

July 2023 – June 2024

Huntly and Ngaruawahia Water Supply Operation Annual Report

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Huntly Water Supply Operation Annual Report

The Huntly water supply serves the Huntly and Rotongaro communities as well as some rural properties on restricted flow.

The Ngaruawahia water supply serves the Ngaruawahia and Horotiu communities as well as some rural properties on restricted flow.

In May 2016 the Huntly and Ngaruawahia water supply was granted Resource Consent #136806 (To take water from the Waikato River at two locations for domestic and municipal supply to Ngaruawahia, Hopuhopu and Huntly communities.) which includes the following conditions:

- Maximum daily take volume shall not exceed 11,800 m³
- Maximum annual take volume not to exceed 2,783,000 m³
- Total Instantaneous take rate from two plants combined shall not exceed 215 l/s
- Low flow restrictions combined net take volume in any 48-hour period must not exceed 17,850 m³
- Maximum velocity of 0.2 m/s
- Each intake shall be screened with a mesh aperture size not exceeding 3 millimetres by 3 millimetres (or 3 millimetre diameter holes)
- This consent is due to expire in January 2046.

In January 2011 the Ngaruawahia water supply was granted Resource Consent #108157 (Discharge to water of filter backwash and sedimentation tank sludge to an unnamed tributary of Waipa River) which includes the following conditions:

- Maximum daily discharge volume shall not exceed 350m³
- Maximum discharge rate not to exceed 4 l/s
- Quality objectives relating to pH, Suspended Solids, and Total Aluminium
- This consent expired in January 2018. A place holder application was lodged before expiry to secure continued discharge. Works are programmed in 2022 for all backwash effluent to be discharged to the WWTP.

In January 2011 the Huntly water supply was granted Resource Consent #105035 (Discharge to water of filter backwash and sedimentation tank sludge to Waikato River)-

All waste streams from the sedimentation and filtration processes at Huntly WTP have been diverted to an onsite sludge lagoon which then discharges to the Huntly Wastewater plant via the reticulation network.

Water Demand Management Plan (WDMP)

Business as Usual Initiatives

- Completed revision of WDMP (2021) – Current 2024 Revision is in Progress
- Written Drought Management Plan,
- Comparison of performance with participation in the Water NZ annual benchmarking,
- Asset management pipe renewals,
- Restricted flow plus on-property storage applied to all rural properties,
- Monitoring of high users, notification to users of any significant increase on previous usage.
- Routine Review Water Supply bylaw
- Annual Water Balance reports,
- Restriction and metering of rural properties,
- Rain water tanks are encouraged through the WDC Rain Water Tank Strategy 2015 and water saving devices are encouraged in the District Plan,
- Water modelling which includes leak detection surveys, measures to detect low flow losses, pressure management and replacement of low reading meters.
- Councils communication summer campaign initiatives
- As part of summer campaign - investigate peak demands and inconsistencies; implement management options to level out the peak demands.

Initiative Achieved

- Dedicated filling stations in Pokeno, Te Kauwhata, Ngaruawahia and Raglan, as well permeant filling station installed in Huntly in 2024 to mitigate illegal hydrant use.

Drought Measures and Effectiveness

The Drought Management Plan addresses two key aspects:

- Source Management and
- Peak Demand Management.

Source Management is influenced by the climate's direct effect on the Waikato River level and the regions aquifers. The Waikato River is also influenced by upstream source management by Mercury. Mercury regulates the discharge from Lake Taupo into the Waikato River to maintain water reserves through dry periods to ensure continual power supply and comply with their resource consent. These influences dictate the abstraction rate and volumes that the WDC water schemes can draw from the Waikato River.

Peak Demand Management influences how customers use water through seasonal dry periods and their daily usage characteristics. The purpose is to maintain Council's customer service levels and remain within the abstraction limits from the Waikato River and other water sources used by WDC.

WDC operates under three different Water Alert level systems in the different areas. Southern and Western Districts follow the Hamilton City Council water alert system, Pokeno and Tuakau follow that of Watercare, and the WDC water alert system applies to all other schemes. During the summer period Operations Managers attend weekly meetings to discuss water demand management matters & risks.

