

**Boundary Creek, Big
Swamp and surrounding
environment
Remediation and
Environmental Protection
Plan**

Quarterly Update

1 January to 31 March 2021

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Introduction

In June 2017, Barwon Water acknowledged that historic management of groundwater pumping had an environmentally significant impact in the Boundary Creek catchment. Reductions in flows caused by groundwater extraction coupled with a drier climate and supplementary flows not reaching the intended area, all contributed to the drying out of Big Swamp. This resulted in the activation of acid sulfate soils and ongoing release of acidic water to the lower reach of Boundary Creek.

In May 2018, Barwon Water established a community and stakeholder working group to participate in the design of a remediation plan for Boundary Creek and Big Swamp. As part of this process, Barwon Water invited the working group to nominate their own technical experts to help support them in their discussions to shape the remediation plan.

Barwon Water's commitment to undertake remedial works was legally strengthened through the issuing of a Ministerial Notice under section 78 of the *Water Act, 1989*. This notice mandated the development and implementation of the Boundary Creek, Big Swamp and Surrounding Environment – Remediation and Environmental Protection Plan (REPP) by 01 March 2020.

The section 78 notice defined remediation to be the controls and actions that could be practicably carried out to achieve improved environmental outcomes. In order to align this with an accepted scientific definition for remediation, the REPP further expanded the definition to be *"the controls and actions that could be practicably carried out to improve the ecological condition and function of areas confirmed to have been impacted by historical management of groundwater pumping at Barwon Downs, noting that this is likely to be different to the original condition due to the extent of change since European settlement."*

In late February 2020, Southern Rural Water (SRW) accepted Barwon Water's REPP, which will be delivered under two parallel work packages:

- The **Boundary Creek and Big Swamp Remediation Plan** to address remediation of confirmed impact in the Boundary Creek catchment resulting from historical management of groundwater extraction.
- The **Surrounding Environment Investigation** to investigate whether other areas within the regional groundwater system have been impacted by historical management of groundwater extraction.

Key requirements of the section 78 notice and the REPP is the provision of quarterly updates to Southern Rural Water to report on progress with implementation of the plan, as well as an Annual Report. The Annual Report is required to be submitted to SRW and made publicly available by 30 September each year.

This quarterly update is the fourth since implementation of the REPP commenced on 01 March, 2020 and provides a high-level update on progress to date with implementation of the REPP.

In addition to the information contained in the quarterly updates, the Annual Report, released on the 30th September each year, provides more detail on technical investigations, monitoring, data collected, and tracking against the REPP success targets.

Quarterly update - Implementation of the REPP

Quarterly Updates outline the actions completed during the reporting period and highlight any major milestones to be achieved in the following quarter. Stakeholder engagement and feedback is also covered in these updates.

Remediation of Boundary Creek and Big Swamp

The REPP outlined the below plan for remediation (refer Figure 1). This quarter, Barwon Water has completed the updated groundwater-surface water model for Boundary Creek & Big Swamp and work has begun on updating the hydro-geochemical modelling for Boundary Creek & Big Swamp. The updated groundwater-surface water modelling has provided 2 key outcomes.

1. The locations of the hydraulic barriers within in Big Swamp in order to maintain the swamp in a saturated state at key target locations.
2. Confirmation that maintenance of minimum flows to Boundary Creek downstream of the swamp can be achieved through continued release of supplementary flows.

The design of the hydraulic barriers is now commencing along with a review and development of success targets for remediation of Boundary Creek & Big Swamp, including possible groundwater recovery targets for the Lower Tertiary Aquifer.

