

## Report card for Thora—North Arm—Bellinger River Water Source

### Background

Water source context		River flows	
<b>Area</b>	442.58 km <sup>2</sup>	<b>Low flow index*</b>	374 ML/day (80 <sup>th</sup> percentile of November [critical month] days).*
<b>Inflowing water source</b>	Rosewood Creek	<b>Flow records</b>	54 years—Bellinger River at Thora Gauge (205002).
<b>Receiving water source</b>	Bellinger River	<b>Stream type</b>	Gaining
*80% of the time average daily flow exceeds 374 ML/day in the critical month of November and this represents low flows.			
Catchment boundary definition			
Thora-North Arm Bellinger River is located in the western-most point of the plan area. The water source comprises all surface waters and alluvial aquifer of the hydrological catchment at and above the Rosewood Creek confluence.			
Upriver alluvial aquifer description			
The upriver alluvial aquifer consists of medium to coarse grained sand, silts and gravel deposits. Groundwater from the aquifer is typically highly connected to the surface water. As a result of this connection, coupled with the coarser sediments, water quality is typically good with high yields potentially obtainable in some areas.			
<b>Groundwater Dependent Ecosystems</b>		Groundwater dependent vegetation ecosystem present.	
Licensed water entitlement			
<b>Total surface water entitlement</b>	202 ML/year.		
<b>Licences</b>	27 licences to access surface water.		
<b>Proportion of extraction management unit</b>	6% of the Bellinger River Catchment Extraction Management Unit.		
<b>Total groundwater entitlement</b>	10 ML/year.		
<b>Licences</b>	1 licence to access groundwater.		
Note: Estimated at January 2020.			

<b>Existing access arrangements during dry conditions</b>	
<b>Cease to take</b>	16 ML/day (95 <sup>th</sup> percentile), or when there is no visible flow at the take site or in/out of the take pool.
<b>Reference point</b>	Bellinger River at Thora Gauge (205002).

## Proposed rules

<b>Draft access rules for surface water</b>		
<b>Conditions</b>	<b>Lower Thora—North Arm—Bellinger River Management Zone</b>	<b>Upper Thora—North Arm—Bellinger River Management Zone</b>
<b>Cease to take</b>	Less than or equal to 20 ML/day (estimated 95 <sup>th</sup> percentile critical month), or when there is no visible flow at the location of take.	Less than or equal to 20 ML/day (estimated 95 <sup>th</sup> percentile critical month), or when there is no visible flow at the location of take.
<b>Commence to take</b>	24 hours after flows have returned above 20 ML/day.	24 hours after flows have returned above 20 ML/day.
<b>Reference point</b>	Bellinger River at Thora Gauge (205002)	Bellinger River at Thora Gauge (205002)
<b>Exemptions</b>	Rule does not apply to licensed domestic and stock, local water utilities, pumping related to specific food or animal safety/care or extraction from dams in accordance with conditions of approval .	
<b>Draft access rules for groundwater</b>		
<b>Cease to take</b>	Surface water cease to take rule applies.	
<b>Commence to take</b>	Surface water commence to take rule applies.	
<b>Exemptions</b>	Rule does not apply to licensed domestic and stock, local water utilities, pumping related to specific food or animal safety/care or extraction from take pool in accordance with conditions of approval .	

<b>Draft distance rules for groundwater</b>		
<b>Distance conditions</b>	<p>A standard suite of rules have been adopted for the upriver alluvials.</p> <p>Distance criteria will apply to new and replacement bores (not current) in relation to:</p> <ul style="list-style-type: none"> <li>• minimising interference between bores</li> <li>• protecting groundwater dependent culturally significant sites</li> <li>• contaminated sites</li> <li>• acid sulfate soils</li> <li>• basic landholder rights</li> <li>• protecting groundwater dependent sensitive environmental areas.</li> </ul>	
<b>Exemptions</b>	Exemptions to these rules (e.g. for replacement works) apply in specific circumstances.	
<b>Draft licence dealing rules</b>		
<b>Rules</b>	<b>Trade</b>	
	<b>Lower Thora—North Arm—Bellinger River Management Zone</b>	<b>Upper Thora—North Arm—Bellinger River Management Zone</b>
<b>INTO water source</b>	Not permitted.	Not permitted.
<b>WITHIN water source</b>	Permitted, subject to assessment.	Not permitted.
<b>Rules</b>	<b>Conversion</b>	
<b>Surface to ground</b>	Permitted.	
<b>Ground to surface</b>	Not permitted.	
<b>High flows</b>	Not permitted.	
<b>Draft rules for granting access licences/works approvals</b>		
<b>Aboriginal cultural access licence</b>	Permitted, no greater than 10ML/yr. per application and subject to assessment.	
<b>Aboriginal community development access licence</b>	Not permitted.	
<b>In-river dams</b>	Permitted, only in streams less than third order.	
<b>Alluvial bores</b>	Permitted, subject to assessment and distance rules.	

## Key factors for decisions

- High instream value, low hydrologic stress, low risk to instream value and low economic dependence.
- In-river dams prohibited in streams of third order or higher due to high instream values.
- For trading purposes the water source has been split into two zones based on the very high instream value of the upper part of the water source. Recommend no trading into this zone.
- Applications for Aboriginal community development licenses not accepted due to presence of high instream value.
- The alluvial aquifers in this water source are highly connected to their adjoining streams and alluvial groundwater extraction can have an impact on the river. As such, access rules apply to aquifer access licences extracting from the alluvial within 40m of an unregulated river.

## Public exhibition

Feedback is particularly sought on the suitability of the proposed changes to access and trading rules.

The draft Bellinger River Area water sharing plan and other fact sheets are available from <https://www.industry.nsw.gov.au/water>

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