

# Upper Lachlan Alluvial Groundwater Source Summary Report 2012-2015

## Water sharing plan

The Upper Lachlan Alluvial Groundwater Source (hereafter referred to as the water source) has been managed under *the Water Management Act 2000 (WMA 2000)* since the commencement of the Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources (hereafter referred to as the Plan) since 14th September 2012. The Plan sets the framework for managing groundwater in the water source until September 2022.

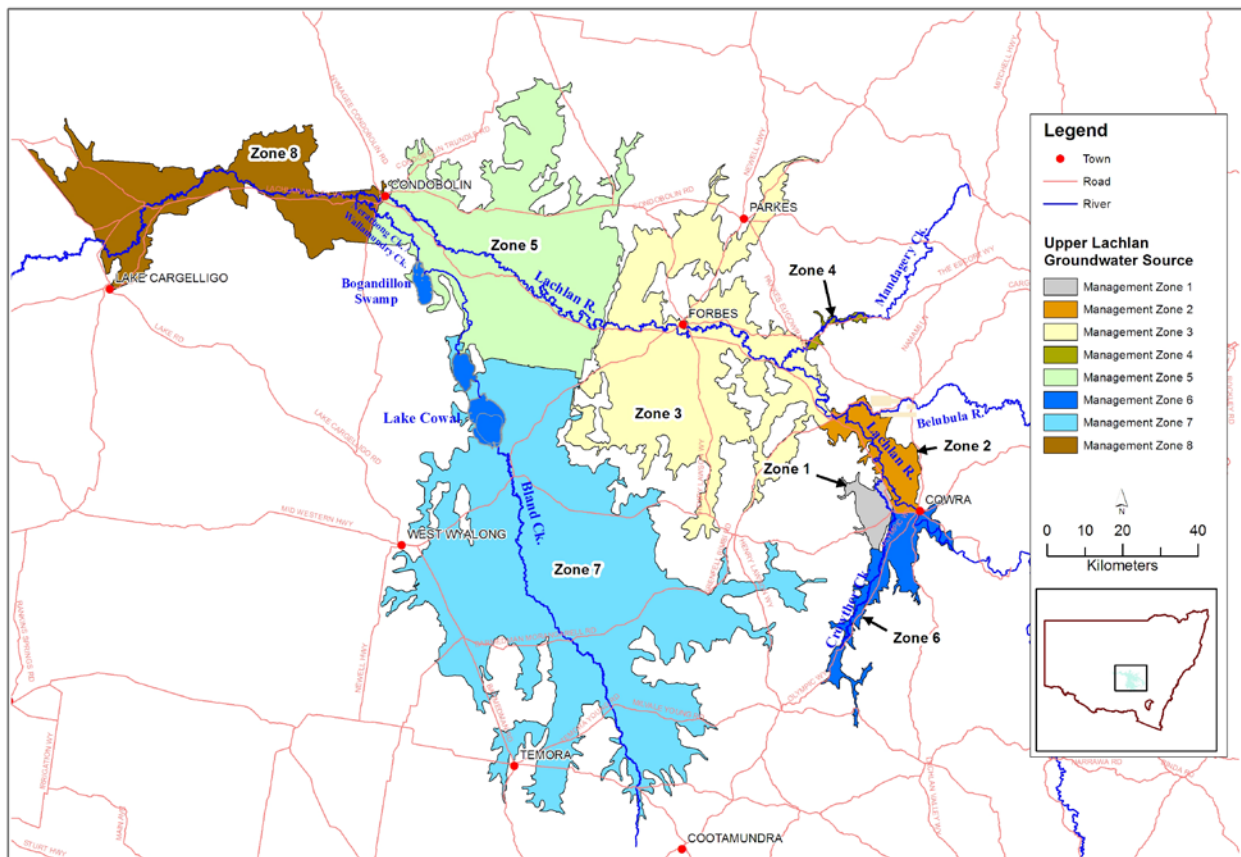
A copy of the Plan can be viewed and downloaded from the NSW legislation website or from the following link:

<http://www.water.nsw.gov.au/Water-management/Water-sharing-plans/Plans-commenced/Water-source/Lachlan-Unregulated-and-Alluvial>

## Location and description of water source

The water source includes all water contained in the unconsolidated alluvial aquifers from immediately upstream of Cowra through to Lake Cargelligo and is divided into Management Zones 1 through 8 as shown on **Figure 1**.

