Lower Namoi Groundwater Source

Groundwater annual report 2023.

Introduction

This report is a summary of water accounts, volume pumped and groundwater levels for the Lower Namoi Groundwater Source up to 2023 including the start of year water account volumes for the 2023/2024 water year (1 July to 30 June).

For detailed information of the hydrogeology, management and past long-term water level behaviour of this water source refer to the Groundwater Resource Description Report for the Namoi Alluvium Water Sources: www.industry.nsw.gov.au/__data/assets/pdf_file/0017/230804/Namoi-Alluvium-WRP-resource-description.pdf

Description

The Lower Namoi Groundwater Source is located within the Namoi River catchment. The alluvium extends approximately 160 km west from Narrabri to beyond Walgett (**Figure 1**).

The Lower Namoi Groundwater Source is made up of sediments that form an extensive alluvial fan deposited by the Namoi River and its tributaries, comprised of clay, silt, sand and gravel.

Water resource management

Water sharing plan

The Lower Namoi Groundwater Source is managed by the rules defined in the Water Sharing Plan for the Namoi Alluvial Groundwater Sources 2020. This water sharing plan is available for viewing at: legislation.nsw.gov.au/view/html/inforce/current/sl-2020-0346

Basic rights

Basic landholder rights are available in this groundwater source for domestic and stock watering requirements. While landholders don't need an access licence to take water for domestic and stock purposes from groundwater below their property, the bore must be authorised by WaterNSW.

The volume of water set aside in the water sharing plan for basic landholder rights is 2,255 megalitres (ML).

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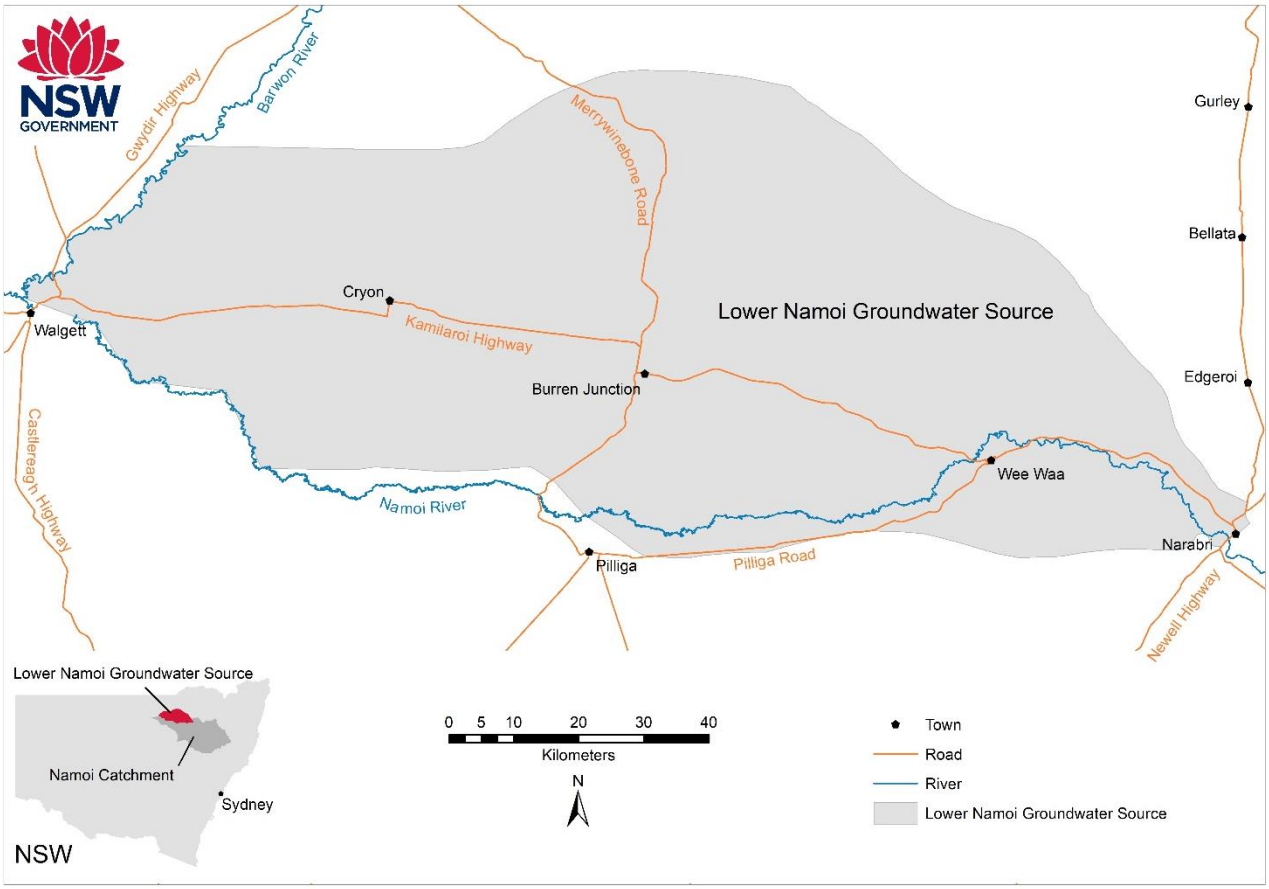
An approval holder is responsible for monitoring water quality from the bore to ensure it is suitable for its intended purpose for the duration of the approval. Inherent water quality and land use activities may make the water in some areas unsuitable for use.

