

# Peel Alluvium Groundwater Source

## Groundwater annual report 2022

### Introduction

This report is a summary of water accounts, volume pumped and groundwater levels for the Peel Alluvium Groundwater Source 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 this water source refer to the Groundwater Resource Description Report for the Namoi Alluvial Groundwater Sources at:

[www.industry.nsw.gov.au/\\_data/assets/pdf\\_file/0017/230804/Namoi-Alluvium-WRP-resource-description.pdf](http://www.industry.nsw.gov.au/_data/assets/pdf_file/0017/230804/Namoi-Alluvium-WRP-resource-description.pdf)

### Description

The Peel Alluvium Groundwater Source is located within the Peel catchment, a sub catchment of the Namoi River catchment. The water source extends from close to where the Peel River meets the Namoi River in the west, extending approximately 40 km east to Attunga, then southeast approximately 80 km past Tamworth and Dungowan, it includes the Peel and Cockburn Rivers and Attunga, Moore, Dungowan, Duncans and Goonoo Goonoo creeks (**Figure 1**).

The Peel Alluvium Groundwater Source consists of relatively thin and narrow valley fill alluvial sediments associated with the Peel River and its tributaries and is comprised of gravel, sand, silt and clay.

### Water resource management

#### Water sharing plan

The Peel Alluvium 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#sec.37](http://legislation.nsw.gov.au/view/html/inforce/current/sl-2020-0346#sec.37)

#### Basic rights

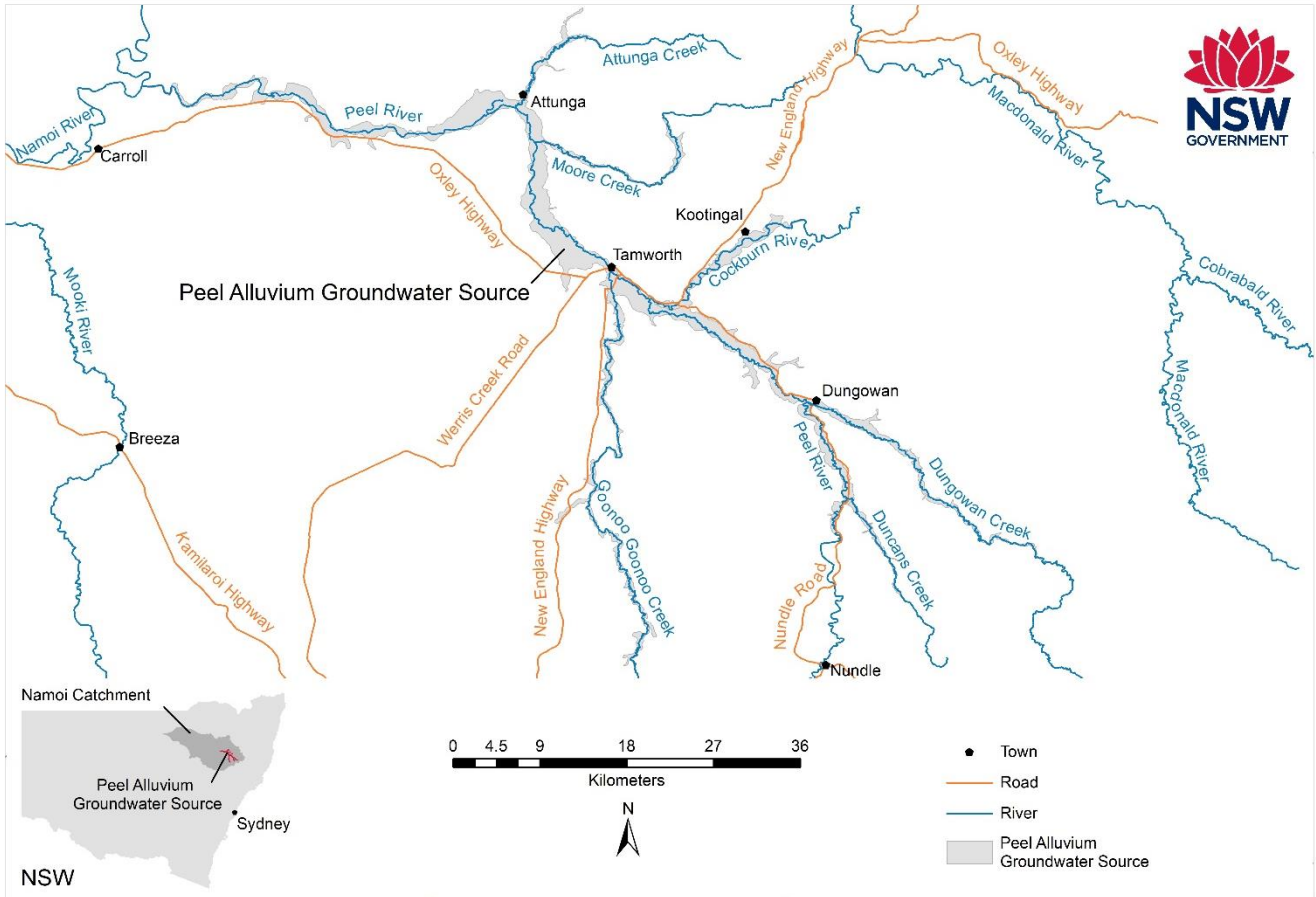
Basic landholder rights are available in this groundwater source for domestic and stock watering requirements. These rights permit the owners or occupiers of the land which is overlying the groundwater source to take water without an access licence. The work (bore or well) being used to access these rights must be authorised by WaterNSW.

