Name of licence
Rookwood Water Supply Scheme Resource Operations Licence

Holder
State of Queensland (represented by the Department of Regional Development, Manufacturing and Water)

Water plan
The licence relates to the Water Plan (Fitzroy Basin) 2011

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 construct the water infrastructure to which the licence relates. This authority only has effect until the completion of Stage 5 of the construction plans.

Conditions
1. Monitoring and reporting requirements
   1.1. The licence holder must carry out the monitoring and reporting requirements as set out in Attachment 2 – Rookwood Water Monitoring Program, specifically the collection and reporting standards outlined in ‘Table 2 – Cross Reference’.
   1.2. The licence holder must provide any monitoring data required under condition 1.1 to the chief executive within the stated time in Attachment 2.
   1.3. 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. The licence holder must ensure that the transfer of data and reporting are consistent with the Water Monitoring Data Reporting Standards1.

2. Other conditions
   2.1. Construction activity approved by this authority is limited to completion of stage 5 of the construction plans provided in Attachment 3 (Drawing No: RWW-RWA-RDS5-SK-001, Rev: P1).
   2.2. The licence holder must formally apply to amend this authority a minimum of 3 months prior to the completion of stage 5 to enable construction activities to progress to the next stage of construction.
   2.3. Construction of the water infrastructure must not adversely impact on the environmental flow objectives detailed in the Water Plan (Fitzroy Basin) 2011.

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1 The Water Monitoring Data Collection Standards and the Water Monitoring Data Reporting Standards can be inspected at any of the department’s offices or accessed online at <www.business.qld.gov.au>
2.4. The licence holder must not adversely impact the availability of water for existing water authorisations (other than water permits) to take water immediately upstream and downstream of the construction site, including the take of water for town water supply from the Fitzroy Barrage.

2.5. Construction of the water infrastructure must not adversely impact on the bed and bank stability immediately upstream and downstream of the construction site.

2.6. The licence holder must not store water in the water infrastructure during construction other than that which is stored as a result of attenuation of flow events that occur during construction stages up to and including stage 5.

2.7. The licence holder must provide written notification to the chief executive at the completion of each stage of construction within 5 business days of completion.

2.8. The licence holder must provide PDF copies of Rookwood Weir design drawings to the chief executive within 5 business days of the drawings being issued for construction.

2.9. Before dewatering activities commence, the licence holder must develop a strategy to outline how they will receive, assess and address any complaints or impacts about affected groundwater bores, including a dispute resolution process. This strategy must also outline how the licence holder will undertake groundwater monitoring and enter into make good agreements with affected parties where impacts have been identified. The strategy must be approved by the chief executive at least 2 weeks before dewatering activities commence.

The information required to be submitted to the chief executive in conditions 2.7, 2.8 and 2.9 must be emailed to wssreportsubmissions@rdmw.qld.gov.au.

This Resource Operations Licence is subject to the conditions attached.

Commencement of licence
The licence took effect on 31 March 2021.

Granted on 31 March 2021

David Wiskar
Executive Director, Water Policy
Attacgment 1  Infrastructure details for Rookwood Water Supply Scheme

Table 1 – Rookwood Weir, Fitzroy River—AMTD 265.3km

<table>
<thead>
<tr>
<th>Description of water infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Proposed full supply level</td>
</tr>
</tbody>
</table>

Table 2 – Construction staging details

<table>
<thead>
<tr>
<th>Stage</th>
<th>Activities</th>
</tr>
</thead>
</table>
| Stage 1A | 1. Left bank: clear, grub and strip topsoils, excavate bank including bench 1 (existing top of bank RL54) and bench 2 (RL47 to RL35).  
2. Right bank: Clear and grub and strip topsoils.  
3. Excavate to RL35 including drill and blasting. All material removed from within high banks to stockpile and pad areas. |
| Stage 1 | 1. Continue with site establishment activities and right abutment excavation as described above.  
2. Commence left abutment excavation activities.  
3. Install the low flow diversion and aqua barriers within the low flow section to create a dry working area for the temporary upstream crossing.  
4. Construction of the weir’s foundations, grouting, stilling basin and coffer dams.  
5. Temporary single lane river crossing spanning channel width with steel pipe culverts and a metal arch structure. |
| Stage 2 | 1. Continue with left and right abutment excavation.  
2. Extend the temporary low flow river channel.  
3. Install aqua barrier downstream of project work site to allow for the commencement of foundation excavations, installation of piling pads, installation of sheet piled cofferdam on right bank and foundation grouting  
4. Install Cofferdam on right bank. |
| Stage 3 | 1. Removal of the aqua barrier upstream of the temporary upstream crossing. The remaining Ø3.6m crossing pipes will then be installed to the crossing.  
2. Continue installation of piling pads, installation of Stage 1 cofferdam on right bank and foundation grouting.  
3. Continue with left and right abutment excavation. |
| Stage 4 | 1. Remove aqua barriers associated with Stages 1, 2 and 3.  
2. Install two aqua barriers and earth/rock bunds adjacent to the left and right bank of the Fitzroy River low flow section. This allows for the installation of the left bank Stage 1 cofferdam, piling pads, weir foundation excavation and foundation grouting.  
3. Commence placement of weir concrete to the right abutment, fishlock and outlet works, monoliths and stilling basin.  
4. Continue with left abutment excavation. |
|--------|------------------------------------------------------------------------------------------------------------------|
| Stage 5 | 1. Stage 1 cofferdams complete, removal of aqua barriers.  
2. Continue weir construction activities including concrete placement to monoliths, fishlock, outlet works and stilling basin.  
3. Complete fish lock and outlet works, left abutment and right abutment, and monoliths within the cofferdams. |
Attachment 2 Rookwood Water Monitoring Program

Rookwood Water Monitoring Program Overview

The Project has developed two primary management and monitoring programs which address monitoring requirements to identify potential impacts to water quality, flow, aquatic life and bank stability, in general accordance with the DRDMW Water Monitoring Collection and Data Reporting Standards issued in August 2020. The two WQ program include: 1) A broader spatial program designed to address one of the Commonwealth EPBC approval conditions and is aimed at primarily detecting changes in water quality (nitrogen in particular) from decaying vegetation caused by inundation; and 2) A construction specific program to detect construction related changes to water quality. Both programs have temporal and spatial components and include sample sites immediately upstream and downstream of the weir location and at intervals as frequently as monthly depending on the sample locations. Baseline water quality monitoring as per the Commonwealth water quality program began in early 2020 and will continue through construction and into operations.

