Lower Namoi Alluvium Groundwater Source Status Update

Department of Planning and Environment

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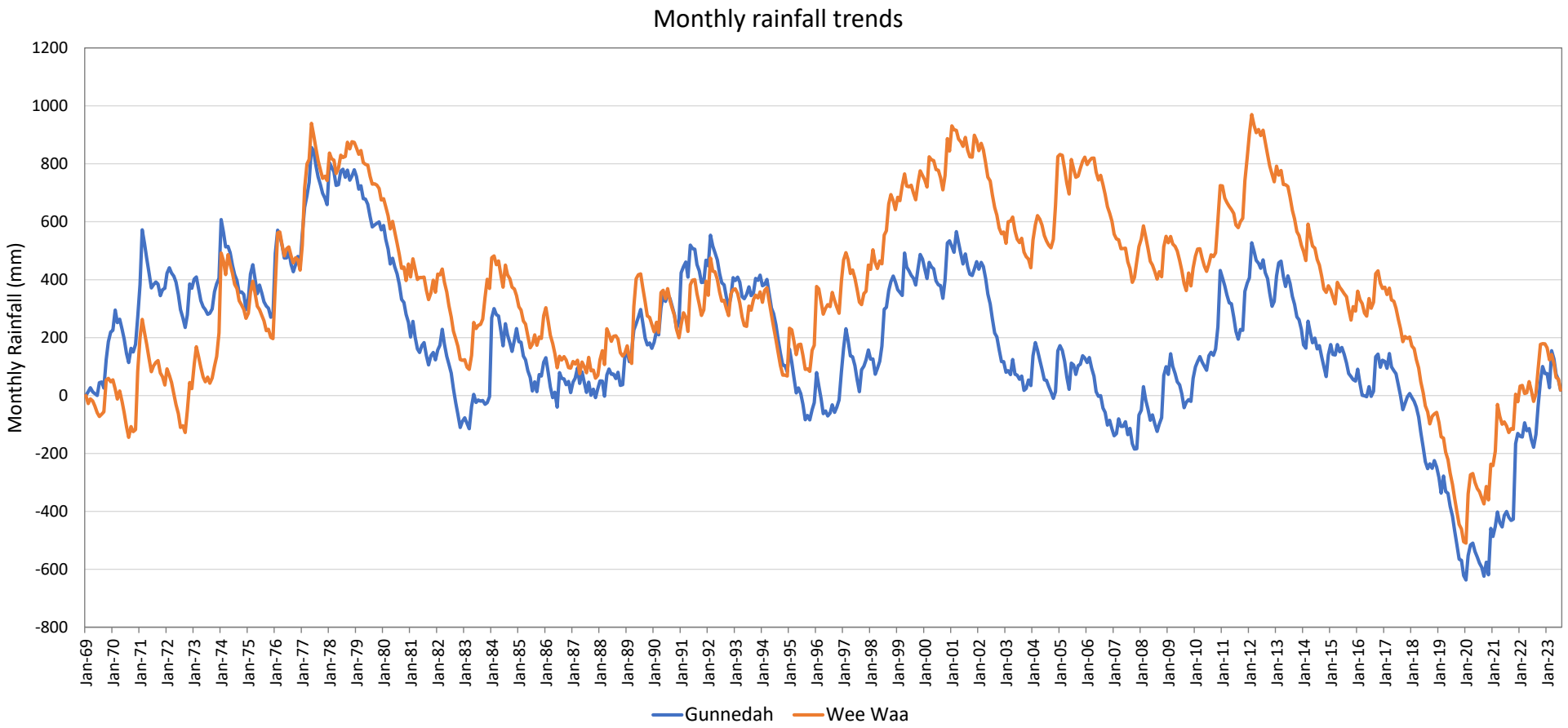
NSW GOVERNMENT

Rainfall Trends



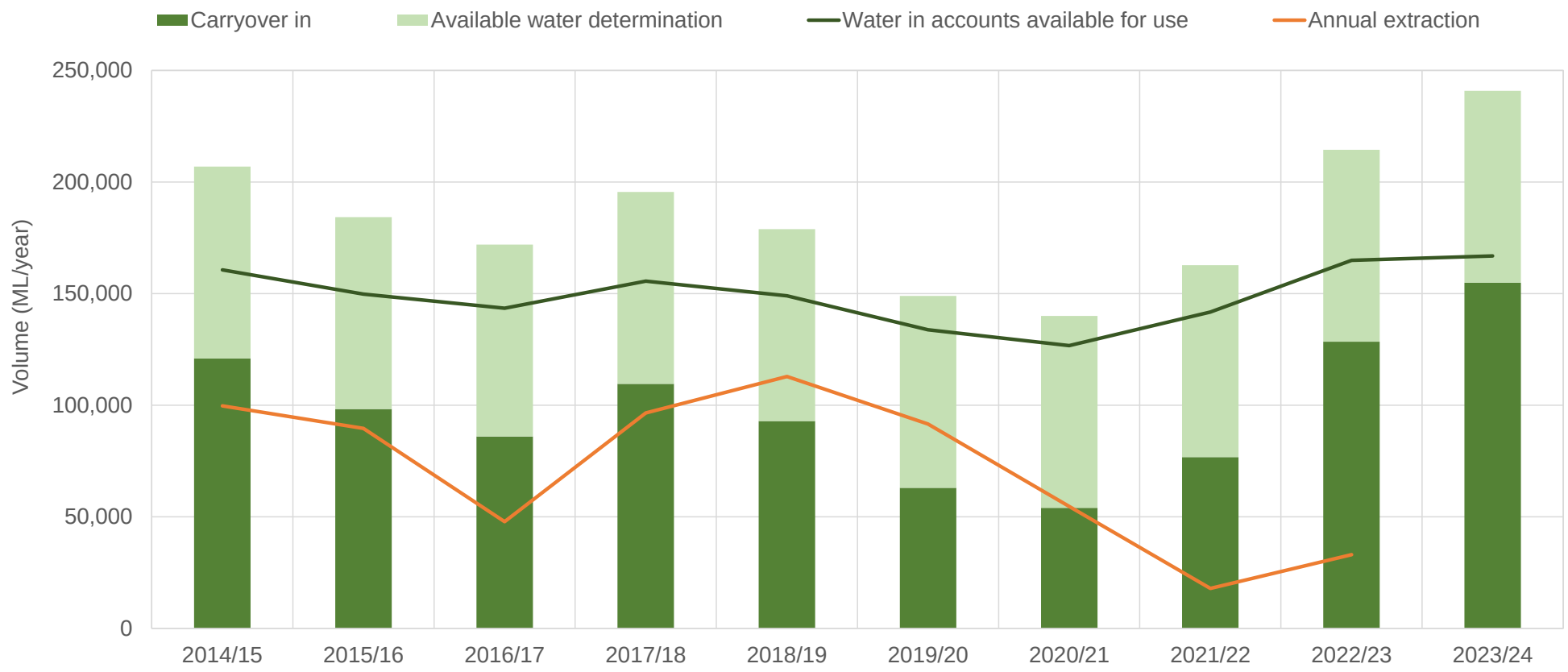
Monthly rainfall trend graph constructed using monthly data sourced from the Scientific Information for Land Owners (SILO) database. The rainfall residual mass graph plots the cumulative difference from the monthly average rainfall and provides a visual representation of the rainfall history in an area.

A falling trend indicates a period of lower than average rainfall, a rising trend showing periods of above average rainfall.

