Approval

Construction and operation of Nathan Dam, Taroom, QLD - EPBC 2008/4313

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted	SunWater Limited	
Proponent's ABN	17 020 276 523	
proposed action	Construction and operation of Nathan Dam on the Dawson Rive and associated infrastructure, Central Queensland [See EPBC Act referral 2008/4313].	

Approval decision

Controlling Provision	Decision
World Heritage properties	
Section 12	Approved
Section 15A	Approved
National Heritage places	
Section 15B	Approved
Section 15C	Approved
Wetlands of international importance	
Section 16	Approved
Section 17B	Approved
Listed threatened species and communities	
Section 18	Approved
Section 18A	Approved
Listed migratory species	
Section 20	Approved

Section 20A	Approved
Commonwealth marine areas	
Section 23	Approved
Section 24A	Approved

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 July 2067

Decision-maker

name and position

James Barker

Assistant Secretary

Assessments and Governance Branch

signature

date of decision

13/7/2017

Conditions attached to the approval

 The approval holder must ensure that no additional water is provided to agricultural users in the Dawson Valley Water Supply Scheme.

Note: The above condition reflects the Environmental Impact Statement submitted by Sunwater Limited, which excludes the provision of additional water for any increase or intensification of agricultural activities.

Pre-clearance surveys

- Before commencement of the action, the approval holder must undertake pre-clearance surveys of all areas to be impacted by the action to determine the extent of habitat for EPBC Act listed threatened species and habitat for EPBC listed ecological communities.
 - a) Pre-clearance surveys must:
 - be undertaken in accordance with the **Department's** survey guidelines in effect at the time of the survey, or another survey methodology agreed to by the **Department** in writing; and
 - ii. be undertaken by a suitably qualified person.
 - b) The survey methodology for the fitzroy river turtle must be informed by available scientific knowledge on the preferred foraging and nesting habitat, breeding and behaviours of the fitzroy river turtle.
 - c) The approval holder must provide a report to the **Department** within 30 days of the completion of the pre-clearance surveys for **EPBC Act listed threatened species** and **EPBC Act ecological communities**. The report must be provided to the **Department** before submission of the Offset Management Plan required at condition 12 and must include:
 - i. details of survey outcomes;
 - ii. the amount of habitat (in hectares) suitable for EPBC Act listed threatened species and EPBC Act listed ecological communities that will be impacted by the action;
 - iii. a description and map of the location of the areas of habitat suitable for EPBC Act listed threatened species and EPBC Act listed ecological communities that will be impacted by the action; and
 - iv. a description of the nature of the impacts.

Water quality monitoring program

- To detect potential impacts on the Great Barrier Reef World Heritage Area and National
 Heritage place due to decaying vegetation in the water storage area, the approval holder
 must develop a Water Quality Monitoring Program (WQMP) that meets current recognised
 standards for water quality monitoring and reporting.
- The WQMP must include:
 - a) details of water sampling and analysis methodologies capable of detecting changes in water quality;

- details of thresholds and early warning triggers for detecting changes in water quality;
- details of adaptive and continuous improvement systems to enhance the capacity to predict and detect changes to water quality and potential impacts on the Great Barrier Reef World Heritage Area and National Heritage place;
- d) include details of reporting requirements, including timeframes and a five (5) yearly review of the WQMP;
- e) provide sufficient information, including monitoring for deriving pre-construction baselines, to enable the determination of a water quality offset required to offset residual significant impacts on the Great Barrier Reef World Heritage Area and National Heritage place, for each year in which those impacts occur; and
- f) demonstrate how the WQMP will be integrated into relevant existing or future water quality monitoring programs including, but not limited to, the Reef 2050 Integrated Monitoring and Reporting Program.
- 5. The approval holder must submit the WQMP for the written approval of the Minister at least three (3) months before inundation of Nathan Dam. Inundation of Nathan Dam must not commence until the WQMP has been approved by the Minister. The approved WQMP must be implemented.
- 6. If it is determined through water sampling and analysis required under the approved WQMP that changes in water quality have occurred and a residual significant impact to the Great Barrier Reef World Heritage Area and National Heritage place is likely to or has occurred, the approval holder must notify the **Department** within 28 days.
- 7. Once notification occurs, a description of actions and timeframes for the provision of water quality offsets must be provided to the Department within 28 days. Offsets must be in accordance with the EPBC Act Environmental Offsets Policy and relevant Reef 2050 Plan requirements including the Net Benefit Policy.

