

## Upper Namoi Zone 1 Groundwater Source

### Introduction

This report is a summary of water accounts, volume pumped and groundwater levels for the Upper Namoi Zone 1 Groundwater Source. The report is for the period 1 July 2019 to 30 June 2020 based on the water sharing plan that applied over the period. It will be updated on an annual basis.

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 Namoi Alluvium: [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 Upper Namoi Zone 1 Groundwater Source is located within the Namoi River catchment. The alluvium extends along Borambil Creek to the south and west of Quirindi (**Figure 1**).

The Upper Namoi Zone 1 Groundwater Source (**Figure 1**) is made up of sediments deposited by the Borambil Creek and its tributaries and is comprised of clay, silt, sand and gravel.

### Water resource management

#### Water sharing plan

For the period of reporting, the Upper Namoi Zone 1 Groundwater Source was managed by the rules in the Water Sharing Plan for the Upper and Lower Namoi Alluvial Groundwater Sources 2019. This plan was replaced on 1 July 2020 by the Water Sharing Plan for the Namoi Alluvial Groundwater Sources 2020.

These water sharing plans are available for viewing on the Department of Planning Industry and Environment - Water website at: [www.industry.nsw.gov.au/water/plans-programs/water-sharing-plans/status/namoi-region](http://www.industry.nsw.gov.au/water/plans-programs/water-sharing-plans/status/namoi-region)

#### 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 27 megalitres/year (ML/year).

The bore owner is responsible for monitoring water quality from the water supply work 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 source 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.

## Upper Namoi Zone 1 Groundwater Source

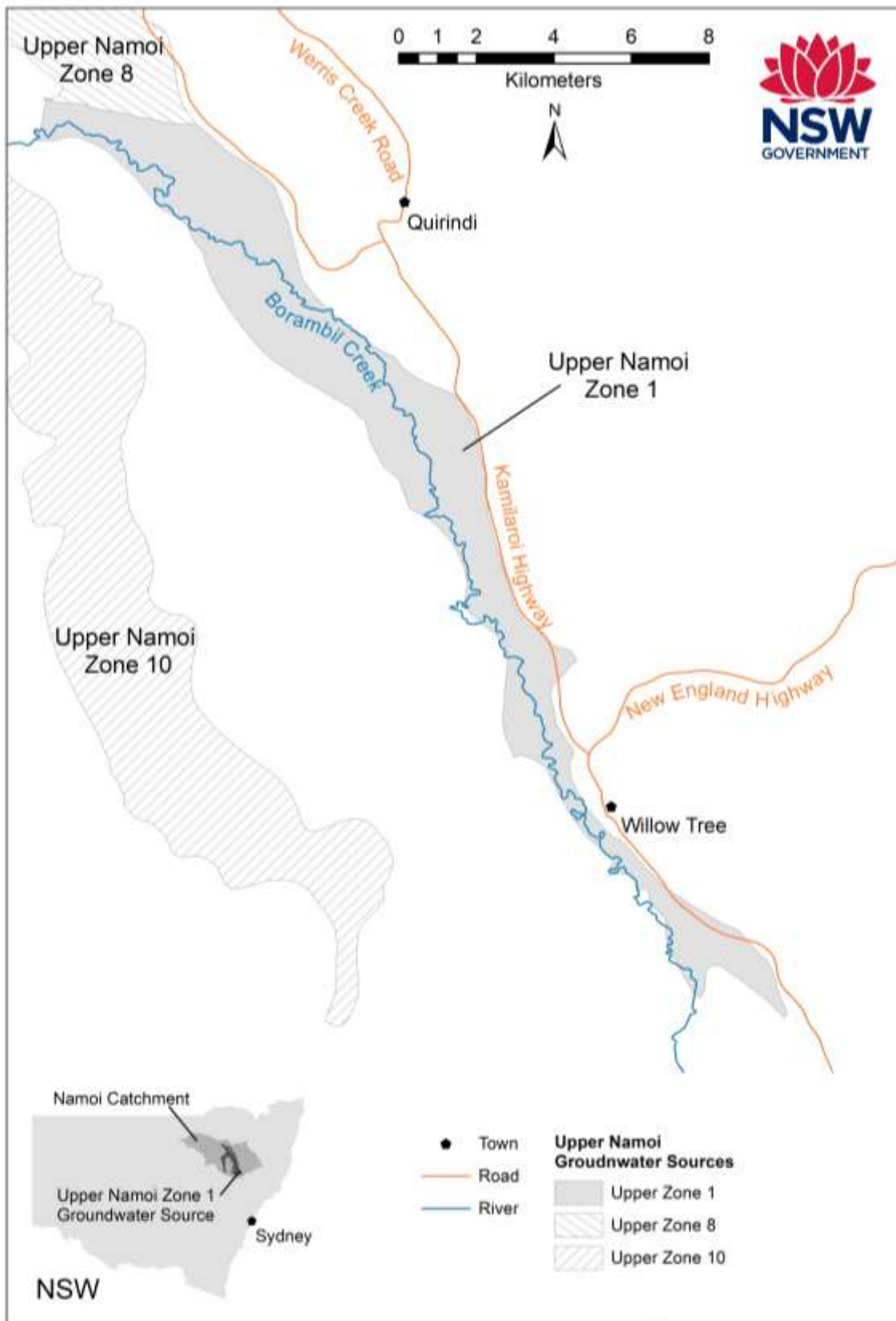


Figure 1: Location Map

## Upper Namoi Zone 1 Groundwater Source

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### Groundwater access licences

Groundwater access licence share components for 2019/2020 are presented in **Table 1**.