Water from the groundwater sources should not be used without first being tested and, if necessary, appropriately treated to ensure it is fit for purpose. Such testing and treatment are the responsibility of the water user.

Figure 1: Location map



Groundwater access licences

Groundwater access licence share components to 30 June 2023 are presented in Table 1.

Table 1: Lower Namoi Groundwater Source share component 30 June 2023

Access Licence Category	Number of Licences	Total Volume
Local Water Utility[1]	3	4,407
Aquifer[2]	227	81,586

[1]Megalitres/year (ML)

[2]Megalitres per unit share

Extraction limit

All groundwater sharing plans have rules to manage extraction in a water source to the long-term average annual extraction limit.

The extraction limit for Lower Namoi Groundwater Source is 88,255 ML/year.

Extraction in the Lower Namoi Groundwater Source is not compliant if the 5 years average annual extraction is more than 105% of the extraction limit (known as the compliance trigger). If average extraction exceeds the compliance trigger, then the available water determination made for aquifer access licences for the following water year, may be reduced by an amount that would return subsequent total water extraction to the extraction limit.

Information on tracking groundwater extraction against extraction limit for the groundwater source including the likelihood of compliance being triggered in the current water year can be found at: water.dpie.nsw.gov.au/allocations-availability/extraction-limits/tracking-groundwater

For each inland groundwater source, the tracking dashboard shows for the current water year:

- volume that if extracted will reach the compliance trigger (in ML, calculated annually)
- volume remaining to be extracted before reaching the compliance trigger (in ML, calculated throughout the year)
- likelihood that access to groundwater may be reduced in the next water year.

Note: the information on the dashboard is limited by the extraction data available at the time.

Available water

Total water availability in a water year is controlled by the available water determination (AWD) credited to an access licence account, and the carryover rules that dictate the allowable volume to be brought forward from one year to the next.

Total available water for use is controlled by the annual account usage limits, which define the maximum volume of allocated water that can be taken in that water year. The rules and limits that are applicable to the Lower Namoi Groundwater Source are provided in **Table 2**.

Table 2: Lower Namoi Groundwater Source access licence account rules

Access Licence Category	Carryover Limit	Annual Use Limit	Maximum AWD
Local Water Utility	0%	100%	100%
Aquifer	2 ML/share	2 ML/share	1 ML/share

The maximum amount of water that can be debited from an aquifer access licence account in a water year can't exceed 2 ML per unit share component (annual use limit) plus any allocation transferred in (temporary trade), and minus any allocation transferred out. This means that metered extraction plus transfers out can't exceed 200 per cent of the of share component, unless water is transferred in.

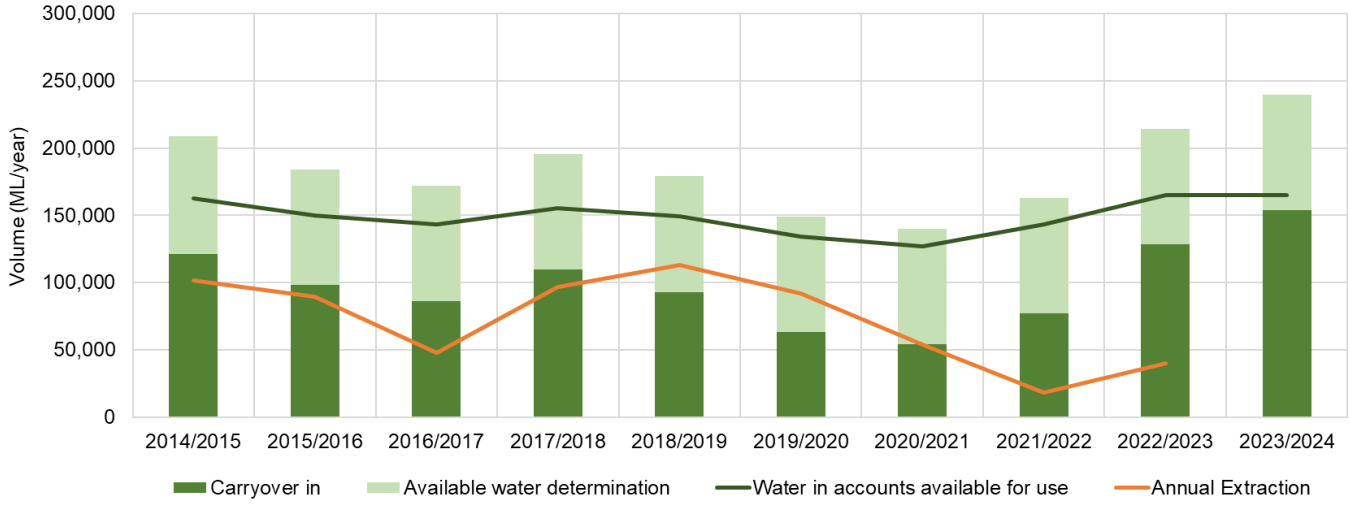
Total account water for period 2014/2015 to 2023/2024 is displayed in **Figure 2** showing the proportion available for use and what is not available for use in a year. Total yearly extraction is also displayed.

