Kāpiti Coast
DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

Waikanae River, Recharge and Borefield Annual Report 2023/24 Consent WGN130103 [35973, 35974 & 35975]

Prepared for Greater Wellington Regional Council
by Kāpiti Coast District Council

[FINAL FOR SUBMISSION]

Revision History

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Action	Name	Signed	Date
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on behalf of	Kāpiti Coast District Council		

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1 Introduction and Compliance Summary

Kāpiti Coast District Council (the Council) holds resource consents (WGN130103 [35973], [35974] and [35975]) to enable the following activities:

- to take groundwater from bores within the Waikanae Borefield for the purpose of supplementing public water supply, through Waikanae River recharge or as an emergency public water source;
- to take water from the Waikanae River for public water supply; and
- to discharge groundwater from the Waikanae Borefield to the Waikanae River for the purpose of river recharge and bore trialling.

The groundwater take consent authorises the abstraction of groundwater from eight production wells within the Waikanae Borefield as part of the Council's River Recharge with Groundwater (RRwGW) scheme. All eight of these wells were operable throughout the 2023/24 year (1 July 2023 to 30 June 2024). The locations of the eight production wells and monitoring bores are shown in Figure 1.

The consents include the requirement to monitor three ecosystems (Waikanae River, Small Coastal Streams and Wetlands) and the Waikanae Borefield. Requirements for annual reporting are detailed in Appendix A. Periodically, there is additional monitoring activity required. In 2023/24, the Council undertook wetland condition monitoring as per the Wetland Ongoing Mitigation Plan (OMP). Monitoring for 2023/24 was carried out in accordance with the approved OMP's.

The conditions of consent require the Council to prepare and maintain several plans, manuals and reports. These key documents are set out in the diagram in Appendix A.

A summary of compliance for the 2023/24 year is set out below, using the symbols shown in the adjacent key. In summary:

- The report at this revision, and the Water Conservation Report, are offered for the 2023/24 RRwGW Season for Adaptive Management Group (AMG) review and discussion, prior to being finalised.
- The river level/flow rate has not been low enough to require river recharge during this season.
- There have been no transgressions of ongoing environmental triggers.
- The trigger for periphyton surveys has not been exceeded over the consent term. The Council is proposing to develop a potential interim trigger to "spot check" whether the Scheme is influencing periphyton growth.
- Wetland Condition Monitoring was undertaken in 2023/24; while the monitoring found changes in the wetland plots observed, the decline is not associated with the RRwGW Scheme. The Council has proposed amendments to the Wetland OMP and additional wetland monitoring in the summer of 2025.
- The Council is proposing to delay the requirement for the Performance Assessment Report (PAR) by at least three years to enable more time for the RRwGW Scheme to operate before reviewing its performance. The Council is proposing interim monitoring and information collection in the period leading up to the PAR.

Table 1: Compliance Summary

Section	
River	River Abstraction
	River Recharge
	Downstream River Flows
	River Aquatic monitoring
Borefield	Abstraction Volumes and Rates
	Back-up wells PW1 and PW5
	Shallow Aquifer Drawdown Monitoring
	Deep Aquifer Drawdown Monitoring
	Saline Intrusion Monitoring
	Waikanae River Flow Gauging
Wetlands	Wetlands Monitoring
Small Coastal Streams	Small Coastal Streams Monitoring

Key	
	No triggers or actions needed
	Trigger or action
	Exceedance

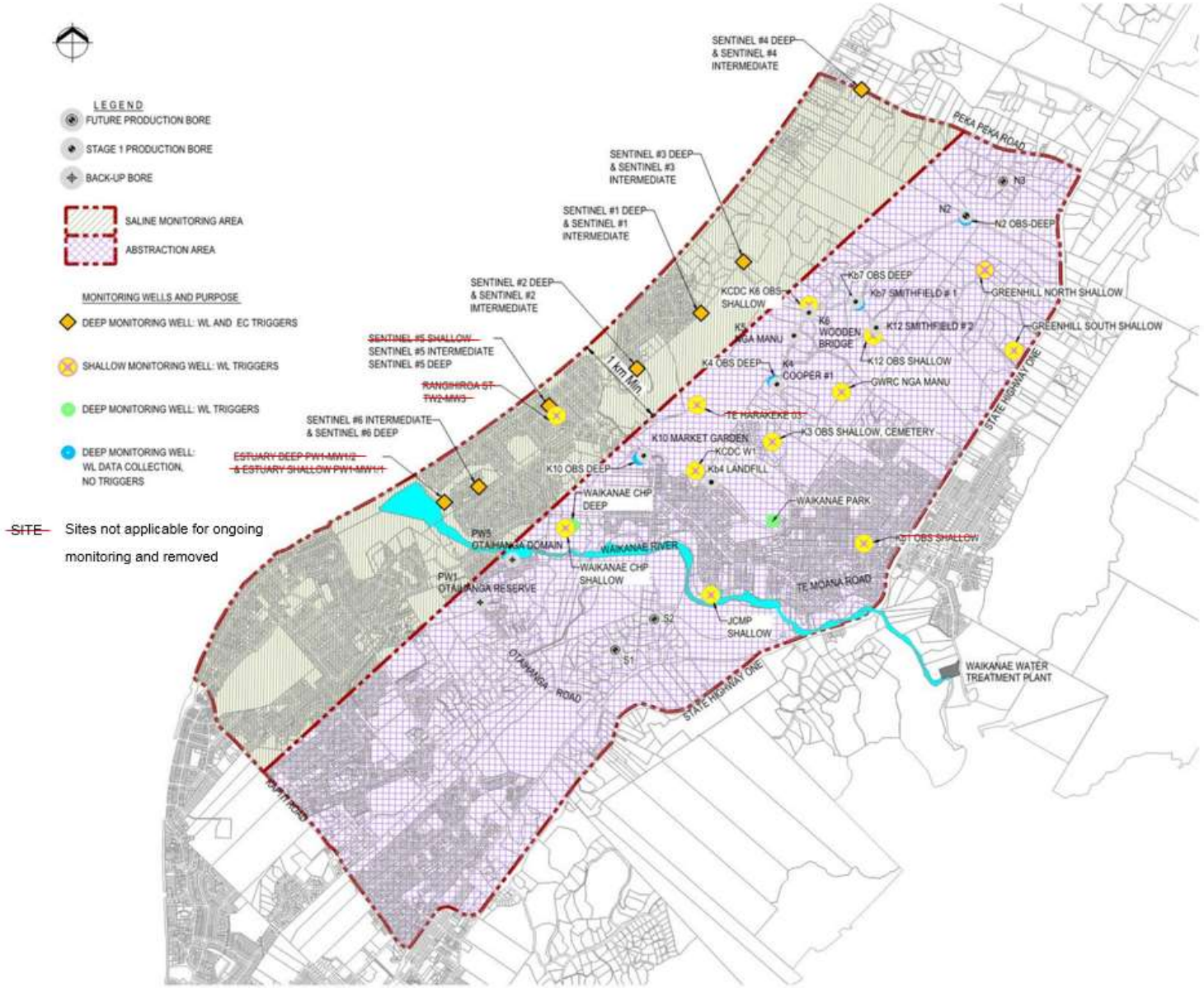


Figure 1: Location Plan - Waikanae Borefield Abstraction Wells and Monitoring Bores

2 Waikanae River

2.1 Waikanae River Flows

The Waikanae River flow is monitored by Greater Wellington Regional Council (GWRC) at a gauging station approximately 200m upstream of the Waikanae Water Treatment Plant (WTP) intake.

The Council's SCADA system receives river flow data from GWRC's SCADA system on an approximately 15-minute basis. The river flow data received and stored by Council is used for managing the water supply abstraction and this data is not back-corrected if GWRC subsequently updates the algorithm for interpreting the level sampling data.

The upstream river flow for the 2023/24 monitoring period is displayed in Figure 2, and the peak and low flow periods are detailed in Table 2 below. The Council did not need to use the river recharge during 2023/24.

Table 2: Upstream Waikanae River Flows

Period	1 July 2022 - 30 June 2023	1 July 2023 – 30 June 2024
Peak flow	137,019 L/s on 7 August 2022	60,005 L/s on 17 December 2023
Minimum flow	1,129 L/s on 3 February 2023	1,263 L/s on 19 July 2023
Low flow periods when river recharge used	N/A	N/A

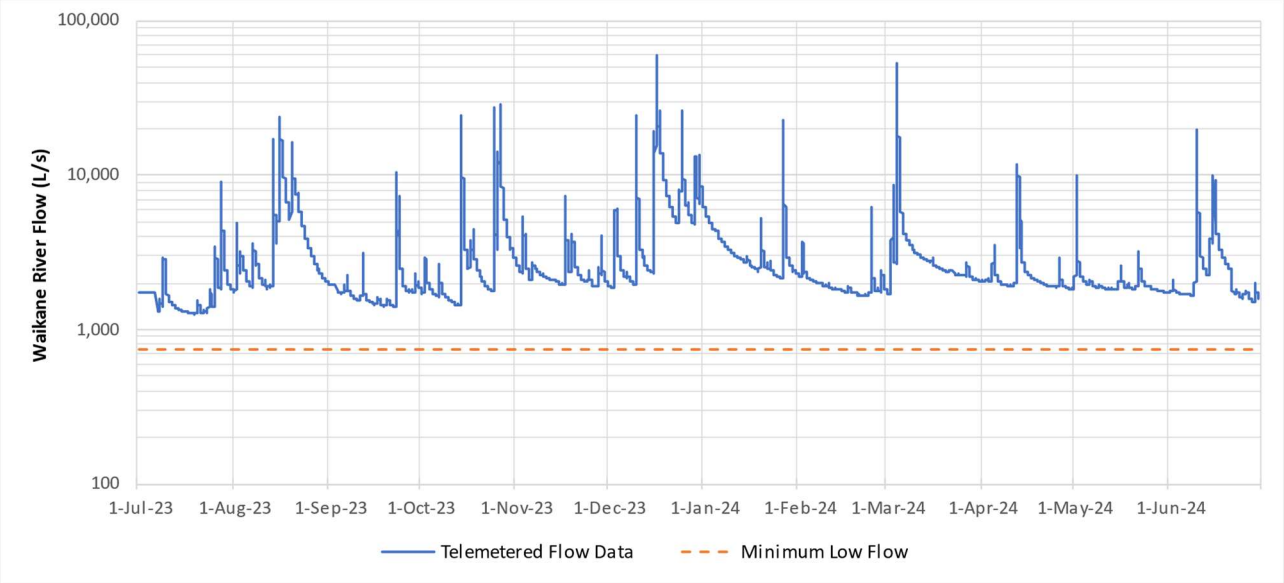


Figure 2: Waikanae River Flow at Water Treatment Plant (July 2023 – June 2024)

Upstream river flows were always above 750 L/s throughout the monitoring period.

2.2 River Abstraction

No triggers or actions needed

The Council measures and records the flow rates and volumes of water abstracted from the Waikanae River through a flow meter at the WTP intake. The Council regularly submits its river abstraction records to GWRC,

as per Condition 13 of consent WGN130103 [35974]; this is done automatically from Council's SCADA to GWRC's Water Use Data Management System (Hydrotel). The Council also submits a quarterly report to GWRC.

The daily abstraction volumes for the reporting period are provided in Table 3 and plotted in Figure 3 below. The red line is the maximum allowable daily take permitted by the consent.

Table 3: Daily and Annual Waikanae River Abstractions

Period	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Maximum daily abstraction	17,590 m^3/day (on 1 February 2022)	19,107 m^3/day (on 11 February 2022)	19,423 m^3/day (on 6 December 2023)
Maximum allowable daily volume permitted by Condition 5 of consent WGN130103 [35974]	30,700 m^3/day	30,700 m^3/day	30,700 m^3/day
Total annual abstraction volume	4,552,870 m^3	4,812,719 m^3	4,700,011 m^3
Equivalent average daily abstraction	12,474 m^3/day	13,186 m^3/day	12,842 m^3/day
Maximum total abstraction volume permitted by Condition 5 of consent WGN130103 [35974]	11,174,800 m^3/year	11,174,800 m^3/year	11,174,800 m^3/year

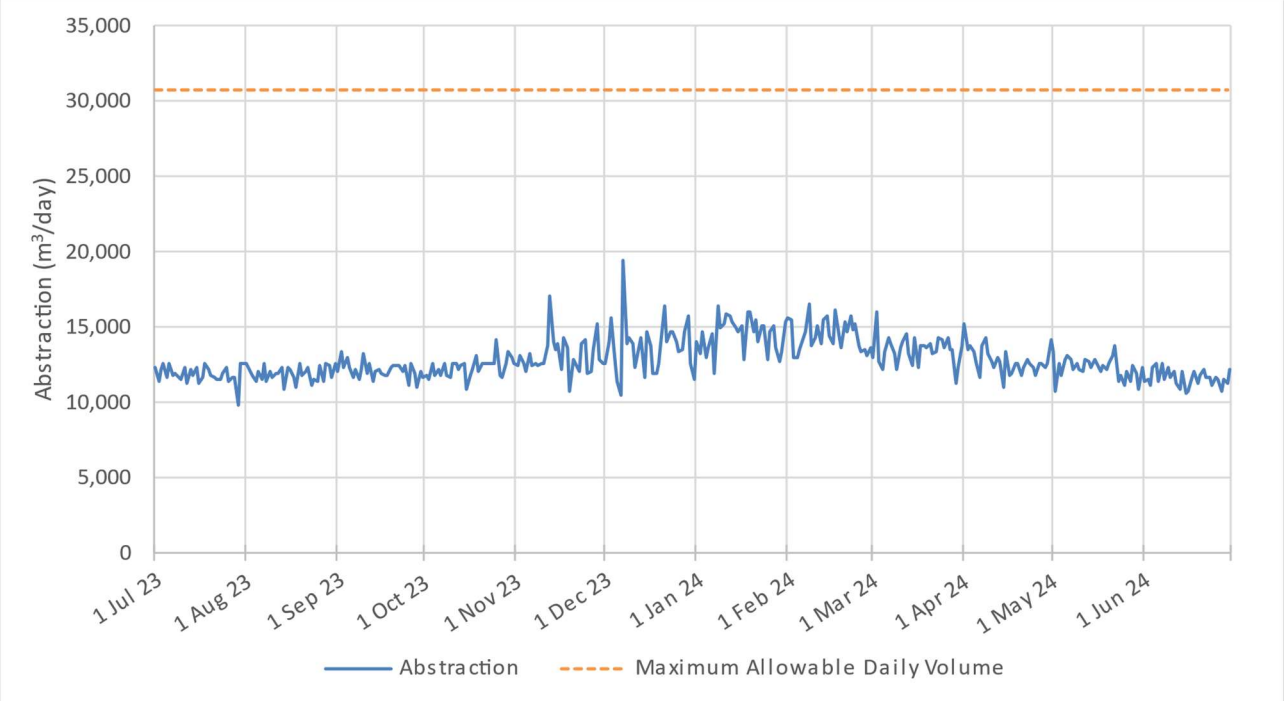


Figure 3: Waikanae WTP River Abstraction Volumes (m^3/day)

No daily abstraction volumes exceeded the consent conditions in the 2023/24 period. Monit

The instantaneous rates of abstraction (recorded at 15-minute intervals) for the reporting period are shown in Table 4 and Figure 4 below.

Table 4: Instantaneous rates of abstraction from Waikanae River

Period	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Maximum abstraction rate	255 L/s (on 1 February 2022)	240 L/s (on 11 February 2023)	318 L/s (on 14 November 2023)
Maximum abstraction rate at time of maximum abstraction permitted by Condition 5 [35974]*	463 L/s	463 L/s	463 L/s

** 355 L/s when the flows in the river are below 1,400 L/s and 463 L/s when the flows in the river are above 1,400 L/s.*

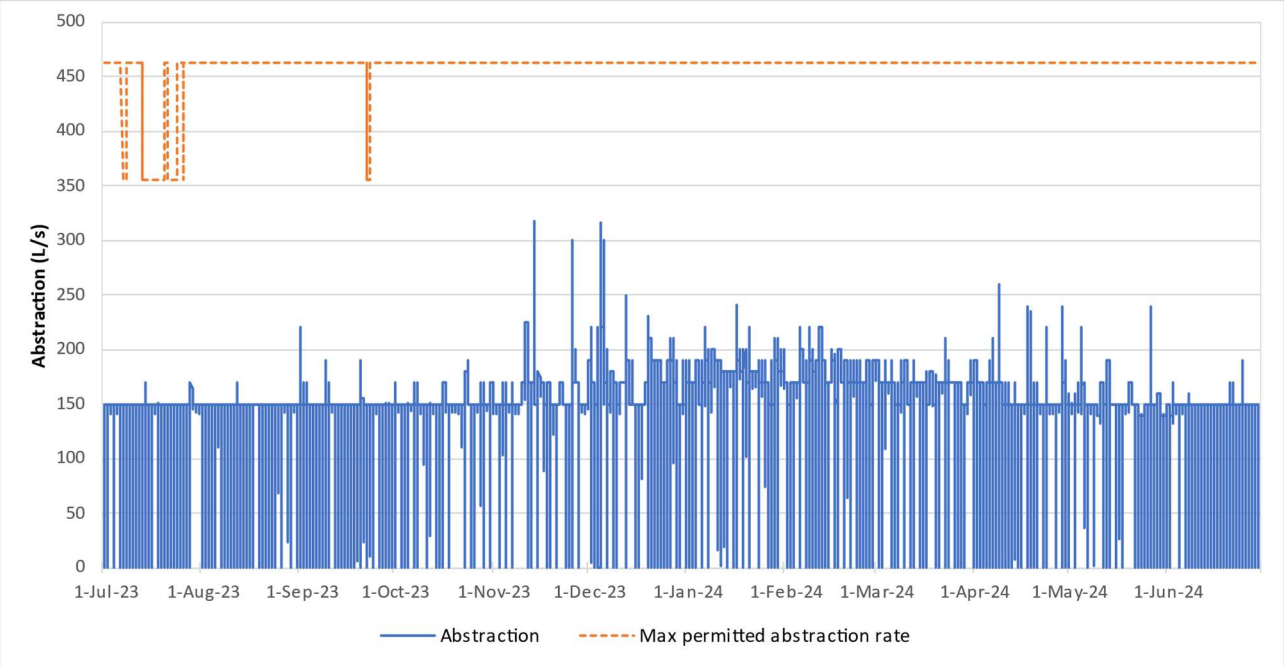


Figure 4: Waikanae WTP River Abstraction Rates (L/s)

The instantaneous abstraction rate was always less than the consent limit conditions.

2.3 River Recharge

No triggers or actions needed

River recharge must be used if required due to low flows in the Waikanae River to maintain the downstream river flow at 750 L/s or at its natural upstream flow rate if less than 750 L/s. The recharge is undertaken in accordance with the approved Bore Preference Hierarchy Plan (BPHP) and approved Waikanae River OMP.

The daily and instantaneous discharge of groundwater from the bore field to the river are outlined in Table 5 and plotted in Figure 5 and Figure 6 below.

Table 5: River recharge discharges into the Waikanae River

Period	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Number of days of river recharge	25 days between 19 March and 15 April	No river recharge required, short-term discharges only.	No river recharge required, short-term discharges only
Maximum river recharge	13,244 m^3/day (on 4 April 2022)	3,337 m^3/day (on 18 January 2023)	2,901 m^3/day (on 12 October 2023)
Ecological monitoring trigger exceeded? *	Trigger not exceeded	Trigger not exceeded	Trigger not exceeded
Number of days of short duration discharges	54 days above 0 m^3/day 29 days above 1 m^3/day	16 days above 0 m^3/day 35 days above 1 m^3/day	13 days above 0 m^3/day 15 days above 1 m^3/day
Total volume of bore water discharged to the Waikanae River (river recharge and additional short-term discharges)	179,400 m^3	27,723 m^3	21,409 m^3

**recharge exceeds 225L/s for 48 hours or greater.*

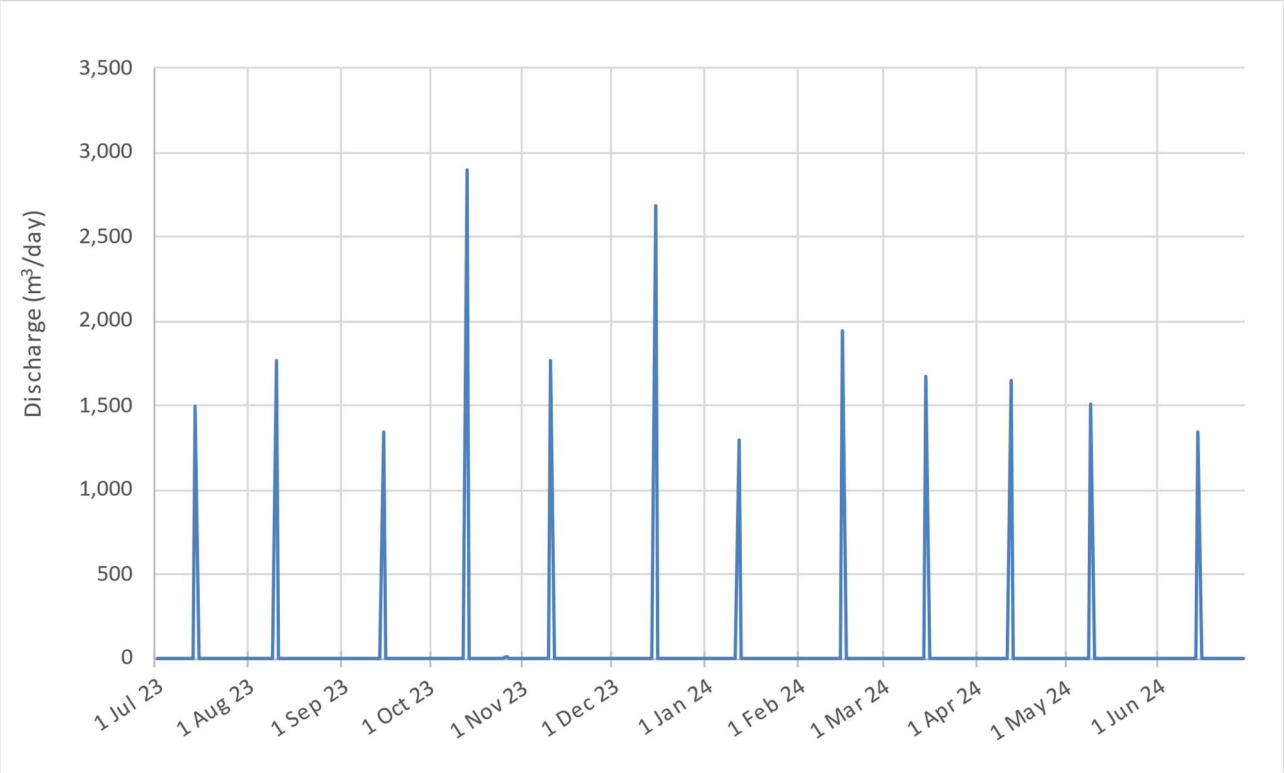


Figure 5: Daily Waikanae River Recharge (and Short Duration Discharges) for 2023/24 (m^3/day)

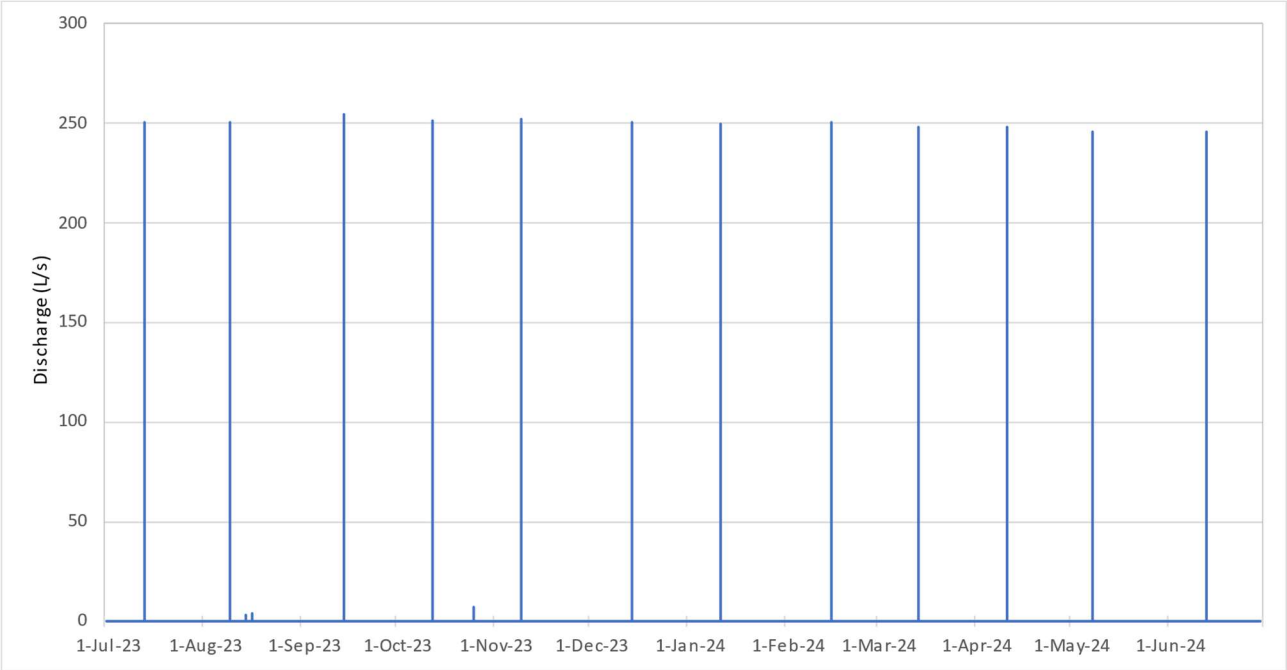


Figure 6: Instantaneous Waikanae River Recharge (and Short Duration Discharges) 2023/24 (L/s)

River recharge was not used during the 2023/24 period. The discharges in relation to testing and maintenance of the bores fell within the constraints for Short Duration Discharges as defined by Consent WGN130103 [35975]].

