Compiled Date	04/10/2021
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LGOIMA

When releasing responses to previous LGOIMA requests, names and contact details of individual requestors will be withheld to protect their privacy.

Information requested by the media, lobby groups, public sector organisations and MPs will always be published, while information specific to an individual or their property will not generally be published.

Request from:	Tim Chambers
Information requested:	Drinking water quality data
Response by:	Te Aroha Cook, Acting Chief Executive

04 October 2021

Tim Chambers
Senior Research Fellow
University of Otago

Via Email:

Dear Tim

Official information request for drinking water quality data

I refer to your official information request dated 13 September 2021 for drinking water quality data.

You has asked for the following information:

1) Comprehensive Chemical Analysis Report (lab reports) for each Water Supply Zone with appropriate supply zoned code as far back as your records are held.

   The information you have request is enclosed.

2) Longitudinal Chemical Analysis Data as far back as records provide.

   The information you have request is enclosed.

3) Spatial Data on Water Supply Zones – any geographic data on the Water Supply Zones.

   The information you have request is enclosed.

4) Any additional information on private supplies – Any information you may hold on water quality of private supplies in your area.

   We do not keep record of any private supplies therefore we refuse this part of your request under section 17(e) of the LGOIMA – that the document alleged to contain the information requested does not exist or, despite reasonable efforts to locate it, cannot be found.

There is no charge in supplying this information to you.

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.

Council has adopted a Proactive Release Policy and accordingly may publish LGOIMA responses on the Council Website at https://www.westlanddc.govt.nz/lgoima-responses. The collection and use of personal information by the Westland District Council is regulated by the Privacy Act 2020. Westland District Council's Privacy Statement is available on our website here
If you wish to discuss this decision with us, please feel free to contact Mary-anne Bell, Senior Administration Officer at LGOIMA@westlanddc.govt.nz, 03 756 9091.

Sincerely,

Te Aroha Cook | Acting Chief Executive

TC/MB

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1305950	DWAPv1
Contact:	P Cannell	**Date Registered:**	01-Aug-2014	
	C/- Westland District Council	**Date Reported:**	12-Aug-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57331	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	Ara 31-Jul-2014 11:00 am	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1305950.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		6.6	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		21	-	-
Free Carbon Dioxide	g/m³ at 25°C		10.5	-	-
Total Hardness	g/m³ as $CaCO_3$		19.9	< 200	-
Electrical Conductivity (EC)	mS/m		8.4	-	-
Electrical Conductivity (EC)	µS/cm		84	-	-
Approx Total Dissolved Salts	g/m³		56	< 1000	-
Total Boron	g/m³		0.0150	-	1.4
Total Calcium	g/m³		3.2	-	-
Total Copper	g/m³		0.0024	< 1	2
Total Iron	g/m³		0.33	< 0.2	-
Total Magnesium	g/m³		2.9	-	-
Total Manganese	g/m³		0.0093	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.78	-	-
Total Sodium	g/m³		8.3	< 200	-
Total Zinc	g/m³		0.0122	< 1.5	-
Chloride	g/m³		10.6	< 250	-
Nitrate-N	g/m³		0.13	-	11.3
Sulphate	g/m³		2.6	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1240529	DWAPv1
Contact:	P Cannell	**Date Registered:**	26-Feb-2014	
	C/- Westland District Council	**Date Reported:**	05-Mar-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56713	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name: / Lab Number:		Guideline Value	Maximum Acceptable Values (MAV)
		ARA250214 25-Feb-2014 11:30 am / 1240529.1			
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	6.6	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	25	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	11.8	-	-	-
Total Hardness	g/m³ as $CaCO_3$	21	-	< 200	-
Electrical Conductivity (EC)	mS/m	8.6	-	-	-
Electrical Conductivity (EC)	µS/cm	86	-	-	-
Approx Total Dissolved Salts	g/m³	58	-	< 1000	-
Total Boron	g/m³	0.0162	-	-	1.4
Total Calcium	g/m³	3.6	-	-	-
Total Copper	g/m³	0.0051	-	< 1	2
Total Iron	g/m³	1.54	-	< 0.2	-
Total Magnesium	g/m³	3.0	-	-	-
Total Manganese	g/m³	0.0069	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	0.75	-	-	-
Total Sodium	g/m³	9.3	-	< 200	-
Total Zinc	g/m³	0.0133	-	< 1.5	-
Chloride	g/m³	9.8	-	< 250	-
Nitrate-N	g/m³	0.09	-	-	11.3
Sulphate	g/m³	2.6	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1110348	DWAPv1
Contact:	P Cannell	**Date Registered:**	13-Mar-2013	
	C/- Westland District Council	**Date Reported:**	20-Mar-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55072	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	ARA120313 12-Mar-2013 10:30 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1110348.1			
Individual Tests						
Total Alkalinity	g/m^3 as $CaCO_3$		26	-	-	-
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.8	-	7.0 - 8.5	-
Free Carbon Dioxide	g/m^3 at 25°C		8.9	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		23	-	< 200	-
Electrical Conductivity (EC)	mS/m		9.0	-	-	-
Electrical Conductivity (EC)	µS/cm		90	-	-	-
Approx Total Dissolved Salts	g/m^3		60	-	< 1000	-
Total Boron	g/m^3		0.0148	-	-	1.4
Total Calcium	g/m^3		3.7	-	-	-
Total Copper	g/m^3		0.0121	-	< 1	2
Total Iron	g/m^3		0.033	-	< 0.2	-
Total Magnesium	g/m^3		3.2	-	-	-
Total Manganese	g/m^3		0.0034	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		0.74	-	-	-
Total Sodium	g/m^3		8.8	-	< 200	-
Total Zinc	g/m^3		0.0050	-	< 1.5	-
Chloride	g/m^3		9.9	-	< 250	-
Nitrate-N	g/m^3		0.15	-	-	11.3
Sulphate	g/m^3		2.5	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1005159	DWAPv1
Contact:	P Cannell	**Date Registered:**	08-May-2012	
	C/- Westland District Council	**Date Reported:**	15-May-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53796	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name: / Lab Number:		Guideline Value	Maximum Acceptable Values (MAV)
		ARA070512 07-May-2012 2:20 pm / 1005159.1			
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	6.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	26	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	34	-	-	-
Total Hardness	g/m³ as $CaCO_3$	22	-	< 200	-
Electrical Conductivity (EC)	mS/m	8.7	-	-	-
Electrical Conductivity (EC)	µS/cm	87	-	-	-
Approx Total Dissolved Salts	g/m³	58	-	< 1000	-
Total Boron	g/m³	0.0163	-	-	1.4
Total Calcium	g/m³	3.7	-	-	-
Total Copper	g/m³	0.0033	-	< 1	2
Total Iron	g/m³	0.068	-	< 0.2	-
Total Magnesium	g/m³	3.1	-	-	-
Total Manganese	g/m³	0.0132	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	0.71	-	-	-
Total Sodium	g/m³	9.1	-	< 200	-
Total Zinc	g/m³	0.0118	-	< 1.5	-
Chloride	g/m³	10.6	-	< 250	-
Nitrate-N	g/m³	0.11	-	-	11.3
Sulphate	g/m³	2.5	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	898555	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-May-2011	
	C/- Westland District Council	**Date Reported:**	03-Jun-2011	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	52538	
		Client Reference:		
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	ARA190511 19-May-2011 2:30 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	898555.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.9	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		27	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		7.5	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		23	-	< 200	-
Electrical Conductivity (EC)	mS/m		9.3	-	-	-
Electrical Conductivity (EC)	µS/cm		93	-	-	-
Approx Total Dissolved Salts	g/m^3		62	-	< 1000	-
Total Boron	g/m^3		0.0148	-	-	1.4
Total Calcium	g/m^3		3.7	-	-	-
Total Copper	g/m^3		0.0041	-	< 1	2
Total Iron	g/m^3		0.048	-	< 0.2	-
Total Magnesium	g/m^3		3.4	-	-	-
Total Manganese	g/m^3		0.0113	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		0.77	-	-	-
Total Sodium	g/m^3		9.7	-	< 200	-
Total Zinc	g/m^3		0.0143	-	< 1.5	-
Chloride	g/m^3		9.9	-	< 250	-
Nitrate-N	g/m^3		0.13	-	-	11.3
Sulphate	g/m^3		3.2	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	785919	DWAPv1
Contact:	P Cannell	**Date Registered:**	22-Apr-2010	
	C/- Westland District Council	**Date Reported:**	30-Apr-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51098	
		Client Reference:	RAW WATER	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name: / Lab Number:		KUM210410 21-Apr-2010 1:10 pm 785919.1	ARA210410 21-Apr-2010 1:40 pm 785919.2	Guideline Value	MAV
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	< 1	-	< 1
Routine Water Profile					
pH	pH Units	6.8	6.4	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	18.5	29	-	-
Free Carbon Dioxide	g/m³ at 25°C	6.3	25	-	-
Total Hardness	g/m³ as $CaCO_3$	17.0	24	200	-
Electrical Conductivity (EC)	mS/m	5.6	9.4	-	-
Electrical Conductivity (EC)	µS/cm	56	94	-	-
Approx Total Dissolved Salts	g/m³	37	63	1000	-
Total Boron	g/m³	< 0.0053	0.0137	-	1.4
Total Calcium	g/m³	4.2	4.0	-	-
Total Copper	g/m³	0.00060	0.0033	1	2
Total Iron	g/m³	< 0.021	0.129	0.2	-
Total Magnesium	g/m³	1.57	3.5	-	-
Total Manganese	g/m³	< 0.00053	0.0162	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m³	0.67	0.84	-	-
Total Sodium	g/m³	4.0	12.3	200	-
Total Zinc	g/m³	< 0.0011	0.0040	1.5	-
Chloride	g/m³	4.5	9.5	250	-
Nitrate-N	g/m³	0.28	0.070	-	11.3
Sulphate	g/m³	2.9	1.90	250	-

Note: The Guideline Values and Maximum Allowable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	851684	DWAPv1
Contact:	P Cannell	**Date Registered:**	07-Dec-2010	
	C/- Westland District Council	**Date Reported:**	14-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51949	
		Client Reference:	Raw water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name: / Lab Number:		ARA061210 06-Dec-2010 3:30 pm 851684.1		Guideline Value	Maximum Acceptable Value (MAV)
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	6.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	27	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	37	-	-	-
Total Hardness	g/m³ as $CaCO_3$	23	-	< 200	-
Electrical Conductivity (EC)	mS/m	9.0	-	-	-
Electrical Conductivity (EC)	µS/cm	90	-	-	-
Approx Total Dissolved Salts	g/m³	60	-	< 1000	-
Total Boron	g/m³	0.0134	-	-	1.4
Total Calcium	g/m³	3.8	-	-	-
Total Copper	g/m³	0.0020	-	< 1	2
Total Iron	g/m³	0.149	-	< 0.2	-
Total Magnesium	g/m³	3.2	-	-	-
Total Manganese	g/m³	0.0111	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	0.77	-	-	-
Total Sodium	g/m³	8.3	-	< 200	-
Total Zinc	g/m³	0.0081	-	< 1.5	-
Chloride	g/m³	8.6	-	< 250	-
Nitrate-N	g/m³	0.09	-	-	11.3
Sulphate	g/m³	2.2	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1350708	DWAPv1
Contact:	P Cannell	**Date Registered:**	13-Nov-2014	
	C/- Westland District Council	**Date Reported:**	18-Nov-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57623	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	FOX121114 12-Nov-2014 12:30 pm	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1350708.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		7.3	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		17.0	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.9	-	-
Total Hardness	g/m³ as $CaCO_3$		19.4	< 200	-
Electrical Conductivity (EC)	mS/m		5.4	-	-
Electrical Conductivity (EC)	µS/cm		54	-	-
Approx Total Dissolved Salts	g/m³		36	< 1000	-
Total Boron	g/m³		< 0.0053	-	1.4
Total Calcium	g/m³		6.7	-	-
Total Copper	g/m³		0.00075	< 1	2
Total Iron	g/m³		0.039	< 0.2	-
Total Magnesium	g/m³		0.65	-	-
Total Manganese	g/m³		0.00062	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		1.72	-	-
Total Sodium	g/m³		1.98	< 200	-
Total Zinc	g/m³		0.0024	< 1.5	-
Chloride	g/m³		2.8	< 250	-
Nitrate-N	g/m³		0.08	-	11.3
Sulphate	g/m³		5.5	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.health.govt.nz/publication/drinking-water-standards-new-zealand-2005-revised-2008

