Upper Namoi Zone 6 and Upper Namoi Zone 10 Groundwater Sources

Groundwater annual report 2022

Introduction

This report is a summary of water accounts, volume pumped and groundwater levels for the Upper Namoi Zone 6 Groundwater Source (Zone 6) and Upper Namoi Zone 10 Groundwater Source (Zone 10) up to 2022, including the start of year water account volumes for the 2022/2023 water year (1 July to 30 June).

For detailed information of the hydrogeology, management and past long-term water level behaviour of these water sources refer to the Groundwater Resource Description Report for the Macquarie-Castlereagh Alluvium at: www.industry.nsw.gov.au/__data/assets/pdf_file/0017/192221/macquarie-castlereagh-alluvium-appendix-a-water-resource-description.pdf

Description

The Upper Namoi Zone 6 and Upper Namoi Zone 10 groundwater sources are located within the Namoi River catchment. Zone 6 extends from Bundella Road in the north approximately 30 km south. Zone 10 is associated with Warrah Creek adjoining Zone 6 at its northern end (**Figure 1**).

The Upper Namoi Zone 6 and Upper Namoi Zone 10 groundwater sources are made up of sediments deposited by the Mooki River and Warrah Creek and their tributaries and are comprised of clay, silt, sand and gravel.

Water resource management

Water sharing plan

The Upper Namoi Zone 6 and Upper Namoi Zone 10 groundwater sources are 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. Whilst landholders do not need an access licence to take water for stock and domestic purposes from groundwater underlying their property, the bore must be authorised by WaterNSW.

The volumes of water set aside in the water sharing plan for basic landholder rights are:

- Upper Namoi Zone 6 Groundwater Source: 98 megalitres/year (ML)