The trigger for periphyton monitoring and water quality sampling in the river is when discharge of bore water to the river exceeds 225 L/s for at least 48 hours. This trigger was not exceeded during this period.

2.4 Downstream River Flows

No triggers or actions needed

The flow immediately downstream of the Waikanae WTP's river recharge discharge structure is calculated as required by Condition 6 of consent WGN130103 [35974] and Condition 12 of WGN130103 [35975]. During low flow periods, a minimum flow of 750 L/s is to be maintained downstream of the WTP unless the river naturally falls below this level upstream of the river intake to the WTP. The low downstream Waikanae River Flow data is detailed in Table 6.

Figure 7 shows the river flow at the GWRC gauging site upstream of the WTP (grey line), the WTP abstraction (yellow line), the river recharge (purple line) and the resulting calculated flow immediately downstream of the WTP (blue line) during the river recharge season of 2023/24 year.

Table 6: Downstream Waikanae River Flows

Period	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Lowest downstream river flow	767 L/s (on 13 April 2022)	938 L/s (on 12 February 2023)	1,113 L/s (on 19 July 2023)
Minimum flow of downstream river in accordance with Condition 6 of consent WGN130103 [35974] and condition 12 of WGN130103 [35975]*	750 L/s	750 L/s	750 L/s
Maximum percentage recharge flow of river flow downstream	27%	19%	17%

**750 L/s unless upstream flow naturally falls below this level*
***river re-gauging undertaken on this date by GWRC*

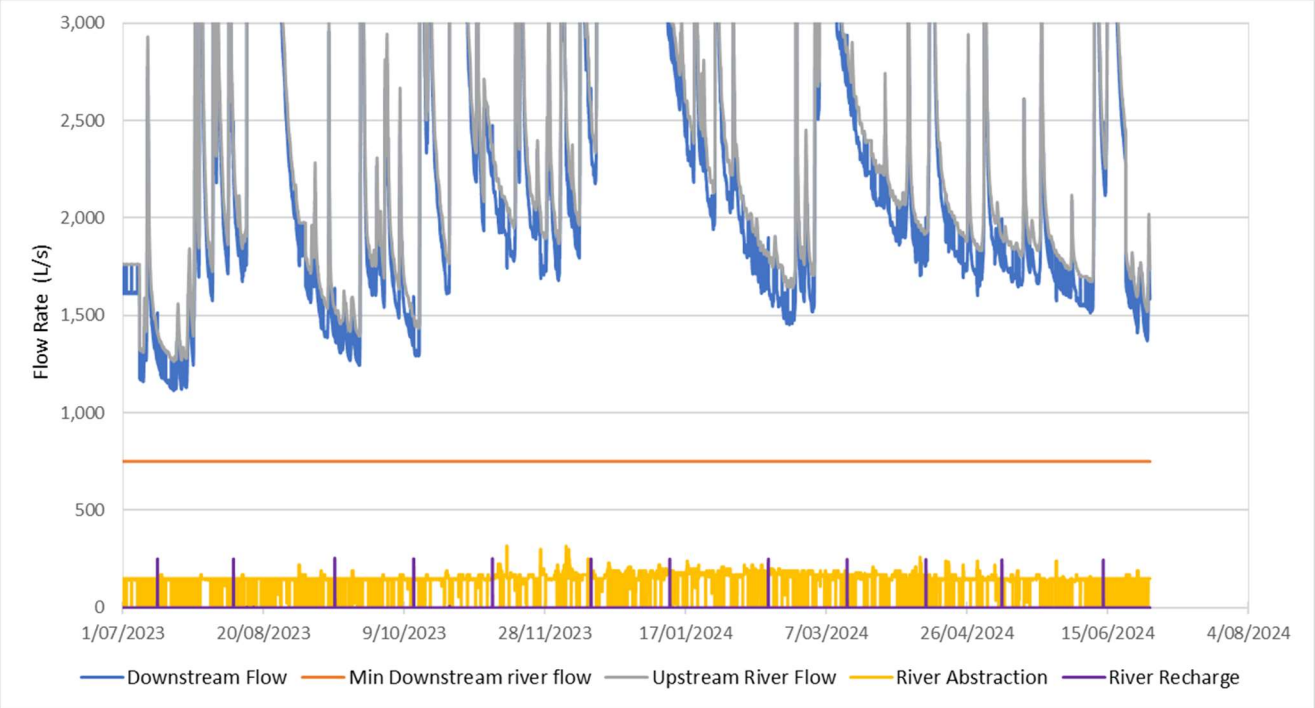


Figure 7: River flow upstream and downstream of WTP during low flow period December 2023 to February 2024.

The flow in the Waikanae River was sufficient during the period therefore the Council did not have to use the Waikanae Borefield for river recharge.

2.5 River Aquatic Monitoring

No triggers or actions needed

Periphyton and water quality monitoring in the Waikanae River is required when recharge of bore water exceeds 225L/s for 48 hours. Macroinvertebrates samples are taken when the level of periphyton in the river reaches high or very high levels as defined in the agreed letter. The trigger for periphyton monitoring and

water quality sampling in the river is when discharge of bore water to the river exceeds 225 L/s for at least 48 hours. This trigger was not exceeded during this period. Table 7 shows that the trigger was not exceeded in 2023/24 or 2022/23.

Table 7: River aquatic monitoring

Period	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Periphyton monitoring	Not required	Not required
Water Quality Sampling- DRP	Not required	Not required
Water Quality Sampling- Conductivity	Not required	Not required
Temperature	Not required	Not required

Fish surveys have previously been undertaken in the river above and below the Waikanae WTP. However, in 2018/19, the AMG agreed to cease fish surveys and re-consider the inclusion of a fish survey from Year 10 to inform the Performance Assessment Report (PAR) requirement for the 15th anniversary of the consent. The River OMP provides that the need for further fish monitoring will be revisited by the AMG at Year 10, being 2023/24. A one-off fish survey was undertaken in the 2022/23 season, which provided evidence that the River Recharge Scheme is not affecting fish densities. The AMG therefore agreed no further fish surveys are required at this stage. No fish surveys were undertaken in 2023/24.

The trigger for periphyton monitoring (discharge of 225L/s for at least 48 hours) has not been exceeded since baseline monitoring. The purpose of periphyton monitoring following recharge is to determine if the discharge of groundwater is causing nuisance periphyton growth and adversely affecting macroinvertebrates. The River OMP suggests that the AMG discusses the appropriateness of the periphyton alert trigger in the five years leading up to the PAR (i.e. from 2023/24) and consider if there is a benefit of the alert trigger level being reviewed.

The River OMP suggests that the AMG:

- Consider if there have been any triggers and if so, what the data collected tells them about the periphyton response, and if there have been no triggers, whether there has been any growing concern about elevated periphyton cover.
- Consider the appropriateness of reducing the trigger to collect more data about periphyton response in the river to better inform the performance review.
- As part of this, re-consider chlorophyll-a sampling to enhance the understanding of the periphyton when elevated.

We have reviewed the recharge data since the consent was granted. The Scheme had its highest use in 2017/18 (in terms of rate and duration) and had the longest continuous recharge period in 2021/22. The maximum duration where recharge exceeded 225 L/s was for 15 hours in January 2018, but the average duration of exceedance is 3 hours. The maximum duration of continuous recharge was 226 hours in 2022, however the maximum rate during this time was 182 L/s.

We do not consider the trigger needs to be revised at this stage. The data suggests that, while the trigger hasn't been exceeded over the past 10 years, it could be exceeded in the coming years, depending on rainfall and water demand. However, we propose to undertake a "spot check" based on an interim trigger for periphyton. The "spot check" will help inform whether river recharge is influencing periphyton growth and if we need to revise the trigger level in the Waikanae River OMP.

3 Waikanae Borefield

3.1 Abstraction Volumes and Rates

No triggers or actions needed

Abstraction from each production well (L/s and m³/day) is measured and recorded in accordance with Conditions 13, 14 and 20 of consent WGN130103 [35973]. The Council submits full abstraction records automatically via SCADA to GWRC as required by Condition 18. A summary of the abstraction for this reporting period is provided in Table 8. The total daily abstraction from the Waikanae Borefield is plotted in **Error! Reference source not found.**.

Table 8: Total daily and annual volumes pumped from the production bores

Period	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Total annual volume pumped	45,600 m^3	33,139 m^3	19,801 m^3
Annual permitted volume (Condition 8 of WGN130103 [35973])	2,300,000 m³/year	2,300,000 m³/year	2,300,000 m³/year
Maximum total daily take volume and date	13,200 m³/day (on 21 March 2022)	13,002 m³/day (on 1 February 2023)	2,160 m^3 (on 12 October 2023)
Maximum daily take permitted by Condition 6 of WGN130103 [35973]**	23,600 m³/day	23,600 m³/day	23,600 m³/day

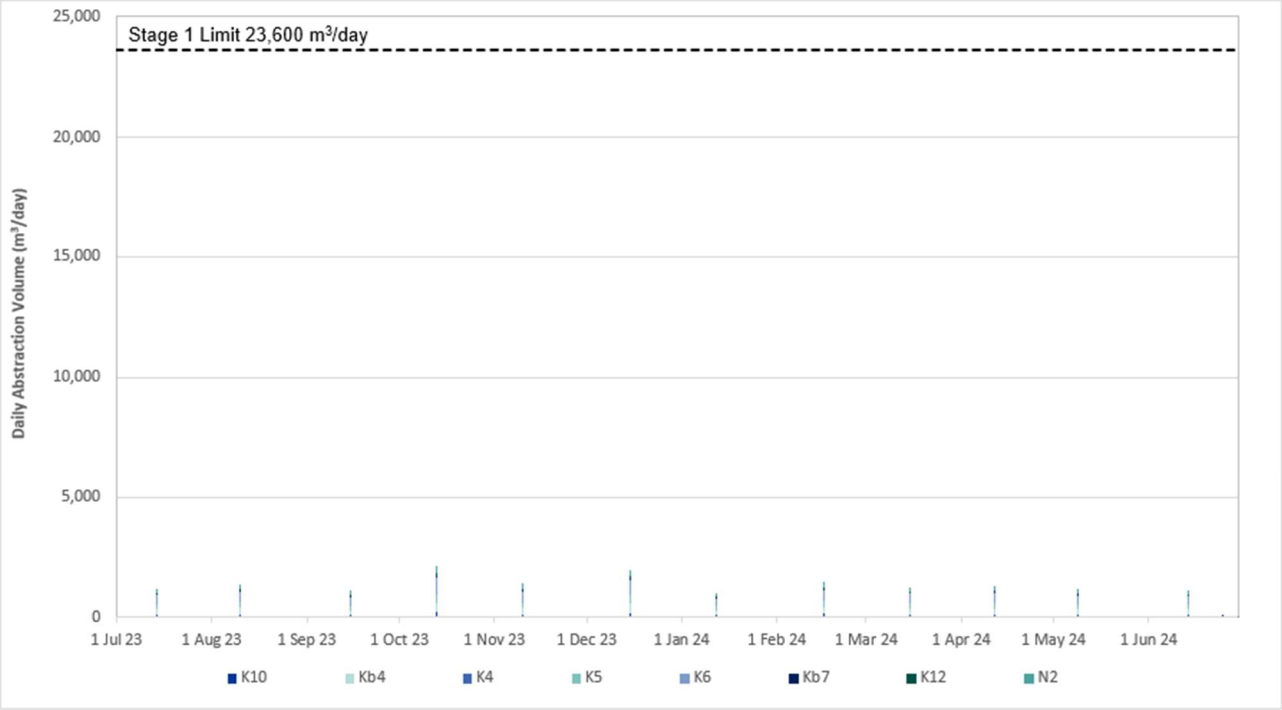


Figure 8: Daily Abstraction Volumes from Production Wells

The total instantaneous abstraction rate from the production wells is shown in Table 9 and plotted in Figure 9.

Table 9: Total instantaneous abstraction rate from production wells

Period	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Maximum combined abstraction	256 L/s for 15 minutes on 17 February 2022	255 L/s for 15 minutes on 8 December 2022	254 L/s for 15 minutes on 9 August 2023
Maximum instantaneous abstraction permitted by Condition 8 of WGN130103 [35973].	273 L/s	273 L/s	273 L/s

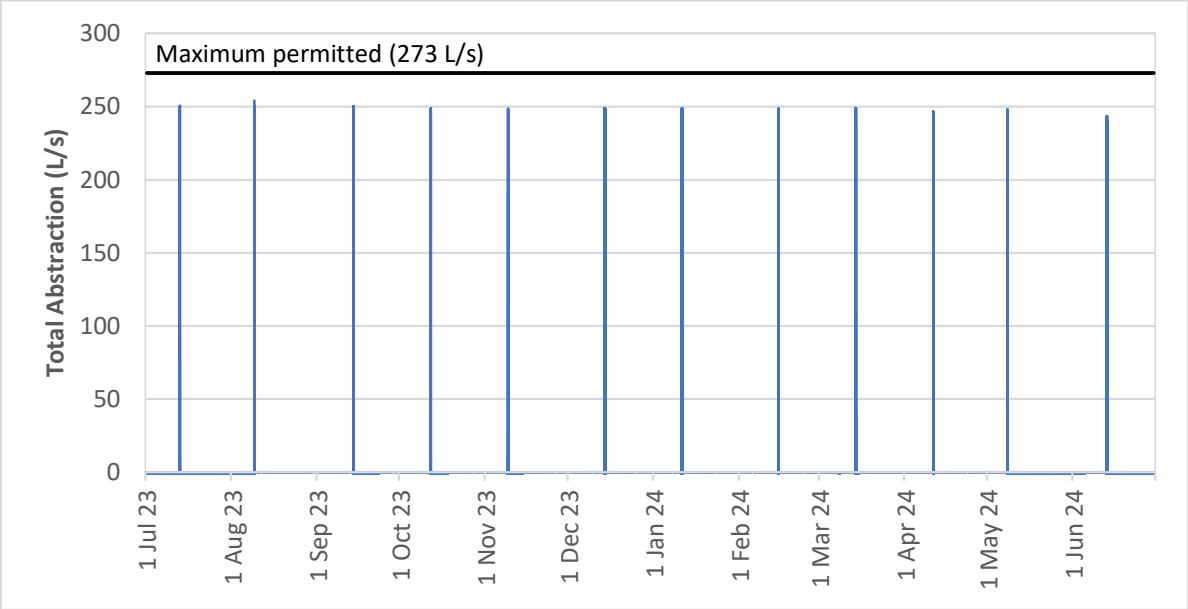


Figure 9: Total Instantaneous Abstraction from Production Wells

The combined instantaneous abstraction from the Borefield was below the maximum abstraction permitted by Condition 8 of WGN130103 [35973] during the 2023/24 period. The maximum instantaneous abstraction rates for the individual production bores are detailed in Table 10.

Figure 10 on the following page shows the daily and cumulative recharge from the Scheme over the past 10 years. Figure 10 shows the peaks of River Recharge Scheme use in 2018 and again in 2022, confirming the minimal use of the Scheme over the consent duration.

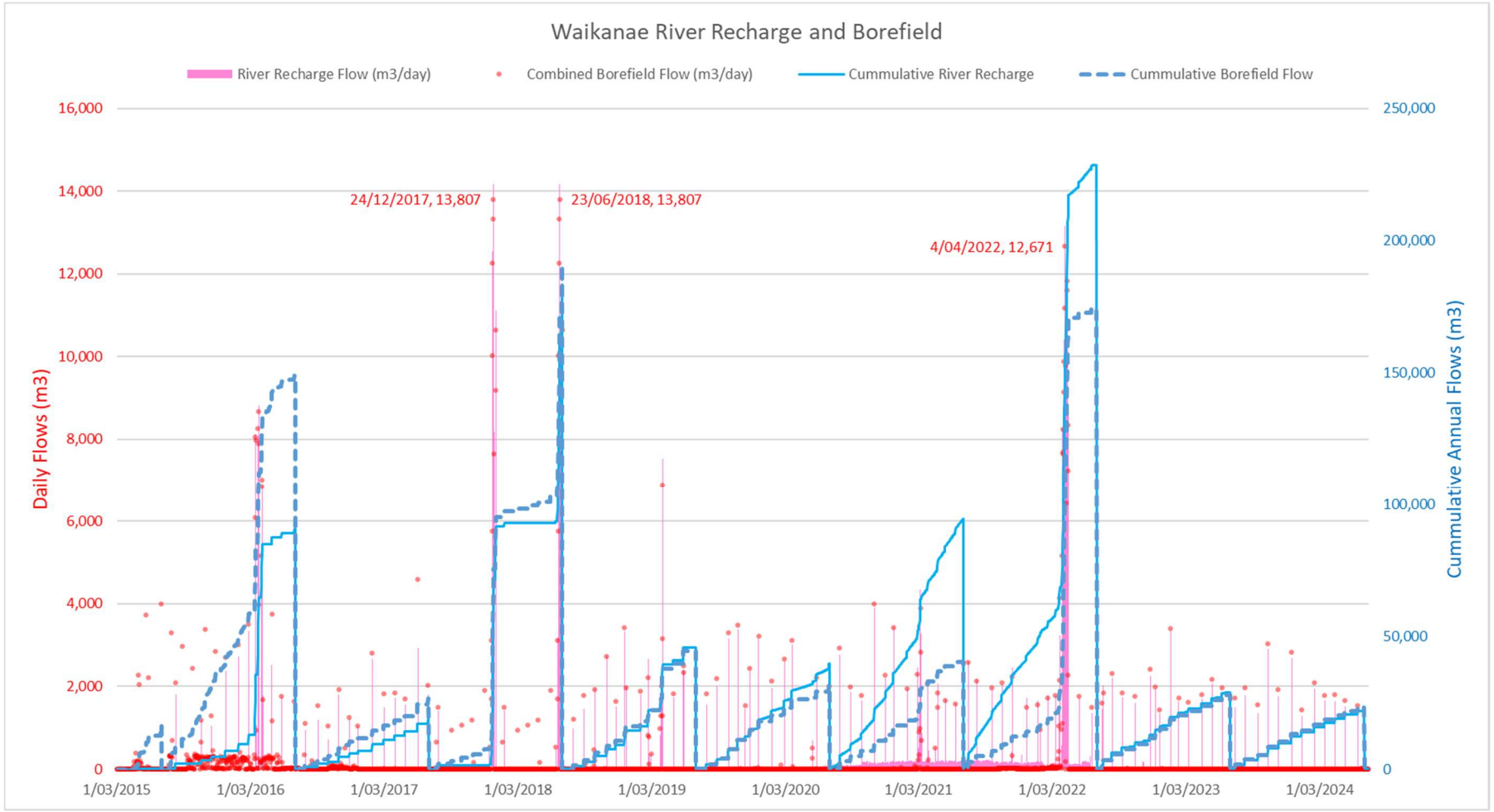


Figure 10: Waikanae River recharge and borefield since 2015

Table 10: Maximum Instantaneous abstraction rates for the individual production bores

Maximum instantaneous abstraction	Stage 1 Maximum yield (Condition 8 of WGN130103 [35973])	1 July 2022 – 30 June 2023	1 July 2023 – 30 June 2024
K10	36 L/s	17 L/s	17 L/s
Kb4	35 L/s	35 L/s	35 L/s
K4	65 L/s	65 L/s	65 L/s
K5	36 L/s	35 L/s	30 L/s
K6	58 L/s	58 L/s	58 L/s
Kb7	8 L/s	6 L/s	6 L/s
K12	10 L/s	8 L/s	8 L/s
N2	25 L/s	25 L/s	25 L/s

The individual bore abstractions were below the Stage 1 maximum yield values in Condition 8 of WGN130103 [35973].

3.2 Flow Gauging

No triggers or actions needed

Measurement of Waikanae River flows at Jim Cooke Memorial Park are undertaken when the bore field abstraction exceeds 23,000 m³/day for a three-day period as outlined in approved River and Borefield OMPs.

Table 11: Flow gauging of the Waikanae River

Period	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Flow Gauging Trigger Status	Borefield abstraction of 23,000 m³/day for a three-day period was not exceeded.	Borefield abstraction of 23,000 m³/day for a three-day period was not exceeded.

This trigger was not reached during the 2023/24 period.

3.3 Back-up Wells PW1 and PW5

No triggers or actions needed

The Council holds a separate resource consent WGN050025 [33147] for two groundwater bores in Otaihanga (PW1 and PW5) for back up water supply. The Back-up wells PW1 and PW5 were not connected to the reticulation and therefore were not used for back up water supply in the 2023/24 period. These bores haven't been used since the borefield was commissioned in 2006 and are unlikely to be used for the foreseeable future. They have also had their chlorine system decommissioned and have unvalidated meters so would require additional measures to become operational for emergency potable water supply.

Table 12: Combined abstraction from wells PW1 and PW5 for back up public water supply to the surrounding communities

Period	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Combined abstraction from wells PW1 and PW5	Wells not used for back up water supply.	Wells not used for back up water supply.
Maximum combined abstraction permitted by Consent WGN050025 [33147].	7000 m³/day	7000 m³/day

3.4 Borefield Monitoring Programme

The Borefield Monitoring Programme is set out in the approved Borefield OMP.

3.4.1 Shallow Aquifer Drawdown Monitoring

No triggers or actions needed

Table 13 lists the shallow aquifer monitoring sites, the applicable trigger levels and the minimum water level (daily average) recorded during the reporting period compared to last year.

Table 13: Shallow Aquifer Drawdown Monitoring Wells and Trigger Levels

Well Name	GWRC Bore Number	Trigger Level			Min level reporting period 2021/22 (mm AMSL)	Min level reporting period 2022/23 (mm AMSL)	Min level reporting period 2023/24 (mm AMSL)
		Alert (mm AMSL)	Action (mm AMSL)	Cease (mm AMSL)			
KCDC K6 Obs Shallow	R26/6992	2180	1980	1780	3504	3258	3061
GWRC Nga Manu	R26/6991	7138	6938	6738	8049	8040	7798
KCDC W1	R26/7025	4350	4150	3950	4931	5052	4935
Waikanae CHP Shallow	R26/6916	1445	1245	1045	2389	2366	2187
K12 Obs Shallow, Smithfield Rd	R26/6300	5035	4835	4635	5820	5766	5493
JCMP Shallow, Jim Cooke Memorial Park	N/A	6641	6441	6241	7433	7507	7316
K3A Obs Shallow, Cemetery	R26/6290	6964	6764	6564	8010	8153	7715
Greenhill North Shallow, Greenhill Rd North	N/A	6387	6187	5987	7146	7156	6916
Greenhill South Shallow, Greenhill Rd South	N/A	11829	11629	11429	12988	12898	12500

Several alarm notifications were received throughout the year. The number of actual triggers from the alarm notifications are shown in Table 14.

GWRC is responsible for the GWRC Nga Manu monitoring well (R26/6991). As with previous years, the trigger exceedance and was investigated and found to be because of a fault with the equipment. The management of this equipment is outside of the Council's control. We understand that upgrading the GWRC Nga Manu bore is not a priority for GWRC. A wider discussion with GWRC may be required regarding the ongoing viability/suitability of using GWRC monitoring wells for this consent.

Table 14: Shallow Aquifer Triggers

Period	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Total number of notifications	12	10
Total number of actual triggers	0	0

3.4.2 Deep Aquifer Drawdown Monitoring

No triggers or actions needed

Table 15 lists the deep aquifer monitoring sites, the applicable trigger levels and the minimum water level (daily average) recorded during this year's reporting period compared to last year.

Table 15: Deep Aquifer Drawdown Monitoring Wells and Trigger Levels

Well Name	GWRC Bore Number	Trigger Level			Min level reporting period 2021/22 (mm AMSL)	Min level reporting period 2022/23 (mm AMSL)	Min level reporting period 2023/24 (mm AMSL)
		Alert [mm AMSL]	Action [mm AMSL]	Cease [mm AMSL]			
Sentinel #1 Deep, Rutherford Drive	R26/6378	-1537	-3787	-5475	2065	3517	3325
Sentinel #1 Intermediate, Rutherford Drive	N/A	-2526	-4776	-6463	1663	2053	1823
Sentinel #2 Deep, Hodgkins Rd	N/A	-898	-2698	-4048	2466	3044	2922
Sentinel #2 Intermediate, Hodgkins Rd	N/A	-1757	-3557	-4907	1436	1845	1798
Sentinel #3 Deep, Old WWTP	R26/6776	-2090	-4490	-6290	1553	2858	3118
Sentinel #3 Intermediate, Old WWTP	N/A	-2547	-4947	-6747	2317	2418	2126
Sentinel #4 Deep, Peka Peka Rd	N/A	1832	932	257	3778	4113	4027
Sentinel #4 Intermediate, Peka Peka Rd	N/A	284	-616	-1291	2290	2251	1988

Well Name	GWRC Bore Number	Trigger Level			Min level reporting period 2021/22 (mm AMSL)	Min level reporting period 2022/23 (mm AMSL)	Min level reporting period 2023/24 (mm AMSL)
		Alert [mm AMSL]	Action [mm AMSL]	Cease [mm AMSL]			
Sentinel #5 Intermediate, Taiata St	R26/6955	-393	-1443	-2231	1876	1907	1821
Sentinel #5 Deep, Taiata St	N/A	19	-1031	-1819	2089	2318	2117
Sentinel #6 Deep, Tamati Place	N/A	560	-190	-752	2202	2329	2226
Sentinel #6 Intermediate, Tamati Place	N/A	599	-151	-714	2176	2246	2107
Waikanae CHP Deep	R26/6594	540	-510	-1298	2634	2686	2540
Waikanae Park	R26/6284	4611	2511	936	8818	8884	8602

Several alarm notifications were received throughout the year. The number of actual triggers from the alarm notifications are shown in Table 16.