Peak Demand Management

Daily monitoring was carried out on water demand and at least weekly re-assessments were made on water sources.

During the 2023-24 period, no water restrictions were in place for Huntly and Ngaruawahia supply zones.

Water Saving Targets

Key Objectives

- Improve reporting of water losses,
- Ensure satisfactory monitoring of minimum night flows into each network,
- Increased efficiency and effectiveness of active leak detection work,
- Increased accuracy and volume of metered consumption,
- Teams work together to reduce water loss, and
- Support asset management programs to reduce water loss.

The main steps (KPI's) required to achieve the objectives and targets has mostly progressed as planned with the following KPI's met so far:

- Regular reporting of water losses through an annual Water Balance Report,
- Pipe renewals are part of AMP/BAU activity.
- WSL completed leak detection for Huntly, Raglan and TK during 2021-22; all identified leaks were repaired.

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

Supply & Usage Analysis

Monitoring Regime

- RC 136806 Condition #5 – Take volume is recorded daily.
- RC 136806 Condition #6 – Rate of take is recorded daily.

Appendix A contains the collected raw data from 1 July 2023 to 30 June 2024. The following Table 1 a & b summarizes the daily take values for Huntly and Ngaruawahia Water Treatment Plants.

Table 2 summarizes the combined total take for Huntly and Ngaruawahia WTP.

Table 1a Huntly WTP Total Take RC 105034

Period	Annual Take Volume (m ³)	Av. Daily Take (m ³ /day)	Peak Daily Take (m ³ /day)	Max Daily Flow Rate (L/s)
1 July 2023- 30 June 2024	1,396,179	3,825.1	5,744	69

Table 2b Ngaruawahia WTP Total Take RC 105034

Period	Annual Take Volume (m ³)	Av. Daily Take (m ³ /day)	Peak Daily Take (m ³ /day)	Max Daily Flow Rate (L/s)
1 July 2023- 30 June 2024	993,002	2,720.6	3,599	55.6

Table 3 Huntly-Ngaruawahia Combined Take

Huntly-Ngaruawahia WTP Combined Total Take (RC 136806)				
Period	Annual Take Volume (m ³)	Av. Daily Take (m ³ /day)	Peak Daily Take (m ³ /day)	Max Combined Flow Rate (L/s)
1 July 2023- 30 June 2024	2,389,180	3,272.8	9,343.3	124.6

The rate of take is compliant with a maximum combined rate of take at 125l/s; see Appendix A.

Usage

The table below summarises types and number of connections in the Huntly and Ngaruawahia water supply area which has an estimated population of 8,467 (Huntly) and 8,575 (Ngaruawahia) based on the Waikato District Council Water Demand Management Plan 2021.

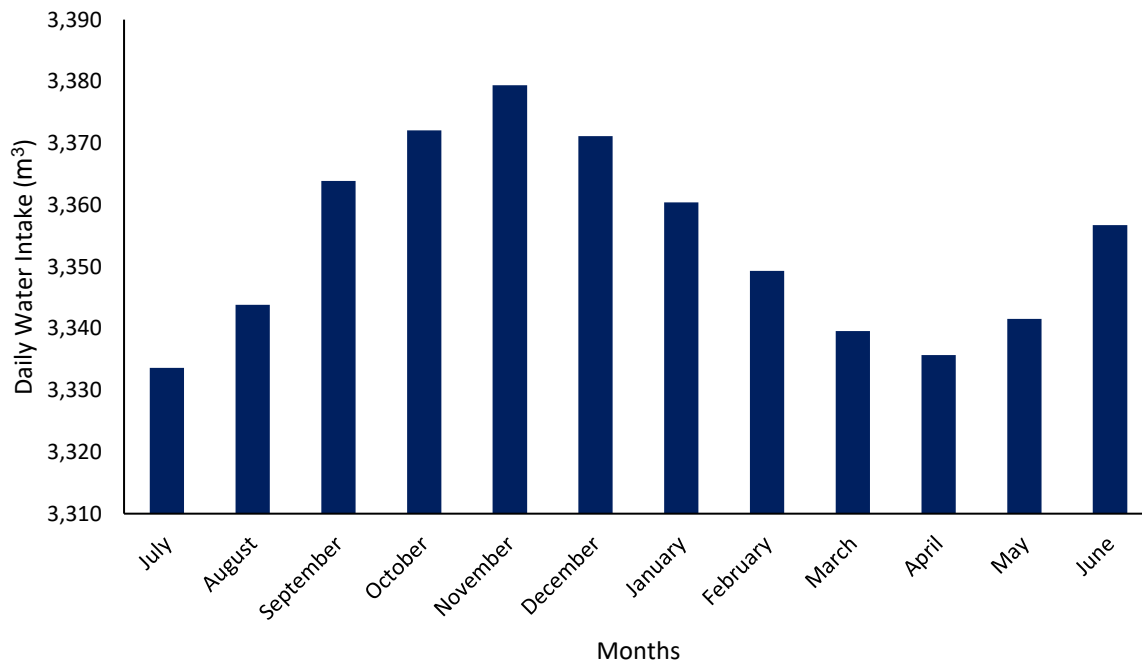
Number of Service Connections	Number of Metered Residential	Number of Metered Non-Residential	Number of Unmetered Residential	Number of Unmetered Non-Residential
Huntly				
3,253	2997	256	5	0
Ngaruawahia				
3,316	3139	177	22	0