An overview of the monitoring programs are outlined in Table 1 below.

### Table 1 Monitoring Programs and Plans

<table>
<thead>
<tr>
<th>Requirement Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil and Water Management Sub Plan (RWWW RWA ENV MP 000 003) Rev 1</td>
<td>Currently under review by Sunwater</td>
</tr>
<tr>
<td><strong>Requirement</strong></td>
<td>Part of the broader Construction Environmental Management Plan (CEMP) required by Acciona’s Integrated Management System certified to AS/NZS ISO 14001:2015 as well as by Contractual requirements.</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>This CEMP provides a system and procedures and establishes and maintains best practice controls to manage potential environmental impacts arising from construction of the Project.</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>Scope of sub-plan covers: - Surface water quality during construction - Dewatering dam water quality and releases - Erosion and sediment monitoring - Flow monitoring to demonstrate minimal interference during construction</td>
</tr>
<tr>
<td><strong>Implementation Responsibility</strong></td>
<td>Acciona – Construction Alliance Partner</td>
</tr>
<tr>
<td><strong>Use of results/data collected</strong></td>
<td>Detect any Project impact to Water Quality, determine risks posed by river water quality during the take and use for construction - Demonstrate construction methodology is not interfering with flows, - Monitor conditions when take of water is permitted.</td>
</tr>
<tr>
<td><strong>Data reporting</strong></td>
<td>Internal reporting - monitoring data monthly to Sunwater</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Requirement Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dewatering Management Plan (RWWW RWA ENV PC 000 001) Rev 0 Issued for Use</td>
<td>Schedules 3 and 4 of the Project Alliance Agreement (PAA)</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>This Dewatering Management Procedure has been prepared to: - Include the relevant conditions of approval related to water quality and dewatering activities - Describe how dewatering from construction activities will be managed and mitigated so as to not cause environmental pollution or harm in accordance to Lendlease Procedures LLE705 (Water Quality). - Detail actions to be taken for the management of dewatering, including water sampling, treatment and discharge.</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>Outlines the water quality criteria, sampling, permit to discharge framework and management of pumping activities for any dewatering including excavations, drainage, low lying areas, sediment controls, dewatering from piles and clean water diversions.</td>
</tr>
<tr>
<td><strong>Implementation Responsibility</strong></td>
<td>Acciona – Construction Alliance Partner</td>
</tr>
<tr>
<td><strong>Use of results/data collected</strong></td>
<td>To verify and document compliance with requirements not to allow pollutants to enter waterways and to enable proper management and treatment for proposed reuses.</td>
</tr>
<tr>
<td><strong>Data reporting</strong></td>
<td>Internal reporting - monitoring data monthly to Sunwater</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Requirement Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Fitzroy Water Quality Monitoring Program Version 1.7, (Draft Sunwater and Federal Minister approval still required)</td>
<td>Condition 1 of the EPBC Approval as varied on 27 May 2020</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>To outline the monitoring activities and procedures capable of predicting potential, and detecting actual, impacts from the action in respect of the relevant weir on the Great Barrier Reef World Heritage Area and National Heritage place that may result from:</td>
</tr>
</tbody>
</table>
i. changes in nutrient concentrations and oxygen levels due to decaying vegetation; and  
ii. agricultural development facilitated by the action in respect of the relevant weir.

Scope

1. Conduct and augment baseline monitoring at sites, upstream, within and downstream of the predicted impounded area, to determine current ambient and event flow concentrations of scientifically appropriate water quality indicators;
2. Conduct ambient and event monitoring at sites upstream, within and downstream of the predicted impounded area in order to detect and report on any measurable changes between these sites, from guideline values and/or from the baseline water quality conditions, during a) the construction of the impoundment and inundation of vegetation, and b) post construction and as the vegetation degrades over time,
3. Conduct event monitoring directly downstream of the flow of overland water into nearby waterways, from land associated with agricultural development facilitated by extractive water use of the weir, and either a) the closest suitable upstream site, or comparable site, to determine and report any measurable change in the concentrations of scientifically appropriate indicators of changes in agricultural land use;
4. Conduct monitoring at site(s) directly upstream and progressively downstream of the impoundment, to measure scientifically appropriate water quality indicators, including those specific to current water quality models and the Reef 2050 priority pollutants, in order to detect changes to downstream water quality, compare to relevant guideline values, and provide data to catchment modellers and catchment loads monitoring programs to help predict impacts on the Great Barrier Reef World Heritage Area and National Heritage place.

Implementation

Sunwater / Fitzroy Basin Association

Responsibility

Use of results/data collected

Designed to complement relevant existing or future water quality monitoring programs including, but not limited to, the Reef 2050 Integrated Monitoring and Reporting Program. Provided to catchment modellers and catchment loads monitoring programs to help predict impacts on the Great Barrier Reef World Heritage Area and National Heritage place.

Data reporting

External reporting to the Department of Agriculture, Water and the Environment and to the State Department of Environment and Science.

Aquatic and Stream Stability Monitoring Programs during Construction

Aquatic Species Construction SMP, 41-29978-02-AP-RPT-0008

Turtle nesting and movement surveys required by EPBC Approval Condition 2 to establish baseline (commenced in 2019 and continuing for 4 /5 consecutive years)

Erosion and Sediment Control Plans developed and implemented by certified CPESC

Aquatic and Bank Stability Monitoring Programs during Operations

Aquatic Species Management Program (Inundation Areas)

Fishway Monitoring Program to be developed in line with WWBW conditions.

Turtle Passage Contingency Program - This report will outline the current passage design, success criteria and monitoring and reporting programs. The report is currently being prepared and a draft is due to be submitted to DES in mid-December 2020.

It is also noted that Project is required to provide offsets for impacts to water quality, fish passage and aquatic habitat for protected turtle species. The approach for these offsets is outlined within the Project Offset Strategy and Fish Offset Delivery Plan, which can be made available upon request.