**Table 1: Upper Namoi Zone 1 Groundwater Source share component 30 June 2020**

Access Licence Category	Upper Namoi Zone 1 Groundwater Source	
	Number of Licences	Total Volume
Local Water Utility <sup>1</sup>	2	1,216
Aquifer <sup>2</sup>	36	384
Supplementary Water <sup>2</sup>	0	0

<sup>1</sup> megalitres per year (ML/year)

<sup>2</sup> megalitres per unit share

Supplementary water access licences were issued to some licence holders in the Upper Namoi Zone 1 Groundwater Source. These licences provided temporary access to water to adjust to the reduction in entitlements. The volume of water available under the supplementary water access licences gradually decreased each year and these licences were cancelled on June 30, 2015.

### 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 Upper Namoi Zone 1 Groundwater Source is 2,127 ML/year.

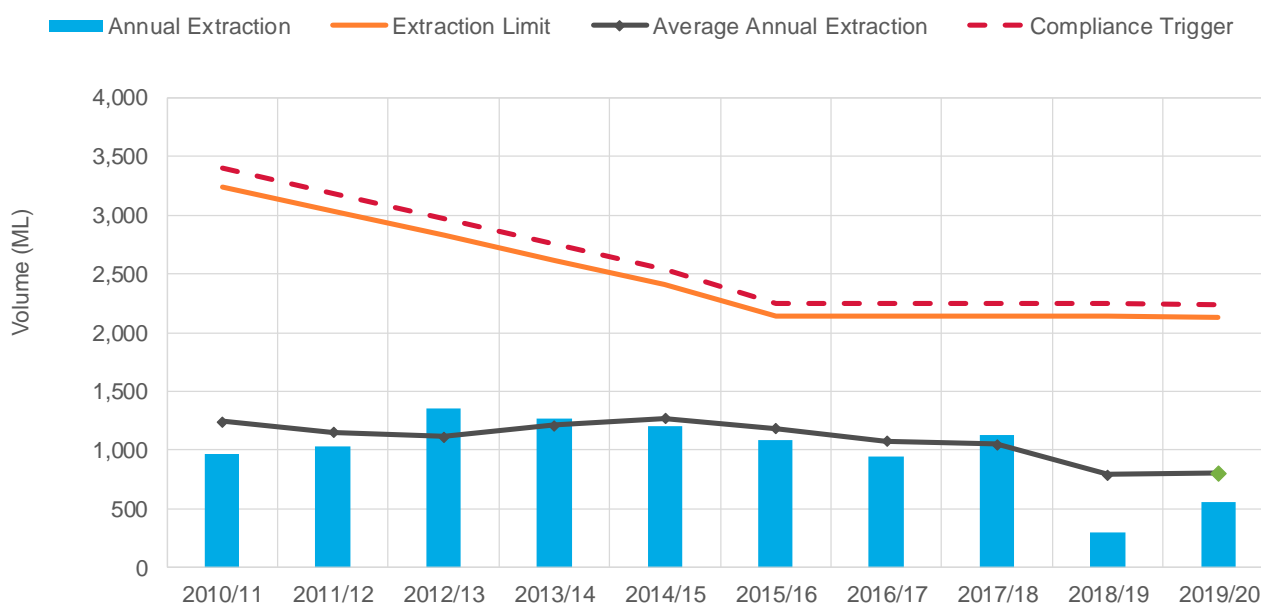
Extraction in the Upper Namoi Zone 1 Groundwater Source is not compliant if the **5 years** average annual extraction (the assessment period) is more than **105%** of the extraction limit (known as the compliance trigger). If average extraction exceeds the compliance trigger, then the available water determination made for aquifer access licences for the following water year may be reduced by an amount that would return total extraction to the extraction limit.

The period for assessing compliance with the extraction limit changed in 2020 from 3 to 5 years with the start of the water sharing plan that commenced on 1 July 2020. The available water determination for the 2020/2021 water year is the first year based on the 5-year assessment period.

Compliance against the extraction limit for the Upper Namoi Zone 1 Groundwater Source is illustrated in **Figure 2**. It shows the extraction limit and compliance trigger declining to 2015/16 as water made available under supplementary water access licences were reduced.

Note that the extraction limit for Upper Namoi Zone 1 Groundwater Source was revised in the Water Sharing Plan for the Upper and Lower Namoi Groundwater Sources 2019.

## Upper Namoi Zone 1 Groundwater Source



**Figure 2: Upper Namoi Zone 1 groundwater extraction compared to the extraction limit compliance trigger**

### Available water

Total water credited to an access licence account in a water year is controlled by the available water determinations 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 1 Groundwater Source are provided in **Table 2**.

