

# **Fitzroy Basin**

## **Dawson Valley Water Supply Scheme Resource Operations Licence Operations Manual**

**October 2018**

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# Chapter 1 Preliminary

## 1 Short title

- (1) This operations manual may be cited as the Dawson Valley Water Supply Scheme Resource Operations Licence Operations Manual.
- (2) Reference in this document to 'this manual' means the Dawson Valley Water Supply Scheme Resource Operations Licence Operations Manual.

## 2 Interpretation of words used in this manual

The dictionary in attachment 1 defines particular words used in this manual.

## 3 Water supply scheme

The extent of the Dawson Valley Water Supply Scheme is defined in schedule 2 of the Water Plan (Fitzroy Basin) 2011.

## 4 Sub-schemes within the Dawson Valley Water Supply Scheme

- (1) The sub-schemes within the Dawson Valley Water Supply Scheme are—
  - (a) the Upper Dawson sub-scheme; and
  - (b) the Lower Dawson sub-scheme.

# Chapter 2 Operating rules

## 5 Operating levels of storages

- (1) The minimum operating levels and nominal operating levels for Glebe Weir, Theodore Weir, Moura Weir and Neville Hewitt Weir are specified in table 1.
- (2) The licence holder may only release supplemented water from a storage if the release is necessary to—
  - (a) supply water for a water allocation;
  - (b) maintain a downstream storage at or above its minimum operating level;
  - (c) meet the minimum waterhole level requirements in section 6; and
  - (d) comply with the environmental management rules on the resource operations licence.
- (3) Despite subsection (2), the licence holder may only release or supply supplemented water from a storage if the water level in that storage is above its minimum operating level, unless authorised by the chief executive.

**Table 1 – Operating levels of storages**

Storage	Minimum operating level (m AHD)	Nominal operating level (m AHD)
Glebe Weir	EL 160.66	Not applicable.
Gyranda Weir	EL 150.08	EL 152.12
Theodore Weir	EL 126.95	EL 132.73
Moura Weir	EL 97.0	EL 102.55
Neville Hewitt Weir	EL 72.53	Not applicable.

## 6 Minimum levels in waterholes

- (1) Unless otherwise authorised by the chief executive, supplemented water and treated CSG water may be taken in the following circumstances—
  - (a) from the waterhole known locally as Boolburra waterhole (nominally AMTD 18.37 km on the Dawson River), if the water level in Neville Hewitt Weir is—
    - (i) above EL 77.0 m AHD—the water must not be taken when the waterhole level is more than 0.5 metres below its cease to flow level; or
    - (ii) below EL 77.0 m AHD—the water must not be taken when the waterhole level is more than 1.2 metres below its cease to flow level; and
  - (b) another waterhole other than that named in subsection (a) is—
    - (i) within the extent of this water supply scheme; and
    - (ii) below 0.5 metres from its cease to flow level.

## 7 Diversions to Moura Offstream Storage

- (1) Water may be diverted by the licence holder to the Moura Offstream Storage at a rate not exceeding 173 ML/day, subject to the following flow conditions—
  - (a) for the duration of the Upper Dawson first post-winter flow management period activated under the water management protocol—the flow passing Moura Weir is more than 2592 ML/day; and

- (b) at other times—the flow passing Moura Weir is more than 432 ML/day.
- (2) Treated CSG water may be diverted by the licence holder to Moura Offstream Storage at any time.
- (3) The licence holder must implement the elevated flow condition described in subsection (1)(a) within 24 hours, if the Dawson first post-winter flow management period is activated before 1 October.

# Chapter 3 Water sharing rules

## 8 Definitions for Chapter 3

In this chapter—

**Lower Dawson sub-scheme**, the extent of the Dawson River from the effective upstream limit of Neville Hewitt Weir (AMTD 107 km) to the downstream limit of Boolburra waterhole (AMTD 18.37 km).

**unused water** means the volume of water not taken under section 17.

**Upper Dawson sub-scheme**, the extent of the Dawson River from the upstream limit of Glebe Weir (AMTD 356.5 km) to the effective upstream limit of Neville Hewitt Weir (AMTD 107 km).