Note: Any offset that may be required by condition 7 may be provided to the **Reef Trust** as financial contribution.

Great Artesian Basin (GAB) Springs Monitoring Program

- 8. The approval holder must submit a Great Artesian Basin Springs Monitoring Program (GABSMP) to the **Department** at least three (3) months before **commencement** of the action for the written approval of the **Minister**.
- 9. The GABSMP must:
 - a) be prepared by a suitably qualified person;
 - include details of sampling and analysis methodologies for detecting and predicting impacts attributable to the action on the GAB Springs ecological community (EC);
 - c) include early warning triggers and impact thresholds sufficient to detect **impacts** attributable to the action on the GAB Springs EC;
 - include corrective actions to address any potential impacts on the GAB Springs EC, as a result of implementing the action; and

- e) include a discussion of how proposed corrective measures take into account relevant approved conservation advice and are consistent with the measures contained in relevant recovery plans and threat abatement plans.
- The approval holder must not commence the action until the GABSMP has been approved by the Minister in writing. The approved GABSMP must be implemented.
- 11. If the monitoring of GAB Springs EC offsets required under condition 12 demonstrates that there is no conservation gain in accordance with the EPBC Act Environmental Offsets Policy:
 - a) the approval holder must notify the **Department** within 28 days; and
 - a description of actions and timeframes for the provision of alternative/additional offsets must be provided to the **Department** within 28 days. Alternative/additional offsets must be in accordance with the **EPBC Act Environmental Offsets Policy**.

Offset Management Plan

- 12. At least three (3) months before the commencement of the action, the approval holder must submit an Offset Management Plan for the written approval of the Minister. The Offset Management Plan must be prepared in accordance with the Department's Environmental Management Plan Guidelines and include:
 - a) details of offsets for residual significant impacts to the following:
 - Brigalow (Acacia harpophylla dominant and co-dominant) ecological community determined by the pre-clearance surveys required under condition 2;
 - ii. habitat/or individuals of hairy-joint grass (*Arthraxon hispidus*) determined by the pre-clearance surveys required under condition 2;
 - iii. habitat for squatter pigeon (southern) (*Geophaps scripta scripta*) determined by the pre-clearance surveys required under condition 2;
 - 5.6 hectares of the GAB Springs EC;
 - v. 2.4 hectares of habitat for the boggomoss snail (Adclarkia dawsonensis); and
 - vi. nesting and foraging habitat for fitzroy river turtle (*Rheodytes leukops*) (if determined that **residual significant impacts** are likely following the pre-clearance survey required at condition 2).
 - details of the proposed minimum offset area/s and how these proposed offset/s meet the requirements of the EPBC Act Environmental Offsets Policy;
 - a description and map to clearly define the location and boundaries of the proposed offset area/s, accompanied by the offset attributes;
 - d) details of the establishment and rehabilitation of a wildlife movement corridor described in Appendix B1-B of the AEIS;
 - details of how the proposed wildlife movement corridor and other proposed offset area/s provide connectivity with other relevant habitats and biodiversity corridors;
 - details of the establishment and rehabilitation of parts of the water storage flood buffer to provide habitat for EPBC Act listed threatened species and EPBC Act listed ecological communities;

