

9 September 21

Sally McKinnon
Senior Contaminated Land and Ground Water Scientist
Gisborne District Council
15 Fitzherbert Street
PO Box 747
Gisborne 4010

By e-mail: Sally.McKinnon@gdc.govt.nz

Dear Sally,

Re: Matawhero Logyard Cell 3 bore monitoring: Consent - DL-2018-108538-00

Please see below the results of the monitoring undertaken on 31 August 2021 as required by conditions 10 – 28 of consent DL-2018-108538-00.

All recorded parameters, except dissolved copper and dissolved zinc at bore GW02, were at or below consent trigger limits.

Kind Regards,



Marie Knue
Ecology Consultant
4Sight Consulting Ltd

Matawhero Log Yard (Eastland Port) - E004

Monthly Bore Monitoring



Attn: Marie Knue (mariek@4sight.co.nz)

Sample Date: 31/08/2021

Sampler: Dion Williams

DO Probe: 138

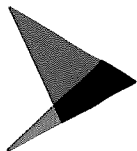
Daily Summary Sheet

Weather Conditions: Cloudy, overcast.

Tidal Flow: Going low

	GW02	New Monitoring Bore
Bore Conditions:	Good	Good
Surrounds Conditions:	Good	Good
Purging Results:	6L then sampled. Pumped dry but recovered pretty well.	40L then sampled. Non-stop flow.

Comments: Had rained the day before.



Groundwater Well Sampling Form

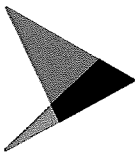
Job Information	
Date: 31.8.21	Time: Arrive: 0940 Depart:
Project Name: EPL Outsourced Compliance Programme	Project Number: AA1146
Site Location: Matawhero Log Yard	Operator: DW
Well ID: New Monitoring Bore	Weather: overcast

Equipment	
Water quality equipment description: Dissolved Oxygen Probe YSI PRO	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Interface Probe Number: 138	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Purging Equipment Type? (Please circle)	Bailer Type: Plastic Teflon Pump Type: Peristaltic <u>Submersible</u> Micro-purge Other:

Well Gauging and Purge Volume Calculations										
Casing Diameter	25mm	50mm	50mm	50mm	50mm	100mm	100mm	100mm	Volume of water in a well:	
Bore Diameter	50mm	100mm	125mm	150mm	200mm	125mm	200mm	250mm	V = π x r ² x h	
Conversion Factor (L/m)	0.93	3.73	5.06	6.68	10.8	10.8	14.2	20.2	V = Volume in litres	
										π = 3.142
										r = radius in m
										h = Height of water column in m
Total Well depth (-) Water Level (=) Water Column										
4.50 - 1.610 =										
Water Column (x) Conversion Factor (=) Litres per 1 Well Volume										
m x = L										

Water Quality Parameters										
Beginning Purging Time:			Ending Purging Time:				Fill Time:	Discharge Time:		
Litres	Time	DO (mg/L)	Cond. (µS/cm)	pH	Redox (mV)	Temp (°C)	DTW (mbTPC)	Comments		
40	0940	0.87				14.1		non stop flow		
Stabilisation Criteria		±10% ¹	±3% or ±5% if <100*	± 0.1*	± 10mV ¹	± 0.1*	Example Comments: <u>clear</u> / slightly cloudy / turbid / very turbid / colour / <u>no odour</u> / slight odour / strong odour / describe odour (hydrocarbon/solvent/organic)			
*Based on MfE National Protocol for SOE Groundwater Sampling in NZ, 2006, ¹ Based on Vic EPA (Australia) 669. Low Flow: Max flow rate = 0.5 L/min Max drawdown = 0.2 cm -- Well stable when 3 consecutive readings (either 3 min or 0.5L apart)										
Total Well Volume							40 litres	Did field parameters stabilise?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Actual amount of water removed prior to sampling								Was the well dry purged?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N

Field Quality Control Checks				
Was pre-cleaning sampling equipment used for these samples?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	Consistent with COC form?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Was pre-cleaning sampling equipment properly protected from contamination?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	COC Filled out?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sampling has been undertaken in accordance with the Site Specific Sampling Protocol and SOPs?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	Signed:	DW



Groundwater Well Sampling Form

Job Information	
Date: 31.8.21	Time: Arrive: 1035 Depart:
Project Name: EPL Outsourced Compliance Programme	Project Number: AA1146
Site Location: Matawhero Log Yard	Operator: DW
Well ID: GW02	Weather: overcast

Equipment	
Water quality equipment description: Dissolved Oxygen Probe YSI Pro	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Interface Probe Number: 138	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Purging Equipment Type? (Please circle)	Bailer Type: Plastic Teflon Pump Type: Peristaltic <u>Submersible</u> Micro-purge Other:

Well Gauging and Purge Volume Calculations									
Casing Diameter	25mm	50mm	50mm	50mm	50mm	100mm	100mm	100mm	Volume of water in a well: $V = \pi \times r^2 \times h$ $V =$ Volume in litres $\pi = 3.142$ $r =$ radius in m $h =$ Height of water column in m
Bore Diameter	50mm	100mm	125mm	150mm	200mm	125mm	200mm	250mm	
Conversion Factor (L/m)	0.93	3.73	5.06	6.68	10.8	10.8	14.2	20.2	
Total Well depth (-) Water Level (=) Water Column									
4.22 - 1.480 =									
Water Column (x) Conversion Factor (=) Litres per 1 Well Volume									
m x = L									

