

Assessing water take consent applications

Consent No. WAR 070109 [26177]

Category: Water Permit
- Groundwater take

Pursuant to Sections 105 and 108, and subject to all the relevant provisions of the Resource Management Act 1991 and any regulations made thereunder, a consent in respect of a natural resource is hereby granted to:

Name	
Address	
Term of consent	Effective: 13 July 2007 Expires: 30 September 2017
Purpose for which right is granted	Take groundwater for irrigation of up to 80 hectares of pasture.
Location	Cornwall Road, Masterton, at or about NZMS 260, T26: 2732430 - 6019981
Legal description of land	Sections 47, 48, Part Section 46, 50, Taratahi District, BLK VIII, Tiffin SD.
Volume/quantity/rate	The rate at which water is taken from bore 3J/173/4.2/I shall not exceed 689,472 m ³ per year, with a maximum pumping rate of 38 litres per second, on a continuous basis, for the term of this consent.
Conditions	as attached

For and on behalf of
WELLINGTON REGIONAL COUNCIL

Consent No. WAR170246 [34646]

Category: Water permit
Groundwater take

Pursuant to sections 104B and 108, and subject to all the relevant provisions of the Resource Management Act 1991 and any regulations made thereunder, a consent in respect of a natural resource is hereby granted to:

Name		
Address		
Duration of consent	Granted: 22 June 2017	Expires: 30 September 2027
Purpose for which right is granted	To take and use groundwater from bore T26/0669 for irrigation purposes	
Location	Cornwall Road at or about map reference NZTM 1822416.5458268	
Legal description of land	SECS 47 48 PT SECS 46 50 TARATAHI DIST BLK VIII TIFFIN SD Valuation No: 18160 016 02	
Water meter ID number	T26/0669	
Volume/Quantity/Rate	To take up to 396,000m ³ /year, at 3283 m ³ /day, at a maximum pumping rate of 38 litres/sec	

For and on behalf of
WELLINGTON REGIONAL COUNCIL

Allocating water

- New users vs. existing users

Water allocation calculator - RFP

Groundwater allocation

ConsentType	Groundwater Take		
Row Labels	Sum of TotalAnnualVolumeM3/Y	RFP allocation limit	RFP allocation %
Ahikouka	1,773,874	3,300,000	53.8%
Akatarawa	14,560	3,600,000	0.4%
Battersea	2,397,707	2,400,000	99.9%
Carterton	2,576,494	3,900,000	66.1%
Coastal	449,411	6,800,000	6.6%
East Taratahi 1	32,358	14,000,000	0.2%
East Taratahi 2	207,360	1,700,000	12.2%
Fernhill	990,165	4,700,000	21.1%
Greytown	3,287,188	20,000,000	16.4%

Surface water allocation

ConsentType	Surface Water Take		
Row Labels	Sum of MaxInstantaneousRateL/S	RFP allocation limit	RFP allocation %
Booths	97	100	97.0%
Dock	212	210	101.0%
Kopuaranga	125	125	100.0%
Lower_Mangatarere	118.5	140	84.6%
Lower_Ruamahanga	1369.5	1500	91.3%
Makahakaha	16.4	50	32.8%

rc_con_id1	ConsentType	RFPCatchment	RFPZone	TotalAnnualVolumeM3/Y	MaxInstantaneousRateL/S
20050	Groundwater Take		Tauherenikau	99000	15
20491	Surface Water Take	Upper_Mangatarere		491500	26.5
20540	Surface Water Take			21840000	800
20544	Surface Water Take			7280000	232
20548	Surface Water Take			15652000	50

