

# **Burnett Basin**

## **Barker Barambah Water Supply Scheme Operations Manual**

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# Chapter 1 Preliminary

## 1 Short title

- (1) This operations manual may be cited as the Barker Barambah Water Supply Scheme Operations Manual.
- (2) Reference in this document to 'this manual' means the Barker Barambah Water Supply Scheme 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 Barker Barambah Water Supply Scheme is defined in the Water Plan (Burnett Basin) 2014.

## Chapter 2 Operating rules

### 4 Operating levels of storages

- (1) The licence holder may only release water from a storage mentioned in table 1 for the following—
  - (a) to maintain a downstream storage at its nominal operating level under subsection (2);
  - (b) to comply with the environmental management rules in attachment 2 of the resource operations licence;
  - (c) to supply water under a water allocation under section 12.
- (2) The licence holder must maintain each storage mentioned in table 1, other than Bjelke-Petersen Dam, at or above the nominal operating level stated in table 1, column 3 for the period stated in table 1, column 4, opposite the storage.
- (3) However, the licence holder may maintain the storage at a level below the nominal operating level for the storage for not more than 7 days a month.
- (4) Despite subsections (1) and (2), the licence holder must not, unless authorised by the chief executive, release water from a storage mentioned in table 1, if the current storage level for the storage is at or below the minimum operating level stated in the table, column 2 for the storage.

**Table 1 – Operating levels of storages**

Column 1	Column 2	Column 3	Column 4
Storage	Minimum operating level (m AHD)	Nominal operating level (m AHD)	Period
Bjelke-Petersen Dam	EL 289.9	not applicable	not applicable
Silverleaf Weir	EL 259.86	EL 263.25	April to September
		EL 263.5	October to March
Joe Sippel Weir	EL 291.06	EL 294.5	all year

## Chapter 3 Water sharing rules

### 5 Announced allocation percentage – initial percentage

- (1) The licence holder must, within 5 business days after the start of a water year, calculate a provisional allocation percentage for each priority group under section 8 or 9.
- (2) The announced allocation percentage for a priority group is the provisional allocation percentage calculated for the priority group under section 8 or 9.
- (3) However, if the provisional allocation percentage calculated for a priority group under section 8 or 9 is less than zero, the announced allocation percentage for the priority group is zero.
- (4) The announced allocation percentage for a priority group—
  - (a) takes effect on the first day of the water year; and
  - (b) subject to section 6, has effect as the announced allocation percentage for the priority group for the water year.

### 6 Announced allocation percentage – further calculations

- (1) The licence holder must calculate a provisional allocation percentage for each priority group under section 8 or 9—
  - (a) within 5 business days after the start of each quarter of the water year, other than the first quarter; and
  - (b) within 10 business days after a major inflow.
- (2) Also, the licence holder may, at any time during the water year, calculate a provisional allocation percentage for each priority group under section 8 or 9.
- (3) If the provisional allocation percentage for a priority group calculated as mentioned in subsection (1) or (2) is greater than the announced allocation percentage currently in effect for the priority group, the provisional allocation percentage—
  - (a) takes effect as the announced allocation percentage for the priority group on the day on which the calculation is made; and
  - (b) has effect as the announced allocation percentage for the priority group for the water year unless a greater announced allocation percentage for the priority group takes effect under this section.

### 7 Publication of announced allocation percentage

- (1) The licence holder must, within the required time after an announced allocation percentage for a priority group takes effect under section 5 or 6, publish details of the announced allocation percentage for the priority group on the licence holder's website.
- (2) In this section—

**required time** means—

  - (a) for an announced allocation percentage that takes effect for a priority group under section 5—5 business days; or
  - (b) for an announced allocation percentage that takes effect for a priority group under section 6—2 business days.

## 8 Calculating provisional allocation percentage for high priority water allocations

(1) The provisional allocation percentage for the high priority water allocations is the lesser of—

- (a) 100%; and
- (b) the percentage calculated using the following formula, rounded up to the nearest whole per cent—

$$\frac{(UV_{HP} + DIVH - HPTOL - VIWY)}{HPA} \times 100$$

(2) The parameters used in the formula for the announced allocation are defined in table 2.

## 9 Calculating provisional allocation percentage for medium priority water allocations

(1) The provisional allocation percentage for the medium priority water allocations is the lesser of—

- (a) 100%; and
- (b) the percentage calculated using the following formula, rounded up to the nearest whole per cent—

$$\frac{(UV_{MP} - HPA - RE + DIV - TOL - VIWY)}{MPA} \times 100$$

(2) The parameters used in the formula for the announced allocation are defined in table 2.

