

Water Accounting Field Trials for the Far North Prescribed Wells Area

Guidelines and Frequently Asked Questions

Introducing the project

The accounting for groundwater take in the Far North Prescribed Wells Area (FNPWA) project has been developed in response to community concern, raised during consultation on the Water Allocation Plan, about the potential impact of water metering on pastoral businesses in the Far North.

The South Australian Licenced Water Use Metering Policy, requires licensed water to be taken through a meter approved by the Minister or in such a way that the Minister is satisfied that the taking of water is consistent with the relevant meter implementation plan. Alternatives to water metering can be considered and documented within a meter implementation plan; for the Far North this plan is referred to as the Water Accounting Implementation Plan.

The accounting for groundwater take project aims to identify and field trial water accounting solutions that meet the requirements associated with managing a prescribed wells area in a way that does not significantly impact a pastoral business; ideally adding value to the businesses.

The project is initially being established for 18 months to investigate and trial metering, measuring and accounting options that maybe suitable for the Far North and can be used to support development of the water accounting implementation plan.

Trials will be undertaken to evaluate proposed accounting methods against key criteria of reliability, practicality, cost and accuracy.

Emphasis is being placed on methods that provide significant benefit for land management such as improved understanding of stock water requirements and water point management and security.

An advisory group has been established to support the project through the provision of advice regarding identification of water accounting projects, contributing to project assessment and assisting in overseeing the conduct of trials. The advisory group consists of pastoral industry members with an interest or experience in groundwater management and managing water for cattle and sheep enterprises and representatives from the SA Arid Lands Landscape Board and the Department for Environment and Water.

Guidelines

Those interested in playing a part in determining water accounting solutions for the Far North Prescribed Wells Area are strongly encouraged to submit an Expression of Interest (EOI) to be a field trial participant and/or put forward their own water accounting ideas.

Expression of Interest

The EOI aims to identify those interested in participating in the program and the potential field trial projects. The EOI involves completing an online form (link on Page 2) which includes applicant details, brief responses to the trial criteria, identification of preferred field trial project and includes space for other water accounting ideas.

Field Trial Projects

A list of field trial projects identified by the advisory group is listed below in this document. Applicants have the option to submit an EOI to be part of one of the listed field trials or to put forward their own water accounting project/idea.

The list of field trial projects includes a description of the project and requirements. Applicants are encouraged to submit an EOI even if all requirements cannot be immediately met.

EOIs that are invited to develop a project application and associated plan will identify funding, resourcing and in-kind contributions required to support the trial. Funding will be available to support approved trials based on the project plans.

Role of Trial Participants

The project trial participants will work closely with and under the guidance of the advisory group and project management team.

The participants will have involvement in conducting the field trials including designing the project and delivering it in accordance with the project plan and funding agreement. The project plan will outline the activities including the location, data collection, monitoring and reporting of results.

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Participant Eligibility

EOI's will be considered against the following criteria.

- Capacity to implement a water accounting investigation in the Far North of South Australia.
- Willingness to provide field data and other information necessary to assess performance of accounting method.
- Ability to commit time to running investigation including collection of field data and reporting of results and other relevant information.
- Capacity to conduct trial across multiple seasons.
- Willingness to showcase suitable outcomes and share information with the pastoral community

Further consideration given to but not essential includes:

- Successfully delivering a grant project in the past.
- Interest in investigating stock water consumption.

Expression of Interest Assessment

Assessors will consider applicant responses to the criteria and details of the proposed project including project location.

The Accounting for Groundwater Take investigations will ideally include participants spread geographically across the Far North Prescribed Wells Area to ensure adequate coverage of the various on-ground and hydrogeological conditions.

If there is insufficient interest through the EOI process or inadequate coverage of the various on-ground or hydrogeological conditions the Advisory Group may recommend potential participants who will be approached directly.

All submitted EOI's will receive a response and may be contacted for further information or to discuss a proposed project.

Project Development

Project Plan

Where an EOI is accepted the next stage is the development of a project application and plan. This will be a collaborative process which will involve the participant working closely with the advisory group and project management team. It will include:

- Identifying/finalising the accounting method/s to be tested that are potentially suited to their on-ground and hydrogeological conditions;
- Develop project plan including; trial aims, methodology, monitoring and reporting;

- Project timing;
- Identifying and sourcing technical advice and support as required;
- Determine project budget including government funding.

Before the project can progress the applicant will be required to enter a grant agreement and terms and conditions for the approved project plan.