Raw background data

Water allocation calculator - PNRP

Sum of M3/Y	Column Labels				PNRP	PNRP	
Row Labels	B	B/C	C	(blank) A	Grand Total	Allocation limit	% allocated
Dry RiverGW	192,798	234,768			427,566	650,000	65.8%
Fernhill TiffenGW			972,000		972,000	1,200,000	81.0%
HuangaruaGW	529,445	120,557			650,002	650,000	100.0%
LakeGW			6,584,837		6,584,837	6,750,000	97.6%
Lower HuttGW	31,574,923	298,306			31,873,229	36,500,000	87.3%
MangatarereGW	1,916,197		632,494		2,548,691	2,300,000	110.8%
MartinboroughGW			979,976		979,976	800,000	122.5%
OnokeGW			2,095,200		2,095,200	2,100,000	99.8%

Groundwater totals and raw background data

rc_con_id1	ConsentType	FreshwaterManagementUnit	GroundwaterCategory	M3/Y	TotalAnnualVolumeM3/Y	GroundwaterAllocationM3/Year	WeeklyAverageL/Sec	SurfaceWaterAllocationL/Sec	MaxInstantaneous
32859	Groundwater Take	TauherenikauGW	B	20,736.0	77760	20736		4.4	6.0
32860	Groundwater Take	OnokeGW	C	280,800.0	280800				26.0
32863	Groundwater Take	TauherenikauGW	B/C	259,200.0	259200				20.0
32873	Groundwater Take	LakeGW	C	594,000.0	594000				50.0
32881	Groundwater Take	Dry RiverGW	B	108,346.0	377344	108346		32.6	50.0
32882	Groundwater Take	LakeGW	C	348,667.0	348667				23.06
32883	Groundwater Take	LakeGW	C	232,875.0	232875				18.75
32885	Groundwater Take	MangatarereGW	B	473,472.0	1296000	473472		47.6	75.0
32886	Groundwater Take	Dry RiverGW	B	21,600.0	21600	21600		0	5.0

Sum of L/SEC	Column Labels				PNRP	PNRP
Row Labels	A	B	ST	Grand Total	Allocation limit	Allocation %
BoothsSW		12.1	97	109.1	25	436.4%
HuangaruaSW	44.33	35.4	12	91.73	110	83.4%
Hutt_LowerSW	3.08	507.49	66.4	576.97	2140	113.4%
Hutt_UpperSW			1850	1850	See above	See above
KapitiCoastSW	0.5			0.5	No limit	N/A
KopuarangaSW		25.1	125	150.1	180	83.4%
LakeWairarapaSW	313.5	85.9	1005.4	1404.8	1800	98.7%
MangaoneSW			24	24	45	53.3%

Surface water totals and raw data

rc_con_id1	ConsentType	FreshwaterManagementUnit	Category	L/SEC	TotalAnnualVolumeM3/Y	GroundwaterAllocationM3/Year	WeeklyAverageL/Sec	SurfaceWaterAllocationL/Sec	MaxInstantaneous
33316	Groundwater Take	Ruamahanga_MiddleSW	A	43	557280.0		43		43.0
33327	Groundwater Take	LakeWairarapaSW	A	12.5	162000		12.5		25
33354	Surface Water Take	ParkvaleSW	ST	12	155520.0				12.0
33356	Groundwater Take	Ruamahanga_UpperSW	A	13.2	176256.0		13.2		17.0
33377	Surface Water Take	ParkvaleSW	ST	15	194400.0				15.0
33378	Groundwater Take	BoothsSW	B	0	174312.0	174312		0	26.9
33382	Surface Water Take	ParkvaleSW	ST	19	246240.0				19.0

Existing users renewing their consents

- the plan allows for allocation to be granted provided it does not exceed whichever is greater of
 - (i) the maximum amount allocated by resource consents at the date the consent application is lodged, or
 - (ii) the allocation amounts in Tables 7.3-7.5

Schedule Q: Reasonable and efficient use criteria

Irrigation

- field validated model that reliably predicts annual irrigation volume within accuracy of 15%
- Must meet criteria of irrigation application efficiency of 80% and demand conditions that occur in nine out of ten years

