Resource Operations Licence

Water Act 2000

Queensland Government

Name of licence
Warrill Valley Water Supply Scheme Resource Operations Licence

Holder
Queensland Bulk Water Supply Authority

Water plan
The licence relates to the Water Plan (Moreton) 2007.

Water infrastructure
The water infrastructure to which the licence relates is detailed in Attachment 1.

Authority to interfere with the flow of water
The licence holder is authorised to interfere with the flow of water to the extent necessary to operate the water infrastructure to which the licence relates.

Authority to use watercourses to distribute water
The licence holder is authorised to use the watercourses listed in Table 1 for the distribution of supplemented water, including sections of tributaries where supplemented water is accessible.

Table 1 – Use of watercourses for distribution

Watercourse	Description
Reynolds Creek	Extending from and including the ponded area of Moogerah Dam downstream to the confluence of the creek with Warrill Creek, which includes the ponded areas of Upper Warrill Diversion Weir, Kents Lagoon Diversion Weir, and the Warrill Creek Diversion Weir.
Warrill Creek	Extending from AMTD 63.3 km to the junction with the Bremer River, which includes the ponded areas of Aratula Weir, Warrill Creek Diversion Weir, Warroolaba Creek Diversion Weir, West Branch Warrill Diversion Weir and Churchbank Weir.
Bremer River	Extending from AMTD 28.79 km (confluence with Warrill Creek) to AMTD 26.4 km which includes the ponded area of Berry's Lagoon Weir.
	Washpool Gully, Warroolaba Creek, Kents Lagoon, Black Gully, The Loop, and Normanby Gully.
	Sections of tributaries of Reynolds and Warrill creeks which contain water ponded behind the infrastructure in the water supply scheme.

Conditions

1. Requirement for operations manual

1.1. The licence holder must operate in accordance with an approved operations manual.

1.2. The approved operations manual must include—

1.2.1. operating rules for water infrastructure;

1.2.2. water sharing rules; and

1.2.3. seasonal water assignment rules.

2. Environmental management rules

2.1. The licence holder must comply with the requirements as detailed in Attachment 2.

3. Metering

3.1. The licence holder must meter the taking of water under all water allocations and seasonal water assignments managed under this licence.

4. Monitoring and reporting requirements

4.1. The licence holder must carry out and report on the monitoring requirements as set out in Attachment 3.

4.2. The licence holder must provide any monitoring data required under condition 4.1 to the chief executive within a stated time upon request.

4.3. The licence holder must ensure that the monitoring, including the measurement, collection, analysis and storage of data, is consistent with the Water Monitoring Data Collection Standards[1].

4.4. The licence holder must ensure that the transfer of data and reporting are consistent with the Water Monitoring Data Reporting Standards1.

5. Other conditions

5.1. The operating and supply arrangements and the monitoring required under this licence do not apply in situations where implementing the rules or meeting the requirements would be unsafe to a person or persons. In these circumstances, the licence holder must comply with the operational or emergency reporting requirements prescribed in Attachment 3.

5.2. The licence holder is required to collect and make publicly available through an industry accepted digital channel, updated at least monthly, details of each seasonal water assignment managed under this licence, including the sale price, the volume of water assigned and the location of where the water was assigned to and from.

5.3. The licence holder must provide the chief executive information about seasonal water assignments as directed by the chief executive within the stated time upon request.

This Resource Operations Licence is subject to the conditions attached.

Commencement of licence
The licence took effect on 2 June 2014.

Granted on 2 June 2014
Amended under section 186 of the *Water Act 2000* on 17/10/2022

Bernadette McNevin
Director, Water Management and Use, South Region

[1] The Water Monitoring Data Collection Standards and the Water Monitoring Data Reporting Standards can be accessed online at www.business.qld.gov.au

