HEALTHY FLOODPLAINS PROJECT

Floodplain Harvesting Measurement - Existing storage metering equipment

Guideline

February 2021

NSW Department of Planning, Industry and Environment | dpie.nsw.gov.au

Published by NSW Department of Planning, Industry and Environment

dpie.nsw.gov.au

Title: Floodplain Harvesting Measurement - Existing storage metering equipment

First published: January 2020

Department reference number: PUB21/42

Document Control

Revision	DATE	WHO	REMARKS
1	February 2021	Department of Planning, Industry and Environment	First published

Contents

1 Introduction

The *NSW Floodplain Harvesting Policy (2018)* will licence and limit floodplain harvesting water extractions.

The *Floodplain Harvesting Measurement Policy (2020)* (the Measurement Policy) has been released together with implementation guidelines to assist landholders and duly qualified persons (DQPs) in understanding their compliance obligations.

2 Purpose of this guideline

New storage meters must meet technical requirements set out in the Measurement Policy.

The Measurement Policy recognises that there are cases where there has been investment in existing storage meters that although not meeting these technical requirements, if installed and calibrated correctly, will achieve a high level of measurement accuracy.

This guideline sets out the circumstances in which a landholder can keep existing storage metering equipment and any associated requirements.

3 Minimum requirements

A landholder can use an existing storage meter that is not included in the Department's list of compatible storage meters only if the storage meter was purchased **before 14 February 2020** (supporting evidence, such as a purchase receipt or a statutory declaration, will be required)

3.1 Storage meters

Existing storage meters must meet the following requirements:

1. The existing storage meter uses a digital measurement sensor.
2. The existing storage meter has been shown to operate at within +/-10mm of accuracy at depths of up to 10 metres, as demonstrated by a *certificate of accuracy* issued by one of the following:
    a. the manufacturer, based on testing in laboratory conditions at the time of manufacture,
    b. a National Associations of Testing Authorities (NATA) accredited laboratory, based on testing in laboratory conditions, after the meter has been installed,
    c. a Certified Storage Meter Installer and Validator, based on testing in-situ, after the meter has been installed.
3. The existing storage meter has been shown to meet the accuracy requirements above within five years before the relevant deadline for compliance with the Measurement Policy.
4. The existing storage meter must output water level readings as follows:
    a. **Submersible pressure meters** must return the pressure reading in mWG units, with all additional calculations taking place in the DAS.
    b. **Radar meters** must return the measurement from the radar head to the water surface (ie. Distance in meters), with all additional calculations taking place in the DAS.
5. The existing storage meter must be independent (separated) from any on-farm or private metering use or network.

3.2 Local Intelligence Devices

All existing storage meters must be fitted with a device (known as a Local Intelligence Device or LID) that records and securely transmits water level data, via telemetry, to the NSW Government's data acquisition service.

LIDs must meet the following technical standards published on the Department's website.

- *Data Logging and Telemetry Specifications (2020),*
- *Data Acquisition Service Logged Data Format Guidelines (2020).*

The Department maintains a list of LIDs that have been shown to meet these specifications on its website.

The NSW Government recognises that some water users have already installed 'on-farm' telemetry systems to help monitor and manage their water use. The *Market Engagement Policy for Metering and Telemetry (2020)* provides a pathway for suppliers of 'on-farm' telemetry services to have these systems recognised for use with the NSW Government's telemetry system.

If a landholder has an existing telemetry system, and their service provider has demonstrated that this telemetry system meets the *Market Engagement Policy for Metering and Telemetry (2020)* then they may continue to use these systems.

4 Installation requirements

4.1 Storage meters and LIDs

Existing storage meters must be assessed, and LIDs installed by a certified storage meter installer and validator (CSV).

4.2 Tamper-evident seal requirements

All parts of the existing storage metering equipment, where tampering could compromise data integrity, must have a tamper evident seal installed by a DQP.

Tamper evident seals must be located, as a minimum:

- on the outside of the LID enclosure to ensure any unauthorised access can be detected upon inspection.
- on radar meter installations, where the support bracket first meets the elevated platform or support structure.
- on submersible pressure meter installations, where the support bracketing first meets the elevated platform or support structure. A tamper-seal shall also be used on the removable top cap of the stillage chamber.

All tamper evident seals must be NSW Government approved seals supplied by Irrigation Australia. Only DQPs can purchase approved seals by logging in to the Irrigation Australia website (see https://www.irrigationaustralia.com.au/)

4.3 Surveying requirements

Existing storage meters must be referenced to the survey benchmark. The survey benchmark must be installed in accordance with *Establishing survey benchmarks for floodplain harvesting measurement devices in NSW (2020)*.

The existing storage meters must be levelled to the survey benchmark by a qualified person. To perform this type of work, personnel and firms should be experienced in land surveying or civil engineering.

A final certification (sign off) by a person who has one of the following qualifications is required:

- Registered Surveyor as recognised by the NSW Board of Surveying and Spatial Information (BOSSI),
- Registered Engineer as recognised by the Engineers Australia,
- Another person or class of person as approved by the Minister.

Subject to water availability, it is recommended that the existing storage meter's water level reading be confirmed by a survey. The survey should confirm that the existing storage meter's water level readings are within the accuracy requirements as defined in section 3.1.

4.3.1 Surveying (levelling in) existing storage meters

For **existing radar meters,** the measuring point or radar head must be levelled to Australian Height Datum (mAHD).