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1116006	DWAPv1
Contact:	P Cannell	**Date Registered:**	27-Mar-2013	
	C/- Westland District Council	**Date Reported:**	09-Apr-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55079	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	CAR260313 26-Mar-2013 11:30 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1116006.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.9	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		19.0	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		4.6	-	-	-
Total Hardness	g/m³ as $CaCO_3$		24	-	< 200	-
Electrical Conductivity (EC)	mS/m		6.5	-	-	-
Electrical Conductivity (EC)	µS/cm		65	-	-	-
Approx Total Dissolved Salts	g/m³		44	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		8.2	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		0.034	-	< 0.2	-
Total Magnesium	g/m³		0.78	-	-	-
Total Manganese	g/m³		0.00070	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		1.91	-	-	-
Total Sodium	g/m³		2.2	-	< 200	-
Total Zinc	g/m³		< 0.0011	-	< 1.5	-
Chloride	g/m³		2.5	-	< 250	-
Nitrate-N	g/m³		0.09	-	-	11.3
Sulphate	g/m³		8.0	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1017451	DWAPv1
Contact:	P Cannell	**Date Registered:**	16-Jun-2012	
	C/- Westland District Council	**Date Reported:**	27-Jun-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	54210	
		Client Reference:		
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	CAR150612 15-Jun-2012 10:16 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1017451.1			
Individual Tests						
Absorbance at 254 nm	AU cm^{-1}		0.009	-	-	-
Transmittance at 254 nm*	%T, 1 cm cell		98	-	-	-
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.4	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		22	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		1.8	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		24	-	< 200	-
Electrical Conductivity (EC)	mS/m		7.0	-	-	-
Electrical Conductivity (EC)	µS/cm		70	-	-	-
Approx Total Dissolved Salts	g/m^3		47	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		8.5	-	-	-
Total Copper	g/m^3		< 0.00053	-	< 1	2
Total Iron	g/m^3		< 0.021	-	< 0.2	-
Total Magnesium	g/m^3		0.74	-	-	-
Total Manganese	g/m^3		0.00066	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		2.0	-	-	-
Total Sodium	g/m^3		2.2	-	< 200	-
Total Zinc	g/m^3		< 0.0011	-	< 1.5	-
Chloride	g/m^3		2.1	-	< 250	-
Nitrate-N	g/m^3		0.09	-	-	11.3
Sulphate	g/m^3		8.8	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	999913	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-Apr-2012	
	C/- Westland District Council	**Date Reported:**	27-Apr-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53778	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name: / Lab Number:		Guideline Value	Maximum Acceptable Values (MAV)
		CAR190412 19-Apr-2012 10:30 am / 999913.1			
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	7.1	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	28	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	4.7	-	-	-
Total Hardness	g/m³ as $CaCO_3$	24	-	< 200	-
Electrical Conductivity (EC)	mS/m	6.6	-	-	-
Electrical Conductivity (EC)	µS/cm	66	-	-	-
Approx Total Dissolved Salts	g/m³	45	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	8.5	-	-	-
Total Copper	g/m³	< 0.00053	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	0.76	-	-	-
Total Manganese	g/m³	< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	2.0	-	-	-
Total Sodium	g/m³	2.0	-	< 200	-
Total Zinc	g/m³	0.0030	-	< 1.5	-
Chloride	g/m³	1.9	-	< 250	-
Nitrate-N	g/m³	0.08	-	-	11.3
Sulphate	g/m³	8.2	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	904316
Contact:	P Cannell	**Date Registered:**	10-Jun-2011
	C/- Westland District Council	**Date Reported:**	24-Jun-2011
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	52547
		Client Reference:	
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:			
Individual Tests					
Escherichia coli	MPN / 100mL	1	-	-	< 1
Routine Water Profile					
pH	pH Units	7.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	20	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	2.6	-	-	-
Total Hardness	g/m³ as $CaCO_3$	23	-	< 200	-
Electrical Conductivity (EC)	mS/m	6.1	-	-	-
Electrical Conductivity (EC)	µS/cm	61	-	-	-
Approx Total Dissolved Salts	g/m³	41	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	7.8	-	-	-
Total Copper	g/m³	< 0.00053	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	0.73	-	-	-
Total Manganese	g/m³	0.00069	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	2.1	-	-	-
Total Sodium	g/m³	2.1	-	< 200	-
Total Zinc	g/m³	0.0016	-	< 1.5	-
Chloride	g/m³	1.8	-	< 250	-
Nitrate-N	g/m³	0.09	-	-	11.3
Sulphate	g/m³	6.3	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	852902	DWAPv1
Contact:	P Cannell	**Date Registered:**	10-Dec-2010	
	C/- Westland District Council	**Date Reported:**	16-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51954	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	CAR091210 09-Dec-2010 12:10 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	852902.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		17.7	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		2.4	-	-	-
Total Hardness	g/m³ as $CaCO_3$		24	-	< 200	-
Electrical Conductivity (EC)	mS/m		6.7	-	-	-
Electrical Conductivity (EC)	µS/cm		67	-	-	-
Approx Total Dissolved Salts	g/m³		45	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		8.4	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		0.73	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		1.96	-	-	-
Total Sodium	g/m³		2.1	-	< 200	-
Total Zinc	g/m³		< 0.0011	-	< 1.5	-
Chloride	g/m³		2.1	-	< 250	-
Nitrate-N	g/m³		0.06	-	-	11.3
Sulphate	g/m³		8.4	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	787443	DWAPv1
Contact:	P Cannell	**Date Registered:**	28-Apr-2010	
	C/- Westland District Council	**Date Reported:**	04-May-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51098	
		Client Reference:	Raw water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	CAR270410 27-Apr-2010 11:00 am	FRA210410 27-Apr-2010 11:30 am	Guideline Value	MAV
		Lab Number:	787443.1	787443.2		
Individual Tests						
Escherichia coli	MPN / 100mL		9	5	-	< 1
Routine Water Profile						
pH	pH Units		7.4	7.6	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		11.0	53	-	-
Free Carbon Dioxide	g/m³ at 25°C		< 1.0	3.0	-	-
Total Hardness	g/m³ as $CaCO_3$		12.2	52	200	-
Electrical Conductivity (EC)	mS/m		3.5	13.1	-	-
Electrical Conductivity (EC)	µS/cm		35	131	-	-
Approx Total Dissolved Salts	g/m³		23	88	1000	-
Total Boron	g/m³		< 0.0053	< 0.0053	-	1.4
Total Calcium	g/m³		4.1	18.4	-	-
Total Copper	g/m³		0.00168	0.0022	1	2
Total Iron	g/m³		0.118	< 0.021	0.2	-
Total Magnesium	g/m³		0.46	1.48	-	-
Total Manganese	g/m³		0.0024	< 0.00053	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m³		1.24	2.8	-	-
Total Sodium	g/m³		1.48	3.7	200	-
Total Zinc	g/m³		0.0048	0.0051	1.5	-
Chloride	g/m³		1.66	4.4	250	-
Nitrate-N	g/m³		0.050	0.070	-	11.3
Sulphate	g/m³		2.8	5.7	250	-

Note: The Guideline Values and Maximum Allowable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1350694	DWAPv1
Contact:	P Cannell	**Date Registered:**	13-Nov-2014	
	C/- Westland District Council	**Date Reported:**	18-Nov-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57623	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	FRA121114 12-Nov-2014 1:30 pm	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1350694.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		7.9	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		58	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.3	-	-
Total Hardness	g/m³ as $CaCO_3$		57	< 200	-
Electrical Conductivity (EC)	mS/m		13.1	-	-
Electrical Conductivity (EC)	µS/cm		131	-	-
Approx Total Dissolved Salts	g/m³		88	< 1000	-
Total Boron	g/m³		< 0.0053	-	1.4
Total Calcium	g/m³		20	-	-
Total Copper	g/m³		< 0.00053	< 1	2
Total Iron	g/m³		< 0.021	< 0.2	-
Total Magnesium	g/m³		1.60	-	-
Total Manganese	g/m³		< 0.00053	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		3.1	-	-
Total Sodium	g/m³		2.4	< 200	-
Total Zinc	g/m³		< 0.0011	< 1.5	-
Chloride	g/m³		2.4	< 250	-
Nitrate-N	g/m³		0.10	-	11.3
Sulphate	g/m³		5.8	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1245086	DWAPv1
Contact:	P Cannell	**Date Registered:**	07-Mar-2014	
	C/- Westland District Council	**Date Reported:**	12-Mar-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56720	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:			
Individual Tests					
Escherichia coli	MPN / 100mL	2	-	-	< 1
Routine Water Profile					
pH	pH Units	7.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	67	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	2.3	-	-	-
Total Hardness	g/m³ as $CaCO_3$	68	-	< 200	-
Electrical Conductivity (EC)	mS/m	15.2	-	-	-
Electrical Conductivity (EC)	µS/cm	152	-	-	-
Approx Total Dissolved Salts	g/m³	102	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	24	-	-	-
Total Copper	g/m³	< 0.00053	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	1.92	-	-	-
Total Manganese	g/m³	0.00057	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	3.3	-	-	-
Total Sodium	g/m³	2.6	-	< 200	-
Total Zinc	g/m³	< 0.0011	-	< 1.5	-
Chloride	g/m³	2.0	-	< 250	-
Nitrate-N	g/m³	0.10	-	-	11.3
Sulphate	g/m³	6.9	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1116031	DWAPv1
Contact:	P Cannell	**Date Registered:**	27-Mar-2013	
	C/- Westland District Council	**Date Reported:**	09-Apr-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55079	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	FRA260313 26-Mar-2013 12:15 pm		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1116031.1			
Individual Tests						
Escherichia coli	MPN / 100mL		3	-	-	< 1
Routine Water Profile						
pH	pH Units		7.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		69	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		2.4	-	-	-
Total Hardness	g/m³ as $CaCO_3$		72	-	< 200	-
Electrical Conductivity (EC)	mS/m		15.6	-	-	-
Electrical Conductivity (EC)	µS/cm		156	-	-	-
Approx Total Dissolved Salts	g/m³		105	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		25	-	-	-
Total Copper	g/m³		0.00073	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		2.0	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		3.5	-	-	-
Total Sodium	g/m³		2.7	-	< 200	-
Total Zinc	g/m³		0.0033	-	< 1.5	-
Chloride	g/m³		2.4	-	< 250	-
Nitrate-N	g/m³		0.11	-	-	11.3
Sulphate	g/m³		7.2	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1017454	DWAPv1
Contact:	P Cannell	**Date Registered:**	16-Jun-2012	
	C/- Westland District Council	**Date Reported:**	27-Jun-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	54210	
		Client Reference:		
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	FRA150612 15-Jun-2012 10:50 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1017454.1			
Individual Tests						
Absorbance at 254 nm	AU cm^{-1}		0.003	-	-	-
Transmittance at 254 nm*	%T, 1 cm cell		99	-	-	-
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		8.0	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		69	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		1.3	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		70	-	< 200	-
Electrical Conductivity (EC)	mS/m		15.8	-	-	-
Electrical Conductivity (EC)	µS/cm		158	-	-	-
Approx Total Dissolved Salts	g/m^3		106	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		25	-	-	-
Total Copper	g/m^3		0.00166	-	< 1	2
Total Iron	g/m^3		< 0.021	-	< 0.2	-
Total Magnesium	g/m^3		1.94	-	-	-
Total Manganese	g/m^3		0.00075	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		3.3	-	-	-
Total Sodium	g/m^3		2.7	-	< 200	-
Total Zinc	g/m^3		0.0101	-	< 1.5	-
Chloride	g/m^3		2.3	-	< 250	-
Nitrate-N	g/m^3		0.08	-	-	11.3
Sulphate	g/m^3		8.4	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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Hill Laboratories
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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	999921	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-Apr-2012	
	C/- Westland District Council	**Date Reported:**	01-May-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53778	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name: / Lab Number:		FRA190412 19-Apr-2012 11:00 am 999921.1		Guideline Value	Maximum Acceptable Values (MAV)
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	8.0	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	76	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	1.4	-	-	-
Total Hardness	g/m³ as $CaCO_3$	71	-	< 200	-
Electrical Conductivity (EC)	mS/m	15.1	-	-	-
Electrical Conductivity (EC)	µS/cm	151	-	-	-
Approx Total Dissolved Salts	g/m³	101	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	25	-	-	-
Total Copper	g/m³	0.0034	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	1.98	-	-	-
Total Manganese	g/m³	0.00057	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	3.5	-	-	-
Total Sodium	g/m³	2.8	-	< 200	-
Total Zinc	g/m³	0.0130	-	< 1.5	-
Chloride	g/m³	2.0	-	< 250	-
Nitrate-N	g/m³	0.09	-	-	11.3
Sulphate	g/m³	7.8	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	904320
Contact:	P Cannell	**Date Registered:**	10-Jun-2011
	C/- Westland District Council	**Date Reported:**	24-Jun-2011
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	52547
		Client Reference:	
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:			
Individual Tests					
Escherichia coli	MPN / 100mL	4	-	-	< 1
Routine Water Profile					
pH	pH Units	7.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	64	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	1.8	-	-	-
Total Hardness	g/m³ as $CaCO_3$	67	-	< 200	-
Electrical Conductivity (EC)	mS/m	14.4	-	-	-
Electrical Conductivity (EC)	µS/cm	144	-	-	-
Approx Total Dissolved Salts	g/m³	97	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	24	-	-	-
Total Copper	g/m³	0.0023	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	1.84	-	-	-
Total Manganese	g/m³	< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	3.3	-	-	-
Total Sodium	g/m³	2.6	-	< 200	-
Total Zinc	g/m³	0.0123	-	< 1.5	-
Chloride	g/m³	2.0	-	< 250	-
Nitrate-N	g/m³	0.10	-	-	11.3
Sulphate	g/m³	6.7	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	852908	DWAPv1
Contact:	P Cannell	**Date Registered:**	10-Dec-2010	
	C/- Westland District Council	**Date Reported:**	16-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51954	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	FRA091210 09-Dec-2010 12:40 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	852908.1			
Individual Tests						
Escherichia coli	MPN / 100mL		1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.9	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		67	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.6	-	-	-
Total Hardness	g/m³ as $CaCO_3$		72	-	< 200	-
Electrical Conductivity (EC)	mS/m		16.2	-	-	-
Electrical Conductivity (EC)	µS/cm		162	-	-	-
Approx Total Dissolved Salts	g/m³		109	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		26	-	-	-
Total Copper	g/m³		0.00198	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.97	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		3.6	-	-	-
Total Sodium	g/m³		2.7	-	< 200	-
Total Zinc	g/m³		0.0050	-	< 1.5	-
Chloride	g/m³		2.1	-	< 250	-
Nitrate-N	g/m³		0.08	-	-	11.3
Sulphate	g/m³		7.8	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	787443	DWAPv1
Contact:	P Cannell	**Date Registered:**	28-Apr-2010	
	C/- Westland District Council	**Date Reported:**	04-May-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51098	
		Client Reference:	Raw water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	CAR270410 27-Apr-2010 11:00 am	FRA210410 27-Apr-2010 11:30 am	Guideline Value	MAV
		Lab Number:	787443.1	787443.2		
Individual Tests						
Escherichia coli	MPN / 100mL		9	5	-	< 1
Routine Water Profile						
pH	pH Units		7.4	7.6	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		11.0	53	-	-
Free Carbon Dioxide	g/m^3 at 25°C		< 1.0	3.0	-	-
Total Hardness	g/m^3 as $CaCO_3$		12.2	52	200	-
Electrical Conductivity (EC)	mS/m		3.5	13.1	-	-
Electrical Conductivity (EC)	µS/cm		35	131	-	-
Approx Total Dissolved Salts	g/m^3		23	88	1000	-
Total Boron	g/m^3		< 0.0053	< 0.0053	-	1.4
Total Calcium	g/m^3		4.1	18.4	-	-
Total Copper	g/m^3		0.00168	0.0022	1	2
Total Iron	g/m^3		0.118	< 0.021	0.2	-
Total Magnesium	g/m^3		0.46	1.48	-	-
Total Manganese	g/m^3		0.0024	< 0.00053	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m^3		1.24	2.8	-	-
Total Sodium	g/m^3		1.48	3.7	200	-
Total Zinc	g/m^3		0.0048	0.0051	1.5	-
Chloride	g/m^3		1.66	4.4	250	-
Nitrate-N	g/m^3		0.050	0.070	-	11.3
Sulphate	g/m^3		2.8	5.7	250	-

Note: The Guideline Values and Maximum Allowable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health.