Figure 1 Map of the Upper Lachlan Groundwater Source



## Access licences

There are two categories of groundwater access licenses held in the water source. They are:

- local water utility access licence, and
- aquifer access licence.

The local water utility access licences are held by local governments and are for town water supply purposes. The share components for local water utility licences are for a specified volume of groundwater. The aquifer access licences are for a specified number of unit shares.

The entitlement held for each access licence category in the water source is summarised in **Table 1**.

**Table 1 Existing access licences in Upper Lachlan Groundwater Source**

Category	ML/yr	Unit shares
Local water utility access licences	7,848	
Aquifer access licences		165,538

## Annual extraction limit and available water determination

The long-term average annual extraction limit for the water source is 94,168 ML/yr. The total requirement for basic landowner rights at the commencement of the Plan was estimated to be 6,280 ML/yr. The 2014-2015 and 2015-16 allocations made available the full entitlement for each category of access licence.

At the start of each water year an available water determination is made which sets the aquifer access licence allocation for the source. If the average annual extraction volume over the preceding 5 year period exceeds the long-term average annual extraction limit by more than 10%, then the available water determination for the water source may be reduced to manage extraction to the extraction limit. In setting the available water determination for the first four years of the plan, the extraction prior to the Plan's commencement will be used to ensure compliance with the long-term average annual extraction to less than 110% of the extraction limit.

If the available water determination is below 0.8 ML per unit share as result of a long-term average annual extraction limit being exceeded, the Plan may be amended under clause 80 (8) to permit the granting of supplementary aquifer access licences to aquifer access licence holders as specified in Schedule 5 of the Plan.

## Access licence account management rules

The water sharing plan allows for accrual of unused allocation in aquifer access licence accounts. This includes the yearly allocations for the aquifer access licences made through available water determinations plus any carryover of unused allocation up to a maximum of 0.2 ML per unit share of the access licence share component.

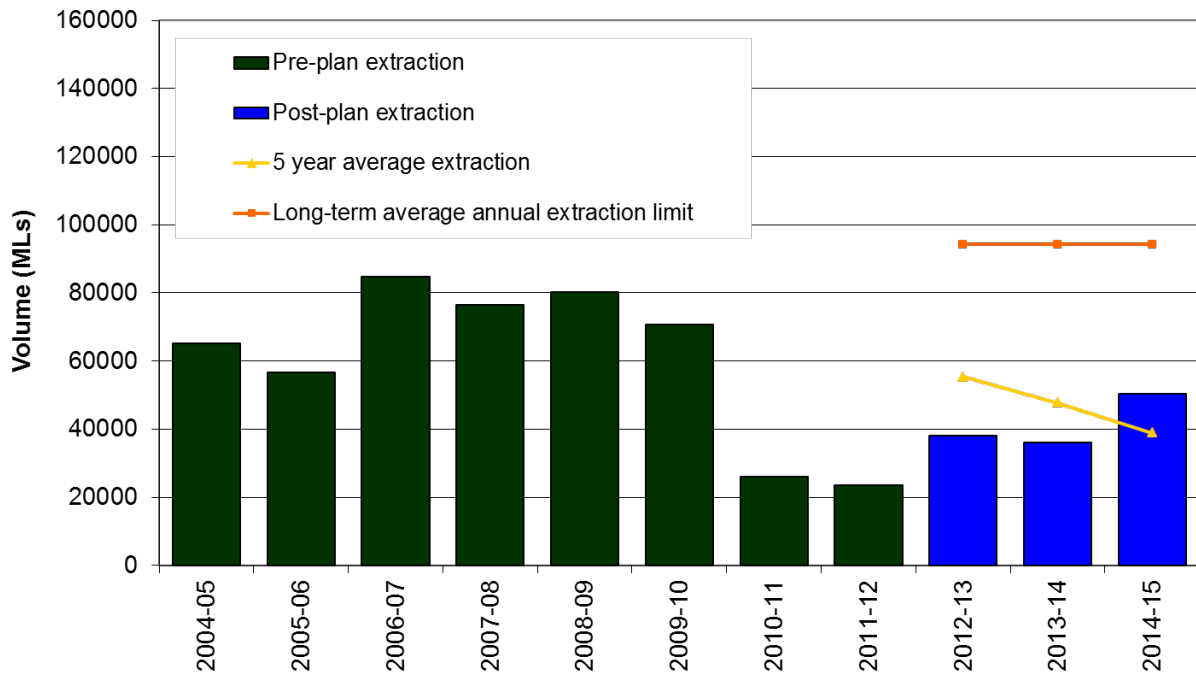
Local water utility access licences do not have any provisions for carryover.

