Government of South Australia
Department for Environment and Water

# SOUTH AUSTRALIA - ADDITIONAL EFFICIENCY MEASURES CRITERIA ASSESSMENT OUTCOME

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| **Project Reference No:** | 377235 |
| **Outcome:** | Compliant with the Efficiency Measures assessment |
| **Date recommended to proceed to public comment** | 7 April 2021 |
| **Date recommended to proceed to the Australian Government's detailed assessment stage** | 31 May 2021 |

**Overview**

This project aims to increase the efficiency and productivity of water use at a 36.0ha family owned and operated vineyard located at Langhorne Creek in the Lower Murray/Lakes region of South Australia.

The primary component of the water savings for the project will be derived from the increased utilisation of existing licensed groundwater entitlements that are currently not used due to the higher than optimal salinity levels for wine grape production. The project works will also significantly increase the water delivery capacity to the vineyard which currently takes over 48 hours to irrigate due to delivery constraints and add automation and control to the vineyard irrigation distribution network.

Specifically the project will include the installation of dam pumps, pump suction, primary filtration, automation and control as well construction of a 12 ML lined storage dam.

In addition to the water savings that will be achieved significant productivity improvements will be realised through improved fruit quality and yields. Currently the vineyard is heavily exposed in periods of extreme and sustained heat due to the delivery constraints which contributes to inefficient water use and reduced productivity per ML of water applied.

All project works will be undertaken by local service providers meaning the program investment will remain the region/State and provide a direct economic stimulus. The works will also assist the vineyard to better adapted and more resilient into the future by enabling the on-going utilisation of groundwater which is not subject to seasonal variations in both availability and price. The works will also ensure that on-farm water use is as efficient as possible which is consistent with the objectives of the local Irrigation Code of Practice.

A conservative water return of 21.7ML or 0.6ML/ha is nominated for the proposal.

## Part 1 - State Assessment - Efficiency Measures criteria

**Assessment Approach**

This State Assessment is reliant on the information provided by the applicant. The comments provide a summary of the information provided by the applicant which is deemed relevant by the assessor to demonstrate that the Efficiency Measures – Agreed Criteria have been met.

**Water Savings Substantiation**

The water savings expected to be achieved by the project have been verified by an Independent Approved Irrigation Professional.

The water savings substantiation is provided at Attachment A.

The project is expected to return a conservative 21.7 ML to the environment, with the applicant retaining 11.7 ML of water savings.

| Water Saving Component | Area ha | Water Saving (ML/ha) | Estimated Water Saving (ML) | Total volume of Eligible Water Rights offered for transfer (ML) |
|---|---|---|---|---|
| Groundwater Substitution | 36.0 | N/A | 24 | 21.7 |
| Automation and Control | 36.0 | 0.2 | 7.2 | |
| **Total Water Saving** | | | **31.2** | |

| Efficiency Measures Criteria | Project Responses to Efficiency Measures Criteria | Adequate Response Y/N | State Assessment |
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| **Evidence of engagement with community, industry and government agencies during project design (Criteria 9, 6a, 6b)** | 6a. N/A - Private Diverter<br><br>6b. The Delivery Partner was engaged by the Australian Government in December 2018. Since this time the Delivery Partner has undertaken extensive consultation on the Water Efficiency Program with key stakeholders.<br><br>Direct engagement with industry and commodity groups, irrigation infrastructure operators, Local Government, Regional Development organisations has occurred on the program.<br><br>The works proposed through this project are consistent with regional plans, priorities and strategies on sustainable land and water management practices and building resilience and adaptability into the irrigated agriculture sector.<br><br>9a. Please refer to 6b.<br><br>9b. Please refer to 5b. | Y | The application has demonstrated that the delivery partner has consulted with relevant industry bodies, relevant Irrigation Infrastructure Operators, local governments and regional development organisations on a strategic regional approach to developing projects under the Water Efficiency Program.<br><br>The proposed project is not located within an irrigation network, so the application is not required to provide evidence that the relevant network operator or water corporation is involved in or aware of the project. |
| **Potential Direct Water Market Impacts (Criteria 7a, 7b, 7c, 7d)** | 7a. The proponent has nominated a water entitlement that they are the current legal owner of.<br><br>The proposal has been independently reviewed and assessed and the volume of | Y | The application has demonstrated that:<br><br>• The water rights to be transferred as part of the project have been independently verified as a conservative estimate of the water savings that can be generated and that the project will not |