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Certificate of Analysis

Client:	Westland District Council	**Lab No:**	2121193	SPv1
Contact:	P Cannell	**Date Received:**	08-Feb-2019	
	C/- Westland District Council	**Date Reported:**	18-Feb-2019	
	Private Bag 704	**Quote No:**	95129	
	Hokitika 7842	**Order No:**	107605	
		Client Reference:		
		Submitted By:	P Cannell	

Sample Type: Drinking Water for DWSNZ Compliance

		Sample Name:	FRA070219 07-Feb-2019 12:00 pm				
		Lab Number:	2121193.1				
Individual Tests							
Total Antimony	g/m³	< 0.00021	-	-	-	-	
Total Arsenic	g/m³	< 0.0011	-	-	-	-	
Total Barium	g/m³	0.0099	-	-	-	-	
Total Cadmium	g/m³	< 0.000053	-	-	-	-	
Total Chromium	g/m³	0.00079	-	-	-	-	
Total Copper	g/m³	< 0.00053	-	-	-	-	
Total Lead	g/m³	< 0.00011	-	-	-	-	
Total Manganese	g/m³	0.0027	-	-	-	-	
Total Mercury	g/m³	< 0.00008	-	-	-	-	
Total Nickel	g/m³	< 0.00053	-	-	-	-	
Total Selenium	g/m³	< 0.0011	-	-	-	-	
Chlorate	g/m³	0.035	-	-	-	-	
Nitrite-N	g/m³	< 0.002	-	-	-	-	
Nitrate-N	g/m³	0.111	-	-	-	-	
Nitrate-N + Nitrite-N	g/m³	0.111	-	-	-	-	
Nitrate	g/m³	0.49	-	-	-	-	
Halogenated Volatile Disinfection By-Products in Water by GCMS							
Bromochloroacetonitrile	g/m³	< 0.0002	-	-	-	-	
Bromodichloromethane	g/m³	0.00139	-	-	-	-	
Bromoform (tribromomethane)	g/m³	< 0.00007	-	-	-	-	
Carbon tetrachloride	g/m³	< 0.0007	-	-	-	-	
Chloroform (Trichloromethane)	g/m³	< 0.007	-	-	-	-	
Chloropicrin	g/m³	< 0.0003	-	-	-	-	
1,2-Dibromo-3-chloropropane	g/m³	< 0.0003	-	-	-	-	
Dibromoacetonitrile	g/m³	< 0.0003	-	-	-	-	
Dibromochloromethane	g/m³	0.00061	-	-	-	-	
1,2-Dibromoethane (ethylene dibromide, EDB)	g/m³	< 0.0003	-	-	-	-	
1,1-Dichloro-2-propanone	g/m³	< 0.0003	-	-	-	-	
Dichloroacetonitrile	g/m³	< 0.0003	-	-	-	-	
Tetrachloroethene (tetrachloroethylene)	g/m³	< 0.0002	-	-	-	-	
1,1,1-Trichloro-2-propanone	g/m³	< 0.0003	-	-	-	-	
Trichloroacetonitrile	g/m³	< 0.0003	-	-	-	-	
1,1,1-Trichloroethane	g/m³	< 0.0002	-	-	-	-	
Trichloroethene (trichloroethylene)	g/m³	< 0.00007	-	-	-	-	
Total Trihalomethanes (THM)	g/m³	< 0.007	-	-	-	-	
Chloroform MAV ratio		< 0.018	-	-	-	-	
Bromodichloromethane MAV ratio		0.023	-	-	-	-	

Sample Type: Drinking Water for DWSNZ Compliance						
Sample Name:	FRA070219 07-Feb-2019 12:00 pm					
Lab Number:	2121193.1					
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Dibromochloromethane MAV ratio	0.004	-	-	-	-	
Bromoform MAV ratio	< 0.001	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	0.028	-	-	-	-	
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	< 0.016	-	-	-	-	
Trihalomethanes Trace in Water by Headspace GC-MS						
Bromodichloromethane g/m³	0.0013	-	-	-	-	
Bromoform (tribromomethane) g/m³	< 0.0003	-	-	-	-	
Chloroform (Trichloromethane) g/m³	0.0019	-	-	-	-	
Dibromochloromethane g/m³	0.0006	-	-	-	-	
Total Trihalomethanes (THM) g/m³	< 0.007	-	-	-	-	
Bromodichloromethane MAV ratio	0.021	-	-	-	-	
Bromoform MAV ratio	< 0.003	-	-	-	-	
Chloroform MAV ratio	0.0048	-	-	-	-	
Dibromochloromethane MAV ratio	0.0039	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	0.028	-	-	-	-	

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 clean 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.
Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Halogenated Volatile Disinfection By-Products in Water by GCMS	Solvent extraction, GC-MS SIM analysis	-	1
Trihalomethanes Trace in Water by Headspace GC-MS	Headspace, GC-MS SIM analysis	-	1
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) 23rd ed. 2017.	-	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.000053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00011 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Chlorate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).	0.005 g/m³	1
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO2N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate	Calculation from Nitrate-N.	0.010 g/m³	1

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	Calculated as the sum of the individual haloacetonitriles specified in DWSNZ (dibromoacetonitrile & dichloroacetonitrile) to their respective Maximum Allowable Values (MAVs).	0	1

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

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Graham Corban MSc Tech (Hons)
Client Services Manager - Environmental

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Certificate of Analysis

Client:	Westland District Council	**Lab No:**	2173363	SPv1
Contact:	P Cannell	**Date Received:**	09-May-2019	
	C/- Westland District Council	**Date Reported:**	17-May-2019	
	Private Bag 704	**Quote No:**	95129	
	Hokitika 7842	**Order No:**	108062	
		Client Reference:	Franz P2	
		Submitted By:	P Cannell	

Sample Type: Drinking Water for DWSNZ Compliance

Sample Name:		FRA001FR 08-May-2019 10:40 am				
Lab Number:		2173363.1				
Individual Tests						
Total Antimony	g/m³	< 0.00021	-	-	-	-
Total Arsenic	g/m³	< 0.0011	-	-	-	-
Total Barium	g/m³	0.0075	-	-	-	-
Total Cadmium	g/m³	< 0.000053	-	-	-	-
Total Chromium	g/m³	< 0.00053	-	-	-	-
Total Copper	g/m³	0.00158	-	-	-	-
Total Lead	g/m³	0.00032	-	-	-	-
Total Manganese	g/m³	< 0.00053	-	-	-	-
Total Mercury	g/m³	< 0.00008	-	-	-	-
Total Nickel	g/m³	< 0.00053	-	-	-	-
Total Selenium	g/m³	< 0.0011	-	-	-	-
Chlorate	g/m³	0.085	-	-	-	-
Nitrite-N	g/m³	< 0.002	-	-	-	-
Nitrate-N	g/m³	0.115	-	-	-	-
Nitrate-N + Nitrite-N	g/m³	0.115	-	-	-	-
Nitrate	g/m³	0.51	-	-	-	-
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Bromochloroacetonitrile	g/m³	< 0.0004	-	-	-	-
Bromodichloromethane	g/m³	0.0024	-	-	-	-
Bromoform (tribromomethane)	g/m³	< 0.0004	-	-	-	-
Carbon tetrachloride	g/m³	< 0.0007	-	-	-	-
Chloroform (Trichloromethane)	g/m³	< 0.007	-	-	-	-
Chloropicrin	g/m³	< 0.0004	-	-	-	-
1,2-Dibromo-3-chloropropane	g/m³	< 0.0004	-	-	-	-
Dibromoacetonitrile	g/m³	< 0.0004	-	-	-	-
Dibromochloromethane	g/m³	0.0012	-	-	-	-
1,2-Dibromoethane (ethylene dibromide, EDB)	g/m³	< 0.0003	-	-	-	-
1,1-Dichloro-2-propanone	g/m³	< 0.0004	-	-	-	-
Dichloroacetonitrile	g/m³	< 0.0004	-	-	-	-
Tetrachloroethene (tetrachloroethylene)	g/m³	< 0.0004	-	-	-	-
1,1,1-Trichloro-2-propanone	g/m³	< 0.0004	-	-	-	-
Trichloroacetonitrile	g/m³	< 0.0004	-	-	-	-
1,1,1-Trichloroethane	g/m³	< 0.0004	-	-	-	-
Trichloroethene (trichloroethylene)	g/m³	< 0.0004	-	-	-	-
Total Trihalomethanes (THM)	g/m³	0.008	-	-	-	-
Chloroform MAV ratio		< 0.018	-	-	-	-
Bromodichloromethane MAV ratio		0.041	-	-	-	-

Sample Type: Drinking Water for DWSNZ Compliance						
Sample Name:	FRA001FR 08-May-2019 10:40 am					
Lab Number:	2173363.1					
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Dibromochloromethane MAV ratio	0.008	-	-	-	-	
Bromoform MAV ratio	< 0.004	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	0.06	-	-	-	-	
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	< 0.03	-	-	-	-	
Trihalomethanes Trace in Water by Headspace GC-MS						
Bromodichloromethane g/m³	0.0024	-	-	-	-	
Bromoform (tribromomethane) g/m³	< 0.0003	-	-	-	-	
Chloroform (Trichloromethane) g/m³	0.0043	-	-	-	-	
Dibromochloromethane g/m³	0.0013	-	-	-	-	
Total Trihalomethanes (THM) g/m³	0.008	-	-	-	-	
Bromodichloromethane MAV ratio	0.040	-	-	-	-	
Bromoform MAV ratio	< 0.003	-	-	-	-	
Chloroform MAV ratio	0.0107	-	-	-	-	
Dibromochloromethane MAV ratio	0.0087	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	0.06	-	-	-	-	

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 clean 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.
Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Halogenated Volatile Disinfection By-Products in Water by GCMS	Solvent extraction, GC-MS SIM analysis	-	1
Trihalomethanes Trace in Water by Headspace GC-MS	Headspace, GC-MS SIM analysis	-	1
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) 23rd ed. 2017.	-	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.000053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00011 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Chlorate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).	0.005 g/m³	1
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO2N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate	Calculation from Nitrate-N.	0.005 g/m³	1

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	Calculated as the sum of the individual haloacetonitriles specified in DWSNZ (dibromoacetonitrile & dichloroacetonitrile) to their respective Maximum Allowable Values (MAVs).	0	1

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

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Ara Heron BSc (Tech)
Client Services Manager - Environmental

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1350692	DWAPv1
Contact:	P Cannell	**Date Registered:**	13-Nov-2014	
	C/- Westland District Council	**Date Reported:**	18-Nov-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57623	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HAA121114 12-Nov-2014 10:00 am	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1350692.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		7.3	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		28	-	-
Free Carbon Dioxide	g/m³ at 25°C		2.7	-	-
Total Hardness	g/m³ as $CaCO_3$		28	< 200	-
Electrical Conductivity (EC)	mS/m		6.6	-	-
Electrical Conductivity (EC)	µS/cm		66	-	-
Approx Total Dissolved Salts	g/m³		44	< 1000	-
Total Boron	g/m³		< 0.0053	-	1.4
Total Calcium	g/m³		10.1	-	-
Total Copper	g/m³		< 0.00053	< 1	2
Total Iron	g/m³		0.044	< 0.2	-
Total Magnesium	g/m³		0.63	-	-
Total Manganese	g/m³		0.00070	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		1.05	-	-
Total Sodium	g/m³		1.50	< 200	-
Total Zinc	g/m³		0.0027	< 1.5	-
Chloride	g/m³		1.4	< 250	-
Nitrate-N	g/m³		0.06	-	11.3
Sulphate	g/m³		4.0	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.health.govt.nz/publication/drinking-water-standards-new-zealand-2005-revised-2008

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1245060	DWAPv1
Contact:	P Cannell	**Date Registered:**	07-Mar-2014	
	C/- Westland District Council	**Date Reported:**	12-Mar-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56720	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HAA060314 06-Mar-2014 11:00 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1245060.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.6	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		30	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		1.5	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		31	-	< 200	-
Electrical Conductivity (EC)	mS/m		7.3	-	-	-
Electrical Conductivity (EC)	µS/cm		73	-	-	-
Approx Total Dissolved Salts	g/m^3		49	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		11.1	-	-	-
Total Copper	g/m^3		0.00056	-	< 1	2
Total Iron	g/m^3		< 0.021	-	< 0.2	-
Total Magnesium	g/m^3		0.67	-	-	-
Total Manganese	g/m^3		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		1.14	-	-	-
Total Sodium	g/m^3		1.58	-	< 200	-
Total Zinc	g/m^3		0.0033	-	< 1.5	-
Chloride	g/m^3		1.2	-	< 250	-
Nitrate-N	g/m^3		0.06	-	-	11.3
Sulphate	g/m^3		4.3	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1115969	DWAPv1
Contact:	P Cannell	**Date Registered:**	27-Mar-2013	
	C/- Westland District Council	**Date Reported:**	09-Apr-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55079	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name: / Lab Number:		Guideline Value	Maximum Acceptable Values (MAV)
		HAA260313 26-Mar-2013 10:00 am / 1115969.1			
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	6.9	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	36	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	9.2	-	-	-
Total Hardness	g/m³ as $CaCO_3$	40	-	< 200	-
Electrical Conductivity (EC)	mS/m	8.7	-	-	-
Electrical Conductivity (EC)	µS/cm	87	-	-	-
Approx Total Dissolved Salts	g/m³	59	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	14.7	-	-	-
Total Copper	g/m³	0.00109	-	< 1	2
Total Iron	g/m³	0.056	-	< 0.2	-
Total Magnesium	g/m³	0.86	-	-	-
Total Manganese	g/m³	< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	1.40	-	-	-
Total Sodium	g/m³	2.1	-	< 200	-
Total Zinc	g/m³	0.0067	-	< 1.5	-
Chloride	g/m³	1.6	-	< 250	-
Nitrate-N	g/m³	0.09	-	-	11.3
Sulphate	g/m³	5.8	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1017437 DWAPv1
Contact:	P Cannell	**Date Registered:**	16-Jun-2012
	C/- Westland District Council	**Date Reported:**	27-Jun-2012
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	54210
		Client Reference:	Raw water
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:	HAA150612 15-Jun-2012 8:30 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1017437.1			
Individual Tests						
Absorbance at 254 nm	AU cm^{-1}		0.037	-	-	-
Transmittance at 254 nm*	%T, 1 cm cell		92	-	-	-
Escherichia coli	MPN / 100mL		< 1 #1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.5	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		29	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		1.8	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		31	-	< 200	-
Electrical Conductivity (EC)	mS/m		7.2	-	-	-
Electrical Conductivity (EC)	µS/cm		72	-	-	-
Approx Total Dissolved Salts	g/m^3		48	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		11.1	-	-	-
Total Copper	g/m^3		0.0032	-	< 1	2
Total Iron	g/m^3		< 0.021	-	< 0.2	-
Total Magnesium	g/m^3		0.70	-	-	-
Total Manganese	g/m^3		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		0.91	-	-	-
Total Sodium	g/m^3		1.69	-	< 200	-
Total Zinc	g/m^3		0.0041	-	< 1.5	-
Chloride	g/m^3		1.6	-	< 250	-
Nitrate-N	g/m^3		0.06	-	-	11.3
Sulphate	g/m^3		5.1	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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Note that the units g/m^3 are the same as mg/L and ppm.