**Table 2: Upper Namoi Zone 1 Groundwater Source access licence account rules**

Access Licence Category	Carryover Limit	Annual Use Limit	Maximum AWD
Aquifer	2.3 ML/share	2.3 ML/share	2.3 ML/share

The maximum amount of water that can be debited from an aquifer access licence account in a water year can't exceed 2.3 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 230 per cent of the of share component, unless water is transferred in.

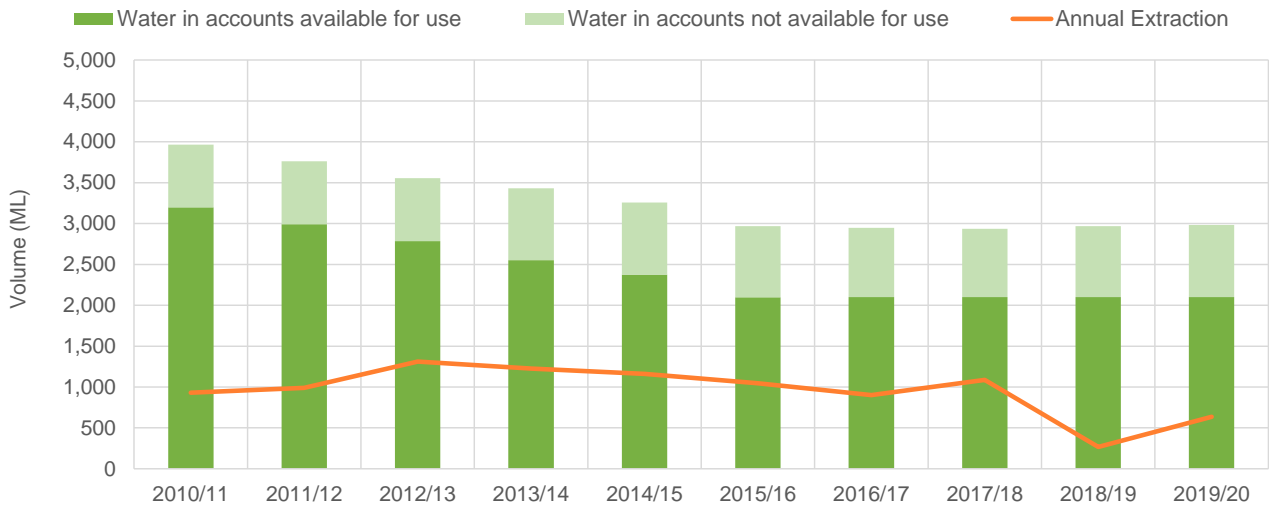
Total account water for the Upper Namoi Zone 1 Groundwater Source is displayed in **Figure 3**, showing the proportion available for use and what is not available for use in a year. Total yearly extraction is also displayed. Note, all access licence categories have been combined in these figures.

The available water determination (AWD) for aquifer access licences in the Upper Namoi Zone 1 Groundwater Source had remained at 1 ML/share from the start of water sharing plan in 2006 until 2010. From 2010 the AWD for aquifer access licences has been set at 2.3 ML/share, this is because 500 ML of local water utility access licence was forfeited and is allocated between aquifer access licences via the increased AWD of 2.3 ML/year.

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Note that the access rules for the Upper Namoi Zone 1 Groundwater Source changed in the Water Sharing Plan for the Namoi Alluvial Groundwater Sources 2020.



**Figure 3: Account water availability and usage summary for the Upper Namoi Zone 1 Water Source**

### Access licence account summary for the 2019/2020 water year

The following section summarises the water accounting information applicable to access licences in the Upper Namoi Zone 1 Groundwater Source for the period 1 July 2019 to 30 June 2020. The data is presented in **Table 3**. Account summary components have been rounded to the nearest megalitre.

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**Table 3: Upper Namoi Zone 1 Groundwater Source access licence account summary 2019-20, volumes in ML or shares**

Access licence category	Share 30 June 2020	Opening balance	AWD	Assignments (Temporary Trades)		Account usage	End of year balance		End of year forfeit	Carry forward
				In	Out		Available	Unavailable		
<b>Aquifer</b>	384	883	883	159	159	637	246	883	405	724
<b>Local Water Utility</b>	1,216	0	1,216	0	0	0	1,216	0	1,216	0

### Explanatory information for Table 3

Heading		Description
Opening balance		The volume of water that has been carried forward from previous years access licence accounts for the relevant licence category.
Assignments	In	Increase in account water as a result of allocation assignments (temporary trade) in.
	Out	Decrease in account water as a result of allocation assignments (temporary trade) out.
End of year balance	Available	The available (accessible for use) account balance reported and the end of the relevant water year. The total account balance is equal to the available plus unavailable volumes. The volume stated is prior to any end of year forfeits.
	Unavailable	The amount in accounts that is unavailable for use at the time of reporting due to account usage limits defined in the relevant water sharing plan. The volume is reported at the end of the relevant water year. The total account balance is equal to the available plus unavailable volumes. The volume stated is prior to any end of year forfeits.
End of Year Forfeit		Account water that is forfeited at the end of the water year as a result of carryover rules defined in the relevant water sharing plan that may restrict the volumes allowed to be carried forward.
Carry Forward		This represents the account water that is permitted to be carried forward into the next water year as determined by the carryover rules.
(123)		Denotes a negative value