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| | water that is nominated for transfer has been confirmed to be highly conservative relative to the total potential water saving.<br><br>7b. Attachments to the application and sourced from the SA Water Licensing System confirm that the nominated water entitlement has been held for a minimum of 3 years.<br><br>7c. As with all other projects submitted by the Delivery Partner the proposed works will result in a reduction in annual irrigation demand (by 31.2ML) however the proponent is only seeking to return a conservative volume (21.7ML) of the assessed saving so the net impact is positive post project works from a water demand/supply context.<br><br>7d. At the local irrigation district level alone the water volume that is nominated for return through this proposal represents less than 0.1% of the River Murray water entitlements on issue. A recent report released by ABARES also confirms that seasonal conditions remain the biggest driver of allocation prices across the MDB system.<br><br>This project is focused on reducing annual demand and creating additional supply via retained savings and therefore will not directly increase the price of water. | | transfer more water than the project will save.<br>• The water entitlements to be transferred have been held for a minimum of 3 years at the time of application.<br><br>The project will generate water savings above the volume returned to the environment and will effectively increase the water available for productive uses in the consumptive pool. The increase in available water will have no direct impact on reliability, and may put downward pressure on water market prices. |
| **Contribution to Proponent Businesses and Irrigation District Viability** | 4a. The Angas Bremer irrigation area is quite | Y | The application has demonstrated that: |

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| **(Criteria 4a, 4b, 4c)** | unique in that it has a number of different water sources including watercourse water from the River Murray/Lake Alexandrina and the Angas & Bremer Rivers and groundwater which is extracted from the local aquifer. Being located at the downstream end of the MDB system water security has, and, continues to be a key issue. The future financial viability of the region and the individual irrigation dependent businesses within it is heavily reliant on having well adapted enterprises that optimise the efficiency and productivity of all available water sources. This project is entirely consistent with those objectives.<br><br>4b. The production of premium quality wine grapes is the dominant irrigated land use in the local region. While annual water use levels are low (ML/ha) due to the reduced yielding production systems that are in place access to water remains critical. Since the millennium drought the region has had access to a community pipeline which supplies River Murray water to local irrigators including the project proponent. This project does not involve any works to the off-farm delivery infrastructure but will ensure the on-farm use of water accessed via the pipeline is as efficient as possible. Due to the dominance of permanent horticulture in the region delivery systems and networks will continue to be used well into the future. | | • The project will contribute to the longer term sustainability of the business and the irrigation district more generally.<br>• The project is focused on modernising existing inefficient irrigation systems, which will position the business to capitalise on returns for wine grape production.<br>• The project will contribute to the longer term viability of the property, which will provide benefits across the irrigation district.<br><br>The project is not located within an irrigation network, so the application is not required to take account of relevant irrigation business' strategies or plans. |

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| | 4c. An irrigation code of practice operates in the Angas Bremer region and provides accreditation to growers who are successfully improving their irrigation management.<br><br>To comply with the code, growers must complete Irrigation Annual Reports, maintain water use efficiency, and plant and maintain deep-rooted, winter-active vegetation.<br><br>The Code of Practice is also recognised in both the River Murray and Eastern Mt Lofty Ranges Water Allocation Plans.<br><br>The works being proposed through this project are consistent with the objectives and goals of the irrigation code of practice. | | |
| **Support for Regional Economies (Criteria 5a, 5b, 5c, 5d, 6c)** | 5a. All works that will be undertaken through this project will be completed by local service providers. This will mean program level investment will provide a direct economic stimulus for the broader region.<br><br>The wine industry underpins the local community and therefore any works that contribute to the longer-term sustainability and viability of local producers provides a benefit at local, regional, State and even National scale.<br><br>5b. As was mentioned in the response to 4a. the Angas Bremer region has access to a diversity of water sources however some are | Y | The application has demonstrated that the project will:<br><br>• Support the wine grape industry, which is an important sector of the Angas Bremer region.<br><br>• Maintain and potentially increase seasonal employment during the harvest period along with engaging local contractors during the redevelopment and construction phase.<br><br>• Generate benefits for the broader region and not just the applicant through sourcing of local farm input supplies and generating regional employment.<br><br>• Increase regional and Basin wide productivity |