Collection and Reporting Standards Cross Reference

Table 2 Cross Reference

<table>
<thead>
<tr>
<th>Water monitoring data collection standard (Guide to changes to water monitoring data collection and reporting standards)</th>
<th>Section</th>
<th>Requirement</th>
<th>Plan in which requirement is addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>These standards apply to those water infrastructure licence holders (WIL) who are required to collect and report water monitoring data and information to the department</td>
<td>Construction: During construction, the Project is required to collect and report water monitoring data under the Take Water Permit and for the purposes of the Construction ROL to demonstrate that flow or quality changes do not impact other users beyond that authorised.</td>
<td></td>
</tr>
</tbody>
</table>
1. Introduction

Where a monitoring program is not consistent with any additional requirements of these standards, the WIL holder may modify and transition within two years of the publishing date of these standards.

Where there are inconsistencies with the matters on these standards the conditions of the licence shall prevail

**Construction:** No monitoring programs currently exist. Therefore, the transition provisions are not relevant to this Construction ROL.

3. Monitoring

Operators of water storages with a potential for medium to high risk to associated water quality are required to have a monitoring program that demonstrates to the department their adaptive storage management (s 3.2.3).

Note: All storages are to be considered as medium or high risk unless the WIL holder has demonstrated otherwise by conducting a risk assessment within two years on this standard being in place

**Construction:** A monitoring program addressing adaptive storage management is not relevant to this Construction ROL: Non-impoundment Phase.

3.2.3 Water Quality Monitoring

Monthly monitoring within (headwater) and downstream (tailwater)

**Construction:** Monthly monitoring of surface water will be completed at three locations, approximately 800 m upstream (RWP-01), 450 m downstream of the construction site (RWP-03) and mid-stream at the weir location (RWP-02). Construction water quality monitoring is to be undertaken in accordance with Queensland’s Monitoring and Sampling Manual 2018 (DES). Further details in Section 5.1.2.1 Rookwood Weir Project Soil and Water Quality Management Sub-Plan.

Monthly water quality monitoring will also occur as part of the Commonwealth Monitoring Program during construction and into operations, to capture information on water quality entering the impoundment and potential effects of impoundment at:

a) 4 sites upstream of the Rookwood Weir project
b) 4 sites within the impoundment, and
c) 4 sites downstream of the impoundment.

**Construction:** Monthly monitoring of surface water will be completed at three locations, approximately 800 m upstream (RWP-01), 450 m downstream of the construction site (RWP-03) and mid-stream at the weir location (RWP-02). Construction water quality monitoring is to be undertaken in accordance with Queensland’s Monitoring and Sampling Manual 2018 (DES). Further details in Section 5.1.2.1 Rookwood Weir Project Soil and Water Quality Management Sub-Plan.

Monitoring headwater and tailwater during event/scheduled release (if safe to do so)

**Construction:** Minor releases during construction stages 1 to 5 will only occur in two circumstances:
1) Unseasonal high rainfall event occurs resulting in overtopping of the coffer dams and contained water requires pumping out.
2) Releases from dewatering of excavations, sediment basins, drainage works to ensure a dry construction area.

Releases are authorised through a permit to discharge process that requires in-situ monitoring of pH, turbidity and visual oil and grease to demonstrate that the water meets the release criteria prior to discharge.

Minimisation of volume of waters released from dewatering will occur through onsite reuse and sourcing of construction water in preference to extraction for river flows. Monitoring of these releases is managed and outlined within Section 3 of the Dewatering Monitoring Plan.

At least one headwater site (located close to the offtake) and one tailwater site (immediately downstream).

**Construction:** During construction, surface water monitoring sites will be located approximately 800 m upstream of the construction site (RWP-01) and

3
In situ depth profiles (minimum 1 m intervals) at headwater sites for temperature, dissolved oxygen, pH, and electrical conductivity.

**Construction:** In situ depth profiles at headwater sites are not required for the construction stage of the project. However, Site 10 (Riverslea Gauging Station) upstream provides depth profiling and will be monitored throughout construction. However, this only provides pH, electrical conductivity, and turbidity and not temperature or DO values.

Integrated hosepipe sample for the analysis of blue-green algae (species identification, enumeration and biovolume)

**Construction:** Hosepipe samples for the analysis of blue-green algae are not required for the construction stage of the project.

Surface and bottom samples for total nitrogen (TN), total phosphorus (TP) and hydrogen sulphide (H2S) (headwater)

**Construction:** Surface and bottom samples at the headwater are not required for the construction stage of the project.

Sunwater are currently reviewing the current Soil and Water Management Sub-Plan and it is recommended that hydrogen sulphide (H2S) is included into the parameter suite for water quality monitoring. Hydrogen sulphide (H2S) detecting tests are inexpensive and simple to detect the presence of faecal indicator bacteria. Unimproved water sources are more frequently contaminated with faecal indicator bacteria (FIB) at higher risk levels, especially in rural areas with the rising pollution of natural waters by sewage and industrial wastes (Bain et al. 2014; Khush et all 2013). As construction water will be taken directly from the river and used for dust suppression this will be considered to determine the human health risk of workers potential exposed.

It is also an indicator of corrosion risks from the water, this is important for consideration in concrete batching and construction. Section 9.2.9 of the ANZECC water quality guidelines identifies that corrosion from hydrogen sulfide occurs in two different forms, sulfide stress cracking and hydrogen stress corrosion cracking (McLaughlan & Knight 1989). In certain environments, hydrogen sulphide can be converted to sulfuric acid, leading to the potential acidification of waters and possible corrosion of exposed surfaces and fittings in distribution systems (ANZECC, 2000).

Total nitrogen and total phosphorus are being sampled as part of the Commonwealth Monitoring Program.

Surface samples for blue-green algae (BGA), TN, TP and H2S (tailwater).

**Construction:** No water will be contained for any period if an overtopping event for the cofferdams or aqua barriers occur - this will be continuously pumped out.

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over the following days to allow construction to continue, thus sampling for blue-green algae is not required. However, Sunwater is currently reviewing the current Soil and Water Management Sub-Plan and it is recommended that hydrogen sulphide (H2S) is included into the parameter suite for water quality monitoring.

Total nitrogen and total phosphorus are being sampled as part of the Commonwealth Monitoring Program.

| Surface in situ monitoring (tailwater) for temperature, dissolved oxygen, pH, and electrical conductivity. | Construction: During construction, collection of surface water samples will be conducted in a way to avoid turbulence or collection of any floating surface debris. All water samples will be collected by either the use of an extendable sampling pole, water quality monitoring probe or grab sampling techniques. All laboratory analysis is to be undertaken at a NATA accredited laboratory.