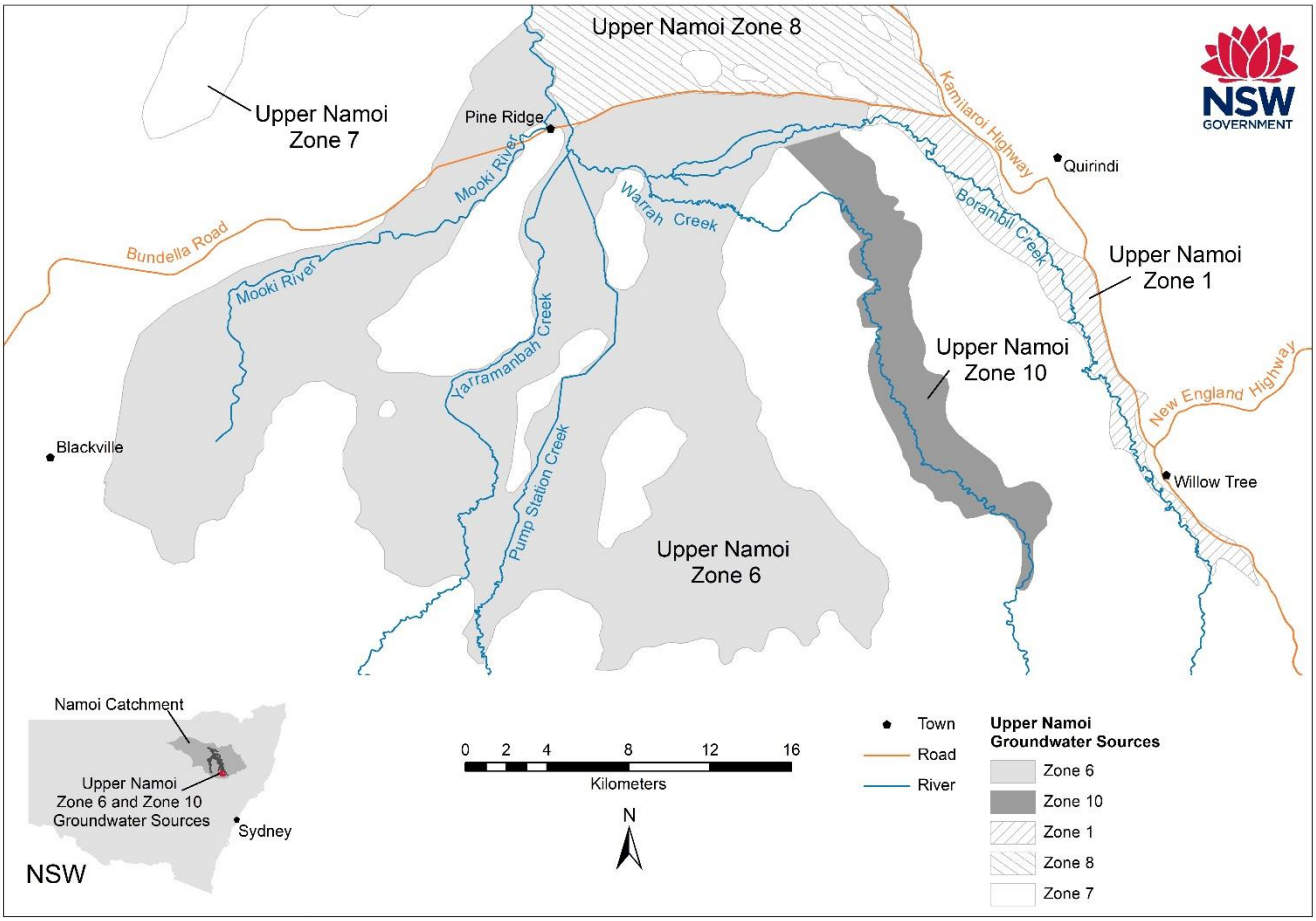
PUB22/1306

- Upper Namoi Zone 10 Groundwater Source: 18 ML

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 2022 are presented in **Table 1**.

Table 1: Upper Namoi Zone 6 and Zone 10 Groundwater Sources share components at 30 June 2022

Water Source	Access Licence Category [Aquifer]	
	Number of Licences	Total Volume[1]
Upper Namoi Zone 6 Groundwater Source	32	10,948
Upper Namoi Zone 10 Groundwater Source	6	1,920

[1] 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 limits for the Upper Namoi Zone 6 and Zone 10 Groundwater Sources are listed in **Table 2**.

Table 2: Extraction limits for the Upper Namoi Zone 6 and Zone 10 Groundwater Sources

Water Source	Extraction limit (ML/year)
Upper Namoi Zone 6 Groundwater Source	14,096
Upper Namoi Zone 10 Groundwater Source	4,518

Extraction in the Upper Namoi Zone 6 and Zone 10 Groundwater Sources 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: www.industry.nsw.gov.au/water/allocations-availability/tracking-groundwater

For each inland groundwater source, the 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)
- The 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 determinations (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 Upper Namoi Zone 6 and Zone 10 Groundwater Source are provided in **Table 3**.

Table 3: Upper Namoi Zone 6 and Zone 10 Groundwater Sources access licence account rules

Access Licence Category	Carryover Limit	Annual Use Limit	Maximum AWD
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% of the of share component, unless water is transferred in.

Total account water for period 2013/2014 to 2022/2023 is displayed in **Figure 2** and **Figure 3**, 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 these figures.

The access licence account information for the Upper Namoi Zone 6 Groundwater Source and the Upper Namoi Zone 10 Groundwater Source on 1 July 2022 is summarised in **Table 4**.

Table 4: Licence account information for Upper Namoi Groundwater Sources Zone 6 and Zone 10 on 1 July 2022

Upper Namoi Groundwater Source	Zone 6	Zone 10
Carryover in:	21,890 ML	3,598 ML
Available water determination:	10,948 ML	1,920 ML
Total water in account:	32,838 ML	5,518 ML
Total water available for use:	21,896 ML	3,818 ML

Figure 2: Account water availability and usage summary for Upper Namoi Zone 6 Groundwater Source