- g) a description of the management measures (including timing, frequency and longevity) that will be implemented in the wildlife movement corridor, water storage flood buffer and other proposed offset area/s;
- a discussion of how proposed management measures take into account relevant approved conservation advice and are consistent with the measures contained in relevant recovery plans and threat abatement plans;
- i) details of outcomes and performance criteria for evaluating the effectiveness of the proposed offset area/s, and criteria for triggering corrective actions (if necessary);
- j) a program to monitor and report on the effectiveness of the outcomes and performance criteria;
- a description of potential risks to the successful implementation of the offset/s, and corrective actions that would be implemented to mitigate against these risks; and
- 1) a timeline and legal mechanism for securing the offset area/s or offset outcomes.
- 13. If additional areas of habitat for EPBC Act listed threatened species and EPBC Act listed ecological communities not previously identified and reported to the Department are found in the project area during pre-clearance surveys required by condition 2, the approval holder must:
 - a) notify the **Department** within five (5) business days of finding the **EPBC Act listed** threatened species and **EPBC Act listed ecological communities**; and
 - b) submit to the Department details of how impacts to EPBC Act listed threatened species and EPBC Act listed ecological communities will be avoided, mitigated and offset if a residual significant impact is likely.
- 14. The approval holder must not commence the action until the Offset Management Plan has been approved by the Minister in writing. The approved Offset Management Plan must be implemented. For offsets that may be required following inundation of fitzroy river turtle habitat, the approval holder may elect to provide a financial offset in a manner approved by the Minister, as calculated using the web-based Financial Settlement Offset Calculator on the Queensland Government website.
- 15. All offset payments required at condition 14 must be paid in full within one (1) year following inundation.

Boggomoss Snail (Adclarkia dawsonensis)

- 16. At least three (3) months prior to the commencement of the action, the approval holder must submit a Boggomoss Snail Management Plan for the written approval of the Minister. The Boggomoss Snail Management Plan must be prepared by a suitably qualified person and in accordance with the Department's Environmental Management Plan Guidelines. The Boggomoss Snail Management Plan must include:
 - details of how the boggomoss snail and its habitat will be protected during construction and operation of the action;
 - b) details of a relocation program, to relocate the **Mount Rose sub-population** of the boggomoss snail outside of the water storage area to an area which is to be managed for the life of the approval, including:

- taking into account the relocation strategy described in Appendix 11E of the Environmental Impact Statement;
- ii. a description of the habitat in the inundation and relocation areas;
- iii. outcomes and performance criteria for the relocation program and ongoing management of the relocation area; and
- iv. monitoring and reporting requirements to report on the effectiveness of the outcomes and performance criteria.
- a discussion of how proposed management measures, including relocation activities, take into account relevant approved conservation advice and are consistent with the measures contained in relevant recovery plans and threat abatement plans;
- d) a description of how flow regimes will be managed to minimise potential **impacts** on boggomoss snail habitat downstream from Nathan Dam; and
- e) a timeline for implementing the proposed management measures.
- 17. The approval holder must not commence the action until the Boggomoss Snail Management Plan has been approved by the Minister in writing. The approved Boggomoss Snail Management Plan must be implemented. Approved relocation activities for the Mount Rose sub-population of the boggomoss snail must be completed before inundation of Nathan Dam.

Fitzroy River Turtle (Rheodytes leukops)

- 18. At least three (3) months before the commencement of the action, the approval holder must submit a Turtle Management Plan for the written approval of the Minister. The Turtle Management Plan must be prepared by a suitably qualified person in accordance with the Department's Environmental Management Plan Guidelines. The Turtle Management Plan must include details of:
 - a) how the fitzroy river turtle and its habitat will be protected and managed during construction of the action; and
 - b) how flow regimes downstream of Nathan Dam will be managed during operations to minimise impacts on the fitzroy river turtle and its habitat;
 - how proposed management measures take into account relevant approved conservation advice and are consistent with the measures contained in relevant recovery plans and threat abatement plans;
 - d) success criteria of the turtle passage infrastructure required at condition 20;
 - e) a turtle movement study to collect baseline data at locations agreed in writing by the Department. The turtle movement study must:
 - i. be prepared and undertaken by a suitably qualified person;
 - collect data on seasonal movement patterns and home ranges of the fitzroy river turtle, including wet and dry season movements, breeding periods and nesting distribution;
 - iii. be sufficient to inform the design of the turtle passage infrastructure required at condition 20; and