Note: all access licence categories have been combined in **Figure 2**.

The access licence account information for the Lower Namoi Groundwater Source on 1 July 2023 is summarised below:

- Carryover in: 153,800 ML
- Available water determination: 85,993 ML
- Total water in account: 239,792 ML
- Total water available for use: 166,444 ML

Figure 2: Account water availability and usage summary for Lower Namoi Groundwater Source



Groundwater trading

Trades are permitted within the Lower Namoi Groundwater Source but not between it and any other groundwater source.

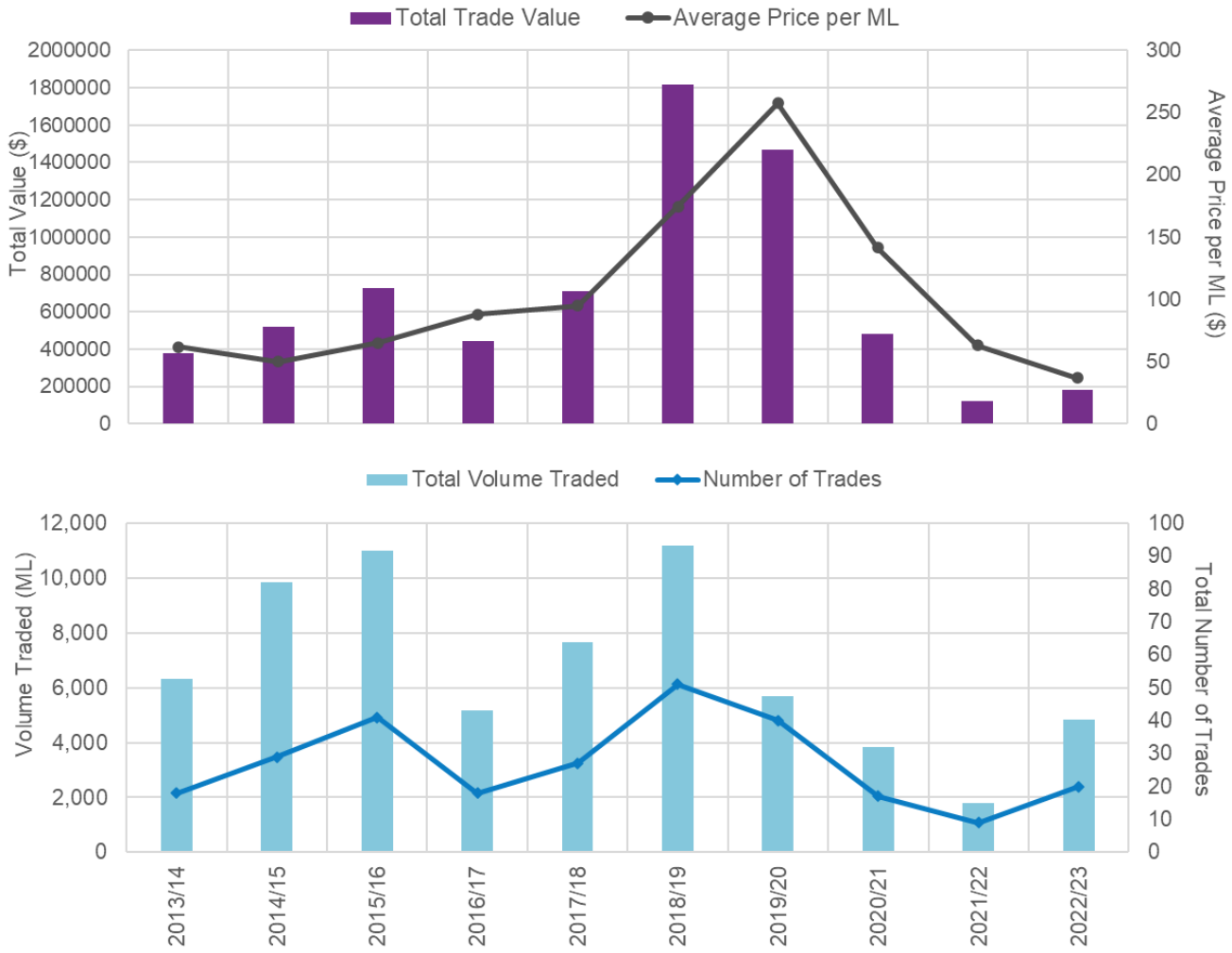
Allocation assignments (temporary trade)

Changes have occurred to how groundwater temporary trades are assessed in the Lower Namoi Groundwater Source. From 1 July 2023 the state-wide groundwater trading assessment process applies in the Lower Namoi Groundwater Source, this includes the assessment of impacts for temporary trades, further information can be found at: water.dpie.nsw.gov.au/allocations-availability/managing-decline-in-groundwater-levels

Trading statistics for the Lower Namoi Groundwater Source are illustrated in **Figure 3**, for trades with value greater than $0. The average value paid per megalitre in 2022-23 was $56.30, while the maximum value was $420 per megalitre.

