Plan Change 4B
(Groundwater allocation)

Regional Plan: Water for Otago

Operative version

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1 September 2015

Otago Regional Council

This is a true and correct copy of Plan Change 4B to the Regional Plan: Water for Otago which was approved by the resolution of the Otago Regional Council on Wednesday, 5 August 2015.

Plan Change 4B to the Regional Plan: Water is deemed to be operative on Tuesday, 1 September 2015.

The Common Seal of the Otago Regional Council was hereto affixed pursuant to the resolution of the Council passed on Wednesday, 5 August 2015 in the presence of:

OTAGO REGIONAL COUNCIL
Common Seal

Stephen Woodhead
Chairperson

Peter Bodeker
Chief Executive

Table of Contents

Policy 6.4.10A (page 6-27 of Plan*) **2**

Rule 12.0.1.3 (page 12-2 of Plan) **4**

Rule 12.2.3.2A (page 12-20 of Plan) **5**

Rule 12.2.3.4 (page 12-21 of Plan) **5**

Method 15.8.3.1 (page 15-13 of Plan) **8**

Schedule 4 (page 20-65 of Plan) **12**

Glossary (page 21-1 of Plan) **14**

Minor and consequential changes **15**

* Regional Plan: Water for Otago operative as at 1 May 2014.

6

Water Quantity

6.1 to 6.3 *[Unchanged]*

6.4 Policies applying to the management of the taking of water

6.4.0 to 6.4.10 *[Unchanged]*

Groundwater Takes

6.4.10A1 Enable the taking of water allocated as groundwater by Policy 6.4.1A, by:

(a) Determining the volume available for taking as the maximum allocation limit less the assessed maximum annual take for an aquifer calculated using Method 15.8.3.1; and

(b) Applying aquifer restrictions where specified in Schedule 4B.

6.4.10A2 Define the maximum allocation limit for an aquifer as:

(a) That specified in Schedule 4A; or

(b) For aquifers not in Schedule 4A, 50% of the mean annual recharge calculated under Schedule 4D.

6.4.10A3 For any aquifer, avoid allocating beyond the maximum allocation limit, unless the water:

(a) Is for a non-consumptive take; or

(b) Has been previously taken under a resource consent; or

(c) Is for a new, consumptive take of a temporary nature that is necessary for construction or repair of a structure; or

(d) Is in a rock formation having an average hydraulic conductivity of less than 1 x 10^{-5} metres per second, which is not an aquifer mapped in the C-series of this Plan, and is taken in connection with mineral extraction activities.

6.4.10A4 Where an application is received to take groundwater by a person who already holds a resource consent to take that water, grant no more water than has been taken under the existing consent, in at least the preceding five years, when:

(a) The take is from an aquifer where the assessed maximum annual take exceeds its maximum allocation limit; or

(b) The take results in the assessed maximum annual take of an aquifer exceeding its maximum allocation limit,

except in the case of a registered community drinking water supply where an allowance may be made for growth that is reasonably anticipated.

6.4.10A5 In managing the taking of groundwater, avoid in any aquifer:

(a) Contamination of groundwater or surface water; and

(b) Permanent aquifer compaction.

6.4.10AB to 6.7.8 *[Unchanged]*

12

Rules: Water Take, Use and Management

12.0 Applications for taking water

12.0.1 Prohibited activity: No resource consent will be granted

12.0.1.1 *[unchanged]*

12.0.1.2 *[unchanged]*

12.0.1.3 The application to take groundwater for a consumptive use by a person who does not hold the existing resource consent to take that water, from an aquifer identified in Schedule 4A, where the assessed maximum annual take:

(i) Exceeds the aquifer's maximum allocation limit; or

(ii) Would exceed the aquifer's maximum allocation limit as a result of this take,

is a ***prohibited*** activity, unless all of the water taken:

(1) Is allocated as surface water under Policy 6.4.1A; or

(2) Is taken for temporary dewatering at a site for construction or repair of a structure.

The Otago Regional Council will use its website www.orc.govt.nz to notify an up-to-date allocation status for aquifers, showing how current allocation compares to the scheduled or default maximum allocation limit (MAL) and will, upon request, advise the applicant of the aquifer's current allocation status before any application is made.

12.1 to 12.2.1A.2 *[unchanged]*

12.2.1A.3 The taking of groundwater for a consumptive use by a person who does not hold the existing resource consent to take that water, from an aquifer not identified in Schedule 4A, where the assessed maximum annual take:

(i) Exceeds the aquifer's maximum allocation limit; or

(ii) Would exceed the aquifer's maximum allocation limit as a result of this take,

is a ***non-complying*** activity, unless all of the water taken:

(1) Is allocated as surface water under Policy 6.4.1A; or

(2) Is taken for temporary dewatering at a site for construction or repair of a structure; or

(3) Is taken from a rock formation having an average hydraulic conductivity of less than 1×10^{-5} metres per second, which is not an aquifer mapped in the C-series of this Plan, and is taken in connection with mineral extraction activities.