Rainfall trends summary

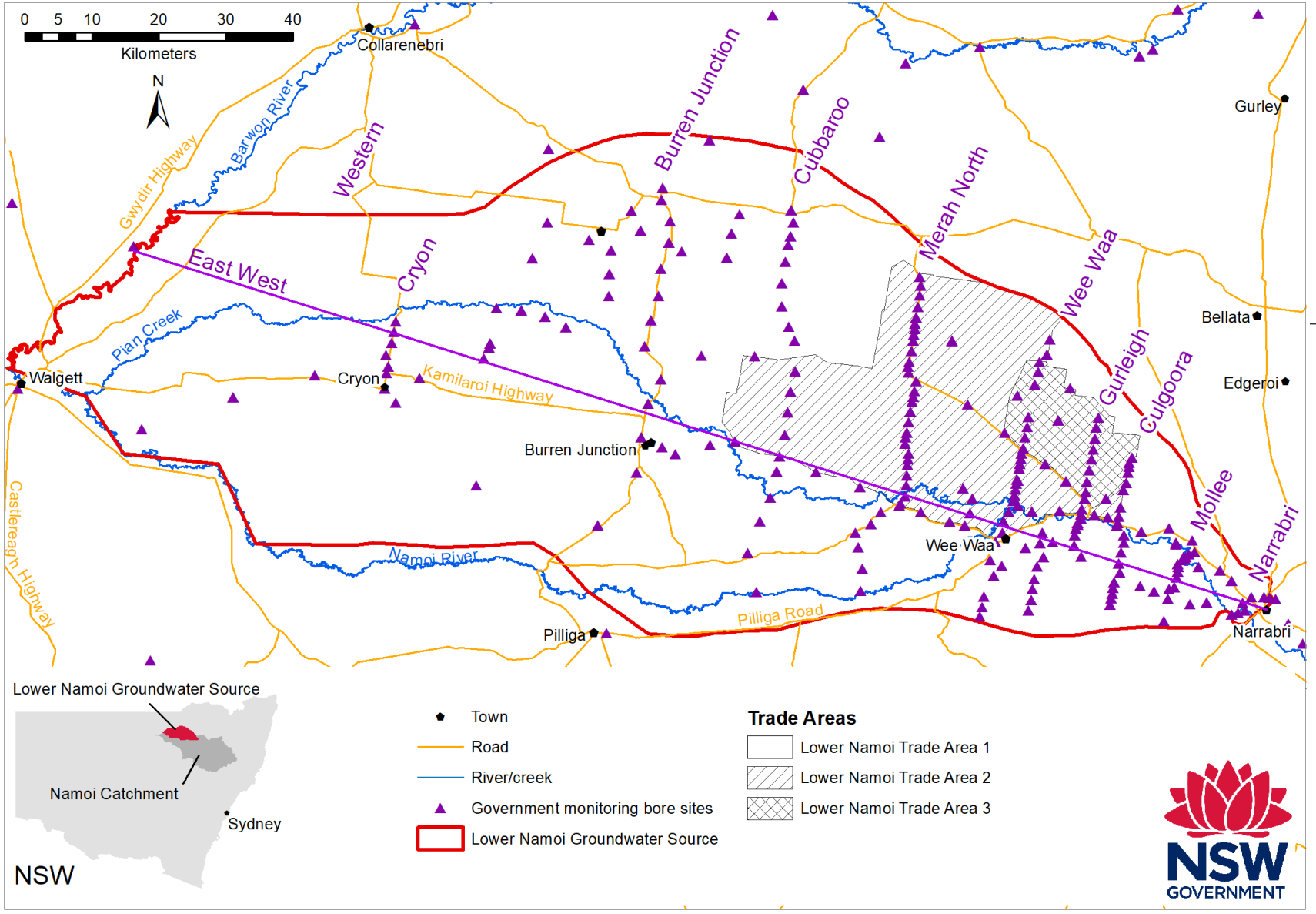
- The Gunnedah and Wee Waa rainfall trend graphs show:
  - below average rainfall in the recent drought
  - above average rainfall trends from 2020 to 2023
- Decent rainfall has resulted in low groundwater extraction since 2020.
- The BOM are forecasting lower than average rainfall in the next few months.

Accounts – Lower Namoi Groundwater Source



Long term average annual extraction limit = 88,255 ML/year	Aquifer access licence shares = 81,586	Local water utility shares = 4,407
Account water available for extraction 2023/2024 = 166,889	2023/2024 account water available for extraction as % of maximum = 99%	