Group or community water supplies

- Water management plan that addresses
 - a) the reasonable demand for water taking into account size (# of people) and different sectors that will use water
 - b) amount of water required for health needs of people and how water will be managed under restrictions
 - c) the effectiveness and efficiency of the distribution network

Water Races

- Information that identifies water race sections where efficiency can be improved plus include a timetable of investigations for improvement options

Other Uses

- Assessment of reasonable and efficient use, calculated in accordance with good management practices for efficient use of water or demonstrate that water is not being wasted

Field Validated Model - IrriCalc

IRRIGATION REASONABLE USE DATABASE

5 STEPS - TO GET THE IRRIGATION REQUIREMENTS INFORMATION YOU NEED FOR IRRIGATION PLANNING, CONSENTING AND DESIGN

IRRIGATION NEW ZEALAND **Ministry for Primary Industries** *Manatū Ahu Matua* **LGA** **AQUALINC** RESEARCH LIMITED

1 Enter the address or coordinates (latitude, longitude) of your farm and click 'Locate' or click on the map

-40.998 , 175.837 **Locate**



2 Select Crop: Pasture

3 Select Plant Available Water: (s) Most likely PAW in this area

4 Select Irrigation Method: Pivot

5 **Fetch Data**

Data

Farm Details		Plant Available Water Details			Irrigation Requirements		
Description		PAW(mm)	Indicative Likelihood	Area (hectares)		Per Hectare	Total Area
Latitude	-40.998	80 ▾	49.2	84	System Capacity	0.61 (l/s/ha)	51.24 (l/s)
Longitude	175.637	▾		0	System Capacity	5.3 (mm/day)	
Council	GreaterWellington	▾		0	Daily Volume	53 (m ³ /ha)	4,452 (m ³)
Climate Site ID	P193133	▾		0	7 Day Volume	(m ³ /ha)	(m ³)
Distance to Climate Site (km)	2.75	▾		0	28 Day Volume	(m ³ /ha)	(m ³)
Rainfall (mm)	919		Total area =	84	90% ile Annual Volume	4,725 (m ³ /ha)	396,900 (m ³)

These estimates of irrigation requirements are based on the assumption that the crop you selected can be grown and irrigated at the site you have selected. Constraints such as topography and crop-specific climate requirements are not taken into account.

Irrigation requirements may be less than reported here if your soils are poorly drained or the water table is close to the soil surface.

[Detailed Results](#)

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[Background Information](#)

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Example of Schedule Q in use

- Consent processed 2007:

3. The total volume of groundwater abstracted from well 3J/173/4.2/l shall not exceed a total of 689472 m³ per year, at a rate not exceeding 38 litres per second, on a continuous basis, for the term of this consent.

- Consent renewed 2017

3. The rate at which water is taken from bore T26/0669 (3J/173/4.2/l) at or about approximate map reference NZTM: 1822416.5458268, shall not exceed 396,000m³/year, at 3283m³/day at a maximum pumping rate of 38 litres/second.

Note: This equates to 24 hours/day and 120 days/year based on the maximum pumping rate.

Policy links to Schedule Q

- Policy P118: Reasonable and efficient use
- Policy P119: Unused water

Irrigation Efficiency

Centre Pivot - Efficiency range 85 - 94 %



Surface Water intake



Groundwater take – headworks and bore



Travelling Gun – Efficiency range 60 – 75 %



Schedule P: Classifying & managing groundwater and surface water connectivity

- Four different 'categories' of water

Surface Water (SW)	
Category A groundwater	Groundwater directly connected to SW
Category B groundwater – <ul style="list-style-type: none"> weekly average rate of take of > 5L/sec and represents a flow depletion from local surface waters of >60% of the rate of take or >10L/sec 	
Category B groundwater – <ul style="list-style-type: none"> balance of above and any take with weekly average abstraction <5L/sec 	Groundwater not directly connected to SW
Category C groundwater	

Classifying Categories

Figure 7.2: Upper Ruamāhanga catchment - rivers and groundwater (0-20m deep) in Tables 7.3 and 7.5