Specific actions undertaken are outlined in Table 1

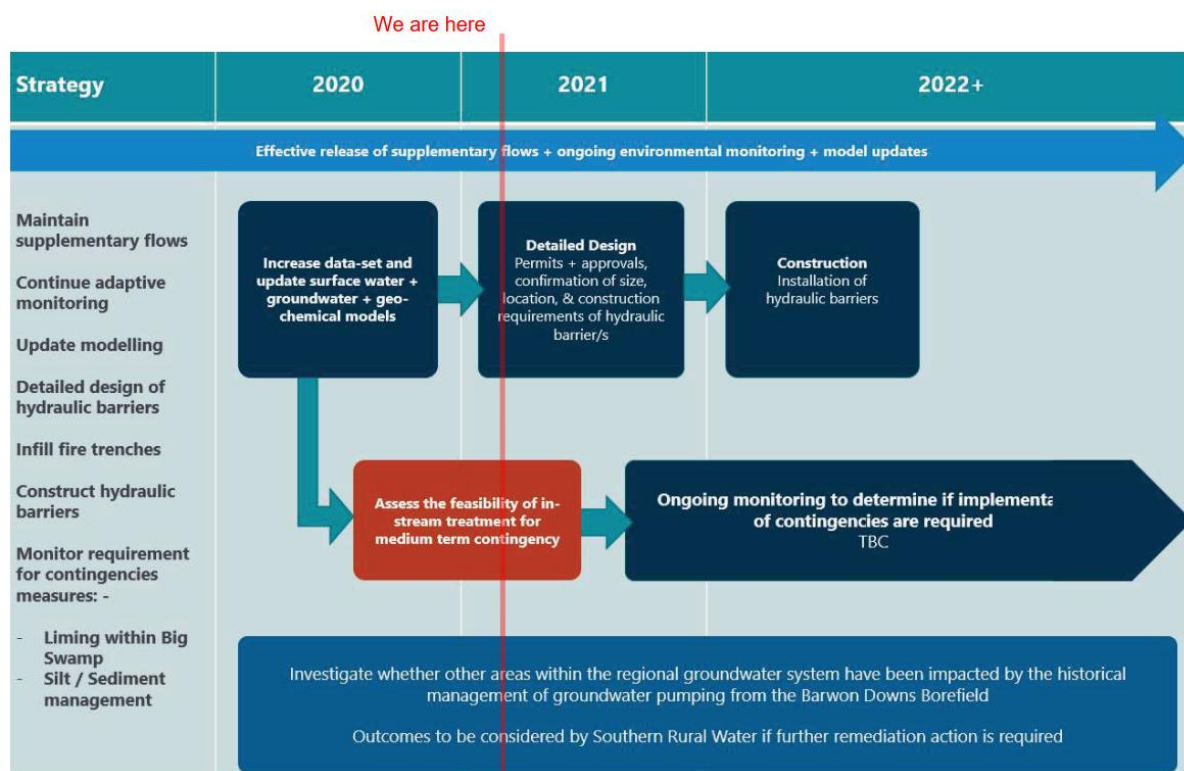


Figure 1: Timeframes for implementation of the REPP

Quarterly update on completed actions for the Boundary Creek and Big Swamp Remediation Plan – Q3 2020/21 (1 January to 31 March 2021)

Table 1: Completed actions – Q3 2020/21 (1 January – 31 March 2021) – Boundary Creek and Big Swamp Remediation Plan

Q3 2020/21 Update (1 January – 31 March 2021) Completed Actions	Comment / Link
Continued monitoring of groundwater levels and groundwater quality in Big Swamp, surface water flows and surface water quality in Boundary Creek and Big Swamp and surface water flows at Ten Mile Creek and Yahoo Creek.	Monitoring of groundwater levels and quality as well as surface water levels, flows and quality will continue throughout remediation
Completion of the Groundwater-Surface Water modelling. ITRP has provided feedback on the modelling which will be addressed in the final report.	The modelling has determined the locations of the hydraulic barriers within in the swamp have been confirmed for assisting to keep key target areas of the swamp saturated and confirmed that minimum flows to Boundary Creek will be able to be maintained through provision of supplementary flows. Final report will be uploaded to BW website early April
Commenced working through and responding to feedback received from SRW and the Independent Technical Review Panel (ITRP) on the proposed REPP Ammendments to address Southern Rural Water's feedback on the REPP Discussions held with SRW & ITRP to clarify some feedback and esure it can be addressed appropriately.	Proposed amendments were submitted to Southern Rural Water by 30 September 2020. Barwon Water continues to work through addressing the feedback received from SRW and ITRP in January 2021.
Established vegetation baseline monitoring for Boundary Creek and Big Swamp Remediation Plan to allow assesement of changes in vegetation and tracking against vegetation targets	The report will be uploaded to the Your Say platform in April 2021
Constructability of an additional bore within Big Swamp has been confirmed to further assist with determining interaction between Lower Tertiary Aquifer (LTA) and Big Swamp at the west end of the swamp.	The new bore is scheduled for construction in April 2021
Commencment of hydro-geochemical modelling, including development of requirements for contingency measures for active treatment of acidity loads leaving Big Swamp.	Scheduled for completion in May 2021
Completion of the Spring macro-invertebrate and water quality sampling report for the Barwon River & Boundary Creek	The report is available on our Your Say platform https://www.yoursay.barwonwater.vic.gov.au/boundary-creek
Commencement of design of the hydraulic barriers and contingency measures for active treatment of acidity loads leaving Big Swamp.	The ITRP are to be briefed at key stages of the design and feedback provided to Barwon Water.