## Upper Namoi Zone 1 Groundwater Source

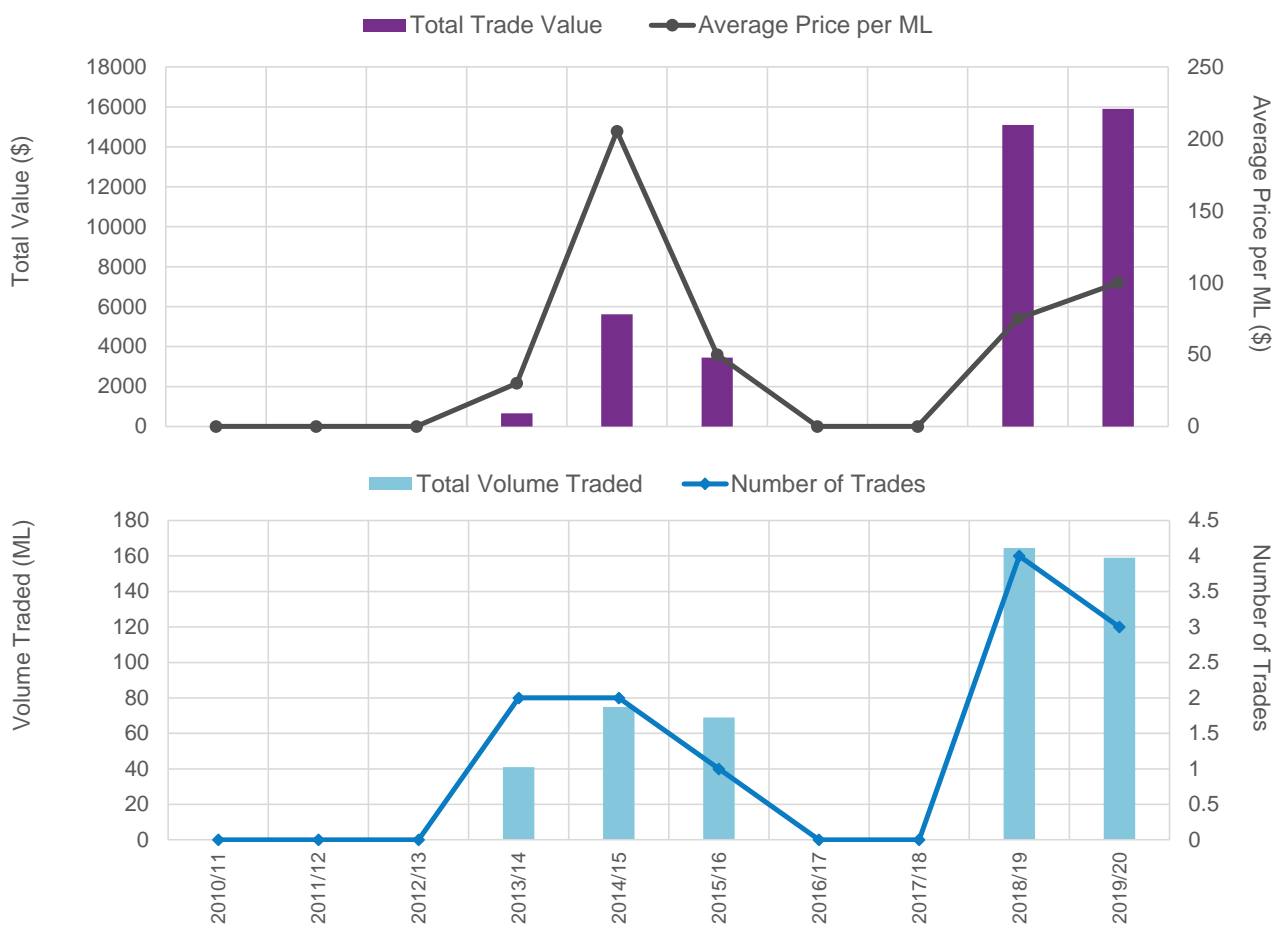
### Groundwater trading

Trading is permitted within the Upper Namoi Zone 1 Namoi Groundwater Source, but you can't trade into the Upper Namoi Zone 1 Groundwater Source from any other groundwater source.

However, trades to Upper Namoi Zone 10 Groundwater Source are permitted subject to the rules in the water sharing plan.

### Allocation assignments (temporary trade)

Trading statistics for the Upper Namoi Zone 1 Groundwater Source are illustrated in **Figure 4**, this excludes trades for less than \$1 per megalitre.



**Figure 4: Upper Namoi Zone 1 Groundwater Source temporary trade statistics**

### Assignment or transfer of rights (permanent trade)

A summary of the assignment or transfer of water access rights dealings in the Upper Namoi Zone 1 Groundwater Source is provided in **Table 4**.