The volume of water set aside in the water sharing plan for basic landholder rights is 240 megalitres (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: Peel Alluvium Groundwater Source share component 30 June 2022

Access Licence Category	Number of Licences	Total Volume
Local Water Utility <sup>1</sup>	3	660
Aquifer <sup>2</sup>	143	18,676
Aquifer (General Security) <sup>2</sup>	191	32,368
Domestic and Stock <sup>1</sup>	2	39
Domestic and Stock (Domestic) <sup>1</sup>	5	170

<sup>1</sup>Megalitres/year (ML)

<sup>2</sup> 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 the Peel Alluvium Groundwater Source is 9,344 ML/year. Extraction in the Peel Alluvium Groundwater Source is not compliant if the 5 years average annual extraction is more than 115% 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](http://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

Carryover of unused account water from one water year to the next is not available for domestic and stock, local water utility and aquifer (general security) access licenses in this groundwater source.

Total water availability in a water year is controlled by the available water determinations credited to an access licence account.

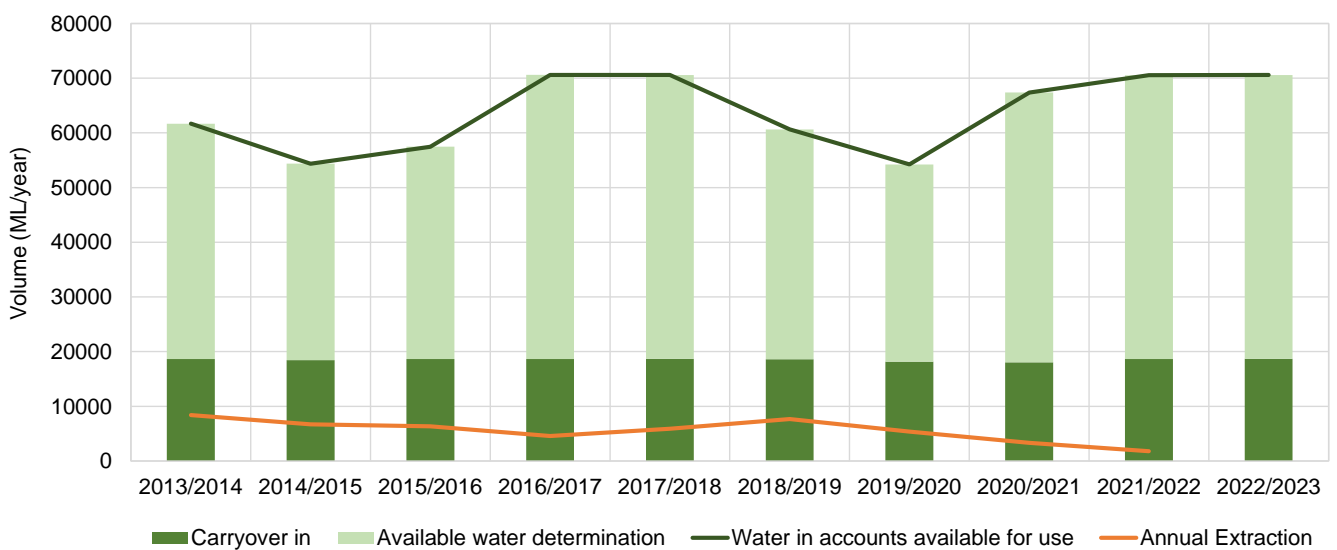
For aquifer access licenses, the maximum amount of water that can be debited from an account in any three consecutive water years cannot exceed the available water determination (AWD), plus any allocation transferred in (temporary trade), minus any allocation transferred out. This means that metered extraction plus transfers out cannot exceed the AWD, unless water is transferred in.

Total account water for period 2013/2014 to 2022/2023 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 Peel Alluvium Groundwater Source on 1 July 2021 is summarised below:

- Carryover In: 18,676 ML
- Available water determination: 51,913 ML
- Total water in account: 70,589 ML
- Total water available for use: 70,589 ML

Figure 2: Account water availability and usage summary for the Peel Alluvial Groundwater Source



### Local management areas

The Peel Alluvium Groundwater Source is divided into the following management zones (**Figure 3**):

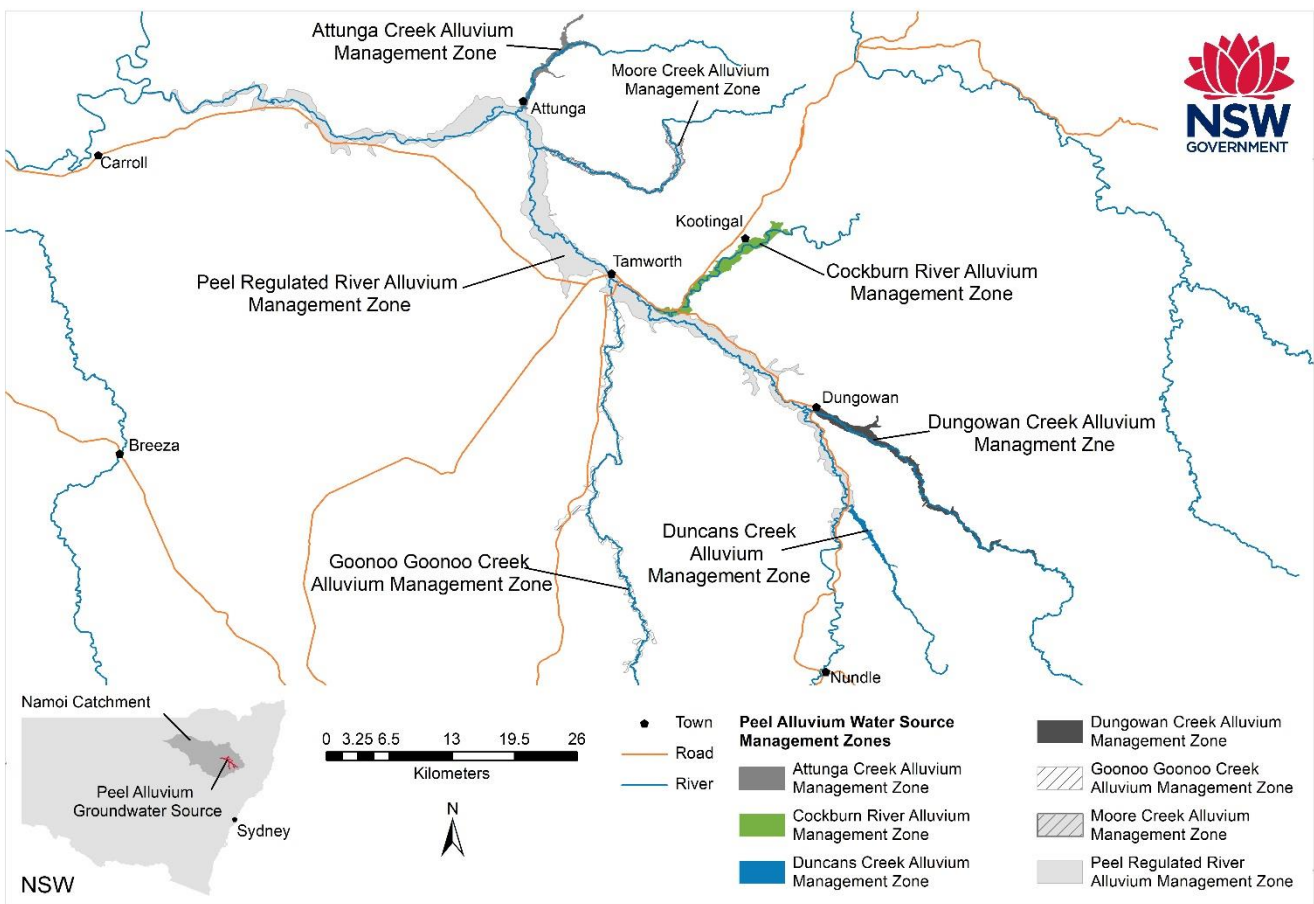
- Peel Regulated River Alluvium Management Zone
- Attunga Creek Alluvium Management Zone
- Moore Creek Alluvium Management Zone
- Cockburn River Alluvium Management Zone
- Dungowan Creek Alluvium Management Zone
- Duncans Creek Alluvium Management Zone
- Goonoo Goonoo Creek Alluvium Management Zone