## 9 Announced allocations—General

- (1) The water year is from 1 October to 30 September.
- (2) The licence holder must—
  - (a) set an announced allocation for water allocations belonging to the high, medium and medium A priority groups to take effect on the first day of each water year;
  - (b) following the commencement of a water year—
    - (i) if the announced allocation percentage is less than 100 per cent—recalculate the announced allocation—
      - (A) within two weeks after a major inflow occurs; and
      - (B) within five business days of the first calendar day of each quarter for the water year, unless a major inflow has occurred within the previous two weeks.
    - (ii) reset the announced allocation—if a recalculation indicates that the announced allocation would—
      - (A) increase by five or more percentage points; or
      - (B) increase to 100 per cent; and
  - (c) make public details of the announced allocation, including parameters used in determining the announced allocations, within five business days of setting or resetting an announced allocation.
- (3) Despite section 10, subsection (1) and section 11, subsection (1), the announced allocations that are set must—
  - (a) not be less than zero; and
  - (b) not be reduced during the water year.

## 10 Announced allocation for the Upper Dawson sub-scheme

- (1) The announced allocation that is set for the Upper Dawson sub-scheme must be—
  - (a) for the medium priority group—the lesser of—

- (i) the announced allocation calculated for the medium priority group in the Upper Dawson sub-scheme using the formula under section 12 rounded to the nearest per cent; and
  - (ii) 100 per cent;
  - (b) for the medium A priority group—the lesser of—
    - (i) the announced allocation calculated for the medium A priority group in the Upper Dawson sub-scheme using the formula under section 12 rounded to the nearest per cent; and
    - (ii) 100 per cent; and
  - (c) for the high priority group—
    - (i) if the announced allocation for both the medium and medium A priority groups in the Upper Dawson sub-scheme is—
      - (A) greater than zero—100 per cent; or
      - (B) zero—100 per cent and restrictions under section 16 may apply.
- (2) Despite subsection (1), the licence holder may set the announced allocation for medium and medium A priority water allocations in the Upper Dawson sub-scheme to exceed 100 per cent to supply treated coal seam gas water, taking into account the projected treated coal seam gas water availability.

## 11 Announced allocation for the Lower Dawson sub-scheme

- (1) The announced allocation that is set for the Lower Dawson sub-scheme must be—
- (a) for the medium priority group—the lesser of—
    - (i) the announced allocation calculated for the medium priority group in the Lower Dawson sub-scheme using the formula under section 13 rounded to the nearest per cent; and
    - (ii) 100 per cent; and
  - (b) for the high priority group—
    - (i) if the announced allocation for the medium priority group in the Lower Dawson sub-scheme is—
      - (A) greater than zero—100 per cent; or
      - (B) zero—100 per cent and restrictions under section 15 may apply.

## 12 Calculation of announced allocation—Upper Dawson sub-scheme

- (1) The resource operations licence holder must calculate the announced allocation for water allocations belonging to the medium A and medium priority groups using the formula—

$$(AA_m \times MPA) + (AA_{ma} \times MAPA) = (UV + IN + INCSG - HPA - RE - TOL - UCSG + DIV - VIWY)$$

- (a) Where—
- (i) If  $AA_{ma} = < 20\%$ ,  $AA_m = 0\%$
  - (ii) If  $AA_{ma} = > 20\%$  and  $< 100\%$ ,  $AA_m = AA_{ma} - 20\%$
  - (iii) If  $AA_m = \geq 80\%$ ,  $AA_{ma} = 100\%$
- (2) The parameters for the formula described in subsection (1) are defined in table 2.



### 13 Calculation of announced allocation—Lower Dawson sub-scheme

- (1) The licence holder must calculate the announced allocation for water allocations belonging to the medium priority using the formula—

$$AA_m = \frac{(UV+IN-HPA-RE-TOL+DIV-VIWY) \times 100}{MPA}$$

- (2) The parameters for the formula described in subsection (1) are defined in table 2.