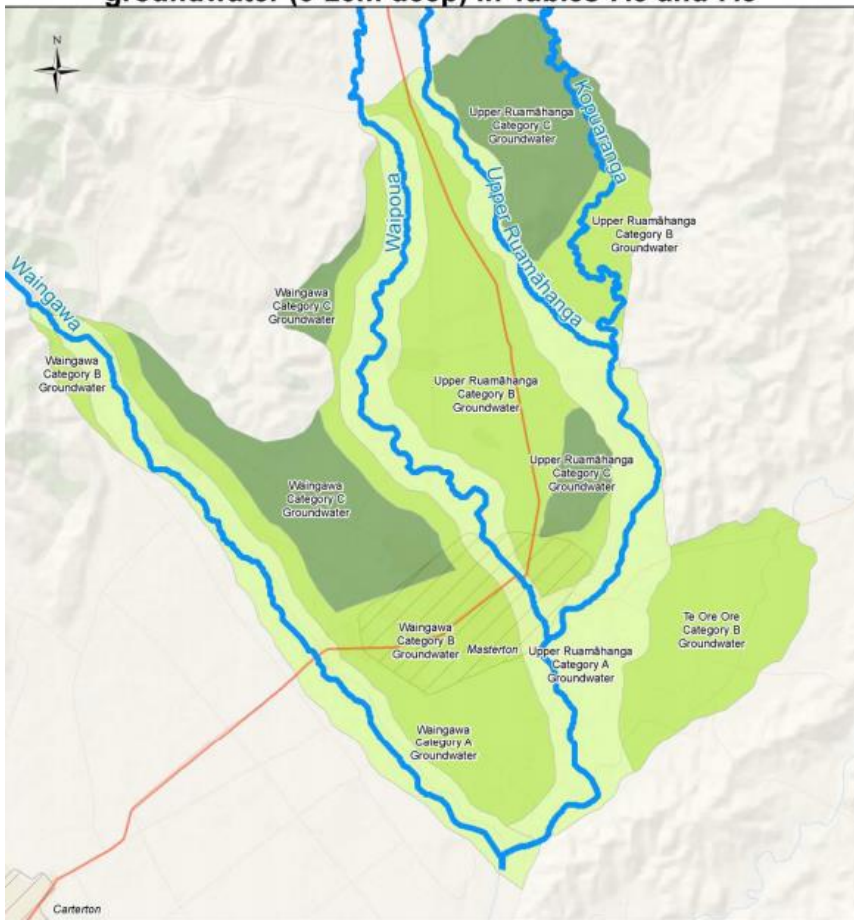


Figure 7.3: Upper Ruamāhanga - groundwater (20-30 metres deep) in Tables 7.3 and 7.5