Analyst's Comments

#1 Please interpret this result with caution as the sample was >24 hours old on receipt at the lab. The sample is required to be less than 24 hours old on receipt.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	999909	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-Apr-2012	
	C/- Westland District Council	**Date Reported:**	02-May-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53778	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name: / Lab Number:		HAA190412 19-Apr-2012 9:00 am 999909.1		Guideline Value	Maximum Acceptable Values (MAV)
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	7.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	41	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	4.9	-	-	-
Total Hardness	g/m³ as $CaCO_3$	32	-	< 200	-
Electrical Conductivity (EC)	mS/m	7.4	-	-	-
Electrical Conductivity (EC)	µS/cm	74	-	-	-
Approx Total Dissolved Salts	g/m³	50	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	11.7	-	-	-
Total Copper	g/m³	0.032	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	0.68	-	-	-
Total Manganese	g/m³	< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	0.95	-	-	-
Total Sodium	g/m³	1.40	-	< 200	-
Total Zinc	g/m³	0.0169	-	< 1.5	-
Chloride	g/m³	1.5	-	< 250	-
Nitrate-N	g/m³	0.06	-	-	11.3
Sulphate	g/m³	5.3	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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Note that the units g/m³ are the same as mg/L and ppm.

Analyst's Comments

The samples do not meet the requirements of the NZDWS samples were older than 24 hours on receipt in the lab. As such, please interpret these microbiological results with caution. Please ensure that the samples reach the lab within 24 hours.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	904313	DWAPv1
Contact:	P Cannell	**Date Registered:**	10-Jun-2011	
	C/- Westland District Council	**Date Reported:**	24-Jun-2011	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	52547	
		Client Reference:	Raw water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:			
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	7.1	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	28	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	4.8	-	-	-
Total Hardness	g/m³ as $CaCO_3$	29	-	< 200	-
Electrical Conductivity (EC)	mS/m	6.7	-	-	-
Electrical Conductivity (EC)	µS/cm	67	-	-	-
Approx Total Dissolved Salts	g/m³	45	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	10.5	-	-	-
Total Copper	g/m³	0.0024	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	0.63	-	-	-
Total Manganese	g/m³	< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	1.05	-	-	-
Total Sodium	g/m³	1.51	-	< 200	-
Total Zinc	g/m³	0.0130	-	< 1.5	-
Chloride	g/m³	1.3	-	< 250	-
Nitrate-N	g/m³	0.09	-	-	11.3
Sulphate	g/m³	4.4	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	852899	DWAPv1
Contact:	P Cannell	**Date Registered:**	10-Dec-2010	
	C/- Westland District Council	**Date Reported:**	17-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51954	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HAA091210 09-Dec-2010 10:30 am		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	852899.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.9	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		25	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		6.4	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		27	-	< 200	-
Electrical Conductivity (EC)	mS/m		6.6	-	-	-
Electrical Conductivity (EC)	µS/cm		66	-	-	-
Approx Total Dissolved Salts	g/m^3		44	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		9.6	-	-	-
Total Copper	g/m^3		0.0027	-	< 1	2
Total Iron	g/m^3		< 0.021	-	< 0.2	-
Total Magnesium	g/m^3		0.59	-	-	-
Total Manganese	g/m^3		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		1.11	-	-	-
Total Sodium	g/m^3		1.70	-	< 200	-
Total Zinc	g/m^3		0.0119	-	< 1.5	-
Chloride	g/m^3		1.2	-	< 250	-
Nitrate-N	g/m^3		0.05	-	-	11.3
Sulphate	g/m^3		3.9	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	787373 DWAPv1
Contact:	P Cannell	**Date Registered:**	28-Apr-2010
	C/- Westland District Council	**Date Reported:**	04-May-2010
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	51098
		Client Reference:	Raw Water
		Submitted By:	P Cannell

Sample Type: Aqueous

Sample Name:	LGR270410 27-Apr-2010 9:00 am	HAA270410 27-Apr-2010 9:30 am	Guideline Value	MAV
Lab Number:	787373.1	787373.2		
Individual Tests				
Escherichia coli MPN / 100mL	10	< 1	-	< 1
Routine Water Profile				
pH pH Units	5.5	7.3	7.0 - 8.5	-
Total Alkalinity g/m^3 as $CaCO_3$	1.90	31	-	-
Free Carbon Dioxide g/m^3 at 25°C	11.5	3.0	-	-
Total Hardness g/m^3 as $CaCO_3$	1.30	32	200	-
Electrical Conductivity (EC) mS/m	1.7	7.6	-	-
Electrical Conductivity (EC) µS/cm	17	76	-	-
Approx Total Dissolved Salts g/m^3	11.6	51	1000	-
Total Boron g/m^3	< 0.0053	< 0.0053	-	1.4
Total Calcium g/m^3	0.159	11.4	-	-
Total Copper g/m^3	0.30	0.0182	1	2
Total Iron g/m^3	0.37	< 0.021	0.2	-
Total Magnesium g/m^3	0.22	0.74	-	-
Total Manganese g/m^3	0.0047	< 0.00053	0.04 Staining 0.10 Taste	0.4
Total Potassium g/m^3	0.097	1.23	-	-
Total Sodium g/m^3	1.83	1.73	200	-
Total Zinc g/m^3	0.068	0.0060	1.5	-
Chloride g/m^3	3.0	1.37	250	-
Nitrate-N g/m^3	< 0.05	0.080	-	11.3
Sulphate g/m^3	< 0.5	4.4	250	-

Note: The Guideline Values and Maximum Allowable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health.

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Certificate of Analysis

Client:	Westland District Council	**Lab No:**	2121143 DWAPv1
Contact:	P Cannell C/- Westland District Council Private Bag 704 Hokitika 7842	**Date Received:**	08-Feb-2019
		Date Reported:	14-Feb-2019
		Quote No:	
		Order No:	107605
		Client Reference:	Raw - RWA
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:	HAR070219 07-Feb-2019 2:15 pm	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	2121143.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		7.1	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		47	-	-
Free Carbon Dioxide	g/m³ at 25°C		6.7	-	-
Total Hardness	g/m³ as $CaCO_3$		53	< 200	-
Electrical Conductivity (EC)	mS/m		12.2	-	-
Electrical Conductivity (EC)	µS/cm		122	-	-
Approx Total Dissolved Salts	g/m³		82	< 1000	-
Total Boron	g/m³		< 0.0053	-	1.4
Total Calcium	g/m³		19.1	-	-
Total Copper	g/m³		0.0111	< 1	2
Total Iron	g/m³		< 0.021	< 0.2	-
Total Magnesium	g/m³		1.27	-	-
Total Manganese	g/m³		< 0.00053	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		2.4	-	-
Total Sodium	g/m³		3.1	< 200	-
Total Zinc	g/m³		0.057	< 1.5	-
Chloride	g/m³		2.1	< 250	-
Nitrate-N	g/m³		0.60	-	11.3
Sulphate	g/m³		6.6	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.health.govt.nz/publication/drinking-water-standards-new-zealand-2005-revised-2008

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1308589	DWAPv1
Contact:	P Cannell	**Date Registered:**	07-Aug-2014	
	C/- Westland District Council	**Date Reported:**	15-Aug-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57336	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HAR060814 06-Aug-2014 10:30 am	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1308589.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		7.1	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		46	-	-
Free Carbon Dioxide	g/m³ at 25°C		6.5	-	-
Total Hardness	g/m³ as $CaCO_3$		52	< 200	-
Electrical Conductivity (EC)	mS/m		12.5	-	-
Electrical Conductivity (EC)	µS/cm		125	-	-
Approx Total Dissolved Salts	g/m³		84	< 1000	-
Total Boron	g/m³		< 0.0053	-	1.4
Total Calcium	g/m³		18.7	-	-
Total Copper	g/m³		0.00145	< 1	2
Total Iron	g/m³		< 0.021	< 0.2	-
Total Magnesium	g/m³		1.22	-	-
Total Manganese	g/m³		< 0.00053	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		2.5	-	-
Total Sodium	g/m³		3.0	< 200	-
Total Zinc	g/m³		0.085	< 1.5	-
Chloride	g/m³		3.2	< 250	-
Nitrate-N	g/m³		0.92	-	11.3
Sulphate	g/m³		8.3	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1240665	DWAPv1
Contact:	P Cannell	**Date Registered:**	26-Feb-2014	
	C/- Westland District Council	**Date Reported:**	05-Mar-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56713	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name: / Lab Number:		Guideline Value	Maximum Acceptable Values (MAV)
		HAR250214 25-Feb-2014 2:00 pm / 1240665.1			
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	6.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	47	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	13.5	-	-	-
Total Hardness	g/m³ as $CaCO_3$	53	-	< 200	-
Electrical Conductivity (EC)	mS/m	12.9	-	-	-
Electrical Conductivity (EC)	µS/cm	129	-	-	-
Approx Total Dissolved Salts	g/m³	86	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	19.3	-	-	-
Total Copper	g/m³	0.0031	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	1.26	-	-	-
Total Manganese	g/m³	< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	2.5	-	-	-
Total Sodium	g/m³	3.0	-	< 200	-
Total Zinc	g/m³	0.054	-	< 1.5	-
Chloride	g/m³	3.0	-	< 250	-
Nitrate-N	g/m³	0.88	-	-	11.3
Sulphate	g/m³	8.3	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1116151	DWAPv1
Contact:	P Cannell	**Date Registered:**	27-Mar-2013	
	C/- Westland District Council	**Date Reported:**	09-Apr-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55079	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HAR260313 26-Mar-2013 2:10 pm		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1116151.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		45	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		15.9	-	-	-
Total Hardness	g/m³ as $CaCO_3$		50	-	< 200	-
Electrical Conductivity (EC)	mS/m		12.3	-	-	-
Electrical Conductivity (EC)	µS/cm		123	-	-	-
Approx Total Dissolved Salts	g/m³		83	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		18.1	-	-	-
Total Copper	g/m³		0.00093	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.18	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		2.5	-	-	-
Total Sodium	g/m³		3.0	-	< 200	-
Total Zinc	g/m³		0.0042	-	< 1.5	-
Chloride	g/m³		2.9	-	< 250	-
Nitrate-N	g/m³		0.96	-	-	11.3
Sulphate	g/m³		8.2	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	999911	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-Apr-2012	
	C/- Westland District Council	**Date Reported:**	02-May-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53778	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:		**Guideline Value**	**Maximum Acceptable Values (MAV)**
		Lab Number:			
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	6.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	45	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	13.3	-	-	-
Total Hardness	g/m³ as $CaCO_3$	45	-	< 200	-
Electrical Conductivity (EC)	mS/m	11.1	-	-	-
Electrical Conductivity (EC)	µS/cm	111	-	-	-
Approx Total Dissolved Salts	g/m³	75	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	16.5	-	-	-
Total Copper	g/m³	0.0056	-	< 1	2
Total Iron	g/m³	< 0.021	-	< 0.2	-
Total Magnesium	g/m³	0.98	-	-	-
Total Manganese	g/m³	0.00085	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	2.0	-	-	-
Total Sodium	g/m³	2.4	-	< 200	-
Total Zinc	g/m³	0.040	-	< 1.5	-
Chloride	g/m³	2.6	-	< 250	-
Nitrate-N	g/m³	0.77	-	-	11.3
Sulphate	g/m³	8.0	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	904323
Contact:	P Cannell	**Date Registered:**	10-Jun-2011
	C/- Westland District Council	**Date Reported:**	24-Jun-2011
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	52547
		Client Reference:	
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:	HAR090611 09-Jun-2011 1:30 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	904323.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		43	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		14.7	-	-	-
Total Hardness	g/m³ as $CaCO_3$		50	-	< 200	-
Electrical Conductivity (EC)	mS/m		11.8	-	-	-
Electrical Conductivity (EC)	µS/cm		118	-	-	-
Approx Total Dissolved Salts	g/m³		79	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		18.0	-	-	-
Total Copper	g/m³		0.0020	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.16	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		2.4	-	-	-
Total Sodium	g/m³		2.9	-	< 200	-
Total Zinc	g/m³		0.0068	-	< 1.5	-
Chloride	g/m³		2.7	-	< 250	-
Nitrate-N	g/m³		0.82	-	-	11.3
Sulphate	g/m³		7.7	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	787454	DWAPv1
Contact:	P Cannell	**Date Registered:**	28-Apr-2010	
	C/- Westland District Council	**Date Reported:**	06-May-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51098	
		Client Reference:	Raw water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name: / Lab Number:		WHA270410 27-Apr-2010 12:40 pm 787454.1	HAR270410 27-Apr-2010 1:10 pm 787454.2	Guideline Value	MAV
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	< 1	-	< 1
Routine Water Profile					
pH	pH Units	6.1	6.6	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	18.5	41	-	-
Free Carbon Dioxide	g/m³ at 25°C	31	20	-	-
Total Hardness	g/m³ as $CaCO_3$	20	42	200	-
Electrical Conductivity (EC)	mS/m	6.7	10.9	-	-
Electrical Conductivity (EC)	µS/cm	67	109	-	-
Approx Total Dissolved Salts	g/m³	45	73	1000	-
Total Boron	g/m³	< 0.0053	< 0.0053	-	1.4
Total Calcium	g/m³	6.5	15.1	-	-
Total Copper	g/m³	0.00181	0.00083	1	2
Total Iron	g/m³	0.38	< 0.021	0.2	-
Total Magnesium	g/m³	1.00	0.99	-	-
Total Manganese	g/m³	0.0028	< 0.00053	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m³	2.2	2.2	-	-
Total Sodium	g/m³	3.3	2.8	200	-
Total Zinc	g/m³	0.0046	< 0.0011	1.5	-
Chloride	g/m³	2.8	2.6	250	-
Nitrate-N	g/m³	1.27	0.46	-	11.3
Sulphate	g/m³	3.5	7.8	250	-