**Table 2 – Parameters for calculation of announced allocation**

Parameter	Definition
AA <sub>m</sub>	The announced allocation for water allocations belonging to the medium priority group in a sub-scheme.
AA <sub>ma</sub>	The announced allocation for water allocations belonging to the medium A priority group in the Upper Dawson sub-scheme.
MPA	Medium priority allocations—the sum of the nominal volumes for all water allocations belonging to the medium priority group in a sub-scheme.
MAPA	Medium A priority allocations—the sum of the nominal volumes for all water allocations belonging to the medium A priority group in the Upper Dawson sub-scheme.
HPA	High priority allocations—the sum of the nominal volumes for all water allocations belonging to the high priority group in a sub-scheme.
DIV	<p>Diversions—the sum of the diversions for all water allocations in a sub-scheme during the current water year.</p> <ul style="list-style-type: none"> <li>In the Lower Dawson sub-scheme—DIV is the volume of supplemented water diversions for all water allocations in the sub-scheme during the current water year, excluding any water taken in the current water year that had been carried over.</li> <li>In the Upper Dawson sub-scheme— DIV is the volume of supplemented water diversions for all water allocations in the sub-scheme during the current water year, excluding any water taken in the current water year that had been carried over.</li> </ul>
UV	<p>Useable volume (UV) for a storage, is the volume of stored supplemented water that can be used to supply water allocations through to the end of a water year and is calculated as—</p> $UV = ASV - DS$ <p>Where—</p> <p><b>Adjusted storage volume (ASV)</b> means the storage volume, in megalitres, equating to the current storage level adjusted for the projected storage loss (SL).</p> <p><b>Projected storage loss (SL)</b> means the combined evaporation and seepage losses, in megalitres, that are expected to occur from the storages through to the end of the water year.</p> <p><b>Dead storage volume (DSV)</b> means the volume of water, in megalitres, that cannot be released or used from the storage under normal operating conditions.</p> <p>For the purposes of this section—</p> <ul style="list-style-type: none"> <li>UV for the Upper Dawson sub-scheme is the sum of the useable volumes for Glebe Weir, Gylanda Weir, Theodore Weir, Moura offstream storage and Moura Weir.</li> <li>UV for the Lower Dawson sub-scheme is the useable volume for Neville Hewitt Weir.</li> </ul>

Parameter	Definition
	<ul style="list-style-type: none"> <li>Evaporation and seepage is specified in millimetres for each month in table 3 for each of the sub-schemes.</li> <li>To determine the projected storage loss (SL), the value next to the current month is multiplied by the current surface area of the storage. The storage loss for each summed to give the total storage loss.</li> <li>DSV is specified for each of the storages in attachment 1 of the resource operations licence.</li> <li>Storage volumes are derived from the relevant storage volume/level curve referenced in attachment 1 of the resource operations licence.</li> </ul>
IN	Inflow—the allowance for natural inflows used in the calculation of the announced allocation. The inflows to be used are specified in table 4. The value which must be used for inflows is the value in the table for the month in which the calculation is undertaken.
RE	Reserve—the volume reserved for supplying high priority allocations in future years derived from table 5.
TOL	<p>Transmission operating loss—the allowance for the expected instream losses associated with the supply of water allocations over the remainder of the water year and is calculated as—</p> <p>Upper Dawson sub-scheme—</p> $TOL = \frac{TOL_1 \times (MPA + MAPA + HPA - DIV)}{(MPA + MAPA + HPA)}$ <p>Lower Dawson sub-scheme—</p> $TOL = \frac{TOL_2 \times (MPA + HPA - DIV)}{(MPA + HPA)}$ <p>Where—</p> <ul style="list-style-type: none"> <li>TOL<sub>1</sub> is derived from table 6 using linear interpolation of the announced allocation for the medium priority group.</li> <li>TOL<sub>2</sub> is derived from table 7 using linear interpolation of the announced allocation for the medium priority group.</li> </ul>
VIWY	Net Carryover volume—the sum of the available carryover volumes for a sub-scheme determined under section 16.
INCSG	The projected inflow of treated CSG water to the scheme, based on production estimates of treated CSG water, which is available for supplemented take.
UCSG	Unsupplemented use of treated CSG water (UCSG), means the sum of the water used during the current water year under the licence. This water is not available for supplemented take.