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| | under-utilised due to water quality (salinity) limitations. The region currently has over 6GL of licensed groundwater entitlements on issue however these are under-utilised (~30% utilisation) as better quality water from the River Murray is also available albeit subject to fluctuating seasonal availability. This project has a strong focus on increasing the utilisation of the existing groundwater entitlements by adopting infrastructure upgrades that facilitate the use of groundwater in combination with other locally available water sources. The outcomes of the project therefore have broader application.<br><br>5c. The works proposed through this project are focused on maintaining and enhancing the productive capacity of the region. With a strong reliance on climate dependent water sources there is a strong driver to diversify and increase the utilisation of other water sources so that the region is better adapted and more resilient into the future which will have a direct flow on benefit to the productivity and viability of the region.<br><br>5d. As described in 5c. above the primary objective of this project is to maintain and ideally increase the productive capacity of the region. This will have flow on benefits to local employment and also other employment along the supply, distribution and processing chains within the wine sector. | | through increasing the volume of water available for consumptive uses on the water market. |

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| | 6c. While the project will deliver positive benefits to the proponent these benefits will extend beyond the farm gate through investment in the local community both for the project works and in the longer term.<br><br>The works will ensure the enterprise remains viable and sustainable into the future and continue to underpin jobs both directly and indirectly along the supply and distribution chains.<br><br>The project will also generate retained savings for the proponent which will assist to increase water supply at a local, regional and Basin scale. | | |
| **Social and Environmental Benefits (Criteria 2a, 2b, 2c,)** | 2a. Currently the property is not maximising the productivity of on-farm water use due to limitations with the irrigation system. These issues are likely to be further exacerbated if not addressed in the short term.<br><br>The works that are proposed through the project will also have application at the broader district scale due to the mix of different water sources that are available in the region. As a result, the benefits of the project will extend beyond just the project proponents themselves.<br><br>The works will also ensure that best practice irrigation management is adopted on farm which is consistent with the environmental credentials of the business which is part of | Y | The application has:<br><br>• Described the expected socio-economic and environmental benefits of their proposed project, which include:<br><br>○ Increased productivity in terms of return per megalitre for the business and region.<br><br>○ Improving the business's long term resilience and viability, which will have flow on benefits to the local, regional and State economies.<br><br>○ Sourcing of goods and services for the project from local companies, which will add further economic stimulus to the regional community.<br><br>○ Increased regional and Basin wide |

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| | the Eco Vineyards project across South Australia winegrape growing regions.<br>2b. N/A<br>2c. N/A | | productivity through increasing the volume of water available for consumptive uses on the water market.<br>• The proposed works are on-farm and will not affect the amenity value to local communities of weirs, storages and parks.<br>• The project is below the $4 million threshold for large projects and is not required to address criteria 2c. |
| **Comply with all relevant laws including work health and safety laws.**<br>**(Criteria 2d)** | 2d. The Delivery Partner has well established WHS management procedures in place which have been specifically tailored to the implementation of Australian Government irrigation efficiency programs.<br>The proponent will be required to complete a Risk Assessment specific to the project activities and demonstrate that all required insurance is in place and current, prior to the project works commencing and any funds being paid. | Y | The application has demonstrated that the applicant and delivery partner have an understanding of all relevant legislation and/or regulation that will require approval prior to works commencing and that they will comply with all relevant laws including work health and safety laws. |
| **Business Resilience, including Drought and Climate Change Impacts**<br>**(Criteria 10a, 13a, 12)** | 10a. Please refer to 5b.<br>12a. As described in 7a. the project has been independently assessed and conservative volume of the assessed saving is nominated to be transferred under the program. The project works budget has been based on formal quotations from service providers and these costs have been reviewed as part of the independent assessment process.<br>13a. The key component of the project is to | Y | The application has demonstrated that the project will:<br>• Modernise existing inefficient irrigation systems, which will position the business to capitalise on returns for wine grape production in the region.<br>• Generate additional water savings that will be retained by the applicant to improve the capacity of the proponent to better manage periods of reduced water availability. |