Note: The Guideline Values and Maximum Allowable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	770850	DWAPv1
Contact:	P Cannell	**Date Registered:**	02-Mar-2010	
	C/- Westland District Council	**Date Reported:**	11-Mar-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51066	
		Client Reference:	Harihari Bore	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HAR-B010310 01-Mar-2010 12:40 pm		Guideline Value	MAV
		Lab Number:	770850.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.1	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		41	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		7.0	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		46	-	200	-
Electrical Conductivity (EC)	mS/m		11.0	-	-	-
Electrical Conductivity (EC)	µS/cm		110	-	-	-
Approx Total Dissolved Salts	g/m^3		73	-	1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		17	-	-	-
Total Copper	g/m^3		0.00094	-	1	2
Total Iron	g/m^3		< 0.021	-	0.2	-
Total Magnesium	g/m^3		0.97	-	-	-
Total Manganese	g/m^3		< 0.00053	-	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m^3		2.4	-	-	-
Total Sodium	g/m^3		2.9	-	200	-
Total Zinc	g/m^3		0.0017	-	1.5	-
Chloride	g/m^3		2.3	-	250	-
Nitrate-N	g/m^3		0.47	-	-	11.3
Sulphate	g/m^3		7.4	-	250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	852944	DWAPv1
Contact:	P Cannell	**Date Registered:**	10-Dec-2010	
	C/- Westland District Council	**Date Reported:**	16-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51954	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HAR091210 09-Dec-2010 1:50 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	852944.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.6	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		38	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		18.6	-	-	-
Total Hardness	g/m³ as $CaCO_3$		43	-	< 200	-
Electrical Conductivity (EC)	mS/m		11.0	-	-	-
Electrical Conductivity (EC)	µS/cm		110	-	-	-
Approx Total Dissolved Salts	g/m³		74	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		15.5	-	-	-
Total Copper	g/m³		0.00118	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		0.97	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		2.3	-	-	-
Total Sodium	g/m³		2.7	-	< 200	-
Total Zinc	g/m³		0.0036	-	< 1.5	-
Chloride	g/m³		2.2	-	< 250	-
Nitrate-N	g/m³		0.45	-	-	11.3
Sulphate	g/m³		7.8	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	770844	DWAPv1
Contact:	P Cannell	**Date Registered:**	02-Mar-2010	
	C/- Westland District Council	**Date Reported:**	11-Mar-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51066	
		Client Reference:	Harihari A.P	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name:		HAR 010310 01-Mar-2010 12:40 pm		Guideline Value	MAV
Lab Number:		770844.1			
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	7.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	50	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	6.8	-	-	-
Total Hardness	g/m³ as $CaCO_3$	44	-	200	-
Electrical Conductivity (EC)	mS/m	12.6	-	-	-
Electrical Conductivity (EC)	µS/cm	126	-	-	-
Approx Total Dissolved Salts	g/m³	84	-	1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	16	-	-	-
Total Copper	g/m³	0.00073	-	1	2
Total Iron	g/m³	0.17	-	0.2	-
Total Magnesium	g/m³	0.99	-	-	-
Total Manganese	g/m³	0.00083	-	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m³	2.2	-	-	-
Total Sodium	g/m³	6.3	-	200	-
Total Zinc	g/m³	0.0023	-	1.5	-
Chloride	g/m³	2.4	-	250	-
Nitrate-N	g/m³	0.49	-	-	11.3
Sulphate	g/m³	10	-	250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1309107	DWAPv1
Contact:	P Cannell	**Date Registered:**	08-Aug-2014	
	C/- Westland District Council	**Date Reported:**	15-Aug-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57338	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name: / Lab Number:	Guideline Value	Maximum Acceptable Values (MAV)
		LKE070814 07-Aug-2014 1:30 pm / 1309107.1		
Routine Water + E.coli profile Kit				
Escherichia coli	MPN / 100mL	8	-	< 1
Routine Water Profile				
pH	pH Units	7.1	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	11.1	-	-
Free Carbon Dioxide	g/m³ at 25°C	1.6	-	-
Total Hardness	g/m³ as $CaCO_3$	11.6	< 200	-
Electrical Conductivity (EC)	mS/m	3.3	-	-
Electrical Conductivity (EC)	µS/cm	33	-	-
Approx Total Dissolved Salts	g/m³	22	< 1000	-
Total Boron	g/m³	< 0.0053	-	1.4
Total Calcium	g/m³	3.3	-	-
Total Copper	g/m³	< 0.00053	< 1	2
Total Iron	g/m³	0.033	< 0.2	-
Total Magnesium	g/m³	0.82	-	-
Total Manganese	g/m³	0.00093	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	0.51	-	-
Total Sodium	g/m³	2.2	< 200	-
Total Zinc	g/m³	0.0013	< 1.5	-
Chloride	g/m³	3.2	< 250	-
Nitrate-N	g/m³	0.06	-	11.3
Sulphate	g/m³	0.9	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1238689	DWAPv1
Contact:	P Cannell	**Date Registered:**	21-Feb-2014	
	C/- Westland District Council	**Date Reported:**	28-Feb-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56707	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	LKE200214 20-Feb-2014 11:00 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1238689.1			
Individual Tests						
Escherichia coli	MPN / 100mL		2	-	-	< 1
Routine Water Profile						
pH	pH Units		7.6	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		12.4	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		< 1.0	-	-	-
Total Hardness	g/m³ as $CaCO_3$		11.8	-	< 200	-
Electrical Conductivity (EC)	mS/m		3.8	-	-	-
Electrical Conductivity (EC)	µS/cm		38	-	-	-
Approx Total Dissolved Salts	g/m³		25	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		3.3	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		0.098	-	< 0.2	-
Total Magnesium	g/m³		0.84	-	-	-
Total Manganese	g/m³		0.0026	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.51	-	-	-
Total Sodium	g/m³		2.1	-	< 200	-
Total Zinc	g/m³		0.061	-	< 1.5	-
Chloride	g/m³		2.6	-	< 250	-
Nitrate-N	g/m³		< 0.05	-	-	11.3
Sulphate	g/m³		0.6	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1108732	DWAPv1
Contact:	P Cannell	**Date Registered:**	08-Mar-2013	
	C/- Westland District Council	**Date Reported:**	15-Mar-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55068	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	LKE070313 07-Mar-2013 10:30 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1108732.1			
Individual Tests						
Escherichia coli	MPN / 100mL		3	-	-	< 1
Routine Water Profile						
pH	pH Units		7.6	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		14.2	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		< 1.0	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		11.8	-	< 200	-
Electrical Conductivity (EC)	mS/m		3.6	-	-	-
Electrical Conductivity (EC)	µS/cm		36	-	-	-
Approx Total Dissolved Salts	g/m^3		24	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		3.4	-	-	-
Total Copper	g/m^3		< 0.00053	-	< 1	2
Total Iron	g/m^3		0.035	-	< 0.2	-
Total Magnesium	g/m^3		0.83	-	-	-
Total Manganese	g/m^3		0.00164	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		0.56	-	-	-
Total Sodium	g/m^3		2.3	-	< 200	-
Total Zinc	g/m^3		< 0.0011	-	< 1.5	-
Chloride	g/m^3		2.8	-	< 250	-
Nitrate-N	g/m^3		< 0.05	-	-	11.3
Sulphate	g/m^3		1.0	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1003309	DWAPv1
Contact:	P Cannell	**Date Registered:**	02-May-2012	
	C/- Westland District Council	**Date Reported:**	09-May-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53788	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	HOK010512 01-May-2012 2:00 pm		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1003309.1			
Routine Water + E.coli profile Kit						
Escherichia coli	MPN / 100mL		2	-	-	< 1
Routine Water Profile						
pH	pH Units		7.3	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		12.8	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.2	-	-	-
Total Hardness	g/m³ as $CaCO_3$		11.8	-	< 200	-
Electrical Conductivity (EC)	mS/m		3.5	-	-	-
Electrical Conductivity (EC)	µS/cm		35	-	-	-
Approx Total Dissolved Salts	g/m³		23	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		3.4	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		0.083	-	< 0.2	-
Total Magnesium	g/m³		0.81	-	-	-
Total Manganese	g/m³		0.00150	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.49	-	-	-
Total Sodium	g/m³		2.1	-	< 200	-
Total Zinc	g/m³		0.23	-	< 1.5	-
Chloride	g/m³		3.3	-	< 250	-
Nitrate-N	g/m³		< 0.05	-	-	11.3
Sulphate	g/m³		0.7	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	852215 DWAPv1
Contact:	P Cannell	**Date Registered:**	08-Dec-2010
	C/- Westland District Council	**Date Reported:**	14-Dec-2010
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	51953
		Client Reference:	Raw water
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:	LKE071210 07-Dec-2010 2:30 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	852215.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.9	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		13.2	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		3.2	-	-	-
Total Hardness	g/m³ as $CaCO_3$		11.8	-	< 200	-
Electrical Conductivity (EC)	mS/m		3.6	-	-	-
Electrical Conductivity (EC)	µS/cm		36	-	-	-
Approx Total Dissolved Salts	g/m³		24	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		3.4	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		0.23	-	< 0.2	-
Total Magnesium	g/m³		0.84	-	-	-
Total Manganese	g/m³		0.00147	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.51	-	-	-
Total Sodium	g/m³		2.2	-	< 200	-
Total Zinc	g/m³		0.096	-	< 1.5	-
Chloride	g/m³		2.7	-	< 250	-
Nitrate-N	g/m³		0.06	-	-	11.3
Sulphate	g/m³		0.9	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	817223	DWAPv1
Contact:	P Cannell	**Date Registered:**	13-Aug-2010	
	C/- Westland District Council	**Date Reported:**	20-Aug-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51578	
		Client Reference:	Routine Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name:		HOK120810-1 12-Aug-2010 10:00 am	HOK120810 12-Aug-2010 3:30 pm	Guideline Value	Maximum Acceptable Value (MAV)
Lab Number:		817223.1	817223.2		
Routine Water Profile					
pH	pH Units	6.3	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	17.1	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	16.7	-	-	-
Total Hardness	g/m³ as $CaCO_3$	12.6	-	< 200	-
Electrical Conductivity (EC)	mS/m	4.3	-	-	-
Electrical Conductivity (EC)	µS/cm	43	-	-	-
Approx Total Dissolved Salts	g/m³	29	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	3.7	-	-	-
Total Copper	g/m³	0.33	-	< 1	2
Total Iron	g/m³	0.24	-	< 0.2	-
Total Magnesium	g/m³	0.80	-	-	-
Total Manganese	g/m³	0.0023	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	0.53	-	-	-
Total Sodium	g/m³	3.0	-	< 200	-
Total Zinc	g/m³	0.037	-	< 1.5	-
Chloride	g/m³	5.8	-	< 250	-
Nitrate-N	g/m³	0.07	-	-	11.3
Sulphate	g/m³	1.2	-	< 250	-
Halogenated Acetic Acids in Water by GC-MS					
Bromochloroacetic acid	g/m³	-	0.0025	-	-
Dibromoacetic acid	g/m³	-	0.0011	-	-
Dichloroacetic acid	g/m³	-	0.052	-	0.05
Monobromoacetic acid	g/m³	-	0.0039	-	-
Monochloroacetic acid	g/m³	-	< 0.005	-	0.02
Trichloroacetic acid	g/m³	-	0.047	-	0.2
Total HAA	g/m³	-	0.107	-	-
Sum of HAA DWSNZ MAV ratios		-	1.3	-	1

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Certificate of Analysis

Client:	Westland District Council	**Lab No:**	2155621	SPv1
Contact:	P Cannell	**Date Received:**	05-Apr-2019	
	C/- Westland District Council	**Date Reported:**	12-Apr-2019	
	Private Bag 704	**Quote No:**	95129	
	Hokitika 7842	**Order No:**	107912	
		Client Reference:		
		Submitted By:	P Cannell	