Table 16: Deep Aquifer Triggers

Period	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Total number of notifications	10	20
Total number of actual triggers	0	0

A small number of automated notifications of trigger values from deep monitoring wells were received by Council and GWRC during the 2023/24 year. River recharge was not underway during these times. All events were due to monitoring system anomalies. Further analysis of all bore monitoring automatic notification events (short-term monitoring equipment failures or anomalies) is included in Section 3.4.4.

3.4.3 Saline Intrusion Monitoring

No triggers or actions needed

Table 17 lists the saline intrusion monitoring sites, the applicable trigger levels and the maximum electrical conductivity (daily average) recorded during this year's reporting period compared to last year.

Table 17: Saline Intrusion Monitoring Wells Electrical Conductivity Trigger Levels

Well Name	GWRC Bore Number	Trigger Level			Max this reporting period 2021/22 (µS/cm)	Max this reporting period 2022/23 (µS/cm)	Max this reporting period 2023/24 (µS/cm)
		Alert (µS/cm)	Action (µS/cm)	Cease (µS/cm)			
Sentinel #1 Deep, Rutherford Drive	R26/6378	1500	1875	2188	2361	1286	1172
Sentinel #1 Intermediate, Rutherford Drive	N/A	521	651	760	467	462	404
Sentinel #2 Deep, Hodgkins Rd	N/A	1532	1915	2234	1195	1198	1242
Sentinel #2 Intermediate, Hodgkins Rd	N/A	1699	2124	2478	840	961	975
Sentinel #3 Deep, Old WWTP	R26/6776	1342	1677	1956	1026	1305	1027
Sentinel #3 Intermediate, Old WWTP	N/A	2789	3486	4067	1094	906	509
Sentinel #4 Deep, Peka Peka Rd	N/A	866	1082	1262	707	828	656
Sentinel #4 Intermediate, Peka Peka Rd	N/A	761	951	1110	870	673	687
Sentinel #5 Intermediate, Taiata St	R26/6955	3642	4553	5311	3261	3564	3596
Sentinel #5 Deep, Taiata St	N/A	5818	6518	7218	5109	5114	5122
Sentinel #6 Deep, Tamati Place	N/A	8693	9393	10093	7844	7947	7536
Sentinel #6 Intermediate, Tamati Place	N/A	1684	2105	2455	1467	1952	1617

Several alarm notifications were received throughout the year. The number of actual triggers from the alarm notifications are shown in Table 18.

Table 18: Saline Intrusion Monitoring Triggers

Period	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Total number of notifications	8	19
Total number of actual triggers	0	0

A small number of automated notifications of trigger values from deep monitoring wells were received by Council and GWRC during the 2023/24 year. River recharge was not underway during these times. All events were due to monitoring system anomalies. Further analysis of all bore monitoring automatic notification events (short-term monitoring equipment failures or anomalies) is included in Section 3.4.4.

3.4.4 Analysis of Monitoring Bore Notification Alerts (Monitoring Equipment Outages)

The OMPs require the Council to monitor triggers during the recharge season and report on these triggers to GWRC. The Council received a total of 29 notifications of a trigger event for the RRwGW monitoring wells during 2023/24. Of these, 10 notifications were received during the river recharge season (1 December to 30 April). Table 19 summarises the in-season notifications, including the date, monitoring point and alert level. In all cases a Council or GWRC monitoring asset was found to have failed, or it had been affected by a maintenance or power outage event.

Table 19: Summary of Notified Monitoring Point Failure Events

Date	Monitoring Point	Alert Level
12/12/23	KCDC W1 Level	Level 1
12/12/23	KCDC W1 Level	Level 2
12/12/23	KCDC W1 Level	Level 3
13/12/23	KCDC W1 Level	Level 1
13/12/23	KCDC W1 Level	Level 2
13/12/23	KCDC W1 Level	Level 3
7/02/24	Waikanae CHP Deep Level	Level 1
7/02/24	Waikanae CHP Shallow Level	Level 2
7/02/24	Waikanae CHP Shallow Level	Level 1
7/02/24	Waikanae CHP Shallow Level	Level 3

3.5 Bore Water Quality Monitoring

No triggers or actions needed

3.5.1 Production Bores

Following the approved BoMM:

- Bore water quality samples are taken from production bores at the start of the abstraction season.
- Water quality sampling is compulsory at the conclusion of the monitoring season if the abstraction from the bore field reaches 23,000m³/day for three consecutive days or reaches a volumetric measure of 540,000m³ or more.

Bore water quality samples were taken from production bores at the start of the 2023/24 season. Bore Water Quality Sampling results from Eurofins' analysis of samples can be found in Appendix D. No non-compliance indicators are noted.

The abstraction from production bores during the 2023/24 season did not exceed 23,000m³/day for three consecutive days or reach 540,000m³ or more, meaning monitoring at the conclusion of the season was not required.

3.5.2 Blended Bore Water

Blended Bore Water sampling is no longer required going forward, as per the approved Borefield OMP.

3.6 Potentially Affected Existing Private Wells

Condition 7 of consent WGN130103 [35973] requires work to be undertaken to identify potentially affected existing authorised wells (and actions (b)-(d) listed in the condition) prior to implementing each stage of the project as referenced in Condition 6. GWRC confirmed on 21 July 2016 that Council has met all requirements of Condition 7 for Stage 1.

A website provides education information, live groundwater level monitoring information and has contact details if private well users wish to discuss issues arising or make complaints. The Council upgraded this website for 2020/21 year; now hosting live operating data, with geospatially represented bore information, on Council's own platform (it was operated for Council by consultant Beca, in the past). The Council is going to compile an updated contact list for all private well users and establish a forum for communicating with these users directly at the beginning of the season.

Refer to the web pages found at the following address:
https://www.kapiticoast.govt.nz/services/a-z-council-services-and-facilities/waters/water-supply/where-it-comes-from/private-bores/

3.7 Complaints

Condition 45 of consent WGN130103 [35973] requires Council to maintain an on-going record of any complaints received alleging adverse effects from, or related to, abstraction from the Waikanae Borefield, including complaints of any adverse effects on private bores. The Complaints Record is attached in Appendix E. There were no complaints received alleging adverse effects from, or related to, abstraction from the Waikanae Borefield in the 2021/22 year.

Table 20: Complaints Record

Period	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
Number of complaints	0	0

4 Wetlands Monitoring

No triggers or actions needed

As required by the approval of the Wetland OMP, wetland triggers are applicable to Nga Manu wetland.

Figure 11 presents the Nga Manu wetland groundwater levels for the wetland monitoring period (Dec 2023 - May 2024), which includes regression analysis of the trigger levels based on the district wide shallow groundwater effects. Figure 11 also shows the trigger recording due to a technical fault in the monitoring equipment (discussed in the previous section).

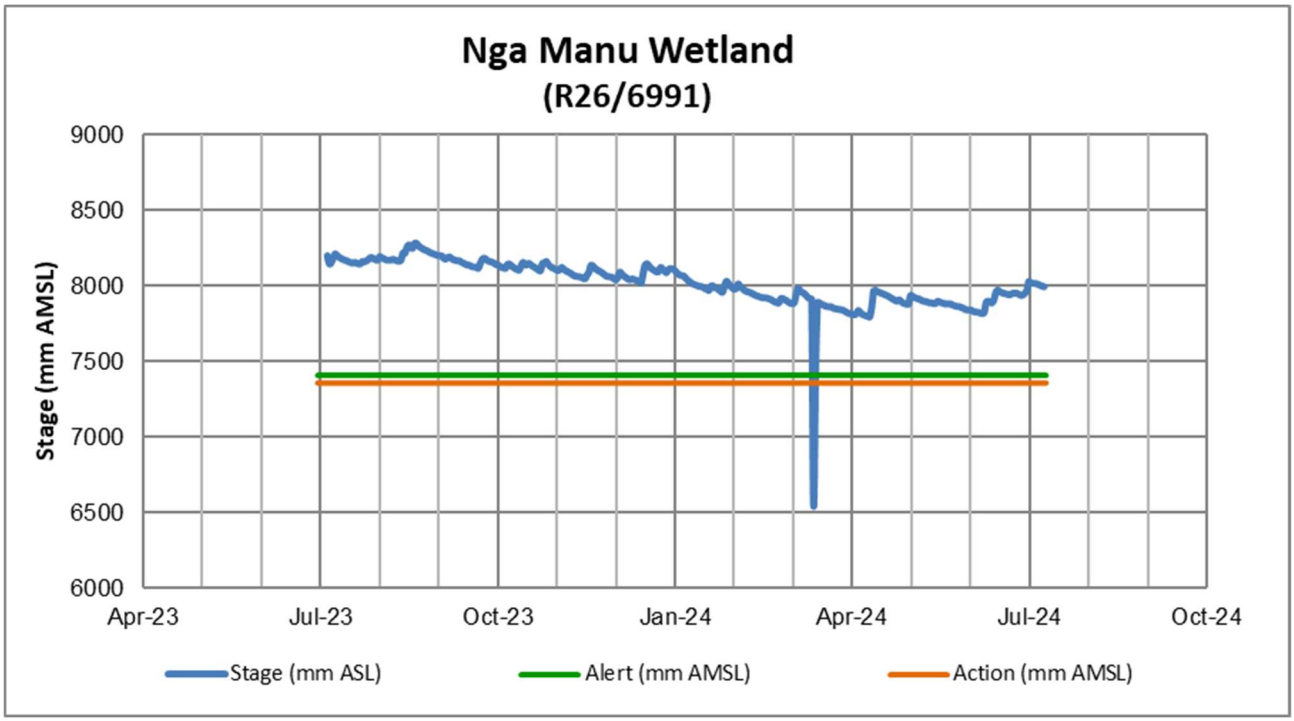


Figure 11: Nga Manu Wetland Regression Analysis

Te Harakeke Wetland is to be included in an updated Wetland OMP if access can be regained. The Council contacted the landowner in February 2024 to establish whether access could be regained. However, the landowner has yet to approve access to the wetland for monitoring.

The number of notifications and actual triggers from the alarm notifications are shown in Table 21 (the analysis of these triggers is provided in Table 19 in the previous section). As discussed, all notifications were due to technical faults with monitoring equipment, meaning no actual triggers were exceeded.

Table 21: Wetland Automated Triggers

Period	1 July 2022 - 30 June 2023	1 July 2022 - 30 June 2023
Total number of notifications	8	0
Total number of actual triggers	0	0

Wetland condition monitoring for Nga Manu Wetland was undertaken in February/March 2024. The Wetland Condition Report prepared by Wildlands Ltd is provided in Appendix C. The Wetland Condition Report assesses Nga Manu Wetland only as the Council has not been able to gain access to Te Harakeke Wetland. In the Wetland Condition Report, wetland plot data showed a decrease in the presence of hydrophytic plants at both sites assessed, to the point where the sites are no longer considered wetlands. The aerial data delineating wetland communities indicate fluctuating water levels across the site with dryland scrub vegetation dying out in parts due to inundation and encroaching into wetland communities in others.

The Wetland Condition Report recommended further investigation into the cause of these changes to establish whether the changes are related to the operation of the RRwGW Scheme. The report recommended that plot monitoring be expanded, along with additional photo point monitoring. Further monitoring will be undertaken in summer 2025 to build a dataset for further analysis. This will ensure future changes are able to be detected in relation to the groundwater levels and the RRwGW Scheme. The Council has recommended amendments to the Wetland OMP to incorporate these monitoring changes, which will be submitted to GWRC for approval.

5 Small Coastal Streams Monitoring

No triggers or actions needed

One small coastal stream site, Ngārara Stream has been monitored this year as defined in the Small Coastal Stream OMP. The required monitoring period is from 1 December 2023 to 1 May 2024. The ground water and stream level for the small coastal stream are shown in Figures 12 and 13.

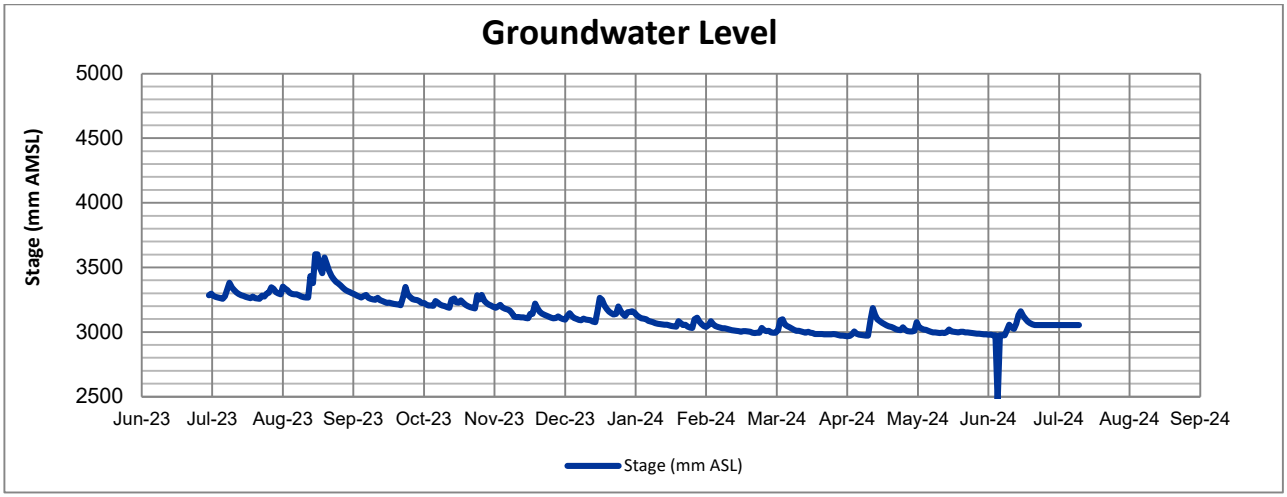


Figure 12: Ground water levels for Ngārara Small Coastal Stream

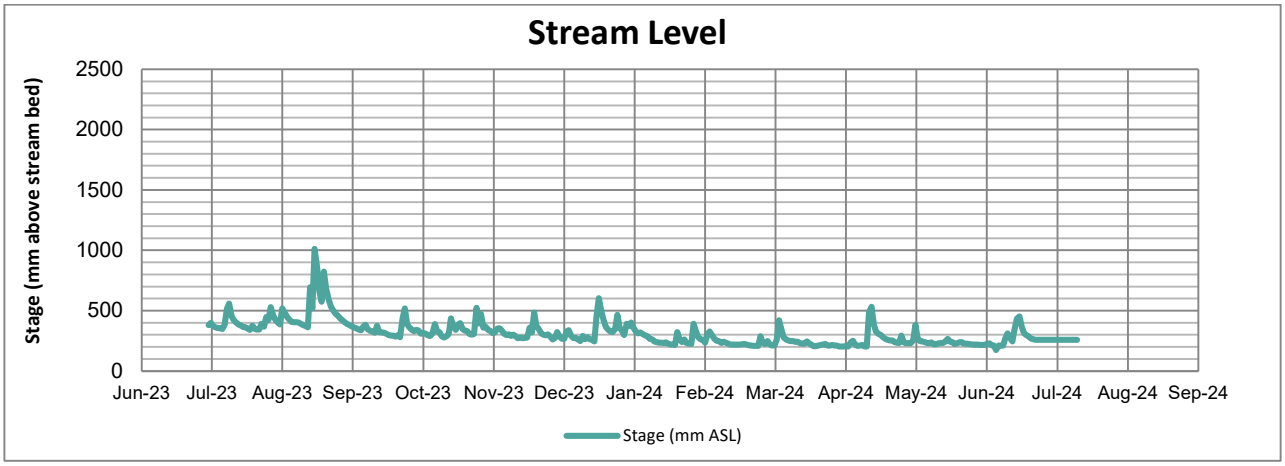


Figure 13: Stream levels for Ngārara Small Coastal Stream

The stream levels shown in Figures 12 and 13 show a gradual decline over 2023/24. The Scheme was not operating during this time, so the decline is unrelated to the Scheme. We suspect the decline to have been influenced by low rainfall levels over 2022/23 and 2023/24, in combination with stream maintenance works to clear a blockage in Ngarara Stream in September 2022, which was causing a significant flood hazard to the lower stream area. We will continue to monitor stream levels and, as part of our interim review leading into the PAR, consider whether the trigger levels for small coastal streams need to be reviewed.

Trigger levels for small coastal streams are calculated in accordance with the Small Coastal Streams OMP. The triggers for 2023/24 are set out in Table 22 based on last year's monitoring data. Trigger levels are applicable from 1 December to 30 April each year, or if the Scheme is used outside this period for river recharge or supplementary supply.

As shown in Figures 12 and 13, we observed a decline in water levels in small coastal streams over 2022/23 and 2023/24. While the Council was not operating the Scheme during this time, it has had an influence on our trigger levels for small coastal streams. Table 22 shows that the trigger level for the Ngārara Stream was elevated during 2023/24. However, the Council did not need to take any actions as the Scheme was not operating at this time.

Table 22: Historic Trigger Levels for Small Coastal Streams

Location	Trigger Level (2023/24 year)			Min Value this reporting period 2023/24(mm -)
	Alert (mm -)	Action (mm -)	Cease (mm -)	
Ngārara Groundwater Level (mm AMSL)	1656 *			2968
Ngārara Stream Level (mm above stream bed)		300 #	150 +	203

* 200mm below the lowest recorded shallow groundwater level for historic monitoring results minus 15% of the range in water levels recorded.

35th percentile stream depth is less than 300mm determined from staff gauge measurement.

+ 35th percentile stream depth is less than 150mm determined from static staff gauge measurement.

Table 23 provides further analysis of the monitoring results for 2023/24. Table 23 shows lower ground and stream levels for Ngārara Groundwater and Stream Level than reported for 2022/23, being 2940mm and 350mm respectively. Table 23 therefore indicates that the alert levels in Table 22 potentially reflect a new baseline ground and surface water level for Ngārara Stream. Trigger levels for 2024/25 will remain the same as 2023/24. As part of our interim monitoring and review of data presented in Section 7.1 of this report, the Council will investigate the implications of lower ground- and surface water in Ngārara Stream and the potential need to amend the method for calculating trigger levels in the future.

Table 23: Analysis of Adaptive Management Trigger Levels - Small Coastal Streams 2023/24

Location	Minimum Level [1] (mm -)	Maximum Level [1] (mm -)	35th Percentile [2] (mm -)	Refined Trigger Level for 2024/25		
				Alert [3] (mm -)	Action (mm -)	Cease (mm -)
Ngārara Groundwater Level (mm AMSL)	2082	4921		1656		
Ngārara Stream Level (mm above stream bed)	174	2350	697		300#	150+

1. Data was taken from the SCADA archive for period 00:00hrs 1/011/2018 thru 23:00 30/04/2024
2. The 35th Percentile is calculated by ranking all data values in the set noted above, in order, then assessing the data point at which 35% of all points are of lesser value.
3. Trigger levels as described in Table 22 notes.

6 Operations

6.1 Operations Log and Maintenance Undertaken

The Council has confirmed that its existing SCADA system together with the NCS system are an 'electronic data management system' that records and stores the information required by Condition 20 of consent WGN130103 [35973] and Condition 18 of consent WGN130103 [35974]. Borefield abstraction, river abstraction and river recharge data are automatically transmitted from Council's SCADA system to GWRC's Water Use Data Management System. The Council has implemented Water Outlook as a system to store and report data and operational information relating to the Waikanae Borefield. The Council is also using Water Outlook to store and report data and operational information relating to the Waikanae River take and recharge. A copy of the site logs for each production bore is included in Appendix D. Appendix D also includes the Waikanae River take and recharge operational records.

6.2 Operation and Maintenance Manuals

6.2.1 Approved Documents History

The Waikanae Borefield Operation and Maintenance Manual (BOMM) and current Waikanae River Take Operations and Maintenance Manual (ROMM) have been approved by AMG & GWRC and were last updated on 19 December 2018.

The following have also been approved by GWRC:

- Borefield OMP (dated 29 November 2018),
- Wetland OMP (dated 9 March 2018),
- Small Coastal Streams OMP (dated 21 February 2019), and
- River OMP (dated 2 July 2020).

6.2.2 Updated Documents

The Council is proposing amendments to the Wetland OMP to amend the methodology for Wetland Condition Monitoring and signal additional monitoring in the summer of 2025. This amendment is further discussed in Section 4 and will be submitted to GWRC for approval.

7 Mitigation/Adaptive Management

The Adaptive Management Group (AMG) for the RRwGW scheme comprises members who include representatives of GWRC, Council, and Te Āti Awa ki Whakarongotai. AMG members meet annually to discuss the performance of the RRwGW programme.

The 2023/24 monitoring activities have been completed in accordance with the approved OMPs. The AMG annual meeting was held in September 2024. The meeting minutes are provided in **Appendix G**.

7.1 Performance Assessment Review

The resource consents require the Council to undertake a performance assessment of the Scheme and submit a Performance Assessment Report (PAR) to GWRC for approval by 7 April 2029 or when groundwater discharge to the Waikanae River reaches 28,000m^3/day, whichever occurs earlier. The purpose of the PAR is to "review the abstraction and monitoring undertaken to date and evaluate this against the assumptions and assessment of effects described in the application dated 8th November 2012 and supporting information". GWRC will then review the PAR and confirm that the Council can proceed to Stage 2 of the Scheme, which, at the time of the application, the Council anticipated to be 2033.

At the 2023/24 AMG annual meeting, the Council presented its proposal to extend the PAR requirement by 4 years to 2033. A memo detailing the proposal was pre-circulated to the AMG and is provided in **Appendix H**.

The purpose for extending the PAR timeframe is because water demand has been much less than anticipated when the consents were granted in 2013. This has resulted in the following key outcomes:

- The Council has not collected enough monitoring data throughout the past 10 years to inform the PAR as monitoring required by the consent and OMPs is in response to Scheme utilisation.
- The Council is on track to progress to Stage 2 of the Scheme (28,000m3/day) 3-4 years later than originally anticipated due to lower water demand.

The AMG was generally supportive of this proposal. The Council will therefore progress a resource consent application to amend the PAR timeframe, which is currently encoded in the resource consent conditions, over the next 12 months. The Council has also proposed a series of interim monitoring measures to undertake between now and the timeframe for submitting the PAR, as detailed in the memo.

7.2 Changes to Mitigation Plans

7.2.1 Operating Documents and Consent - active

The consents and the related operating documents were deployed as unchanged for the 2023/24 season, in the now normalised operating mode. No new consent amendments are proposed.

7.2.2 Operating Documents – revision control

7.2.2.1 Operation and Maintenance Manuals

The Council is proposing amendments to the Wetland OMP to amend the methodology for Wetland Condition Monitoring and signal additional monitoring in the summer of 2025. This amendment is further discussed in Section 4 and will be submitted to GWRC for approval.

No other amendments are proposed.

7.2.2.2 Operation Management Planning

The Council offers no new operations management amendments for review.

7.2.3 Reports

The Wetland Condition Monitoring Report for 2023/24 is provided in Appendix C of this report.

7.3 Recommendations of the Adaptive Management Group

Several recommendations/next steps are presented in the AMG meeting minutes, including progressing with works to improve fish passage at the main weir at the Waikanae WTP, preparing the s.127 consent application to amend conditions to delay the PAR timeframe, and progressing with interim monitoring.

Appendix A

Consent Requirements and Documents

An annual Waikanae River, Recharge and Borefield report is required by Condition 42 of consent WGN130103 [35973], Condition 24 of consent WGN130103 [35974] and Condition 26 of consent WGN130103 [35975]. This report to Greater Wellington Regional Council (GWRC) covers the period from 1 July 2017 through to 30 June 2018. The requirements of these conditions are listed in the tables below (Table 23, Table 24, and Table 25) with cross-references to the relevant sections in this report.