Waikato District Average Daily water consumption is calculated as 190 l/p/d

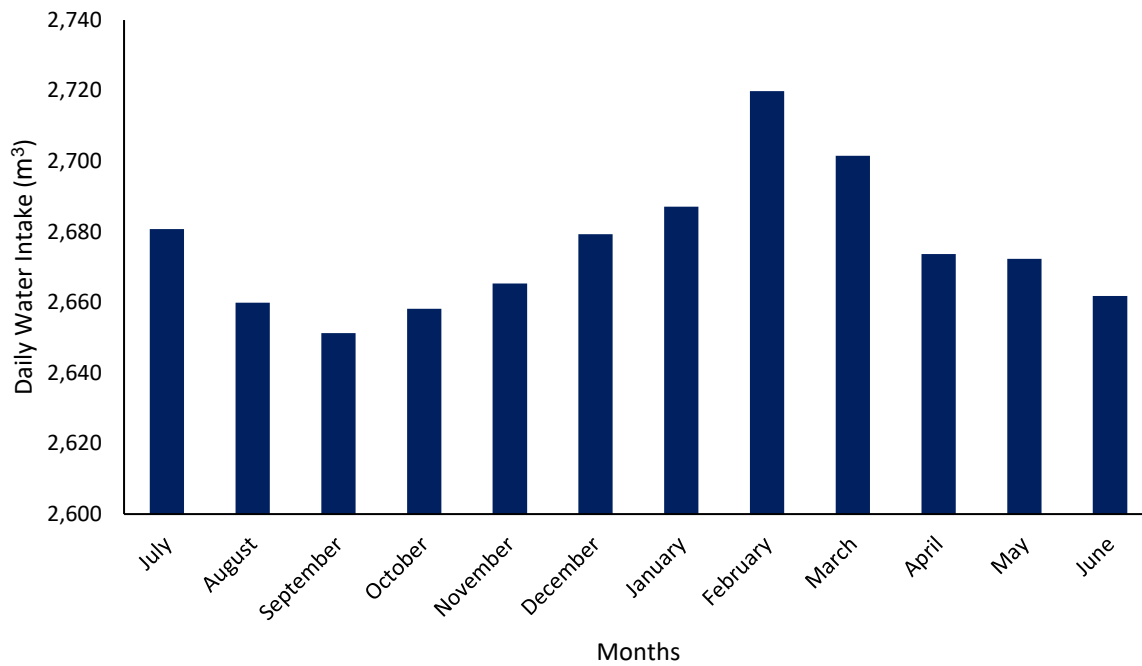
Peak Periods

The following graphs for Huntly and Ngaruawahia show the average daily take by month for 2022-2023 year. Due to increase in demand during summer (Dec – Mar) these months naturally dominate peak demand records.