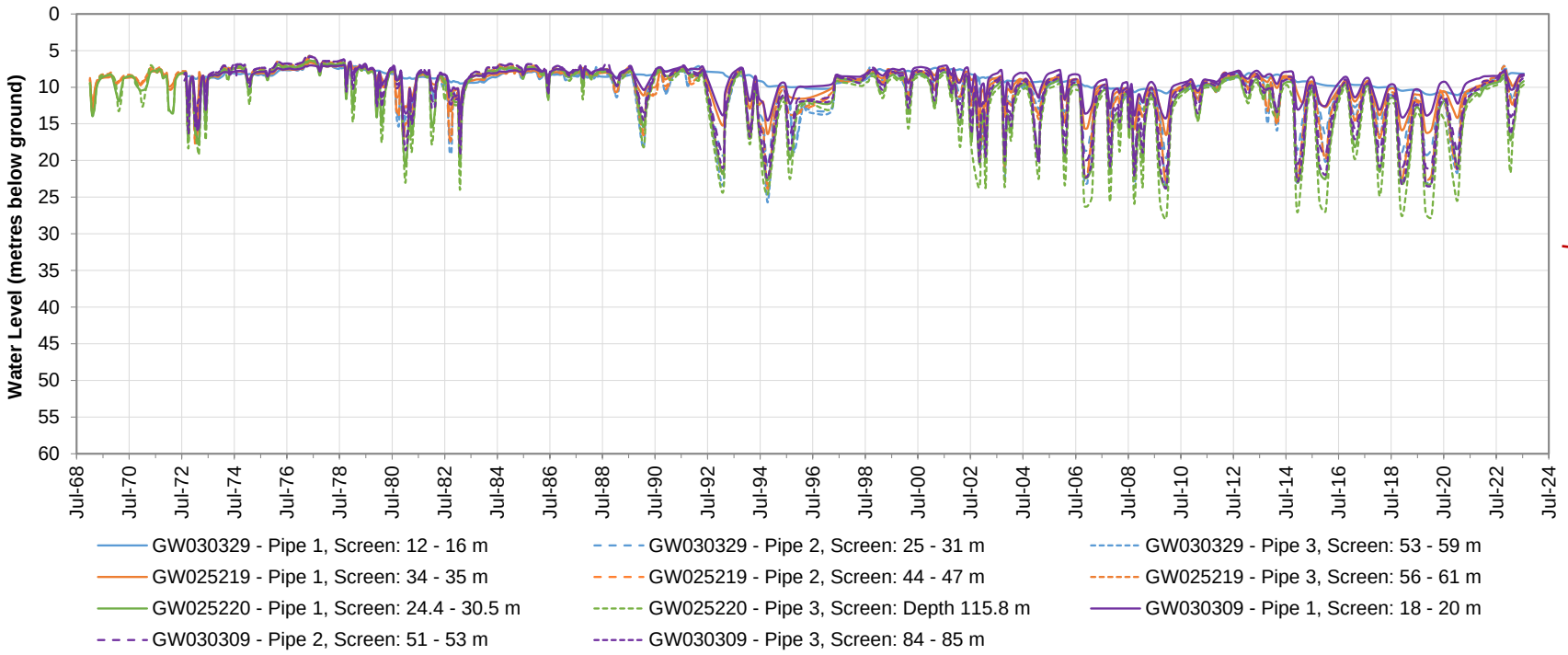
Hydrograph Location Overview

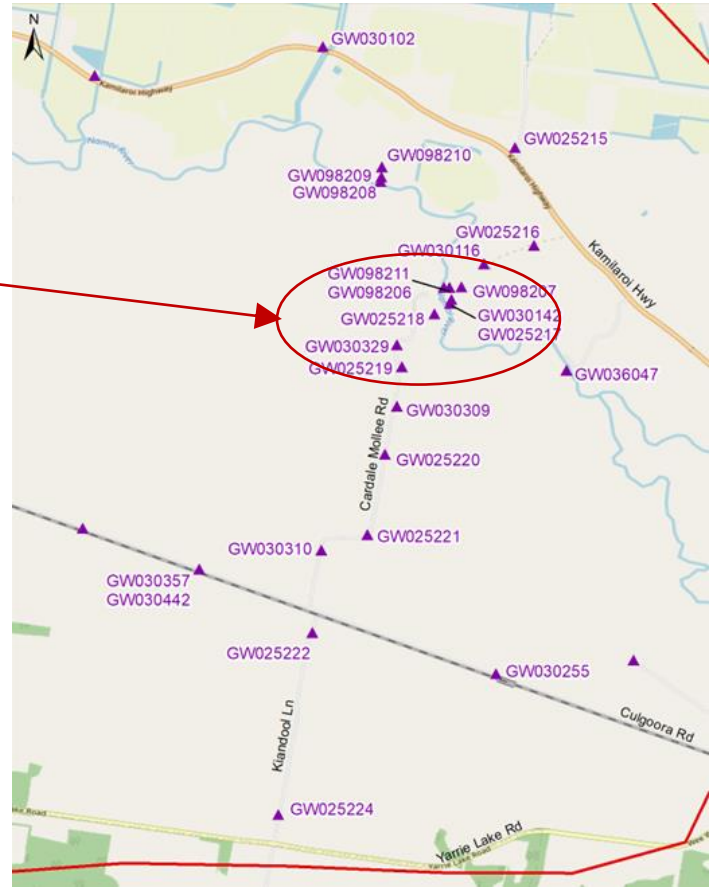


- The following slides show groundwater level hydrographs across the Lower Namoi.

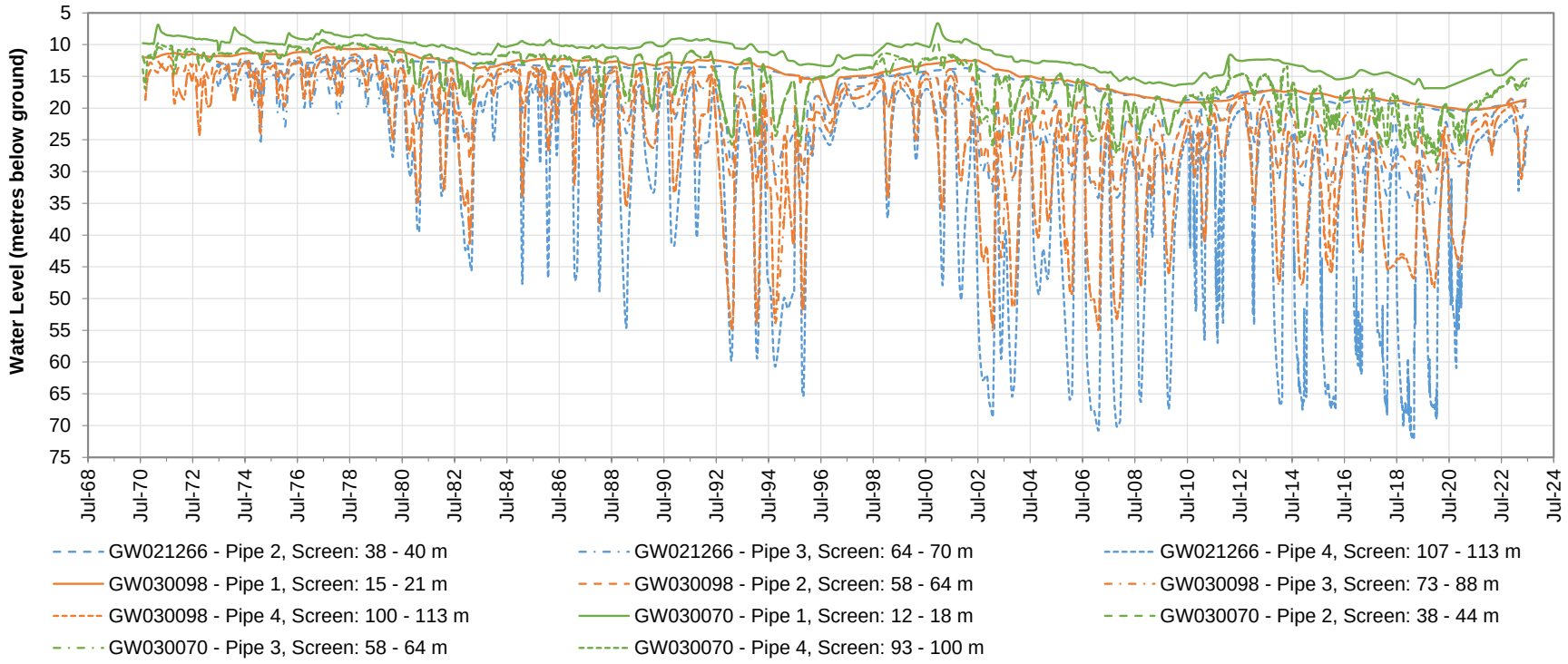
- The graphs are displayed, generally, from east to west.
- Each graph is the same horizontal scale. The vertical scale is set at either 60 or 70 m