## Groundwater extraction

There are approximately 673 production bores (work approvals) within the water source. All bores are metered and the extraction is recorded by the Water NSW at regular intervals ranging from 2 to 4 readings per year.

Annual extractions plotted against long-term average annual extraction limits since the commencement of the Plan are provided in **Figure 2**. The five year average extractions have remained below the long-term average annual extraction limit since Plan commencement.

Figure 2 Annual groundwater extractions - Upper Lachlan groundwater source



## Groundwater dealings (trades)

Under the WMA 2000 dealings are permitted in access licences, shares, account water and the nomination of supply works.

All trades in the water source require a hydrogeological assessment of the potential impact to neighbouring water supply works (bores) and the water source prior to being approved. Trades are permitted within but not between the Management Zones of the water source shown in **Figure 1**.

The most common dealings are assignment of allocation (sale or purchase of account water – s71T), and assignment of rights (sale or purchase of share component – s71Q). A summary of these dealings are provided in **Table 1**.

This information may also be obtained from <http://registers.water.nsw.gov.au> (go to the Register of water allocation assignments or transfer and share assignment statistics).

Table 2 Dealings completed since Plan commencement

Upper Lachlan Alluvial Groundwater Source				
Year	Allocation assignment dealings (71T)		Share Component assignment dealings (71Q)	
	number	volume (ML)	number	volume (ML)
2012-13	11	1,941	0	0
2013-14	21	8,110	0	0
2014-15	28	9,401	0	0

## Groundwater levels

There are 295 monitoring pipes (bores) at 152 sites within the water source that are monitored for groundwater levels (**Figure 3**). At most monitoring sites there are two or more pipes monitoring different depths. The pipes at each site are identified by a common work number with each pipe numbered from shallowest to deepest (e.g. GW036500/1 is the shallow and GW036500/2 is the deeper pipe). The depth monitored by each pipe corresponds to the depth at which the casing is slotted to allow groundwater entry into the pipe. The hydrographs (**Figures 4 to 10**) illustrate the water level variations (natural or induced by pumping) over time from the depth indicated by the pipe's slots. The water levels (or pressures) are expressed as metres below ground level. The locations of the monitoring sites for which the graphs have been constructed are also shown in **Figure 3**.

The hydrograph for monitoring site GW036533 (**Figure 10**) shows a significant decline in water level since 2003. This site is located within Management Zone 7 and the area is locally managed to agreed drawdown levels in consultation with the local users.

The monitoring network includes 19 bores at 13 sites equipped with data loggers that record water levels continuously. A total of 18 of these bores are telemetered for which continuous real time data is available at [http://www.water.nsw.gov.au/Real-time-data/hydro\\_index](http://www.water.nsw.gov.au/Real-time-data/hydro_index).