Q3 2020/21 Update (1 January – 31 March 2021) Completed Actions	Comment / Link
Commencement of review and development of success targets for remediation of Boundary Creek & Big Swamp, including possible groundwater recovery targets for the Lower Tertiary Aquifer.	Initial works have begun for the review and development of success targets which is scheduled to be completed 30 June 2021
Remediation Reference Group meeting held on 17 th March 2021	The meeting was hosted online via Zoom with the majority of members in attendance. The discussion focused on the work completed in Q3 2020/21 and the focus for the upcoming quarter, as well as discussion on proposed REPP amendments in response to feedback. Meetings will be hosted quarterly with the next meeting scheduled in June 2021.
Submit quarterly update for the period 1 January to 31 March 2021 to SRW and publish to website	Once submitted the report will be available on our Your Say platform. https://www.yoursay.barwonwater.vic.gov.au/boundary-creek

Next quarter - Upcoming actions for the Boundary Creek and Big Swamp Remediation Plan – Q4 2020/21 – 1 April to 30 June 2021

Table 2: Upcoming actions – Q4 2020/21 (1 April – 30 June 2021) – Boundary Creek and Big Swamp Remediation Plan

Upcoming tasks – Remediation of Boundary Creek and Big Swamp	Due (if applicable)
Completion of hydrogeochemical analysis and modelling and assessment of contingency measures for active treatment of acidity loads leaving Big Swamp SRW & ITRP feedback to be sought and addressed during this task	31 May 2021
Continue work on detailed design of the hydraulic barriers and contingency measures for active treatment of acidity loads leaving Big Swamp. SRW & ITRP feedback to be sought and addressed during this task	31 July 2021
Completion of review and development of success targets for remediation of Boundary Creek & Big Swamp, including possible groundwater recovery targets for the Lower Tertiary Aquifer. SRW & ITRP feedback to be sought and addressed during this task	30 June 2021
Continued refinement of REPP amendments to address SRW feedback SRW & ITRP feedback to be sought and addressed during this task	Underway
Q4 Remediation Reference Group Meeting	June 2021
Submit quarterly update to SRW for the period 1 April to 30 June 2021 and publish to website	30/06/2021

Surrounding Environment Investigation

We have also commenced work on the Surrounding Environment Investigation (refer Figure 2). Completed actions are outlined below in Table 3.

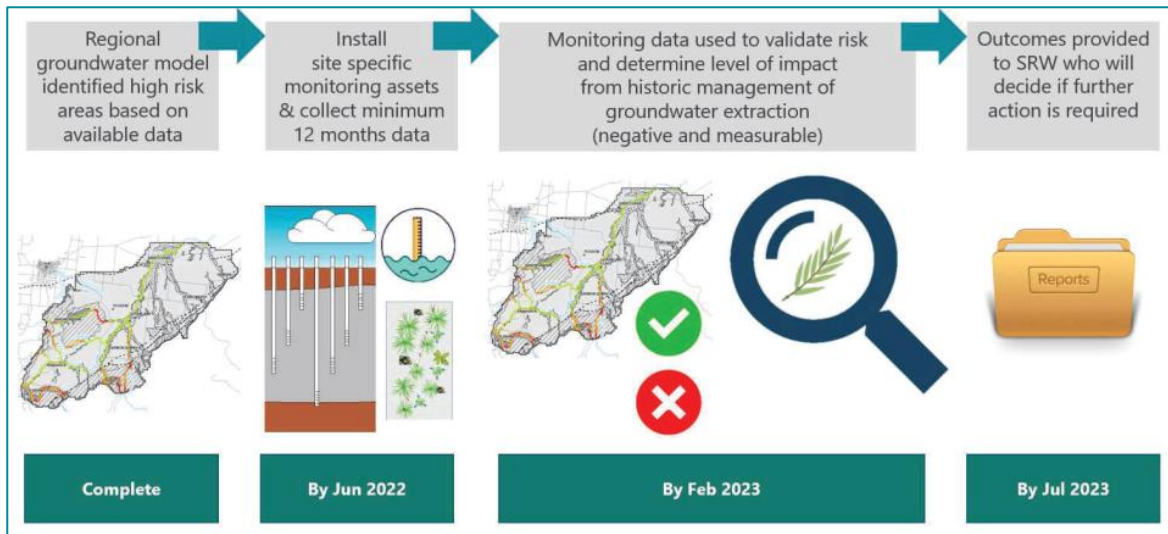


Figure 2: Process overview for the Surrounding Environment Investigation

Quarterly update on completed actions for the Surrounding Environment Investigation – Q3 2020/21 (1 January to 31 March 2021)