The alluvium within the Peel Regulated River Alluvium Management Zone is highly connected to the Peel River. The available water determinations (AWD) for the aquifer (general security) access licences in the Peel Regulated River Alluvium Management Zone are linked to those of the Peel River general security access licences. The allocations for these licences are based on:

- 51% of the available water determination of aquifer access licences, plus
- 49% of the AWD made for regulated river (general security) access licences in the Peel Regulated River Water Source.

The 2021/2022 allocations made available the full entitlement for each category and subcategory of access licence.

Figure 3: Trade management areas



## Groundwater trading

Trades are permitted within the Peel Alluvium Groundwater Source management zones, but not between them and other groundwater sources in NSW.

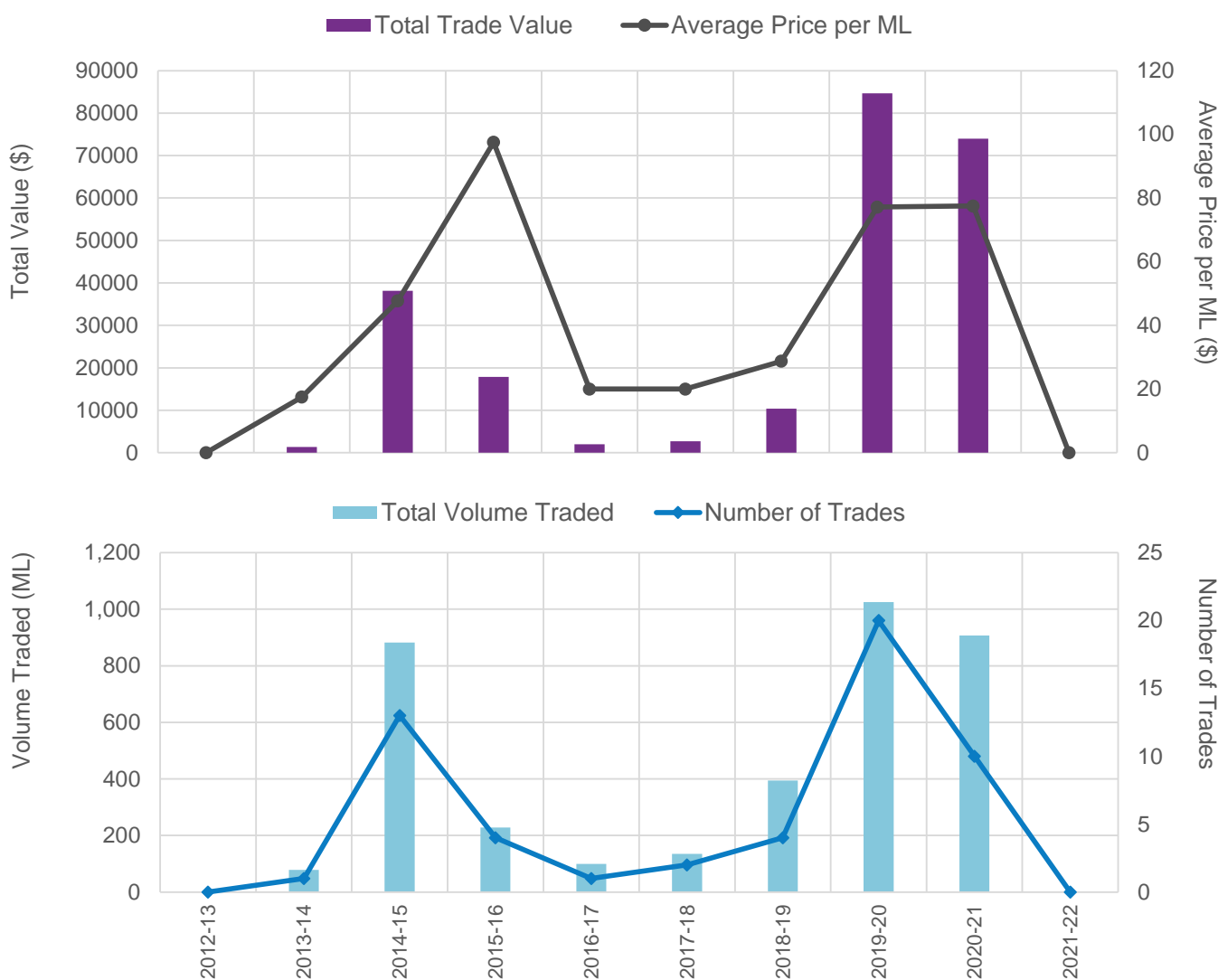
### Allocation assignments (temporary trade)