Surface water quality parameters will be monitored weekly during construction and will include in field sampling of temperature, dissolved oxygen (DO), pH, electrical conductivity (EC) and turbidity (NTU). Visual inspections will assess oils and grease and laboratory analysis will determine total suspended solids (TSS). However, monitoring is not required for TSS if correlation with NTU criteria is achieved. For details refer to Section 5.1.3 Rookwood Weir Project Soil and Water Quality Management Sub-Plan. |

| Bank Condition | WIL holders are now required to undertake a baseline geomorphic assessment within storage and downstream to the limit of scheme operations to establish ‘high risk’ areas or hotspots. Visual inspections of high risks areas are required following large inflow events or releases (and evidence to support this i.e. photographs and assessments). | Construction: This aspect will be monitored within the construction area footprints as part of the Construction Erosion and Sediment Control Plan as well as daily and weekly environmental inspections. The Erosion and Sediment Control Plan is provided in Appendix B: Erosion Control Response Flowchart in Rookwood Weir Project Soil and Water Quality Management Sub-Plan. |

| Fish Stranding | Certain licences require storage operators to record and assess any instances of fish stranding that may be associated with operation of scheme infrastructure. | Construction: Fauna spotter catchers will record all instances of fish mortality for native species and report incidences as per the aquatic wildlife/fish stranding procedure as developed under the DAF guidelines. |

| Water monitoring data reporting standards | 1. Introduction | Includes a summary of the information about requirements for quarterly and annual data transfers, annual reports and operational and emergency reports. Where a monitoring program is not consistent with additional requirements of these standards, WIL holder may modify and transition within two years of the new standards publication date. | Construction: During construction water monitoring data collected will be submitted Quarterly (Water take volume data and water quality data) as well as in Annual Reports. The constructor is required to submit all monitoring data monthly to Sunwater, whom will compile and report in accordance with these required frequencies. |

| 2. What must be reported | Further guidance on the content of reports and data to be provided to the department in order to assess if WIL holders are complying with their licence conditions, Operational reports must be submitted within five business days (no change) and notification must be made to the chief executive within one business day upon discovery of an incident (new requirement). | Construction: The timing of quarterly and annual reports during the period of this Construction ROL (construction stages 1-5) will be in line with these timeframes or otherwise conditioned timing requirements. |
Emergency reports must be submitted within five business days (no change) of notification of the emergency. WIL holders must notify within one calendar day upon discovery of the emergency (new requirement).

Quarterly reports are to be submitted within eight weeks (previously 3 months) after the end of the reporting quarter (unless otherwise specified in the licence).

Annual reports are due within three months (no change) after the end of the water year.

Annual reports are now required to have a quality assurance statement including details of any quality controls in place.

A new request (and table) for the disclosure of sale price data for seasonal water assignments is required when specified under the licence.

Further information is to be provided to detail any impacts of storage operations on the natural ecosystems and quality of water being released.

Details are to be provided on whether the data remains as primary measured data or has been processed or validated (i.e. quality coded).

3. Submitting data sets and reports

New water data quality codes now need to be applied to processed or edited data. Any numerical quality coded data (as determined by the WIL holder) needs to be mapped against the BoM water data quality codes (s3.3).

3.5 Request to extend reporting timeframes

Request must be made within three business days and no longer stipulates when chief executive decision is to be made.

Noted.

### Water monitoring Data Collection Standards

<table>
<thead>
<tr>
<th>Section</th>
<th>Requirement</th>
<th>Section addressed</th>
</tr>
</thead>
</table>
| 1.1 Background | Under the Water Act 2000, all water supply scheme operators are required to collect and report water (quantity and quality) monitoring data in accordance with the conditions of the Resource Operations Licence (ROL), Distribution Operations Licence (DOL) or interim Resource Operations Licence (iROL). | Construction: As outlined in the above table, both water quality monitoring programs include spatial and temporal monitoring for a range of parameters as relevant to the construction activities being undertaken during construction stages 1-5 as well as addressing the requirements of the Commonwealth EPBC conditions. Further, the approved Water Permit 623329 includes the following relevant approval conditions c (Schedule B):

1. The water taken under the authority of this water permit may be taken only from the waterhole on Fitzroy River adjacent to Lot 3 on PN106 and Lot 1 on SP136791.
2. The monthly volumetric limit of water that may be taken under the authority of this water permit is 22 megalitres. |
3. Despite Schedule B Condition 1, water taken under the authority of this water permit also includes the incidental take of water from the bed and banks adjacent to Lot 3 on PN106 and Lot 1 on SP136791 that is a result of dewatering activities associated with excavation within the bed and banks of the watercourse for the construction of the Rookwood Weir foundations. Schedule B Conditions 4, 5, and 8 do not apply to the take of water from the bed and banks that is a result of these dewatering activities.

4. Water is only permitted to be taken under the authority of this water permit:
   a) at a maximum extraction rate of 5 megalitres per day when flows in the Fitzroy River are at, or greater than, 9 megalitres per day; or
   b) at a maximum extraction rate of 1.5 megalitres per day when flows in the Fitzroy River are less than 9 megalitres per day.

5. When there is no flow in the Fitzroy River, the take of water from the waterhole on the Fitzroy River adjacent to Lot 3 on PN106 and Lot 1 on SP136791 must not reduce the depth of the waterhole by more than 0.5 meters below full supply level.

6. The holder of this water permit must develop and implement a method of measuring waterhole levels to ensure compliance with Schedule B Condition 5. and must provide evidence of this method to the chief executive by email at centralwaterservices@dnrme.qld.gov.au within 5 business days upon request.

7. Flows in the Fitzroy River mentioned under Schedule B Conditions 4, 5, and 8 must be measured:
   a) at Riverslea Gauging Station (GS130003B); or
   b) at a location and of a method to the satisfaction of the chief executive, if flows in the Fitzroy River cannot be measured at Riverslea Gauging Station (GS130003B).

8. On each occasion that water is taken under the authority of this water permit, the permit holder must record:
   (a) For the beginning of the period when the take commenced:
      i. the meter or measuring device reading;
      ii. the date and the time;
      iii. the rate of take;
      iv. the flow in the Fitzroy River; and
      v. the water level in the waterhole if water is being taken when there is no flow in the Fitzroy River.

The impact of storage operation on aquatic ecosystems, including:
- water quality
- bank condition
- fish stranding.
For the end of the period when the take ceased:
   i. the meter or measuring device reading;
   ii. the date and the time;
   iii. the total volume taken;
   iv. the flow in the Fitzroy River; and
   v. the water level in the waterhole if water was taken when there was no flow in the Fitzroy River.