Sample Type: Drinking Water for DWSNZ Compliance

Sample Name:		HOK - S01069 04-Apr-2019 10:30 am				
Lab Number:		2155621.1				
Individual Tests						
Total Antimony	g/m³	< 0.00021	-	-	-	-
Total Arsenic	g/m³	< 0.0011	-	-	-	-
Total Barium	g/m³	0.0074	-	-	-	-
Total Cadmium	g/m³	< 0.000053	-	-	-	-
Total Chromium	g/m³	0.00071	-	-	-	-
Total Copper	g/m³	0.0058	-	-	-	-
Total Lead	g/m³	0.00040	-	-	-	-
Total Manganese	g/m³	< 0.00053	-	-	-	-
Total Mercury	g/m³	< 0.00008	-	-	-	-
Total Nickel	g/m³	< 0.00053	-	-	-	-
Total Selenium	g/m³	< 0.0011	-	-	-	-
Chlorate	g/m³	< 0.005	-	-	-	-
Nitrite-N	g/m³	< 0.002	-	-	-	-
Nitrate-N	g/m³	0.20	-	-	-	-
Nitrate-N + Nitrite-N	g/m³	0.20	-	-	-	-
Nitrate	g/m³	0.90	-	-	-	-
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Bromochloroacetonitrile	g/m³	< 0.0004	-	-	-	-
Bromodichloromethane	g/m³	< 0.0004	-	-	-	-
Bromoform (tribromomethane)	g/m³	< 0.0004	-	-	-	-
Carbon tetrachloride	g/m³	< 0.0007	-	-	-	-
Chloroform (Trichloromethane)	g/m³	< 0.007	-	-	-	-
Chloropicrin	g/m³	< 0.0004	-	-	-	-
1,2-Dibromo-3-chloropropane	g/m³	< 0.0004	-	-	-	-
Dibromoacetonitrile	g/m³	< 0.0004	-	-	-	-
Dibromochloromethane	g/m³	< 0.0004	-	-	-	-
1,2-Dibromoethane (ethylene dibromide, EDB)	g/m³	< 0.0003	-	-	-	-
1,1-Dichloro-2-propanone	g/m³	< 0.0004	-	-	-	-
Dichloroacetonitrile	g/m³	< 0.0004	-	-	-	-
Tetrachloroethene (tetrachloroethylene)	g/m³	< 0.0004	-	-	-	-
1,1,1-Trichloro-2-propanone	g/m³	< 0.0004	-	-	-	-
Trichloroacetonitrile	g/m³	< 0.0004	-	-	-	-
1,1,1-Trichloroethane	g/m³	< 0.0004	-	-	-	-
Trichloroethene (trichloroethylene)	g/m³	< 0.0004	-	-	-	-
Total Trihalomethanes (THM)	g/m³	< 0.007	-	-	-	-
Chloroform MAV ratio		< 0.018	-	-	-	-
Bromodichloromethane MAV ratio		< 0.007	-	-	-	-

Sample Type: Drinking Water for DWSNZ Compliance						
Sample Name:	HOK - S01069 04-Apr-2019 10:30 am					
Lab Number:	2155621.1					
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Dibromochloromethane MAV ratio	< 0.003	-	-	-	-	
Bromoform MAV ratio	< 0.004	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	< 0.02	-	-	-	-	
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	< 0.03	-	-	-	-	
Trihalomethanes Trace in Water by Headspace GC-MS						
Bromodichloromethane g/m³	< 0.0003	-	-	-	-	
Bromoform (tribromomethane) g/m³	< 0.0003	-	-	-	-	
Chloroform (Trichloromethane) g/m³	< 0.0003	-	-	-	-	
Dibromochloromethane g/m³	< 0.0003	-	-	-	-	
Total Trihalomethanes (THM) g/m³	< 0.007	-	-	-	-	
Bromodichloromethane MAV ratio	< 0.005	-	-	-	-	
Bromoform MAV ratio	< 0.003	-	-	-	-	
Chloroform MAV ratio	< 0.0010	-	-	-	-	
Dibromochloromethane MAV ratio	< 0.0017	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	< 0.02	-	-	-	-	

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 clean 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.
Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Halogenated Volatile Disinfection By-Products in Water by GCMS	Solvent extraction, GC-MS SIM analysis	-	1
Trihalomethanes Trace in Water by Headspace GC-MS	Headspace, GC-MS SIM analysis	-	1
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) 23rd ed. 2017.	-	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.000053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00011 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Chlorate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).	0.005 g/m³	1
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO2N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate	Calculation from Nitrate-N.	0.010 g/m³	1

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	Calculated as the sum of the individual haloacetonitriles specified in DWSNZ (dibromoacetonitrile & dichloroacetonitrile) to their respective Maximum Allowable Values (MAVs).	0	1

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

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Certificate of Analysis

Client:	Westland District Council	**Lab No:**	2142735	SPv1
Contact:	P Cannell	**Date Received:**	15-Mar-2019	
	C/- Westland District Council	**Date Reported:**	26-Mar-2019	
	Private Bag 704	**Quote No:**	95129	
	Hokitika 7842	**Order No:**	107788	
		Client Reference:	Hoki P2	
		Submitted By:	P Cannell	

Sample Type: Drinking Water for DWSNZ Compliance

Sample Name:		HOK001HO - 140319 14-Mar-2019 12:00 pm				
Lab Number:		2142735.1				
Individual Tests						
Total Antimony	g/m³	< 0.00021	-	-	-	-
Total Arsenic	g/m³	< 0.0011	-	-	-	-
Total Barium	g/m³	< 0.0053	-	-	-	-
Total Cadmium	g/m³	< 0.000053	-	-	-	-
Total Chromium	g/m³	0.00071	-	-	-	-
Total Copper	g/m³	0.21	-	-	-	-
Total Lead	g/m³	0.00022	-	-	-	-
Total Manganese	g/m³	0.00082	-	-	-	-
Total Mercury	g/m³	< 0.00008	-	-	-	-
Total Nickel	g/m³	< 0.00053	-	-	-	-
Total Selenium	g/m³	< 0.0011	-	-	-	-
Chlorate	g/m³	< 0.005	-	-	-	-
Nitrite-N	g/m³	< 0.002	-	-	-	-
Nitrate-N	g/m³	0.051	-	-	-	-
Nitrate-N + Nitrite-N	g/m³	0.052	-	-	-	-
Nitrate	g/m³	0.23	-	-	-	-
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Bromochloroacetonitrile	g/m³	< 0.0002	-	-	-	-
Bromodichloromethane	g/m³	0.0032	-	-	-	-
Bromoform (tribromomethane)	g/m³	< 0.00007	-	-	-	-
Carbon tetrachloride	g/m³	< 0.0007	-	-	-	-
Chloroform (Trichloromethane)	g/m³	0.032	-	-	-	-
Chloropicrin	g/m³	< 0.0003	-	-	-	-
1,2-Dibromo-3-chloropropane	g/m³	< 0.0003	-	-	-	-
Dibromoacetonitrile	g/m³	< 0.0003	-	-	-	-
Dibromochloromethane	g/m³	0.00014	-	-	-	-
1,2-Dibromoethane (ethylene dibromide, EDB)	g/m³	< 0.0003	-	-	-	-
1,1-Dichloro-2-propanone	g/m³	0.0007	-	-	-	-
Dichloroacetonitrile	g/m³	0.0011	-	-	-	-
Tetrachloroethene (tetrachloroethylene)	g/m³	< 0.0007	-	-	-	-
1,1,1-Trichloro-2-propanone	g/m³	0.0028	-	-	-	-
Trichloroacetonitrile	g/m³	< 0.0003	-	-	-	-
1,1,1-Trichloroethane	g/m³	< 0.0002	-	-	-	-
Trichloroethene (trichloroethylene)	g/m³	< 0.0004	-	-	-	-
Total Trihalomethanes (THM)	g/m³	0.035	-	-	-	-
Chloroform MAV ratio		0.081	-	-	-	-

Sample Type: Drinking Water for DWSNZ Compliance						
Sample Name:	HOK001HO - 140319 14-Mar-2019 12:00 pm					
Lab Number:	2142735.1					
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Bromodichloromethane MAV ratio	0.053	-	-	-	-	
Dibromochloromethane MAV ratio	< 0.001	-	-	-	-	
Bromoform MAV ratio	< 0.001	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	0.134	-	-	-	-	
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	0.054	-	-	-	-	
Trihalomethanes Trace in Water by Headspace GC-MS						
Bromodichloromethane g/m³	0.0009	-	-	-	-	
Bromoform (tribromomethane) g/m³	< 0.0003	-	-	-	-	
Chloroform (Trichloromethane) g/m³	0.031	-	-	-	-	
Dibromochloromethane g/m³	< 0.0003	-	-	-	-	
Total Trihalomethanes (THM) g/m³	0.032	-	-	-	-	
Bromodichloromethane MAV ratio	0.016	-	-	-	-	
Bromoform MAV ratio	< 0.003	-	-	-	-	
Chloroform MAV ratio	0.077	-	-	-	-	
Dibromochloromethane MAV ratio	< 0.0017	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	0.134	-	-	-	-	

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 clean 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.
Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Halogenated Volatile Disinfection By-Products in Water by GCMS	Solvent extraction, GC-MS SIM analysis	-	1
Trihalomethanes Trace in Water by Headspace GC-MS	Headspace, GC-MS SIM analysis	-	1
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) 23rd ed. 2017.	-	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.000053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00011 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Chlorate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).	0.005 g/m³	1
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO2N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Nitrate	Calculation from Nitrate-N.	0.010 g/m³	1
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	Calculated as the sum of the individual haloacetonitriles specified in DWSNZ (dibromoacetonitrile & dichloroacetonitrile) to their respective Maximum Allowable Values (MAVs).	0	1

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

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Certificate of Analysis

Client:	Westland District Council	**Lab No:**	2155622	SPv1
Contact:	P Cannell	**Date Received:**	05-Apr-2019	
	C/- Westland District Council	**Date Reported:**	12-Apr-2019	
	Private Bag 704	**Quote No:**	95129	
	Hokitika 7842	**Order No:**	107912	
		Client Reference:	P2 Chemical Testing	
		Submitted By:	P Cannell	

Sample Type: Drinking Water for DWSNZ Compliance

Sample Name:		LKE-S00014 04-Apr-2019 2:15 pm				
Lab Number:		2155622.1				
Individual Tests						
Total Antimony	g/m³	< 0.00021	-	-	-	-
Total Arsenic	g/m³	< 0.0011	-	-	-	-
Total Barium	g/m³	0.0065	-	-	-	-
Total Cadmium	g/m³	< 0.000053	-	-	-	-
Total Chromium	g/m³	< 0.00053	-	-	-	-
Total Copper	g/m³	< 0.00053	-	-	-	-
Total Lead	g/m³	0.00041	-	-	-	-
Total Manganese	g/m³	0.0072	-	-	-	-
Total Mercury	g/m³	< 0.00008	-	-	-	-
Total Nickel	g/m³	< 0.00053	-	-	-	-
Total Selenium	g/m³	< 0.0011	-	-	-	-
Chlorate	g/m³	< 0.005	-	-	-	-
Nitrite-N	g/m³	< 0.002	-	-	-	-
Nitrate-N	g/m³	0.006	-	-	-	-
Nitrate-N + Nitrite-N	g/m³	0.007	-	-	-	-
Nitrate	g/m³	0.028	-	-	-	-
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Bromochloroacetonitrile	g/m³	< 0.0004	-	-	-	-
Bromodichloromethane	g/m³	< 0.0004	-	-	-	-
Bromoform (tribromomethane)	g/m³	< 0.0004	-	-	-	-
Carbon tetrachloride	g/m³	< 0.0007	-	-	-	-
Chloroform (Trichloromethane)	g/m³	< 0.007	-	-	-	-
Chloropicrin	g/m³	< 0.0004	-	-	-	-
1,2-Dibromo-3-chloropropane	g/m³	< 0.0004	-	-	-	-
Dibromoacetonitrile	g/m³	< 0.0004	-	-	-	-
Dibromochloromethane	g/m³	< 0.0004	-	-	-	-
1,2-Dibromoethane (ethylene dibromide, EDB)	g/m³	< 0.0003	-	-	-	-
1,1-Dichloro-2-propanone	g/m³	< 0.0004	-	-	-	-
Dichloroacetonitrile	g/m³	< 0.0004	-	-	-	-
Tetrachloroethene (tetrachloroethylene)	g/m³	< 0.0004	-	-	-	-
1,1,1-Trichloro-2-propanone	g/m³	< 0.0004	-	-	-	-
Trichloroacetonitrile	g/m³	< 0.0004	-	-	-	-
1,1,1-Trichloroethane	g/m³	< 0.0004	-	-	-	-
Trichloroethene (trichloroethylene)	g/m³	< 0.0004	-	-	-	-
Total Trihalomethanes (THM)	g/m³	< 0.007	-	-	-	-
Chloroform MAV ratio		< 0.018	-	-	-	-
Bromodichloromethane MAV ratio		< 0.007	-	-	-	-

Sample Type: Drinking Water for DWSNZ Compliance						
Sample Name:	LKE-S00014 04-Apr-2019 2:15 pm					
Lab Number:	2155622.1					
Halogenated Volatile Disinfection By-Products in Water by GCMS						
Dibromochloromethane MAV ratio	< 0.003	-	-	-	-	
Bromoform MAV ratio	< 0.004	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	< 0.02	-	-	-	-	
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	< 0.03	-	-	-	-	
Trihalomethanes Trace in Water by Headspace GC-MS						
Bromodichloromethane g/m³	< 0.0003	-	-	-	-	
Bromoform (tribromomethane) g/m³	< 0.0003	-	-	-	-	
Chloroform (Trichloromethane) g/m³	< 0.0003	-	-	-	-	
Dibromochloromethane g/m³	< 0.0003	-	-	-	-	
Total Trihalomethanes (THM) g/m³	< 0.007	-	-	-	-	
Bromodichloromethane MAV ratio	< 0.005	-	-	-	-	
Bromoform MAV ratio	< 0.003	-	-	-	-	
Chloroform MAV ratio	< 0.0010	-	-	-	-	
Dibromochloromethane MAV ratio	< 0.0017	-	-	-	-	
Sum of THM MAV ratios (NZ DW Stds)	< 0.02	-	-	-	-	