Figure 3 Monitoring bore locations – Upper Lachlan Groundwater Source

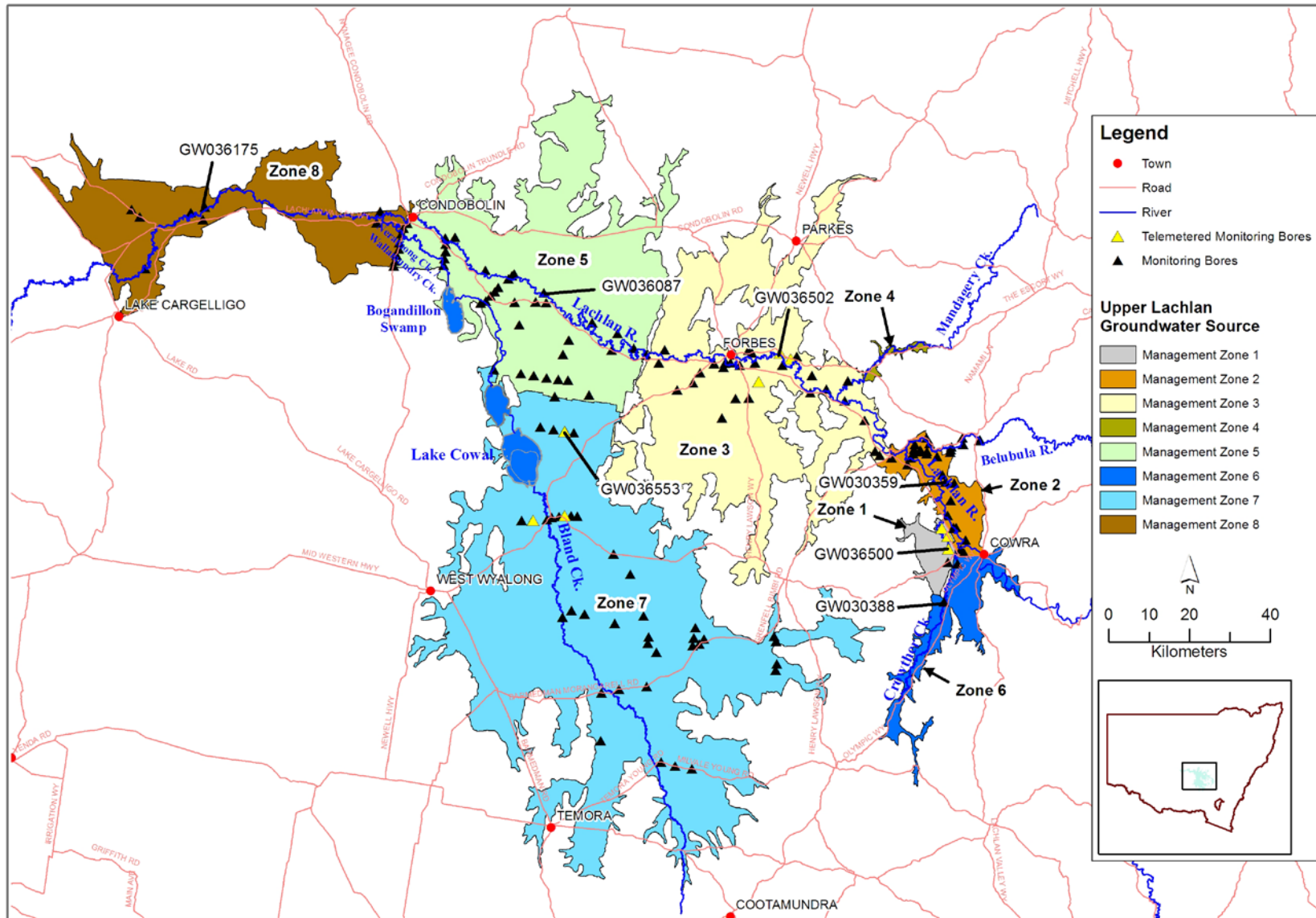


Figure 4 Hydrograph for monitoring site GW030359