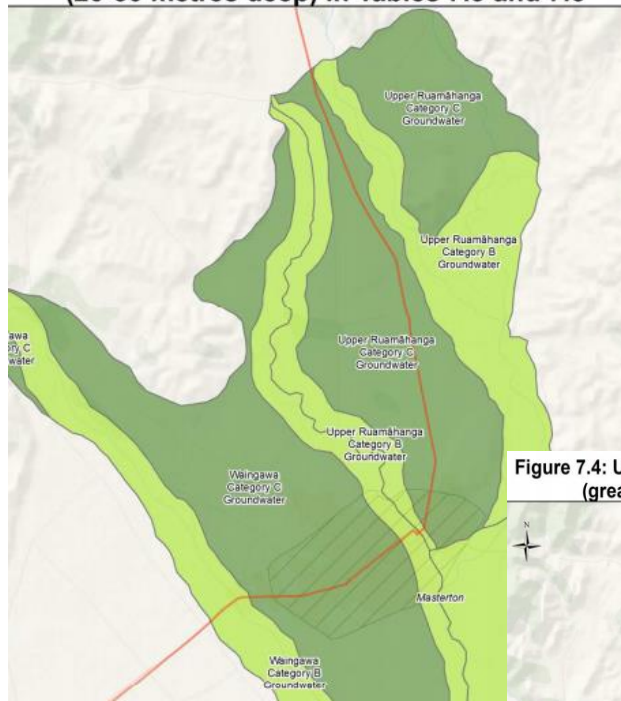
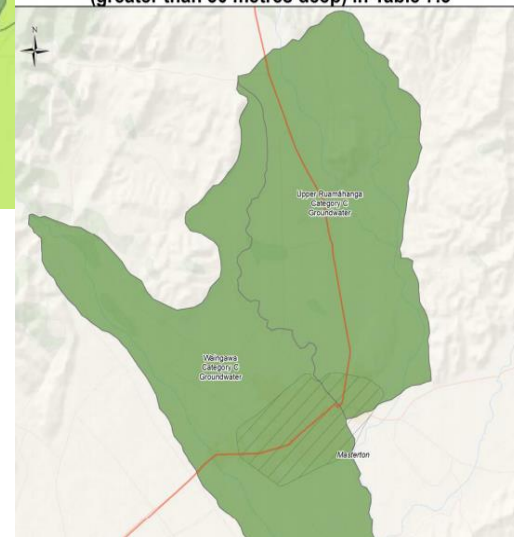


Figure 7.4: Upper Ruamāhanga catchment - groundwater (greater than 30 metres deep) in Table 7.5



This version of the map is not complete. The version of this map available online through the online web map viewer shows the complete, detailed information on a GIS overlay that is not shown on this hard copy. The online version is available on the Council's website at <http://mapping.gw.govt.nz/gwrc/> (select theme Proposed Natural Resources Plan 2015) and can be accessed from the Council offices or public library.



greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

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Topographic and Cadastral LINZ & CoreLogic LIF

Policy P115 – Authorising takes below minimum flows and lake levels

The take and use of water may be authorised below minimum flows or lake levels established in whatua chapters of the Plan (chapters 7-11) for:

- (a) *the health needs of people as part of group drinking water supply or community drinking water supply, and*
- (b) *the water used by industry from a community drinking water supply for a period of seven years from the date of public notification of the Proposed Natural Resources Plan (31.07.2015), and*
- (c) *permanent horticultural or viticultural root crops (excluding pasture species, animal fodder crops and maize) for the sole purpose of avoiding their death provided:*
 - (i) *the water shall only be available five days (120 hours) after minimum flow cessation take restrictions are imposed and where no practical alternative sources of water are available or accessible, and*
 - (ii) *the amount of water needed shall be determined following consideration of the extent and type of crop(s) and the risk of crop death in drought situations, and*
- (d) category A groundwater which shall be required to reduce the take by 50% of the amount consented above minimum flows,
- (e) *category B groundwater (directly connected), category B groundwater (not directly connected) and category C groundwater.*

Typical condition to reflect (d)

When the flow in the Waingawa River at Kaituna monitoring site falls below 1900 litres/second the consent holder shall:

- Restrict the abstraction to a cumulative total of 12 hours/day; and
- Not take water between 8am and 5pm (in order to minimise evapotranspiration losses); unless otherwise agreed to the satisfaction of the Manager, Environmental Regulation.

Anomalies

- P115/Rule R.R1: the take or use below min flow – no exceptions provided for e.g. ‘back flow’ consents and water races
- Rule R.R1: Industry water not supplied below minimum flow after 7 years
- Surface water takes vs. Category A groundwater takes – policy framework gives no discretion for restriction levels

Group or community water supplies – Schedule Q

- Difficult to put a number on the health needs of people

Conclusions

- pNRP provides more tools for water to be 'clawed back' though attrition than the RFP
- pNRP allows us to more accurately categorise groundwater takes and their connection to surface water and thereby restrict them accordingly (but could still provide further discretion) where as the RFP was silent on this issue