Attachment 1 Infrastructure details for Warrill Valley Water Supply Scheme

Table 1 – Churchbank Weir, Warrill Creek—AMTD 3.2 km

Description of water infrastructure	
Description	Mass concrete weir with an ogee crest. Maximum height 3.3 m.
Full supply level	EL 38.68 m AHD
Minimum operating level	EL 35.78 m AHD
Storage capacity	
Full supply volume	170 ML
Minimum operating volume	53 ML
Storage curves	F37415A
Spillway arrangement	
Description of works	Ogee crest (Level 1) with a downstream sill baffle on stream bed. A second spillway (Level 2) for higher flows discharges to a concrete/rock pitched apron on stream bed.
Spillway level	Top of Level 1 spillway EL 38.68 m AHD. Top of Level 2 spillway EL 39.14 m AHD.
Spillway width	46.02 m
Spillway length	Nil.
Discharge characteristics	Spillway capacity 55.4 m^3/second.
River inlet/outlet works	
Description of works	A 225 mm diameter pipe and valve, housed in a 750 x 750 mm outlet box, and a sluice outlet located on the RHS wing wall.
Inlet	Single level offtake to outlet pipe. Single square outlet through weir controlled by gate on upstream face of weir. Removable drop boards are installed in a continuous vertical opening above the floor of the well.
Cease to flow levels	EL 35.78 m AHD

Table 2 – Kents Lagoon Diversion Weir, Reynolds Creek—AMTD 1.2 km

Description of water infrastructure	
Description	Clay core weir with concrete cap. Length is 2.7 m and maximum height is 2 m above stream bed.
Full supply level	74.74 m AHD
Minimum operating level	EL 73.25 m AHD
Storage capacity	
Full supply volume	5 ML
Minimum operating volume	0 ML
Storage curves	A3-212618
Spillway arrangement	
Description of works	Incorporates 2/1 000 wide x 600 deep inlet/outlet flume with drop log controls. Diversion to Kents Lagoon: 900 mm offtake pipe.
Spillway level	EL 74.74 m AHD at top of drop logs.
Spillway width	Nil.
Spillway length	Nil.
Discharge characteristics	The weir backs up water for the Kents Lagoon gravity diversion pipeline, which feeds Kents Lagoon. Diversions from Warrill Creek Diversion Weir to Kents Lagoon can be made by the removal of drop logs, and this is because Warrill Creek Diversion Weir is located downstream and has a higher full supply level of EL 74.77 m AHD.
River inlet/outlet works	
Description of works	Outlet works: 225 mm diameter pipe and valve, and a diversion to Kents Lagoon which consists of a 3 000 mm long x 1 200 mm wide x 2 100 mm high inlet structure with a 900 mm inlet pipe to a 1 500 mm diameter valve operating well, with 900 mm diameter Armco slide gate and then a 900 mm diameter offtake pipe.
Inlet	EL 73.86 m AHD
Cease to flow levels	EL 73.25 m AHD

Table 3 – Moogerah Dam, Reynolds Creek—AMTD 15.3 km

Description of water infrastructure	
Description	Mass concrete double curvature dam.
Full supply level	EL 154.81 m AHD
Total storage capacity level	EL 154.81 m AHD
Minimum operating level	Invert of Outlet Works EL 132.85 m AHD. 1 130 ML is cease to flow. 563 ML dead storage after syphoning takes place.
Storage capacity	
Full supply volume	83 765 ML
Minimum operating volume	1 200 ML
Storage curves	A3-110927
Spillway arrangement	
Description of works	Uncontrolled ogee crest with flip apron.
Spillway level	EL 154.81 m AHD
Spillway width	25.91 m
Spillway length	Nil.
Discharge characteristics	Spillway capacity 260 m^3/second.
River inlet/outlet works	
Description of works	2 x 760 mm diameter mild steel outlet conduits.
Inlet	Invert of Inlet Works EL 132.85 m AHD.
Cease to flow levels	EL 132.85 m AHD

Table 4 – Railway Weir, Normanby Gully—AMTD 1.5 km

Description of water infrastructure	
Description	Mass concrete weir with ogee crest.
Full supply level	EL 46.18 m AHD Weir crest is 1.79 meters above bed level.
Minimum operating level	There is no specific level. The weir is operated between the FSL and dead storage level.
Storage capacity	
Full supply volume	35 ML
Minimum operating volume	0 ML
Storage curves	Nil.
Spillway arrangement	
Description of works	Ogee crest of weir.
Spillway level	EL 46.18 m AHD
Spillway width	36.3 m
Spillway length	Nil.
Discharge characteristics	Spillway capacity 282 m³/second.
River inlet/outlet works	
Description of works	Outlet works: 300 mm pipeline and 300 mm diameter gate valve. Used when flow is below weir crest.
Inlet	Single level offtake. Invert level of outlet pipe EL 44.39 m AHD.
Cease to flow levels	EL 44.39 m AHD