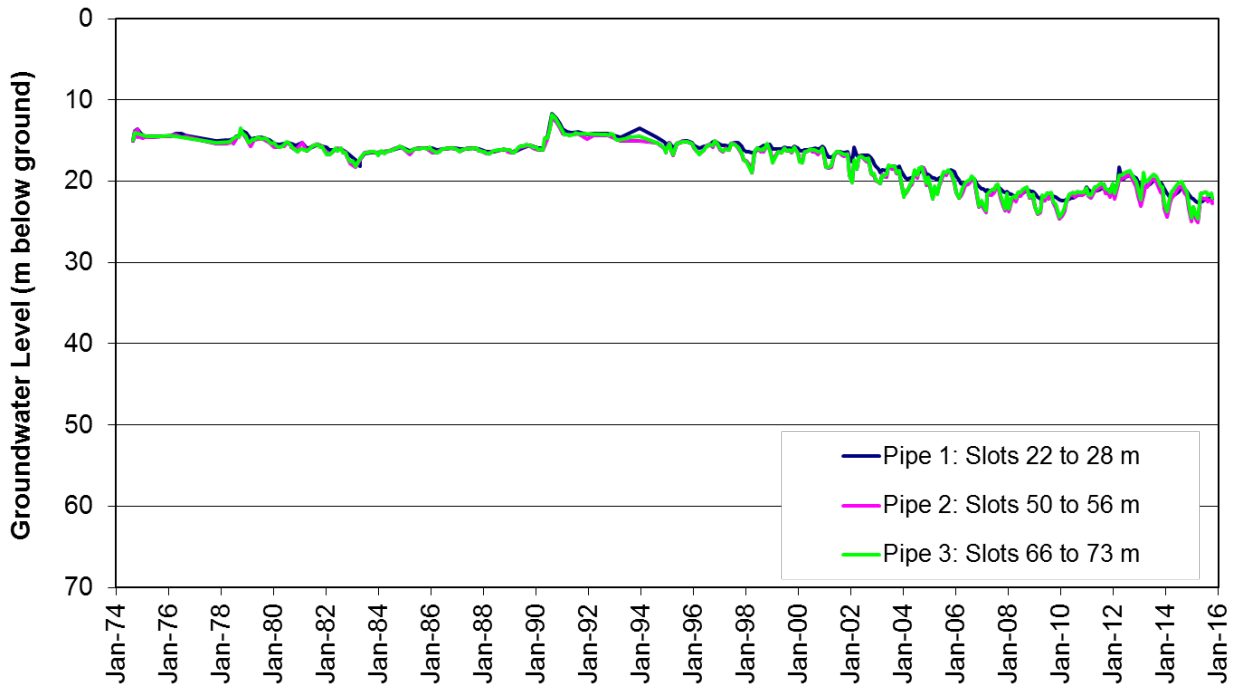


Figure 5 Hydrograph for monitoring site GW030388

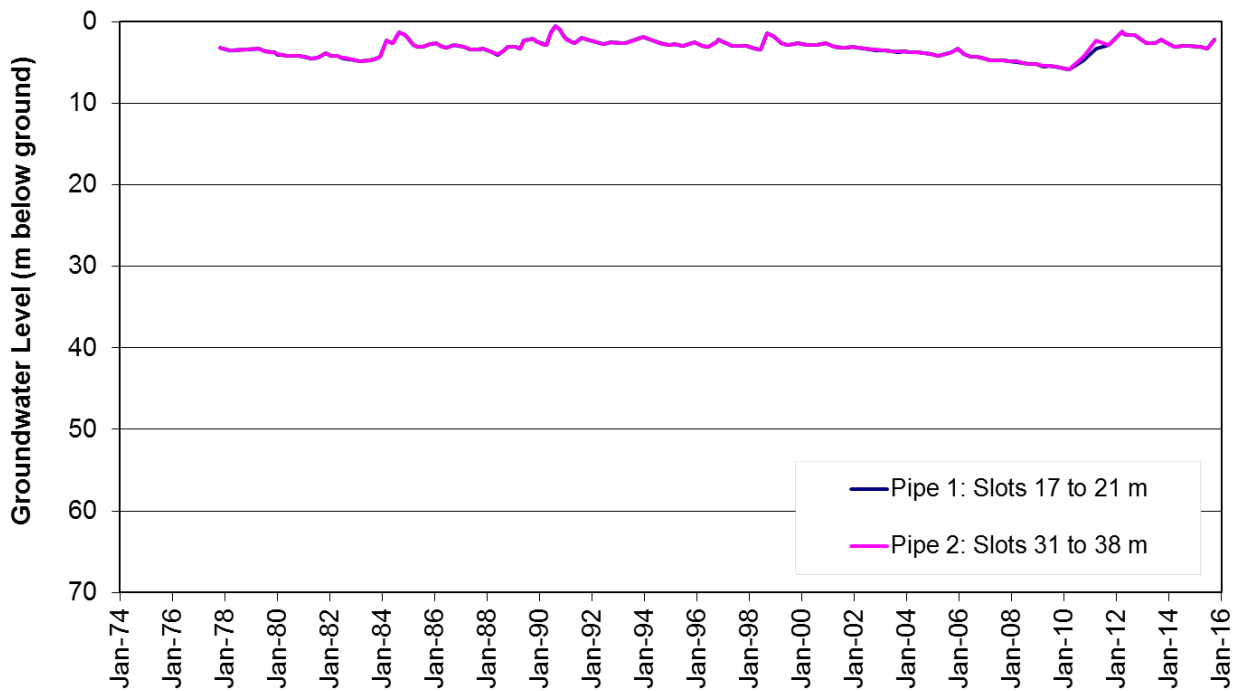


Figure 6 Hydrograph for monitoring site GW036087