Table 3: Completed actions – Q3 2020/21 (1 January to 31 March 2021) – Surrounding Environment Investigation

Completed actions – Surrounding Environment Investigation	Comment / Link
Continued collection of streamflow data for Yahoo and Ten Mile Creeks (tributaries of Loves Creek)	Data collection continues
Completed the design, planning and approvals for installation of 22 monitoring bores in the surrounding environment	Complete
Commenced construction of 22 new monitoring bores in the Surrounding Environment	Scheduled for completion in April 2021
<p>Completed construction of new stream gauges on the East Barwon River and West Barwon River and data collection commenced.</p> <p>Stream gauges for the Gellibrand River and Barongarook Creek have been designed, with construction to be completed in April 2021, subject to favourable conditions</p> <p>The stream gauge on the Barwon River downstream of the confluence with Boundary Creek is currently awaiting cultural heritage and planning approvals, with construction to commence once approvals are obtained.</p>	Construction is being undertaken by Barwon Asset Solutions with installation of instrumentation and ongoing monitoring undertaken through the Regional Water Monitoring Partnership

Completed actions – Surrounding Environment Investigation	Comment / Link
Establishment of vegetation baseline monitoring program to align with 6 of the new bore locations in the surrounding environment.	Completed by Eco Logical Australia The report will be uploaded to the Your Say platform in April 2021
Commenced collation of community information regarding sites/issues of concern to inform the Surrounding Environment Investigation	Information and sites of concern already provided by the community to be considered in the Surrounding Environment Investigations includes: <ul style="list-style-type: none"> - Flows in Gellibrand River / Loves Creek - Acid Sulfate Soil sites - Aquade report - Changes in GDE vegetation identified in historical vegetation assessments
Commenced development of the framework to formally capture the process for incorporating community information and knowledge into the Surrounding Environment Investigation	The Remediation Reference Group Nominated Experts have provided a case study to assist Barwon Water in developing this framework.
Remediation Reference Group meeting held on 17 th March 2021*	The meeting was hosted online via Zoom with the majority of members in attendance. The discussion focused on the work completed in Q3 2020/21 and the focus for the upcoming quarter, as well as discussion on proposed REPP amendments in response to feedback. Meetings will be hosted quarterly with the next meeting scheduled in June 2021.
Submit quarterly update to SRW for the period 1 January to 31 March 2021 and publish to website*	Once submitted the report will be available on our Your Say platform https://www.yoursay.barwonwater.vic.gov.au/boundary-creek

* Also shown in Table 1 Remediation of Boundary Creek and Big Swamp.

Next quarter - Upcoming actions for the Surrounding Environment Investigation – Q4 2020/21 – 1 April to 30 June 2021

Table 4: Upcoming actions – Q4 2020/21 (1 April – 30 June 2021) – Surrounding Environment Investigation

Upcoming tasks – Surrounding Environment Investigation	Due (if applicable)
Continued construction of 22 new monitoring bores in the surrounding environment	31/07/2021
Stream gauge construction at: <ul style="list-style-type: none"> - Gellibrand River - Barongarook Creek - Barwon River downstream confluence with Boundary Creek 	31/07/2021

Commenced development of the framework to formally capture the process for incorporating community information and knowledge into the Surrounding Environment Investigation	Underway
Continue collation of community information regarding sites/issues of concern to inform the Surrounding Environment Investigation	Underway
Q4 Remediation Reference Group Meeting*	June 2021
Submit quarterly update to SRW for the period 1 April to 30 June 2021 and publish to website*	30/06/2021

* Also shown in Table 2 Remediation of Boundary Creek and Big Swamp.

Issues register

This section outlines any issues that have been identified during implementation of the REPP that may impact future implementation activities or achievement of key milestones.