**Table 3 – Projected storage losses (mm)**

Month in which announced allocation is calculated	Upper Dawson sub-scheme (mm)	Lower Dawson sub-scheme (mm)
October	990	990
November	990	990
December	990	990
January	990	990
February	990	990
March	815	815
April	645	645
May	515	515
June	420	420
July	340	340
August	255	255
September	145	145

**Table 4 – Inflow allowances (ML)**

Month	Upper Dawson sub-scheme inflows (ML)	Lower Dawson sub-scheme inflows (ML)
October	2500	700
November	1555	432
December	1447	432
January	1379	47
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0

**Table 5 – Reserve volumes (ML)**

Month in which announced allocation is calculated	Upper Dawson sub-scheme reserve (ML)	Lower Dawson sub-scheme reserve (ML)
October	2500	700
November	1555	432
December	1447	432
January	1379	47
February	4000	1500
March	4000	1500
April	4000	1500
May	4000	1500
June	4000	1500
July	4000	1500
August	4000	1500
September	4000	1500

**Table 6 – TOL<sub>1</sub> for Upper Dawson sub-scheme**

AA <sub>m</sub> (%)	TOL <sub>1</sub> (ML)
0	250
10	550
50	1300
80	1700
100	1850

**Table 7 – TOL<sub>2</sub> for Lower Dawson sub-scheme**

AA <sub>m</sub> (%)	TOL <sub>2</sub> (ML)
0	100
60	400
100	550

## 14 Taking water under a water allocation

- (1) The volume of water taken under a water allocation in a water year must not exceed the nominal volume of the allocation multiplied by the announced allocation.
- (2) For a water allocation that has changed its priority group—the announced allocation for the new priority group must not apply until the water year following the year in which the change was registered.
- (3) Subsection (1) does not include a volume of water permitted to be carried over from the previous water year, as specified in section 16.

## 15 Fourth quarter restriction period

- (1) The licence holder must activate a restriction period after 1 July when the fourth quarter unused entitlement is more than 5 per cent greater than the total available supply.
- (2) When a restriction period is activated under subsection (1), the licence holder must—
  - (a) discontinue supply under the announced allocation arrangements;
  - (b) identify water entitlements which have essential water needs and determine a nominated required volume;
  - (c) allocate essential water needs entitlements a volume that is the lesser of—
    - (i) total available supply; or
    - (ii) 10 per cent of the total nominal volume of the high priority entitlements;
  - (d) determine the remaining available supply;
  - (e) allocate fourth quarter unused entitlements a volume equal to the remaining available water supply; and
  - (f) regularly review the total available supply and the announced volume yet to be supplied.
- (3) During the restriction period, if a review of the total available supply determines the total available supply is 10 per cent greater than currently allocated under the restriction period, the licence holder must—
  - (a) determine the additional available supply;
  - (b) allocate essential water needs entitlements a volume that is the lesser of—
    - (i) the additional available supply; or
    - (ii) the difference between the nominated required volume and the volume currently allocated to the essential water needs entitlements; and
  - (c) any remaining volume in supply is to be allocated to the fourth quarter unused entitlements.
- (4) Despite subsections (2) and (3), any allocation must not exceed an individual's entitlement.
- (5) The licence holder must cease restrictions—
  - (a) if the announced allocation for medium and medium A priority allocation increases; or
  - (b) at the end of the water year.
- (6) In this section—

**essential water needs** means part of a town water supply required for essential services, including drinking water and sanitation but excluding lawns and gardens.

The licence holder, in conjunction with water allocation holders, may establish additional essential purposes.

**fourth quarter unused entitlement** means total volume in each entitlement's water account following meter readings after 1 July.

**nominated required volume** is the volume to meet essential water needs, as negotiated between the licence holder and essential water needs entitlement holders.

**total available supply** is useable volume for each storage, adjusted to account for next year's high priority requirement and any transmission operation losses.

$$\text{Total available supply} = UV - RE - TOL$$

where the parameters for this formula are defined in table 2.

## 16 Orange Creek Weir release period

- (1) The Orange Creek Weir release period for the Upper Dawson sub-scheme starts at such time the licence holder notifies under subsection (2).
- (2) The licence holder may notify medium priority and medium A priority water allocation holders in the Upper Dawson sub-scheme, and the distribution operations licence holder, of the activation of the Orange Creek Weir release period to make available supplies of water stored in Orange Creek Weir.