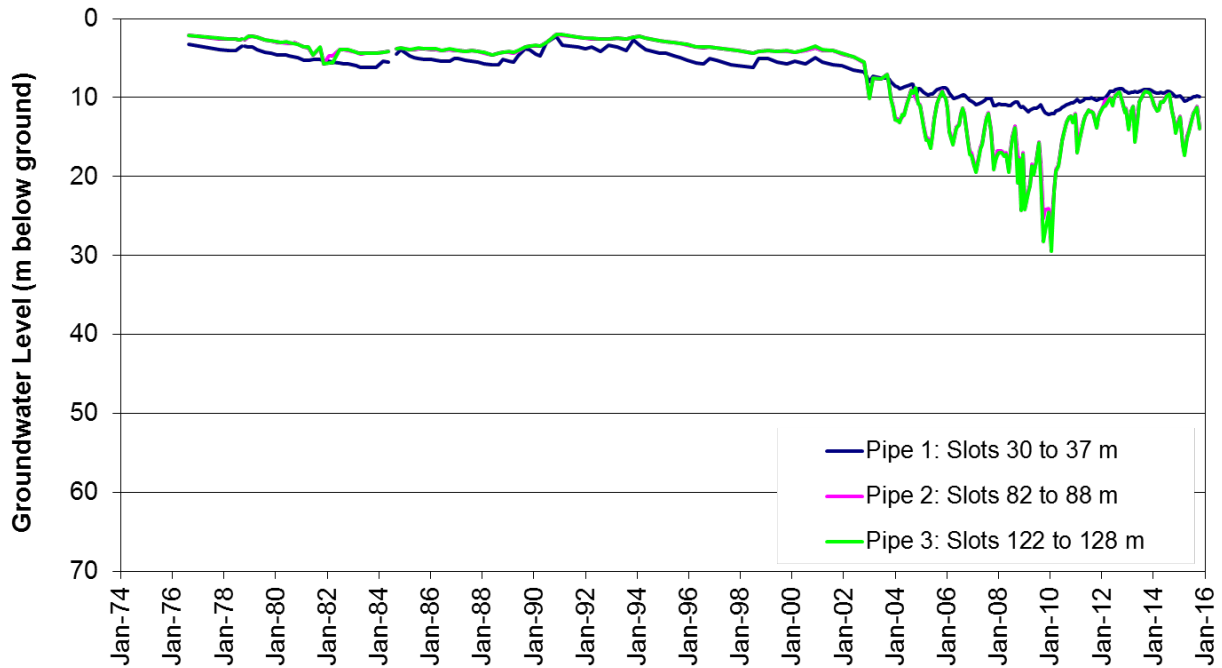


Figure 7 Hydrograph for monitoring site GW036175

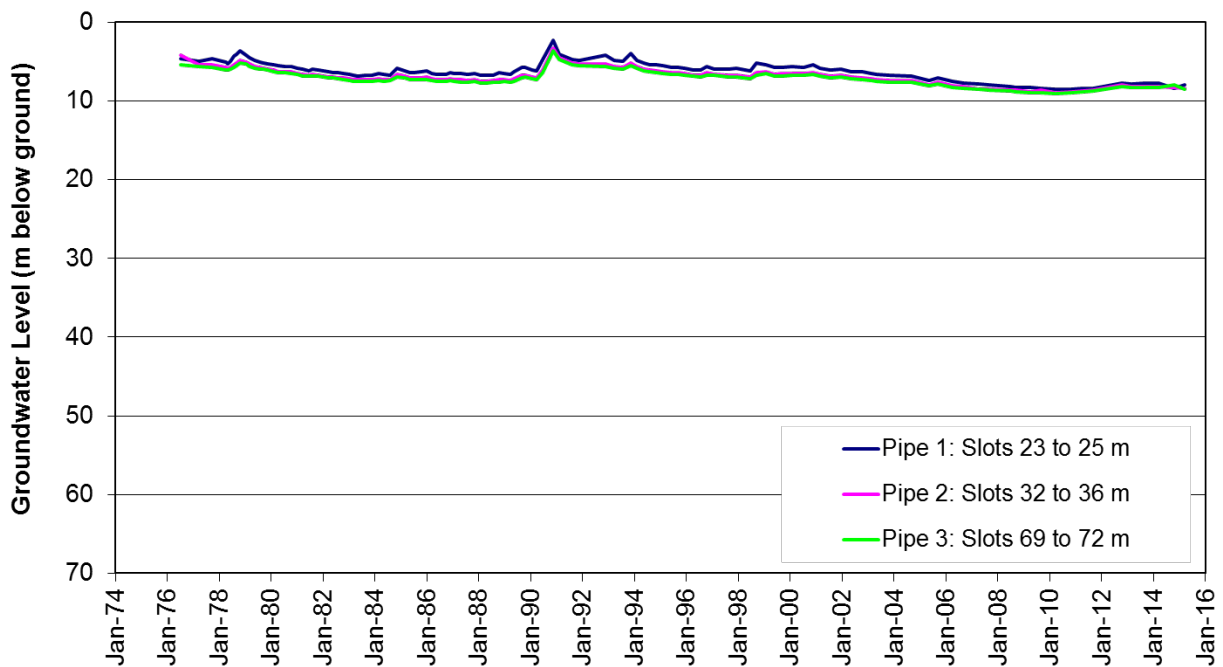