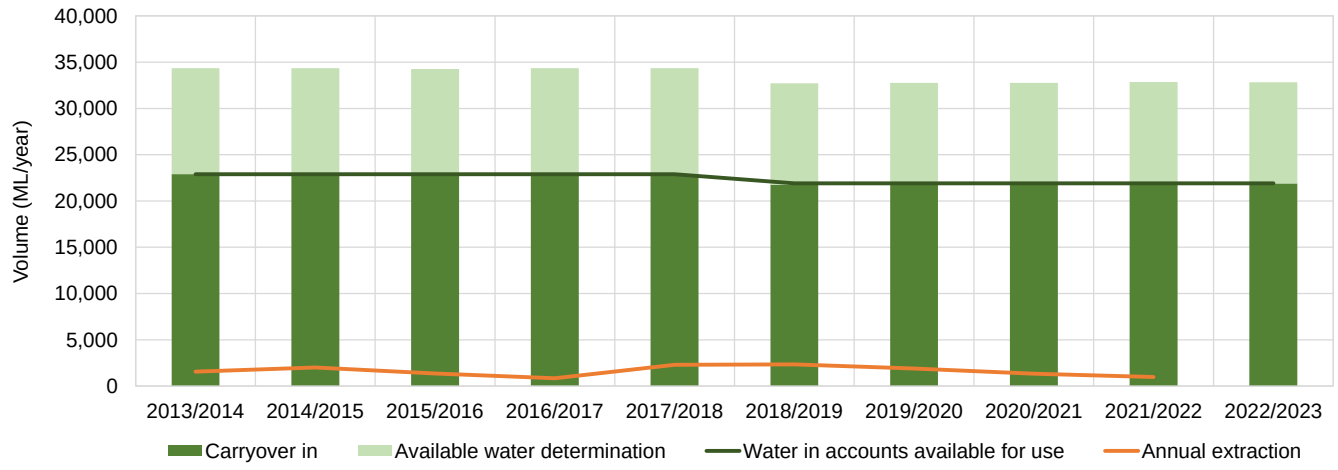
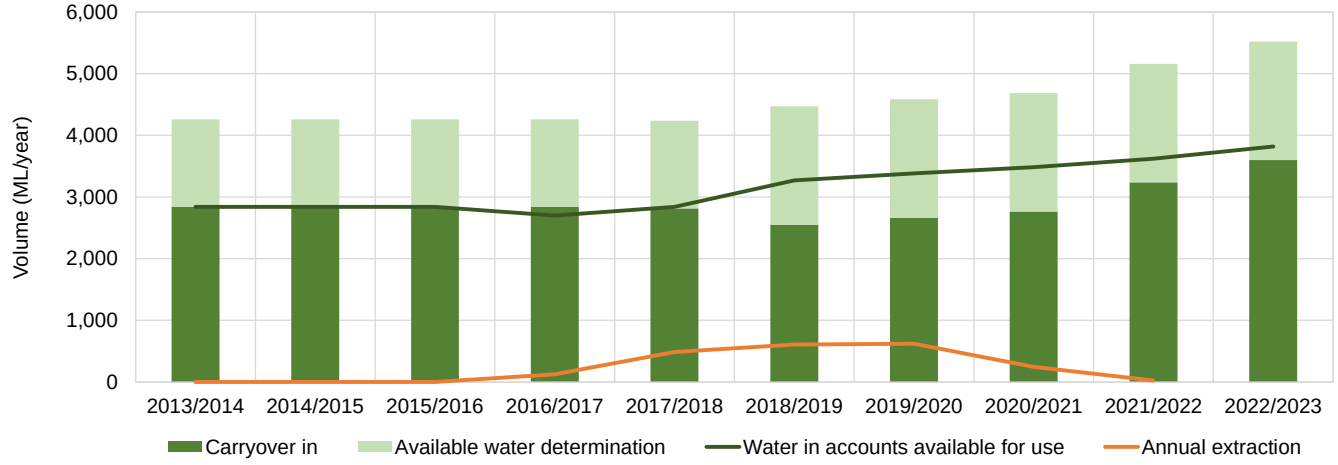


Figure 3: Account water availability and usage summary for Upper Namoi Zone 10 Groundwater Source



Groundwater trading

Trades are permitted within the Upper Namoi Zone 6 Groundwater Source, but not between the Upper Namoi Zone 6 Groundwater Source or any other groundwater source. Trading is permitted within the Upper Namoi Zone 10 Groundwater Source and from other Upper Namoi groundwater sources into the Upper Namoi Zone 10 Groundwater Source subject to the rules in the water sharing plan.

Allocation assignments (temporary trade)

There have been no temporary trades in Upper Namoi Zone 6 Groundwater Source over the last 10 years.

There has been one temporary trade in Upper Namoi Zone 10 Groundwater Source over the last 10 years.

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

Bores

There are approximately 319 registered bores across the Upper Namoi Groundwater Source Zones 6 and 10. (**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 5**).