9. Any take of water from the bed and banks that is a result of dewatering activities, in accordance with Schedule B Condition 3., must be measured and recorded separately. On each occasion that this dewatering water is taken under the authority of this water permit, the permit holder must record:
   a) For the beginning of the period when the take commenced:
      i. the meter or measuring device reading;
      ii. the date and the time; and
      iii. the rate of take.
   b) For the end of the period when the take ceased:
      i. the meter or measuring device reading;
      ii. the date and the time; and
      iii. the total volume taken.

10. Records under Schedule B Conditions 8. and 9. must be provided to the chief executive by email at centralwaterservices@dnrme.qld.gov.au:
    a) within 5 business days after the end of each month during the period of the water permit; and
    b) within 5 business days upon request.

1.2 Purpose and scope

The scope of monitoring to which these standards apply is:

- Water level and quantity monitoring
- Monitoring impacts of storage operation on aquatic ecosystems, including:
  - overview of new risk-based approach water quality (for Medium, High and Low risk storages)
  - bank condition
  - fish stranding.
- Establishing and reviewing monitoring programs and
- Data collection, validation, and storage

Note: The risk-based approach referred to throughout this document does not apply to water level and quantity monitoring. Any monitoring associated with flood operations are outside the scope of these standards.

Construction: Water levels in the river will be monitored as part of the take water permit as part of the take water permit, as detailed in Section 5.2 of the Soil and Water Monitoring sub-plan, as well as the flood warning system for construction safety. Quantity monitoring will occur on extraction pumps used to take construction water volumes as required by the take water permit conditions. Refer to Section 3.2.3 for monitoring of impacts to aquatic ecosystems. Monitoring is directly related to the Alliance construction contractor and is reviewed and approved by Sunwater. Other operational or project life monitoring programs are developed and managed by Sunwater as required under the projects approval conditions and approved by the relevant administering authority. Data collection, validation and storage is addressed in Section 5.
1.3 Transition to these standards

Where a monitoring program is not consistent with additional requirements of these standards, WIL holders are required to modify their monitoring program to ensure consistency with these standards within two years of the publishing date of these standards, or within a Chief Executive-approved timeframe.

These standards set out the minimum monitoring requirements for water quantity, water quality, fish stranding and bank condition. However, WIL holders have an opportunity to modify their monitoring programs (for water quality, fish stranding and bank condition), based on a risk assessment approach.

2 External Standards, guidelines and water quality objectives

- **Environmental Protection Policy (Water and Wetland Biodiversity) (2019)**
  - WIL holders are required to assess water quality condition against WQGs and WQOs

- **Queensland Water Quality Guidelines (2009)**
  - WIL holders can assess water quality condition against WQGs in the absence of EPP (Water and Wetland Biodiversity) scheduled values.

- **Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)**
  - WIL holders can assess water quality condition against WQGs where no locally derived/basin specific or Queensland WQGs exist.

- **Monitoring and Sampling Manual (Environment Protection Water Policy 2018)**
  - WIL holder monitoring programs should be designed in accordance with the methods and standards outlined in the Monitoring and Sampling Manual, where an existing method is already prescribed in this manual

- **National Industry Guidelines for hydrometric monitoring**
  - Although not specifically established for WIL holders, provides national recommended practice for metadata and should be adhered to, where possible.
  - Metadata requirements are also specified in the Water Monitoring Data Reporting Standards (DNRME 2020).

- **Water Retention and Disposal Schedule QDAN 738 v1**
  - WIL holders are required to adhere to the advice provided in the Water Retention and Disposal Schedule.

**Construction:** The monitoring programs for the construction stage currently meet standard requirements as per this assessment.

- **Water Quality Objectives (WQOs) for the Fitzroy Basin were scheduled under the EPP (Water) in 2019. The three sub-basins that are relevant to this monitoring program are the Fitzroy River, Dawson River and Mackenzie River sub-basins (State of Queensland, 2013). The relevant, current, water quality objectives and guidelines are provided in Tables 5, 6 and 7 (State of Queensland, 2013). Guidelines have now also been developed for more pesticides (Table 8). In future, if the objectives and guidelines are updated, measured values should be instead compared to the newest version.**

If monitoring reveals exceedances of scheduled Water Quality Objectives or Guidelines, the following additional assessments are recommended:

- Compare measured values to previously recorded values from nearby monitoring sites (Table 9) and pre-development baseline monitoring, to determine whether water quality has changed from the pre-development state.
- Conduct additional monitoring to attempt to identify the source of the exceedance, including at sites upstream from the measured value or in contributing tributaries.
- Increase frequency of monitoring for the affected parameter/s at the affected site/s.

In some cases, this additional monitoring may provide information as to whether the exceedance occurred as a result of the Rookwood Weir project and associated developments.

If impacts on waterway condition occur during the monitoring period (e.g. a fish kill, or an increase in gullying or streambank erosion in PDA), but cause/effect was not detected by the water quality monitoring program, monitoring site locations and frequency should be reviewed.

The conditions of the approval state that if the monitoring program determines that a residual impact to the Great Barrier Reef World Heritage Area and National Heritage
3.1 Water quantity monitoring

The requirements for monitoring water quantity are set out in the WIL and are specifically related to the infrastructure of the WIL. These standards do not provide further guidance on what, where and when to monitor in terms of stream flow, water level, releases, diversions, allocations or assignments.

All water quantity monitoring should be undertaken in accordance with the National Industry Guidelines for Hydrometric Monitoring Series and National Industry Guidelines for Water Quality Metadata (BoM 2019 and BoM 2016, respectively), where relevant.

3.2.1 Overview of risk based approach

These standards are supplemented by a targeted risk-based approach to monitoring water storages and receiving water environments using the following guideline and template:

- Guidance on assessing risk of impact of Water Infrastructure Licence holder storage operations on aquatic ecosystems and
- Template for assessing risk of impact of Water Infrastructure Licence holder storage operations on aquatic ecosystems.

Where WIL holders have not implemented the risk-based approach, the minimum monitoring requirements for water quality, bank condition and fish stranding are specified in Section 3.2.3 to 3.2.5 of this document.

3.2.2 Risks to bank condition

Storage operations, including the timing, volume, duration and rate of releases needs to be carefully monitored to minimise risks to bank stability within and downstream of storages.