Further information on water licences, approvals, water trade and water dealings and other matters related to water entitlements in NSW can be found on the NSW Water Register at: waterregister.waternsw.com.au/water-register-frame

Figure 3: Lower Namoi Groundwater Source temporary trade statistics



Bores

There are approximately 2,154 registered bores across the Lower Namoi Groundwater Source (**Figure 4**). The majority of these bores are used for stock and domestic purposes (Basic Landholder Rights). There is also significant use of groundwater for irrigation (**Table 3**).

Production bores in the Lower Namoi Groundwater Source are concentrated mainly east of Burren Junction. The majority of production bores produce supply in the range of 200 ML/year (**Figure 5**).

Table 3: Approximate number of licensed bores in Lower Namoi Groundwater Source (2023)

Groundwater Source	Registered Bore Purpose		
	Basic Landholder Rights	Production	Local Water Utility
Lower Namoi	1510	634	10

Figure 4: Lower Namoi Groundwater Source registered bores

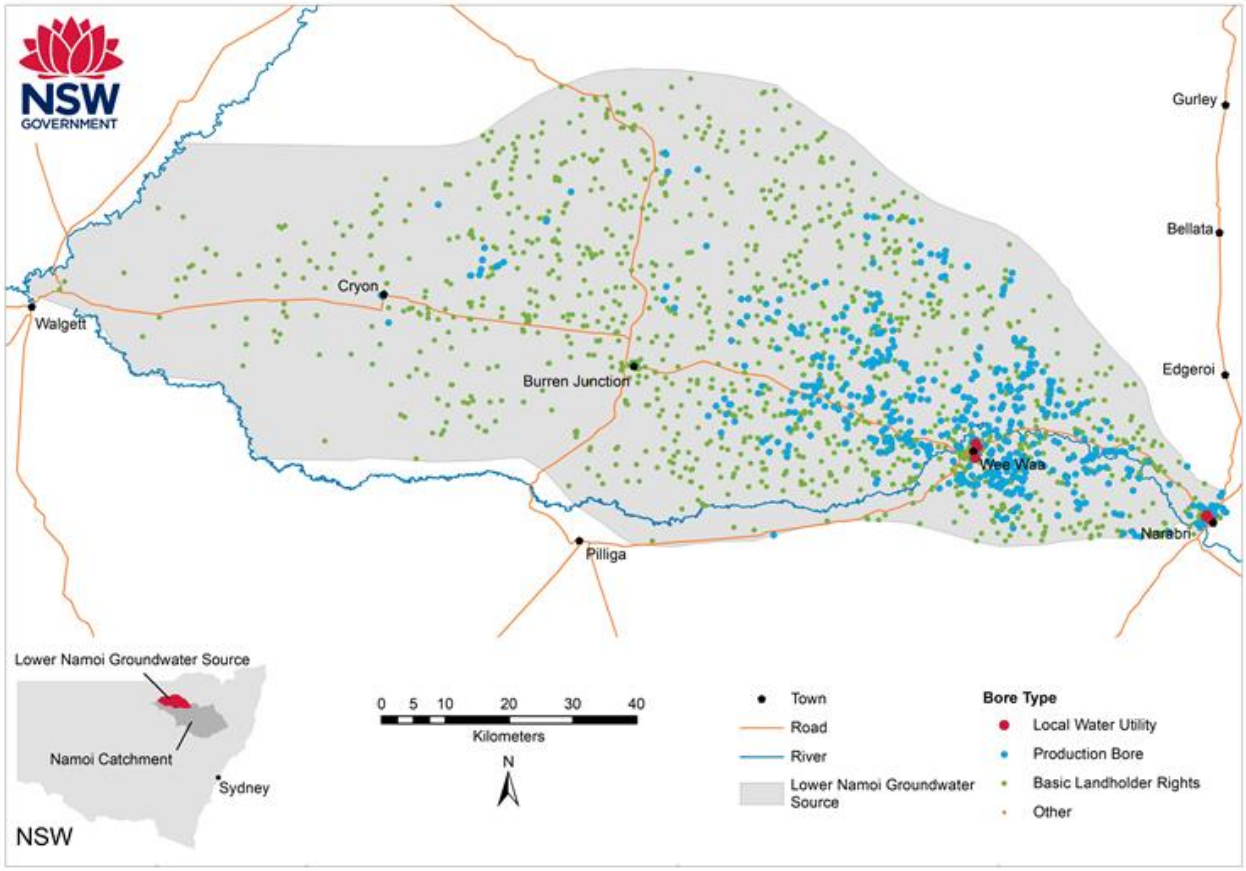
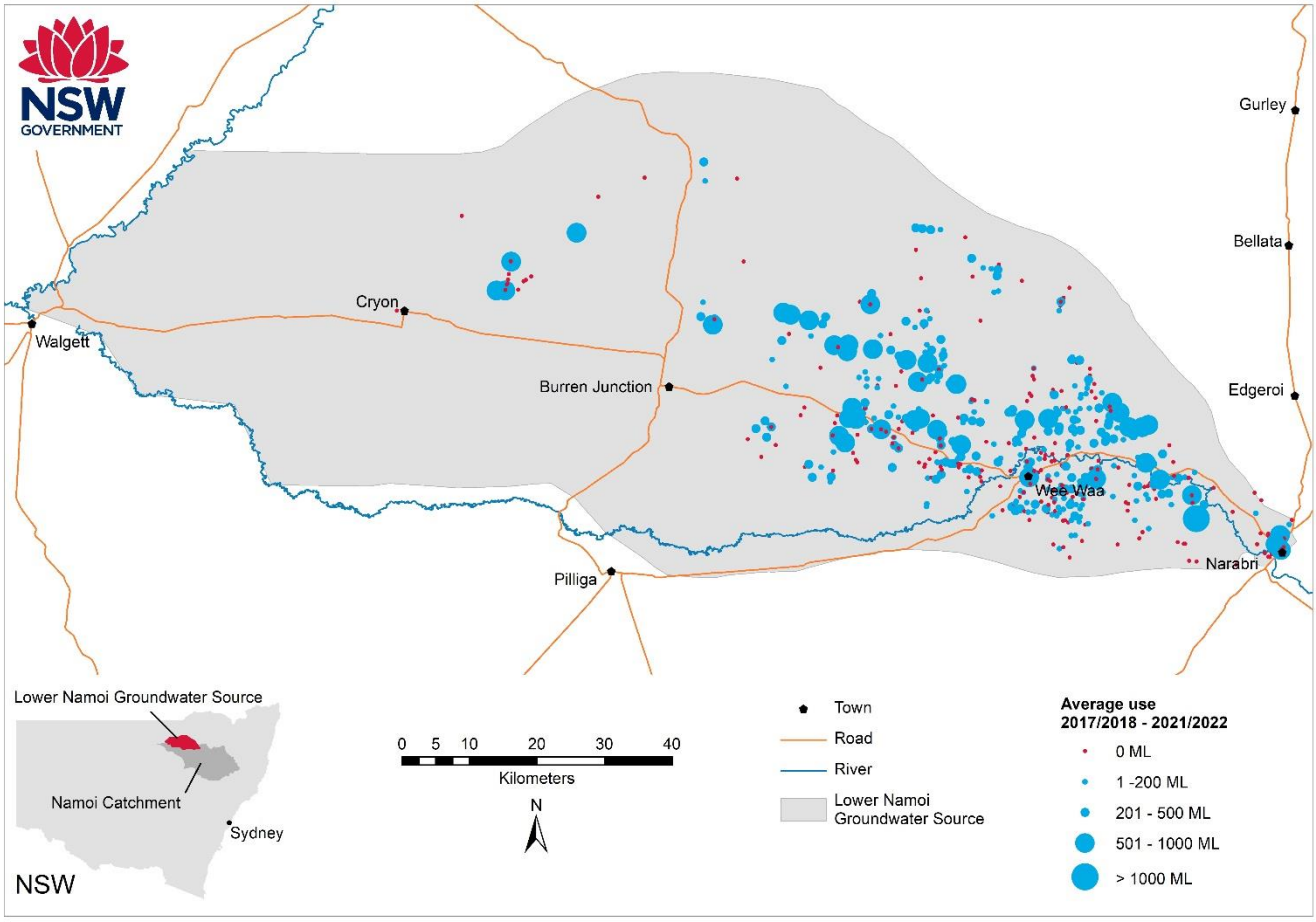


Figure 5: Lower Namoi Groundwater Source water supply bores and distribution of extraction



Water level monitoring

WaterNSW monitors groundwater levels at 580 monitoring bores at 250 sites in the Lower Namoi Groundwater Source (**Figure 6**). At most monitoring sites there are two or more pipes monitoring different depths. The depth monitored by each pipe reflects the depth where the casing is slotted to allow groundwater entry into the pipe.

A hydrograph is a plot of groundwater level or pressure from a monitoring bore over time. A representative sample of hydrographs from monitoring bores have been selected and are presented in **Figures 7** to **12**.

Data for the monitored bores as well as private bore information can be obtained from the WaterNSW real time data portal at: realtimedata.waternsw.com.au/

Data is also available for 25 monitoring bores at 22 of the groundwater monitoring sites in real-time via telemetry.