Water Quality Parameters									
Beginning Purging Time:			Ending Purging Time:				Fill Time:	Discharge Time:	
Litres	Time	DO (mg/L)	Cond. (µS/cm)	pH	Redox (mV)	Temp (°C)	DTW (mbTPC)	Comments	
6	1035	2.90				15.0		Pump dry but recovered ok	
Stabilisation Criteria		±10% ¹	±3% or ±5% if <100*	± 0.1*	± 10mV ¹	± 0.1*	Example Comments: <u>clear</u> / slightly cloudy / turbid / very turbid / colour / <u>no</u> odour / slight odour / strong odour / describe odour (hydrocarbon/solvent/organic)		
[*] Based on MfE National Protocol for SOE Groundwater Sampling in NZ, 2006, ¹ Based on Vic EPA (Australia) 669. Low Flow: Max flow rate = 0.5 L/min Max drawdown = 0.2 cm -- Well stable when 3 consecutive readings (either 3 min or 0.5L apart)									
Total Well Volume							Did field parameters stabilise?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Actual amount of water removed prior to sampling 6 Litres							Was the well dry purged?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N

Field Quality Control Checks				
Was pre-cleaning sampling equipment used for these samples?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	Consistent with COC form?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Was pre-cleaning sampling equipment properly protected from contamination?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	COC Filled out?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sampling has been undertaken in accordance with the Site Specific Sampling Protocol and SOPs?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	Signed:	D. Williams

Analysis Report

Customer: Eastland Port	Date Received: 31/08/2021 11:50 AM
Address: 1 Kaiti Beach Road	Date Completed: 8/09/2021 9:08 AM
Gisborne, 4010	
Attention: Marie Knue	Purchase Order #:

Sample Type: Water

	Units	2021004054 Bore GW02	2021004056 New Monitoring Bore
		31/08/2021 10:35	31/08/2021 9:40
Test			
Analytica Laboratories Report		21-37293	21-37293
Conductivity @25°C	µS/cm	959	1160
Dissolved Oxygen Field Test	g/m ³	2.9	0.87
pH - Water		7.0	7.3
Salinity	ppt	0.4	0.5
Static Water Level	m	1.48	1.61
Temperature on Site	°C	15.0	14.1

Comments: These samples were also analysed by Analytica Laboratories. Please see attached report.

Test Standards:

Test	Methodology
Analytica Laboratories Report	Sub Contracted Tests
Conductivity @25°C	APHA 23rd Ed 2510 B
Dissolved Oxygen Field Test	APHA 23rd Ed 4500 OG
pH - Water	APHA 23rd 4500-H+ B. Unless stated, measured between 18-22°C
Salinity	APHA 23rd Ed 2520 B
Static Water Level	*
Temperature on Site	APHA 23rd Ed 2550 B

Authorised By:

Stephanie Brew
Laboratory Technician
Dipl. Biologist

Certified By:

Brenda Overend
Technician
KTP Chemistry and Microbiology



Tests indicated as not accredited are outside the scope of the laboratory's accreditation

The NZ mark of competence
Tohu Matatau Aotearoa

Methods marked with a * are not IANZ accredited.

This report shall not be reproduced except in full, without written approval of the laboratory.

"Detailed activity" stating the start and completion dates and times of individual tests have not been recorded on this report. This information is available upon request.



Certificate of Analysis

Linnaeus Laboratory Limited
 4 Banks Street, Awapuni
 Gisborne 4010

Attention: Libby Dalcom
 Phone: 06 867 8512
 Email: libby@linnaeus.co.nz

Lab Reference: 21-37293
 Submitted by: Linnaeus Laboratory Limited
 Date Received: 01/09/2021
 Testing Initiated: 2/09/2021
 Date Completed: 7/09/2021
 Order Number: 279
 Reference:

Sampling Site: Matawhero Log Yard (Eastland Port)

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

Elements in Water (Soluble)

Client Sample ID			2021004054 Bore GW02	2021004056 New Monitoring Bore
Date Sampled			31/08/2021	31/08/2021
Analyte	Unit	Reporting Limit	21-37293-1	21-37293-2
Copper	g/m ³	0.0002	0.0027	<0.00020
Lead	g/m ³	0.00005	<0.000050	<0.000050
Zinc	g/m ³	0.001	0.033	0.0021

Total Petroleum Hydrocarbons - Water

Client Sample ID			2021004054 Bore GW02	2021004056 New Monitoring Bore
Date Sampled			31/08/2021	31/08/2021
Analyte	Unit	Reporting Limit	21-37293-1	21-37293-2
C7-C9	g/m ³	0.2	<0.2	<0.21
C10-C14	g/m ³	0.2	<0.2	<0.21
C15-C36	g/m ³	0.3	<0.3	<0.3
C7-C36 (Total)	g/m ³	0.5	<0.5	<0.5

Method Summary

Soluble Trace Elements

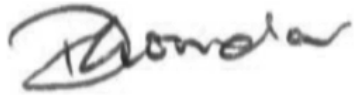
Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.

TPH in Water

Solvent extraction, silica cleanup, followed by GC-FID analysis (C7-C36). MFE Petroleum Industry Guidelines. (In accordance with in-house procedure based on US EPA 8015).



Emily Hanna, B.Sc.
Trace Elements Team Leader



Divya Goundar DipSciTech
Technician

