

July 2023 – June 2024

Port Waikato Water Supply Operation Annual Report

CONTENT

Introduction

Water Demand Management Plan

Consent Compliance

APPENDICES

<i>APPENDIX A</i>	<i>Collected Raw Data July 2023 – June 2024</i>
<i>APPENDIX B</i>	<i>Wai Comply Audit Report for July 2023 – March 204</i>
<i>APPENDIX C</i>	<i>Calibration Certificates</i>
<i>APPENDIX D</i>	<i>Memorandum - Port Waikato Abstraction Exceedance</i>
<i>APPENDIX E</i>	<i>Port-Waikato – Abstraction Data</i>
<i>APPENDIX F</i>	<i>Memorandum - Port Waikato Weir Level</i>

Port Waikato Water Supply

The Port Waikato water take was granted resource consent #AUTH136297.01.01 in 4 May 2016 (surface water take from Maraetai Stream) with the following conditions:

- Maximum net take volume not to exceed 80 m³ in any 24 hour period
- Maximum instantaneous net take rate shall not exceed 2.6 l/s
- 7 day rolling average flow is equal or less than 9 l/s
- This consent is due to expire in April 2051

This report satisfies Condition 4 -13 regarding an abstraction limits, annual monitoring and water management plan. The Resource Management (Measurement & Reporting of Water Takes)

Water Demand Management Plan (WDMP)

Business as Usual Initiatives

This is a closed supply no further connections are available,	Completed revision of WDMP (2021) – Current 2024 WDMP is in progress with consultants
---	---

District wide Water Balance/Loss 2023-2024

Summary of Water Balance Results												
Area	System Input (Production) m ³	Billed Metered Consumption m ³	Water Filling Stations m ³	Unbilled metered/faulty Consumption m ³ *4	Authorised unbilled Consumption m ³ *2	Apparent Losses m ³ *3	Real Losses	Current Annual Real Losses l/conn/d	Current Annual Real Losses m ³ /km/d	Non revenue Water (%)	Total Leakage (%)	Res Cons. using top10 for comm (l/cap/d)
Tuakau	502,123	409,478		2,742	2,511	25,495	64,640	85	2.9	18%	17%	178
Pokeno	504,859	419,404	13,836	5,791	16,361	26,019	43,076	51	1.8	17%	10%	166
Raglan	574,053	382,330	4,837	4,840	7,707	24,857	159,159	195	7.0	33%	30%	154
Huntly *1	1,206,551	727,390	5,212	4,868	11,245	48,435	419,481	360	10.3	40%	38%	194
Mid Waikato	679,095	538,661	2,499	9,272	5,895	33,724	100,815	109	1.9	21%	18%	120
Central District *1	1,085,598	702,782	7,404	8,113	12,832	45,995	323,988	246	6.6	35%	33%	179
Southern & Western District *7	836,733	639,498		18,817	4,184	40,342	152,709	128	1.4	24%	21%	162
Te Akau *5	1,954	959		Not Calculated due to Very small Systems	10	67	918	93	2.8	51%	50%	Not Calculated due to Very small Systems
Onewhero **	2,256	1,470			11	0	775	212	3.5	35%	34%	
Port Waikato	12,724	6,002			64	427	6,231	1,138	2.8	53%	52%	
Combined Systems	5,405,946	3,827,974	33,789	54,444	60,819	245,362	1,271,791			29%	26%	166

*1 The transfer volume to Ngaruawahia has been deducted from Huntly and added to Central Districts.

*2 The recommended default value of 0.5% of Water Supplied has been included in the volume of Unbilled Authorised Consumption in the ten water balances to allow for maintenance use (such as network flushing) and for Fire Service use.

*3 Apparent Losses: Customer meter under-registration = 5.0% of Billed Metered Consumption by Registered Customers and Unauthorised Consumption = 1% of Water Supplied - Increased due % due to increased break/leaks from drilling works

*4 Consumption based on number of meters connected (faulty) multiplied by 219 litres per year

*5 Te Akau Water is Tankered from Raglan (Total volume deducted from Raglan production).

*6 Note that for Mid Waikato and Southern & Western Districts, the CARL are expressed in m³/km/day due to density of connections being less than 20 connections/km main.