Project Funding

The program has received funding from the SAAL Board, Department for Environment and Water and the Australian Governments Improving Great Artesian Basin Drought Resilience (IGABDR) program. Individual project funding will be assessed on a case by case basis with consideration given to project set-up and infrastructure requirements.

Key dates

Trial participant/project expression of interest stage 1 open: 21 March 2022

Trial participant/project expression of interest close: 12:00 pm, 19 April 2022

Stage 2 project development and plan invitation open: May 2022

Estimated project set-up and start: July 2022

How to Apply

Applicants can apply by submitting the online expression of interest form. Accessible via the link below:

<https://landscape.smartygrants.com.au/WaterAccountingTrialsEOI>

For more information

Should you wish to discuss this opportunity further, please contact Aaron Smith by email aaron.smith3@sa.gov.au or phone 0417 643 956 or Melissa Horgan by email melissa.horgan@sa.gov.au or phone 0409 896 402.

For information on the state-wide metering policy and other relevant policies visit www.environment.sa.gov.au/topics/water/waterlicences-and-permits/metering-water-use

Applications must be submitted by 12:00 pm on the 19 April 2022

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Frequently Asked Questions

What is water accounting?

Water accounting is the recording and reporting of water use within a licenced or prescribed area.

Why do we need to account for water use?

All licenced water users in South Australia are required to account for their water use in line with the conditions of their water management authorisation.

Water accounting is to ensure judicious use of water and assists licensees to better manage their entitlements.

Understanding actual use is fundamental to the management of groundwater resources and understanding monitoring observations. You cannot manage what you don't measure.

Why does the water used by stock need to be accounted for in the Far North Prescribed Wells Area?

In the Far North Prescribed Wells Area the Water Allocation, based on licenced allocation, stock water take accounts for 15% of the total authorised water take however the actual water take for stock use is unknown. Understanding actual use is imperative to management of the groundwater resources and understanding monitoring observations.

What is considered stock water use?

Stock water use is the taking of water to provide drinking water for sheep and cattle other than for stock subject to intensive farming. The Guide for the Water Allocation Plan for the Far North Prescribed Wells Area provides more information about how water is allocated. Note horses that are used for pastoral purposes, in this project, will be considered as stock and included in the water take for stock purposes. Other species that take water, such as large feral herbivores and native animals, are not considered stock but will be accounted for in the project trials to understand the take that occurs.

Could water accounting lead to a reduction in my water entitlement?

No, not if you are working in accordance with your water licence and associated conditions.

Are there any potential benefits to improving water accounting?

Water accounting improves understanding of how water resources are sourced, managed, shared and used. Informs the tools and resources that are used to make decisions about the impacts to users including the environment. Some of these tools and resources include the groundwater model, assessment methods and baseline monitoring. For licensees understanding what is being used, can help inform management decisions such as how they will use their water resources into the future, adjusting allocations and water point management.

Will water accounting lead to a stock or domestic water levy?

A stock and domestic water levy cannot be imposed on the taking of water for domestic purposes or for watering stock that are not subject to intensive farming as this is explicitly excluded under section 76(14) of the Act, and there is currently no intention to change this.

Note, in the SA Arid Lands region for water take where a levy can be applied (such as mining), levies are based on entitlement and are not dependent on metered use. Further information on levies can be found on the [board's website](#).

What is a Water Accounting Implementation Plan?

A publicly available plan for the implementation of water accounting measures for a particular prescribed water resource. In other prescribed areas this is known as a Metering Implementation Plan.

South Australia's default policy is that all licensed water use shall be metered. However, the policy allows for implementation to be sufficiently flexible to recognise on-ground regional implementation issues. Meter (water accounting)

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implementation plans are the mechanism used to document and consistently apply any exemptions or alternative methods of measurement. It is acknowledged that there are a number of complexities associated with metering in the FNPWA, such as artesian conditions and measuring water at high pressures and temperatures. The Department will work with the board and water users to determine how water take can be accounted for in a reasonable manner. This feedback will be considered in the development of a Water Accounting Implementation Plan for the FNPWA.

What is the Accounting for Groundwater Take in the Far North Prescribed Wells Area (FNPWA) project?

It is acknowledged that metering is a complex issue for the FNPWA and further work is required to determine the best approach to water accounting. The accounting for groundwater take project will investigate water accounting options to provide the evidence to enable the development of the Far North Prescribed Wells Water Accounting Implementation Plan. The investigation into water accounting options will be undertaken through field trials led and conducted by the pastoral community.