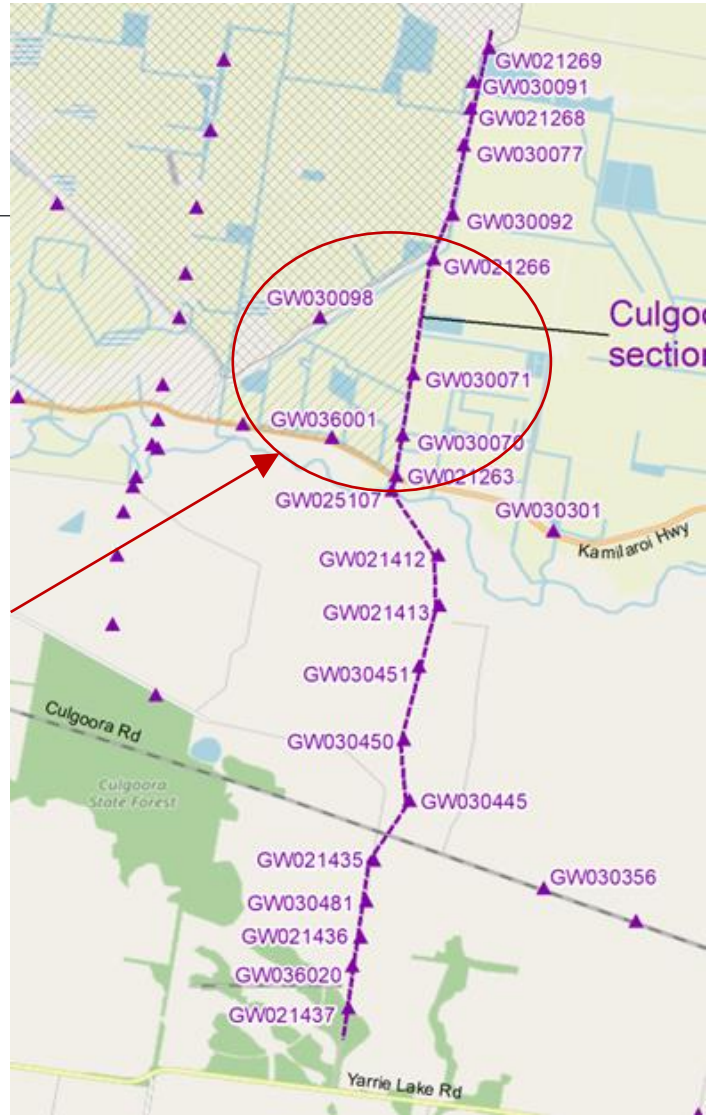
Mollee Section





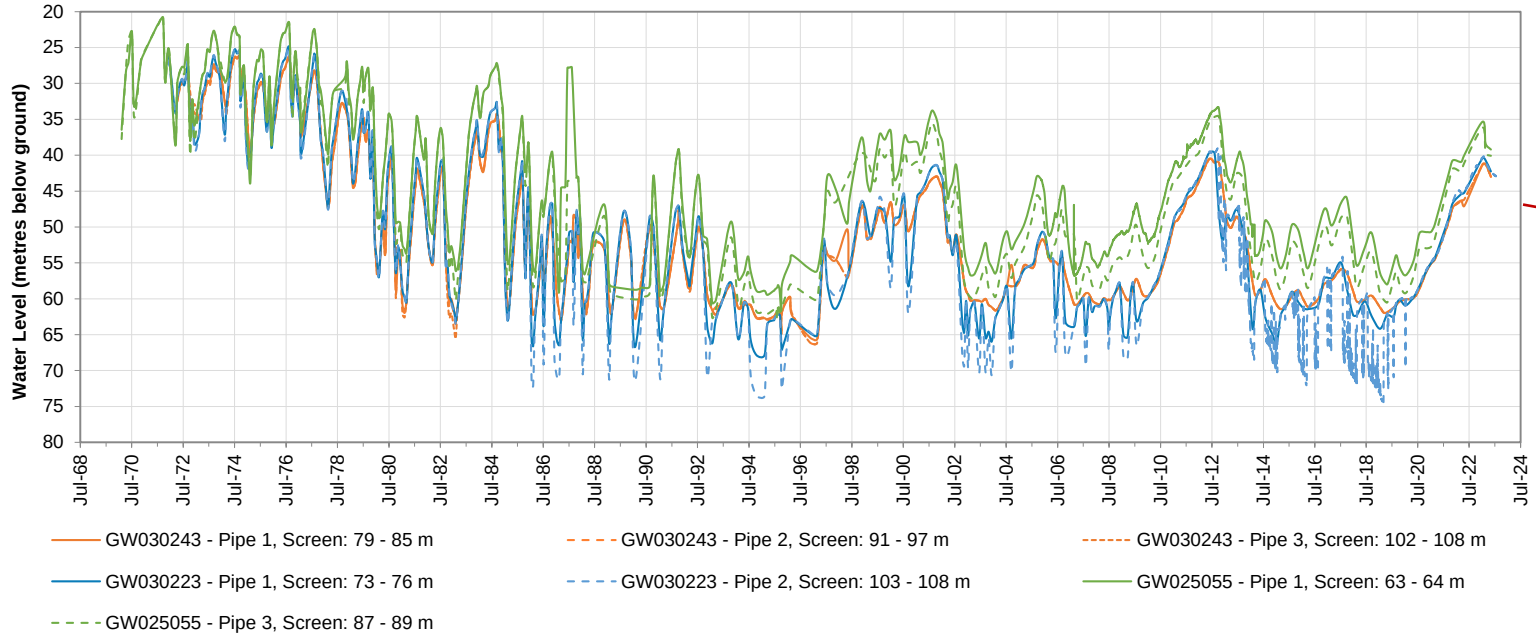
Culgoora Section