Table 24: Requirements for Annual Waikanae River report

Condition 24 of Consent WGN130103 [35974]	Section in this Annual Report
The consent holder shall, by 30th September each year, submit an Annual Waikanae River report to the Manager, or by another date as agreed with the Manager. The annual Waikanae River report shall report on the year 1 July to 30 June inclusive, and include the following information:	
a) Records of the instantaneous rate of take (L/s), and total daily volumes (m^3);	Section 2.2
b) Flow and river recharge information to demonstrate compliance with Condition 6 (Waikanae River low flow);	Sections 2.1, 2.3 and 2.4
c) Provide information to demonstrate compliance with Condition 18 of this consent	Sections 2.1, 2.2 and Section 6.1
d) Results of all monitoring undertaken that year required by Conditions 19, 20 and 21 of this consent (if applicable), including a comprehensive analysis of the monitoring results, assessment against any relevant guidelines and comparison with previous years' results (i.e. trend analysis);*	Section 2.5 and Section 3.2
e) Details of any trigger levels or compliance limits that were reached (if occurred that year);	Section 2.5
f) Details of any actions and/or mitigation/adaptive management taken in response to trigger levels or compliance limits being reached, including an assessment of the effectiveness of these actions and/or mitigation/adaptive management;	Section 2.5 and Section 3.2
g) Any recommendations for changes to the Waikanae River Baseline Monitoring Plan or the On-going Mitigation Plan (as relevant), including triggers, compliance limits or actions and/or mitigation measures or changes to the operations and maintenance manual, including recommendations of the Adaptive Management Group (referred to in Condition 26 of this consent);	Section 6.2 and Section 7, 7.1.1 and 7.2
h) A discussion on any mitigation/adaptive management that may be required in the coming year;	Section 7
i) Summary of any maintenance undertaken.	Section 6.1
The annual Waikanae River report can be combined with the annual River Recharge report required by the conditions of discharge permit WGN130103 [35975]. The annual Waikanae River report shall be made available to the public on the Kāpiti Coast District Council website no later than 30 September each year, or by another date as agreed with the Manager. Note: The consent holder is only required to report on the listed requirements of this condition if they have occurred during that compliance year (1 July to 30 June inclusive). Note: The consent holder may request, with the Manager's approval, an extension of time to submit the annual report to the Manager and make it available to the public on the website, if the Adaptive Management Group requires more time to consider the draft annual report and provide their recommendations as required by part (g) of this condition.	Refer www.kapiticoast.govt.nz

**Conditions 19 and 20 due to completion of Baseline monitoring*

Table 25: Requirements for Annual River Recharge report

Condition 26 of Consent WGN130103 [35975]	Section in this Annual Report
The consent holder shall, no later than 30 September each year that a discharge to the river occurs, submit an annual River Recharge report to the Manager, or by another date as agreed with the Manager. The annual River Recharge report shall report on the year 1 July to 30 June inclusive, and include the following information:	
a) Records of the instantaneous rate of discharge (L/s), and total daily volumes (m^3) of discharge	Section 2.3
b) Dates, times and duration of discharge	Section 2.3
c) Information to demonstrate compliance with the rate of discharge specified in Condition 5	Section 2.3
d) Flow and river recharge information to demonstrate compliance with the Waikanae River low flow specified in Condition 12 of this consent	Section 2.4
e) Results of all monitoring undertaken that year required by Conditions 22* or 23 of this consent (if applicable), including a comprehensive analysis of the monitoring results, assessment against any relevant guidelines and comparison with previous years' results (i.e. trend analysis)	Section 2.5 and Section 3.2
f) Details of any trigger levels or compliance limits that were reached (if occurred that year)	Section 2.5
g) Details of any actions and/or mitigation/adaptive management taken in response to trigger levels or compliance limits being reached, including an assessment of the effectiveness of these actions and/or mitigation/adaptive management	Section 2.5 and Section 3.2
h) Any recommendations for changes to the Waikanae River Baseline Monitoring Plan or the On-going Mitigation Plan as relevant), including triggers, compliance limits or actions and/or mitigation measures or changes to the operations and maintenance manual, required by Condition 17 to be discussed with the Adaptive Management Group (as required by Condition 27 of this consent)	Section 6.2 and Section 7, 7.1.1 and 7.2
i) A discussion on any mitigation/adaptive management that may be required in the coming year	Section 7
j) Summary of any maintenance undertaken	Section 6.1
The annual River Recharge report may be combined with the annual Waikanae River report required by consent WGN130103 [35974]. The annual River Recharge River report shall be made available to the public on the Kāpiti Coast District Council website by 30 September each year, or by another date as agreed with the Manager. Note: The consent holder may request, with the Manager's approval, an extension of time to submit the annual report to the Manager and make it available to the public on the website, if the Adaptive Management Group requires more time to consider the draft annual report and provide their recommendations as required by part (g) of this condition.	Refer www.kapiticoast.govt.nz

**Condition 22 is not applicable due to completion of Baseline monitoring.*

Table 26: Requirements for Annual Waikanae Borefield report

Condition 42 of Consent WGN130103 [35973]	Section in this Annual Report
The consent holder shall, by 30 September each year, submit an annual Waikanae Borefield report to the Manager, or by another date as agreed with the Manager. The annual Waikanae Borefield report shall report on the year 1 July to 30 June inclusive, and include the following information:	
a) A copy of the records to demonstrate compliance with Condition 20 of this consent;	Sections 3.1 and 3.3
b) Details of the use (including daily and total volumes of groundwater abstracted) and reasons for that use of the water from the Borefield;	Section 3.1
c) A summary of Waikanae River flow gauging required by Condition 25 of this consent, if undertaken that year; *	Section 3.2
d) Results of all monitoring undertaken that year required by conditions of this consent (if applicable), including a comprehensive analysis of the monitoring results, assessment against any relevant guidelines and comparison with previous years' results (i.e. trend analysis);	Sections 3, 4 and 5
e) Results or evidence to demonstrate compliance with Condition 7 of this consent	Section 3.6
f) Details of any trigger levels or compliance limits that were reached (if occurred that year) and specifically the findings of saline monitoring compared with the 'alert', 'action' or 'cease' triggers;	Sections 3 and 4
g) Details of any actions and/or mitigation/adaptive management taken in response to trigger levels or compliance limits being reached, including an assessment of the effectiveness of these actions and/or mitigation/adaptive management;	Sections 3, 4 and 5
h) Any recommendations for changes to the monitoring plan required by conditions of this consent, including triggers, compliance limits or actions and/or mitigation measures or changes to the operations and maintenance manual, required by Condition 19 of this consent, including any recommendations of the Adaptive Management Committee (referred to in Condition 43 of this consent);	Section 6.2, Section 7.1.2, 7.1.3, 7.1.4, and 7.2
i) A discussion on any mitigation/adaptive management that may be required in the coming year;	Section 7
j) A copy of the complaints record required by Condition 45 of this consent;	Section 3.7
k) Summary of any maintenance undertaken.	Section 6.1
The annual Waikanae Borefield report shall be made available to the public on the Kāpiti Coast District Council website by 30 September each year, or by another date as agreed with the Manager. Note: The consent holder may request, with the Manager's approval, an extension of time to submit the annual report to the Manager and make it available to the public on the website, if the Adaptive Management Group requires more time to consider the draft annual report and provide their recommendations as required by part (h) of this condition.	Refer www.kapiticoast.govt.nz

** Condition that may change following S127*

In addition to the above consents, Council holds resource consent WGN050025 [33147] to abstract groundwater from two wells (PW1 and PW5) for the purpose of back up water supply for the communities of Waikanae, Paraparaumu and Raumati. Requirements of Condition 15 are discussed in Section 4.6

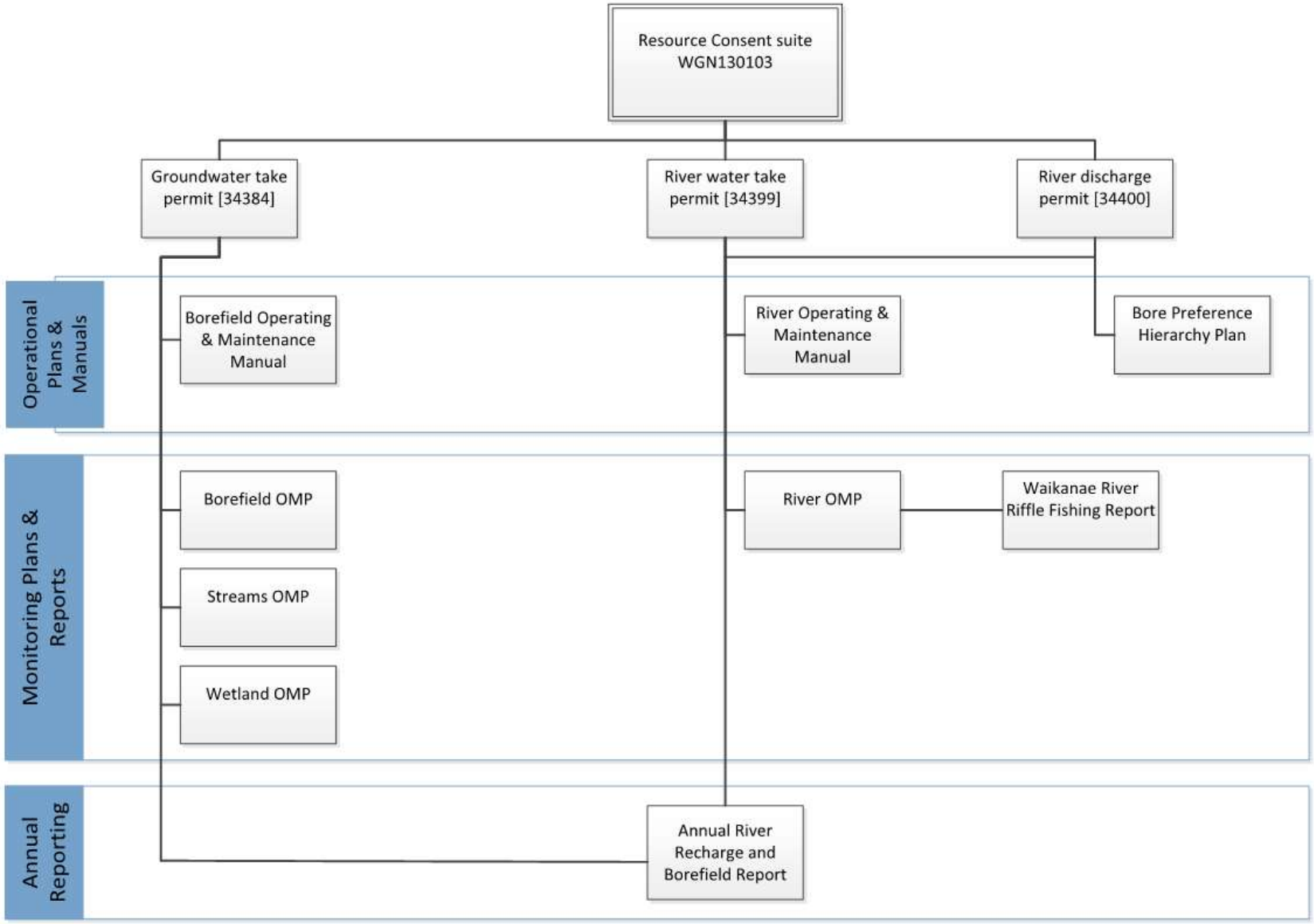


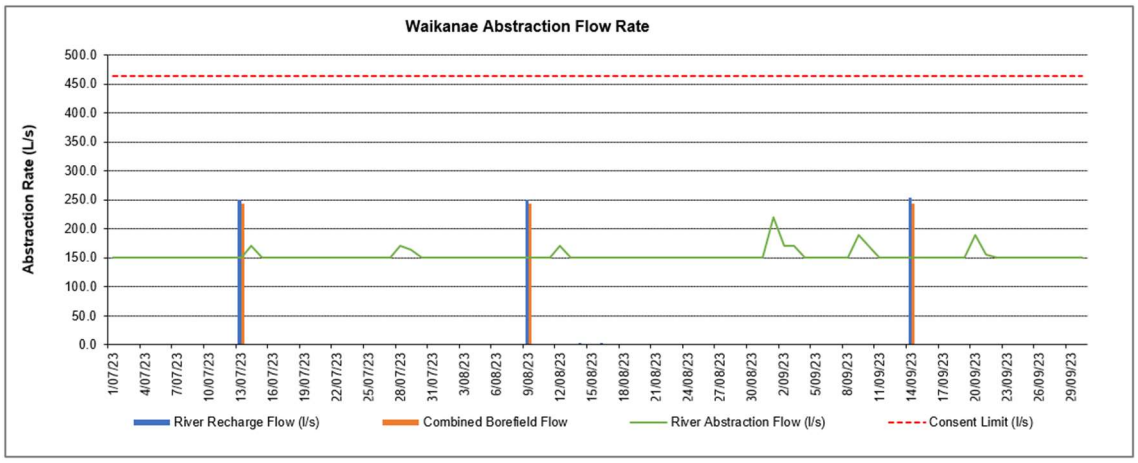
Figure 14: Key documents for RRwGW consent and ongoing monitoring

Appendix B

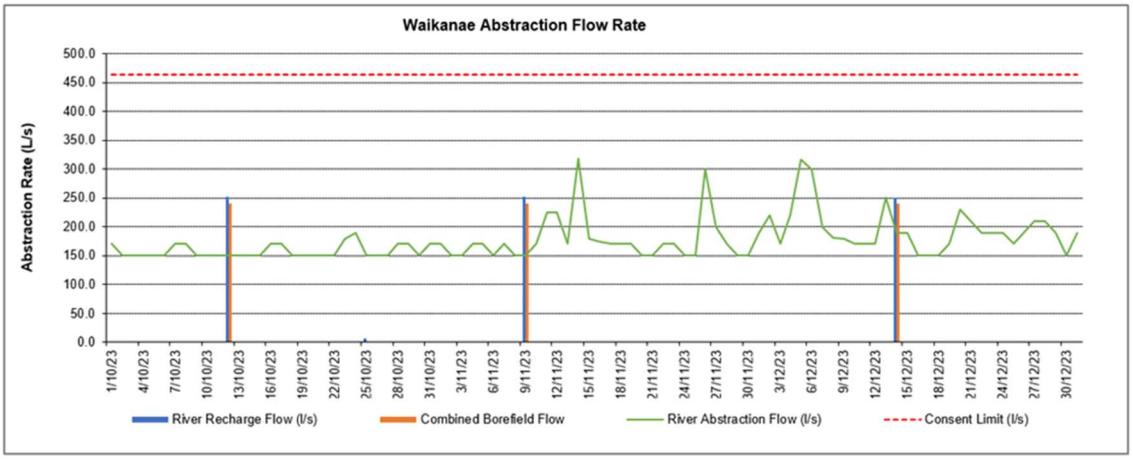
Summary of quarterly reporting

Well Hierarchy (For aquatic life)	The total rate of groundwater abstracted from the bores in the Waikanae Borefield shall not exceed a combined total of 30,700 m3 /day and 2,300,000m3 /year, subject to the approval required by Condition 46 of this consent to proceed to the subsequent stage of the project. The instantaneous rate of groundwater abstracted from any one production bore in the Waikanae Borefield shall comply with the maximum yields specified in Table 2 below:		
Bore	Stage 1 maximum yield (L/s)	Stage 2 maximum yield (L/s)	Stage 3 maximum yield (L/s)
Kb4	35.0	45	45
N2	25.0	25	25
K4	65.0	80	80
K6	58.0	58	58
Kb7	8.0	8	8
K10	36.0	36	36
K12	10.0	10	10
K5	36.0	46	46
N3	TBC	TBC	TBC
S1	TBC	TBC	TBC
S2	TBC	TBC	TBC
Max Yield (l/s)	273.0	308.0	308.0
Max Daily Take (m3)	23,600	28,800	30,700
Max Annual Take (m3)	2,300,000	2,300,000	2,300,000

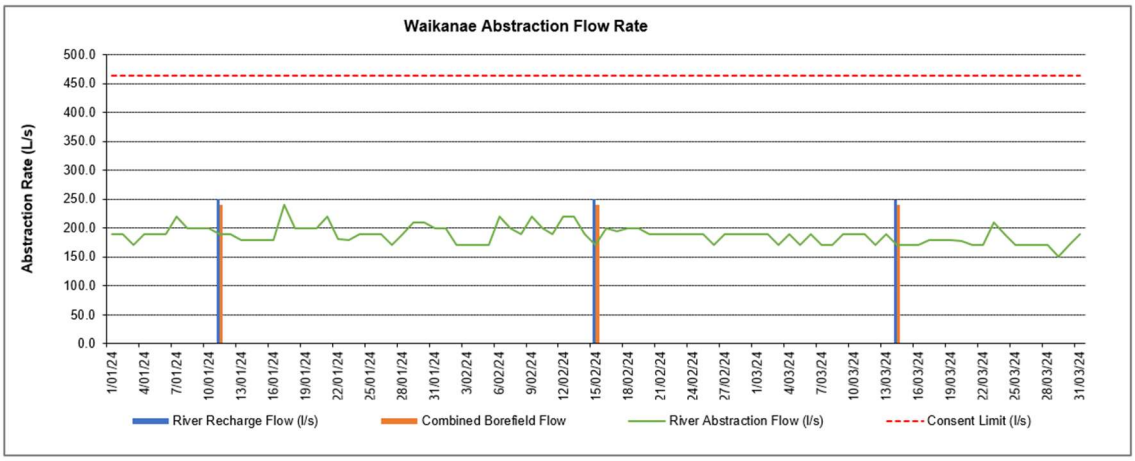
Period of report: **1-Jul-23 to 30-Sep-23**



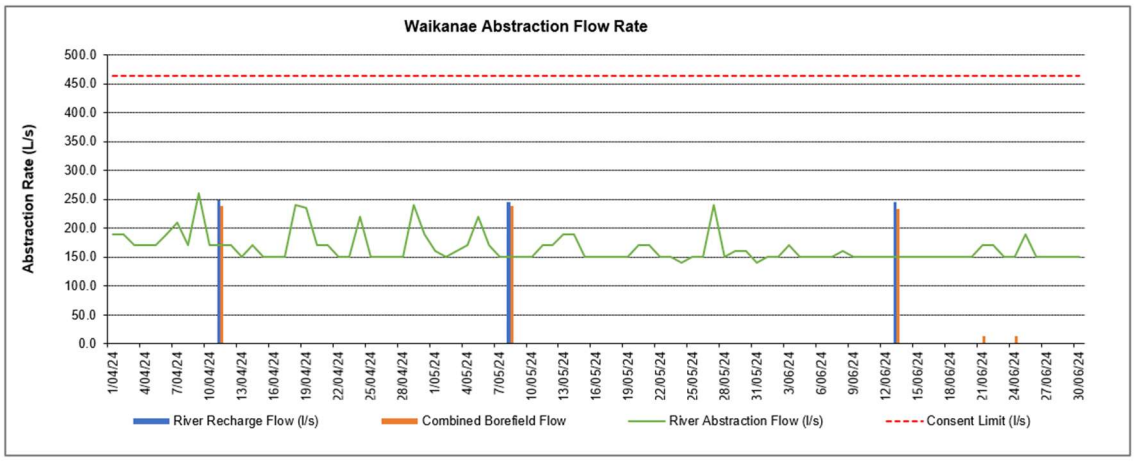
Period of report: **1-Oct-23 to 31-Dec-23**



Period of report: **1-Jan-24 to 31-Mar-24**



Period of report: **1-Apr-24 to 30-Jun-24**



Appendix C

Nga Manu Wetland Condition Monitoring Report

Appendix D

Operation and Maintenance Logs Intake and Production Bores

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

K10 Operational Bore Log

Date	FY	Filled in log book?	Bore Level above Pump	Pump Run Hours	Temperature	Flow Forward	Flow Reverse	Cabinet Filter	Checked Well	Compressor Servic	Run compress	Compressor	Well-head Se	Comments
6/07/2023	2023/2024	Yes	52	5007.67	14.3	31088.34	111.37	2 - Clean	Yes	23/10/2023	Yes	273.00	Ok	
13/07/2023	2023/2024	Yes	32	5009.44	24.5	31193.79	111.37	2 - Clean	Yes	23/10/2023	Yes	274.15		
20/07/2023	2023/2024	Yes	52	5009.68	14.3	31207.34	111.37	2 - Clean	Yes	23/10/2023	Yes	274.00	Ok	
27/07/2023	2023/2024	Yes	52	5009.68	14.3	31207.34	111.37	2 - Clean	Yes	23/10/2023	Yes	275.04	OK	
3/08/2023	2023/2024	Yes	52	5009.68	14.3	31207.34	111.37	2 - Clean	Yes	23/10/2023	Yes	275.40		
9/08/2023	2023/2024	Yes	52	5012	14.6	31345	111	3 - No Action	Yes	23/02/2024	Yes	276.00		
17/08/2023	2023/2024	Yes	52	5012	14.3	31345.15	111.37	3 - No Action	Yes	23/02/2024	Yes	276.00		
24/08/2023	2023/2024	Yes	52	5012.01	14.3	31345.16	111.37	2 - Clean	Yes	1/02/2024	Yes	277.18	OK	
31/08/2023	2023/2024	Yes	52	5012.01	14.3	31345.16	111.37	2 - Clean	Yes	29/02/2024	Yes	277.42		
7/09/2023	2023/2024	Yes	52	5012.01	14.3	31345.16	111.37	3 - No Action	Yes	23/02/2024	Yes	277.76		
14/09/2023	2023/2024	Yes	52	5014	14.7	31467.27	111.37	2 - Clean	Yes	14/02/2024	Yes	278.00	Ok	
21/09/2023	2023/2024	Yes	52	5014	14.3	31467.27	111.37	3 - No Action	Yes	23/02/2024	Yes	278.00		Panel Display has not rebooted properly an
28/09/2023	2023/2024	Yes	52	5014.07	14.3	31467.27	111.37	2 - Clean	Yes	28/02/2024	Yes	279.17		
5/10/2023	2023/2024	Yes	52	5014.07	14.3	31467.27	111.37	3 - No Action	Yes	23/02/2024	Yes	279.53		
12/10/2023	2023/2024	Yes	50	5017	19.3	31686.9	111.37	2 - Clean	Yes	1/02/2024	Yes	280.00	Ok	
19/10/2023	2023/2024	Yes	52	5017.77	14.4	31686.9	111.37	2 - Clean	Yes	1/02/2024	Yes	280.49	OK	
26/10/2023	2023/2024	Yes	52	5017.77	14.3	31686.9	111.37	2 - Clean	Yes	26/02/2024	Yes	280.91		
2/11/2023	2023/2024	Yes	52	5017.77	14.3	31686	111	3 - No Action	Yes	23/01/2024	Yes	281.00		
9/11/2023	2023/2024	Yes	52	5020	14.7	31823.11	111.37	3 - No Action	Yes	1/02/2024	Yes	282.00	Ok	
16/11/2023	2023/2024	Yes	52	5020.07	14.4	31823.11	111.37	2 - Clean	Yes	1/02/2024	Yes	282.14	OK	Paint repairs required
23/11/2023	2023/2024	Yes	52	5020.07	14.4	31823.11	111.37	2 - Clean	Yes	23/02/2024	Yes	283.70		
30/11/2023	2023/2024	Yes	52	5020.07	14.4	31823	111	3 - No Action	Yes	23/02/2024	Yes	282.00		
7/12/2023	2023/2024	Yes	52	5020.07	14.4	31823.11	111.37	2 - Clean	Yes	1/02/2024	Yes	282.00	Ok	
14/12/2023	2023/2024	Yes	51	5023	18.3	32018.86	111.37	2 - Clean	Yes	1/02/2024	Yes	283.00	OK	
21/12/2023	2023/2024	Yes	52	5023.38	14.4	32018.86	111.37	3 - No Action	Yes	23/02/2024	Yes	283.79		no sealant around cable entry
28/12/2023	2023/2024	Yes	52	5023.38	14.4	32018	111	3 - No Action	Yes	28/02/2024	Yes	283.00		
4/01/2024	2023/2024	Yes	52	5023.38	14.4	32018.86	111.37	3 - No Action	Yes	28/02/2024	Yes	284.00		
11/01/2024	2023/2024	Yes	52	5025	15.2	32121.74	111.37	2 - Clean	Yes	1/02/2024	Yes	285.00	OK	
18/01/2024	2023/2024	Yes	52	5025.12	14.4	32121.74	111.37	3 - No Action	Yes	18/02/2024	Yes	285.01		
25/01/2024	2023/2024	Yes	52	5025.12	14.4	32121.74	111.37	2 - Clean	Yes	17/02/2024	Yes	285.14		
1/02/2024	2023/2024	Yes	52	5025.12	14.4	32121.74	111.37	2 - Clean	Yes	1/02/2024	Yes	285.00	Ok	
8/02/2024	2023/2024	Yes	52	5025.12	14.4	32121.74	111.37	2 - Clean	Yes	8/02/2024	Yes	285.00	Ok	
15/02/2024	2023/2024	Yes	50	5027	19.4	32273.87	111.37	2 - Clean	Yes	15/02/2024	Yes	286.00	Ok	
22/02/2024	2023/2024	Yes	52	5027	14.4	32273	111	3 - No Action	Yes	23/02/2024	Yes	287.00		Service due on comp
29/02/2024	2023/2024	Yes	52	5027	14.4	32273.87	111.37	2 - Clean	Yes	29/08/2024	Yes	288.00	Ok	
7/03/2024	2023/2024	Yes	52	5027	14.3	32273.87	111.37	2 - Clean	Yes	29/08/2024	Yes	288.00	Ok	
14/03/2024	2023/2024	Yes	51	5029.85	16.8	32401.97	111.37	2 - Clean	Yes	29/08/2024	Yes	289.41		
21/03/2024	2023/2024	Yes	52	5029.85	14.3	32401	111	3 - No Action	Yes	28/02/2025	Yes	289.00		
28/03/2024	2023/2024	Yes	52	5029.85	14.3	32401.97	111.37	2 - Clean	Yes	29/08/2024	Yes	289.00	Ok	Bottom of cabinet filter plastic louvre broken
4/04/2024	2023/2024	Yes	52	5029.85	14.3	32401.97	111.37	2 - Clean	Yes	29/08/2024	Yes	289.00	Ok	
11/04/2024	2023/2024	Yes	51	5032	16.6	32533.76	111.37	2 - Clean	Yes	29/08/2024	Yes	290.38		
18/04/2024	2023/2024	Yes	52	5032	14.3	32533	111	3 - No Action	Yes	28/02/2025	Yes	290.00		
25/04/2024	2023/2024	Yes	52	5032	14.3	32533.76	111.37	2 - Clean	Yes	29/08/2024	Yes	290.00	Ok	Air vessel fencing paint peeling a lot
2/05/2024	2023/2024	Yes	52	5032	14.3	32533.76	111.37	2 - Clean	Yes	29/08/2024	Yes	290.00	OK	
9/05/2024	2023/2024	Yes	52	5034	14.3	32652	111.37	2 - Clean	Yes	29/08/2024	Yes	291.00	Ok	
16/05/2024	2023/2024	Yes	52	5034	14.4	32652.71	111.37	2 - Clean	Yes	29/08/2024	Yes	291.10		
23/05/2024	2023/2024	Yes	52	5034	14.3	32652.71	111.37	2 - Clean	Yes	29/08/2024	Yes	291.00	OK	
30/05/2024	2023/2024	Yes	52	5034	14.3	32652.71	111.37	2 - Clean	Yes	29/08/2024	Yes	291.00	OK	
6/06/2024	2023/2024	Yes	52	5034	14.3	32652	111.37	2 - Clean	Yes	29/08/2024	Yes	291.00	Ok	
13/06/2024	2023/2024	Yes	52	5036.08	14.8	32770.55	111.37	2 - Clean	Yes	29/08/2024	Yes	292.05		
20/06/2024	2023/2024	Yes	52	5036.08	14.3	32770	111	3 - No Action	Yes	28/02/2025	Yes	292.00		
27/06/2024	2023/2024	Yes	52	5036.46	14.3	32790.81	111.4	2 - Clean	Yes	29/08/2024	Yes	292.00	Ok	