- iv. inform development of criteria for monitoring success of the turtle movement passage required at condition 20 (the turtle movement success criteria) based on the data collected during turtle movement study.
- 19. The approval holder must not commence the action until the Turtle Management Plan has been approved by the Minister in writing. The approved Turtle Management Plan must be implemented.
- 20. The approval holder must construct turtle passage infrastructure suitable for the fitzroy river turtle prior to **inundation** of Nathan Dam.
- 21. The approval holder must ensure:
 - turtle passage infrastructure is constructed in accordance with a design addressing requirements evident from the turtle movement study required under condition 18; or another turtle movement study agreed to in writing by the **Department**; and
 - b) turtle passage infrastructure, and dam design and operation minimise the incidence of turtle injury and mortality as a result of operation of Nathan Dam.
- 22. The approval holder must monitor the effectiveness of the turtle passage infrastructure against the turtle movement success criteria (at condition 18). Monitoring of the effectiveness of the turtle passage infrastructure must be undertaken by a suitably qualified person and commence 12 months after minimum operating volume is first reached, and annually thereafter.
- 23. The approval holder must:
 - a) during the first year of operation, establish a volumetric flow performance regime to minimise impacts to fitzroy river turtle nests downstream of Nathan Dam; and
 - b) thereafter, during the months of September to February, manage the release of water from Nathan Dam in accordance with the volumetric flow performance regime.

Note: The approval holder may align a plan required under these conditions with the requirements of the Queensland Government, as long as the relevant matters under the conditions of this approval are clearly and adequately addressed.

Administrative conditions

- 24. Within 10 days after the **commencement** of the action, the approval holder must advise the **Department** in writing of the actual date of **commencement**.
- 25. The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plan or program required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department**'s website. The results of audits may also be publicised through the general media.
- 26. Within three (3) months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report (Annual Compliance Report) on its website addressing compliance with each of the conditions of this approval, including implementation of any management plans or programs as specified in the conditions, during the previous 12 months. Documentary evidence providing proof of the date of

- publication must be provided to the **Department** at the same time as the Annual Compliance Report is published. The approval holder must continue to publish the Annual Compliance Report each year until such time as agreed to in writing by the **Minister**.
- 27. The approval holder must report any potential or actual contravention of the conditions of this approval to the **Department** in writing within two (2) business days of the approval holder becoming aware of a contravention. Upon the direction of the **Minister**, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The approval holder must not commence the audit until the **Minister** approves the independent auditor and audit criteria in writing. The audit report must address the criteria to the satisfaction of the **Minister**.
- 28. The approval holder may choose to revise a management plan or program approved by the Minister under conditions 3, 8, 16 and 18 without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan or program would not be likely to have a new or increased impact. If the approval holder makes this choice it must:
 - a) notify the **Department** in writing that the approved plan or program has been revised and provide the Department, at least four (4) weeks before implementing the revised plan or program, with:
 - i. an electronic copy of the revised plan or program;
 - ii. an explanation of the differences between the revised plan or program and the approved plan or program; and
 - iii. reasons the approval holder considers that the taking of the action in accordance with the revised plan or program would not be likely to have a new or increased impact.
- 29. The approval holder may revoke its choice under condition 28 at any time by notice to the **Department**. If the approval holder revokes the choice to implement a plan or program without approval under section 143A of the **EPBC Act**, the plan or program approved by the **Minister** must be implemented.
- 30. Condition 28 does not apply if the revisions to the approved plan or program include changes to environmental offsets provided under the plan or program in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the Minister. This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised plan or program would, or would not, be likely to have new or increased impacts.
- 31. If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan or program would be likely to have a new or increased impact, then:
 - a) condition 28 does not apply, or ceases to apply, in relation to the plan or program;
 and
 - the approval holder must implement the plan or program explicitly approved by the Minister.