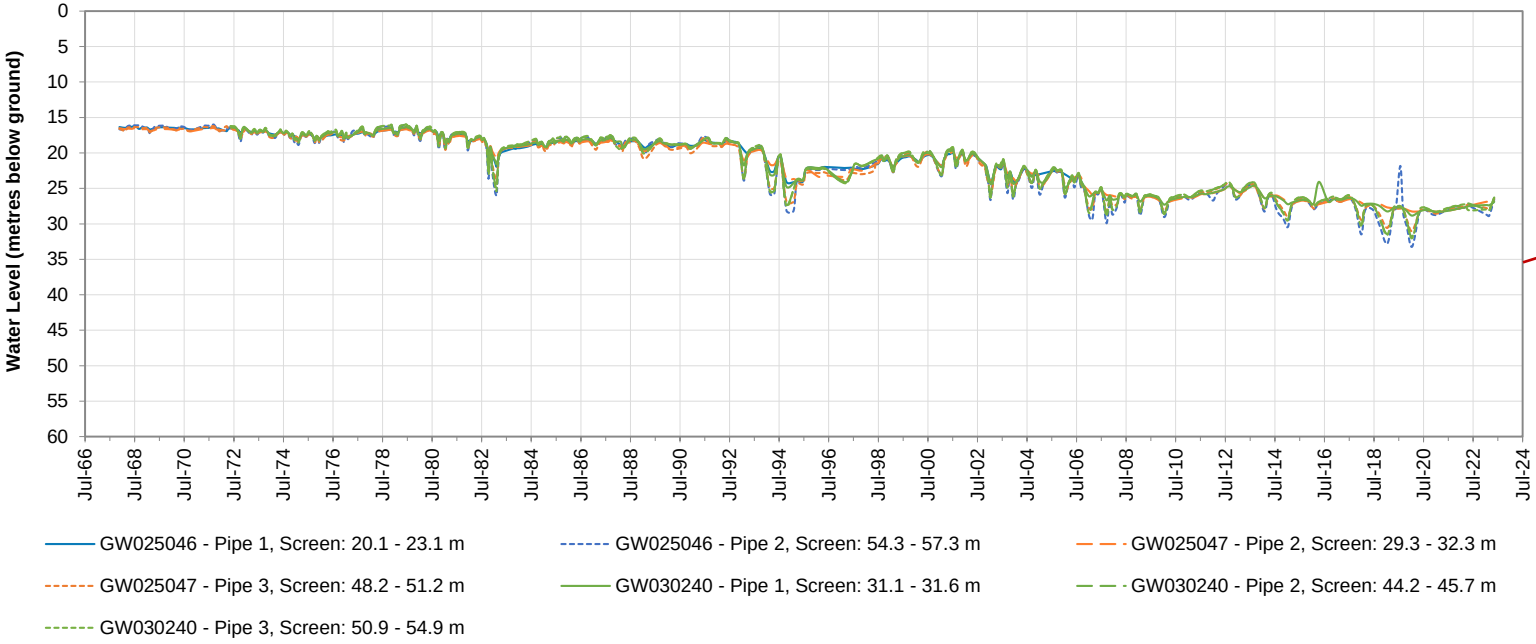


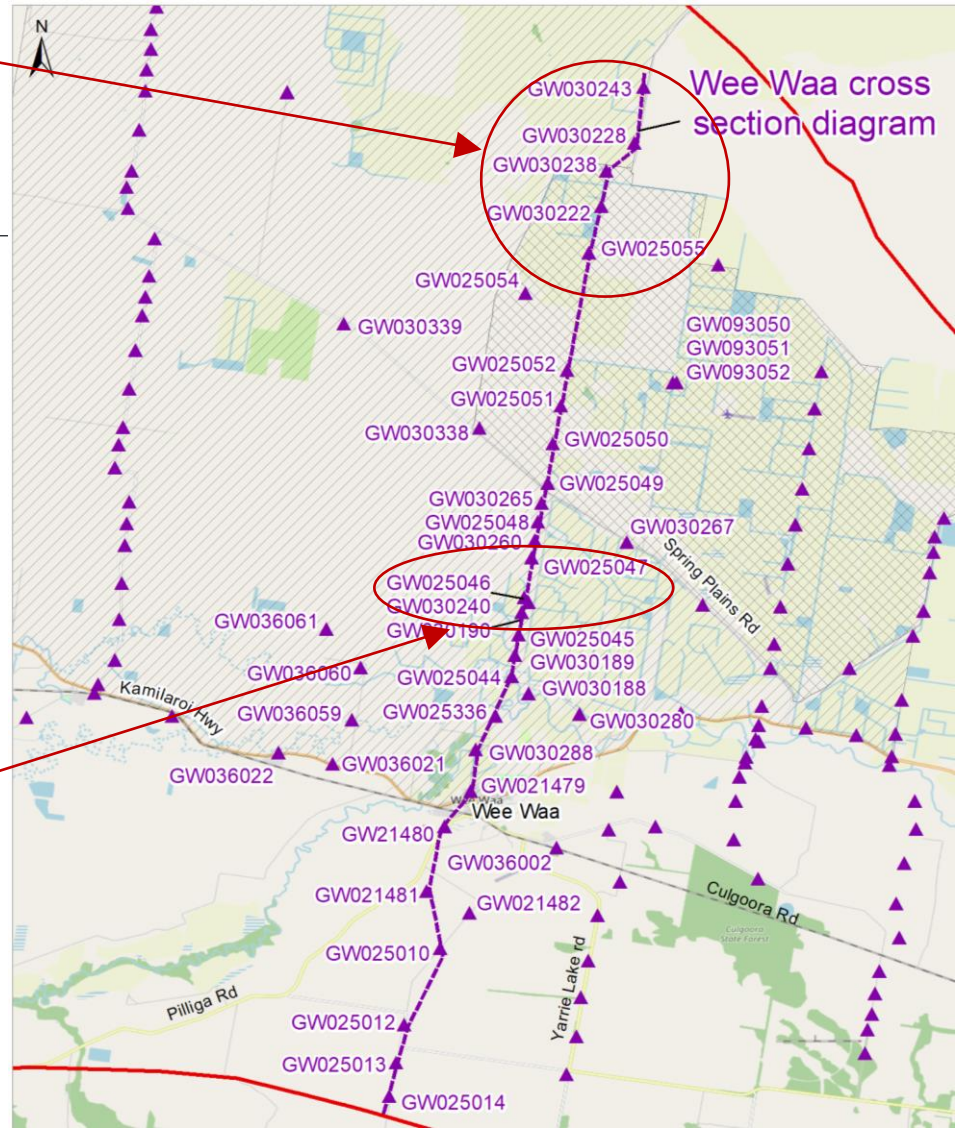


Near the Cotton Research Institute site