Average extraction from individual production bores is around 100 ML/year (**Figure 5**).

Table 5: Approximate number of licensed bores in Upper Namoi Groundwater Sources Zone 6 and Zone 10 (2022)

Water Source	Registered Bore Purpose	
	Basic Landholder Rights	Production
Upper Namoi Zone 6 Groundwater Source	210	58
Upper Namoi Zone 10 Groundwater Source	39	12

Figure 4: Upper Namoi Groundwater Sources Zone 6 and Zone 10 registered bores

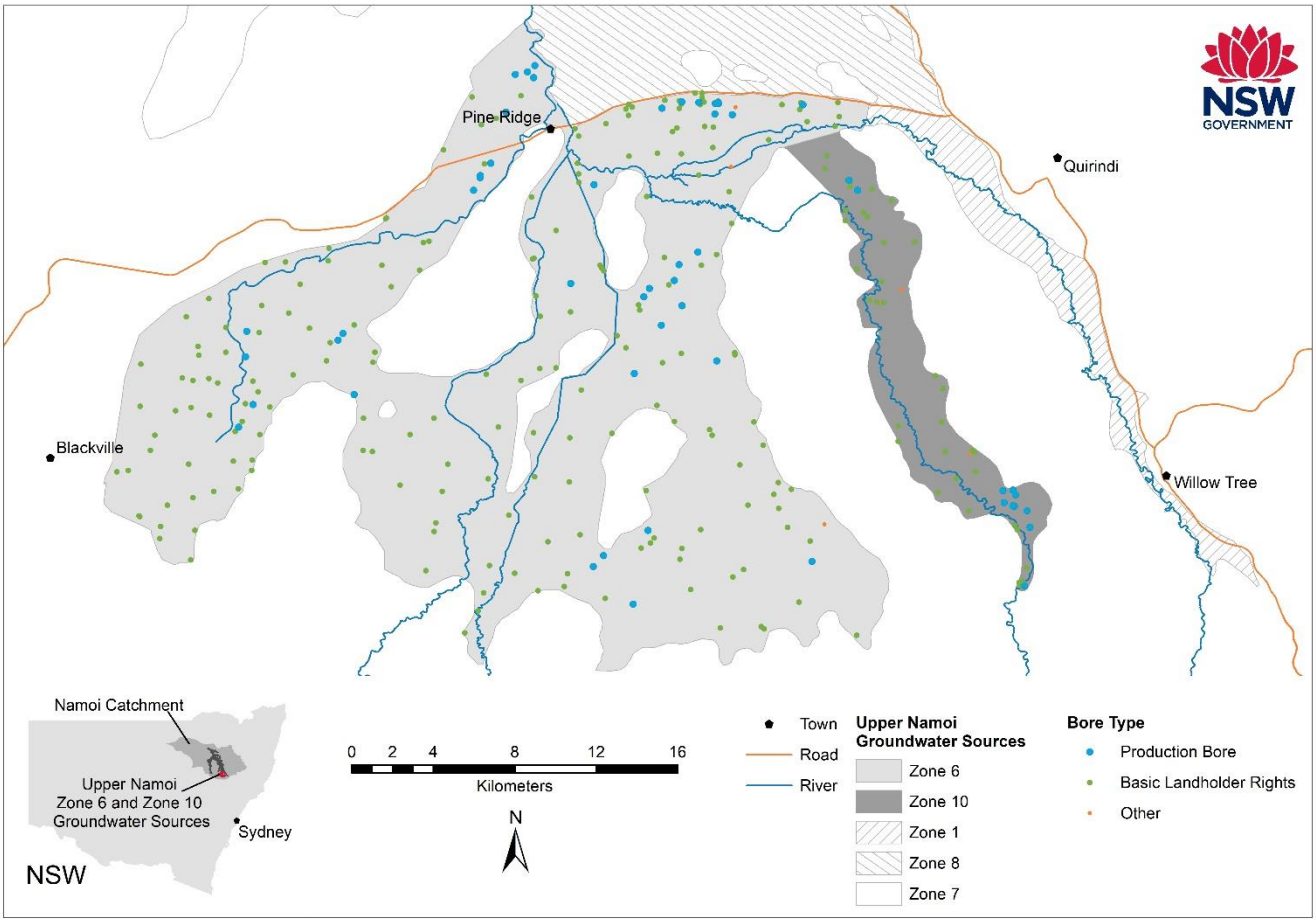
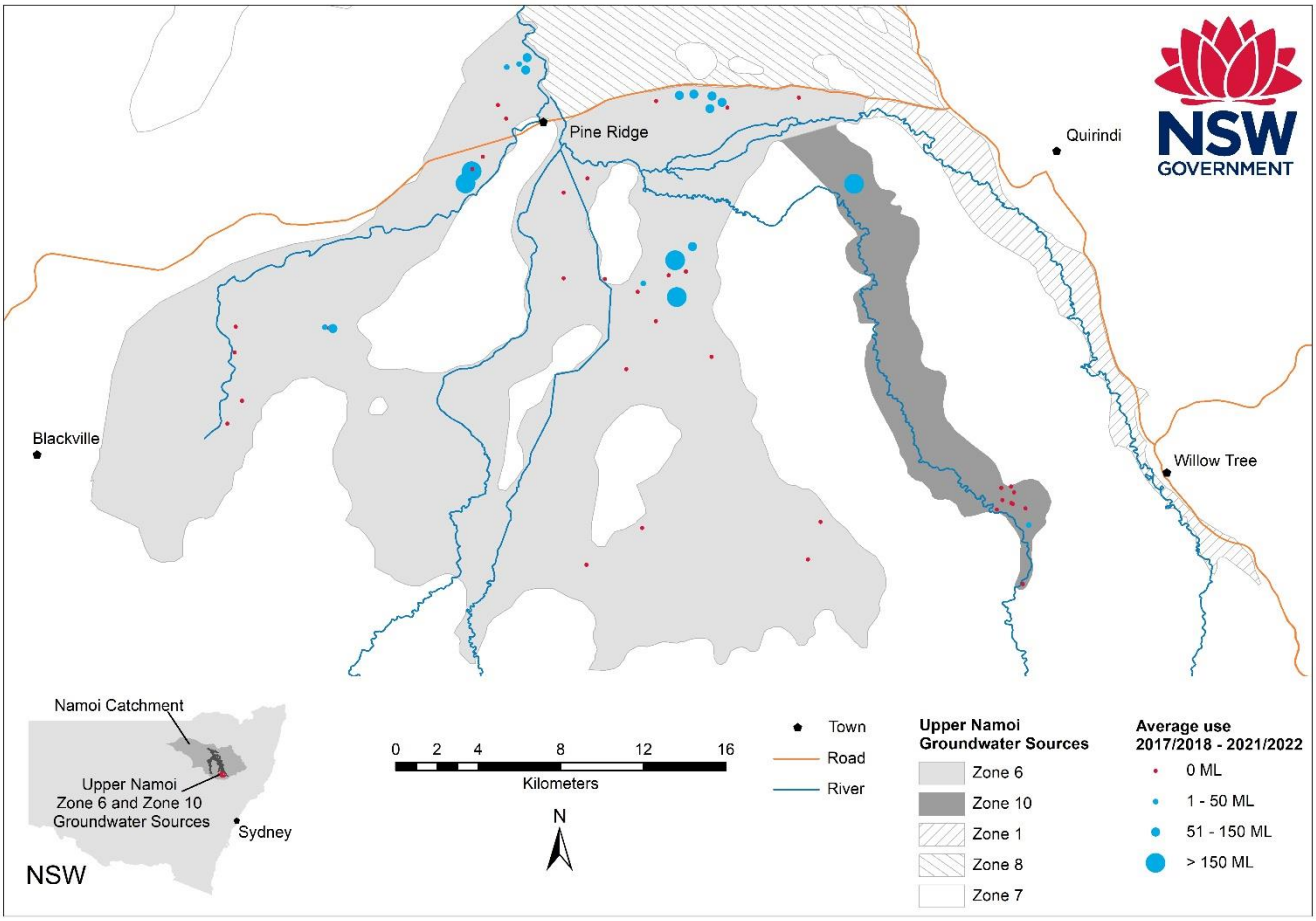


Figure 5: Upper Namoi Groundwater Sources Zone 6 and Zone 10 water supply bores and distribution of extraction



Water level monitoring

WaterNSW monitors groundwater levels at 30 monitoring bores at 19 sites in the Zone 6, and 2 monitoring bores at 2 sites in the Zone 10 groundwater sources (**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.