*7 System input volume for southern & Western District was taken from the WDC billed consumption volume as data issues with Water Outlook consumption volumes. Negative results for Real Losses defaulted to zero.

** The SI volume for Onewhero has been adjusted to achieve a (positive) nominal result for real water losses

Consent Compliance

Watercare is required to provide the below recordings and reporting:

Abstraction Limits

4. The maximum instantaneous net take rate shall not exceed 2.6 liters per second.
5. The maximum net take volume in any 24 hour period shall not exceed 80 cubic meters.

Recording and Reporting

6. A water measuring system shall quantify water taken from the take location on a cumulative basis. The system shall have a reliable calibration to water flow and shall be maintained to an accuracy of +/- 5%.

7. The consent holder shall record water usage:

- (i) On an at least weekly (seven day) basis (or at an increased frequency, if requested in writing by the Waikato Regional Council), or
- (ii) On a daily basis, where condition 10 is effective.

8. The consent holder must develop and implement a system for continuously monitoring Maraetai Stream 7—day rolling average flow at or about NZTM 1753300 E 5859700 N ("Maraetai flow site"). This system must:

- (i) measure or model stream flow reliably; and
- (ii) maintain a reliable stream flow calibration via spot flow gauging, regular weed removal and regular instrument calibration; and
- (iii) have an emphasis on that part of the stream flow regime that is equal to or less than 9 litres per second; and
- (iv) operate over the duration that this water take is authorised.

9. The consent holder must continuously monitor and maintain records of the Maraetai Stream 7—day rolling average flow at Maraetai flow site-*Compliant (Please see Appendix A)*

10. When the 7-day rolling average flow at the Maraetai flow site, for 240 or more consecutive hours, is less than 8.55 litres per second, the take volume in any 48 hour period must not exceed 136 cubic metres- *Compliant (Please see Appendix A)*

11. Records collected under conditions 7 and 9 shall be supplied by the 31st July and 31st January each year, for the preceding six month (January to June and July to December) periods.

Appendix A and Appendix E contains the readings with associated volumes for the Maraetai Stream take between 1 July 2023 and 30 June 2024. These readings were taken from the SCADA system daily.

The following Table 1 summarizes these values to demonstrate compliance.

Table 1: Summary Take Volumes – Daily Figures Spreadsheet

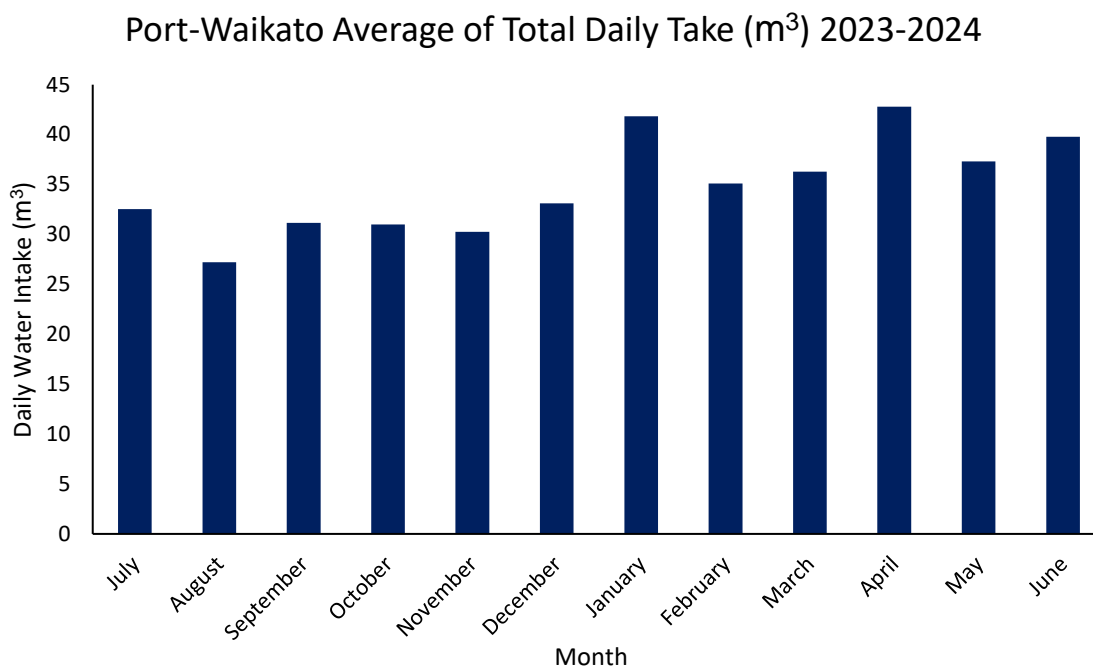
Period	Annual Take Volume (m ³)	Annual Av. Daily Usage (m ³)	Peak Daily Usage (m ³)
1 July 2023 – 30 June 2024	12,724	35	156