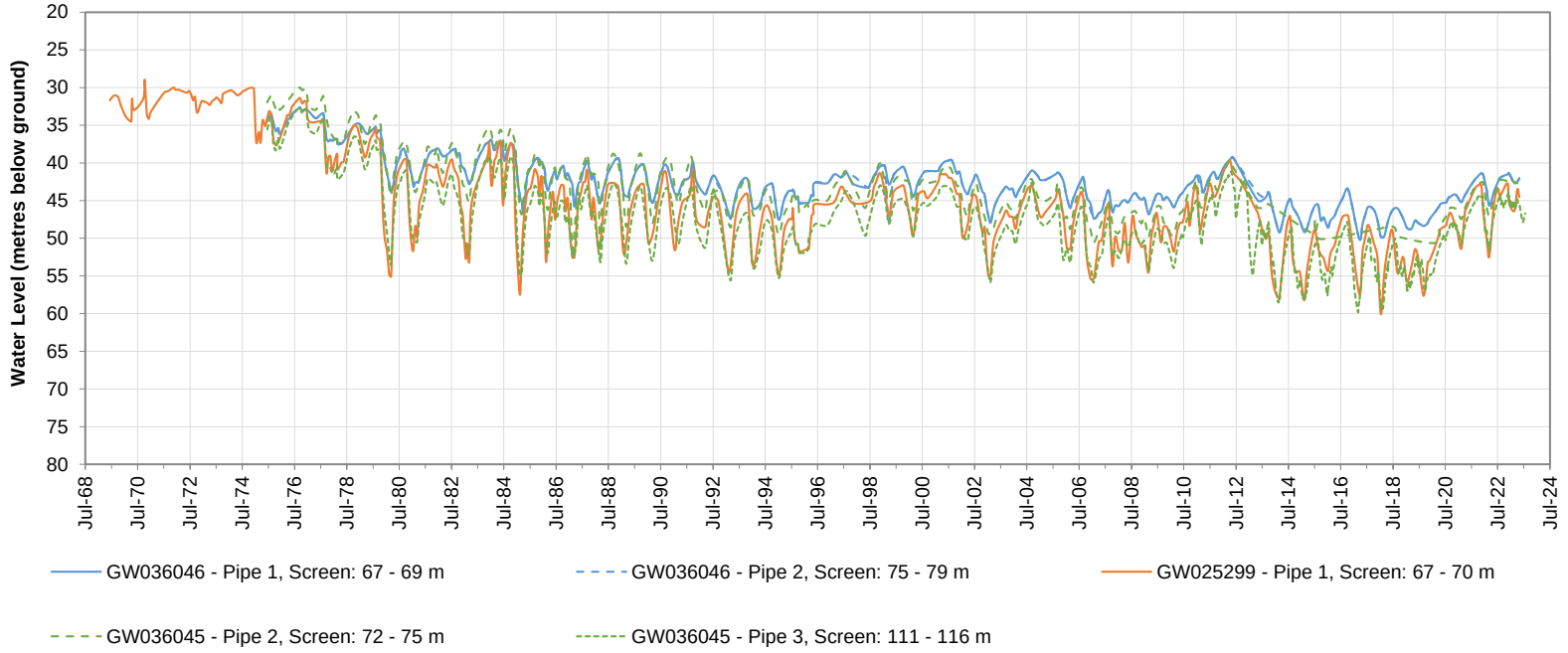
Wee Waa Section

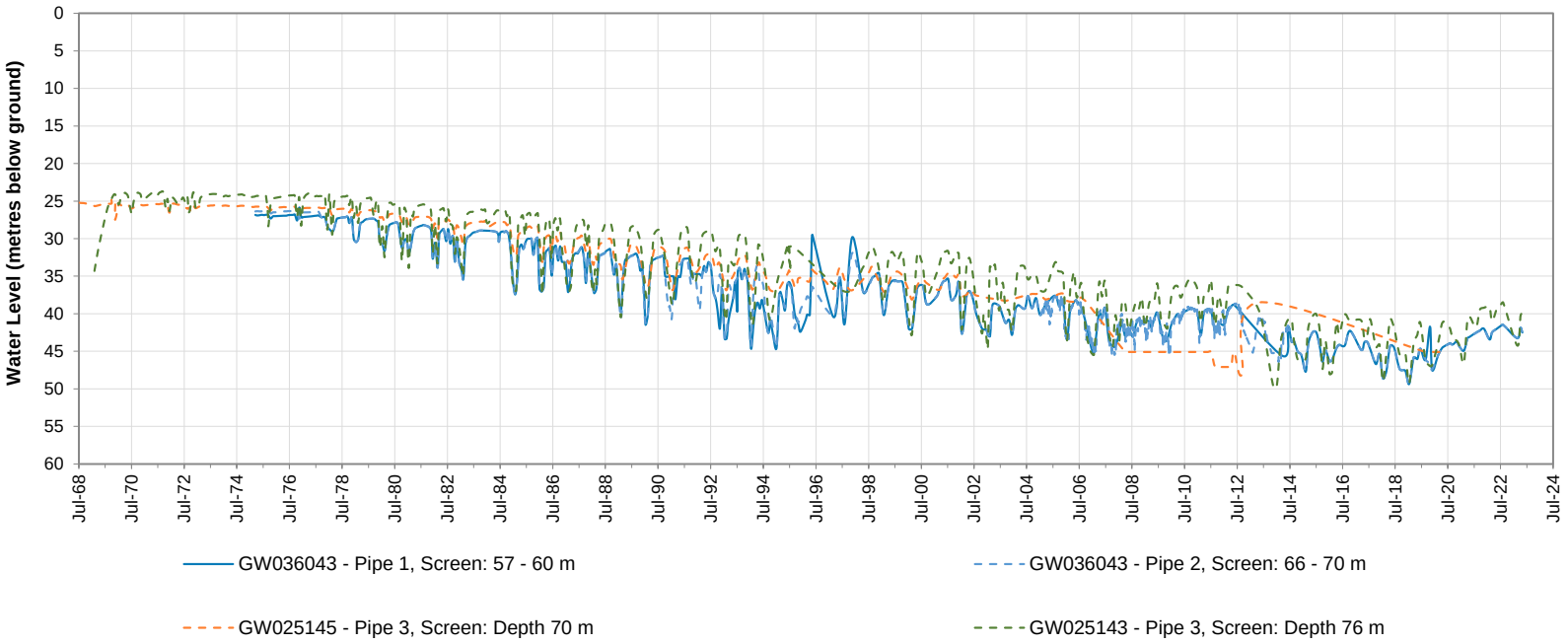


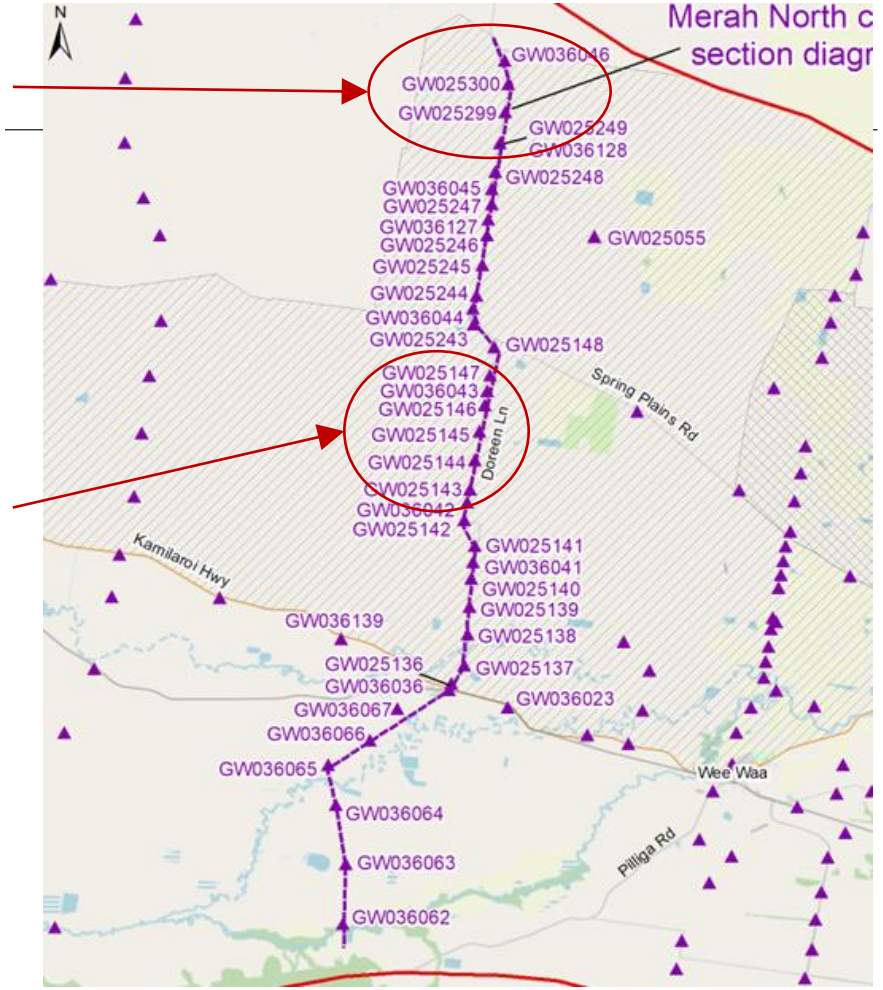