Is water metering the preferred option?

The state has a default position of metering to account for water use as meters are typically the most accurate way to account for water. This project will investigate both meters and other accounting methods, however this does not mean that meters will be the most practical, reliable and cost effective method for water accounting in the Far North. This is the reason for the accounting for groundwater project to look at a method or methods that meet the criteria of being practical, reliable, accurate and cost effective that would then allow individuals to select from approved accounting methods most appropriate for their circumstances. The department also acknowledges the complexity of metering in the Far North and is supporting this project to assist in identifying different methods that may also be practical and suitable for water licencing administration.

What type of water take is being investigated?

The project trials are focussed on investigating accounting methods for the take of water for stock, domestic and bore-fed wetlands purposes, however all licensed take is being considered as part of the broader water accounting project. Many industries, such as mining and energy, already account for their water take using different methods or technology, such as water meters, to report annually their water take. The methods that other industries use maybe applicable to the accounting trials and will be considered as part of the project.

How long will the Accounting for Groundwater Take project operate before it finishes?

The project has been established initially for 18 months and it is intended that trials to support the project will be a minimum of 12 months. It is however recognised that accounting for groundwater take in the Far North is a complex issue and a short-term project may not be sufficient to support the practicality, cost-effectiveness, accuracy and reliability of the options trialled. It is envisaged that, as the project progresses, additional resourcing or funding will be leveraged to support the extension of the project and as such enable trials to be extended or new trials to be established as the project progresses. Extending the project is contingent on securing of the funding and agreement by both the board and DEW.

Is there funding available to support the trials?

Yes there is funding support available for the trials. This will be identified during Stage 2 of the EOI process, with the funding and resourcing requirements and the supporting inkind contributions identified in the development of the project plan. It is acknowledged that different trials will require different levels of support and each application for a trial will be assessed on merit with consideration given to the funding and inkind contributions identified in the application. The intent of the funding is to ensure that those approved and participating in the trials are not significantly disadvantaged in the cost to install water accoutnign equipment and conduct the trial, where the trial is a significant addition to their regular business.

What can be considered for funding and inkind support?

Funding identified in the development of the project plan is applied for as part of the Stage 2 EOI. Elibilgble funding may include:

- new infrastructure including water meters;

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- other accounting tools;
- support to modify or connect accounting equipment;
- new recording devices such as data loggers and cameras;
- new software or systems to support the collection and management of data; and other items as identified in the project plans.

Ineligible to be funded but considered as in kind or co-contribution includes:

- Time of those participating in the trial to collect, manage and report on the project;
- existing infrastructure and access or use of this equipment;
- other incidentals to manage or maintain the trial, such as costs to travel to site; and
- ongoing fees to collect or manage data, for example subscription fees.

What is the role of the Water Accounting Advisory Group?

The advisory group is responsible for providing advice to assist in the selection and conduct of water accounting trials. The group will:

- Provide advice to the project management team with regard to:
 - Identify water accounting investigation projects
 - Identify water accounting trial participants
- Assist with monitoring and reporting on individual project performance;
- Assist in the development of individual project plans;
- Review individual trial progress and in consultation with the participant make recommendations for amendments as required;
- Address concerns raised by participants;

Can an Advisory Group member also run a water accounting trial?

Yes, it is possible to be a member of the advisory group and a trial participant however there will be limitations on your involvement in assessing and making recommendations on your own water accounting project.

What additional information do I need to provide to support my expression of interest?

Anything you consider relevant to support your expression of interest such as detail of your project, your qualifications etc. can be included and will be considered.

Is there a minimum or maximum number of field trials?

The aim is to have sufficient number of trials to test accounting methods against various land systems and hydrogeological and environmental conditions i.e. surface water and climate. If there is insufficient interest through the EOI process or inadequate coverage of the various on-ground or hydrogeological conditions the Advisory Group may recommend potential participants who will be approached directly.

field trials run?

The field trials will run as per the grant agreement that is signed between the board and the successful trial participant. The trials will run for at least 12 months, however it is recognised that 12 months may not be sufficient for all trials due to the complexity of accounting in the Far North. Additional funding maybe leveraged to extend appropriate trials as well as secure new or additional trials. Where an extension is able to occur this will be discussed with the trial participants and if willing the trial may be extended. The length of time for any trials extended will depend on the funding received and outcomes from the trial received to date.