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

KB4 Operational Bore Log

Date	FY	Filled in lo	Bore Leve	Pump Run	Temperatu	Flow Forw	Flow Reve	Cabinet Fi	Checked V	Well-head	Comments
6/07/2023	2023/2024	Yes	36	6020	14.5	336049	7223	2 - Clean	Yes	Ok	
13/07/2023	2023/2024	Yes	28	6021.89	23.6	336244	7241	2 - Clean	Yes		
20/07/2023	2023/2024	Yes	36	6022	14.5	336292	7260	2 - Clean	Yes	Ok	
27/07/2023	2023/2024	Yes	36	6022.29	14.5	336292	7279	2 - Clean	Yes	OK	
3/08/2023	2023/2024	Yes	36	6022.29	14.4	336292	7298	2 - Clean	Yes		
9/08/2023	2023/2024	Yes	36	6024	15	336570	7315	3 - No Acti	Yes		
17/08/2023	2023/2024	Yes	36	6024	14.5	336571	7338	3 - No Acti	Yes		
24/08/2023	2023/2024	Yes	36	6024.55	14.6	336573	7359	2 - Clean	Yes	OK	
31/08/2023	2023/2024	Yes	36	6024.55	14.5	336573	7378	2 - Clean	Yes		
7/09/2023	2023/2024	Yes	36	6024.55	14.6	3366575	7399	3 - No Acti	Yes		
14/09/2023	2023/2024	Yes	36	6026	15.2	336781	7418	2 - Clean	Yes	Ok	
21/09/2023	2023/2024	Yes	36	6026	14.6		7437	3 - No Acti	Yes		Reset power on display to get ala
28/09/2023	2023/2024	Yes	36	6026.22	14.5	336782	7457	2 - Clean	Yes		
5/10/2023	2023/2024	Yes	36	6026	14.6	336782	7476	3 - No Acti	Yes		
12/10/2023	2023/2024	Yes	35	6029	18.6	337208	7495	2 - Clean	Yes	Ok	
19/10/2023	2023/2024	Yes	36	6029.67	14.6	337208	7514	2 - Clean	Yes	OK	
26/10/2023	2023/2024	Yes	36	6029.67	14.6	337208	7532	2 - Clean	Yes		
2/11/2023	2023/2024	Yes	36	6029	14.6	337208	7551	3 - No Acti	Yes		
9/11/2023	2023/2024	Yes	35	6031	15.2	337481	7573	3 - No Acti	Yes	Ok	
16/11/2023	2023/2024	Yes	36	6031.86	14.7	337481	7591	2 - Clean	Yes	OK	
23/11/2023	2023/2024	Yes	36	6031.86	14.6	337481	7610	2 - Clean	Yes		
30/11/2023	2023/2024	Yes	36	6031	14.6	337482	7630	3 - No Acti	Yes		
7/12/2023	2023/2024	Yes	36	6031	14.7	337482	7648	2 - Clean	Yes	Ok	
14/12/2023	2023/2024	Yes	35	6035	15.9	337888	7668	2 - Clean	Yes	OK	
21/12/2023	2023/2024	Yes	36	6035	14.6	337889		3 - No Acti	Yes		
28/12/2023	2023/2024	Yes	36	6035	14.8	337889	7705	3 - No Acti	Yes		
4/01/2024	2023/2024	Yes	36	6035	14.7	337889	7723	3 - No Acti	Yes		
11/01/2024	2023/2024	Yes	36	6036	15.5	338100	7742	2 - Clean	Yes	OK	Crack appearing in wrap
18/01/2024	2023/2024	Yes	36	6036.84	14.8	338100	7761	2 - Clean	Yes		
25/01/2024	2023/2024	Yes	36	6036.84	14.8	338100	7780	2 - Clean	Yes		
1/02/2024	2023/2024	Yes	36	6036	14.7	338100	7800	2 - Clean	Yes	Ok	
8/02/2024	2023/2024	Yes	36	6036	14.7	338101	7821	2 - Clean	Yes	Ok	
15/02/2024	2023/2024	Yes	35	6039	17.6	338411	7841	2 - Clean	Yes	Ok	
22/02/2024	2023/2024	Yes	36	6039	14.7	338412	7862	3 - No Acti	Yes		
29/02/2024	2023/2024	Yes	36	6039	14.7	338412	7883	2 - Clean	Yes	Ok	
7/03/2024	2023/2024	Yes	36	6039	14.5	338416	7908	2 - Clean	Yes	Ok	
14/03/2024	2023/2024	Yes	35	6041.47	16.5	338677	7931	2 - Clean	Yes		
21/03/2024	2023/2024	Yes	36	6041	14.6	338677	7953	3 - No Acti	Yes		
28/03/2024	2023/2024	Yes	36	6041	14.6	338681	7980	2 - Clean	Yes	Ok	Retic guys have fixed the leaking
4/04/2024	2023/2024	Yes	36	6041	14.6	338684	8004	2 - Clean	Yes	Ok	
11/04/2024	2023/2024	Yes	35	6043	16.5	338943	8030	2 - Clean	Yes		
18/04/2024	2023/2024	Yes	36	6043	14.6	338947	8056	3 - No Acti	Yes		
26/04/2024	2023/2024	Yes	36	6043	14.6	338950	8085	2 - Clean	Yes	Ok	
2/05/2024	2023/2024	Yes	36	6043	14.6	338953	8109	2 - Clean	Yes	OK	Plastic covering still cracking on c
9/05/2024	2023/2024	Yes	36	6045	14.6	339194	8134	2 - Clean	Yes	Ok	
16/05/2024	2023/2024	Yes	36	6045	14.6	339198	8161	2 - Clean	Yes		
23/05/2024	2023/2024	Yes	36	6045	14.5	339200	8186	2 - Clean	Yes	OK	
30/05/2024	2023/2024	Yes	36	6045	14.5	339211	8222	2 - Clean	Yes	OK	
6/06/2024	2023/2024	Yes	36	6045	14.5	339215	8250	2 - Clean	Yes	Ok	Looks like relief valve is starting t
13/06/2024	2023/2024	Yes	36	6047.38	15.2	339452	8277	2 - Clean	Yes		
20/06/2024	2023/2024	Yes	36	6047	14.5	339456	8304	3 - No Acti	Yes		
27/06/2024	2023/2024	Yes	36	6047	14.5	339459	8332	2 - Clean	Yes	Ok	

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

K4 Operation Bore Log

Date	FY	Filled in lo	Bore Leve	Pump Run	Temperatu	Flow Forw	Flow Reve	Cabinet Fi	Checked V	Well-he	Comments
13/07/2023	2023/2024	Yes	30	7802.97	29.1	434410	5930	2 - Clean	Yes		
20/07/2023	2023/2024	Yes	49	13.7	13.7	434723	5944	2 - Clean	Yes	Ok	Need to fix the faulty alarm a
27/07/2023	2023/2024	Yes	49	7804.32	13.7	434723	5957	2 - Clean	Yes	OK	
3/08/2023	2023/2024	Yes	49	7804.32	13.6	434723	5971	2 - Clean	Yes		
9/08/2023	2023/2024	Yes	48	7806	14.5	435240	5982	3 - No Acti	Yes		
17/08/2023	2023/2024	Yes	49	7806	13.7	435240	5997	3 - No Acti	Yes		
24/08/2023	2023/2024	Yes	49	7806.55	13.7	435240	6011	2 - Clean	Yes	OK	
31/08/2023	2023/2024	Yes	49	7806.55	13.7	435240	6024	2 - Clean	Yes		
7/09/2023	2023/2024	Yes	49	7806.55	13.7	435240	6039	3 - No Acti	Yes		
14/09/2023	2023/2024	Yes	48	7808	14.5	435618	6055	2 - Clean	Yes	Ok	
21/09/2023	2023/2024	Yes	49	7808	13.7		6069	3 - No Acti	Yes		Door alarm not working. Res
28/09/2023	2023/2024	Yes	49	7808.18	13.7	435618	6083	2 - Clean	Yes		
5/10/2023	2023/2024	Yes	49	7808	13.7	435618	6097	3 - No Acti	Yes		
12/10/2023	2023/2024	Yes	47	7811	17.9	436410	6111	2 - Clean	Yes	Ok	
19/10/2023	2023/2024	Yes	49	7811.5	13.7	436410	6127	2 - Clean	Yes	OK	
26/10/2023	2023/2024	Yes	49	7811.58	13.7	436410	6143	2 - Clean	Yes		
2/11/2023	2023/2024	Yes	49	7811	13.7	436410	6158	3 - No Acti	Yes		
9/11/2023	2023/2024	Yes	48	7813	14.5	436866	6173	3 - No Acti	Yes	Ok	
16/11/2023	2023/2024	Yes	49	7813.55	13.7	436866	6191	2 - Clean	Yes	OK	
23/11/2023	2023/2024	Yes	49	7813.55	13.7	436866	6211	2 - Clean	Yes		
30/11/2023	2023/2024	Yes	49	7813	13.7	436866	6227	3 - No Acti	Yes		
7/12/2023	2023/2024	Yes	49	7813	13.7	436866	6240	2 - Clean	Yes	Ok	
14/12/2023	2023/2024	Yes	48	7816	15.3	437626	6254	2 - Clean	Yes	OK	
21/12/2023	2023/2024	Yes	49	7816	13.7	437626		3 - No Acti	Yes		
28/12/2023	2023/2024	Yes	49	7816	13.7	437626	6292	3 - No Acti	Yes		
4/01/2024	2023/2024	Yes	49	7816	13.7	437626	6309	3 - No Acti	Yes		
11/01/2024	2023/2024	Yes	48	7818	14.7	438011	6327	2 - Clean	Yes	OK	
18/01/2024	2023/2024	Yes	48	7818.47	13.8	438011	6346	2 - Clean	Yes		
25/01/2024	2023/2024	Yes	49	7818.47	13.7	438011	6366	2 - Clean	Yes		
1/02/2024	2023/2024	Yes	49	7818	13.7	438011	6384	2 - Clean	Yes	Ok	
8/02/2024	2023/2024	Yes	49	7818	13.7	438011	6401	2 - Clean	Yes	Ok	
15/02/2024	2023/2024	Yes	47	7820	17.3	438571	6418	2 - Clean	Yes	Ok	
22/02/2024	2023/2024	Yes	48	7820	13.7	438571	6437	3 - No Acti	Yes		
29/02/2024	2023/2024	Yes	48	7820	13.7	438571	6454	2 - Clean	Yes	Ok	
7/03/2024	2023/2024	Yes	48	7820	13.7	438571	6469	2 - Clean	Yes	Ok	
14/03/2024	2023/2024	Yes	48	7822.88	16.2	439035	6484	2 - Clean	Yes		
21/03/2024	2023/2024	Yes	48	7822	13.7	439035	6502	3 - No Acti	Yes		
28/03/2024	2023/2024	Yes	49	7822	13.7	439035	6519	2 - Clean	Yes	Ok	
4/04/2024	2023/2024	Yes	48	7822	13.7	439035	6535	2 - Clean	Yes	Ok	
11/04/2024	2023/2024	Yes	48	7824	14.9	439492	6552	2 - Clean	Yes		
18/04/2024	2023/2024	Yes	48	7824	13.7	439492	6569	3 - No Acti	Yes		
26/04/2024	2023/2024	Yes	49	7824	13.7	439492	6586	2 - Clean	Yes	Ok	
2/05/2024	2023/2024	Yes	48	7824	13.7	439492	6598	2 - Clean	Yes	OK	
9/05/2024	2023/2024	Yes	48	7826	13.8	439917	6612	2 - Clean	Yes	Ok	
16/05/2024	2023/2024	Yes	48	7826	13.7	439917	6625	2 - Clean	Yes		
23/05/2024	2023/2024	Yes	48	7826	13.7	439917	6639	2 - Clean	Yes	OK	
30/05/2024	2023/2024	Yes	48	7826	13.7	439917	6653	2 - Clean	Yes	OK	
6/06/2024	2023/2024	Yes	48	7826	13.7	439917	6666	2 - Clean	Yes	Ok	
13/06/2024	2023/2024	Yes	48	7828.58	14.7	440320	6681	2 - Clean	Yes		
20/06/2024	2023/2024	Yes	48	7828	13.7	440320	6694	3 - No Acti	Yes		
27/06/2024	2023/2024	Yes	48	7828	13.7	440320	6707	2 - Clean	Yes	Ok	
4/07/2024	2024/2025	Yes	48	7828	13.7	440320	6720	3 - No Acti	Yes		

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

K5 Operation Bore Log

Date	FY	Filled in lo	Bore Leve	Pump Run	Temperati	Flow Forw	Flow Reve	Cabinet Fi	Checked V	Well-head	Comments
8/06/2023	2022/2023	Yes	27	5474.9	24.7	15020.8	0.94	2 - Clean	Yes		
15/06/2023	2022/2023	Yes	56	5476	14.8	15142	0.94	3 - No Acti	Yes		
22/06/2023	2022/2023	Yes	55	5476	14.8	15142.1	0.94	2 - Clean	Yes	Ok	
29/06/2023	2022/2023	Yes	56	5476.04	14.9	15142.1	0.96	2 - Clean	Yes	OK	
6/07/2023	2023/2024	Yes	55	5476	14.9	15142.1	0.96	2 - Clean	Yes	Ok	
13/07/2023	2023/2024	Yes	29	5476.8	24.7	15223.9	0.97	2 - Clean	Yes		
20/07/2023	2023/2024	Yes	55	5478	14.9	15356.1	0.97	2 - Clean	Yes	Ok	
27/07/2023	2023/2024	Yes	55	5478.03	14.9	15356.1	0.97	2 - Clean	Yes	OK	Green waste illegally d
3/08/2023	2023/2024	Yes	55	5478.03	14.8	15356.1	0.97	2 - Clean	Yes		
9/08/2023	2023/2024	Yes	54	5480	15.2	15597	0.98	3 - No Acti	Yes		
17/08/2023	2023/2024	Yes	56	5480	14.8	15597	0.98	3 - No Acti	Yes		
24/08/2023	2023/2024	Yes	55	5480.28	14.9	15597.6	0.98	2 - Clean	Yes	OK	
31/08/2023	2023/2024	Yes	55	5480.28	14.9	15597.6	0.98	2 - Clean	Yes		
7/09/2023	2023/2024	Yes	55	5480.28	14.9	15597.6	0.98	3 - No Acti	Yes		
14/09/2023	2023/2024	Yes	54	5482	15.2	15789.7	0.98	2 - Clean	Yes	Ok	
21/09/2023	2023/2024	Yes	55	5482	14.9	15789.7	0.98	3 - No Acti	Yes		VSD is off but making a
28/09/2023	2023/2024	Yes	56	5482.08	14.9	15789.7	0.98	2 - Clean	Yes		
5/10/2023	2023/2024	Yes	55	5482	14.9	15789	0.98	3 - No Acti	Yes		
12/10/2023	2023/2024	Yes	50	5485	16.6	16153.7	0.98	2 - Clean	Yes	Ok	
19/10/2023	2023/2024	Yes	55	5485.46	14.9	16153.7	0.98	2 - Clean	Yes	OK	
26/10/2023	2023/2024	Yes	55	5485.46	14.9	16153.7	0.98	2 - Clean	Yes		
2/11/2023	2023/2024	Yes	55	5485	14.9	16153	0.98	3 - No Acti	Yes		
9/11/2023	2023/2024	Yes	54	5487	15.2	16376.9	0.98	3 - No Acti	Yes	Ok	
16/11/2023	2023/2024	Yes	55	5487.55	14.9	16376.9	0.98	2 - Clean	Yes	OK	
23/11/2023	2023/2024	Yes	55	5487.55	14.9	16376.9	0.98	2 - Clean	Yes		
30/11/2023	2023/2024	Yes	55	5487	14.9	16376	0.98	3 - No Acti	Yes		
7/12/2023	2023/2024	Yes	55	5487	14.9	16376.9	0.98	2 - Clean	Yes	Ok	
14/12/2023	2023/2024	Yes	52	5490	15.6	16730.6	1.01	2 - Clean	Yes	OK	
21/12/2023	2023/2024	Yes	55	5490	14.9	16730.6	1.01	3 - No Acti	Yes		
28/12/2023	2023/2024	Yes	55	5490	15	16730	1	3 - No Acti	Yes		
4/01/2024	2023/2024	Yes	55	5490	15	16730	1.01	3 - No Acti	Yes		
11/01/2024	2023/2024	Yes	54	5492	15.4	16911.6	1.01	2 - Clean	Yes	OK	Small crack appearing
18/01/2024	2023/2024	Yes	55	5492.56	15	16911.9	1.01	2 - Clean	Yes		
25/01/2024	2023/2024	Yes	55	5492.53	15	16911.6	1.02	2 - Clean	Yes		
1/02/2024	2023/2024	Yes	55	5492	15	16911.6	1.02	2 - Clean	Yes	Ok	
8/02/2024	2023/2024	Yes	55	5492	15	16911.6	1.02	2 - Clean	Yes	Ok	
15/02/2024	2023/2024	Yes	51	5495	16.5	17184.2	1.02	2 - Clean	Yes	Ok	
22/02/2024	2023/2024	Yes	55	5495	15	17184	1	3 - No Acti	Yes		
29/02/2024	2023/2024	Yes	55	5495	15	17184.2	1.02	2 - Clean	Yes	Ok	
7/03/2024	2023/2024	Yes	55	5495	14.9	17184.2	1.02	2 - Clean	Yes	Ok	
14/03/2024	2023/2024	Yes	52	5497.1	16	17402.5	1.02	2 - Clean	Yes		
21/03/2024	2023/2024	Yes	55	5497	14.9	17402	1.02	3 - No Acti	Yes		
28/03/2024	2023/2024	Yes	55	5497	15	17402.5	1.02	2 - Clean	Yes	Ok	
4/04/2024	2023/2024	Yes	55	5497	14.9	17402.5	1.02	2 - Clean	Yes	Ok	
11/04/2024	2023/2024	Yes	53	5499	15.5	17639.6	1.02	2 - Clean	Yes		
18/04/2024	2023/2024	Yes	55	5499	14.9	17639	1.02	3 - No Acti	Yes		
26/04/2024	2023/2024	Yes	55	5499	14.9	17639.6	1.02	2 - Clean	Yes	Ok	
2/05/2024	2023/2024	Yes	55	5499	14.9	17639.6	1.02	2 - Clean	Yes	OK	
9/05/2024	2023/2024	Yes	55	5501	14.9	17853	1.02	2 - Clean	Yes	Ok	
16/05/2024	2023/2024	Yes	55	5501	14.9	17853.7	1.02	2 - Clean	Yes		
23/05/2024	2023/2024	Yes	55	5501	14.9	17853.7	1.02	2 - Clean	Yes	OK	
30/05/2024	2023/2024	Yes	55	5501	14.9	17853.7	1.02	2 - Clean	Yes	OK	

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

K6 Operation Bore Log

Date	FY	Filled in lo	Bore Leve	Pump Run	Temperatu	Flow Forw	Flow Reve	Cabinet Fi	Checked V	Compress	Run comp
13/07/2023	2023/2024	Yes	31	7268.47	31	598086	266265	2 - Clean	Yes	#######	Yes
20/07/2023	2023/2024	Yes	49	7269	14.5	598263	266265	2 - Clean	Yes	#######	Yes
27/07/2023	2023/2024	Yes	49	7269.34	14.5	598263	266265	2 - Clean	Yes	#######	Yes
3/08/2023	2023/2024	Yes	49	7269.34	14.5	598263	266265	2 - Clean	Yes	#######	Yes
9/08/2023	2023/2024	Yes	49	7271	15.2	598741	266265	3 - No Acti	Yes	#######	Yes
17/08/2023	2023/2024	Yes	49	7271	14.5	598741	266265	3 - No Acti	Yes	#######	Yes
24/08/2023	2023/2024	Yes	49	7271.65	14.5	598741	266265	2 - Clean	Yes	1/02/2024	Yes
31/08/2023	2023/2024	Yes	49	7271.65	14.5	598741	266266	2 - Clean	Yes	#######	Yes
7/09/2023	2023/2024	Yes	49	7271.65	14.5	598741	266266	3 - No Acti	Yes	#######	Yes
14/09/2023	2023/2024	Yes	49	7273	15.2	599140	266266	2 - Clean	Yes	#######	Yes
21/09/2023	2023/2024	Yes	49	7273	14.5	599140	266266	3 - No Acti	Yes	#######	Yes
28/09/2023	2023/2024	Yes	49	7273.57	14.5	599140	266267	2 - Clean	Yes	#######	Yes
5/10/2023	2023/2024	Yes	49	7273.57	14.5	599140	266267	3 - No Acti	Yes	#######	Yes
12/10/2023	2023/2024	Yes	46	7277	18.3	599897	266268	2 - Clean	Yes	1/02/2024	Yes
19/10/2023	2023/2024	Yes	49	7277.27	14.5	599897	266268	2 - Clean	Yes	1/02/2024	Yes
26/10/2023	2023/2024	Yes	49	7277.27	14.5	599897	266268	2 - Clean	Yes	#######	Yes
2/11/2023	2023/2024	Yes	49	7277.27	14.5	599898	266270	3 - No Acti	Yes	#######	Yes
9/11/2023	2023/2024	Yes	48	7279	15.1	600418	266271	3 - No Acti	Yes	1/02/2024	Yes
16/11/2023	2023/2024	Yes	49	7279.81	14.5	600418	266272	2 - Clean	Yes	1/02/2024	Yes
23/11/2023	2023/2024	Yes	49	7279.81	14.5	600418	266274	2 - Clean	Yes	#######	Yes
30/11/2023	2023/2024	Yes	49	7279.81	14.5	600418	266274	3 - No Acti	Yes	#######	Yes
7/12/2023	2023/2024	Yes	49	7279.81	14.5	600418	266277	2 - Clean	Yes	1/02/2024	Yes
14/12/2023	2023/2024	Yes	48	7283	15.9	601087	266278	2 - Clean	Yes	1/02/2024	Yes
21/12/2023	2023/2024	Yes	49	7283	14.5	601087		3 - No Acti	Yes	#######	Yes
28/12/2023	2023/2024	Yes	49	7283	14.5	601087	266282	3 - No Acti	Yes	#######	Yes
4/01/2024	2023/2024	Yes	49	7283	14.5	601087	266284	3 - No Acti	Yes	#######	Yes
11/01/2024	2023/2024	Yes	49	7284	15.3	601409	266290	2 - Clean	Yes	1/02/2024	Yes
18/01/2024	2023/2024	Yes	49	7284.68	14.5	601409	266292	2 - Clean	Yes	#######	Yes
25/01/2024	2023/2024	Yes	49	7284.68	14.5	601409	266295	2 - Clean	Yes	#######	Yes
1/02/2024	2023/2024	Yes	49	7284.68	14.5	601409	266296	2 - Clean	Yes	1/02/2024	Yes
8/02/2024	2023/2024	Yes	49	7284.68	14.5	601409	266297	2 - Clean	Yes	8/02/2024	Yes
15/02/2024	2023/2024	Yes	47	7286	18	601861	266297	2 - Clean	Yes	#######	Yes
22/02/2024	2023/2024	Yes	49	7286	14.5	601861	266297	3 - No Acti	Yes	#######	Yes
29/02/2024	2023/2024	Yes	49	7286	14.5	601861	266297	2 - Clean	Yes	#######	Yes
7/03/2024	2023/2024	Yes	49	7286	14.5	601861	266298	2 - Clean	Yes	#######	Yes
14/03/2024	2023/2024	Yes	48	7289.01	16.8	602288	266298	2 - Clean	Yes	#######	Yes
21/03/2024	2023/2024	Yes	49	7289.01	14.5	602288	266298	3 - No Acti	Yes	#######	Yes
28/03/2024	2023/2024	Yes	49	7289.01	14.5	602288	266299	2 - Clean	Yes	#######	Yes
4/04/2024	2023/2024	Yes	49	7289.01	14.5	602288	266299	2 - Clean	Yes	#######	Yes
11/04/2024	2023/2024	Yes	48	7291	15.6	602706	266299	2 - Clean	Yes	#######	Yes
18/04/2024	2023/2024	Yes	49	7291	14.5	602706	266299	3 - No Acti	Yes	#######	Yes
26/04/2024	2023/2024	Yes	49	7291	14.5	602706	266299	2 - Clean	Yes	#######	Yes
2/05/2024	2023/2024	Yes	49	7291	14.5	602706	266299	2 - Clean	Yes	#######	Yes
9/05/2024	2023/2024	Yes	49	7292	14.7	603092	266299	2 - Clean	Yes	#######	Yes
16/05/2024	2023/2024	Yes	49	7292	14.5	603092	266299	2 - Clean	Yes	#######	Yes
23/05/2024	2023/2024	Yes	49	7292	14.5	603092	266299	2 - Clean	Yes	#######	Yes
30/05/2024	2023/2024	Yes	49	7292	14.5	603092	266299	2 - Clean	Yes	#######	Yes
6/06/2024	2023/2024	Yes	49	7292	14.5	603092	266299	2 - Clean	Yes	#######	Yes
13/06/2024	2023/2024	Yes	48	7294.76	15.4	603458	266299	2 - Clean	Yes	#######	Yes
20/06/2024	2023/2024	Yes	49	7294.79	14.5	603458	266299	3 - No Acti	Yes	#######	Yes
27/06/2024	2023/2024	Yes	49	7294	14.5	603458	266299	2 - Clean	Yes	#######	Yes
4/07/2024	2024/2025	Yes	49	7294.79	14.5	603458	26299	3 - No Acti	Yes	#######	Yes