Table 5 – Upper Warrill Diversion Weir, Reynolds Creek—AMTD 12.9 km

Description of water infrastructure	
Description	Rockfill weir with Concrete Cap.
Full supply level	EL 115.92 m AHD
Minimum operating level	EL 115.16 m AHD
Storage capacity	
Full supply volume	3 ML
Minimum operating volume	0 ML (weir constructed of permeable material).
Storage curves	Seqwater report: Upper Warrill Diversion Weir Annual Condition Inspection 2012- Appendix B.
Spillway arrangement	
Description of works	Diversion works to Upper Warrill Creek: structure 4 200 mm long x 1 500 mm wide x 2 100 mm high (internal dimensions) with 900 mm diameter RC pipe and 900 mm diameter Armco slide gate.
Spillway level	EL 115.92 m AHD
Spillway width	31.64 m
Spillway length	Nil.
Discharge characteristics	Spillway capacity 61 m³/second.
River inlet/outlet works	
Description of works	Outlet is 900 mm diameter RC pipe and 900 mm diameter Armco slide gate.
Inlet	Sill of inlet: EL 115.16 AHD
Cease to flow levels	EL 115.16 m AHD

Table 6 – Warrill Creek Diversion Weir, Warrill Creek—AMTD 51.4 km

Description of water infrastructure	
Description	Stepped (3 rows) steel sheet piling structure with concrete slabs placed over free draining fill.
Full supply level	74.6 m AHD
Minimum operating level	EL 70.43 m AHD
Storage capacity	
Full supply volume	110 ML
Minimum operating volume	14 ML
Storage curves	A3-205136
Spillway arrangement	
Description of works	Free fall over 3 rows of steel sheet piling stepped down from weir crest to bed level.
Spillway level	EL 74.77 m AHD
Spillway width	29.4 m
Spillway length	Nil.
Discharge characteristics	Spillway capacity 184 m^3/second HW and 336 m^3/second TW.
River inlet/outlet works	
Description of works	Outlet works: 750 mm diameter pipe with butterfly control valve driven by SCADA system.
Inlet	Invert Level of inlet pipe EL 70.42 m AHD.
Cease to flow levels	Invert Level of inlet pipe EL 70.42 m AHD.
Maximum discharge rate	2.9 m^3/second (250 ML/day).

Table 7 – Warroolaba Creek Diversion Weir, Warrill Creek—AMTD 35.0 km

Description of water infrastructure	
Description	Rockfill gabion.
Full supply level	EL 52.71 m AHD
Minimum operating level	EL 52.00 m
Storage capacity	
Full supply volume	8 ML
Minimum operating volume	0 ML
Storage curves	Not available.
Spillway arrangement	
Description of works	Weir crest.
Spillway level	Outlet pipe to Warroolaba Creek: Pipe invert EL 52.01 m AHD.
River inlet/outlet works	
Description of works	Two outlets: river outlet to Warrill Creek, and Warroolaba Creek diversion outlet. Releases to river through 300 mm diameter outlet pipe with valve. Diversion offtake is 2 150 mm x 1 070 mm reinforced concrete box, cast around a 900 mm diameter inlet pipe to a 1 500 mm well, fitted with a 600 mm sluice valve and a 675 mm outlet pipe.
Inlet	River outlet pipe: EL 52.00 m AHD (estimated to be 750 mm below crest level).
Cease to flow levels	Below river outlet pipe which is at EL 52.00 m AHD. Below diversion outlet which is at EL 52.01 m AHD.

Table 8 – West Branch Warrill Diversion Weir, Warrill Creek—AMTD 28.5 km

Description of water infrastructure	
Description	Masonry cantilever and concrete filled weir. A reinforced concrete base is overlain with two rows of block work.
Full supply level	EL 43.72 m AHD
Minimum operating level	EL 42.47 m AHD
Storage capacity	
Full supply volume	2 ML
Minimum operating volume	Negligible.
Storage curves	Not available.
Spillway arrangement	
Description of works	Spillway: Downstream releases made by discharge over crest. No outlet through weir to East Branch Warrill Creek. Then releases pass to the East Branch of Warrill Creek.
Spillway level	E 43.72 m AHD
Discharge characteristics	Downstream releases to east branch of Warrill Creek occur over spillway.
River inlet/outlet works	
Description of works	Diversion to west branch of Warrill Creek occurs through 600 mm diameter pipe in left bank of weir structure.
Inlet	An intake pit exists behind the weir wall.
Cease to flow levels	EL 42.47 m AHD