Other dealings that can result in increased extractions at existing locations or at new locations such as adding or removing approvals from an access licence, or subdivision and consolidation of access licences have not been included in **Table 4**.

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Note, permanent dealings and/or new bore applications may not be approved or could be subject to an annual extraction limit in some parts of this water source. This is due to the high density of bores and/or share volumes.



## Upper Namoi Zone 1 Groundwater Source

**Table 4: Summary of assignments or transfers of water access rights**

Dealing		2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<b>Upper Namoi Zone 1 Groundwater Source</b>											
Transfer of WAL (excludes transfers for less than \$1 per share)	Number	1	0	0	1	1	0	0	0	0	0
	Total share transferred	21	0	0	1	11	0	0	0	0	0
Assignment of share component (excludes assignments for less than \$1 per share)	Number	0	0	0	0	0	1	0	0	0	0
	Total share assigned	0	0	0	0	0	4	0	0	0	0
	Average price per ML	0	0	0	0	0	1,200	0	0	0	0

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### Bores

There are approximately 136 registered bores across the Upper Namoi Zone 1 Groundwater Source (**Figure 5**). 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**).

The majority of production bores produce supply in the range of 80 ML/year (**Figure 6**).

**Table 5: Approximate number of licensed water supply bores in the Upper Namoi Zone 1 Groundwater Source (at June 2020).**

Registered Bore Purpose		
Basic Landholder Rights	Production	Local Water Utility
84	48	4

### Water level monitoring

WaterNSW monitors groundwater levels at around 17 monitoring bores at 11 sites in the Upper Namoi Zone 1 Groundwater Source (**Figure 7**). At some 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 in the Upper Namoi Zone 1 Groundwater Source have been selected and are presented in **Figure 8 to 10**.

Data for the monitored bores as well as private bore information can be obtained from the WaterNSW real time data portal ([realtimedata.watersw.com.au/](https://realtimedata.watersw.com.au/)). You can also request information via: [Customer.Helpdesk@watersw.com.au](mailto:Customer.Helpdesk@watersw.com.au)

A review of water levels is currently being undertaken for the Upper Namoi groundwater sources and a report will be prepared highlighting any areas of concern and any further extraction management that may be required.