3.2.2.2 Risks to fish stranding

Storage operation protocols should ensure that any releases reflect natural flow regimes as far as possible and avoid a rapid increase in flows followed by a constant release rate and a rapid decline.

3.2.3 Water quality monitoring

WIL holders are required to collect sufficient water quality data to enable them to report against the requirements of their licence and to enable comparison to the relevant WQOs and includes:

- Summarise any operational release decisions made and evaluate the effectiveness of these decisions on preventing or mitigating any adverse impacts
- Discuss and assess
  - thermal and chemical stratification patterns in each storage
  - the impact of the storage and its management on the quality of water released
  - Cumulative effects of water storages within a water supply scheme
  - Cyanobacterial population changes in response to stratification in each storage

To provide adequate spatial (depth) and temporal (seasonal) data to inform the data reporting requirements, and in the absence of place is likely to or has actually occurred, the approval holder must notify the Minister within 20 days.

Both water quality monitoring programs were prepared taking into consideration all relevant water quality monitoring standards.

Construction: Noted. All water quality monitoring requirements including stream flow, water level, releases, diversions, allocations or assignments have been developed by taking into consideration the construction stages and methodology and various approval conditions imposed on the Project.

Construction: Environmental Impact Assessments and detailed risk assessments have informed the development of current individual water monitoring programs as well permit requirements for construction.

Construction monitoring will meet the relevant requirements within section 3.2.3 and 3.2.5.

Risks associated with Construction ROL for Stages 6-7 and the Operational ROL will addressed in an amended water quality program.

Construction: Not relevant to this Construction ROL.

Construction: Not relevant to this Construction ROL.

Construction: Only partially relevant to this Construction ROL.

Headwater and tailwater flow and water quality monitoring will be sufficient to demonstrate if any significant impacts from construction has or is occurring so that corrective actions can be put in place.

Th two monitoring programs show the monitoring locations which include headwater and tailwater sites. Construction monitoring will include:

- Monthly monitoring within (headwater) and downstream (tailwater)
- Monitoring headwater and tailwater during event/scheduled release (if safe to do so)
a risk assessment, the following program is the minimum required **for all high and medium risk storages**:
- Monthly monitoring within (headwater) and downstream (tailwater)
- Monitoring headwater and tailwater during event/scheduled release (if safe to do so)
- At least one headwater site (located close to the offtake) and one tailwater site (immediately downstream)
- In situ depth profiles (minimum 1m intervals) at headwater sites for temperature, dissolved oxygen, pH, and electrical conductivity
- Integrated hosepipe sample for the analysis of blue-green algae (species identification, enumeration and biovolume)
- Surface and bottom samples for total nitrogen (TN), total phosphorus (TP) and hydrogen sulphide (H2S) (headwater)
- Surface samples for blue-green algae (BGA), TN, TP and H2S (tailwater)
- Surface in situ monitoring (tailwater) for temperature, dissolved oxygen, pH, and electrical conductivity.

All sampling should be undertaken according to the DES (2018) Monitoring and Sampling Manual.

---

**Table 3.1** Monthly water quality sampling requirements for medium or high risk storages

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Within storage (headwater)</th>
<th>Method</th>
<th>Storage outfall (tailwater)</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGA</td>
<td>Yes</td>
<td>Integrated hosepipe</td>
<td>Yes</td>
<td>Surface grab</td>
</tr>
<tr>
<td>Temperature</td>
<td>Yes</td>
<td>In situ profile, 1m intervals</td>
<td>Yes</td>
<td>In situ (surface)</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>Yes</td>
<td>In situ profile, 1m intervals</td>
<td>Yes</td>
<td>In situ (surface)</td>
</tr>
<tr>
<td>pH</td>
<td>Yes</td>
<td>In situ profile, 1m intervals</td>
<td>Yes</td>
<td>In situ (surface)</td>
</tr>
<tr>
<td>Electrical Conductivity</td>
<td>Yes</td>
<td>In situ profile, 1m intervals</td>
<td>Yes</td>
<td>In situ (surface)</td>
</tr>
<tr>
<td>Total nitrogen</td>
<td>Yes</td>
<td>Surface/bottom (using Niskin bottle)</td>
<td>Yes</td>
<td>Surface grab</td>
</tr>
<tr>
<td>Total phosphorus</td>
<td>Yes</td>
<td>Surface/bottom (using Niskin bottle)</td>
<td>Yes</td>
<td>Surface grab</td>
</tr>
<tr>
<td>Total sulphide</td>
<td>Yes</td>
<td>Surface/bottom (using Niskin bottle)</td>
<td>Yes</td>
<td>Surface grab</td>
</tr>
</tbody>
</table>

- At least one headwater site (located close to the offtake) and one tailwater site (immediately downstream)
- Surface in situ monitoring (tailwater) for temperature, dissolved oxygen, pH, and electrical conductivity.

As flows will not be impounded during Stage 1 to 5 the other elements are not relevant.

---

3.2.4 Bank Condition

Where specified in the licence, WIL holders are required to inspect and report on banks for evidence of collapse and/or erosion identified within the ponded areas and downstream of each storage.

While no downstream limit of inspection is specified in the WIL, the expectation is that all potential impacts must be monitored to the limit of the impact of the scheme operations.

Until such guidelines are available, the minimum monitoring requirements are:
- Undertake a baseline geomorphic assessment within storages and downstream to the limit of scheme operations to establish 'high-risk' areas or hotspots
- Implement a regular (e.g. annual/biennial) program to monitor and assess any changes against the baseline conditions
- Inspect banks within and downstream of storages in high risk areas following large inflow events or releases.

**Construction**: Within construction disturbance areas this aspect will be monitored as part of the Construction Erosion and Sediment Control Plan as well as daily and weekly environmental inspections. The Erosion and Sediment Control Plan is provided in Appendix B: Erosion Control Response Flowchart in Rookwood Weir Project Soil and Water Quality Management Sub-Plan. For operation details refer to Section 3.2.3.
3.2.5 Fish stranding

Where specified in the licence, WIL holders are required to record and assess instances of fish stranding in watercourses or ponded areas associated with the operation of their scheme infrastructure.

Construction: Fauna spotter catchers will record all instances of fish mortality for native species and report incidences as per the aquatic wildlife/fish stranding procedure as developed under the DAF guidelines.