Table 9 – Aratula Weir, Warrill Creek—AMTD 28.5 km

Description of water infrastructure	
Description	Mass concrete weir with an ogee crest.
Full supply level	97.52 m AHD
Minimum operating level	Not applicable.
Storage capacity	
Full supply volume	54 ML
Minimum operating volume	5 ML
Storage curves	F37414
Spillway arrangement	
Description of works	Ogee crest with apron sill.
Spillway level	97.52 m AHD
Discharge characteristics	Spillway capacity 71.5 m^3/second.
River inlet/outlet works	
Description of works	230 mm diameter outlet pipe and 9 inch (DN225) gate valve housed in an outlet box which is gravity fed by a pipeline, the afflux of which is on the upstream side of the ogee crest.
Inlet	Single level offtake to outlet pipe.

Attachment 2 Environmental management rules

1 Quality of water released

When releasing water from Moogerah Dam, the licence holder must draw water from the inlet level that optimises the quality of water released.

2 Change in rate of release from infrastructure

The licence holder must minimise the occurrence of adverse environmental impacts by ensuring that any change in the rate of release of water occurs incrementally.

Attachment 3 Licence holder monitoring and reporting

Part 1 Monitoring requirements

Division 1 Water quantity

1 Streamflow and infrastructure water level data

(1) The licence holder must record water level and volume and streamflow data in accordance with Table 1.

(2) Infrastructure inflows may be determined based upon an infrastructure inflow derivation technique supplied by the licence holder and approved by the chief executive.

Table 1 – Locations where continuous water data recording required

Continuous time series storage water level data	Continuous time series flow data
Churchbank Weir headwater level	—
—	Moogerah Dam inflow
Moogerah Dam headwater level	—
—	Moogerah Dam tailwater
Warrill Creek Diversion Weir headwater	—
—	Warrill Creek Diversion Weir tailwater

2 Releases from infrastructure

The licence holder must measure and record for each release of water from Moogerah Dam—

(a) the daily volume released;

(b) the release rate, and for any change in release rate—

(i) the date and time of the change;

(ii) the new release rate; and

(iii) the reason for each release;

(c) the inlet level used for each release; and

(d) the reason for taking water via a particular inlet level.

3 Water diversions

The licence holder must estimate and record the daily total volumes of water delivered between the licence holder's major diversion points and those watercourses the licence holder is authorised to use for the distribution of water.

4 Announced allocations

The licence holder must record details of announced allocation determinations, including—

(a) the announced allocations for medium and high priority water allocations;

(b) the date announced allocations are determined; and

(c) the value of each parameter applied for calculating the announced allocation.

5 Water taken by water users

The licence holder must record the total volume of water taken by each water user for each zone as follows—

(a) the total volume of water taken in each quarter of the water year;

(b) the total volume of water entitled to be taken at any time; and

(c) the basis for determining the total volume of water entitlement to be taken at any time.

6 Seasonal water assignment of a water allocation

The licence holder, upon consent to a seasonal water assignment, must record details of seasonal water assignment arrangements, including—

(a) the name of the assignee and the assignor;

(b) the volume of the assignment;

(c) the location—

(i) from which it was assigned; and

(ii) to which it was assigned;

(d) the effective date of the seasonal water assignment; and

(e) the sale price.

Division 2 Impact of infrastructure operation on natural ecosystems

7 Water quality

The licence holder must monitor and record water quality data in relation to relevant infrastructure listed in Attachment 1.

8 Bank condition

(1) The licence holder must inspect banks for evidence of collapse and/or erosion within the ponded areas and downstream of the relevant infrastructure listed in Attachment 1, following instances of—

(a) rapid water level changes;

(b) large flows through infrastructure; or

(c) other occasions when collapse and/or erosion of banks may be likely.

(2) For subsection (1), downstream of the relevant infrastructure means the distance of influence of infrastructure operations.

Part 2 Reporting requirements

9 Reporting requirements

The licence holder must provide the following reports in accordance with this part—

(a) annual reports for the previous water year; and

(b) operational or emergency reports.

Division 1 Annual reporting

10 Annual report

(1) The licence holder must submit an annual report to the chief executive after the end of each water year.

