

LTAEL compliance assessment for Peel Regulated River Water Source

Executive summary

This report describes the methods used to assess if extractions in the Peel Regulated River Water Source are compliant with the limit described in the water sharing plan. The assessment has found that long term average annual extractions are compliant for the 2020-21 water year.

Background and purpose

The water sharing plan for the Peel Regulated River Water Source requires an assessment of compliance with a Long-term Average Annual Extraction Limit (LTAEL). The LTAEL is sometimes referred to as the 'plan limit'.

The assessment is to be carried out annually by the Department of Planning and Environment - Water (DPE Water) following the end of each water year. LTAEL compliance requires two scenario models; one to represent LTAEL and one to represent current conditions. The long-term results from both models are compared to assess compliance.

Each water sharing plan defines the LTAEL, how the compliance assessment is to be completed, triggers for non-compliance and subsequent compliance action. The LTAEL includes multiple types of water use. However, the compliance assessment is based on the total.

This report summarises a compliance assessment for the Peel Regulated River Water Source. The assessment was based on best available models, using climate data from 1895 to 2021.

Scenarios and agreed model version

Model scenarios for Cap, water sharing plan and current conditions were selected based on evaluation against multiple [scenario model selection criteria](#), including whether these had been documented and independently reviewed, how appropriate the management and levels of development are, and consistency of the hydrology. For the Peel Regulated River Water Source, the selected model scenarios reported in Table 1 are the most appropriate for LTAEL compliance purposes.

The scenarios are based on the accredited model scenario used for the Cap and the derivative model scenario used for the water sharing plan to set the LTAEL, and the annual permitted take model used for sustainable diversion limit compliance assessment for the Basin Plan.

Table 1. Model scenarios selected for Peel river regulated water source for LTAEL assessment purposes

Model scenario	System file
Cap conditions	PeelB119.sqq
Water Sharing Plan conditions	Peelw144.sqq
Current conditions	PeelS030.sqq

LTAAEL compliance results

LTAAEL assessment

The LTAAEL is the modelled long-term average annual extraction limit calculated over the duration of the available climate record, using either the Cap scenario model or the water sharing plan scenario model, whichever is the lesser. For this assessment the modelling period 1895-2021 is used. The results of this analysis are reported in Table 2. The LTAAEL for the 2020/21 water year for the Peel Regulated River Water Source is 15.1 gegalitres per year (GL/y), based on the Cap scenario model. There are also unmodelled extractions (for water taken under basic landholder rights) estimated at 0.3 GL/y. These unmodelled estimates have not changed and are not included in LTAAEL compliance assessment.

Table 2. Modelled long term average annual extractions (1895-2021) for Cap and water sharing plan scenario models (GL/y)

Extraction category	CAP scenario model	Water Sharing Plan scenario model
Modelled extractions		
General security	6.5	6.1
Local water utility	8.4	8.8
High security and stock and domestic	0.2	0.3
Total modelled extractions	15.1	15.2
Unmodelled extractions		
Basic Rights	0.3	0.3

This water sharing plan will be revised to include all water take components, such as plantation forestry and harvestable right dams, to harmonise with reporting required under the Basin Plan. In this regulated river water sharing plan area, the water source boundary is defined by the bank of the regulated river and hence plantation forestry and harvestable rights dams are located within the adjacent unregulated river water source.

In addition, water taken under a basic landholder right has been excluded from the compliance assessment. This is because any unmodelled estimates are excluded if no assessment of change has been made.

Compliance assessment

This compliance assessment follows the requirements as described in the *Water Sharing Plan for the Peel Regulated River Water Source 2010*, which sets out a two-step process:

1. A ten-year rolling average test requiring the comparison of metered extractions against modelled extractions using the LTAAEL model scenario.
2. If average metered extractions exceed average modelled extractions by more than 20% for the last ten years, then undertake a comparison of modelled long-term extractions from the LTAAEL scenario model compared with those from the current conditions scenario model.
 - a. If long term average annual modelled extractions for the current condition scenario model exceeds LTAAEL by 3% or more, the water source is then non-compliant with the LTAAEL.

Table 3. Ten-year (2011/12-2020/21) average metered and modelled extractions (GL/y) for compliance assessment

Extraction estimate	Ten year average
Metered extractions	14.4
LTAAEL Modelled extractions	13.3
LTAAEL Modelled extractions +20%	16.0

The metered extractions are less than the modelled extractions +20% (Table 3), and there is no need to proceed to Step 2. Extractions in the Peel Regulated River Water Source are compliant with LTAAEL.

The water sharing plan also requires an assessment of growth in modelled long term average annual extractions by Tamworth Regional Council, with 5% of this growth to be managed in the Peel Regulated River Water Source, and 95% of this growth to be managed in the Upper Namoi and Lower Namoi Regulated River Water Sources. This result is reported in Table 4.

Table 4. Long term average modelled extractions for Tamworth Regional Council (1895-2021) (GL/y)

Extraction estimate	Average
LTAAEL scenario model	8.61
Current conditions scenario model	8.37
Growth to manage in Peel (5%)	0.01
Growth to manage in Namoi (95%)	0.23

This result does not alter the overall assessment, however; it is needed for completion of the Upper Namoi and Lower Namoi Regulated River Water Sources LTAAEL assessment.

Modelled compliance action

No compliance action is required, as the LTAAEL assessment shows compliance.

Supporting information

Results over Basin Plan assessment period

The results over the Basin Plan assessment period of 1895-2009 are included for reference only. These results will be used to track significance of future model updates.

Table 5. Modelled long term average annual extractions over the Basin Plan reference period 1895-2009 (GL/y)

Extraction category	LTAEL scenario model
General Security	6.5
Local water utility	8.4
High security and stock and domestic	0.2
Total modelled extractions	15.1