Trading statistics for the Lower Namoi Groundwater Source are illustrated in **Figure 4**, excludes trades for less than \$1 per megalitre. No trades above \$1 per megalitre were recorded for 2021-2022, there were two trades in total for 2021/2022 at less than \$1 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](http://waterregister.waternsw.com.au/water-register-frame)

Figure 4: Peel Alluvial Groundwater Source temporary trade statistics



## Bores

There are approximately 1,010 registered bores across the Peel Alluvium Groundwater Source (**Figure 5**). Approximately half of these bores are used for stock and domestic purposes (Basic Landholder Rights), however; there is also a significant use of groundwater for irrigation (**Table 3**).

Bores in the Peel Regulated River Alluvium Management Zone and Cockburn River Management Zone can yield more than 100 ML/year, the rest of the Peel Alluvium generally yields up to 100 ML/year (**Figure 6**).

Table 3: Approximate number of licensed bores in Peel Alluvium Groundwater Source (2022)

Groundwater Source	Registered Bore Purpose		
	Basic Landholder Rights	Production	Local Water Utility
Peel Alluvium	434	562	14

## Water level monitoring

WaterNSW monitors groundwater levels at 49 monitoring bores at 48 sites in the Peel Alluvium Groundwater Source (**Figure 7**). 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 **Figure 8** to **Figure 15**.

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/](http://realtimedata.waternsw.com.au/)

Data is also available for 3 of the groundwater monitoring sites in real-time via telemetry.

You can also request information via: [Customer.Helpdesk@waternsw.com.au](mailto:Customer.Helpdesk@waternsw.com.au)

Figure 5: Peel Alluvium Groundwater Source registered bores

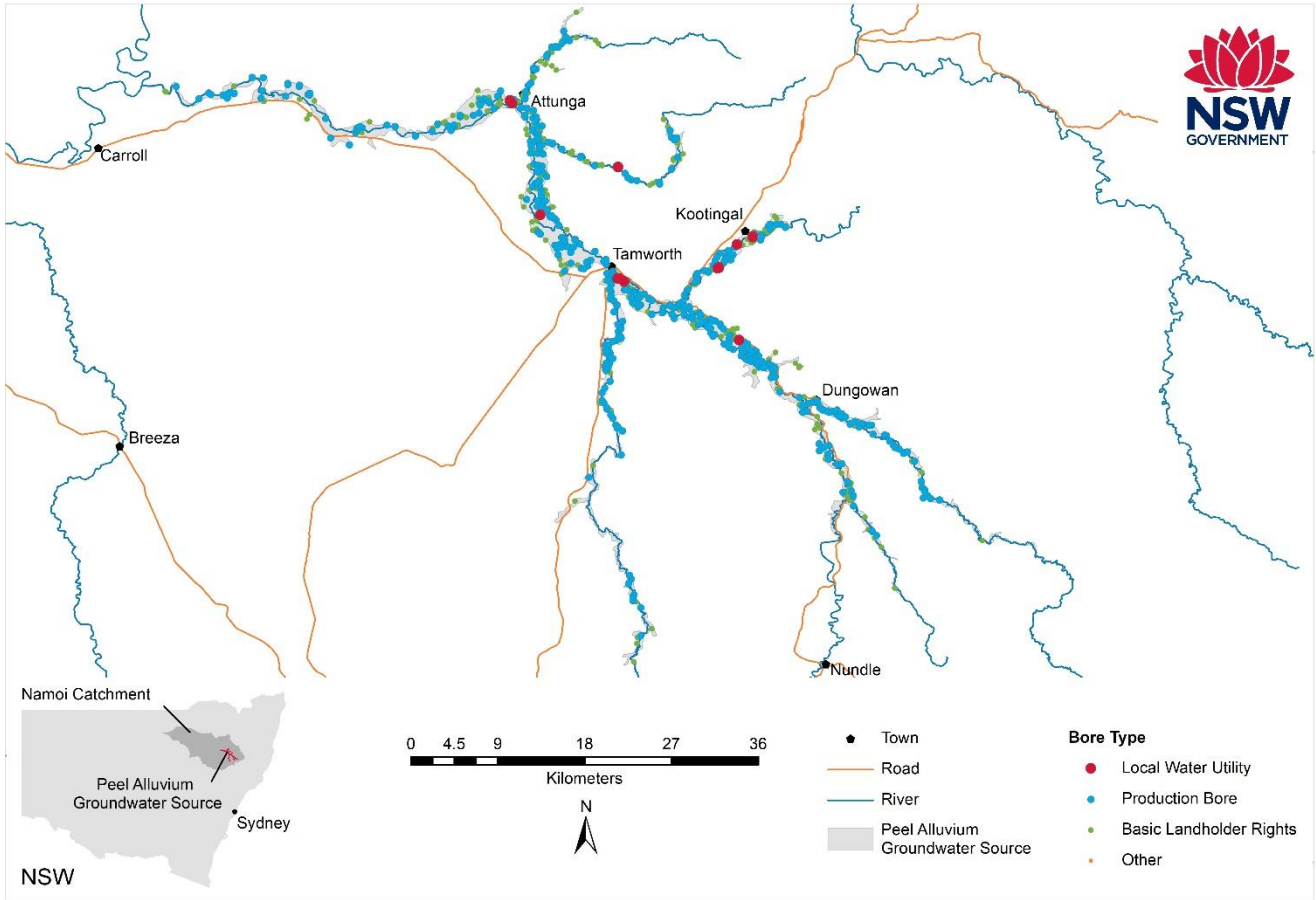




Figure 6: Peel Alluvium Groundwater Source water supply bores and distribution of extraction