Table 5: Issues register

Issue	Likelihood	Consequence	Comment
COVID-19 pandemic limits/delays engagement with stakeholders and the community	Low	Low	Coronavirus (COVID-19) has seen face to face stakeholder and community engagement with a Remediation Working Group move to an online setting. During 2020 email updates were provided in lieu of a face-to-face meeting. The likelihood and consequence have now been scored low as the December meeting of the Remediation Reference Group was run online on Zoom with positive feedback from group members. Future meetings may be hosted in-person depending on the latest Government advice.
COVID-19 pandemic impacts availability of appropriate consultants or contractors to undertake required work for implementation of the REPP	Low	Low	To date Barwon Water has experienced little to no impact on availability of consultants and contractors to complete work during the coronavirus (COVID-19) pandemic.

Community engagement

The second Remediation Reference Group meeting was held on 17 March 2020. This group comprises mostly of continuing members from the Remediation Working Group who were involved in the development of the REPP. The meeting was again held online via Zoom.

Topics discussed included:

- The updated Groundwater – Surface water modelling for Boundary Creek & Big Swamp and proposed locations for the hydraulic barriers to assist with maintaining groundwater levels within the swamp
- Commencement of hydro-geochemical modelling to help inform requirements for treatment of acidity loads leaving the Big Swamp
- The Spring macro-invertebrate and water quality sampling undertaken for the Barwon River and Boundary Creek

- An update on progress with installation of new stream gauges and monitoring bores to help inform the Surrounding Area Investigation
- The development of this quarterly update
- The further feedback received from Southern Rural Water and the ITRP in response to the proposed REPP amendments to address the original feedback received in February 2020.

An open forum was also held for group members to raise any topics that were not discussed above.

Future meetings for 2021 are proposed for each quarter, noting additional meetings may be scheduled if required. Depending on the latest Government advice, face-to-face meetings may be able to resume later in 2021.

Key items of feedback that have been received from the community and agency stakeholders through the Remediation Reference Group and how Barwon Water is responding is outlined in Table 6 below.

Table 6: Community Feedback

Community Feedback Received	How we are responding
Wording in the REPP around emergency access to groundwater from the Barwon Downs Borefield needs to better reflect that it is an absolute last resort after all other avenues have been explored. It should also make mention of how the water supply system is to be managed to prevent a water shortage from eventuating	In response to this feedback, Barwon Water presented additional and strengthened wording to the Remediation Reference Group for discussion and consideration at the meeting held 17 th March 2021. The Remediation Reference Group accepted the proposed wording and subsequently this will be included in the proposed REPP amendments to be submitted to SRW
Members of the Remediation Reference Group indicated that they would like to see any technical reports and data/information from field surveys made available to the community.	In order to continue our commitment to transparency for the REPP Barwon Water will continue to make reports and information available to the community as it becomes available for release.
Full aquifer recovery in the LTA should still be considered as a key component of remediation. Full recovery does not need to be to pre-european levels, but pre-pumping levels e.g. 1982 Groundwater levels. Even if these levels cannot be achieved due to climate, just leave the aquifer alone. The rate of aquifer recovery should also be revisited to determine if the rate has changed and when groundwater levels may return to pre-pumping levels.	Barwon Water will re-assess the rates of aquifer recovery and what may be achievable for recovery of groundwater levels in the LTA to inform success targets for aquifer recovery. This will be considered as part of the Success Target review (undertaken 'when') and development work that is currently underway.
The remediation reference group would like to see a process outlined for incorporating local knowledge and information into the surrounding environment investigation, particularly where specific sites have been identified and are believed to have been impacted by management of historical groundwater extraction from Barwon Downs. The RRG nominated experts advised that there would be existing frameworks that could be readily adopted for considering both local knowledge and scientific measures of assessment.	Barwon Water will continue to seek and collate information from the community and stakeholders on specific sites or issues of concern to inform the Surrounding Environment Investigation. We will also work with the Remediation Reference Group and their nominated experts to develop an appropriate framework/process to ensure this information continues to be captured and is given due consideration in informing the surrounding environment investigation. This is a focus of Q4 2020/21