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| | increase the utilisation of available groundwater which will mean the property has less reliance on River Murray water in the future. Water availability from the River Murray is projected to become more volatile in the future and therefore creating diversity within available water sources will assist to mitigate against this.<br><br>The project works will also reduce water demand which will mean variability in water availability is better managed in the future. | | • Provide the enterprise with an increased ability to endure and adapt to future climate variability and water availability by generating productivity improvements and improving profitability. |
| **Cultural Benefits**<br>**(Criteria 8a, 8b, 8c)** | 8a. The Angas Bremer irrigation region has been the subject of many studies over a long period of time due to the success of the community driven approach to sustainable land and water management in the region.<br><br>The region has faced very significant challenges to its ongoing viability since the irrigation area was established however they have managed to navigate these challenges and continue to prosper.<br><br>Projects such as this one are about adding another level of adaptability and flexibility recognising that business conditions are always changing and throwing up new challenges.<br><br>The outcomes of this project will have broad applicability for the wider irrigation community. | Y | The application has described the expected cultural benefits of the proposed project, including the strategy for increasing the cultural benefit to participants and their communities through local sourcing of goods, services and labour.<br><br>The total project value is below $3 million and is not required to identify cultural heritage sites and manage any impacts in accordance with relevant Commonwealth and State laws. |

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| | 8b. During implementation the project will contribute direct economic stimulus through the engagement of local service providers and the works will assist with securing employment within the local community.<br><br>The water recovered through the project will also be used to underpin the longer term health of the Murray-Darling Basin including priority local floodplain and wetland assets which are critical for the tourism sector.<br>8c. N/A | | |

**In-Principle Recommendation**

The application has adequately addressed the Efficiency Measures – Agreed Criteria and demonstrated that the project will have neutral or positive socio-economic impacts and not have negative third party impacts on irrigation systems, water markets or regional communities. Accordingly, the South Australian Government provides in-principle approval for the project and recommends that the application proceed to the **public comment stage**.

**Part 2 - State Response – Public Comments**

| Relevant Public Comments to be responded to | Response to Relevant Public Comments |
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| It is clear this project will have negative socio-economic impacts at a broader regional level as there will simply be less water available for agriculture.<br><br>Any project that decreases the total pool available to food production results in negative outcomes.<br><br>On-farm projects reduce the total amount of water available to agriculture. While this proponent claims they will become more efficient with their water use, agriculture as a whole in the Basin will be worse off as there is simply less for agriculture to use.<br><br>South Australia remains the only State not adhering to the agreed socio-economic criteria. | The South Australian Government prefers efficiency measures to recover water for the environment, as they provide real and positive outcomes to irrigation businesses, while supporting communities that would otherwise be hard hit by the reduction in regional productivity or the closure of businesses through water leaving the consumptive pool through buybacks.<br><br>Unlike water buybacks that remove water from the consumptive pool, efficiency measures increase the volume of water available. Properly constructed efficiency measures projects recover water that is effectively "lost" through evaporation, leaky infrastructure and inefficient irrigation systems or overwatering and is unavailable for use until projects are completed.<br><br>The water savings for all South Australian on-farm projects have been independently verified as a conservative estimated of water savings. Those water savings were not previously available to the consumptive pool.<br><br>Additionally, all proponents of on farm projects in South Australia under the efficiency measures program have retained a portion of the water savings generated from their projects. This is increasing supply and putting downward pressure on water market prices.<br><br>Accordingly, South Australian projects are increasing the water available for consumptive uses across the southern connected Murray-Darling Basin and have not reduced the amount of water available for agricultural use.<br><br>South Australia continues to encourage participation in on-farm efficiency measures projects to generate positive outcomes for irrigators and regional communities, and is assessing all applications in full accordance with the Murray-Darling Basin Ministerial Council agreed socio-economic criteria. |
| Evidence suggests that those who participate in on-farm | Both the ABARE and Aither reports have acknowledged that it is difficult to separate the |

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| projects do require additional water and do enter the water market, thus driving up the price. There is no guarantee that this project will not enter the market. | impact of water recovery from other major trends such as climate change and the significant growth in industries and as such the findings should be treated with caution.<br><br>The ABARE report draws heavily on a recent study undertaken by ABARES, available at https://onlinelibrary.wiley.com/doi/full/10.1111/1467-8462.12396?af=R This study found that some on-farm program participants subsequently purchased water to increase their irrigated production. The study did not however directly link this to participation in the program and noted that many other demographic and economic factors are likely to influence business decisions. In fact, it is specifically stated that the study did not attempt to define or separately quantify direct and indirect effects of on-farm efficiency measures projects on water prices.<br><br>The ABARES study also evaluated many projects that would not meet the criteria agreed by the MDB Ministerial Council and as a result, no conclusions can be drawn between the findings of this study and on-farm efficiency measures projects that have been submitted since these criteria were agreed.<br><br>The Aither report appears to treat water recovered through on-farm efficiency measures the same as buybacks. This fails to recognise that on-farm efficiency measures are reducing demand by the same amount and in most cases more than the corresponding reduction in supply.<br><br>Accordingly, it would be incorrect to infer that South Australian on-farm projects are directly attributable to increased water use and higher water market prices when they are consistently reducing water demand and increasing supply.<br><br>Any expansion of irrigated area and hence water use that occurs post on-farm project is an indirect effect of the program and is likely to be driven by many other complex and interrelated economic and social factors. These indirect impacts are not considered as part of the socio economic assessment. |