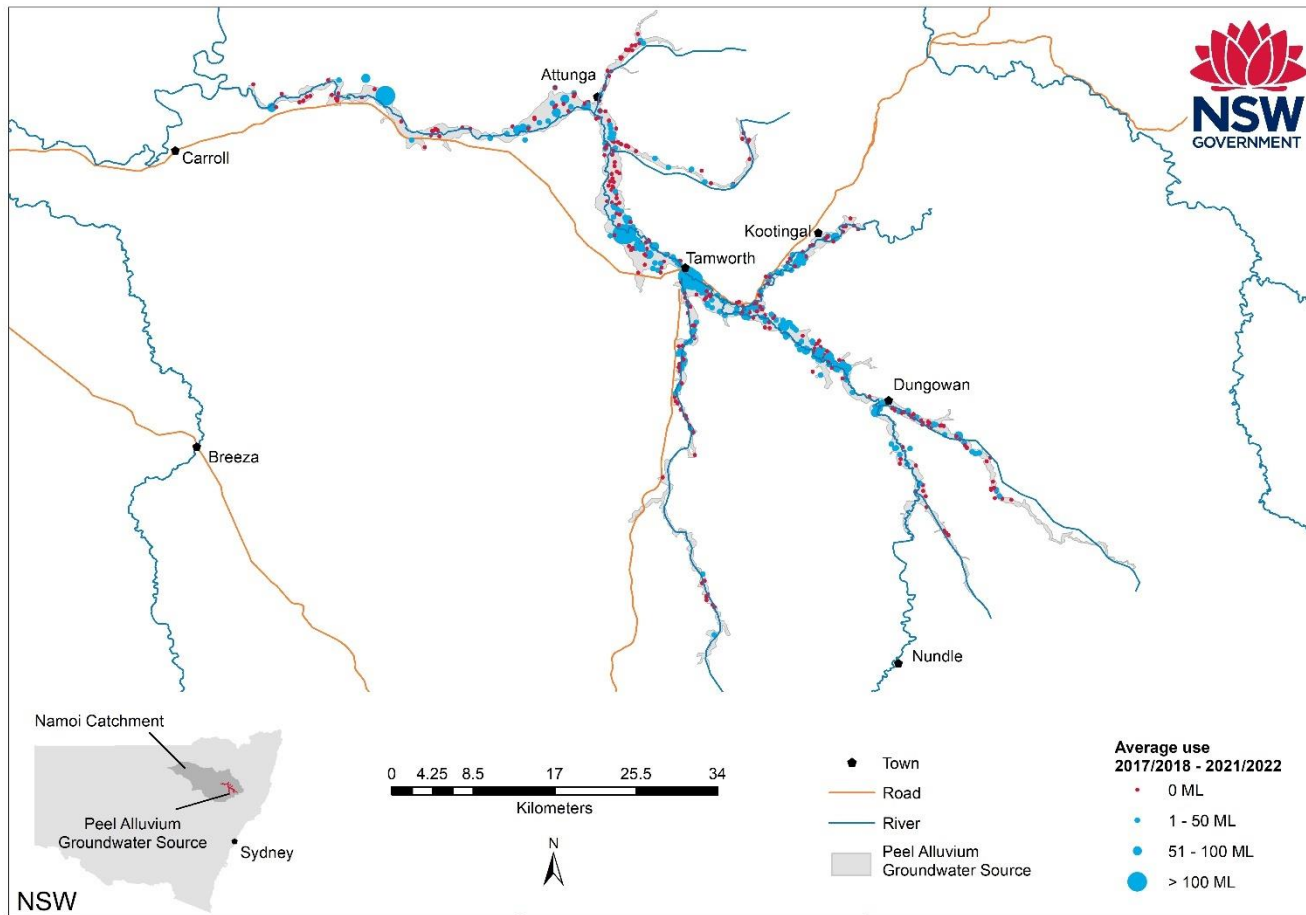


Figure 7: Peel Alluvium Groundwater Source monitoring bore sites

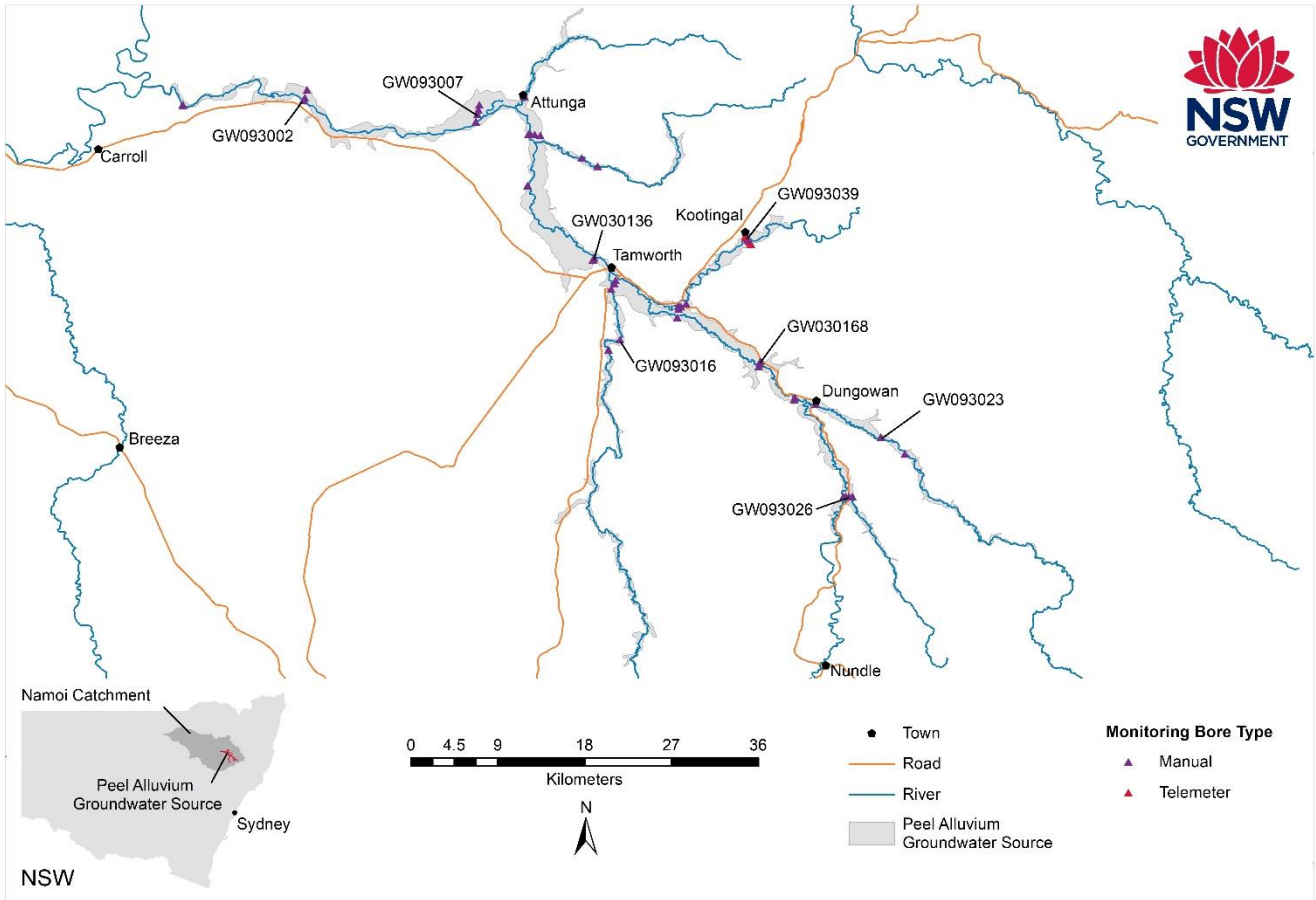


Figure 8: Hydrograph of monitoring bore GW030136