Community Feedback Received	How we are responding
<p>Members of the Remediation Reference Group have raised concerns regarding the adequacy of assessment of ecology in the Barwon River and the impacts of acid events on the ecology, noting that while macroinvertebrate sampling is being conducted, it is well after the previous acid event and therefore not representative of the impact.</p>	<p>Barwon Water is committed to continuing the macroinvertebrate surveys as an indicator of ecological health in Boundary Creek and the Barwon River over time. These are recorded in spring and autumn with condition assessment reporting provided each year following the autumn sampling.</p> <p>We are also working with local environmental groups to support eDNA surveys for platypus in the Barwon River. We will also continue to re-assess the appropriateness of our current monitoring programs for assessing ecological health of Boundary Creek and the Barwon River, and the surrounding environment as the Surrounding Environment Investigation progresses</p>
<p>The Remediation Reference Group have raised concerns regarding the impact of climate change on the sustainability of the provision of the supplementary flows to Boundary Creek and Big Swamp and how this will impact success of remediation.</p>	<p>Barwon Water will undertake further work to confirm the sustainability of the provision of supplementary flows to ensure groundwater levels within Big Swamp and minimum flows in Boundary Creek can be maintained until groundwater levels in the Lower Tertiary Aquifer recover sufficiently to sustain groundwater levels in Big Swamp.</p>

Success targets

The REPP provided 12 success targets for remediation of Boundary Creek and Big Swamp.

A review of these success targets utilising the data captured since 2019, the updated groundwater-surface water model and the updated hydro geochemical will be undertaken in Q4 2020/21. This review will also consider inclusion of additional targets as appropriate based on feedback received to date, including consideration of groundwater recovery targets for the Lower Tertiary Aquifer.

An update on progress against success targets will be provided in the Annual Report. Monitoring data, which informs many of the success targets, will also be provided with the Annual Report.

Success targets for the Surrounding Environment Investigation will be developed if impacts are confirmed and remediation determined to be practicable in accordance with the Section 78 Notice.

Technical reports and investigation

Reports for technical work and investigations that have been completed can be accessed from the dedicated Boundary Creek Remediation webpage via the following link:

<https://www.yoursay.barwonwater.vic.gov.au/boundary-creek>

Contingency measures

Table 7 will outline any contingency measures confirmed to be required during the detailed design or implementation of the REPP, contingency measures are being developed as a part of the Hydro-Geochemical Modelling and Detailed Design.

Table 7: Contingency measures to be implemented

Contingency measure	Status
No contingency measures are currently being implemented, however specifications for active treatment of the acidity load leaving Big Swamp are currently being developed	In planning

REPP amendments

Table 8 outlines REPP amendments current as of the time of this report.

Table 8: Amendments to the REPP

No.	REPP amendments	Status
1	REPP updated 27 th February 2020 to include new section capturing SRW feedback on the REPP	Complete
2	The first round of proposed amendments to the REPP to address SRW feedback have been developed but are yet to be formally incorporated into the REPP	Feedback received from SRW and the ITRP on the proposed amendments. Further work required to address the feedback received before the proposed amendments can be finalised

Progress report

Table 9 presents actions that have been completed, are currently in progress, or are yet to commence as part of implementation of the REPP. It is important to note that additional tasks may be added as they are identified during implementation of the REPP.

Table 9: Action register

#	Activity	Due Date	Status	Health Indicator	Comments
6.0	Complete installation of additional monitoring assets for the Surrounding Environment Investigation	31-May-21	In progress	On track	Installation of first 2 stream gauges completed in December, remaining 3 to be installed as weather permits Bores to be installed in March & April 2021
7.0	Conclusion of monitoring period enabling the capture of a full seasonal cycle of data to inform updates to the groundwater-surface water model and geochemical model.	31-Jul-20	Complete	Complete	1 year of monitoring completed. Monitoring of GW levels, stream flows and water quality continues in Big Swamp and Boundary Creek.
8.0	REPP Feedback Work plan - Submission and Acceptance	31-Jul-20	Complete	Complete	Complete
9.0	Governance Framework - Submission and Acceptance	31-Jul-20	Complete	Complete	Complete
10.0	Barwon Water Comms and Engagement Plan	Ongoing	In progress	On track	First Remediation Reference Group held on the 2 December. The group agreed Ways of Working were reviewed and discussed with group members
11.0	Submit updated REPP to capture the work plan for addressing the feedback register. SRW to accept the updated REPP.	TBA	In progress	On track	Barwon Water submitted changes to SRW on 30th September. SRW has provided feedback, and further clarification was sought from SRW and the ITRP on 10 th March and from SRW on 23 rd March. Discussions were also held with the RRG on 17 th March regarding proposed revisions based on the feedback received.
12.0	Submit annual report to SRW and publish to website	30-Sep-20	Complete	Complete	Complete