Figure 8 Hydrograph for monitoring site GW036500

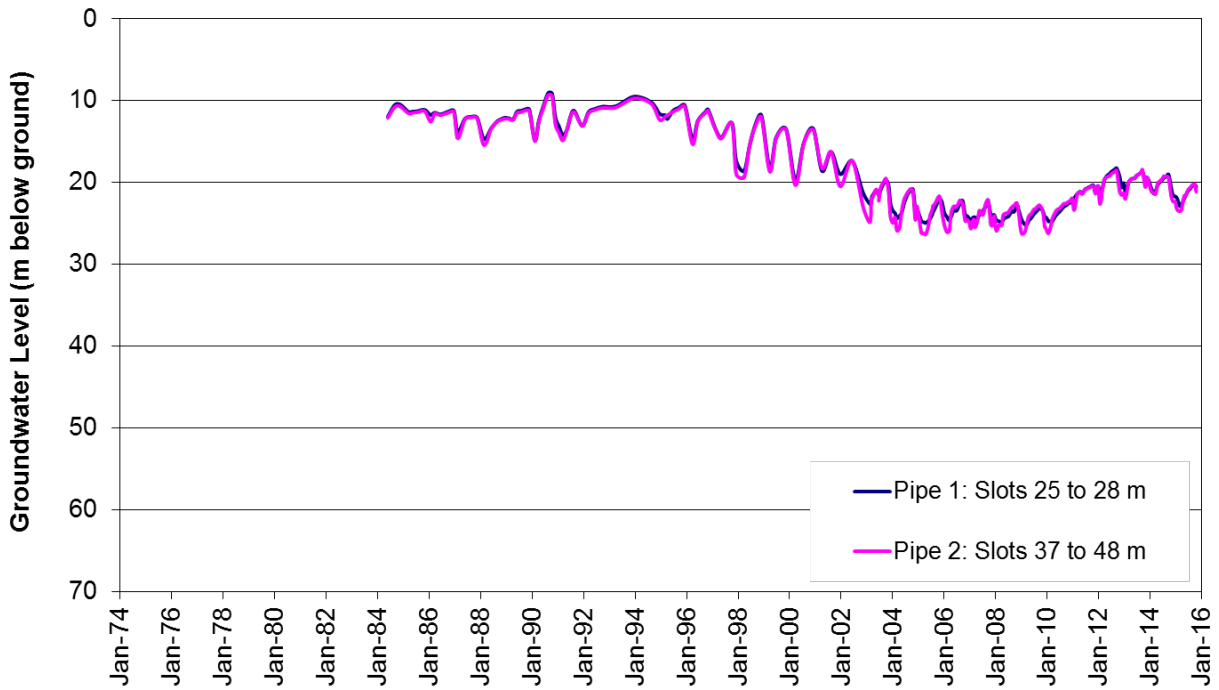


Figure 9 Hydrograph for monitoring site GW036502

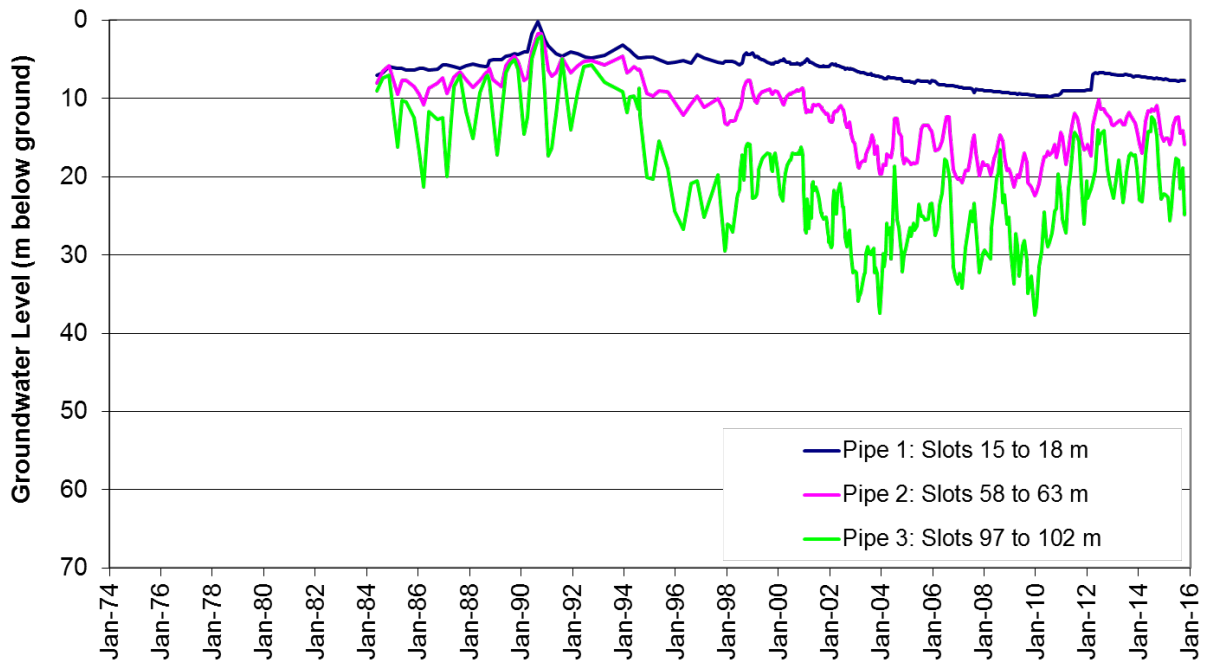