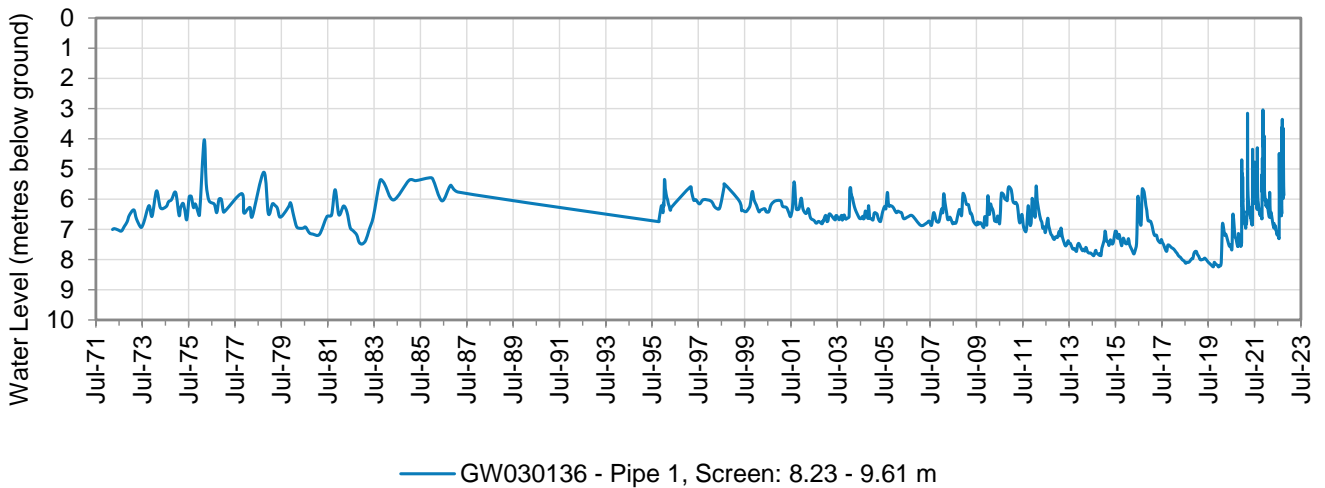


Figure 9: Hydrograph of monitoring bore GW030423

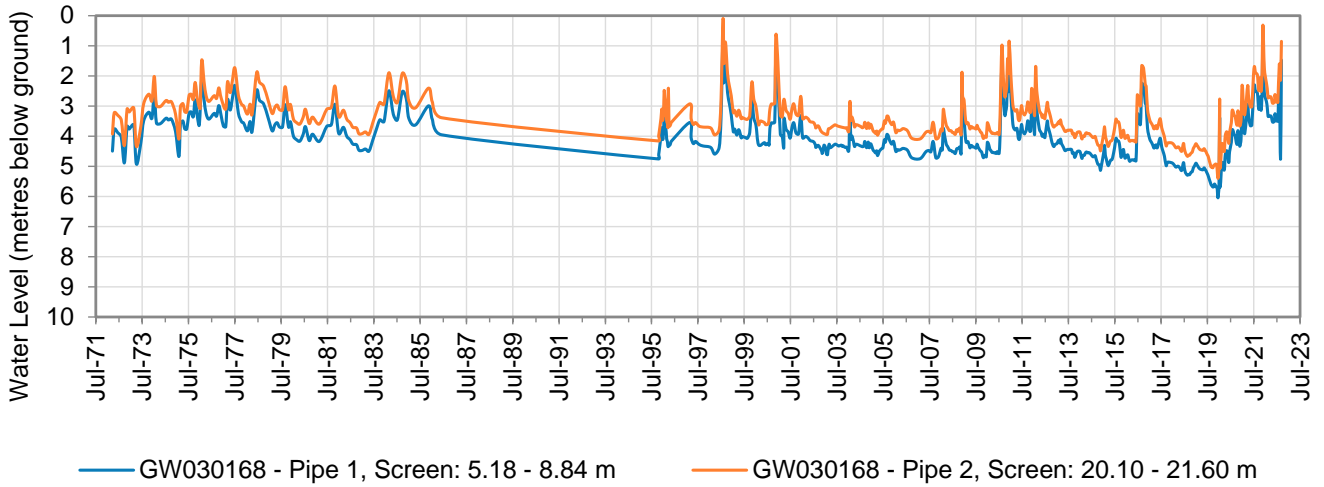


Figure 10: Hydrograph of monitoring bore GW093002

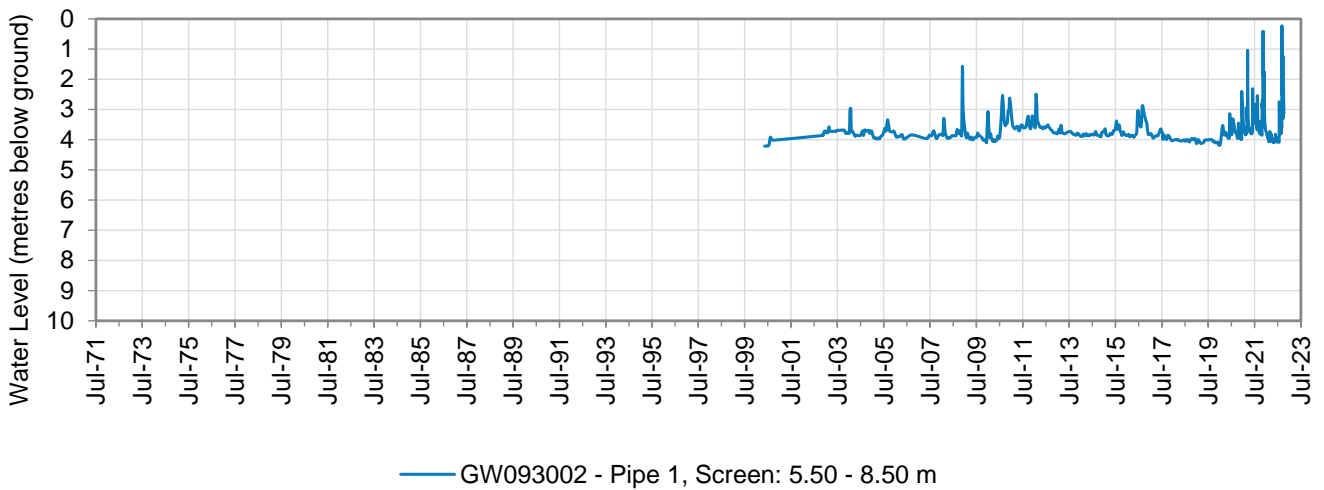