4.1 Assumed medium or high risk unless demonstrated otherwise

Based on the new risk-based approach, all storages are considered as medium or high risk unless demonstrated otherwise.

In the absence of a risk assessment, and where specified in the WIL, the minimum monitoring requirements for water quality, fish stranding and bank condition are specified in Section 3.2.3 to 3.2.5 of this document.

Construction: For this Construction ROL, it has been assumed that the weir is considered as medium or high risk by its design and magnitude.

5 Data collection, validation and storage

The collection, validation and storage of data must be undertaken according to existing national and state standards and guidelines, where available.

To ensure the collection and delivery of reliable, accurate and fit for purpose data, WIL holders are required to operate within a structured quality management system (QMS). This should include establishing specific quality assurance policies, protocols and procedures relating to all aspects data measurement, collection, analysis and storage, including:

- Training and certification of staff
- Hydrometric site establishment and operations
- Data measurement and collection, including discrete water sample collection, in situ data collection and primary measured data collection
- Maintenance and calibration of instruments
- Field quality assurance/quality control (QA/QC)
- Laboratory and analytical methods - all analysis to be undertaken by a National Association of Testing Authorities (NATA) accredited laboratory, according to appropriate levels of detection, standard methods (e.g. APHA, USEPA etc)
- Laboratory QA/QC
- Data handling, validation, and Q
- Data storage and disposal.

Construction: Water quality monitoring must be undertaken by a suitably qualified person with appropriate training in sampling techniques in accordance with the DEHP’s Monitoring and Sampling Manual 2009.

Two locations, one upstream and one downstream are nominated as stream flow monitoring locations to observe river flows during the construction period. A stream flow gauge will be installed at Hanrahan’s Crossing prior to construction of the Weir. Hanrahan’s will measure flows downstream of the Weir both during and after construction. An existing stream flow gauge ‘130003B FITZROY RIVER AT RIVERSLEA’ will be inundated at the completion of the construction i.e. water can be impounded, however during construction the existing gauge can be used for upstream flow monitoring. The existing Riverslea gauging station is to be made redundant and a new upstream gauging station installed by Sunwater to replace it. For details refer to Section 5.2 Rookwood Weir Project Soil and Water Quality Management Sub-Plan.

Manual sampling using a handheld multi-parameter monitor will measure the following parameters; pH, Temperature, Turbidity (NTU), Dissolved Oxygen (DO) and Electrical Conductivity (EC). Where required, samples will also be collected and sent to a laboratory for testing of additional parameters. Laboratory analysis will determine total suspended solids (TSS). However, monitoring is not required for TSS if correlation with NTU criteria is achieved. For details refer to Section 5.1.3 Rookwood Weir Project Soil and Water Quality Management Sub-Plan.

The parameters and sampling schedules have been designed to provide appropriate data to inform existing catchment scale and reef load models run by the Queensland Government. Baseline data collected before and during construction may be utilised to
Refine or validate the models. The results of the monitoring program will also inform the need for a water nutrient offset strategy (State of Queensland, 2016). Monitoring data should be provided through an agreed channel between Sunwater and the relevant Queensland Government Department personnel for this purpose, as soon as it is collected. The existing models can then be used to predict impacts of the activity on the Great Barrier Reef World Heritage Area using the Source Catchments model for the Fitzroy.

Provision of fish passage is recognized as an integral part of the conditions relevant to construction and operation of the weir. To address this, a fishway design process was undertaken in accordance with Queensland Fisheries (then as the Department of Employment, Economic Development and Innovation (DEEDI)) Design Process criteria. For details refer to Section 2.3 of the Rookwood Weir Waterway Barrier Works Planning Report.

Instruments must be stored, calibrated, maintained and used as per manufacturer’s instructions, and detailed records of calibration and maintenance must be kept (State of Queensland, 2018). Instructions for taking readings with multi-parameter water quality meters are provided in the Monitoring and Sampling Manual (State of Queensland, 2018).

The Monitoring and Sampling Manual (State of Queensland, 2018) recommends the development of a structured data management system that provides secure data storage for reliable access and reporting. High frequency data are collected by continuous monitoring techniques, so specific quality assurance protocols and procedures are generally required in these cases. Erroneous data should be removed from the dataset before use, but any data corrections must be based on documented procedures and be defensible.

The recommended approach is that data are collected and cleaned, transferred to the Department of Environment and Science (loads monitoring team) to conduct loads calculations, and then transferred to the Department of Natural Resources,
**Water monitoring Data Reporting Standards**

<table>
<thead>
<tr>
<th>Section</th>
<th>Requirement</th>
<th>Section addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Background</td>
<td>Under the Water Act 2000, all water supply scheme operators are required to collect and report water (quantity and quality) monitoring data in accordance with the conditions of the Resource Operations Licence (ROL), Distribution Operations Licence (DOL) or interim Resource Operations Licence (iROL).</td>
<td>Construction: Noted. The requirements of the standards have been incorporated into the existing monitoring program reviews to ensure consistency and compliance.</td>
</tr>
<tr>
<td>1.2 Purpose and scope</td>
<td>Data sets and reports from a monitoring program must be measured, collected, analysed and stored in accordance with the collection standards. These standards set out the recommended format, minimum specifications and timeframe requirements for water quantity and water quality data sets and reports required to be submitted by all WIL holders to the Chief Executive of the department. These standards outline the requirements for quarterly and annual data transfers, annual reports, and operational and emergency reports, including details on: • The format required for data file transfers • Minimum specifications including metadata for file transfers and reports • The requirements for each report type • Reporting on quality assurance. • When reports and data sets must be submitted by • Lodgement of the data transfers and reports.</td>
<td>Noted and standards currently being incorporated into monitoring program reviews to ensure consistency and compliance. These requirements will be clearly stated within the programs prior to Sunwater approval of the documents for implementation.</td>
</tr>
<tr>
<td>1.3 Transition to these standards</td>
<td>Where a monitoring program is not consistent with additional requirements of these standards, WIL holders are required to modify their monitoring program to ensure consistency with these standards within two years of the publishing date of these standards, or within a Chief Executive-approved timeframe.</td>
<td>As above.</td>
</tr>
</tbody>
</table>