You can also request information via: Customer.Helpdesk@waternsw.com.au

Figure 6: Lower Namoi Groundwater Source monitoring bore sites

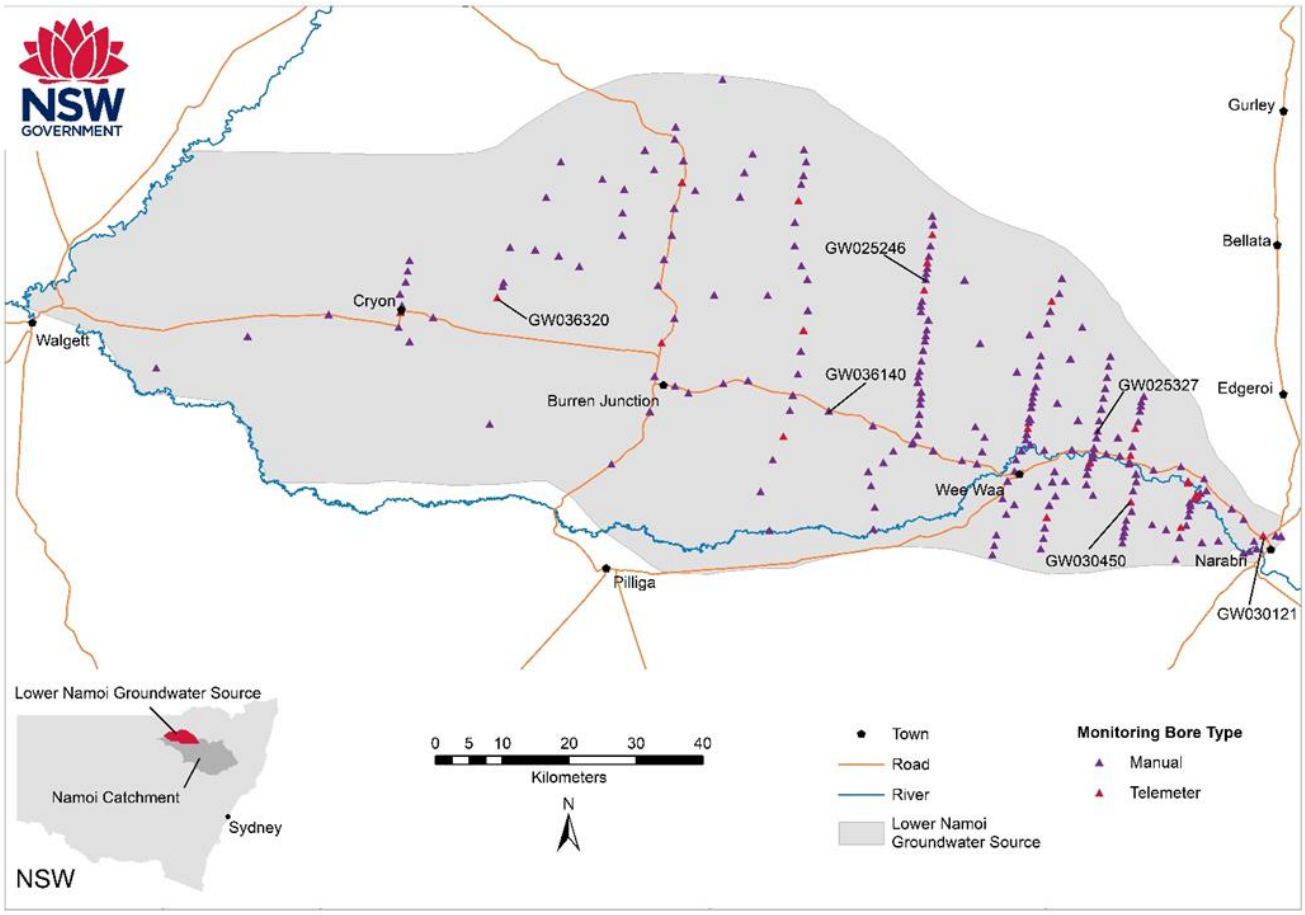


Figure 7: Hydrograph for monitoring bore GW030121

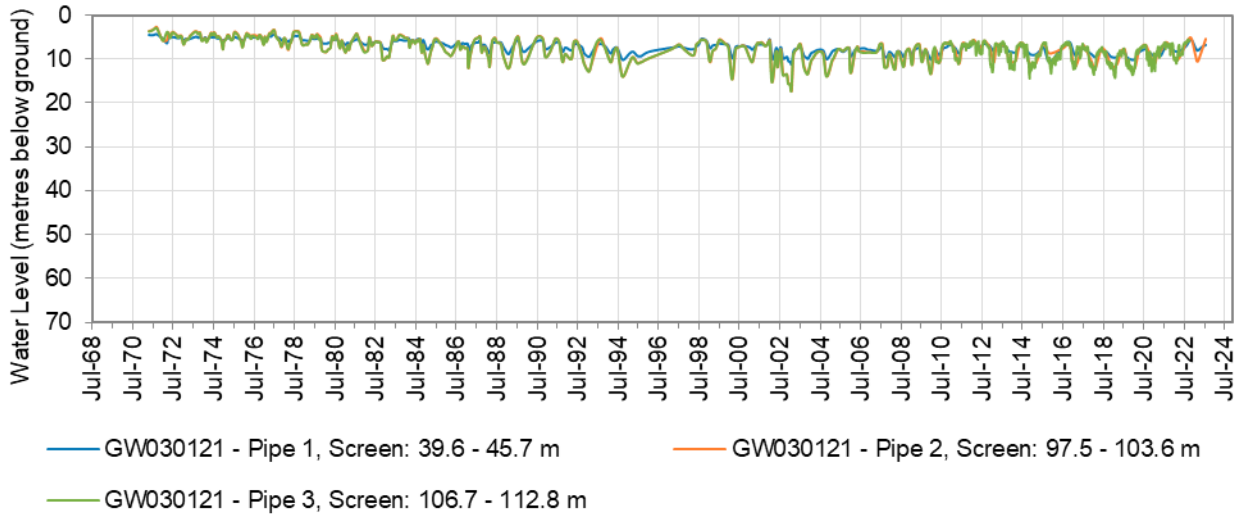