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 clean 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.
Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Halogenated Volatile Disinfection By-Products in Water by GCMS	Solvent extraction, GC-MS SIM analysis	-	1
Trihalomethanes Trace in Water by Headspace GC-MS	Headspace, GC-MS SIM analysis	-	1
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) 23rd ed. 2017.	-	1
Total Antimony	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00021 g/m³	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Total Barium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0053 g/m³	1
Total Cadmium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.000053 g/m³	1
Total Chromium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00011 g/m³	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m³	1
Total Nickel	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m³	1
Total Selenium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m³	1
Chlorate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B (modified).	0.005 g/m³	1
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO2N. In-House.	0.0010 g/m³	1
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO_3^- I (modified) 23rd ed. 2017.	0.002 g/m³	1
Nitrate	Calculation from Nitrate-N.	0.010 g/m³	1

Sample Type: Drinking Water for DWSNZ Compliance			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Sum of Haloacetonitriles MAV ratios (NZ DW Stds)	Calculated as the sum of the individual haloacetonitriles specified in DWSNZ (dibromoacetonitrile & dichloroacetonitrile) to their respective Maximum Allowable Values (MAVs).	0	1

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

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1305951	DWAPv1
Contact:	P Cannell	**Date Registered:**	01-Aug-2014	
	C/- Westland District Council	**Date Reported:**	12-Aug-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57331	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	KUM310714 31-Jul-2014 11:30 am	**Guideline Value**	**Maximum Acceptable Values (MAV)**
		Lab Number:	1305951.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		4	-	< 1
Routine Water Profile					
pH	pH Units		7.3	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		17.8	-	-
Free Carbon Dioxide	g/m^3 at 25°C		2.0	-	-
Total Hardness	g/m^3 as $CaCO_3$		17.1	< 200	-
Electrical Conductivity (EC)	mS/m		5.6	-	-
Electrical Conductivity (EC)	µS/cm		56	-	-
Approx Total Dissolved Salts	g/m^3		38	< 1000	-
Total Boron	g/m^3		0.0059	-	1.4
Total Calcium	g/m^3		4.2	-	-
Total Copper	g/m^3		< 0.00053	< 1	2
Total Iron	g/m^3		0.024	< 0.2	-
Total Magnesium	g/m^3		1.59	-	-
Total Manganese	g/m^3		0.00054	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		0.77	-	-
Total Sodium	g/m^3		4.2	< 200	-
Total Zinc	g/m^3		< 0.0011	< 1.5	-
Chloride	g/m^3		5.3	< 250	-
Nitrate-N	g/m^3		0.34	-	11.3
Sulphate	g/m^3		1.0	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1240520	DWAPv2
Contact:	P Cannell	**Date Registered:**	26-Feb-2014	
	C/- Westland District Council	**Date Reported:**	05-Mar-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56713	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	KUM250214 25-Feb-2014 11:00 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1240520.1			
Individual Tests						
Escherichia coli	MPN / 100mL		5	-	-	< 1
Routine Water Profile						
pH	pH Units		7.5	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		18.9	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.2	-	-	-
Total Hardness	g/m³ as $CaCO_3$		17.4	-	< 200	-
Electrical Conductivity (EC)	mS/m		5.6	-	-	-
Electrical Conductivity (EC)	µS/cm		56	-	-	-
Approx Total Dissolved Salts	g/m³		38	-	< 1000	-
Total Boron	g/m³		0.0056	-	-	1.4
Total Calcium	g/m³		4.3	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.61	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.63	-	-	-
Total Sodium	g/m³		4.0	-	< 200	-
Total Zinc	g/m³		< 0.0011	-	< 1.5	-
Chloride	g/m³		4.9	-	< 250	-
Nitrate-N	g/m³		0.22	-	-	11.3
Sulphate	g/m³		1.2	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1110363	DWAPv2
Contact:	P Cannell	**Date Registered:**	13-Mar-2013	
	C/- Westland District Council	**Date Reported:**	19-Mar-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55072	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	KUM120313 12-Mar-2013 11:00 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1110363.1			
Individual Tests						
Total Alkalinity	g/m^3 as $CaCO_3$		19.1	-	-	-
Escherichia coli	MPN / 100mL		1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.6	-	7.0 - 8.5	-
Free Carbon Dioxide	g/m^3 at 25°C		1.1	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		17.3	-	< 200	-
Electrical Conductivity (EC)	mS/m		5.8	-	-	-
Electrical Conductivity (EC)	µS/cm		58	-	-	-
Approx Total Dissolved Salts	g/m^3		39	-	< 1000	-
Total Boron	g/m^3		0.0068	-	-	1.4
Total Calcium	g/m^3		4.3	-	-	-
Total Copper	g/m^3		< 0.00053	-	< 1	2
Total Iron	g/m^3		< 0.021	-	< 0.2	-
Total Magnesium	g/m^3		1.62	-	-	-
Total Manganese	g/m^3		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		0.63	-	-	-
Total Sodium	g/m^3		4.4	-	< 200	-
Total Zinc	g/m^3		< 0.0011	-	< 1.5	-
Chloride	g/m^3		5.2	-	< 250	-
Nitrate-N	g/m^3		0.22	-	-	11.3
Sulphate	g/m^3		1.1	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1005158	DWAPv1
Contact:	P Cannell	**Date Registered:**	08-May-2012	
	C/- Westland District Council	**Date Reported:**	15-May-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53796	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	KUM070512 07-May-2012 2:00 pm		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1005158.1			
Routine Water + E.coli profile Kit						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.3	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		18.8	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		19.3	-	-	-
Total Hardness	g/m³ as $CaCO_3$		17.3	-	< 200	-
Electrical Conductivity (EC)	mS/m		5.6	-	-	-
Electrical Conductivity (EC)	µS/cm		56	-	-	-
Approx Total Dissolved Salts	g/m³		38	-	< 1000	-
Total Boron	g/m³		0.0056	-	-	1.4
Total Calcium	g/m³		4.3	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.62	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.65	-	-	-
Total Sodium	g/m³		4.5	-	< 200	-
Total Zinc	g/m³		0.0022	-	< 1.5	-
Chloride	g/m³		5.2	-	< 250	-
Nitrate-N	g/m³		0.30	-	-	11.3
Sulphate	g/m³		1.2	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	898552	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-May-2011	
	C/- Westland District Council	**Date Reported:**	02-Jun-2011	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	52538	
		Client Reference:		
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	KUM190511 19-May-2011 2:00 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	898552.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.1	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		18.0	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		29	-	-	-
Total Hardness	g/m³ as $CaCO_3$		16.6	-	< 200	-
Electrical Conductivity (EC)	mS/m		5.7	-	-	-
Electrical Conductivity (EC)	µS/cm		57	-	-	-
Approx Total Dissolved Salts	g/m³		38	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		4.1	-	-	-
Total Copper	g/m³		0.00086	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.52	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.68	-	-	-
Total Sodium	g/m³		4.1	-	< 200	-
Total Zinc	g/m³		0.0175	-	< 1.5	-
Chloride	g/m³		5.0	-	< 250	-
Nitrate-N	g/m³		0.31	-	-	11.3
Sulphate	g/m³		0.9	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	851705	DWAPv1
Contact:	P Cannell	**Date Registered:**	07-Dec-2010	
	C/- Westland District Council	**Date Reported:**	15-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51949	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	KUM061210 06-Dec-2010 3:00 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	851705.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.4	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		18.4	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		15.0	-	-	-
Total Hardness	g/m³ as $CaCO_3$		16.8	-	< 200	-
Electrical Conductivity (EC)	mS/m		5.6	-	-	-
Electrical Conductivity (EC)	µS/cm		56	-	-	-
Approx Total Dissolved Salts	g/m³		38	-	< 1000	-
Total Boron	g/m³		0.0053	-	-	1.4
Total Calcium	g/m³		4.2	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.56	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.67	-	-	-
Total Sodium	g/m³		4.0	-	< 200	-
Total Zinc	g/m³		0.0013	-	< 1.5	-
Chloride	g/m³		4.1	-	< 250	-
Nitrate-N	g/m³		0.24	-	-	11.3
Sulphate	g/m³		1.0	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	785919 DWAPv1
Contact:	P Cannell	**Date Registered:**	22-Apr-2010
	C/- Westland District Council	**Date Reported:**	30-Apr-2010
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	51098
		Client Reference:	RAW WATER
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:	KUM210410 21-Apr-2010 1:10 pm	ARA210410 21-Apr-2010 1:40 pm	Guideline Value	MAV
		Lab Number:	785919.1	785919.2		
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	< 1	-	< 1
Routine Water Profile						
pH	pH Units		6.8	6.4	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		18.5	29	-	-
Free Carbon Dioxide	g/m^3 at 25°C		6.3	25	-	-
Total Hardness	g/m^3 as $CaCO_3$		17.0	24	200	-
Electrical Conductivity (EC)	mS/m		5.6	9.4	-	-
Electrical Conductivity (EC)	µS/cm		56	94	-	-
Approx Total Dissolved Salts	g/m^3		37	63	1000	-
Total Boron	g/m^3		< 0.0053	0.0137	-	1.4
Total Calcium	g/m^3		4.2	4.0	-	-
Total Copper	g/m^3		0.00060	0.0033	1	2
Total Iron	g/m^3		< 0.021	0.129	0.2	-
Total Magnesium	g/m^3		1.57	3.5	-	-
Total Manganese	g/m^3		< 0.00053	0.0162	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m^3		0.67	0.84	-	-
Total Sodium	g/m^3		4.0	12.3	200	-
Total Zinc	g/m^3		< 0.0011	0.0040	1.5	-
Chloride	g/m^3		4.5	9.5	250	-
Nitrate-N	g/m^3		0.28	0.070	-	11.3
Sulphate	g/m^3		2.9	1.90	250	-

Note: The Guideline Values and Maximum Allowable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1308595	DWAPv1
Contact:	P Cannell	**Date Registered:**	07-Aug-2014	
	C/- Westland District Council	**Date Reported:**	18-Aug-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	57336	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	ROS060814 06-Aug-2014 11:30 am	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1308595.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		7.3	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		18.0	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.7	-	-
Total Hardness	g/m³ as $CaCO_3$		17.8	< 200	-
Electrical Conductivity (EC)	mS/m		5.9	-	-
Electrical Conductivity (EC)	µS/cm		59	-	-
Approx Total Dissolved Salts	g/m³		39	< 1000	-
Total Boron	g/m³		< 0.0053	-	1.4
Total Calcium	g/m³		5.6	-	-
Total Copper	g/m³		0.00073	< 1	2
Total Iron	g/m³		0.028	< 0.2	-
Total Magnesium	g/m³		0.92	-	-
Total Manganese	g/m³		0.00098	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.61	-	-
Total Sodium	g/m³		4.9	< 200	-
Total Zinc	g/m³		< 0.0011	< 1.5	-
Chloride	g/m³		6.9	< 250	-
Nitrate-N	g/m³		0.07	-	11.3
Sulphate	g/m³		1.0	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1240681	DWAPv1
Contact:	P Cannell	**Date Registered:**	26-Feb-2014	
	C/- Westland District Council	**Date Reported:**	05-Mar-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56713	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	ROS250214 25-Feb-2014 2:30 pm		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1240681.1			
Individual Tests						
Escherichia coli	MPN / 100mL		2	-	-	< 1
Routine Water Profile						
pH	pH Units		7.6	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		21	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.1	-	-	-
Total Hardness	g/m³ as $CaCO_3$		19.6	-	< 200	-
Electrical Conductivity (EC)	mS/m		6.4	-	-	-
Electrical Conductivity (EC)	µS/cm		64	-	-	-
Approx Total Dissolved Salts	g/m³		43	-	< 1000	-
Total Boron	g/m³		0.0063	-	-	1.4
Total Calcium	g/m³		6.1	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.07	-	-	-
Total Manganese	g/m³		0.00066	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.42	-	-	-
Total Sodium	g/m³		5.0	-	< 200	-
Total Zinc	g/m³		0.0050	-	< 1.5	-
Chloride	g/m³		7.3	-	< 250	-
Nitrate-N	g/m³		< 0.05	-	-	11.3
Sulphate	g/m³		1.2	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1115167	DWAPv1
Contact:	P Cannell	**Date Registered:**	26-Mar-2013	
	C/- Westland District Council	**Date Reported:**	05-Apr-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55078	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	ROS250313 25-Mar-2013 10:45 am		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1115167.1			
Individual Tests						
Escherichia coli	MPN / 100mL		48	-	-	< 1
Routine Water Profile						
pH	pH Units		7.1	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		18.0	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		2.8	-	-	-
Total Hardness	g/m³ as $CaCO_3$		18.7	-	< 200	-
Electrical Conductivity (EC)	mS/m		6.4	-	-	-
Electrical Conductivity (EC)	µS/cm		64	-	-	-
Approx Total Dissolved Salts	g/m³		43	-	< 1000	-
Total Boron	g/m³		0.0072	-	-	1.4
Total Calcium	g/m³		5.1	-	-	-
Total Copper	g/m³		0.00059	-	< 1	2
Total Iron	g/m³		0.042	-	< 0.2	-
Total Magnesium	g/m³		1.47	-	-	-
Total Manganese	g/m³		0.00147	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.40	-	-	-
Total Sodium	g/m³		5.4	-	< 200	-
Total Zinc	g/m³		0.0015	-	< 1.5	-
Chloride	g/m³		7.4	-	< 250	-
Nitrate-N	g/m³		0.05	-	-	11.3
Sulphate	g/m³		1.3	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	999915	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-Apr-2012	
	C/- Westland District Council	**Date Reported:**	27-Apr-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53778	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	ROS190412 19-Apr-2012 3:00 pm		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	999915.1			
Routine Water + E.coli profile Kit						
Escherichia coli	MPN / 100mL		1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.1	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		28	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		4.2	-	-	-
Total Hardness	g/m³ as $CaCO_3$		17.2	-	< 200	-
Electrical Conductivity (EC)	mS/m		5.8	-	-	-
Electrical Conductivity (EC)	µS/cm		58	-	-	-
Approx Total Dissolved Salts	g/m³		39	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		4.7	-	-	-
Total Copper	g/m³		< 0.00053	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.34	-	-	-
Total Manganese	g/m³		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.32	-	-	-
Total Sodium	g/m³		4.6	-	< 200	-
Total Zinc	g/m³		< 0.0011	-	< 1.5	-
Chloride	g/m³		7.0	-	< 250	-
Nitrate-N	g/m³		0.07	-	-	11.3
Sulphate	g/m³		1.4	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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Analyst's Comments

The samples do not meet the requirements of the NZDWS samples were greater than 10°C on receipt in the lab. As such, please interpret these microbiological results with caution. Samples must be kept at less than 10 °C (but not frozen).