**Final Recommendation**

The application has adequately addressed the Efficiency Measures – Agreed Criteria and demonstrated that the project will have neutral or positive socio-economic impacts and not have negative third party impacts on irrigation systems, water markets or regional communities. Accordingly, it is recommended that the application proceed to the Australian Government's detailed assessment stage.

# Water Savings Substantiation – Water Efficiency Program (WEP) Technical Assessment

**Project ID:** [redacted]

**Crop Type: Wine Grapes**

**Project Summary:**

The applicant is seeking to undertake integrated upgrades to the delivery, storage and distribution of existing irrigation water sources (some that are currently under-utilised) to achieve further gains in water efficiency and productivity at a 36.0ha family owned and operated vineyard located at [redacted] in the SA Lower Murray/Lakes region.

A conservative water saving of 21.7ML, or 0.6ML/ha is nominated for the proposal.

**Water Saving Methodology:**

Currently the property sources its River Murray irrigation water via the Creeks Pipeline Company (CPC) however this can only be utilised at the flow rate (l/s) available through the pipeline at the farm gate. A key limitation with this is that irrigation scheduling needs to be matched with available flow rates meaning that only a very small area (approximately 3.0ha) of the 36.0ha property can be irrigated at a time and currently it takes 52 hours to irrigate the entire vineyard.

The vineyard also has access to 60.0ML of licenced groundwater within the Angas Bremer Prescribed Wells Area however currently this water is not utilised at all as it is brackish (~3,000EC) in quality and the vineyard water requirements can be met with existing held River Murray water entitlement (when fully allocated) that is of a much better quality (~250-300EC).

As the River Murray water entitlements remain subject to seasonal allocations the applicant is seeking to undertake works that will enable the increased utilisation of the groundwater resource into the on-farm irrigation management which will reduce the on-going reliance on River Murray water. This will provide greater adaptability during periods of reduced water availability and when allocations are high or maximised potentially free up excess water for allocation trading creating another revenue stream for the applicant.

The project works will complement each other by addressing the existing delivery constraint described and facilitating the increased utilisation of the available groundwater resource.

In order to increase the flow rate that can be delivered to the vineyard and to enable the increased utilisation of the licenced groundwater resource a new **12.0ML** storage dam will be constructed into which both groundwater and River Murray can be pumped and mixed to create a shandy and subsequently re-lifted with new pumps and through new filtration at a significantly higher flow rate.

Assuming:

- Source water salinity levels = 300EC (River Murray) & 3,000EC (Groundwater)
- Each dam fill = 10ML (note 2ML kept in the dam at all times to assist with integrity of liner)
- Each dam fill = 7ML River Murray & 3ML of Groundwater
- Resultant shandy = 1,110EC
- 8 x dam fills per irrigation season (total of 80ML)
- **Calculated Groundwater Utilisation = 24ML (8 x 3ML)**

Note as the system will be designed to still allow the direct application of River Murray water to the vineyard via the CPC network (bypassing the storage dam) it is assumed that early and late season vine water requirements can be met without the need to pump into the on-farm storage when crop irrigation demands are low. This has been factored into the number of dam fills.

As described earlier it currently takes around 52 hours to cover the 36.0ha vineyard area when 4 hour (~4.0mm) shifts are applied across the 13 exiting irrigation units. The new pumping and primary filtration infrastructure to be installed on the storage dam will reduce the number of irrigation shifts to 5 so at 4 hours per shift the vineyard will be irrigated in full in 20 hours, a significant enhancement to water management flexibility which will greatly improve productivity outcomes (yield and quality).