## Upper Namoi Zone 1 Groundwater Source

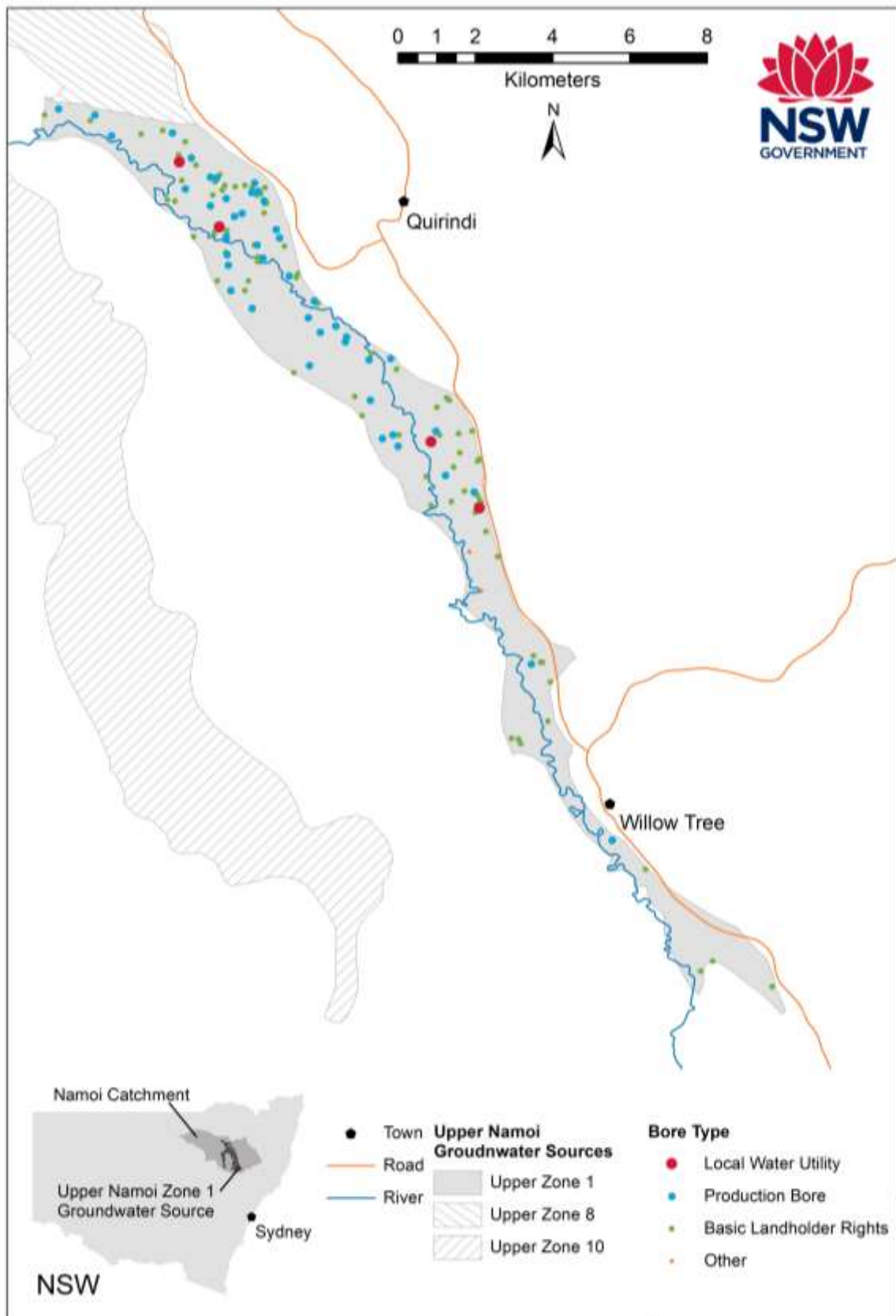


Figure 5: Upper Namoi Zone 1 Groundwater Source water supply bores

## Upper Namoi Zone 1 Groundwater Source

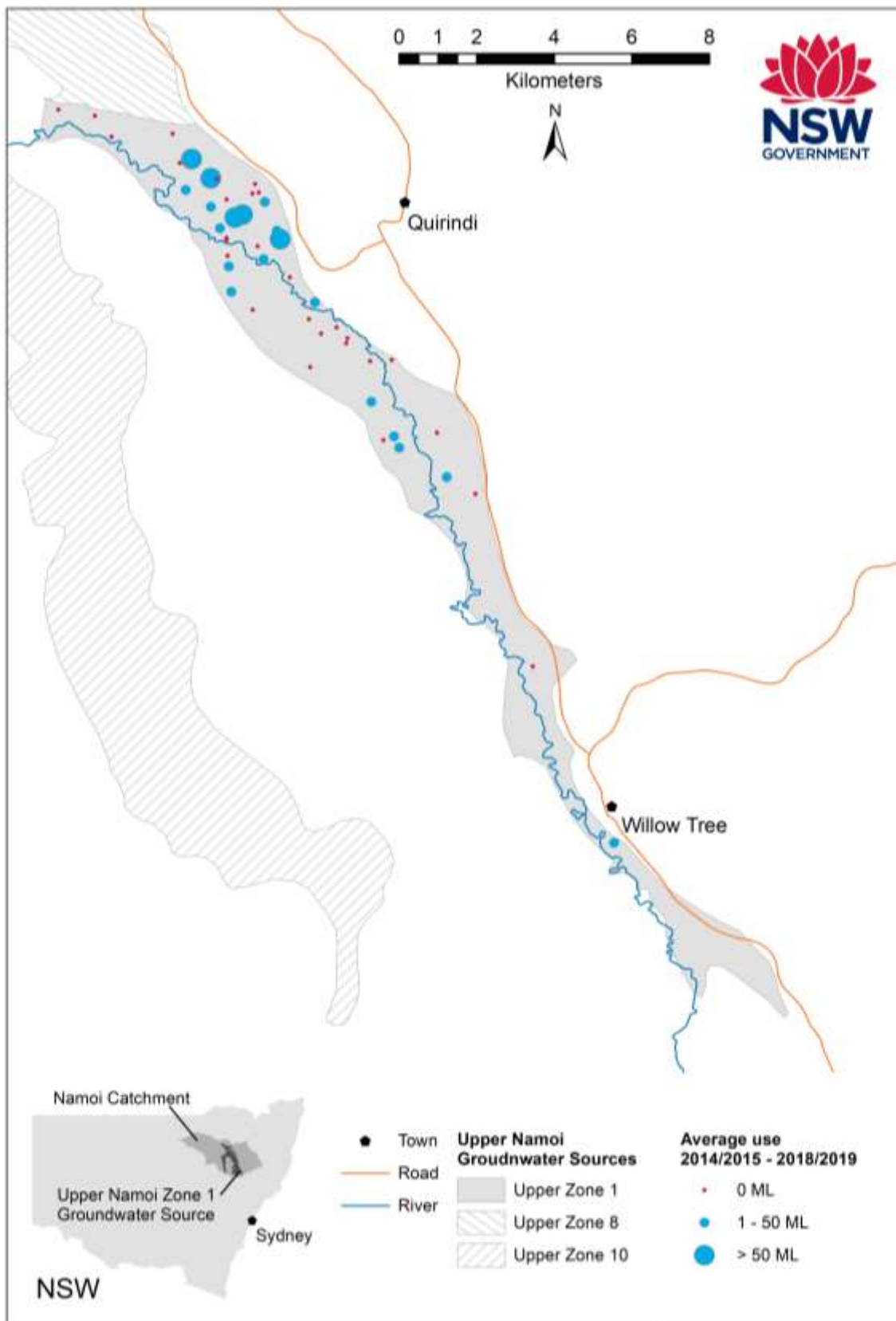