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	903540	DWAPv1
Contact:	P Cannell	**Date Registered:**	08-Jun-2011	
	C/- Westland District Council	**Date Reported:**	20-Jun-2011	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	52546	
		Client Reference:	Ross RW	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	ROS070611 07-Jun-2011 2:00 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	903540.1			
Individual Tests						
Escherichia coli	MPN / 100mL		1	-	-	< 1
Routine Water Profile						
pH	pH Units		7.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		12.5	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		1.7	-	-	-
Total Hardness	g/m³ as $CaCO_3$		12.0	-	< 200	-
Electrical Conductivity (EC)	mS/m		4.6	-	-	-
Electrical Conductivity (EC)	µS/cm		46	-	-	-
Approx Total Dissolved Salts	g/m³		31	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		3.2	-	-	-
Total Copper	g/m³		0.022	-	< 1	2
Total Iron	g/m³		0.048	-	< 0.2	-
Total Magnesium	g/m³		0.93	-	-	-
Total Manganese	g/m³		0.0037	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		0.29	-	-	-
Total Sodium	g/m³		4.0	-	< 200	-
Total Zinc	g/m³		0.0037	-	< 1.5	-
Chloride	g/m³		6.1	-	< 250	-
Nitrate-N	g/m³		< 0.05	-	-	11.3
Sulphate	g/m³		0.7	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	852212	DWAPv1
Contact:	P Cannell	**Date Registered:**	08-Dec-2010	
	C/- Westland District Council	**Date Reported:**	16-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51953	
		Client Reference:	Raw water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	MIN071210 07-Dec-2010 2:00 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	852212.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.9	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		14.6	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		3.9	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		16.1	-	< 200	-
Electrical Conductivity (EC)	mS/m		6.0	-	-	-
Electrical Conductivity (EC)	µS/cm		60	-	-	-
Approx Total Dissolved Salts	g/m^3		40	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		4.4	-	-	-
Total Copper	g/m^3		< 0.00053	-	< 1	2
Total Iron	g/m^3		< 0.021	-	< 0.2	-
Total Magnesium	g/m^3		1.27	-	-	-
Total Manganese	g/m^3		< 0.00053	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		0.31	-	-	-
Total Sodium	g/m^3		4.6	-	< 200	-
Total Zinc	g/m^3		< 0.0011	-	< 1.5	-
Chloride	g/m^3		6.9	-	< 250	-
Nitrate-N	g/m^3		0.07	-	-	11.3
Sulphate	g/m^3		1.2	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	786241 DWAPv1
Contact:	P Cannell	**Date Registered:**	23-Apr-2010
	C/- Westland District Council	**Date Reported:**	03-May-2010
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	51098
		Client Reference:	Raw Water
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:	ROS220410 22-Apr-2010 11:00 am	LKE220410 22-Apr-2010 11:30 am	Guideline Value	MAV
		Lab Number:	786241.1	786241.2		
Individual Tests						
Escherichia coli	MPN / 100mL		2	1	-	< 1
Routine Water Profile						
pH	pH Units		6.5	6.7	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		22	11.9	-	-
Free Carbon Dioxide	g/m³ at 25°C		12.9	5.1	-	-
Total Hardness	g/m³ as $CaCO_3$		22	11.2	200	-
Electrical Conductivity (EC)	mS/m		6.8	3.4	-	-
Electrical Conductivity (EC)	µS/cm		68	34	-	-
Approx Total Dissolved Salts	g/m³		45	23	1000	-
Total Boron	g/m³		< 0.0053	< 0.0053	-	1.4
Total Calcium	g/m³		6.8	3.2	-	-
Total Copper	g/m³		0.00176	< 0.00053	1	2
Total Iron	g/m³		< 0.021	0.28	0.2	-
Total Magnesium	g/m³		1.14	0.78	-	-
Total Manganese	g/m³		< 0.00053	0.0034	0.04 Staining 0.10 Taste	0.4
Total Potassium	g/m³		0.38	0.46	-	-
Total Sodium	g/m³		4.7	1.86	200	-
Total Zinc	g/m³		0.00132	0.071	1.5	-
Chloride	g/m³		5.5	2.2	250	-
Nitrate-N	g/m³		0.050	< 0.05	-	11.3
Sulphate	g/m³		0.93	0.86	250	-

Note: The Guideline Values and Maximum Allowable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1378955	DWAPv1
Contact:	P Cannell	**Date Registered:**	30-Jan-2015	
	C/- Westland District Council	**Date Reported:**	10-Feb-2015	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	58101	
		Client Reference:	Whataroa	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	WHA290115 29-Jan-2015 1:40 pm	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1378955.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1	-	< 1
Routine Water Profile					
pH	pH Units		6.2	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		18.0	-	-
Free Carbon Dioxide	g/m³ at 25°C		21	-	-
Total Hardness	g/m³ as $CaCO_3$		25	< 200	-
Electrical Conductivity (EC)	mS/m		8.2	-	-
Electrical Conductivity (EC)	µS/cm		82	-	-
Approx Total Dissolved Salts	g/m³		55	< 1000	-
Total Boron	g/m³		0.0060	-	1.4
Total Calcium	g/m³		8.1	-	-
Total Copper	g/m³		0.0030	< 1	2
Total Iron	g/m³		0.071	< 0.2	-
Total Magnesium	g/m³		1.25	-	-
Total Manganese	g/m³		0.0035	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		2.4	-	-
Total Sodium	g/m³		3.4	< 200	-
Total Zinc	g/m³		0.0048	< 1.5	-
Chloride	g/m³		4.4	< 250	-
Nitrate-N	g/m³		2.7	-	11.3
Sulphate	g/m³		4.4	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.health.govt.nz/publication/drinking-water-standards-new-zealand-2005-revised-2008

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1245089	DWAPv1
Contact:	P Cannell	**Date Registered:**	07-Mar-2014	
	C/- Westland District Council	**Date Reported:**	12-Mar-2014	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	56720	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	WHA060314 06-Mar-2014 2:00 pm		**Guideline Value**	**Maximum Acceptable Values (MAV)**
		Lab Number:	1245089.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		6.0	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		19.4	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		42	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		25	-	< 200	-
Electrical Conductivity (EC)	mS/m		7.8	-	-	-
Electrical Conductivity (EC)	µS/cm		78	-	-	-
Approx Total Dissolved Salts	g/m^3		52	-	< 1000	-
Total Boron	g/m^3		0.0060	-	-	1.4
Total Calcium	g/m^3		8.0	-	-	-
Total Copper	g/m^3		0.0029	-	< 1	2
Total Iron	g/m^3		0.092	-	< 0.2	-
Total Magnesium	g/m^3		1.22	-	-	-
Total Manganese	g/m^3		0.0032	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		2.3	-	-	-
Total Sodium	g/m^3		3.3	-	< 200	-
Total Zinc	g/m^3		0.0038	-	< 1.5	-
Chloride	g/m^3		4.1	-	< 250	-
Nitrate-N	g/m^3		2.0	-	-	11.3
Sulphate	g/m^3		3.3	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	1116092	DWAPv1
Contact:	P Cannell	**Date Registered:**	27-Mar-2013	
	C/- Westland District Council	**Date Reported:**	09-Apr-2013	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	55079	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	WHA260313 26-Mar-2013 1:10 pm		Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	1116092.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		5.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		19.4	-	-	-
Free Carbon Dioxide	g/m³ at 25°C		56	-	-	-
Total Hardness	g/m³ as $CaCO_3$		25	-	< 200	-
Electrical Conductivity (EC)	mS/m		7.5	-	-	-
Electrical Conductivity (EC)	µS/cm		75	-	-	-
Approx Total Dissolved Salts	g/m³		50	-	< 1000	-
Total Boron	g/m³		< 0.0053	-	-	1.4
Total Calcium	g/m³		8.1	-	-	-
Total Copper	g/m³		0.0032	-	< 1	2
Total Iron	g/m³		< 0.021	-	< 0.2	-
Total Magnesium	g/m³		1.20	-	-	-
Total Manganese	g/m³		0.0031	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		2.4	-	-	-
Total Sodium	g/m³		3.4	-	< 200	-
Total Zinc	g/m³		0.0067	-	< 1.5	-
Chloride	g/m³		4.3	-	< 250	-
Nitrate-N	g/m³		1.76	-	-	11.3
Sulphate	g/m³		3.1	-	< 250	-

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	999916	DWAPv1
Contact:	P Cannell	**Date Registered:**	20-Apr-2012	
	C/- Westland District Council	**Date Reported:**	01-May-2012	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	53778	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

Sample Name: / Lab Number:		WHA190412 19-Apr-2012 1:10 pm / 999916.1		Guideline Value	Maximum Acceptable Values (MAV)
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	6.2	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	19.6	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	25	-	-	-
Total Hardness	g/m³ as $CaCO_3$	22	-	< 200	-
Electrical Conductivity (EC)	mS/m	6.5	-	-	-
Electrical Conductivity (EC)	µS/cm	65	-	-	-
Approx Total Dissolved Salts	g/m³	44	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	6.9	-	-	-
Total Copper	g/m³	0.0030	-	< 1	2
Total Iron	g/m³	0.130	-	< 0.2	-
Total Magnesium	g/m³	1.04	-	-	-
Total Manganese	g/m³	0.0028	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	2.2	-	-	-
Total Sodium	g/m³	3.3	-	< 200	-
Total Zinc	g/m³	0.0058	-	< 1.5	-
Chloride	g/m³	2.7	-	< 250	-
Nitrate-N	g/m³	1.13	-	-	11.3
Sulphate	g/m³	3.8	-	< 250	-

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Analyst's Comments

The samples do not meet the requirements of the NZDWS - samples were greater than 10°C on receipt in the lab. As such, please interpret these microbiological results with caution. Samples must be kept at less than 10 °C (but not frozen).

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	904327 DWAPV1
Contact:	P Cannell	**Date Registered:**	10-Jun-2011
	C/- Westland District Council	**Date Reported:**	24-Jun-2011
	Private Bag 704	**Quote No:**	
	HOKITIKA 7842	**Order No:**	52547
		Client Reference:	
		Submitted By:	P Cannell

Sample Type: Aqueous

		Sample Name:		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:			
Individual Tests					
Escherichia coli	MPN / 100mL	< 1	-	-	< 1
Routine Water Profile					
pH	pH Units	5.8	-	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$	17.2	-	-	-
Free Carbon Dioxide	g/m³ at 25°C	51	-	-	-
Total Hardness	g/m³ as $CaCO_3$	19.4	-	< 200	-
Electrical Conductivity (EC)	mS/m	6.2	-	-	-
Electrical Conductivity (EC)	µS/cm	62	-	-	-
Approx Total Dissolved Salts	g/m³	42	-	< 1000	-
Total Boron	g/m³	< 0.0053	-	-	1.4
Total Calcium	g/m³	6.2	-	-	-
Total Copper	g/m³	0.00167	-	< 1	2
Total Iron	g/m³	0.28	-	< 0.2	-
Total Magnesium	g/m³	0.95	-	-	-
Total Manganese	g/m³	0.0028	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³	2.1	-	-	-
Total Sodium	g/m³	3.0	-	< 200	-
Total Zinc	g/m³	0.0044	-	< 1.5	-
Chloride	g/m³	2.8	-	< 250	-
Nitrate-N	g/m³	1.11	-	-	11.3
Sulphate	g/m³	5.5	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

The Maximum Acceptable Values (MAVs) have been defined by the Ministry of Health for paramenters of health significance and should not be exceeded. The Guideline Values are the limits for aesthetic determinands that, if exceeded, may render the water unattractive to consumers.

Note that the units g/m³ are the same as mg/L and ppm.

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ANALYSIS REPORT

Client:	Westland District Council	**Lab No:**	852943	DWAPv1
Contact:	P Cannell	**Date Registered:**	10-Dec-2010	
	C/- Westland District Council	**Date Reported:**	16-Dec-2010	
	Private Bag 704	**Quote No:**		
	HOKITIKA 7842	**Order No:**	51954	
		Client Reference:	Raw Water	
		Submitted By:	P Cannell	

Sample Type: Aqueous

		Sample Name:	WHA091210 09-Dec-2010 1:10 pm		Guideline Value	Maximum Acceptable Value (MAV)
		Lab Number:	852943.1			
Individual Tests						
Escherichia coli	MPN / 100mL		< 1	-	-	< 1
Routine Water Profile						
pH	pH Units		5.8	-	7.0 - 8.5	-
Total Alkalinity	g/m^3 as $CaCO_3$		16.3	-	-	-
Free Carbon Dioxide	g/m^3 at 25°C		53	-	-	-
Total Hardness	g/m^3 as $CaCO_3$		22	-	< 200	-
Electrical Conductivity (EC)	mS/m		7.0	-	-	-
Electrical Conductivity (EC)	µS/cm		70	-	-	-
Approx Total Dissolved Salts	g/m^3		47	-	< 1000	-
Total Boron	g/m^3		< 0.0053	-	-	1.4
Total Calcium	g/m^3		7.1	-	-	-
Total Copper	g/m^3		0.0031	-	< 1	2
Total Iron	g/m^3		0.22	-	< 0.2	-
Total Magnesium	g/m^3		1.05	-	-	-
Total Manganese	g/m^3		0.0031	-	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m^3		2.3	-	-	-
Total Sodium	g/m^3		3.1	-	< 200	-
Total Zinc	g/m^3		0.0053	-	< 1.5	-
Chloride	g/m^3		2.6	-	< 250	-
Nitrate-N	g/m^3		1.24	-	-	11.3
Sulphate	g/m^3		4.1	-	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2008)', Ministry of Health. Copies of this publication are available from http://www.moh.govt.nz/moh.nsf/pagesmh/8534

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Note that the units g/m^3 are the same as mg/L and ppm.