Figure 11: Hydrograph of monitoring bore GW093007

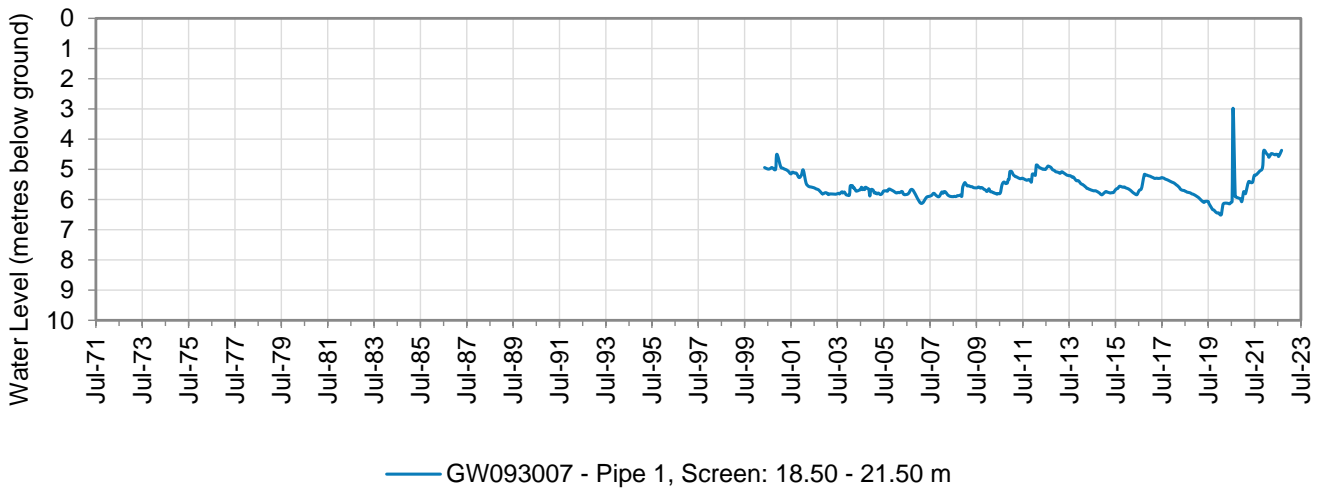


Figure 12: Hydrograph of monitoring bore GW093016

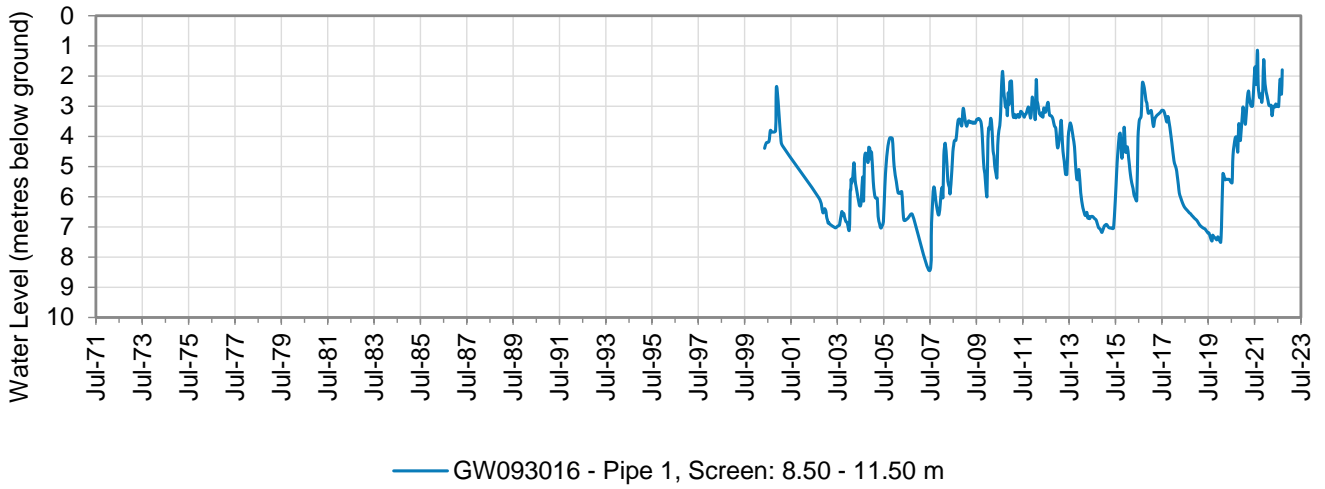