## 17 Carryover

- (1) Subject to this section, the licence holder may, allow a holder of a water allocation belonging to the high, medium or medium A priority groups, to carry over part of any unused water from one water year to the next water year.
- (2) If a fourth quarter restriction period has been activated under section 15 during the current water year—carryover is not permitted.
- (3) For each sub-scheme, the total volume of unused water that is permitted to be carried over to the next water year is the lesser of—
  - (a) the total volume of unused water for that sub-scheme at the end of the water year; and
  - (b) 10 per cent of the total nominal allocation for that sub-scheme.
- (4) The volume of water that may be carried over by a water user must not exceed the nominal volume of the water allocation.
- (5) Any volume of water that is carried over into a water year that is unused by the water allocation holder as at the date of either of the following events, must be deducted from the volume of water available to the allocation holder—
  - (a) at 1 November; or
  - (b) for the Upper Dawson sub-scheme—at the time Gylanda Weir spills; or
  - (c) for the Lower Dawson sub-scheme—at the time Neville Hewitt Weir spills.
- (6) The licence holder must make public the methodology for determining the volume of water permitted to be carried over by each water user if the volume determined under subsection (3)(b) is less than the total volume of unused water for the scheme.

## Chapter 4 Seasonal water assignment rules

### 18 Seasonal water assignment rules

- (1) The holder of a water allocation may enter into an arrangement for a seasonal water assignment in relation to the allocation under section 61 of the Water Regulation 2016, only if the licence holder consents to the arrangement.
- (2) Despite subsection (1), the consent of the distribution operations licence holder to the arrangement is also required when—
  - (a) water is being seasonally assigned from the Dawson Valley Water Supply Scheme into the Theodore Channel Irrigation Scheme; and
  - (b) water is being seasonally assigned from the Theodore Channel Irrigation Scheme out to the Dawson Valley Water Supply Scheme—
- (3) Water supplied under section (1) or (2) may be used for any purpose.

# Attachment 1 Dictionary

Term	Definition
AHD	Australian Height Datum, which references a level or height to a standard base level.
AMTD	Adopted Middle Thread Distance, is the distance in kilometres, measured along the middle of the watercourse, that a specific point in the watercourse is from— <ul style="list-style-type: none"> <li>• the watercourse's mouth; or</li> <li>• if the watercourse is not a main watercourse—the watercourse's confluence with its main watercourse.</li> </ul>
Announced allocation	For a water allocation managed under a resource operations licence, means a number, expressed as a percentage, which is used to determine the maximum volume of water that may be taken in a water year under the authority of a water allocation.
Barrage	A barrier constructed across a watercourse to prevent the inflow of tidal water.
Carryover	The volume of water permitted to be carried over from the unused portion of the entitlement at the end of the previous water year.
Cease to flow level	For a waterhole, the level at which water stops flowing from a waterhole over its downstream control.
Distribution operations licence holder	Distribution operations licence holder for the Theodore Channel Scheme.
Licence holder	The holder of the resource operations licence for the Dawson Valley Water Supply Scheme.
Megalitre (ML)	One million litres.
Minimum operating level	For a dam or weir, is the volume of water within the ponded area of a dam, weir or barrage below which water cannot be released or taken from the infrastructure under normal operating conditions.
Nominal volume	Nominal volume means the volume of water, in megalitres, that represents the share of the water available to be taken by holders of water allocations in a priority group or a water allocation group.
Outlet	Means an arrangement on a dam or weir that allows stored water to be released downstream.
Ponded area	Area of inundation at full supply level of a storage.
Priority group	A grouping of water allocations for taking supplemented water from a water supply scheme with the same Water Allocation Security Objective (WASO).
Quarter or quarterly	Three-monthly intervals commencing at the start of the water year.
Release	Water from a dam or weir that passes downstream from the dam or weir either through the dam or weir outlet works or over the dam spillway.
Tailwater	The flow of water immediately downstream of a dam, weir or barrage. Tail water includes all water passing the infrastructure, for example controlled releases and uncontrolled overflows.
Treated Coal Seam Gas water (treated CSG water)	Means water produced during the extraction of gas from coal seams, which is treated and delivered by the Woleebee Creek to Glebe Weir pipeline to the Dawson Valley Water Supply Scheme.
Water use	Refers to actual take of water.

Water user	The holder of a valid water entitlement.
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