A level (mAHD) shall be taken on the storage floor directly under the existing radar meters.

For **existing submersible pressure meters**, the measuring point or sensor must be levelled to Australian Height Datum (mAHD).

A level (mAHD) shall be taken on the storage floor adjacent to the existing submersible pressure meters.

The storage floor level shall be indicative of the storage floor level and not be taken in any localised low points (eg. Inlet pipe erosion sump etc).

The (MGA20) coordinates (Eastings, Northings and Zone) of the existing storage meter shall be determined.

A qualified person, as defined in section **Error! Reference source not found.**, must certify all survey work.

5 Registration and Certification

A landowner, or a person acting on their behalf (ie. DQP), must provide evidence that they have met the requirements outlined in this guideline. It is the landowner's responsibility to ensure the DQP has all the necessary documents to certify the site.

Existing storage meters and new LIDs must be registered by a Duly Qualified Person (DQP) in the DQP Portal (https://dqp.waternsw.com.au/).

An installation and calibration check list is available on the department's website (an example is provided in **Appendix A**). The installation and calibration checklist must be completed by DQP.

A DQP must register the landowner's site in the WaterNSW online DQP Portal (https://dqp.waternsw.com.au/). A new site will be created in the DAS with the storage site details.

When all necessary information is entered into the DQP Portal, a *Validation Certificate* will be generated, and a copy of the certificate will be emailed automatically to the DQP and landowner.

6 Equipment failure

The obligations on a landholder upon failure of existing metering equipment areE the same as for new storage meters and LIDs. Refer to Part 5 of the Measurement Policy.

All water users must report faulty storage metering equipment to WaterNSW **within 24 hours** of becoming aware that existing storage metering equipment is faulty or has failed. An offence applies for failing to report faulty storage metering equipment within 24 hours.

Storage metering equipment includes telemetry (LIDs).

Faulty storage metering equipment must be report via WaterNSW - *S91i Self Reporting Form*. https://www.waternsw.com.au/customer-service/service-and-help/forms/s91i-reporting-to-take-water-while-metering-equipment-is-not-operating-simplify

Landholders **will have 21 days** from the time that they have lodged their faulty meter *S91i Self Reporting Form*, to repair or replace the faulty existing metering equipment.

Landowners **must keep records** while the equipment is being repaired. Refer to *Floodplain Harvesting Measurement – Secondary (backup) Measurement Devices* guideline.

7 End of life

If an existing storage meter is no longer functioning in accordance with its specifications and is beyond mechanical repair, a landholder must replace it with a storage meter that meets the minimum specifications of the Floodplain Harvesting Measurement Policy (2020).

Appendix A – Installation and calibration checklist

Note: items without an N/A option are **compulsory**

INSPECTION COMPLIANCE

(Y = Yes, E = Evidence provided, N/A = Not Applicable)

SITE DETAILS	DETAILS
Landholder name	
Storage ID	
Date	
Details of certifying DQP	
Details of Registered Surveyor undertaking survey	

PREREQUISITES	Y	E	N/A	REMARKS
Site inspection performed by DQP	☐			
DQP registers site on WaterNSW portal	☐			
Mandatory LID information/events configured to DAS and confirmed by DQP (if applicable)	☐			
Read only access to DAS confirmed prior to attending site	☐			

EQUIPMENT ACCURACY CONFIRMATION	Y	E	N/A	REMARKS
Existing storage meter				
Comply with +/-10mm accuracy requirement throughout its range of operation (typically 0-5m but up to 10m). The operational range is demonstrated by a ***certificate of accuracy*** issued by one of the following:	☐			
- the manufacturer, based on **testing in laboratory conditions** at the time of manufacture.	☐	☐		
- a National Associations of Testing Authorities (NATA) accredited laboratory, based on **testing in laboratory conditions**, after the meter has been installed.	☐	☐		
- a Certified Storage Meter Installer and Validator (CSV), based **on testing in-situ**, after the meter has been installed.	☐	☐		
Output water level readings in mAHD. A physical survey of the water level undertaken by a qualified surveyor.	☐	☐	☐	
Data logger and telemetry (LIDs)				
Comply with the following documents (as amended from time to time):	☐			
- Data Logging and Telemetry Specifications 2020	☐	☐		
- Data Acquisition Service Logged Data Format Guidelines (2020)	☐	☐		

DAS CONFIRMATION	Y	E	N/A	REMARKS
Confirmed storage level data is being successfully received in DAS	☐			
LID restart events correctly received in DAS	☐	☐		
Meter communications lost events correctly received in DAS	☐	☐		
Unauthorised enclosure tamper events reported as fast as communication network allows, and correctly received in DAS	☐	☐		
All Mandatory Event Codes correctly received in DAS	☐	☐	☐	
STORAGE LEVEL CALIBRATION	**Y**	**E**	**N/A**	**REMARKS**
Surveyor has attended site to provide accurate level details	☐		☐	
Reference survey benchmark ID	☐			
Reference survey benchmark level mAHD	☐		mAHD	
Meter level mAHD	☐	☐	mAHD	
Output water level readings are:				
- Pressure sensor mWG.	☐	☐	mWG	
- Radar mAHD	☐	☐	mAHD	
Confirmed DAS reading is correct	☐	☐		
FINAL CHECKS	**Y**	**E**	**N/A**	**REMARKS**
All required evidence for certification	☐			
Details entered in DQP portal and validation certificate generated	☐			