In addition to the water savings facilitated through the increased utilisation of groundwater further irrigation efficiencies will be achieved through the installation of a new automation and control system given the current system is manually operated. Even with the new pumping system reducing the number of irrigation shifts from 13 currently down to 5 the addition of automation & control will generate a significant labour saving and greatly improve the precision of irrigation management.

Due to the lower water use levels (2.5-3.0ML/ha per season) that are applied to the vineyard to the achieve the fruit quality outcomes being sought a conservative water saving of 0.2ML/ha has been applied compared to the standard 0.5ML/ha that is used with maximum production wine grapes.

While no specific water savings have been attributed to the ability to irrigate the vineyard in much less time it is expected significant efficiencies will be achieved as the new system will enable irrigation scheduling to manage weather events in close to real time. Currently with such a long return time (52 hours) preparation (via application of irrigation) for extreme heat must commence several days in advance of the weather physically occurring meaning that any change to the forecast which may affect crop water demand cannot be factored into irrigation scheduling as it may have already been applied.

Likewise currently rainfall inputs are under-utilised as there is a high level of risk with delaying irrigation on the assumption that forecast rainfall events will occur as the existing system is unable to 'catch-up' and replenish soil water depletions especially during peak water demand periods.

While rainfall inputs during the growing season are not significant in the [redacted] region the long term effective rainfall total for the November – March period inclusive is 66.0mm or 0.66ML/ha (Source: *Understanding the Water Allocation Plan for the River Murray*) which is equivalent to 23.8ML.

| **Water Saving Activity** | **Area (ha)** | **Water Saving (ML/ha)** | **Total Water Saving (ML)** | **Conservative Saving (ML)** | **Conservative Saving (ML/ha)** |
|---|---|---|---|---|---|
| Groundwater Substitution | 36.0 | N/A^ | 24.0 | | |
| Automation and Control | 36.0 | 0.2# | 7.2 | | |
| **Total Water Saving** | | | **31.2** | **21.7** | **0.6** |

^ Refer calculation on page 1

# Lower figure used to reflect reduced yield production system in place

[redacted]

**Project Budget:**

Project costs have been based quotes provided by [redacted]

**Irrigation Design:**

An Irrigation Plan has been completed and is included as an attachment to the proposal.

**Approvals/Environmental:**

A standard Development Approval is required to construct the new on-farm storage dam which has been submitted to the relevant approving authority (Alexandrina Council).

No other approvals are required to conduct the works as they are all occurring on private property owned by the eligible participant and the activities will not have an adverse environmental impact on the property or the surrounds.

The Angas Bremer community where the project is located has had a long history of advocating for community led solutions to local land and water issues including salinity. Irrigation efficiency has a direct relationship with salinity management and the local irrigation code of practice includes provisions aimed at optimising the efficiency of on-farm water management practices. At the conclusion of each water use year an Irrigation Annual Report is produced and is published at - http://www.angasbremerwater.org.au/

[redacted]



# 1 PROJECT DETAILS:

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| **CID Name:** | [redacted] | **Date:** | 15/12/2020 |
| **CID No:** | [redacted] | **Client Name:** | [redacted] |
| **Project Name:** | [redacted] | **Project No:** | [redacted] |
| **Submitted By:** | [redacted] | **Contractors:** | [redacted] |

# 2 PREAMBLE AND PROJECT SCOPE:

The above project was assessed on the below mentioned scope and is limited to project data supplied, including any documentation and designs as being true and correct in every respect.

I declare, as an Independent Approved Irrigation Professional agreed to under the Deed, that:

a) I have carried out the technical and practical feasibility assessment for the Works; and
b) I have had no previous involvement in preparing this Project Proposal.

I certify that the Project Works are technically and practically feasible, including that:

a) the projected water savings they will generate are reasonable and realistic, including being appropriate to the crops, soils, climates, water delivery system and topography of the Eligible Irrigator's Property;
b) the rationale for the water savings assessment is clearly explained;
c) the projected water savings can be achieved while maintaining the agricultural production potential of the Property on which the Works would be completed as part of a Project;
d) the engineering solutions they entail are achievable and appropriate to the needs of the Eligible Irrigator and the Property;
e) the projected costs are reasonable and realistic, and within the expected range for that type of infrastructure and scale of installation; and
f) the projected water savings they will generate represent the conservative or minimum feasible volume that could be derived from completing the Works.

[redacted]

[redacted]

Certified Irrigation Designer

[redacted]