Figure 13: Hydrograph of monitoring bore GW093023

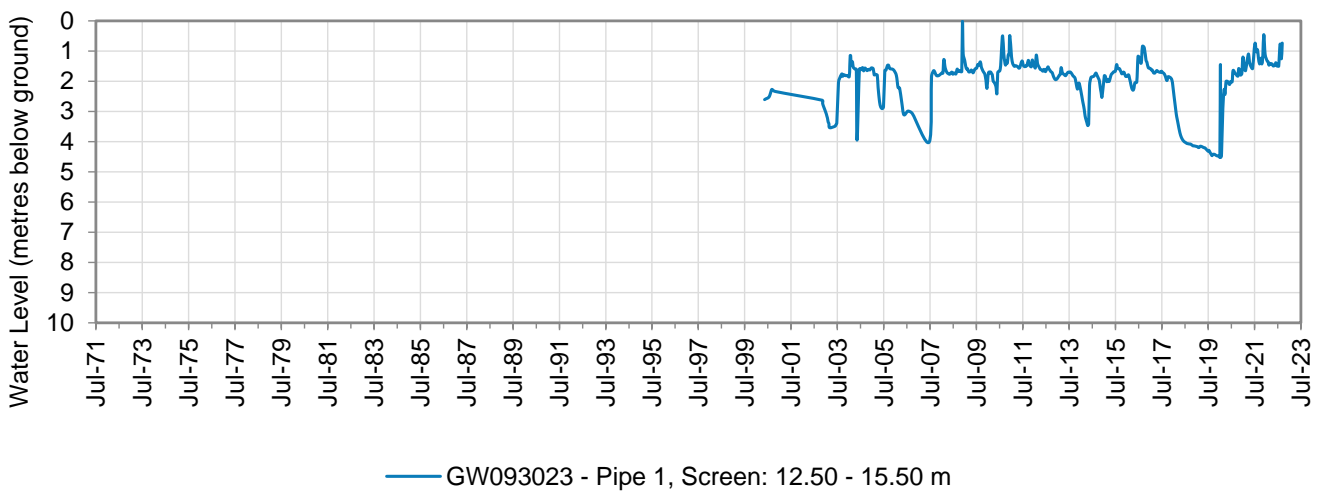


Figure 14: Hydrograph of monitoring bore GW093026

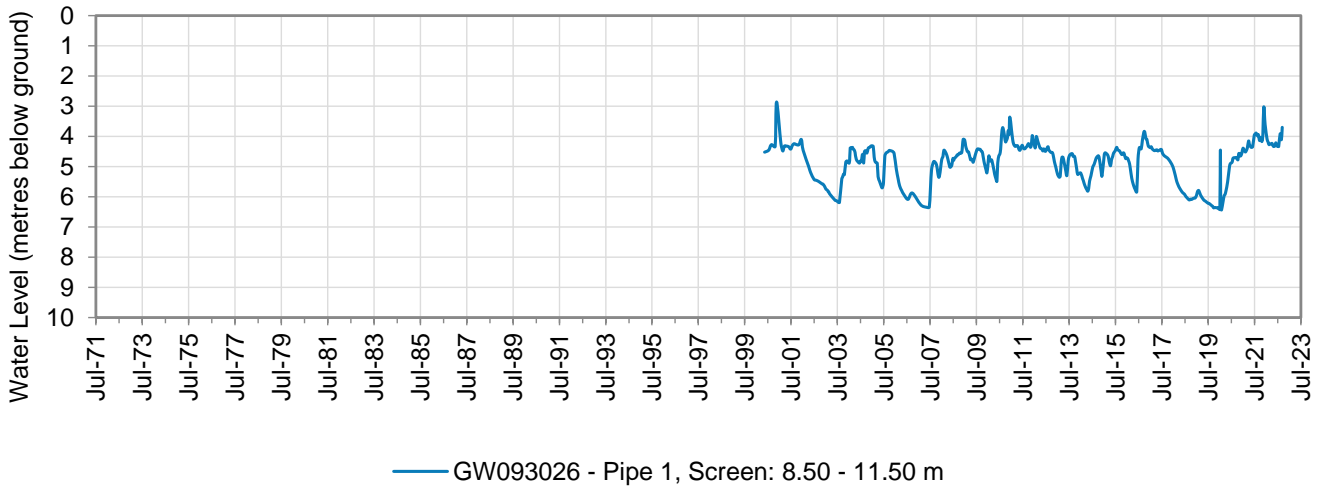


Figure 15: Hydrograph of monitoring bore GW093039