To avoid any doubt, condition 31 does not affect any operation of conditions 28, 29 and 30 in the period before the day the notice is given.

At the time of giving the notice, the **Minister** may also notify that for a specified period of time condition 28 does not apply for one or more specified plan or program required under the approval.

- 32. Conditions 28, 29, 30 and 31 are not intended to limit the operation of section 143A of the **EPBC Act** which allows the approval holder to submit a revised plan or program to the **Minister** for approval.
- 33. If, at any time after five (5) years from the date of this approval, the approval holder has not substantially **commenced** the action, then the approval holder must not **commence** the action without the written agreement of the **Minister**.
- 34. Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans, programs, studies, designs and reports referred to in these conditions of approval on its website. Each management plan, program, study, design and report must be published on the website within one (1) month of being approved by the Minister or being submitted under condition 28. All management plans, programs, studies, designs and reports must remain published on the website for the lifetime of the approval unless otherwise agreed to in writing by the Minister.

Definitions

Additional: means additional to total water allocations granted prior to the operation of Nathan Dam.

Approved conservation advice: A conservation advice approved by the Minister under section 266B(2) of the EPBC Act for EPBC Act listed threatened species and ecological communities.

AEIS: Additional information to the Environmental Impact Statement as submitted to the Department in May 2016.

Commence/commencement: means clearing and inundation of vegetation except for the explicit purposes of:

- erecting fencing, signage and access tracks or for protection of EPBC Act listed threatened species and ecological communities by managing invasive weeds or preventing wildfire;
- installation of wind monitoring masts or weather stations;
- any surveys, including ecological, building and road dilapidation surveys;
- · investigative drilling and geotechnical investigations; and
- · establishing temporary site offices and construction compounds.

Conservation advice: a conservation advice made under the EPBC Act.

Dawson Valley Water Supply Scheme: The Dawson River from the upstream limit of Nathan Dam (AMTD 390.5 km) to the downstream limit of the Boolburra waterhole (AMTD 18.37 km).

Department: The Australian Government Department or agency responsible for administering the **EPBC Act** from time to time.

Environmental Management Plan Guidelines: The Environmental Management Plan Guidelines (2014), or subsequent revision. Available at. www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines.

EPBC Act: The Environment Protection and Biodiversity Conservation Act 1999 (Cth).

EPBC Act Environmental Offsets Policy: The *EPBC Act Environmental Offsets Policy* (October 2012), or subsequent revision, including the Offset Assessment Guide. Available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy.

EPBC Act listed threatened species: A threatened flora or fauna species listed under the EPBC Act, including but not limited to:

- Boggomoss Snail (Adclarkia dawsonensis) critically endangered
- Hairy-joint grass (Anthraxon hispidus) vulnerable
- Squatter Pigeon (Geophaps scripta scripta) vulnerable
- Fitzroy River Turtle (Rheodytes leukops) vulnerable

EPBC listed ecological communities: A threatened ecological community, listed under the EPBC Act, including but not limited to:

- Brigalow (Acacia harpophylla dominant and co-dominant) ecological community endangered
- The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin – endangered

Financial Settlement Offset Calculator: An online tool for calculating financial offsets for environmental impacts. Available at: https://environment.ehp.qld.gov.au/offsets-calculator.

Impact/s/impacted: As defined in section 527E of the EPBC Act.

Inundation: flooding of the water storage area above the existing water level.