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

KB7 Operation Bore Log

Date	FY	Filled in lo	Bore Leve	Pump Run	Temperatu	Flow Forw	Flow Reve	Cabinet Fi	Checked V	Well-head Security	Comment	Comments
15/06/2023	2022/2023	Yes	40	2350	14.1	27995	95	3 - No Acti	Yes			Alarm not ack
22/06/2023	2022/2023	Yes	40	2350	14.1	27995.4	95.48	2 - Clean	Yes	Ok		
29/06/2023	2022/2023	Yes	40	2350.23	14.1	27995.4	95.48	2 - Clean	Yes	OK		
6/07/2023	2023/2024	Yes	40	2350	14.1	27995.4	95.48	2 - Clean	Yes	Ok		Dings in rear of cabinet - see pic
13/07/2023	2023/2024	Yes	13	2351.57	25.9	28024.6	95.48	2 - Clean	Yes			
20/07/2023	2023/2024	Yes	40	2352	14.1	28038	95.48	2 - Clean	Yes	Ok		Alarm ack function needs to be fixed.
27/07/2023	2023/2024	Yes	40	2352.19	14.1	28038	95.48	2 - Clean	Yes	OK		
3/08/2023	2023/2024	Yes	40	2352.19	14.1	28038	95.48	2 - Clean	Yes			
9/08/2023	2023/2024	Yes	39	2354	14.3	28086	95.48	3 - No Acti	Yes			
17/08/2023	2023/2024	Yes	40	2354	14.1	28086	95.48	3 - No Acti	Yes			
24/08/2023	2023/2024	Yes	40	2354.42	14.2	28086.4	95.48	2 - Clean	Yes	OK		
31/08/2023	2023/2024	Yes	40	2354.42	14.1	28086.5	95.48	2 - Clean	Yes			
7/09/2023	2023/2024	Yes	40	2354.42	14.1	28088.8	96.51	3 - No Acti	Yes			
14/09/2023	2023/2024	Yes	39	2356	14.4	28136.3	99.53	2 - Clean	Yes	Ok		
21/09/2023	2023/2024	Yes	40	2356	14.2	28136.4	100.71	3 - No Acti	Yes			
28/09/2023	2023/2024	Yes	40	2356.24	14.2	28136.5	100.71	2 - Clean	Yes			
5/10/2023	2023/2024	Yes	40	2356	14.1	28136.5	100.71	3 - No Acti	Yes			
12/10/2023	2023/2024	Yes	38	2359	14.9	28210.8	100.71	2 - Clean	Yes	Ok		
19/10/2023	2023/2024	Yes	40	2359.67	14.2	28210.8	100.71	2 - Clean	Yes	OK		
26/10/2023	2023/2024	Yes	40	2359.67	14.1	28210.8	100.71	2 - Clean	Yes			
2/11/2023	2023/2024	Yes	40	2359	14.2	28210	100	3 - No Acti	Yes			
9/11/2023	2023/2024	Yes	39	2361	14.3	28258.9	100.72	3 - No Acti	Yes	Ok		
16/11/2023	2023/2024	Yes	40	2361.89	14.2	28259	100.72	2 - Clean	Yes	OK		Paint repair required
23/11/2023	2023/2024	Yes	40	2361.89	14.2	28259	100.72	2 - Clean	Yes			
30/11/2023	2023/2024	Yes	40	2361	14.2	28259	100	3 - No Acti	Yes			
7/12/2023	2023/2024	Yes	40	2361	14.2	28259.1	100.72	2 - Clean	Yes	Ok		
14/12/2023	2023/2024	Yes	38	2365	14.5	28330.5	100.72	2 - Clean	Yes	OK		
21/12/2023	2023/2024	Yes	40	2365	14.2	28330.5	100.72	3 - No Acti	Yes			
28/12/2023	2023/2024	Yes	40	2365	14.2	28330	100	3 - No Acti	Yes			
4/01/2024	2023/2024	Yes	40	2365	14.2	28330	100	3 - No Acti	Yes			
11/01/2024	2023/2024	Yes	39	2367	14.4	28372.1	100.73	2 - Clean	Yes	OK		Small cracks on wrap
18/01/2024	2023/2024	Yes	40	2367.1	14.2	28372.1	100.73	2 - Clean	Yes			
25/01/2024	2023/2024	Yes	40	2367.1	14.2	28372.2	100.73	2 - Clean	Yes			
1/02/2024	2023/2024	Yes	40	2367	14.2	28372.3	100.73	2 - Clean	Yes	Ok		
8/02/2024	2023/2024	Yes	40	2367	14.2	28372.4	100.74	2 - Clean	Yes	Ok		
15/02/2024	2023/2024	Yes	38	2369	14.8	28428.4	100.74	2 - Clean	Yes	Ok		
22/02/2024	2023/2024	Yes	40	2369	14.2	28428	100	3 - No Acti	Yes			
29/02/2024	2023/2024	Yes	40	2369	14.2	28428.6	100.74	2 - Clean	Yes	Ok		
7/03/2024	2023/2024	Yes	40	2369	14.2	28428.9	100.74	2 - Clean	Yes	Ok		
14/03/2024	2023/2024	Yes	38	2371.81	14.6	28475.2	100.74	2 - Clean	Yes			
21/03/2024	2023/2024	Yes	40	2371	14.2	28475	100	3 - No Acti	Yes			
28/03/2024	2023/2024	Yes	40	2371	14.2	28475.6	100.74	2 - Clean	Yes	Ok		
4/04/2024	2023/2024	Yes	40	2371	14.2	28476	100.74	2 - Clean	Yes	Ok		
11/04/2024	2023/2024	Yes	38	2374	14.4	28524.7	100.74	2 - Clean	Yes			
18/04/2024	2023/2024	Yes	40	2374	14.2	28524	100	3 - No Acti	Yes			
26/04/2024	2023/2024	Yes	40	2374	14.2	28525.2	100.74	2 - Clean	Yes	Ok		
2/05/2024	2023/2024	Yes	40	2374	14.2	28525.5	100.74	2 - Clean	Yes	OK		
9/05/2024	2023/2024	Yes	39	2376	14.2	28569	100	2 - Clean	Yes	Ok		
16/05/2024	2023/2024	Yes	40	2376	14.2	28570	100.75	2 - Clean	Yes			
23/05/2024	2023/2024	Yes	40	2376	14.2	28570.3	100.75	2 - Clean	Yes	OK		
30/05/2024	2023/2024	Yes	40	2376	14.2	28570.6	100.75	2 - Clean	Yes	OK		
6/06/2024	2023/2024	Yes	40	2376	14.1	28575	102.64	2 - Clean	Yes	Ok		

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

K12 Operational Bore Log

Date	FY	Filled in lo	Bore Leve	Pump Run	Temperatu	Flow Forw	Flow Reve	Cabinet Fi	Checked \	Well-head	Comments
6/07/2023	2023/2024	Yes	62.3	1048	13.7	37746.5	54.5	2 - Clean	Yes	Ok	No action
#######	2023/2024	Yes	26.1	1049.1	27.4	37774.3	54.5	2 - Clean	Yes		No action
#######	2023/2024	Yes	62.2	1050	13.7	37803.3	54.5	2 - Clean	Yes	Ok	No action
#######	2023/2024	Yes	62.2	1050.1	13.7	37803.3	54.5	2 - Clean	Yes	OK	No action
3/08/2023	2023/2024	Yes	62.2	1050.1	13.7	37803.3	54.5	2 - Clean	Yes		No action
9/08/2023	2023/2024	Yes	61.2	1052	13.8	37867	54	3 - No Acti	Yes	Ok	Perspex s
#######	2023/2024	Yes	62.2	1052	13.7	37867	54.5	3 - No Acti	Yes		
#######	2023/2024	Yes	62.2	1052.3	13.7	37867.1	54.5	2 - Clean	Yes	OK	
#######	2023/2024	Yes	62.3	1052.3	13.7	37867.1	54.5	2 - Clean	Yes		
7/09/2023	2023/2024	Yes	62.3	1052	13.7	37867.1	54.5	3 - No Acti	Yes		
#######	2023/2024	Yes	61.4	1054	13.8	37919.8	54.5	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	62.1	1054	13.7	37919.8	54.5	3 - No Acti	Yes		Rust on fla
#######	2023/2024	Yes	62.2	1054.1	13.7	37919.8	54.5	2 - Clean	Yes		
5/10/2023	2023/2024	Yes	62.1	1054	13.7	37919.8	54.5	3 - No Acti	Yes		
#######	2023/2024	Yes	59.4	1057	14.2	38020.8	54.5	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	62	1057.6	13.7	38020.8	54.5	2 - Clean	Yes	OK	
#######	2023/2024	Yes	62.1	1057.6	13.7	38020.8	54.5	2 - Clean	Yes		
2/11/2023	2023/2024	Yes	62.2	1057	13.7	38028	54.5	3 - No Acti	Yes		
9/11/2023	2023/2024	Yes	61.1	1059	13.8	38085.8	54.5	3 - No Acti	Yes	Ok	
#######	2023/2024	Yes	62	1059.9	13.7	38085.8	54.5	2 - Clean	Yes	OK	Paint repa
#######	2023/2024	Yes	62	1059.9	13.7	38085.8	54.5	2 - Clean	Yes		
#######	2023/2024	Yes	62	1059	13.7	38085	54.5	3 - No Acti	Yes		
7/12/2023	2023/2024	Yes	62	1059	13.7	38085.8	54.5	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	60.2	1063	13.8	38181	54.5	2 - Clean	Yes	OK	
#######	2023/2024	Yes	61.9	1063	13.7	38180.7	54.5	3 - No Acti	Yes		
#######	2023/2024	Yes	62	1063	13.7	38180	54	3 - No Acti	Yes		
4/01/2024	2023/2024	Yes	62	1063	13.7	38180	54.5	3 - No Acti	Yes		
#######	2023/2024	Yes	61	1065	13.8	38325.8	54.5	2 - Clean	Yes	OK	Small crac
#######	2023/2024	Yes	61.9	1065	13.7	38235.8	54.5	2 - Clean	Yes		
#######	2023/2024	Yes	61.8	1065.1	13.7	38235.7	54.5	3 - No Acti	Yes		
1/02/2024	2023/2024	Yes	61.9	1065	13.7	38235.8	54.5	2 - Clean	Yes	Ok	
8/02/2024	2023/2024	Yes	61.9	1065	13.7	38235.8	54.5	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	59.6	1067	14.2	38310.1	54.5	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	61.7	1064	13.7	38310	54	3 - No Acti	Yes		
#######	2023/2024	Yes	61.8	1067	13.7	38310.1	54.5	2 - Clean	Yes	Ok	
7/03/2024	2023/2024	Yes	61.8	1067	13.7	38310.1	54.5	2 - Clean	Yes		
#######	2023/2024	Yes	60	1069	14.1	38371	54.5	2 - Clean	Yes		
#######	2023/2024	Yes	61.7	1069	13.7	38371	54.5	3 - No Acti			
#######	2023/2024	Yes	61.7	1069	13.7	38371.6	54.5	2 - Clean	Yes	Ok	
4/04/2024	2023/2024	Yes	61.7	1069	13.7	38371.6	54.5	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	60.5	1071	13.8	38435.9	54.5	2 - Clean	Yes		
#######	2023/2024	Yes	61.7	1071	13.7	38435	54	3 - No Acti	Yes		
#######	2023/2024	Yes									
2/05/2024	2023/2024	Yes	61.8	1071	13.7	38435.9	54.5	2 - Clean	Yes	OK	
9/05/2024	2023/2024	Yes	61.7	1073	13.7	38494	54	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	62.1	1073	13.7	38494.1	54.5	2 - Clean	Yes		
#######	2023/2024	Yes	61.8	1073	13.7	38494.1	54.5	2 - Clean	Yes	OK	
#######	2023/2024	Yes	61.8	1073	13.7	38494.1	54.5	2 - Clean	Yes	OK	
6/06/2024	2023/2024	Yes	61.8	1073	13.7	38494	54.5	2 - Clean	Yes	Ok	
#######	2023/2024	Yes	61	1075.6	13.8	38550.6	54.5	2 - Clean	Yes		
#######	2023/2024	Yes	61.8	1075	13.7	38550	54.5	3 - No Acti	Yes		
#######	2023/2024	Yes	61.8	1075	13.7	38550.6	54.5	2 - Clean	Yes	Ok	

N2 Operational Bore Log

Date	FY	Filled in lo	Bore Leve	Pump Run	Temperatu	Flow Forw	Flow Reve	Cabinet Fi	Checked \	Well-head	Comments
13/07/2023	2023/2024	Yes	42.1	759	13	72233.3	10.84	2 - Clean	Yes	Ok	No action
20/07/2023	2023/2024	Yes	37.1	759.5	25.2	72287.3	10.84	2 - Clean	Yes		No action
27/07/2023	2023/2024	Yes	42.1	761	13	72475.6	10.84	2 - Clean	Yes	Ok	No action
3/08/2023	2023/2024	Yes	42.1	761.2	13	72505	10.84	2 - Clean	Yes	OK	No action
9/08/2023	2023/2024	Yes	42.1	761.2	13	72534.7	10.84	2 - Clean	Yes		No action
17/08/2023	2023/2024	Yes	42	763	13.6	72754	10.81	3 - No Acti	Yes	Ok	Perspex b
24/08/2023	2023/2024	Yes	42.1	763	13	72785	10.84	3 - No Acti	Yes		No action
31/08/2023	2023/2024	Yes	42.2	763.2	13	72815.9	10.84	2 - Clean	Yes	OK	No action
7/09/2023	2023/2024	Yes	42.1	763.4	13	72846.6	10.84	2 - Clean	Yes		No action
14/09/2023	2023/2024	Yes	42.1	763	13	72885.2	10.84	3 - No Acti	Yes		No action
21/09/2023	2023/2024	Yes	37.1	763	26	72947	10.84	3 - No Acti	Yes		No action
28/09/2023	2023/2024	Yes	42	765	13	73136	10.84	3 - No Acti	Yes		Rust on ai
5/10/2023	2023/2024	Yes	42.1	765.2	13	73177.8	10.84	2 - Clean	Yes		No action
12/10/2023	2023/2024	Yes	42	765	13	73214	10.84	3 - No Acti	Yes		No action
19/10/2023	2023/2024	Yes	37	766	27.1	73318	10.84	3 - No Acti	Yes		No action
26/10/2023	2023/2024	Yes	42	768	13	73610	10.84	2 - Clean	Yes	OK	No action
2/11/2023	2023/2024	Yes	42.1	768.8	13	73658.7	10.84	2 - Clean	Yes		No action
9/11/2023	2023/2024	Yes	42	768	13	73707.5	10.84	3 - No Acti	Yes		No action
16/11/2023	2023/2024	Yes	36.8	769	27.1	73816	10.84	3 - No Acti	Yes		No action
23/11/2023	2023/2024	Yes	41.9	771.7	13	74005.1	10.84	2 - Clean	Yes	OK	No action
30/11/2023	2023/2024	Yes	41.9	771.2	13	74056.8	10.84	2 - Clean	Yes		No action
7/12/2023	2023/2024	Yes	41.9	771	13	74105	10.84	3 - No Acti	Yes		No action
14/12/2023	2023/2024	Yes	41.9	771	13	74156.7	10.84	2 - Clean	Yes	Ok	No action
21/12/2023	2023/2024	Yes	36.9	771	26.8	74244	10.84	3 - No Acti	Yes		No action
28/12/2023	2023/2024	Yes	41.9	774	13	74533.7	10.84	3 - No Acti	Yes	no sealant	No action
4/01/2024	2023/2024	Yes	41.9	774	13	74584	10.84	3 - No Acti	Yes		No action
11/01/2024	2023/2024	Yes	41.8	774	13	74630.2	10.84	3 - No Acti	Yes		No action
18/01/2024	2023/2024	Yes	36.9	774	26.9	74720.4	10.84	3 - No Acti	Yes		No action
25/01/2024	2023/2024	Yes	41.8	776.1	13	74868.8	10.84	2 - Clean	Yes		No action
1/02/2024	2023/2024	Yes	41.7	776.1	13	74912.5	10.84	2 - Clean	Yes		No action
8/02/2024	2023/2024	Yes	41.7	776	13	74957.1	10.84	2 - Clean	Yes	Ok	No action
15/02/2024	2023/2024	Yes	41.7	776	13	75006.5	10.84	2 - Clean	Yes	Ok	No action
22/02/2024	2023/2024	Yes	36.7	776	26.8	75095	10.84	3 - No Acti	Yes	lock is dod	cable outs
29/02/2024	2023/2024	Yes	41.6	778	13	75310	10.84	3 - No Acti	Yes		No action
7/03/2024	2023/2024	Yes	41.6	778	13	75349.1	10.84	2 - Clean	Yes	Ok	No action
14/03/2024	2023/2024	Yes	41.6	778	13	75389	10.84	2 - Clean	Yes		No action
21/03/2024	2023/2024	Yes	36.7	779	26.7	75468.5	10.84	2 - Clean	Yes	Ok	No action
28/03/2024	2023/2024	Yes	41.5	780	13	75640	10.84	3 - No Acti	Yes		No action
4/04/2024	2023/2024	Yes	41.6	780	13	75668.5	10.84	2 - Clean	Yes	Ok	No action
11/04/2024	2023/2024	Yes	41.6	780	13	75695.4	10.84	2 - Clean	Yes	Ok	No action
18/04/2024	2023/2024	Yes	36.7	781.2	26.1	75762.9	10.84	2 - Clean	Yes	OK	Cabinet cc
26/04/2024	2023/2024	Yes	41.7	783	13	75644	10.84	3 - No Acti	Yes		No action
2/05/2024	2023/2024	Yes									
9/05/2024	2023/2024	Yes	41.7	783	13	75995.4	10.84	2 - Clean	Yes	OK	Could do \
16/05/2024	2023/2024	Yes	41.5	785	13.2	76188.9	10.84	2 - Clean	Yes	Ok	No action
23/05/2024	2023/2024	Yes	41.7	785	13	76209.1	10.84	2 - Clean	Yes		No action
30/05/2024	2023/2024	Yes	41.7	785	13	76229.9	10.84	2 - Clean	Yes	OK	Cabinet ne
6/06/2024	2023/2024	Yes	41.6	785	13	76249.1	10.84	2 - Clean	Yes	OK	No action
13/06/2024	2023/2024	Yes	41.5	785	13	76270	10.84	2 - Clean	Yes	Ok	Apron cou
20/06/2024	2023/2024	Yes	36.8	785	24.1	76317	10.84	2 - Clean	Yes	Ok	No action
27/06/2024	2023/2024	Yes	41.7	786	13	76480	10.84	3 - No Acti	Yes		No action
4/07/2024	2024/2025	Yes	41.6	786	13.1	76497	10.84	2 - Clean	Yes	Ok	No action

Appendix E

Bore Water Quality Sampling Results

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NW-061465-01** REPORT DATE **17/11/2023**

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND
Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz

Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary **Order code:** EUNZWE-00149887
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples **Purchase Order Number:** 377936

SAMPLE CODE **812-2023-00148557**

Client Reference: Bore K10
Client described sample as: Bore water
Sampling Point code: NW0002254014 **Sampling Point name:** Bore K10
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55 **Analysis Ending Date:** 17/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.24	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	7.95	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	219	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.51	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	9.12	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	126	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	80.7	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.17	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	65.4	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	14.5	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.152	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	9.20	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.050	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	101	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.04	mg/l	0.02
①NW028	**Free Carbon Dioxide**			
	Carbon dioxide	9	mg CO2/l	1
①NW351	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	6.86	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
NW011	**Sulphate**			
	Sulphate	<0.02	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	220	mg CaCO3/l	1
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	395	mg/l	1
①NW207	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW207	**Total Dissolved Solids**			
	Total dissolved Solids	444	mg/l	1
NW029	**Total Hardness**			
	Hardness	223	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.210	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.066	mg/l	0.005

LIST OF METHODS

NW002 **Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW028 **Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B

NW029 **Total Hardness:** APHA Online Edition 2340 B

NW084 **Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.

NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.

NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.

NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.

NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.

NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.

NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.

NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.

NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.

NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.

NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.

NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.

NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.

NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.

NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.

NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H

NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW193 **Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G

NW194 **Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B

NW195 **pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B

NW199 **Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F

NW207 **Total Dissolved Solids:** Internal Method, Calculation

NW210 **Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B

NW303 **Anion Sum:** APHA 1030 E

NW304 **Cation Sum:** APHA 1030 E

NW305 **Ion Balance:** APHA 1030 E

NW339 **Total Dissolved Solids:** Internal Method, Gravimetry

NW351 **Hydrogen Sulphide:** calculated

NW583 **Dissolved Arsenic:** APHA Online Edition 3125 B mod.

NW679 **Cyanide:** APHA Online Edition 4500-CN C & E

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Gabriela Carvalhaes Manager Food and Water Testing Chemistry

EXPLANATORY NOTE

①Test is not accredited
②Test is subcontracted within Eurofins group and is accredited
③Test is subcontracted within Eurofins group and is not accredited
④Test is subcontracted outside Eurofins group and is accredited
⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
⑩Test is subcontracted within Eurofins group and is RLP accredited

N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

The Customer acknowledges and accepts that: (a) where Eurofins is not responsible for sampling, the test result(s) in this report apply only to the sample as received. Customer is solely responsible for the sampling process and warrants that the sample provided to Eurofins is representative of the lot / batch from which the samples were drawn; and (b) Eurofins expresses no opinion and accepts no liability in respect of the Customer's production process or homogeneity of the product.
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Accreditation does not apply to comments or graphical representations.
Unless otherwise stated, all tests in this analytical report (except for subcontracted tests) are performed at 85 Port Road, Seaview, Lower Hutt, Wellington, NEW ZEALAND.
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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NW-062142-01** REPORT DATE **22/11/2023**

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND
Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz
Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary **Order code:** EUNZWE-00149887
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples **Purchase Order Number:** 377936

SAMPLE CODE **812-2023-00148563**

Client Reference: Bore K12
Client described sample as: Bore water
Sampling Point code: NW0002254020 **Sampling Point name:** Bore K12
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55 **Analysis Ending Date:** 22/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	4.81	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	87	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.27	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	4.81	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	95.7	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	51.6	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.39	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	23.8	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	8.74	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0109	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	2.07	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.041	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	65.5	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.07	mg/l	0.02
①NW028	**Free Carbon Dioxide**			
	Carbon dioxide	3	mg CO2/l	1
①NW351	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	0.00	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	0.02	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.8		0.1
NW011	**Sulphate**			
	Sulphate	16.4	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	88	mg CaCO3/l	1
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	253	mg/l	1
①NW207	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW207	**Total Dissolved Solids**			
	Total dissolved Solids	284	mg/l	1
NW029	**Total Hardness**			
	Hardness	95	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	<0.05	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	<0.1	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.048	mg/l	0.005

LIST OF METHODS

NW002 **Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW028 **Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B

NW029 **Total Hardness:** APHA Online Edition 2340 B

NW084 **Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.

NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.

NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.

NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.

NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.

NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.

NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.

NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.

NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.

NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.

NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.

NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.

NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.

NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.

NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.

NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H

NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW193 **Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G

NW194 **Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B

NW195 **pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B

NW199 **Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F

NW207 **Total Dissolved Solids:** Internal Method, Calculation

NW210 **Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B

NW303 **Anion Sum:** APHA 1030 E

NW304 **Cation Sum:** APHA 1030 E

NW305 **Ion Balance:** APHA 1030 E

NW339 **Total Dissolved Solids:** Internal Method, Gravimetry

NW351 **Hydrogen Sulphide:** calculated

NW583 **Dissolved Arsenic:** APHA Online Edition 3125 B mod.

NW679 **Cyanide:** APHA Online Edition 4500-CN C & E

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Gabriela Carvalhaes Manager Food and Water Testing Chemistry

EXPLANATORY NOTE

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②Test is subcontracted within Eurofins group and is accredited
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⑤Test is subcontracted outside Eurofins group and is not accredited
⑥Test result is provided by the customer and is not accredited
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⑧Tested at the sampling point by Eurofins and is accredited
⑨Test is RLP accredited
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Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NW-062141-01** REPORT DATE **22/11/2023**

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND
Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz
Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary **Order code:** EUNZWE-00149887
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples **Purchase Order Number:** 377936

SAMPLE CODE **812-2023-00148559**

Client Reference: Bore K4
Client described sample as: Bore water
Sampling Point code: NW0002254016 **Sampling Point name:** Bore K4
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55 **Analysis Ending Date:** 22/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.02	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	4.40	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	104	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.22	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	4.54	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	72.4	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	46.4	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.11	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	5.1	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	3.97	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.118	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	1.88	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.103	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	89.9	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.18	mg/l	0.02
①NW028	**Free Carbon Dioxide**			
	Carbon dioxide	3	mg CO2/l	1
①NW351	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	1.57	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.8		0.1
NW011	**Sulphate**			
	Sulphate	13.1	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	105	mg CaCO3/l	1
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	228	mg/l	1
①NW207	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW207	**Total Dissolved Solids**			
	Total dissolved Solids	255	mg/l	1
NW029	**Total Hardness**			
	Hardness	29	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	<0.05	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.7	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.110	mg/l	0.005

LIST OF METHODS

NW002 **Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW028 **Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B

NW029 **Total Hardness:** APHA Online Edition 2340 B

NW084 **Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.

NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.

NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.

NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.

NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.

NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.

NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.

NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.

NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.

NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.

NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.

NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.

NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.

NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.

NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.

NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H

NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW193 **Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G

NW194 **Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B

NW195 **pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B

NW199 **Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F

NW207 **Total Dissolved Solids:** Internal Method, Calculation

NW210 **Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B

NW303 **Anion Sum:** APHA 1030 E

NW304 **Cation Sum:** APHA 1030 E

NW305 **Ion Balance:** APHA 1030 E

NW339 **Total Dissolved Solids:** Internal Method, Gravimetry

NW351 **Hydrogen Sulphide:** calculated

NW583 **Dissolved Arsenic:** APHA Online Edition 3125 B mod.