**Table 1.1**

| Monitoring and Sampling Manual (Environment Protection Water Policy 2009) - WIL holder monitoring programs should be designed in accordance with the methods and standards outlined in the Monitoring and Sampling Manual, where an existing method is already prescribed in this manual. National industry guidelines for hydrometric monitoring - WIL holders should refer to these guidelines for collection of primary measured data, including surface water - level, discharge, water quality; groundwater - level and water quality. Does not relate to discrete water sampling data. National industry guidelines for water quality metadata - provides national recommended practice for metadata Water Retention and Disposal Schedule QDAN 738 v1 - WIL holders are required to adhere to the advice provided in the Water Retention and Disposal Schedule. | It is noted that this Manual has been superseded by The Monitoring and Sampling Manual 2018 is the main document to determine the protocols when monitoring is required under the Environmental Protection Act 1994 and Environmental Protection Regulation 2019. |

**2.1 Requirements for operational, emergency,** Where the details of the licence differ from the reporting requirements in Table 2.1, the conditions of the licence shall prevail. | Noted |
Table 2.1 Operational, emergency, quarterly and annual reporting

### Operational Reports
- Where specified in the licence, WIL holders must notify the Chief Executive within **one business day** of any non-compliance with the WIL or with operating and supply arrangements OR other operational incidents, including fish stranding and kills, blue-green algal blooms or bank slumping (within and downstream from storages).

- The WIL holder must also notify the Chief Executive of any arrangements for circumstances where they are unable to supply water allocations.

- A written report must be provided within **five business days** (or within the timeframes specified in the licence) following notification to the Chief Executive.

### Emergency Reports
- As specified in the licence, WIL holders must notify the Chief Executive within **one calendar day** upon discovery of any emergency.

- WIL holders must submit an emergency report in accordance with their licence conditions, within **five business days** of notification of the emergency.

### Quarterly Reports
- Where specified in the licence, WIL holders must submit quarterly reports to the Chief Executive.

- For WIL holders that are not required to submit quarterly reports, they must retain the monitoring data and provide it upon any request from the department.

### Annual Reports
- The WIL holder must submit a written annual report along with supporting primary measured data and analysis in accordance with collection standards, these standards and their licence conditions.

- WIL holders are to submit annual data sets, where they are different from the quarterly data sets, or where the quarterly data reports are not required under their licence.

---

2.2 Quality assurance statement

WIL holder annual reports are required to have a quality assurance statement that outlines the standards and quality controls that are planned or have been implemented. These annual reports must detail what quality controls were in place at the time of collecting and reporting on the data i.e. validation of the primary measured data.

All WIL holders have an improvement plan as part of the quality management of the hydrometric networks that they are required to periodically report as detailed under these standards.

---

**Construction:** All monitoring data will be collected in accordance with standards and will be compiled for Quarterly or annual reports if required under the ROL conditions.

Operational or emergency reports are not applicable to this Construction ROL.

This will be incorporated into the Project Quality Management System as well as monitoring programs during the current Proponent reviews and prior to final approval for implementation.
<table>
<thead>
<tr>
<th>Data set/report</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarterly report and data transfer</td>
<td>Within eight weeks after the end of the reporting quarter (unless otherwise specified in the licence)</td>
</tr>
<tr>
<td>Annual report</td>
<td>Within three months after the end of the water year</td>
</tr>
</tbody>
</table>

**Construction:** Data collected during construction will be submitted quarterly.

**Emergency report**

Notification to the Chief Executive is as specified in the licence conditions and must be made within five business days upon discovery of the emergency.

A written report within five business days following notification to the Chief Executive (unless otherwise specified in the licence).

**Requested data transfer**
The Chief Executive may request data to be provided in a specified format and timeframe for any data under a WLA that may not be detailed in this standard.
Attachment 3 - Construction plans

CONSTRUCTION PLANS conditioned in the
RESOURCE OPERATIONS LICENCE
by The Department Of Regional
Development, Manufacturing And Water.

DATE: ........................................

STAGE 1 - MARCH - MAY 2021
RIVER CROSSING
CONSTRUCTION
WORK AREA

RIGHT BANK
EXCAVATION
TO RL37.0

4 x 900mm
CULVERTS

LEFT BANK
EXCAVATION
TO RL33.0

CONNECT TO SITE
ACCESS ROAD

LEGEND

MAJOR CONTOURS

MINOR CONTOURS

PERMANENT DESIGN CONTOURS

AQUA BARRIER

CULVERTS

1:1000

STAGE 1 PLAN LAYOUT

DO NOT SCALE

RPEQ

NAME: L. YOUNG

REVISION

SIGNATURE

DATE

PROJECT

DRAWING

MANAGER

PLOT DATE: 17/12/2020 2:30:33 PM

Note: * indicates signatures on original issue of drawing or last revision of drawing

Rookwood
Weir
Project

SUNWATER
ROOKWOOD WEIR PROJECT
RIVER DIVERSION
STAGE 1

NOT FOR CONSTRUCTION

SUNWATER

A1

Drawing No: RWW - RWA-RDS1- SK - 001 - Rev: P1

Project

Manager

Director

Client

Approved

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Scale

1:1000

RWW

RWA

RDS1

SK

P1

17.12.20

NOT FOR CONSTRUCTION

Project

Director

Manager

Client

Approved

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Scale

1:1000

RWW

RWA

RDS1

SK

P1

17.12.20

(Note: * indicates signatures on original issue of drawing or last revision of drawing)
CONSTRUCTION PLANS
conditioned in the
RESOURCE OPERATIONS LICENCE
by The Department Of Regional
development, Manufacturing And Water.

DATE: ..........................
CONSTRUCTION PLANS conditioned in the RESOURCE OPERATIONS LICENCE by The Department Of Regional Development, Manufacturing And Water.

DATE: 

RIVER CROSSING COMPLETE AND RIVER PASSING THROUGH LOW FLOW ARCH

STAGE 4 - JULY - NOV 2021
CONSTRUCTION PLANS conditioned in the RESOURCE OPERATIONS LICENCE by The Department Of Regional Development, Manufacturing And Water.

DATE: .................................
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHD</td>
<td>Australian Height Datum, which references a level or height to a standard base level.</td>
</tr>
<tr>
<td>AMTD</td>
<td>Adopted middle thread distance</td>
</tr>
<tr>
<td>EL</td>
<td>Elevation</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>A dam, weir or other water storage and any associated works for taking or interfering with water in a watercourse, lake or spring.</td>
</tr>
<tr>
<td>Megalitre (ML)</td>
<td>One million litres</td>
</tr>
</tbody>
</table>