Figure 8: Hydrograph of monitoring bore GW030450

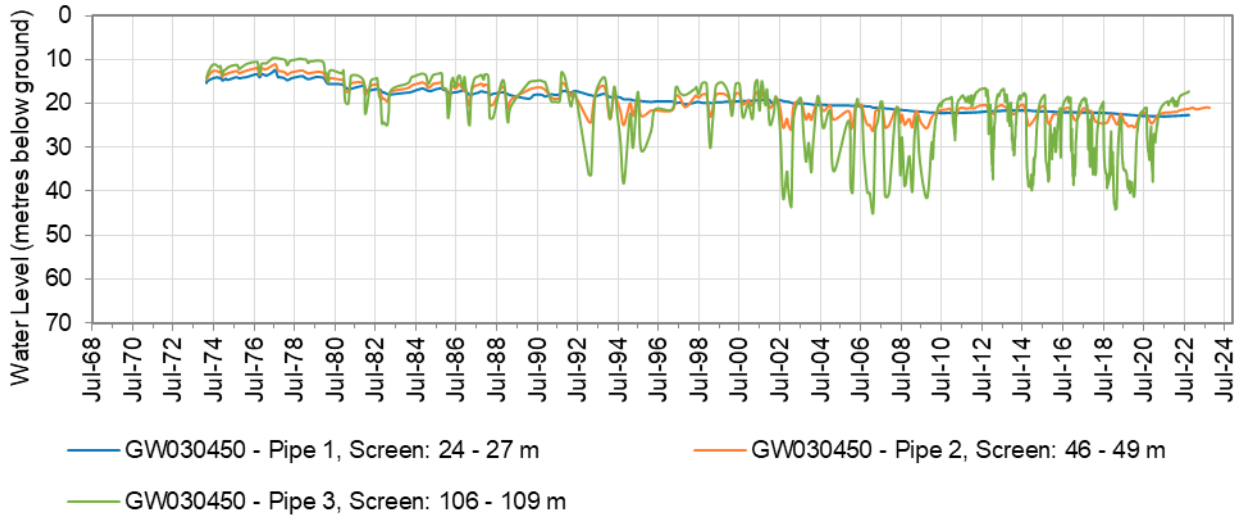


Figure 9: Hydrograph of monitoring bore GW025327 (located next bore to the south of GW025326 ID on map – no data is available since 2019 for GW025326 so it has been replaced with the next closest site GW025327)