NW679 **Cyanide:** APHA Online Edition 4500-CN C & E

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Gabriela Carvalhaes Manager Food and Water Testing Chemistry

EXPLANATORY NOTE

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⑤Test is subcontracted outside Eurofins group and is not accredited
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⑦Tested at the sampling point by Eurofins and is not accredited
⑧Tested at the sampling point by Eurofins and is accredited
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N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NW-061467-01** REPORT DATE **17/11/2023**

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND
Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz
Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary **Order code:** EUNZWE-00149887
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples **Purchase Order Number:** 377936

SAMPLE CODE **812-2023-00148560**

Client Reference: Bore K5
Client described sample as: Bore water
Sampling Point code: NW0002254017 **Sampling Point name:** Bore K5
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55 **Analysis Ending Date:** 17/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.35	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	11.1	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	251	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.72	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	11.3	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	214	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	113	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.52	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	46.6	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	14.9	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0659	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	9.12	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.101	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	171	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.04	mg/l	0.02
①**NW028**	**Free Carbon Dioxide**			
	Carbon dioxide	4	mg CO2/l	1
①**NW351**	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	0.65	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	8.1		0.1
NW011	**Sulphate**			
	Sulphate	0.19	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	254	mg CaCO3/l	1
①**NW207**	**Total Dissolved Solids**			
	Total dissolved Solids	622	mg/l	1
①**NW339**	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	552	mg/l	1
NW029	**Total Hardness**			
	Hardness	178	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.330	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.101	mg/l	0.005

LIST OF METHODS

NW002	**Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D	NW003	**Total Alkalinity:** APHA Online Edition 2320 B
NW006	**Fluoride:** APHA Online Edition 4110 B	NW007	**Chloride:** APHA Online Edition 4110 B
NW008	**Nitrite-N:** APHA Online Edition 4110 B	NW009	**Bromide:** APHA Online Edition 4110 B
NW010	**Nitrate-N:** APHA Online Edition 4110 B	NW011	**Sulphate:** APHA Online Edition 4110 B
NW023	**Conductivity:** APHA 24th Edition 2510 B	NW028	**Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B
NW029	**Total Hardness:** APHA Online Edition 2340 B	NW084	**Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.
NW103	**Dissolved Boron:** APHA Online Edition 3125 B mod.	NW104	**Dissolved Cadmium:** APHA Online Edition 3125 B mod.
NW105	**Dissolved Calcium:** APHA Online Edition 3125 B mod.	NW106	**Dissolved Chromium:** APHA Online Edition 3125 B mod.
NW108	**Dissolved Copper:** APHA Online Edition 3125 B mod.	NW109	**Dissolved Iron:** APHA Online Edition 3125 B mod.
NW110	**Dissolved Lead:** APHA Online Edition 3125 B mod.	NW112	**Dissolved Magnesium:** APHA Online Edition 3125 B mod.
NW113	**Dissolved Manganese:** APHA Online Edition 3125 B mod.	NW116	**Dissolved Nickel:** APHA Online Edition 3125 B mod.
NW117	**Dissolved Potassium:** APHA Online Edition 3125 B mod.	NW119	**Dissolved Silver:** APHA Online Edition 3125 B mod.
NW120	**Dissolved Sodium:** APHA Online Edition 3125 B mod.	NW125	**Dissolved Zinc:** APHA Online Edition 3125 B mod.
NW179	**Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H	NW189	**Total Nitrogen:** APHA Online Edition 4500-NO3- I
NW193	**Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G	NW194	**Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B
NW195	**pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B	NW199	**Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F
NW207	**Total Dissolved Solids:** Internal Method, Calculation	NW210	**Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B
NW303	**Anion Sum:** APHA 1030 E	NW304	**Cation Sum:** APHA 1030 E
NW305	**Ion Balance:** APHA 1030 E	NW339	**Total Dissolved Solids:** Internal Method, Gravimetry
NW351	**Hydrogen Sulphide:** calculated	NW583	**Dissolved Arsenic:** APHA Online Edition 3125 B mod.
NW679	**Cyanide:** APHA Online Edition 4500-CN C & E		

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Gabriela Carvalhaes Manager Food and Water Testing Chemistry

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N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NW-061468-01** REPORT DATE **17/11/2023**

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND
Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz
Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary **Order code:** EUNZWE-00149887
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples **Purchase Order Number:** 377936

SAMPLE CODE **812-2023-00148561**

Client Reference: Bore K6
Client described sample as: Bore water
Sampling Point code: NW0002254018 **Sampling Point name:** Bore K6
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55 **Analysis Ending Date:** 17/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.50	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	11.3	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	291	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.67	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	11.8	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	191	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	112	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.77	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	46.3	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	17.0	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0786	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	12.3	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.064	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	177	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.03	mg/l	0.02
①NW028	**Free Carbon Dioxide**			
	Carbon dioxide	12	mg CO2/l	1
①NW351	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	2.15	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
NW011	**Sulphate**			
	Sulphate	0.07	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	292	mg CaCO3/l	1
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	548	mg/l	1
①NW207	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW207	**Total Dissolved Solids**			
	Total dissolved Solids	616	mg/l	1
NW029	**Total Hardness**			
	Hardness	186	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.470	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.2	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.071	mg/l	0.005

LIST OF METHODS

NW002 **Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW028 **Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B

NW029 **Total Hardness:** APHA Online Edition 2340 B

NW084 **Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.

NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.

NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.

NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.

NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.

NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.

NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.

NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.

NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.

NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.

NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.

NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.

NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.

NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.

NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.

NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H

NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW193 **Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G

NW194 **Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B

NW195 **pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B

NW199 **Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F

NW207 **Total Dissolved Solids:** Internal Method, Calculation

NW210 **Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B

NW303 **Anion Sum:** APHA 1030 E

NW304 **Cation Sum:** APHA 1030 E

NW305 **Ion Balance:** APHA 1030 E

NW339 **Total Dissolved Solids:** Internal Method, Gravimetry

NW351 **Hydrogen Sulphide:** calculated

NW583 **Dissolved Arsenic:** APHA Online Edition 3125 B mod.

NW679 **Cyanide:** APHA Online Edition 4500-CN C & E

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Gabriela Carvalhaes Manager Food and Water Testing Chemistry

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NW-061466-01** REPORT DATE **17/11/2023**

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND
Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz
Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary **Order code:** EUNZWE-00149887
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples **Purchase Order Number:** 377936

SAMPLE CODE **812-2023-00148558**

Client Reference: Bore KB4
Client described sample as: Bore water
Sampling Point code: NW0002254015 **Sampling Point name:** Bore KB4
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55 **Analysis Ending Date:** 17/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.09	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	12.1	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	193	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.93	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	13.4	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	291	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	127	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.28	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	58.7	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	14.7	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0304	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	8.95	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.030	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	207	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.03	mg/l	0.02
①NW028	**Free Carbon Dioxide**			
	Carbon dioxide	8	mg CO2/l	1
①NW351	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	5.01	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.7		0.1
NW011	**Sulphate**			
	Sulphate	1.42	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	194	mg CaCO3/l	1
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	620	mg/l	1
①NW207	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW207	**Total Dissolved Solids**			
	Total dissolved Solids	699	mg/l	1
NW029	**Total Hardness**			
	Hardness	207	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	0.080	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.1	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.033	mg/l	0.005

LIST OF METHODS

NW002 **Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW028 **Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B

NW029 **Total Hardness:** APHA Online Edition 2340 B

NW084 **Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.

NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.

NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.

NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.

NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.

NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.

NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.

NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.

NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.

NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.

NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.

NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.

NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.

NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.

NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.

NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H

NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW193 **Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G

NW194 **Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B

NW195 **pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B

NW199 **Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F

NW207 **Total Dissolved Solids:** Internal Method, Calculation

NW210 **Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B

NW303 **Anion Sum:** APHA 1030 E

NW304 **Cation Sum:** APHA 1030 E

NW305 **Ion Balance:** APHA 1030 E

NW339 **Total Dissolved Solids:** Internal Method, Gravimetry

NW351 **Hydrogen Sulphide:** calculated

NW583 **Dissolved Arsenic:** APHA Online Edition 3125 B mod.

NW679 **Cyanide:** APHA Online Edition 4500-CN C & E

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Gabriela Carvalhaes Manager Food and Water Testing Chemistry

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END OF REPORT

Food & Water Testing

ANALYTICAL REPORT

REPORT CODE **AR-23-NW-061469-01** REPORT DATE **17/11/2023**

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND
Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz
Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary **Order code:** EUNZWE-00149887
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples **Purchase Order Number:** 377936

SAMPLE CODE **812-2023-00148562**

Client Reference: Bore KB7
Client described sample as: Bore water
Sampling Point code: NW0002254019 **Sampling Point name:** Bore KB7
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55 **Analysis Ending Date:** 17/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	<0.01	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	7.81	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	99	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.53	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	7.73	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	195	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	83.7	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.53	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	28.4	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	12.0	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0091	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	3.63	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.025	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	120	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.05	mg/l	0.02
①NW028	**Free Carbon Dioxide**			
	Carbon dioxide	3	mg CO2/l	1
①NW351	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	0.55	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.8		0.1
NW011	**Sulphate**			
	Sulphate	14.2	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	100	mg CaCO3/l	1
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	410	mg/l	1
①NW207	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW207	**Total Dissolved Solids**			
	Total dissolved Solids	460	mg/l	1
NW029	**Total Hardness**			
	Hardness	120	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	<0.05	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	<0.1	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.033	mg/l	0.005

LIST OF METHODS

NW002 **Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW028 **Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B

NW029 **Total Hardness:** APHA Online Edition 2340 B

NW084 **Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.

NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.

NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.

NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.

NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.

NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.

NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.

NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.

NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.

NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.

NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.

NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.

NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.

NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.

NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.

NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H

NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW193 **Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G

NW194 **Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B

NW195 **pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B

NW199 **Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F

NW207 **Total Dissolved Solids:** Internal Method, Calculation

NW210 **Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B

NW303 **Anion Sum:** APHA 1030 E

NW304 **Cation Sum:** APHA 1030 E

NW305 **Ion Balance:** APHA 1030 E

NW339 **Total Dissolved Solids:** Internal Method, Gravimetry

NW351 **Hydrogen Sulphide:** calculated

NW583 **Dissolved Arsenic:** APHA Online Edition 3125 B mod.

NW679 **Cyanide:** APHA Online Edition 4500-CN C & E

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Gabriela Carvalhaes Manager Food and Water Testing Chemistry

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LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
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✓ (Satisfactory) means meets the specification

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Food & Water Testing

ANALYTICAL REPORT

REPORT CODE	AR-23-NW-061913-01	REPORT DATE	20/11/2023

Attention Kapiti Coast District Council
Kim Mazur
175 Rimu Road
5032 Paraparaumu
NEW ZEALAND

Phone +64275554729
Email Kim.Mazur@kapiticoast.govt.nz

Copy to: Coley (Marcus.Coley@kapiticoast.govt.nz)

Contact for your orders: Binu Chaudhary
Contract: Kapiti DC WWTP
Submission Reference: Annual Pre Season Bore Samples
Order code: EUNZWE-00149887
Purchase Order Number: 377936

SAMPLE CODE **812-2023-00148556**

Client Reference: Bore N2
Client described sample as: Bore water
Sampling Point code: NW0002254013
Sampling Point name: Bore N2
Reception Date & Time: 09/11/2023 11:25
Analysis Start Date & Time: 09/11/2023 17:55
Analysis Ending Date: 20/11/2023
Sampled Date & Time 09/11/2023 00:00

		RESULTS		LOQ
NW179	**Ammonia Nitrogen**			
	Ammoniacal nitrogen (N)	0.05	mg/l	0.01
NW303	**Anion Sum**			
	Anions, sum	3.90	meq/l	0.01
NW002	**Bicarbonate Alkalinity**			
	Bicarbonate alkalinity	76	mg CaCO3/l	1
NW009	**Bromide**			
	Bromide	0.25	mg/l	0.02
NW304	**Cation Sum**			
	Cations, sum	5.10	meq/l	0.01
NW007	**Chloride**			
	Chloride (Cl)	69.4	mg/l	0.02
NW023	**Conductivity**			
	Conductivity	42.2	mS/m	0.1
NW679	**Cyanide**			
	Cyanide	<0.005	mg/l	0.005
NW583	**Dissolved Arsenic**			
	Arsenic (As)	<0.001	mg/l	0.001
NW103	**Dissolved Boron**			
	Boron (B)	0.07	mg/l	0.03
NW104	**Dissolved Cadmium**			
	Cadmium (Cd)	<0.0002	mg/l	0.0002
NW105	**Dissolved Calcium**			
	Calcium (Ca)	41.7	mg/l	0.1
NW106	**Dissolved Chromium**			
	Chromium (Cr)	<0.001	mg/l	0.001
NW108	**Dissolved Copper**			

		RESULTS		LOQ
NW108	**Dissolved Copper**			
	Copper (Cu)	<0.0005	mg/l	0.0005
NW109	**Dissolved Iron**			
	Iron (Fe)	<0.01	mg/l	0.01
NW110	**Dissolved Lead**			
	Lead (Pb)	<0.0005	mg/l	0.0005
NW112	**Dissolved Magnesium**			
	Magnesium (Mg)	8.57	mg/l	0.01
NW113	**Dissolved Manganese**			
	Manganese (Mn)	0.0712	mg/l	0.0005
NW116	**Dissolved Nickel**			
	Nickel (Ni)	<0.0005	mg/l	0.0005
NW117	**Dissolved Potassium**			
	Potassium (K)	3.69	mg/l	0.01
NW193	**Dissolved Reactive Phosphorus**			
	Phosphorus (soluble reactive)	0.131	mg/l	0.005
NW119	**Dissolved Silver**			
	Silver (Ag)	<0.0005	mg/l	0.0005
NW120	**Dissolved Sodium**			
	Sodium (Na)	50.9	mg/l	0.01
NW125	**Dissolved Zinc**			
	Zinc (Zn)	<0.002	mg/l	0.002
NW006	**Fluoride**			
	Fluoride	0.18	mg/l	0.02
①NW028	**Free Carbon Dioxide**			
	Carbon dioxide	5	mg CO2/l	1
①NW351	**Hydrogen Sulphide**			
	Sulphide	<0.05	mg/l	0.05
NW305	**Ion Balance**			
	Ion balance	13.4	%	0.01
NW084	**Mercury - Acid Soluble**			
	Mercury (Hg)	<0.0005	mg/l	0.0005
NW010	**Nitrate-N**			
	Nitrate-N	<0.01	mg/l	0.01
NW008	**Nitrite-N**			
	Nitrite Nitrogen as N	<0.01	mg/l	0.01
NW195	**pH (Tested beyond 15 minute APHA holding time)**			
	pH	7.5		0.1
NW011	**Sulphate**			
	Sulphate	20.1	mg/l	0.02
NW199	**Sulphide**			
	Sulphide	<0.2	mg/l	0.2
NW003	**Total Alkalinity**			
	Alkalinity total	76	mg CaCO3/l	1
①NW339	**Total Dissolved Solids**			
	Total dissolved Solids	207	mg/l	1
①NW207	**Total Dissolved Solids**			

		RESULTS		LOQ
①NW207	**Total Dissolved Solids**			
	Total dissolved Solids	232	mg/l	1
NW029	**Total Hardness**			
	Hardness	140	mg CaCO3/l	1
NW189	**Total Nitrogen**			
	Total Nitrogen (N)	<0.05	mg/l	0.002
NW210	**Total Non-Purgeable Organic Carbon**			
	Total Organic Carbon	0.1	mg/l	0.1
NW194	**Total Phosphorus**			
	Total phosphorus	0.137	mg/l	0.005

LIST OF METHODS

NW002 **Bicarbonate Alkalinity:** APHA Online Edition 4500-CO2 D

NW003 **Total Alkalinity:** APHA Online Edition 2320 B

NW006 **Fluoride:** APHA Online Edition 4110 B

NW007 **Chloride:** APHA Online Edition 4110 B

NW008 **Nitrite-N:** APHA Online Edition 4110 B

NW009 **Bromide:** APHA Online Edition 4110 B

NW010 **Nitrate-N:** APHA Online Edition 4110 B

NW011 **Sulphate:** APHA Online Edition 4110 B

NW023 **Conductivity:** APHA 24th Edition 2510 B

NW028 **Free Carbon Dioxide:** APHA Online Edition 4500-CO2 B

NW029 **Total Hardness:** APHA Online Edition 2340 B

NW084 **Mercury - Acid Soluble:** APHA Online Edition 3125 B mod.

NW103 **Dissolved Boron:** APHA Online Edition 3125 B mod.

NW104 **Dissolved Cadmium:** APHA Online Edition 3125 B mod.

NW105 **Dissolved Calcium:** APHA Online Edition 3125 B mod.

NW106 **Dissolved Chromium:** APHA Online Edition 3125 B mod.

NW108 **Dissolved Copper:** APHA Online Edition 3125 B mod.

NW109 **Dissolved Iron:** APHA Online Edition 3125 B mod.

NW110 **Dissolved Lead:** APHA Online Edition 3125 B mod.

NW112 **Dissolved Magnesium:** APHA Online Edition 3125 B mod.

NW113 **Dissolved Manganese:** APHA Online Edition 3125 B mod.

NW116 **Dissolved Nickel:** APHA Online Edition 3125 B mod.

NW117 **Dissolved Potassium:** APHA Online Edition 3125 B mod.

NW119 **Dissolved Silver:** APHA Online Edition 3125 B mod.

NW120 **Dissolved Sodium:** APHA Online Edition 3125 B mod.

NW125 **Dissolved Zinc:** APHA Online Edition 3125 B mod.

NW179 **Ammonia Nitrogen:** APHA Online Edition 4500-NH3 H

NW189 **Total Nitrogen:** APHA Online Edition 4500-NO3- I

NW193 **Dissolved Reactive Phosphorus:** APHA Online Edition 4500-P G

NW194 **Total Phosphorus:** APHA Online Edition 4500-P G / 4500-P B

NW195 **pH (Tested beyond 15 minute APHA holding time):** APHA 24th Edition 4500-H B

NW199 **Sulphide:** APHA Online Edition 4500-S^{2-} B, C, F

NW207 **Total Dissolved Solids:** Internal Method, Calculation

NW210 **Total Non-Purgeable Organic Carbon:** APHA Online Edition 5310 B

NW303 **Anion Sum:** APHA 1030 E

NW304 **Cation Sum:** APHA 1030 E

NW305 **Ion Balance:** APHA 1030 E

NW339 **Total Dissolved Solids:** Internal Method, Gravimetry

NW351 **Hydrogen Sulphide:** calculated

NW583 **Dissolved Arsenic:** APHA Online Edition 3125 B mod.

NW679 **Cyanide:** APHA Online Edition 4500-CN C & E

Signature

Marylou Cabral Laboratory Manager

Jennifer Mont Supervisor

Divina Cunanan Lagazon Supervisor

Eurofins ELS Limited
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Gabriela Carvalhaes Manager Food and Water Testing Chemistry

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N/A means Not Applicable
Not Detected means not detected at or above the Limit of Quantification (LOQ)
LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
✗ (Unsatisfactory) means does not meet the specification
✓ (Satisfactory) means meets the specification

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Appendix F

Complaints Record

Appendix G

Meeting Minutes

Minutes of Meeting (DRAFT)

Waikanae River Recharge and Borefields Annual Adaptive Management Group Meeting 4 4 September 2024

Held: Wednesday, 4 September 2024 2 pm-3:30 pm, Kāpiti Coast District Council Chambers.

Present:
Ben Thompson (KCDC) (**BT**)
Nick Urlich (KCDC) (**NU**)
Ramesh Pillai (KCDC) (**RP**)
Bruce Nesbitt (KCDC) (**BN**)
Lyndon Dearlove (GWRC) (**LD**)
Feriel Falconer (Friends of the Waikanae River) (**FF**)
Russell Bell (Friends of the Waikanae River) (**FF**)
Tessa Roberts (Wildlands) (**TR**)
Rawiri Kerekere-Haapu (KCDC) (**RK**)
Liam McAuliffe (Te Āti Awa ki Whakarongotai) (**LM**)

Apologies:
Ami Coughlan - Wellington Fish & Game Council. (**FG**)
Pip Parkin (Regional Public Health) (**PP**)
Tess Drewitt (KCDC) (**TD**)

Distribution: *RRwGW AMG*

Item		Action
1	**Welcome / Apologies** ▪ RP welcomed everyone to the meeting. ▪ RK lead the karakia.	-
2	**Matters arising from previous meeting**	
2.1	**Fish passage enhancements** ▪ Council staff visited site with GW ecologists & discussed options ▪ General agreement that the weir was providing a good degree of fish passage; but some gaps in rock outfall. ▪ The Council agreed to fill gaps with large boulders – Permitted activity under the NRP (memo to AMG dated 17 June 2024). ▪ Works on hold pending cultural considerations ▪ LM stated that Te Āti Awa's expectation was that Council Iwi Partnership would work with BN to coordinate the blessing of rocks. ▪ FF has questioned if a further fish survey can be undertaken following the works to determine if the works improve fish passage. The Council will look into this.	- -

2.2	**Gravel extraction resource consent renewal** ▪ BN – talked through why the gravel extraction is required and the Council has a long-term relationship with the property owner for access. ▪ BN also talked through some historic photos of the weir and fish passage getting installed. ▪ BN talked through the timeline for the Consent renewal and explained that December was the deadline for the consent to be submitted for s.124 rights under the RMA. ▪ Resource consent application has been prepared and shared with Te Atiawa and Fish & Game. ▪ Fish & Game has approved the proposal. ▪ Te Atiawa to observe works to inform Cultural Impact Assessment (CIA). ▪ Timing of observation/works waiting on fish passage enhancement works. ▪ Application needs to be submitted by December 2024 ▪ With recent rainfall, BN unable to examine the gravel level around the intake and it may be that gravel extraction not required before the consent need to be applied for. Actions: 1. The Council will submit application for Gravel extraction by Dec 2024. 2. The WTP manager will arrange for rocks to be blessed by the Iwi Partnerships Team and undertake works and investigate options for further fish survey.	**BN/TD** **BN**
3	**Review of annual reports**	
3.1	**Overview (NU)** ▪ The draft RRwGW Annual Report and Annual Water Conservation Report were offered for the 2023/24 RRwGW Season for AMG review, prior to the planned AMG Meeting. Comments raised by AMG members are discussed further in Section 4. ▪ River recharge was not required in 2023/24. ▪ No changes to operational practice have occurred, nor changes to operational documents made. ▪ No trigger exceedances. ▪ Periphyton trigger not exceeded ▪ Wetland Condition Monitoring carried out in Nga Manu Wetland. ▪ Explanation provided for delay of Performance Assessment Review to 2033. Council is identifying information requirements. The difficulty is that the Scheme hasn't been used as much as anticipated so there hasn't been much data collection to inform the PAR. Also, the Council unlikely to progress to Stage 2 by 2033. So the Council is proposing to delay the PAR until 2033. ▪ LD explained that a Section 127 would be required to adjust the PAR review date and noted that the Council should consider those people who made a submission on the consent and whether any issues were raised with the timeframe in the consent. ▪ No objections were raised to a delay in the PAR with rational to collect additional monitoring to provide a better basis for the assessment.	-
3.2	**River and Borefield report 2022/23 (NU & BT)** ▪ All key data is presented in Annual Reports and presentation slides for the meeting.	-

- River recharge not required as river levels did not get low enough.
- Note that regauging of the Waikanae River lowered the reported minimum flow to 909 L/s from the reported as 1,263 L/s. This was still above the minimum consent trigger level of 750 L/s
- Tables show that, despite not requiring river recharge, the Council still abstracted bore water and discharged to the Waikanae River. The ongoing abstraction is required for maintenance and to ensure the bores are still operating as required. These maintenance and short duration discharges are authorised by the consent conditions.
- BT summarised 2023/24 monitoring requirements, including wetland condition monitoring, and ongoing investigations of instrument failures at some GWRC monitoring sites.
- A summary of the proactive and reactive monitoring was discussed including calibrations, water quality sampling, flow testing, wetland monitoring, automated trigger response and stream level monitoring.

3.3 Ongoing Wetland Mitigation Monitoring (TR)

- TR presented an update on wetland and ecological monitoring.
- To date monitoring has occurred within Nga Manu wetland on five occasions with:
  - Baseline monitoring undertaken within thirteen wetlands in 2015, 2016, and 2017
  - Mitigation monitoring undertaken in one wetland (Nga Manu) February 2021, February 2024.
  - Detailed UAV aerials were taken to accurately map wetland communities.
  - Piezometers measuring groundwater levels.
- Wetland condition score has changed between baseline and now, due to development occurring in the wider catchment. Plots no longer consider wetland, significant dieback of some wetland communities. Therefore, the monitoring indicates a substantial shift from baseline data, but not attributed to the Scheme.

3.4 Periphyton Surveys (TR)

- The purpose of surveys is to determine if the recharge is causing nuisance periphyton growth in Waikanae River.
- Scheme not fully utilised, no evidence of nuisance growth from Scheme.
- Expect trigger to be exceeded at some stage.
- Baseline monitoring (4 years) to be updated in 2024/25.
- “Spot check” if the recharge exceeds 225L/s for 3hrs in 2024/25.

3.5 Ongoing Waikanae River Mitigation Monitoring (TR)

- The slides set out a series of recommendations made by Wildlands, including establishing new plots, including photo-points in monitoring and additional aerial mapping in three years’ time.
- Are the mitigation measures appropriate?
- Dissolved Oxygen only taken diurnally?
- TR noted that nitrates are not measured and recommended that these and other water quality measurements undergo a desktop review, using data previously collated for the project as well as relevant scientific literature. This is to ensure we are accurately measuring potential impacts, including some proactive (rather than reactive) impact measures.

- TR also queried whether baseline measures are still accurate given the amount of time passed. She recommended that the Waikanae River baseline monitoring is redone to account for any natural ecosystem changes that may have occurred since the last monitoring round in 2017.

  Action:

  3. The Council will review Wildlands recommendations re baseline monitoring and implement monitoring that complements interim monitoring proposed in PAR report dated August 2024. **TD/BT**

3.6 Water conservation report 2023/24 (NU & BT)

- The district-wide peak demand target of 490 lites-per-preson-per-day (l/p/d) was achieved, with 355 l/p/d being recorded in WPR for 2023/24.
- Annual losses decreased from 226 L/conn/day in 2022/23 to 213 L/conn/day in 2023/24. 18% drop in non-revenue water compared to 2022/23. This resulted in an improved leakage index for WPR from C Band to B Band.
- NU noted that through an internal audit a discrepancy had been identified between the instantaneous and totaliser outputs from the trunk main meters supplying Waikanae & Paraparaumu and data has been updated.
- Council's focus for 2024/25:
  - BT advised that Council is set to sweep the entire district in 2024/25 to identify and repair leaks. The Council is also issuing credits for homeowners who fix their leaks.
  - Council will continue to support the community to use water wisely
  - Invest $951k in water conservation, water metering and leak management works for 2024/25.