Peak daily flow was recorded on 3/04/2024. Upon investigation it looks like the trends were flat lining indicating that the intake pump was running when it wasn't. This was due to an RTU/PLC failure, see Appendix E for the investigation Memorandum.

Following the weir level sensor failure on 13/04/2023 after the unprecedented weather events and slips the new level sensor was replaced with incorrect scaling which has since been amended. Please see memorandum attached as Appendix F for more details.

The Peak Periods

The graph is as expected with all periods showing fairly similar trends. Due to increased demand in summer (Dec – Mar) these months naturally dominate peak demand records.



AUTH136297.03.01 Port Waikato discharge consent

Six monthly Backwash monitoring sampling required for concentrations of:

- (i) total and dissolved aluminium
- (ii) total suspended solids
- (iii) pH
- (iv) The total aluminium concentration of the discharge shall not exceed 0.75 grams per cubic metre.

Backwash at Port-Waikato is not currently discharged to the stream due to ongoing instances of elevated Aluminium present in both the stream and the backwash. The backwash is currently sucker trucked out and disposed of.

APPENDIX A

Collected Data

Max Flow Rate (L/s)

Average Flow Rate (L/s)

Pump Hours

Stream Flow (L/s) (7-day rolling average flow)

Total Take (m³)

APPENDIX B

Wai Comply Audit Report for July 2023 - March 2024

Drinking Water Quality Assurance Rules 2022, Water Services Act 2021 & Drinking Water Standards for New Zealand 2005 (Revised 2018)

Compliance

Taumata Arowai became the drinking water regulator on 15 November 2021. The regulations came into force on 14 November 2022, set the Drinking Water Standards for New Zealand. The standards set limits for the concentration of determinands in drinking water. The limits are referred to as maximum acceptable values (**MAVs**). The MAVs for any determinand must not be exceeded at any time. Under the Water Services Act 2021, all drinking water suppliers must ensure that the drinking water they supply complies with the standards, regardless of the nature of the source water used or the number of people served by the supply. The standards are based in part on the World Health Organization *Guidelines for drinking-water quality: fourth edition incorporating the first and second addenda*. The standards revoke and replace the *Drinking-water Standards for New Zealand 2005 (revised 2018)*.

Water Quality

The Watercare Laboratory Services team is responsible for organizing the collection and analysis of all scheduled sample requirements since October 2020. The Lab analyses the collected samples and sends the results through to the Operations Manager and the Water Quality Scientist. Watercare staff then review the results and act as per approved SOP, response plans, and water safety plans as required.

Attached as Appendix B is a Wai Comply Audit for Quarters through July 2023 March 2024. *The April-June 2024 quarter reports have been submitted to Wai Comply for Audit.*

APPENDIX C

Calibration Certificate

The water meter was last calibrated on 27/03/2024 and the certificates were submitted to WRC. Flowmeter calibrations are a routine function undertaken by the Watercare Waikato District Maintenance controller.

APPENDIX D

Memorandum - Port Waikato Abstraction Exceedance

Peak daily flow was recorded on 3/04/2024. Upon investigation it looks like the trends were flat lining indicating that the intake pump was running when it wasn't. See Memorandum for more details.

APPENDIX E

Port Waikato – Abstraction Data

Raw data extracted in relation to Port-Waikato abstraction

Raw Water Flow Meter

Raw Water Pump | Running

Raw Water Flowrate Daily Max

Raw Water Flowrate Daily Average

Stream Flow

Raw Water Daily Total Volume

Daily Treated Water Outflow Total

Stream Flow 10-Day Flow Flow Alarm

APPENDIX F

Memorandum - Port Waikato Weir Level

Memorandum explaining the Weir Level adjustments that have been made since the initial failure in 2023