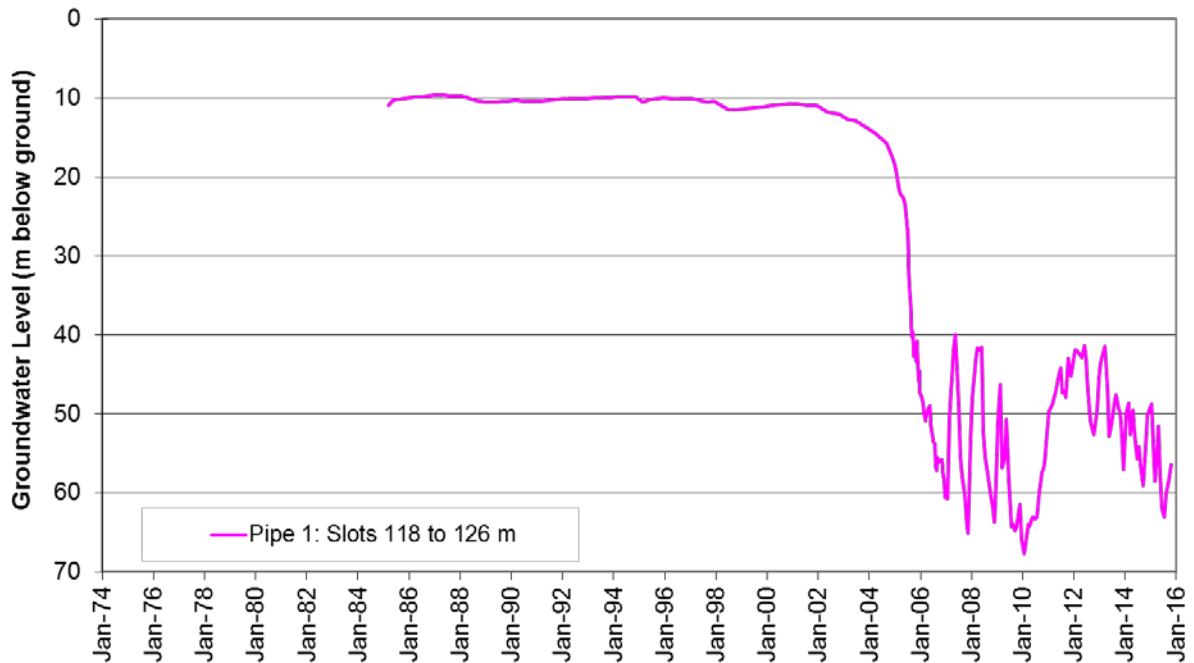


Figure 10 Hydrograph for monitoring site GW036553



## More information

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