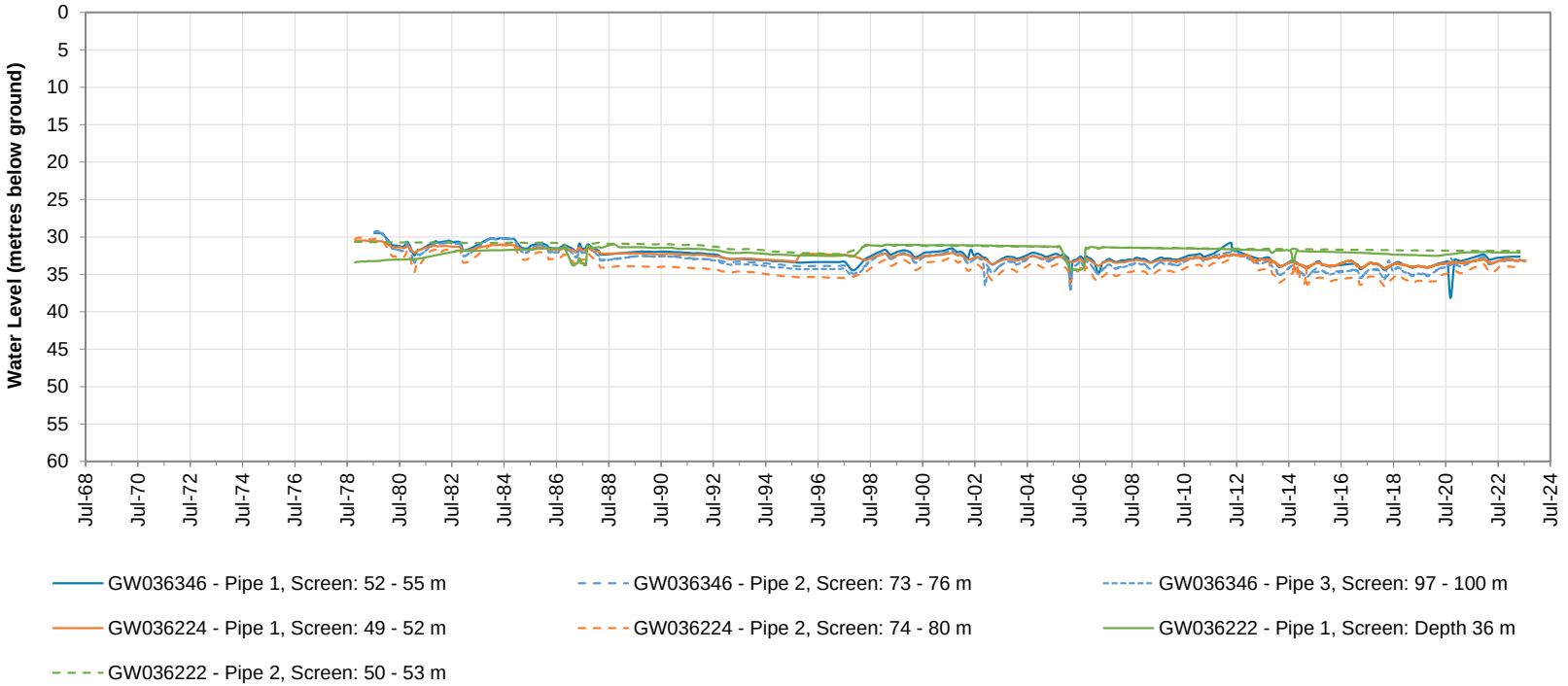
Merah North Section

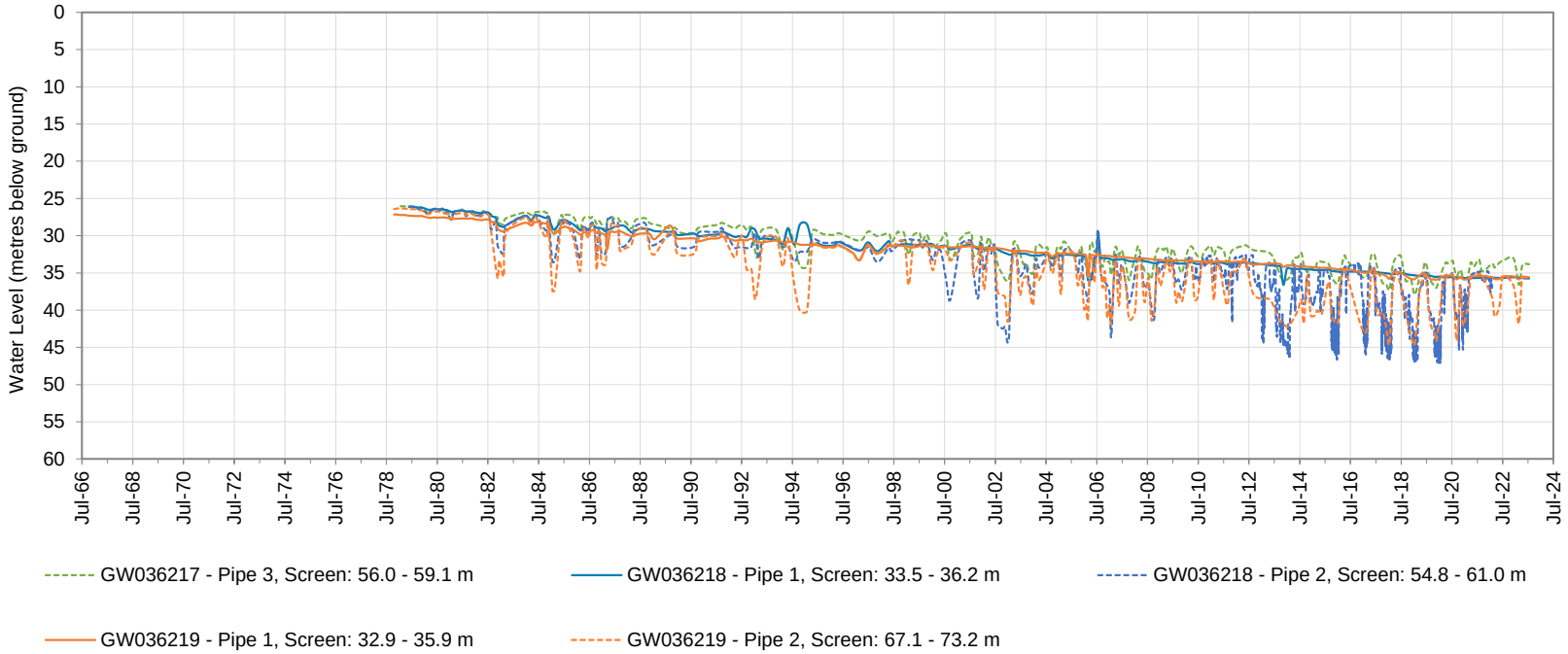