The Otago Regional Council will use its website www.orc.govt.nz to notify an up-to-date allocation status for aquifers, showing how current allocation compares to the scheduled or default maximum

allocation limit (MAL) and will, upon request, advise the applicant of the aquifer's current allocation status before any application is made.

12.2.2 to 12.2.3.1A *[unchanged]*

12.2.3.2A Except as provided for by 12.0.1.3, 12.2.1A.3 and 12.2.3.1A, the taking and use of groundwater is a ***restricted discretionary*** activity, if:

(a) The volume sought is within:

(i) The maximum allocation limit identified in Schedule 4A; or

(ii) 50% of the mean annual recharge calculated under Schedule 4D, for any aquifer not identified in Schedule 4A; or

(iii) That volume specified in an existing resource consent where the assessed maximum annual take of the aquifer exceeds its maximum allocation limit; and

(b) It is subject to any aquifer restriction identified in Schedule 4B; and

(c) Where the rate of surface water depletion is greater than 5 l/s, as calculated using Schedule 5A:

(i) Primary surface water allocation is available; and

(ii) For the Waitaki catchment, allocation to activities set out in Table 12.1.4.2 is available.

The matters to which the Otago Regional Council has restricted the exercise of its discretion are set out in Rule 12.2.3.4.

…

12.2.3.4 Restricted discretionary activity considerations

In considering any resource consent for the taking and use of groundwater in terms of Rule 12.2.3.2A, the Otago Regional Council will restrict the exercise of its discretion to the following:

(i) The maximum allocation limit for the aquifer; and

(iA) The assessed maximum annual take for the aquifer; and

(ii) The mean annual recharge of the aquifer; and

(iii) The effect of the take on the hydrodynamic properties of the aquifer and the vulnerability of the aquifer to compaction; and

…

15
Methods other than Rules

15.1 to 15.8.2.2 *[unchanged]*

15.8.3 Methodology for calculating assessed maximum annual take for groundwater

15.8.3.1 The assessed maximum annual take of groundwater from any aquifer for the purposes of Policy 6.4.10A1(a), will be the sum of:

(a) The annual volume specified on consents to take groundwater from that aquifer; and

(b) Where a consent does not specify an annual volume, it is calculated using the instantaneous, daily, weekly or monthly limits specified as shown below:

(i) Where the purpose of use includes irrigation, convert the consent limit as follows:

(1) Where a daily or a monthly limit is specified:

Consent Limit	Purpose of use irrigation
Daily	Multiply by 90
Monthly	Multiply by 6

Note: A 90 day limit is equivalent to irrigating 150 days at 60% of the maximum take rate. A 6 month limit is representative of an annual irrigation season.

Where both limits are specified, use the limit which yields the smaller volume.

(2) Where no daily or monthly limit is specified:

Consent Limit	Purpose of use irrigation
Instantaneous (e.g. litres/second or m^3/hour)	Convert to a daily volume assuming taking of 12 hours per day, and then multiply by 90.
Weekly	Convert to a monthly volume, by multiplying by 4.3, and then multiplying by 6.

Where both limits are specified, use the limit which yields the smaller volume.

(3) If a consent specifically restricts taking over different periods, use the quantity and time limits specified on the consent.

(ii) Where the only purpose of use is frost-fighting, convert any consent limit to a 20 day volume.

(iii) Except as provided for by (i) and (ii), convert the consent limit to a 12-month volume.

(c) less any quantity specified in a consent as non-consumptive.

The assessed maximum annual take sums only those consents allocated as groundwater under Policy 6.4.1A(c) and (d).

Principal reasons for adopting

This method is adopted to assess the annual volume of take from an aquifer, and so assist in determining the remaining allocation available from an aquifer.

20
Schedules

4. Schedule of the allocation and restriction regime for groundwater

4A to 4C *[unchanged]*

4D Matters to be considered in calculating mean annual recharge

For any aquifer not included in Schedule 4A the setting of the maximum allocation limit will involve calculating the mean annual recharge of the aquifer (see Policy 6.4.10.A2(b)). The mean annual recharge is a statistical value based on the past climate, aquifer hydrology, soil properties, irrigation practice and other factors with direct influence over groundwater recharge.

This schedule sets out the matters to which consideration will be given when calculating the mean annual recharge of an aquifer.

4D.1 Sources of aquifer recharge

Sources of aquifer recharge may include:

(a) Land surface recharge due to rainfall excess.
(b) Land surface recharge due to irrigation excess, which should be based on the application of irrigation at an efficient rate.
(c) Land surface recharge due to intermittent runoff flowing over the land surface.
(d) Surface water recharge due to river infiltration.
(e) Surface water recharge due to wetland, pond or lake infiltration.
(f) Through-flow from any other aquifer.

The mean annual recharge can arise from a single recharge source or a combination of recharge sources, in which case the mean annual recharge is based on the combined recharge from all relevant sources.

