as $CaCO_3$		1.8
Electrical Conductivity (EC)	mS/m		12.3
Approx Total Dissolved Salts	g/m³		82
Arsenic	g/m³		< 0.0010
Barium	g/m³		< 0.005
Boron	g/m³		2.6
Calcium	g/m³		0.44
Iron	g/m³		< 0.02
Magnesium	g/m³		0.17
Manganese	g/m³		< 0.0005
Phosphorus	g/m³		< 0.02
Potassium	g/m³		6.4
Sodium	g/m³		27
Bromide	g/m³		< 0.05
Fluoride	g/m³		< 0.05
Reactive Silica	g/m³ as SiO_2		5.1

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 that 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: Potable Water

Test	Method Description	Default Detection Limit	Sample No
pH	pH meter. 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
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. APHA 2320 B (modified for Alkalinity <20) : Online Edition.	1.0 g/m³ as $CaCO_3$	1
Bicarbonate	Calculation: from alkalinity and pH, valid where TDS is not >500 mg/L and alkalinity is almost entirely due to hydroxides, carbonates or bicarbonates. APHA 4500-CO_2 D : Online Edition.	1.0 g/m³ at 25°C	1

Sample Type: Potable Water			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Free Carbon Dioxide	Calculation: from alkalinity and pH, valid where TDS is not >500 mg/L and alkalinity is almost entirely due to hydroxides, carbonates or bicarbonates. APHA 4500-CO_2 D : Online Edition.	1.0 g/m^3 at 25°C	1
Total Hardness	Calculation: from Ca and Mg. APHA 2340 B : Online Edition.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. APHA 2510 B : Online Edition.	0.1 mS/m	1
Approx Total Dissolved Salts	Calculation: from Electrical Conductivity.	2 g/m^3	1
Arsenic	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0010 g/m^3	1
Barium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m^3	1
Boron	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.005 g/m^3	1
Calcium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m^3	1
Iron	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m^3	1
Magnesium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m^3	1
Manganese	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.0005 g/m^3	1
Phosphorus	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m^3	1
Potassium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.05 g/m^3	1
Sodium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B : Online Edition.	0.02 g/m^3	1
Bromide	Filtered sample. Ion Chromatography. APHA 4110 B (modified) : Online Edition.	0.05 g/m^3	1
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F^- C : Online Edition.	0.05 g/m^3	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Flow Injection Analyser. APHA 4500-SiO_2 F (modified) : Online Edition.	0.10 g/m^3 as SiO_2	1

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

Testing was completed between 17-Jan-2024 and 19-Jan-2024. 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.

Ara Heron BSc (Tech)
Client Services Manager - Environmental