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

Parameter	Definition
$UV_{HP}$	<p>The usable volume for Bjelke-Petersen Dam that can be used to supply high priority water allocations through to the end of a water year and is calculated as—</p> $UV_{HP} = ASV - DSV$ <p>where—</p> <p><b>adjusted storage volume</b> (ASV) means the current storage volume of water in Bjelke-Petersen Dam for the <b>adjusted storage level</b> calculated using the storage curve as stated in attachment 1 of the resource operations licence.</p> <p><b>adjusted storage level</b> means the level in AHD calculated by subtracting the <b>storage loss</b> for the storage from the current storage level for Bjelke-Petersen Dam.</p> <p><b>storage loss</b> means, for Bjelke-Petersen Dam, for a month, means the loss of water from the storage, due to evaporation and seepage, stated in table 3 for Bjelke-Petersen Dam for the month in which the provisional allocation percentage is calculated.</p> <p><b>dead storage volume</b> (DSV) means the dead storage volume for Bjelke-Petersen Dam stated in attachment 1 of the resource operations licence.</p>
$UV_{MP}$	<p>The total of the usable volumes for Bjelke-Petersen Dam, Silverleaf Weir and Joe Sippel Weir that can be used to supply high and medium priority water allocations through to the end of the water year and is calculated as—</p>

	$UV_{MP} = ASV - DSV$ <p>where—</p> <p><b>adjusted storage volume</b> (ASV) means the current storage volume of water in Bjelke-Petersen Dam, Silverleaf Weir and Joe Sippel Weir for the <b>adjusted storage level</b> calculated using the relevant storage curve as stated in attachment 1 of the resource operations licence.</p> <p><b>adjusted storage level</b> means the level in AHD calculated by subtracting the <b>storage loss</b> for the relevant storage from the current storage level for in Bjelke-Petersen Dam, Silverleaf Weir and Joe Sippel Weir.</p> <p><b>storage loss</b> means, for Bjelke-Petersen Dam, Silverleaf Weir and Joe Sippel Weir, for a month, means the loss of water from the relevant storage, due to evaporation and seepage, stated in table 3 for the month in which the provisional allocation percentage is calculated.</p> <p><b>dead storage volume</b> (DSV) means the dead storage volume for Bjelke-Petersen Dam, Silverleaf Weir and Joe Sippel Weir as stated in attachment 1 of the resource operations licence.</p>
<b>DIVH</b>	The total volume of water taken under all high priority water allocations since the start of the water year in which the provisional announced allocation is calculated.
<b>HPTOL</b>	The figure stated in table 5, column 2 for the month in which the provisional announced allocation is calculated.
<b>VIWY</b>	The difference between the total volume of water carried over to the current water year under section 10, and the total volume of water brought forward to the current water year under section 11, by holders of water allocations.
<b>HPA</b>	The total volume of the nominal volumes for high priority water allocations.
<b>RE</b>	For a month, means the volume, in megalitres, reserved for water allocations in the high priority group for future water years, stated in table 4 for the month in which the provisional allocation percentage is calculated.
<b>DIV</b>	The total volume of water taken under all water allocations since the start of the water year in which the provisional announced allocation is calculated.
<b>TOL</b>	<p>The transmission and operational losses for the month, used as an allowance for the loss of water associated with supplying water to water allocation holders—</p> <ul style="list-style-type: none"> <li>(a) if the provisional allocation percentage for the medium priority group in the water supply scheme, is zero—stated in table 5, column 2 for the month in which the provisional allocation percentage is calculated; or</li> <li>(b) if the provisional allocation percentage for the medium priority group in the water supply scheme is 100%—stated in table 5, column 3 for the month in which the provisional allocation percentage is calculated; or</li> <li>(c) for another provisional allocation percentage for the medium priority group in the water supply scheme—linearly interpolated using the figures in table 5, columns 2 and 3 for the month in which the provisional allocation percentage is calculated.</li> </ul>
<b>MPA</b>	The total volume of the nominal volumes for medium priority water allocations.



**Table 3 – Storage loss**

Month in water year	Bjelke-Petersen Dam	Silverleaf Weir	Joe Sippel Weir
	Storage loss (mm)	Storage loss (mm)	Storage loss (mm)
July	1446	0	0
August	1378	0	0
September	1280	0	0
October	1156	0	0
November	1002	0	0
December	839	0	0
January	679	0	0
February	517	0	0
March	393	0	0
April	251	0	0
May	137	0	0
June	59	0	0

**Table 4 – Reserve**

Month in water year	Reserve (ML)
July	4480
August	4667
September	4853
October	5040
November	5227
December	5413
January	5600
February	5787
March	5973
April	6160
May	6347
June	6533

**Table 5 – Transmission and operational losses**

Month in water year	Column 2 (ML)	Column 3 (ML)
July	743	11 401
August	703	11 042
September	631	10 224
October	559	8 766
November	490	7 737
December	428	6 609
January	366	5 481
February	303	4 460
March	248	3 552
April	186	2 531
May	122	1 827
June	55	907

## 10 Carry over

- (1) The licence holder may allow the holder of a water allocation in the medium priority group to carry over unused water from one water year to the next water year.
- (2) However, the total volume of water the licence holder may allow the water allocation holders to carry over is the lesser of the following—
  - (a) 20% of the total of the nominal volumes for all medium priority water allocations;
  - (b) the total volume of the unused water for the water year under all medium priority water allocations.