(2) The annual report must include—

(a) water quantity monitoring results as required under section 11;

(b) details of the impact of infrastructure operation on natural ecosystems as required under section 12;

(c) a discussion on any issues that arose as a result of operating in accordance with this licence; and

(d) a summary of sale price disclosure information and other seasonal water assignment information as required under section 6.

11 Water quantity monitoring

The licence holder must include in the annual report made under section 10—

(a) a summary of announced allocation determinations, including—

(i) an evaluation of the announced allocation procedures and outcomes; and

(ii) the date and value for the initial announced allocation and for each change made to an announced allocation;

(b) streamflow and infrastructure water levels—all records referred to in section 1;

(c) the total annual volume of water taken by each water user, specified by zone, namely—

(i) the total volume of supplemented water taken;

(ii) the total volume of supplemented water entitled to be taken; and

(iii) the basis for determining the volume entitled to be taken;

(d) details of seasonal water assignments, namely—

(i) the total number of seasonal water assignments; and

(ii) the total volume of water seasonally assigned;

(e) all details of changes to infrastructure or the operation of the infrastructure that may impact on compliance with rules in this licence; and

(f) details of any new monitoring devices used, such as equipment to measure streamflow.

12 Impact of infrastructure operation on natural ecosystems

The licence holder must include in the annual report made under section 10—

(a) a summary of environmental considerations made by the licence holder in making operational and release decisions;

(b) a summary of the environmental outcomes of the decision, including any adverse environmental impacts;

(c) a summary of bank condition assessment, including—

(i) results of investigations of bank slumping and/or erosion identified in ponded areas or downstream of infrastructure undertaken in accordance with section 8; and

(ii) changes to the operation of infrastructure to reduce instances of bank slumping and/or erosion;

(d) water quality—all records referred to in section 7 and a discussion and assessment of water quality issues.

Division 2 Operational or emergency reporting

13 Operational or emergency reporting[2]

(1) The licence holder must notify the chief executive—

(a) within one business day of becoming aware of any of the following operational incidents—

(i) a non-compliance by the licence holder with the conditions of this licence;

(ii) instances of bank slumping within the impounded areas or downstream of the water infrastructure to which this licence relates; and

(iii) a decision being made to introduce a reduced fully supply level under section 399B of the *Water Supply (Safety and Reliability) Act 2008*;

(b) an emergency where, as a result of the emergency, the licence holder cannot comply with the conditions of this licence.

(2) The licence holder must provide the chief executive upon request, and within the timeframe requested, a report which includes details of—

(a) the incident or emergency;

(b) conditions under which the incident or emergency occurred;

(c) any responses or activities carried out as a result of the incident or emergency; and

(d) in relation to an emergency only, any requirements under this licence that the licence holder is either permanently or temporarily unable to comply with due to the emergency.

[2] This does not preclude requirements for dam safety under the *Water Supply (Safety and Reliability) Act 2008*, *Water Act 2000* and any other applicable legislation.

Glossary

Term	Definition
AHD	Australian Height Datum, which references a level or height to a standard base level.
Announced allocation	For a water allocation managed under a water 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.
Assignee	The person or entity to whom an interest or right to water is being transferred (e.g. seasonally assigned).
Assignor	The person or entity that transfers an interest or right in water to an assignee (e.g. a seasonal assignment).
EL	Elevation level.
Full supply volume	The specified maximum volume of water within the ponded area of a dam, weir or barrage, which corresponds to the full supply level.
Headwater level	The level (or elevation) of the water immediately upstream of a dam, weir, or other hydraulic structure.
Infrastructure	A dam, weir or other water storage and any associated works for taking or interfering with water in a watercourse, lake or spring.
Inlet	Infrastructure comprised of an entrance channel, intake structure, and gate or valve, which allow for water to be taken from the storage and discharged into the watercourse downstream of the storage.
Location	For a water allocation, means the zone and/or place from which water under the water allocation can be taken. For a water licence, means the section of the watercourse, lake or spring abutting or contained by the land described on the water licence at which water may be taken.
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.
Minimum operating volume	The specified minimum 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.
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 dam, weir or barrage.
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.
Release rate	Rate of release of water from a storage facility, for example, a dam or weir.
Streamflow	Includes flow of water resulting from tributary inflows, and does not include releases of supplemented water.
Tailwater	The flow of water immediately downstream of a dam, weir or barrage. Tailwater includes all water passing the infrastructure, for example controlled releases and uncontrolled overflows.