Legal mechanism for securing: To secure a legal agreement under the *Nature Conservation Act 1992* (Qld) or equivalent in relation to a site, to provide enduring protection for the site against development incompatible with conservation.

Matters of national environmental significance: Matters listed under the EPBC Act for the following controlling provisions:

- listed threatened species and ecological communities
- world heritage properties
- national heritage places
- migratory species
- Commonwealth marine areas

Minimum operating volume: the minimum water level at which the outlet works, including that supporting the turtle passage infrastructure, becomes operational.

Minister: The Minister administering the EPBC Act and includes a delegate of the Minister.

Mount Rose sub-population: the population of the boggomoss snail located on a patch of vegetation surrounding a mound spring on Mount Rose Station, near Taroom, Queensland.

Net Benefit Policy: As outlined in the **Reef 2050 Plan** Annual Report and Implementation Strategy (2016), or subsequent revision. Available at:

www.environment.gov.au/system/files/resources/e2b70193-91fa-49e6-95b2-b1aa8adb1d7c/files/annual-report-imp-plan-reef-2050-plan.pdf.

New or increased impact: A new or increased impact on or risk to any matter protected by the controlling provisions for the action, when compared to the impact on or risk resulting from implementing the plan or program that has been approved by the **Minister**.

Pre-construction baselines: Water quality parameters derived from a regular series of measurements taken in accordance with **recognised standards for water quality monitoring and reporting** over several years before the **commencement** of the action.

Recognised standards for water quality monitoring and reporting: The National Water Quality Management Strategy Australian Guidelines for Water Quality Monitoring and Reporting 2000, or subsequent revision. Available at:

www.agriculture.gov.au/SiteCollectionDocuments/water/nwgms-monitoring-reporting.pdf.

Recovery plan/s: A recovery plan made or adopted by the Minister under the EPBC Act.

Reef 2050 Integrated Monitoring and Reporting Program: The monitoring and reporting programs that are implemented under the Reef 2050 Plan. Available at: www.gbrmpa.gov.au/managing-the-reef/reef-2050/reef-integrated-monitoring-and-reporting-program.

Reef 2050 Plan: The *Reef 2050 Long-Term Sustainability Plan*. Commonwealth of Australia, 2015. Available at: www.environment.gov.au/marine/gbr/long-term-sustainability-plan.

Reef Trust: A financial mechanism assisting in the delivery of the Reef 2050 Long-Term Sustainability Plan. Commonwealth of Australia 2015. Available at: www.environment.gov.au/marine/gbr/long-term-sustainability-plan.

Reef Water Quality Protection Plan: The Reef Water Quality Protection Plan. State of Queensland, 2013. Available at: www.reefplan.gld.gov.au/.

Residual significant impact: means a residual likely significant **impact** (as determined through application of the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance) of the action on **matters of national environmental significance** after avoidance and mitigation measures are applied.

Suitably qualified person/s: means a person who has professional qualifications, training or skills and at least five (5) years of experience relevant to the nominated subject matters to give authoritative assessment, advice and analysis about performance relevant to the subject matter using relevant protocols, standards, methods and/or literature.

Threat abatement plans: A threat abatement plan made or adopted by the Minister under the EPBC Act.

Water storage area: means the area inundated by water as a result of the dam being at Full Supply Level (dam storage capacity of 888,312 megalitres and surface area of 13,508 hectares).

Water quality: Nutrients such as phosphorus and nitrogen, sediments and other suspended solids. An increase in any of these parameters is a detrimental impact to water quality.

Water storage flood buffer: means 100 metres from either the full supply level or 1-in-100-year flood line, whichever is larger. At certain locations around the dam, this line may be adjusted to account for local topography, property boundaries and other features.

Wildlife movement corridor: means a strip of habitat between Precipice National Park, Spring Creek and the Boggomoss and Mount Rose nature refuges and existing protected areas to the north that facilitates fauna movement, as shown in Figure 3 of Appendix B1-B of the **AEIS**.