4D.2 Methods for calculating aquifer recharge

Methods for calculating aquifer recharge from various recharge sources may include:

(a) Daily soil moisture balance for the calculation of land surface recharge.
(b) Daily soil moisture balance for calculation of irrigation recharge.
(c) Differences between surface water flows measured at different flow monitoring sites for the determination of bed infiltration passing to an aquifer.
(d) Direct measurement of land surface recharge using subsoil measuring devices such as lysimeters.
(e) Calibrated recharge estimation using unsaturated zone matric potential or saturated zone water table height fluctuation.
(f) Environmental tracers such as isotopes (radioactive or stable) and conservative anions.
(g) Groundwater computer modelling, especially where calibration and parameter estimation can be used to constrain initial estimates of surface water contributions and land surface recharge.

21
Glossary

Allocation limit	The maximum flow or quantity of water in a water body, which is able to be allocated to resource consents for taking.
Assessed maximum annual take	The sum of the takes of groundwater as calculated by Method 15.8.3.1.
Maximum allocation limit	The quantity of groundwater as established under Policy 6.4.10A2.
Mean annual recharge	The quantity of groundwater recharge as calculated by Schedule 4D.
Non-consumptive take[+]	A take is non-consumptive when: (1) The same amount of water is returned to the same water body at or near the location from which it was taken; and (2) There is no significant delay between the taking and the returning of the water. [+] as defined in the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010
Registered community drinking water supply	A drinking water supply, which is registered under Section 69J of the Health Act and serves a community of more than 25 people for more than 60 days a year.

Table of minor and consequential changes

<table>
<tr><th>Plan Provision</th><th>Detail of proposed change</th></tr>
<tr><td>Page numbers</td><td>Update page numbers.</td></tr>
<tr><td>Footers</td><td>Change footer to read “Regional Plan: Water for Otago (Updated to 1 September 2015)”.</td></tr>
<tr><td>Title page</td><td>Change the date to read “Updated to 1 September 2015”.</td></tr>
<tr><td>ISBN number</td><td>Obtain new ISBN numbers for Regional Plan: Water for Otago.</td></tr>
<tr><td>Chronicle of key events</td><td>Add the following to the end of table:
<table>
<tr><th>Key event</th><th>Date notified</th><th>Date decisions released</th><th>Date operative</th></tr>
<tr><td>Plan Change 4B (Groundwater allocation) to the Regional Plan: Water</td><td>17 May 2014</td><td>13 December 2014</td><td>1 September 2015</td></tr>
</table></td></tr>
<tr><td>Table of contents [on page viii]</td><td>Update page numbers.

Reference to Maximum Allocation Volume:
Maximum Allocation Limit;

Add the following:
4D Matters to be considered in calculating maximum annual recharge 20.67</td></tr>
<tr><td>Table of contents [on page 20-2]</td><td>Reference to Maximum Allocation Volume:
Maximum Allocation Limit;

Add the following:
4D Matters to be considered in calculating maximum annual recharge 20.67</td></tr>
<tr><td>section 1.4</td><td>Proposed Plan Change 4A builds on the groundwater management system of taking water within a maximum allocation limit, established…

Proposed Plan Change 4B (Groundwater allocation) clarifies groundwater allocation provisions. It was notified on 17 May 2014 and a total of 16 submissions and 8 further submissions were received. Following the hearing, decisions on submissions received were released on 13 December 2014. Plan Change 4B was made operative on 1 September 2015.</td></tr>
</table>

<table>
<tr><td>Index to policies in 6.4; References to policies in Schedules and in map index pages</td><td>Make consequential amendments to Policy numbers in Plan and map references</td></tr>
<tr><td>Policy 6.4.10.AC</td><td>Both references to maximum allocation volume:

maximum allocation limit</td></tr>
<tr><td>Schedule 3A: Schedule of human uses of particular aquifers</td><td>Correct the following incorrect map number for the Papakaio Aquifer:
<table>
<tr><th>Aquifer</th><th>Map</th><th>Values</th></tr>
<tr><td>Lower Waitaki Plains Aquifer</td><td>C9
C10</td><td>– Human consumption without treatment
– Stock drinking water supply and farm dairy water.</td></tr>
<tr><td>Papakaio Aquifer</td><td>C9a</td><td>– Irrigation</td></tr>
<tr><td>North Otago Volcanic Aquifer</td><td>C10</td><td>– Irrigation</td></tr>
</table></td></tr>
<tr><td>Schedule 4</td><td>All references to Maximum Allocation Volume:
Maximum Allocation Limit</td></tr>
<tr><td>Schedule 4B</td><td>Ettrick Basin: Calder Bore should read “Cemetery Bore”.</td></tr>
<tr><td>Plan Maps: Map C16</td><td>Delete every reference to Kuriwao Basin Aquifer. There is no aquifer at this location.</td></tr>
</table>