3.7 Performance Assessment Review

- The Council pre-circulated a memo dated August 2024 indicated its intention to review the timeframe for the Performance Assessment Review (PAR). **-**
- The Consents require the Council to complete a performance assessment review by 7 April 2029. The purpose of the review is to confirm the assumptions for the original application based on monitoring data. However, because the Scheme has had little use, minimal monitoring data has been collecting. As such, there's minimal evidence on whether the effects management approach is working. The Council is therefore proposing to delay to 2033.
- The August 2024 memo sets out a series of proposed interim monitoring tasks.
- Next steps are for the Council to amend the consent conditions to change the reporting date to 2033, and progressing to Stage 2 to 2037 based on updated demand assessments, develop a timeframe for interim monitoring tasks, and prepare PAR by 2033.

  Action:

  4. The Council will apply for a section 127 consent to change conditions to delay PAR until 2033 along with confirming proposed additional monitoring to meet data gaps so that effective trigger levels can be assessed. **TD**

4 AMG Observations / feedback (NU)

- FF queried that there were some tables that were not correctly referenced.

  Action: **BT**

5. The Council will review the Annual Reports and updated incorrect references for final issue by 30 September.	
5 Operating document updates (BT) ▪ No updates to operating documents or reports commissioned in 2023/24. The Council signalled an intention to update the Wetland OMP as per Wildlands recommendations for additional monitoring in 2024/25.	-
6 Other matters (BN) **6.1 Gravel Extraction Consent Application** ▪ The Council is finalising the application and hopes to submit in October. The Council is seeking to renew consent to 2048. Actions captured previously in minutes. **6.2 Waikanae WTP upgrades** ▪ BN gave an update on the WTP upgrades. Civil works are well under way on the main WTP components. BN showed a time lapse video.	-
▪ Recommendations / Next Steps ▪ The following actions are identified in the minutes: • The Council will submit application for Gravel extraction by Dec 2024. • The WTP manager will arrange for rocks to be blessed by the Iwi Partnerships Team and the Council will investigate options for a further fish survey. • The Council to review Wildlands recommendations re baseline monitoring and implement monitoring that complements interim monitoring proposed in PAR report dated August 2024. • The Council will apply for a section 127 consent to change conditions to delay PAR until 2033 along with confirming proposed additional monitoring to meet data gaps so that effective trigger levels can be assessed. • The Council will review the Annual Reports and updated incorrect references for final issue by 30 September. ▪ Next steps: • TD to issue meeting minutes. • TD to finalise draft reports incorporating AMG comments/feedback to submit to GWRC by end of September. • Final reports to be published on the Council's website by 30 September 2024.	**BN/TD** **BN** **TD/BT** **TD** **TD**

Minutes by: Nick Urlich, KCDC

Appendix F

Performance Assessment Review Memo

M E M O

TO:	Adaptive Management Group, Waikanae River Recharge Consents
FROM:	Tess Drewitt, Compliance Consultant for Water & Wastewater Infrastructure, Kapiti Coast District Council
DATE	13 August 2024
SUBJECT:	Performance Assessment Review – Waikanae River Recharge Consents

1. Purpose

This memo sets out the Kapiti Coast District Council's (the Council) proposal to delay the requirement for the Performance Assessment Review (PAR) by Year 15 of the exercise of the Waikanae River Recharge consents. The consents currently require the Council to prepare the PAR by 7 April 2029, and the Council proposes to delay this requirement by four years to 7 April 2033.

As set out in this memo, water demand has been much lower than anticipated since the consents were granted. This has resulted in limited use of the Scheme over the consent term and the Council likely pushing out the requirement to expand to Stage 2 by 3-4 years. The Council also anticipates having minimal monitoring data to undertake the PAR in 2029, due to triggers not being exceeded. The purpose for the delay is therefore to better align with the Council's progression to Stage 2 of the Scheme and collect more trigger-related monitoring data to inform the PAR.

2. Background

The Council holds resource consents with Greater Wellington Regional Council (GWRC) to operate the Waikanae River Recharge Scheme.[1] The consents authorise the Council to abstract up to 11,174,800m^3/year from the Waikanae River for municipal water supply. When the Waikanae River flow drops below 750L/s, the Council is required to recharge the river with bore water from the Waikanae Borefield.

The resource consents require the Council to undertake a scientifically robust assessment of the performance of the Waikanae River Recharge Scheme (the PAR). The Council must submit the PAR report to GWRC by 7 April 2029 or when groundwater discharge to the Waikanae River reaches 28,000m^3/day, whichever occurs earlier. The purpose of the PAR is to "*review the abstraction and monitoring undertaken to date and evaluate this against the assumptions and assessment of effects described in the application dated 8th November 2012 and supporting information*". GWRC will then review the PAR report and confirm that the Council can proceed to Stage 2 of the Scheme, which, at the time of the application, the Council anticipated to be 2033.

The consent conditions require the PAR to include information such as a thorough assessment of monitoring data, discussion on triggers that have been exceeded over the previous 15 years and mitigation response, recommended changes to the Waikanae River Ongoing Mitigation Plan (OMP), recommended changes to triggers, and an evaluation and discussion on the assumptions that underlie the Waikanae River Recharge Scheme.

[1] WGN130103 [35973], [35974] and [35975].

3. Water demand assessment - 2012

A demand assessment was prepared in September 2012 to support the resource consent application for the Waikanae River Recharge consents.[2] The demand assessment was based on projected population growth to 2060 for medium and high growth scenarios for water supply. Peak water demand was set at 490L/p/day, and assumed universal metering, water conservation and loss reduction would achieve savings at least to this amount by July 2016.

The demand assessment found peak demand would reach 28,800m^3/day by 2033, under the high growth scenario, as shown in Figure 1. Based on this assessment, the resource consents anticipate the Council progressing to Stage 2 of the Scheme by 2033. Stage 2 involves adding a new bore, N2, to the production line for groundwater abstraction, and additional bore and pipeline upgrades, as shown in Figure 2.

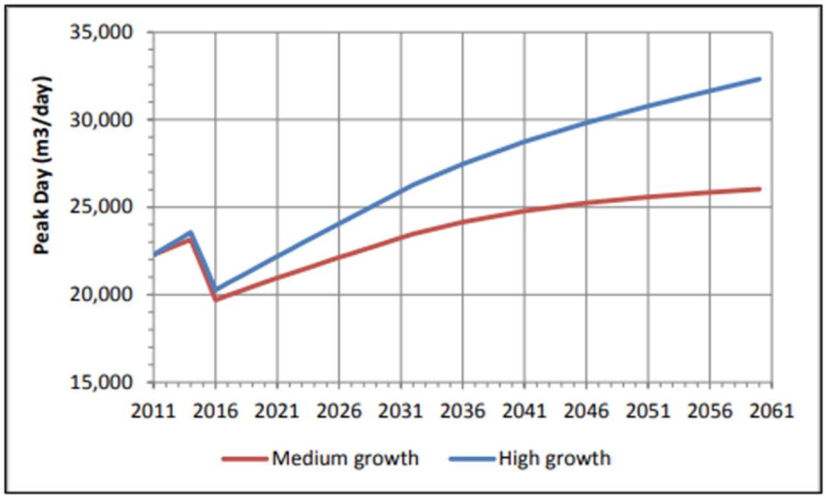

Figure 1: Demand assessment, 2021 (source: Beca, 2012)

Stage	Indicative Scope of Work (subject to detailed design)	Total Yield#	Estimated Timing*
One	Wellheads for bores Kb7, K12 and N2 Pipeline from bore N2 along Ngarara Road and End Farm Road to Smithfield Road Pipeline from bore K12 along Smithfield Road to bore K6 on Ngarara Road Possibly duplicate or upgrade existing pipeline along Ngarara Road Further develop bore K10 and replace pump to increase yield Bore K13 taken out of service due to poor water quality New pipework within Waikanae WTP and recharge outfall Modifications to existing river intake at Waikanae WTP	23,600 m^3/day	2014
Two	Construct and develop production bore N3, including wellhead Pipeline from N3 to N2 Possibly further duplicate or upgrade existing pipeline along Ngarara Road Replace pumps in bores, Kb4, K4 and K5 to increase yield	28,800 m^3/day	2033
Three	Construct and develop production bore S1, including wellhead Pipeline from bore S1 to M2PP Expressway corridor, over Waikanae River to Te Moana Road and connecting to existing pipeline	30,900 m^3/day	2041

Yield is dependent on further development at K10 and future production bore drilling.

* Timing depends on actual growth and per capita peak demand – staging may be brought forward or extended – the nature of the River Recharge With Groundwater project provides for this.

Figure 2: Consent Staging Plan (Condition 6, WGN130103 [35973]

[2] Beca, 2012. Kapiti Water Supply Project: Demand Modelling for River Recharge with Groundwater, prepared for the Council, 5 September 2012.

4. Updated demand assessment – 2024

The Council has updated the demand assessment for water supply. While population growth forecasts are now higher than anticipated in 2012, water demand has reduced more than anticipated due to the introduction of universal water metering (introduced in 2014) and the success of other water conservation measures. The peak demand of 490L/p/day is now too conservative; since universal water metering, the actual peak demand has been 350-370 L/p/day (based on the 99th percentile). Figure 3 shows the actual and anticipated peak daily demand based on the revised demand assessment.

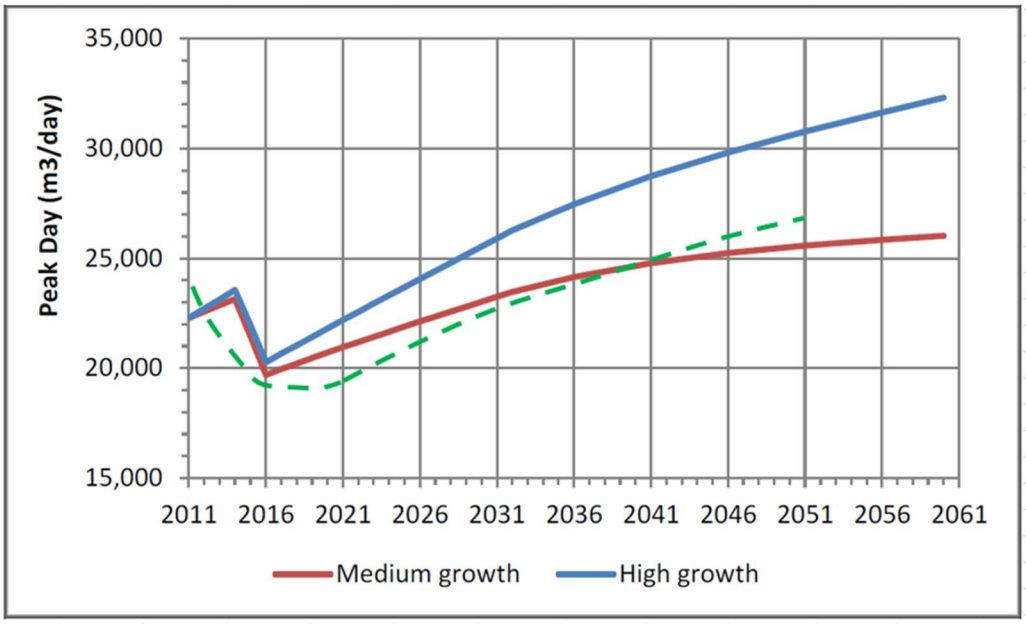

Figure 3: Revised demand assessment based on use

Despite the increase in population growth forecasts, the Council anticipates a much slower growth in water demand over the consent term than projected in 2012. Figure 4 on the following page shows water use and projected demand to 2054 based on actual peak demand. The Council now anticipates reaching a peak daily demand of 28,800m^3/day and therefore progressing to Stage 2 in 2036/37. This is 3-4 years later than originally anticipated when GWRC granted resource consent for the Scheme.

5. Trigger exceedances over the consent term

Actual water use over the past 10 years has been much less than anticipated when the consents were granted. The Council has operated the Scheme 5 out of the past 10 years, most of which have been for a minimal duration and/or instantaneous rate. The monitoring requirements under the Scheme are largely related to trigger exceedances, and as the Scheme has had minimal use, none of these triggers have been exceeded. The Council has, however, undertaken scheduled monitoring required by the Ongoing Monitoring Plans (OMP), including fish surveys and wetland condition monitoring.

Table A1 in Appendix A provides full details of the monitoring that has been undertaken to date and shows that trigger levels have not been exceeded to require trigger response monitoring.

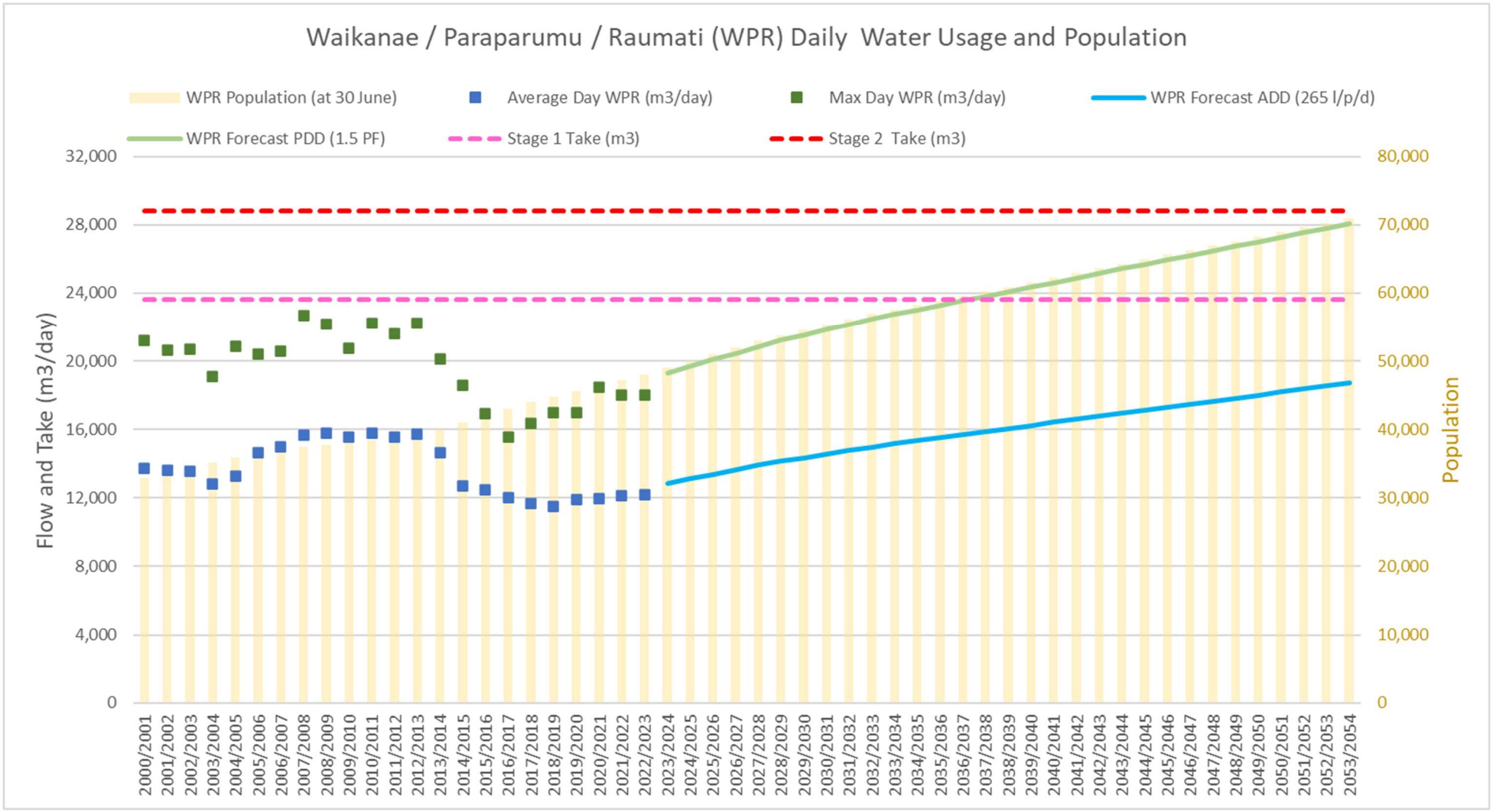

Figure 4: Water use and projected demand to 2054

6. Proposed changes to PAR report timeframe

The purpose of the PAR report is to ensure that the Scheme is capable of proceeding to Stage 2 in line with the effects envelope assessed at the time of the consent application. The updated demand assessment forecasts that the Council will reach 28,800m^3/day by 2036/37, which means the Council will proceed to Stage 2 approximately 3-4 later than originally anticipated. As such, we propose to extend the PAR report timeframe to coincide with the revised staging timeframe. Table 1 shows the current consented timeframe for the PAR and the proposed timeframe based on the revised demand assessment.

Table 1: Current and proposed PAR timeframe

Year	Consent year	Timeframe	
		Current	Proposed
2022/23 – 2023/24	10 - 11	Review monitoring information, identify gaps and develop strategies for filling gaps.	
2023/24 – 2024/25	11 - 12	Discuss findings with AMG and decide whether additional monitoring is needed.	Discuss findings with AMG, extend PAR timeframe, agree on interim monitoring & information collection.
2023/24 – 2027/28	11 - 15	Carry out monitoring as per OMP requirements.	Carry out monitoring as per OMP requirements and collect agreed interim monitoring & information collection.
2027/28 – 2028/29	15 - 16	Submit PAR Report by 7 April 2029.	
2028/29 – 2031/32	15 - 19	Prepare to progress to Stage 2	
2031/32 – 2032/33	19 - 20	Progress to Stage 2.	Submit PAR Report by 7 April 2033.
2032/33 – 2035/36	20 - 23		Prepare to progress to Stage 2.
2035/36 – 2036/37	23 - 24		Progress to Stage 2.

The proposed approach would provide more time for the Scheme to operate at its full Stage 1 capacity. This would facilitate more triggered monitoring and data collection to inform a scientifically robust PAR report. Without this information, we would continue to rely on assumptions and baseline monitoring, which would provide minimal benefit in establishing whether the Scheme can progress to Stage 2.

7. Interim monitoring and information collection

The Council has reviewed the monitoring data that has been collected over the consent term and we have identified some information gaps that could be filled in the lead-up to the PAR. Should the AMG agree to the extended timeframe set out in Table 1, the Council proposes to undertake the following interim tasks:

- We've engaged a consultant to review the trigger level for periphyton and advise on a potential interim trigger to "spot check" whether the river recharge is having any effect on periphyton in the Waikanae River. Unlike fish surveys, periphyton monitoring needs to be undertaken following river recharge activities to be able to detect whether the recharge is affecting growth.

- The Council collects information on bore water quality at the beginning of the river recharge season. We also collect some data when the bores are maintained. We will undertake a high-level review of this data to determine if there are any trends in bore water quality over the past 10 years.

- We have observed a decrease in groundwater levels over this past year in the small coastal streams, particularly Ngarara Stream. The decrease is not connected to the Scheme as we have not operated the Scheme over this time. However, the decrease may affect the trigger levels for monitoring these streams. We will therefore review groundwater data throughout and prior to the consent term to confirm whether the method for calculating the trigger for coastal streams should be amended.

- We continue to seek access to Te Harakeke Wetland for wetland condition monitoring. We were unsuccessful in gaining access to the wetland for 2023/24 wetland condition monitoring but will continue to investigate options with the landowner for gaining access.

- We will undertake a stocktake of ecological monitoring that we know is being undertaken by the Council and other parties (e.g. Fish & Game Council) in Waikanae River and confirm what information will be useful to inform the PAR, in conjunction with trigger monitoring that we anticipate collecting prior to the PAR.

- We will review land access agreements for all monitoring sites on private land to confirm these are up to date.

- We will update our database of private well users and their contact details and commence a notification procedure for these well users at the beginning of the season.

In addition to these tasks, we are keeping track of the Kapiti Whaitua process and how this might affect the Scheme. The Kapiti Whaitua Committee is currently recommending minimum flow levels for Waikanae River, which may affect the operation of these consents. We will update the AMG annually on developments.

8. Next steps

At the AMG annual meeting, we will consult with the AMG on the proposed schedule changes outlined in Table 1 and interim monitoring and information collection. Following this meeting, the next steps will be to apply to GWRC to amend the conditions of the resource consents under section 127 of the Resource Management Act 1991 (RMA) to incorporate the revised timeframe.

We look forward to discussing this with you.

Nga mihi nui,

Tess Drewitt
Compliance Consultant, Kapiti Coast District Council

Appendix A

Table A1: Summary of river recharge and monitoring undertaken

Period	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-24
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Max. river abstraction	21,779 m³/day on	20,527 m³/day on	16,644 m³/day on	17,361 m³/day on	16,179 m³/day on	18,203 m³/day on	20,537 m³/day on	17,723 m³/day on	17,590 m³/day on	19,107 m3/day	19,423 m3/day
Min. flow upstream of WTP	764 L/s	734 L/s	750 L/s	>1,400 L/s	744 L/s	878 L/s	1,074 L/s	909 L/s	801 L/s	1,129 L/s	1,263 L/s
Number of days of river recharge (excl. testing)	N/A	N/A	14 days	None	24 days	10 days	None	4 days	25 days	None	None
Maximum daily river recharge discharge	N/A	N/A	8,118 m³/day	4,489 m³/day	17,657 m³/day	7,639 m³/day	3,011 m³/day	4,507 m³/day	13,244 m3/day	3,337 m3/day	2,901 m3/day
River aquatic monitoring trigger exceeded?[3]	N/A – Baseline monitoring	N/A – Baseline monitoring	N/A – Baseline monitoring	N/A – Baseline monitoring	Trigger not exceeded	Trigger not exceeded	N/A (no river recharge)	Trigger not exceeded	Trigger not exceeded	Trigger not exceeded	Trigger not exceeded

[3] The trigger for periphyton monitoring and water quality sampling in the river is when discharge of bore water to the river exceeds 225 L/s for at least 48 hours.

Period	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-24
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Fish monitoring	Baseline	Baseline	Not required as agreed with GWRC	Baseline	4 surveys	4 surveys	None	Not required	Not required	1 voluntary survey	Not required
Maximum total daily groundwater take volume[4]	15,069 m^3/day	15,830 m^3/day	8,425 m^3/day	4,489 m^3/day	16,707 m^3/day	6,631 m^3/day	3,359 m^3/day	3,867 m^3/day	13,200 m^3/day	13,002 m^3/day	2,160 m^3
Total annual volume pumped from production bores	350,887 m^3/year	308,118 m^3/year	142,773 m^3/year	28,759 m^3/year	245,941 m^3/year	43,818 m^3/year	30,366 m^3/year	41,211 m^3/year	45,600 m^3/year	33,139 m^3/year	19,801 m^3/year
Waikanae River Flow Gauging	Gauging carried out 11 Mar 2014 and 10 April 2014	Gauging carried out 12 Feb and 10 Mar 2015	Five sets of gauging	Not triggered	Not triggered	Not triggered	Not triggered	Not triggered	Not triggered	Not triggered	Not triggered

[4] Maximum daily groundwater take volume and date do not align with maximum daily river recharge discharge volume and date; likely due to differences in flow totalisers and date/times attached to data recorded at the production bores and WTP.

Period	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-24
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Shallow Aquifer Drawdown Monitoring triggers	0 (interim triggers)	0 (interim triggers)	0 (interim triggers)	0 (interim triggers)	0	0	0	0	0	0	0
Deep Aquifer Drawdown Monitoring triggers	0 (interim triggers)	0 (interim triggers)	0 (interim triggers)	0 (interim triggers)	0	0	0	0	0	0	0
Saline intrusion monitoring triggers	0 (interim triggers)	0 (interim triggers)	0 (interim triggers)	0 (interim triggers)	1 (could not be linked to RRwGW)	0	0	0	0	0	0
Production bore water quality sampling	Monthly samples for BPHP	Monthly samples for BPHP and based on use	Monthly samples for BPHP for K10, Kb7, K12 and N2 and based on use (K4 and Kb4)	Not required as borefield not used for river recharge	Sampled in accordance with sampling requirements in place 22 Dec 17 to 25 May 18	All bores on 17 Dec 2019 and 28 May 2019	All bores on 19 Dec 2019	All bores at start of monitoring season	All bores at start of monitoring season	All bores at start of monitoring season	All bores at start of monitoring season
Complaints	0	0	0	0	0	0	0	0	0	0	0

Period	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-24
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Wetlands monitoring	Baseline monitoring El Rancho and Ngarara Rd triggers in March/April	Baseline monitoring No interim triggers exceeded	Baseline monitoring No interim triggers exceeded	Baseline monitoring No interim triggers exceeded No access to Te Harakeke wetland	No trigger reached for Nga Manu Awaiting access to Te Harakeke	No trigger reached for Nga Manu Awaiting access to Te Harakeke	No trigger reached for Nga Manu Awaiting access to Te Harakeke	No trigger reached for Nga Manu Condition monitoring and aerial photography and mapping completed in Feb 2021.	No trigger reached for Nga Manu Awaiting access to Te Harakeke	No trigger reached for Nga Manu Awaiting access to Te Harakeke	No trigger reached for Nga Manu Condition monitoring and aerial photography and mapping completed in Feb 2024
Small coastal stream monitoring	Baseline monitoring	Baseline monitoring	Baseline monitoring	Baseline monitoring No interim triggers exceeded	No triggers reached	No triggers reached	No triggers reached	No triggers reached	No triggers reached	No triggers reached	Trigger exceeded but not related to Scheme operation.