Figure 6: Upper Namoi Zone 1 Groundwater Source distribution of extraction

## Upper Namoi Zone 1 Groundwater Source

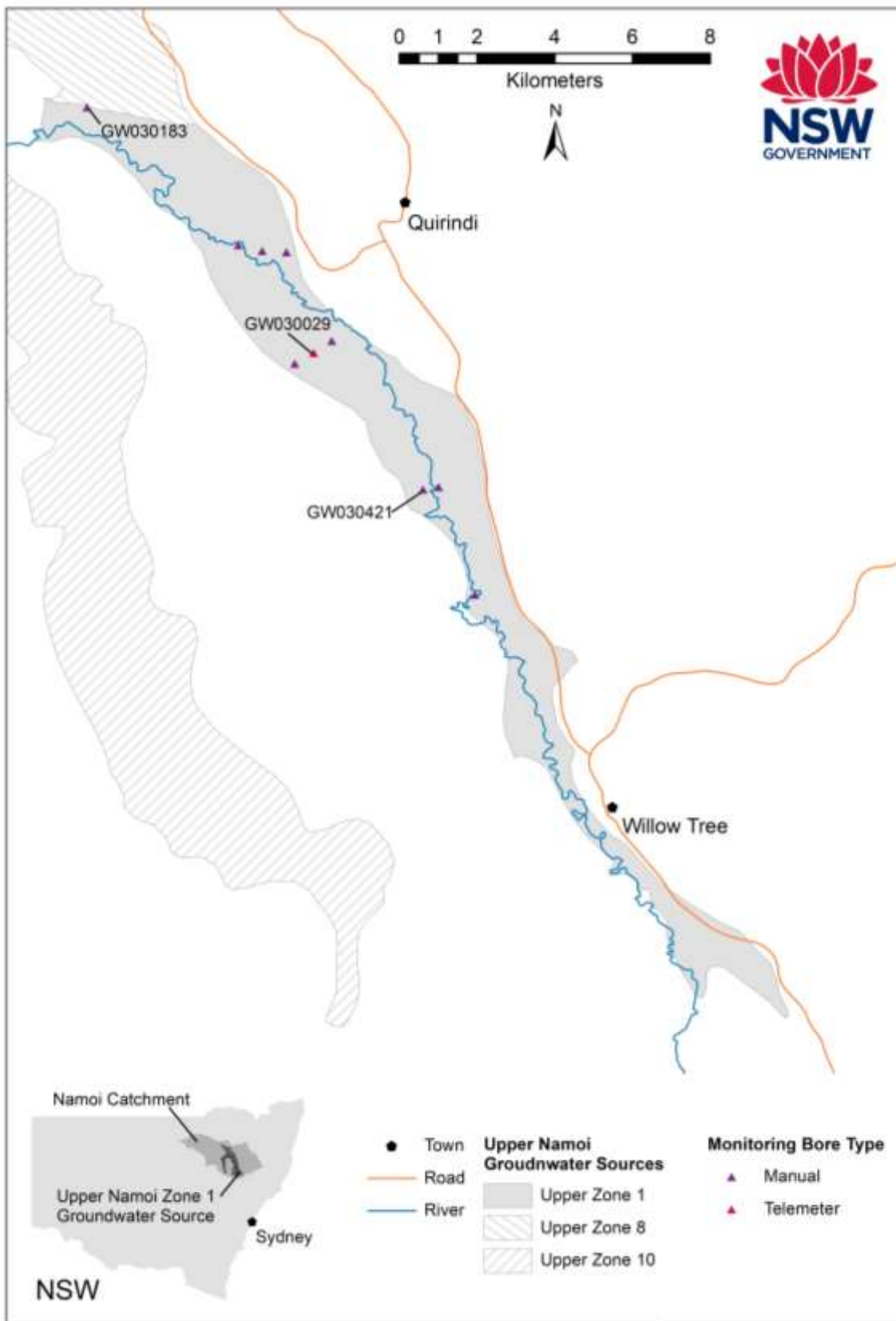
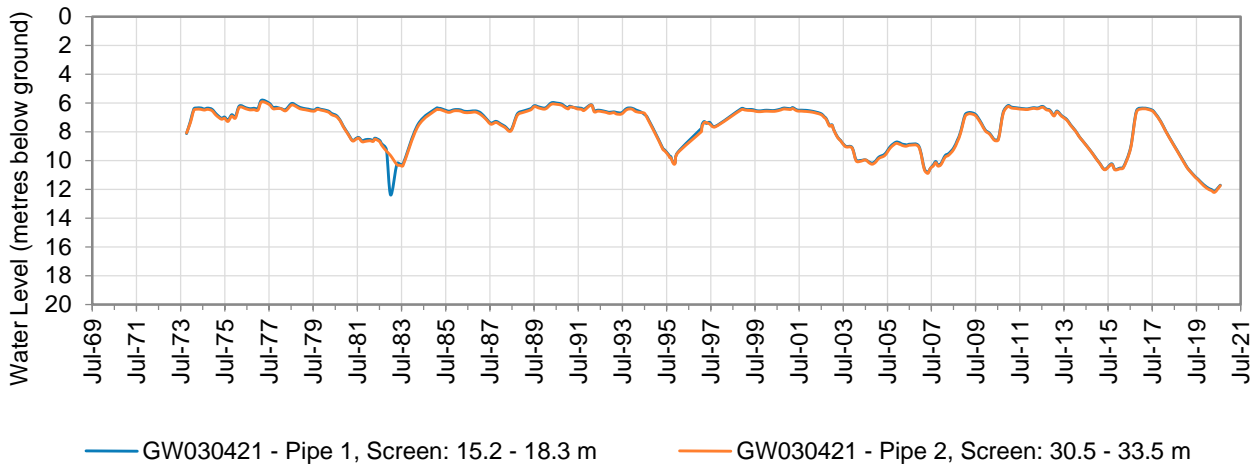
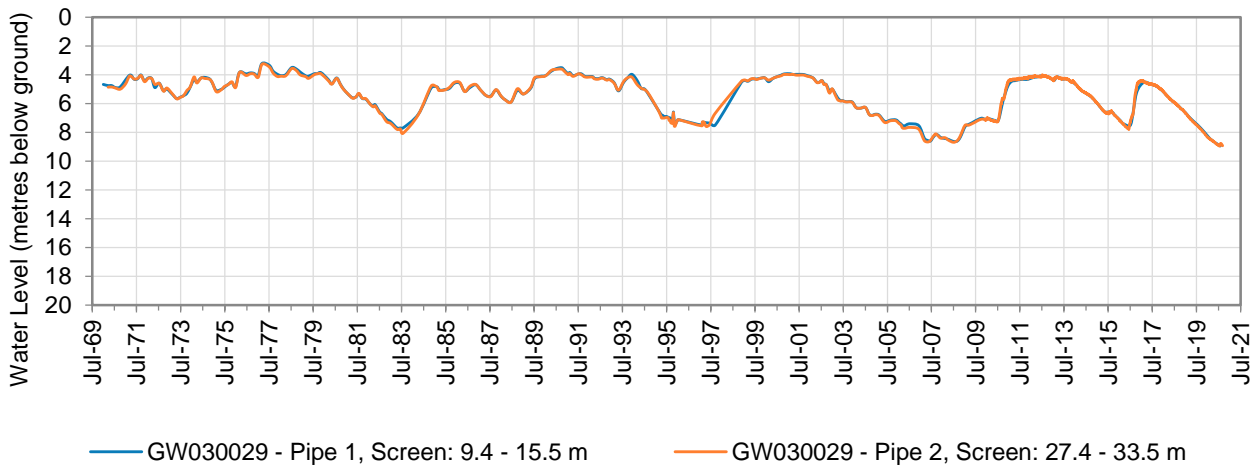