Huntly Average of Total Daily Take (m³) 2023-2024



Ngaruawahia Average of Total Daily Take (m³) 2023-2024



High Volume Users

Huntly and Ngaruawahia high volume users (use greater than 15m³ per day) are listed below. This list is made up of mostly commercial properties with use ranging between 15m³ to 113m³ per day for Huntly and properties ranging between 118m³ and 289m³ for Ngaruawahia. With the district wide metering and high usage letters sent out this ensures high usage or loss is reviewed regularly and aware by owners.

Huntly Water Supply - Top Consumers (1 Jul 23- 30 Jun 24)				
Tariff	Total Consumption (m3)	Av. Daily (m3)	Customer Category	Note/Meter ID
RurHly	47281	129.54	Commercial (Rur)	15710983
RurHly	19584	71	Commercial (Urb)	22HB00610
UurHly	16405	45.25	CommTitle	08W712636A
RurHly	6584	17.46	InfraProp	21MC284213
ComHly	5989	16.54	ResUrbDwel	21MC276330
RurHly	5467	15.185	ResRurDwel	08M268515
RurHly	5430	15.085	Farmland	08M268514
RurHly	5311	14.75	Farmland	15MC201155
RurHly	3980	10.935	ResUrbDwel	I22LU146919

Ngaruawahia Water Supply - Top Consumers (1 Jul 23 - 30 Jun 24)				
Tariff	Total Consumption (m³)	Av. Daily (m³)	Customer Category	Note/Meter ID
ComNga	14,278	39.77	BusStdLUnt	20V700640
RurNga	11,082	30.785	ResRurDwel	13A017413
UrbNga	9,052	25.115	ResUrbDwel	10H701063
ComNga	6,036	34.49	BusStdDwel	1534007503
UrbNga	5,345	31.345	ResUrbDwel	15JU023702
UrbNga	5,313	14.66	ComUrb	1034006187
RurNga	5,193	14.765	ResRurDwel	14022071
UrbNga	4,409	25.19	EduPriSch	122LU147108

Water Allocation Progress Report for Huntly and Ngaruawahia was submitted to WRC on 07/05/2021 as required by condition 13 of RC136806. The next Water Allocation Progress Report is scheduled for completion in 2026.

AUTH123691.01.01 - Bed – structure

The consent holder is required to install signage to warn river users of the location and nature of the water intake. In 2022 vegetation was cleared from the Huntly WTP intake site and a new sign was erected at the Ngaruawahia WTP intake site. The following evidence was forwarded to WRC on 16/05/022.

- 20220121_Warning signage for the Huntly WTP intake screen
- 20220315_Warning signage for the Ngaruawahia WTP intake screen

APPENDIX A

Collected Data

Huntly

- Max Flow Rate (L/s)
- Average Flow Rate (L/s)
- Pump Hours
- Total Take (m³)

Ngaruawahia

- Max Flow Rate (L/s)
- Average Flow Rate (L/s)
- Pump Hours
- Total Take (m³)

APPENDIX B

Wai Comply Audit Report for Jan-March 2023

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 Comly for Audit.*

APPENDIX C

Calibration Certificates

RC 136806 condition 11 requires the consent holder to conduct verification on the water measuring system.

- i) At the written request of Waikato Regional Council
- ii) At a frequency of no less than five yearly; and
- iii) To the satisfaction of the Waikato Regional Council

Ngaruawahia raw water intake meter was last verified on 28/03/2024 and Huntly raw water intake meter on 09/04/2024.

APPENDIX D

Huntly-Ngaruawahia WTP Intake Velocity

RC 136806 conditions 8 requires the consent holder to provide evidence for the intake screen velocity to be less than 0.2 m/s. Please find Appendix D attached (Water Outlook Raw water velocity SCADA data). Huntly indicates a daily max of 0.08 m/s and Ngaruawahia indicates a daily max of 0.05 m/s.

APPENDIX E

Dive Reports

WDC Dive Surveys were completed by DeepDive Division in October 2023 and January 2024, reports attached as Appendix E to meet requirement for the RC 123691 compliance condition 8. Watercare intends to undertake dive surveys at approximately 6 monthly intervals.