## 11 Forward draw

- (1) The licence holder may allow the holder of a water allocation to bring forward to the current water year any water that may be taken under the water allocation in the next water year.
- (2) However, the total volume of water the licence holder may allow the holders of water allocations in a priority group to bring forward must not exceed 1% of the total of the nominal volumes for all water allocations in the priority group.

## 12 Supplying and taking water under a water allocation

- (1) The licence holder may supply under a water allocation, and the water allocation holder may take, in a water year, the volume of water calculated under subsection (2).
- (2) The volume of water is calculated by—
  - (a) multiplying the nominal volume for the water allocation by the announced allocation percentage for the priority group to which the water allocation belongs; and
  - (b) adding the volume of water, if any, that the water allocation holder brought forward to the current water year under section 11; and
  - (c) subtracting the volume of water, if any, that the water allocation holder brought forward in the previous water year under section 11.
- (4) Also, the licence holder may supply under the water allocation, and the water allocation holder may take, in the carry over period in the water year, the volume of water, if any, that the water allocation holder carried over to the current water year under section 10.
- (5) However, if the water allocation holder does not take, during the carry over period in the water year, the full volume of the water mentioned in subsection (3), the water allocation holder may not take any further volume of that water after the carry over period ends.
- (6) In this section—

**carry over period**, for a water year, means the period in the water year—

  - (a) starting at the start of the water year; and
  - (b) ending on the earliest of the following—
    - (i) when Bjelke-Petersen Dam overflows;
    - (ii) when the current storage level in Bjelke-Petersen Dam is less than EL 295.7m AHD;
    - (iii) 9 months after the start of the water year.

# Chapter 4 Seasonal water assignment rules

## 13 Seasonal water assignment rules

The seasonal water assignment rules are contained in attachment 4 of the resource operations licence.

# Attachment 1 Dictionary

Term	Definition
AHD	The Australian height datum, which references to a level or height to a standard base level.
Announced allocation percentage	For a priority group in a water supply scheme, means the percentage used to calculate the maximum volume of water that may be supplied, under section 12, in a water year to water allocation holders in the priority group.
Current storage level	For a storage, means the current level of water in the storage in AHD.
Current storage volume	For a storage, means the volume of water in the storage for the current storage level calculated using the storage curve for the storage stated in attachment 1 of the resource operations licence.
EL	Elevation level
High priority water allocations	Water allocations in the high priority group under which water may be taken from the Barker Barambah Water Supply Scheme.
Licence holder	The holder of the resource operations licence for the Barker Barambah Water Supply Scheme.
Major inflow	A flow of water into the scheme that would allow the announced allocation percentage for a priority group, in the water supply scheme to increase by more than 5%.
Medium priority water allocations	Water allocations in the medium priority group under which water may be taken from the Barker Barambah Water Supply Scheme.
Megalitre (ML)	One million litres.
Minimum operating level	For a storage, is the volume of water within the ponded area of the storage below which water cannot be released or taken from the infrastructure under normal operating conditions.
Nominal operating level	Is the level in a weir that requires releases from upstream weirs or dams. From time to time under normal conditions the weirs may drop below these levels, for example if water has been released from an upstream storage but for unseen circumstances the released water has not travelled to the storage in time.
Nominal volume	The quantity of water apportioned under an existing authorisation for a regulated water supply.
Priority group	A grouping of water allocations for taking supplemented water from a water supply scheme with the same Water Allocation Security Objective as defined in the Water Plan (Burnett Basin) 2014.
Provisional allocation percentage	For a priority group in a water supply scheme, the percentage calculated for the priority group under section 8 or 9, that is used to calculate the announced allocation percentage for the priority group.
Release	Water from a dam or weir that passes downstream from the dam or weir through the dam or weir outlet works.
Storage Curve	For a storage, means the drawing, showing the volume of water in the storage for a range of water levels, stated in attachment 1 of the resource operations licence for the storage.
Unused water	For a water year—means water that may be taken, but is not taken, in the water year by the holder of a water allocation, but does not include water that may be taken in the water year only because the licence holder has allowed the water allocation holder to carry over water from the previous water year.

Zone	A geographic location defined by a reach of a watercourse. Zones are for defining the location of a water allocation and operational arrangements under an operations manual. Zones are defined in the Water Plan (Burnett Basin) 2014.
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