Figure 7: Upper Namoi Zone 1 Groundwater Source monitoring bore sites

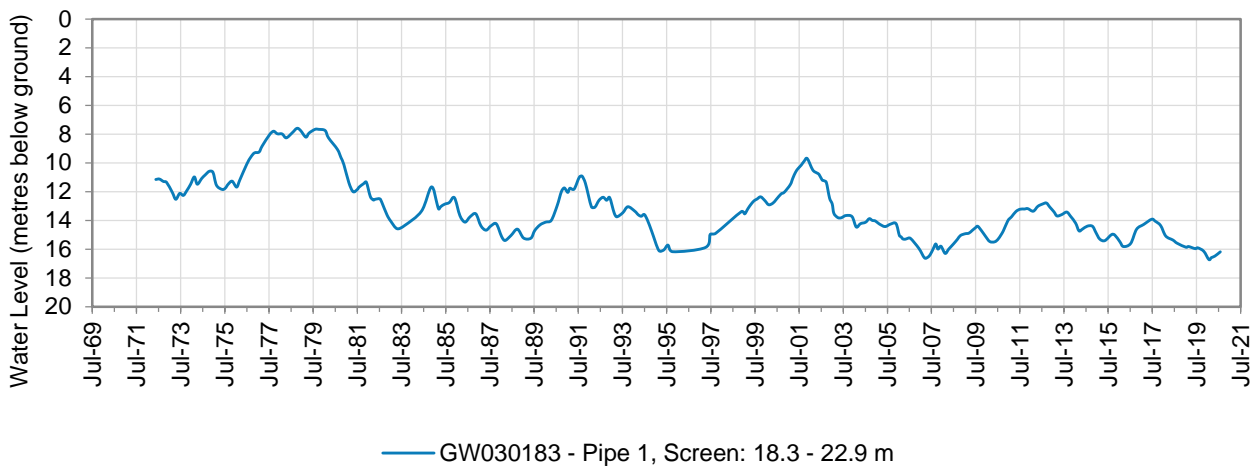
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**Figure 8: Hydrograph of monitoring bore GW030421**



**Figure 9: Hydrograph of monitoring bore GW030029**



**Figure 10: Hydrograph of monitoring bore GW030183**

## Upper Namoi Zone 1 Groundwater Source

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