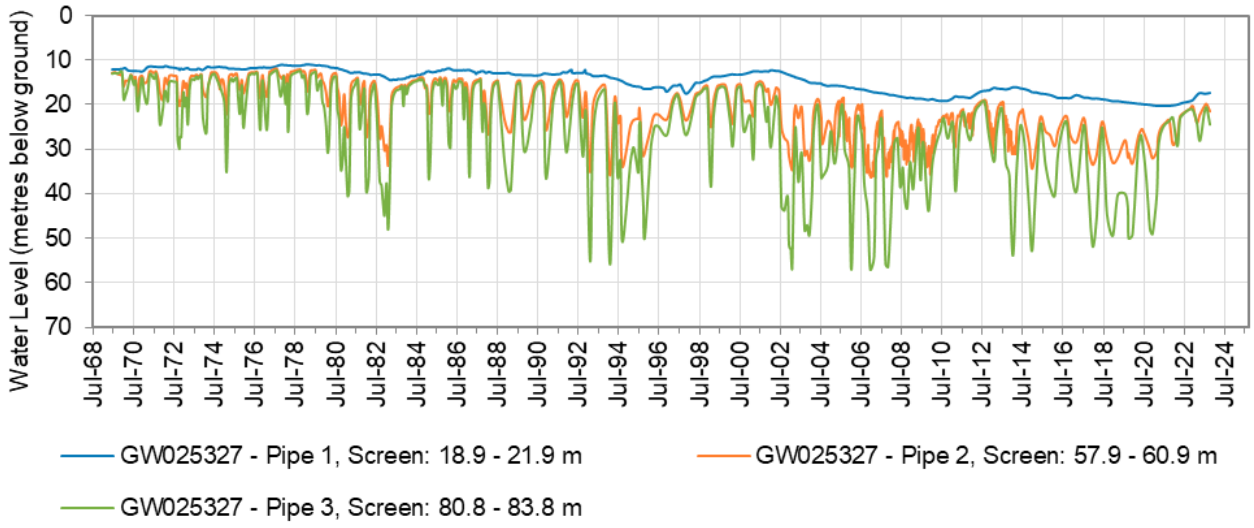


Figure 10: Hydrograph of monitoring bore GW025246

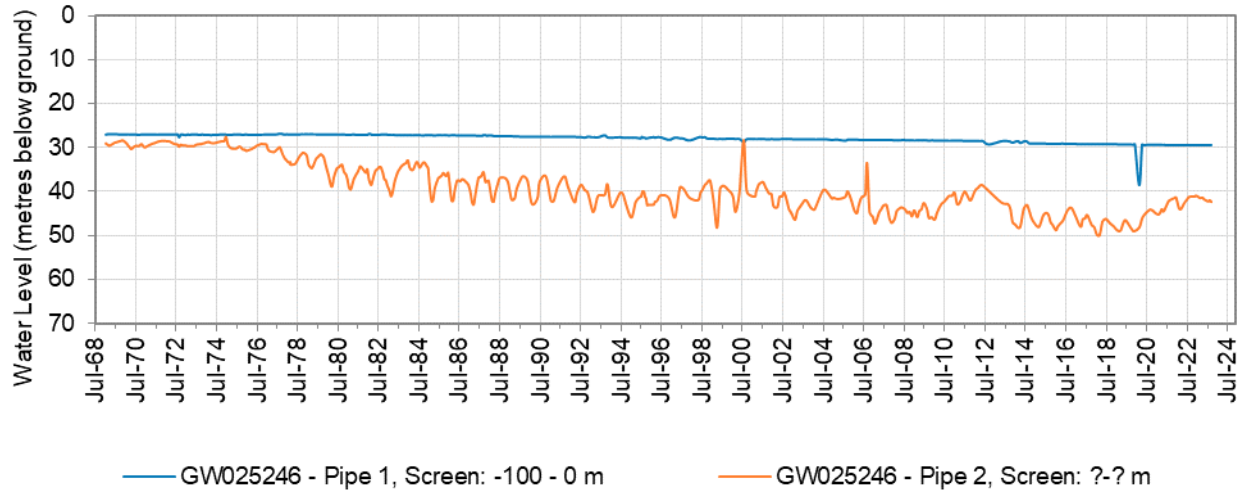


Figure 11: Hydrograph of monitoring bore GW036140

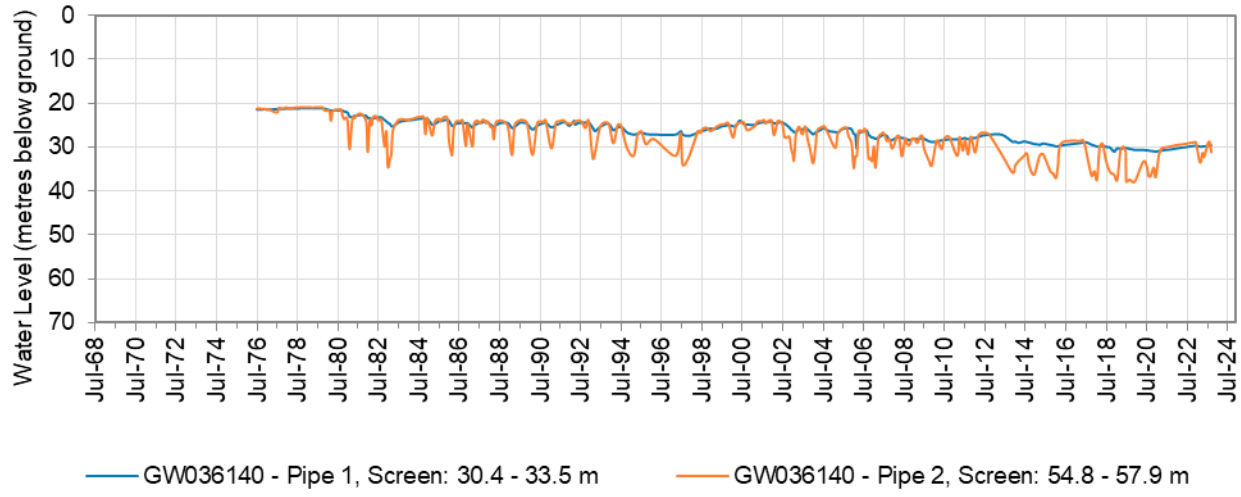


Figure 12: Hydrograph of monitoring bore GW036320