#	Activity	Due Date	Status	Health Indicator	Comments
13.0	Remediation Reference Group Meeting	2-Dec-20	Complete	Complete	Very positive first meeting. Most members could attend. BW received positive feedback for the work being completed so far. Suggestions for surrounding environment investigations were provided as well as comments on proposed REPP changes to address feedback
14.0	Establish vegetation baseline monitoring for Boundary Creek and Big Swamp Remediation Plan	31-Dec-20	Complete	Complete	Baseline Monitoring undertaken 25th of November - Further monitoring to be completed in 2022 as a minimum
15.0	Update groundwater-surface water model	31-Dec-20	Complete	Complete	GHD has submitted draft report. Feedback to GHD supplied, meeting with ITRP completed. Final report to be uploaded to the your say platform in April
16.0	Update hydro-geochemical model	31-May-21	In progress	In Focus	Contract awarded to Jacobs, on track for completion in May. ITRP have reviewed methodology. Timeframe to complete this work is tight
17.0	Complete Detailed Design for Boundary Creek and Big Swamp Remediation Plan Hydraulic Barrier and Contingency Measures	31-Jul-21	In progress	On track	Work on detailed design has commenced
18.0	Submit quarterly report to SRW and publish to website	31-Dec-20	Complete	Complete	Completed
19.0	Remediation Reference Group Meeting	17-Mar-21	Complete	Complete	Meeting is completed. Topics discussed: - Groundwater – surface water modelling outputs - hydro-geochemical modelling progress - Spring macro-invertebrate and water quality sampling - progress on surrounding environment monitoring assets installation - REPP amendments feedback
20.0	Submit quarterly report to SRW and publish to website	31-Mar-21	Complete	Complete	Completed

#	Activity	Due Date	Status	Health Indicator	Comments
21.0	Remediation Reference Group Meeting	2-Jun-21	Not started		
22.0	Submit quarterly report to SRW and publish to website	30-Jun-21	Not started		
23.0	Complete feasibility assessment for in-stream contingency measures	31-May-21	In progress	On Track	This is included in the geochemical model update
24.0	Complete success target review as a part of detailed design	30-Jun-21	In progress	On Track	This work has commenced
25.0	Submission of detailed design of the hydraulic barriers outlining proposed controls or actions and any revisions to success measures/targets. SRW to accept the detailed design, including proposed actions, controls, and success measures/targets.	31-Jul-21	Not started		
26.0	Remediation Reference Group Meeting	8-Sep-21	Not started		
27.0	Submit annual report to SRW and publish to website	30-Sep-21	Not started		
28.0	Remediation Reference Group Meeting	2-Dec-21	Not started		
29.0	Submit quarterly report to SRW and publish to website	31-Dec-21	Not started		
30.0	Construction of hydraulic barriers: - engage consultants and contractors - undertake construction	31-Mar-22	Not started		
31.0	Submit quarterly report to SRW and publish to website	31-Mar-22	Not started		
32.0	Submit quarterly report to SRW and publish to website	30-Jun-22	Not started		
33.0	Conclusion of monitoring period for Surrounding Area Investigation enabling the capture of a full seasonal cycle of data (12 month minimum) to inform updates to the groundwater-surface water model and geochemical model.	31-Jul-22	Not started		
34.0	Submit quarterly report to SRW and publish to website	30-Sep-22	Not started		
35.0	Update regional groundwater model or build new local scale groundwater models for the Surrounding Investigation Area 'high' risk sites to assess magnitude of impact as a result of historic groundwater management.	31-Oct-22	Not started		

#	Activity	Due Date	Status	Health Indicator	Comments
36.0	Submit quarterly report to SRW and publish to website	31-Dec-22	Not started		
37.0	Review risk assessment for 'high' risk areas for the Surrounding Area Investigation to confirm risk rankings based on updated groundwater model/s		Not started		
38.0	Submit quarterly report to SRW and publish to website	31-Mar-23	Not started		
39.0	Submit quarterly report to SRW and publish to website	30-Jun-23	Not started		
40.0	Outcomes of the Surrounding Area Investigation to be provided to Southern Rural Water to determine if further remedial works is required. SRW to decide if further action is required.	31-Jul-23	Not started		
41.0	Submit annual report to SRW and publish to website	30-Sep-23	Not started		
42.0	Submit quarterly report to SRW and publish to website	31-Dec-23	Not started		