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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 **Figure 7** to **Figure 9**Error! Reference source not found..

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/

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

Figure 6: Upper Namoi Groundwater Sources Zone 6 and Zone 10 monitoring bore sites

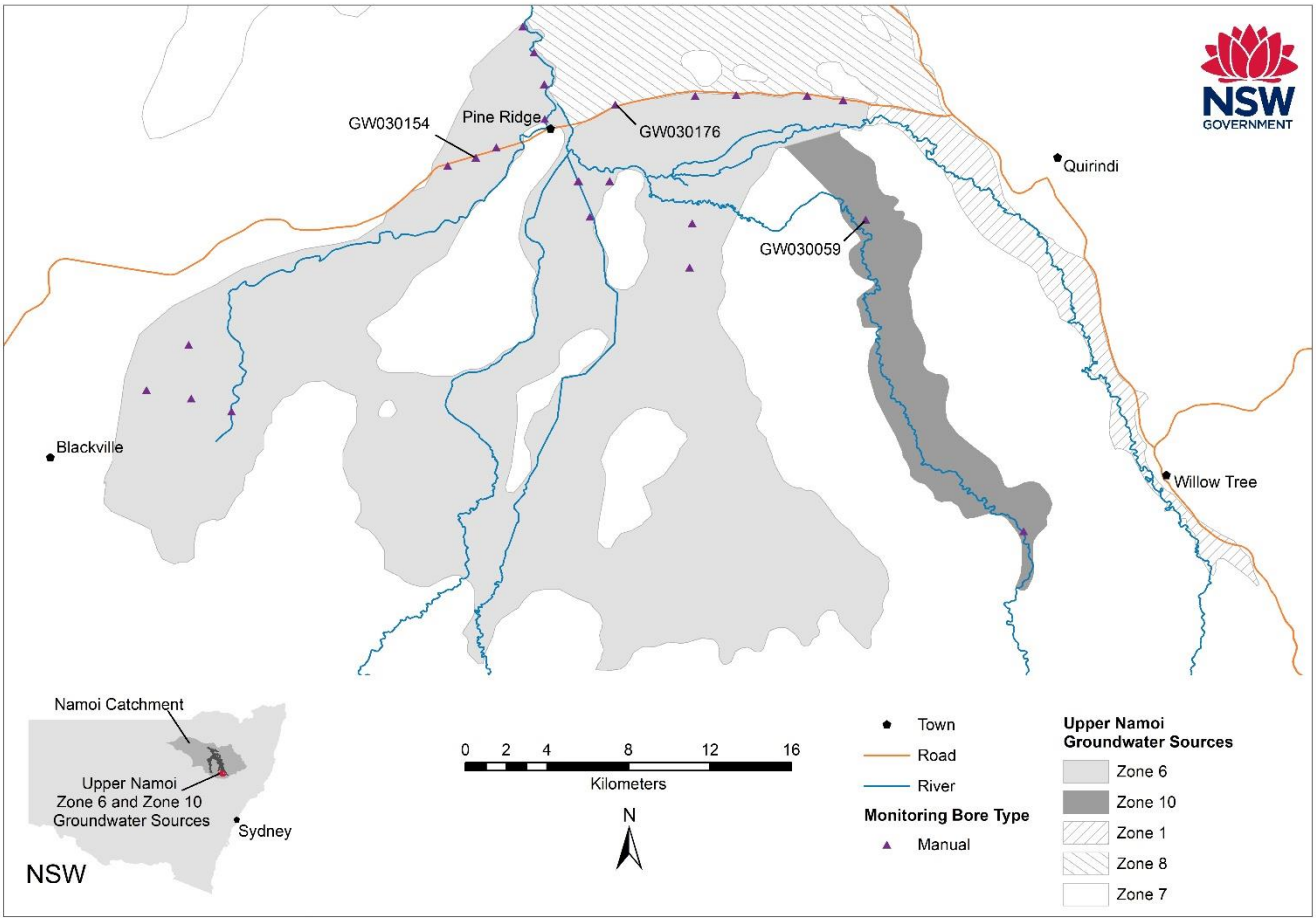

Figure 7: Hydrograph of monitoring bore GW030154 (Upper Namoi Zone 6)