The water accounting group has developed a project list to help identify the trials to be tested, however the expression of interest will provide an opportunity for field trials not just based on the list provided. The trials will cover a variety of

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circumstances and some considerations have been identified for each project including accounting for non-licensed animal take (i.e. feral animals) and land system types with the presence of surface water.

The type of technology or monitoring will depend on the trial being undertaken and will be identified in the development of the project plan. Examples of some technology and monitoring includes telemetry systems, flow and level sensors that monitor tanks and troughs, water meters, flow meters, maric valves, remote cameras, software/programs to manage data and connectivity to the internet.

Yes monitoring and reporting will be a requirement of the project and will be outlined in the project plan. The project plans will be tailored to the trials being undertaken and the monitoring and reporting requirements will be identified according to the type of trial being undertaken and data required.

The type of data required will be determined in the development of the project plan and there will be some variation across trials, however data such as water take/use and stock numbers will be common across each trial. The information collected as part of the trial will be used to assess the method against the criteria, cost-effectiveness, reliability, practicalness and accuracy, to inform recommendations on suitable accounting methods. Some data and information related to the project evaluation maybe shared to communicate the trial and project outcomes or for audit purposes. The project plans will identify the type of data collected and how this data will be managed and shared, including privacy requirements, and will form part of the grant agreement to undertake the trial.

Water Accounting Field Trials

PROJECT LIST

Field Trial Projects

Those interested in playing a part in field testing water accounting solutions for the Far North Prescribed Wells Area are strongly encouraged to submit an expression of interest to be a participant in the field trials.

Applicants have the option to submit an expression of interest to be part of one or more of the field trials listed below or to put forward their own water accounting project/idea. The list includes a description of the project and trial requirements. Applicants are encouraged to submit an EOI even if all requirements cannot be immediately met.

Trials will evaluate proposed accounting methods against key criteria of reliability, practicality, cost and accuracy.

No.	Project Description	Considerations
1	<p>Name: Stock Water Consumption Trial</p> <p>Accounting Method: Stock water take calculated based on daily stock water consumption multiplied by head of stock.</p> <p>Description: The project will measure livestock and native and feral animal water consumption under various seasonal conditions and land systems.</p> <p>The trial will have 2 key parts:</p> <ol style="list-style-type: none">1) Determine average daily livestock water consumption2) Water take based on calculation of head of stock multiplied by daily water use <p>Assistance will be provided to set-up watering points to determine stock water take and that of other animals. This may include installation of water meter/s, cameras or other monitoring equipment.</p>	<ul style="list-style-type: none">• Water tight delivery to trough/s• Known number of stock watering from water point• Estimate of the age of stock• Identify other watering points accessed by stock e.g. rivers, dams• Known water quality or ability to determine water quality• Land system type including existence of surface water and key grazing vegetation• Capacity to run across seasons and to monitor and report on seasonal conditions
2	<p>Name: Representative water point metering (in conjunction with project 1)</p> <p>Accounting Method: Stock water take measured by water meter at one or more representative bore-fed watering points.</p> <p>Description: The project will measure stock water consumption at selected watering point/s with known stock numbers. Results extrapolated for full station stock use estimate.</p> <p>Assistance will be provided to set-up watering points this may include installation of water meter/s, cameras or other monitoring equipment.</p> <p>Meters of various types can be considered.</p>	<ul style="list-style-type: none">• Water tight delivery to trough/s• Known number of stock watering from water point• Estimate of the age of stock• Identify other watering points accessed by stock e.g. rivers, dams• Land system type including existence of surface water and key grazing vegetation• Capacity to run across seasons and to monitor and report on seasonal conditions
3	<p>Name: Bore Fed Wetland monitoring</p> <p>Accounting Method: Constant flow device (e.g. maric valve)</p> <p>Description: The project will measure the accuracy of flow regulator device by comparing calculated water use with measured use using traditional water meter.</p>	<ul style="list-style-type: none">• Water tight delivery from well to bore fed wetland• Meter or other accounting method to test accuracy of constant flow device

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PROJECT LIST

4	<p>Name: High Pressure and Temperature</p> <p>Accounting Method: Tailored Water Accounting solution for high temperature and pressure hydrogeological conditions</p> <p>Description: The project will investigate water accounting on high groundwater pressure and temperature wells. Potential solutions will be investigated with landholder/manager</p>	<ul style="list-style-type: none">• High water pressure and temperature
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