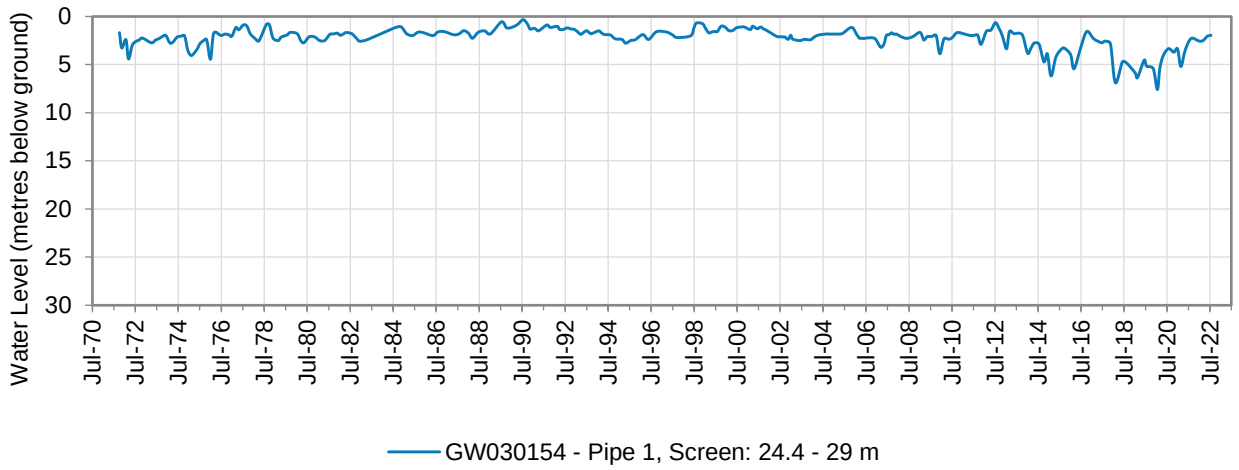

Figure 8: Hydrograph for monitoring bore GW030176 (Upper Namoi Zone 6)

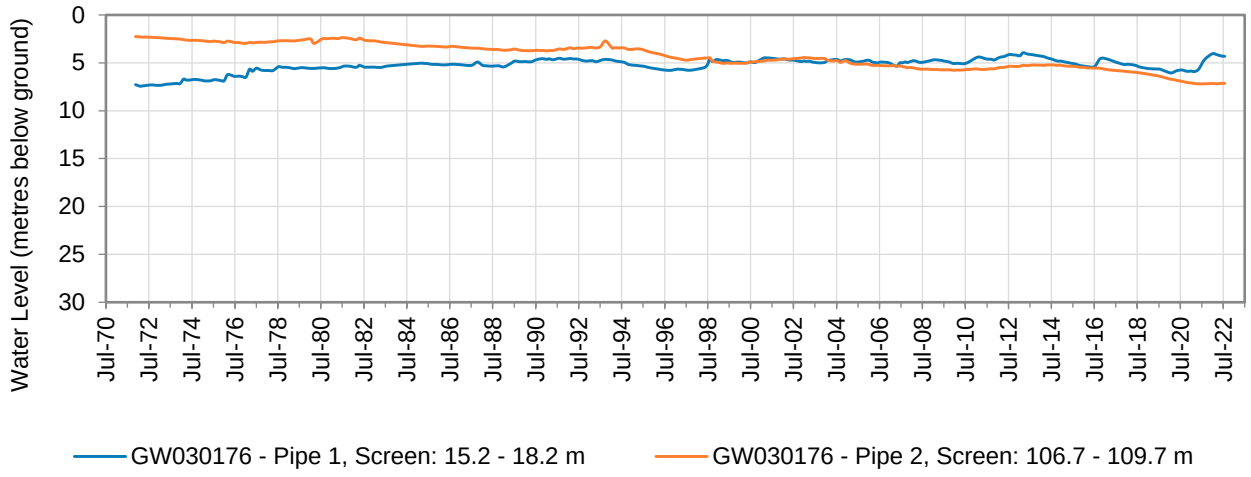

Figure 9: Hydrograph of monitoring bore GW030059 – Upper Namoi Zone 10