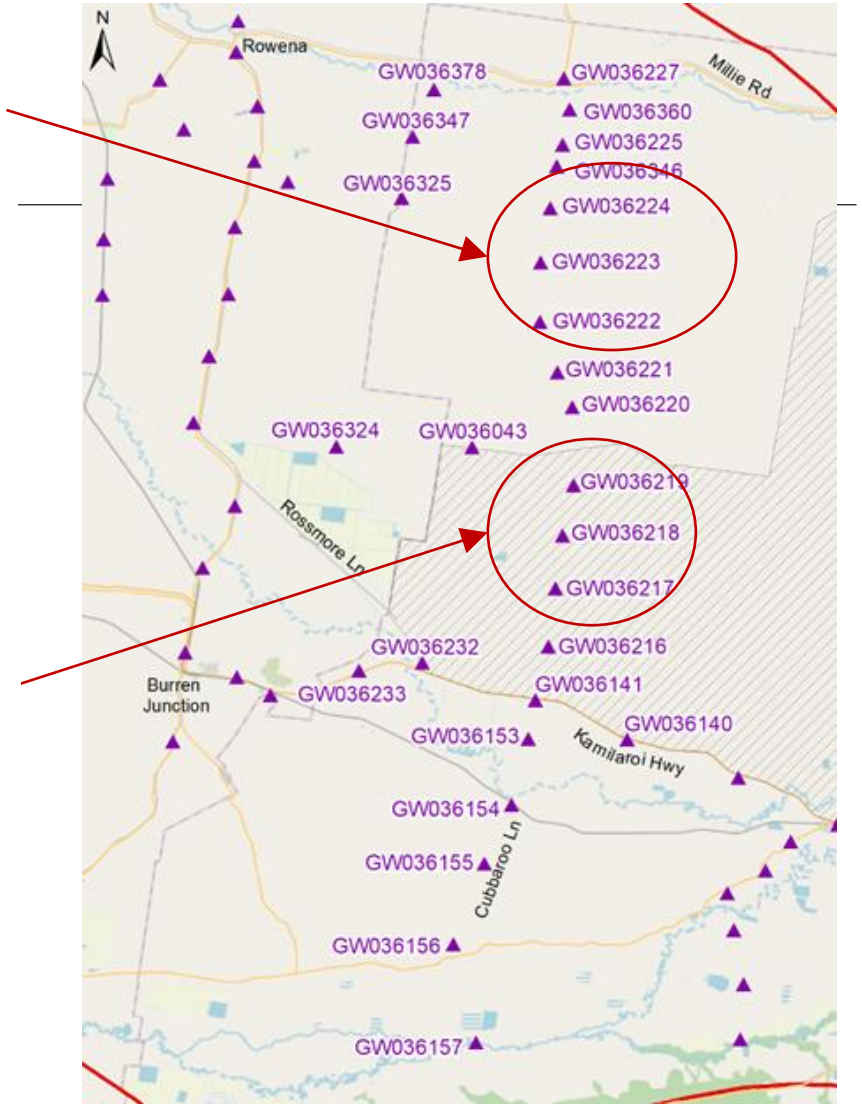




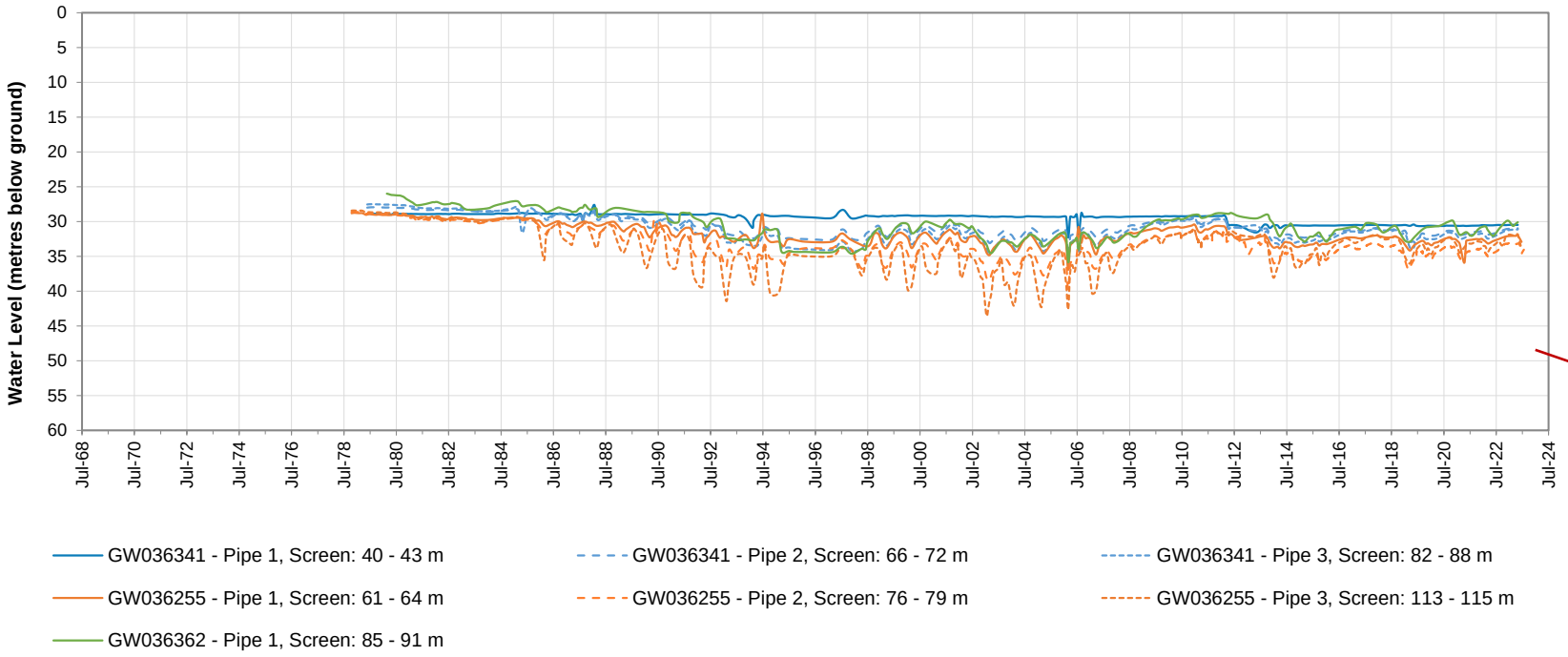
Cubbaroo Section

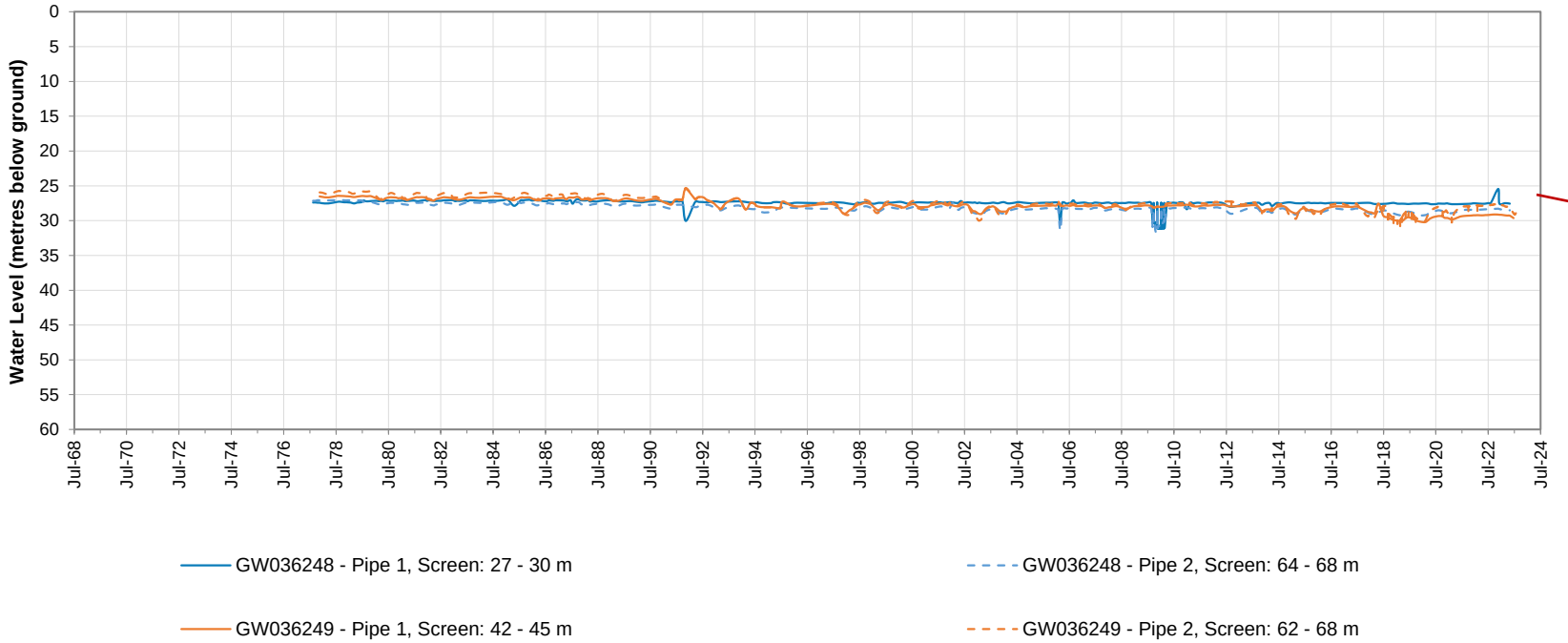


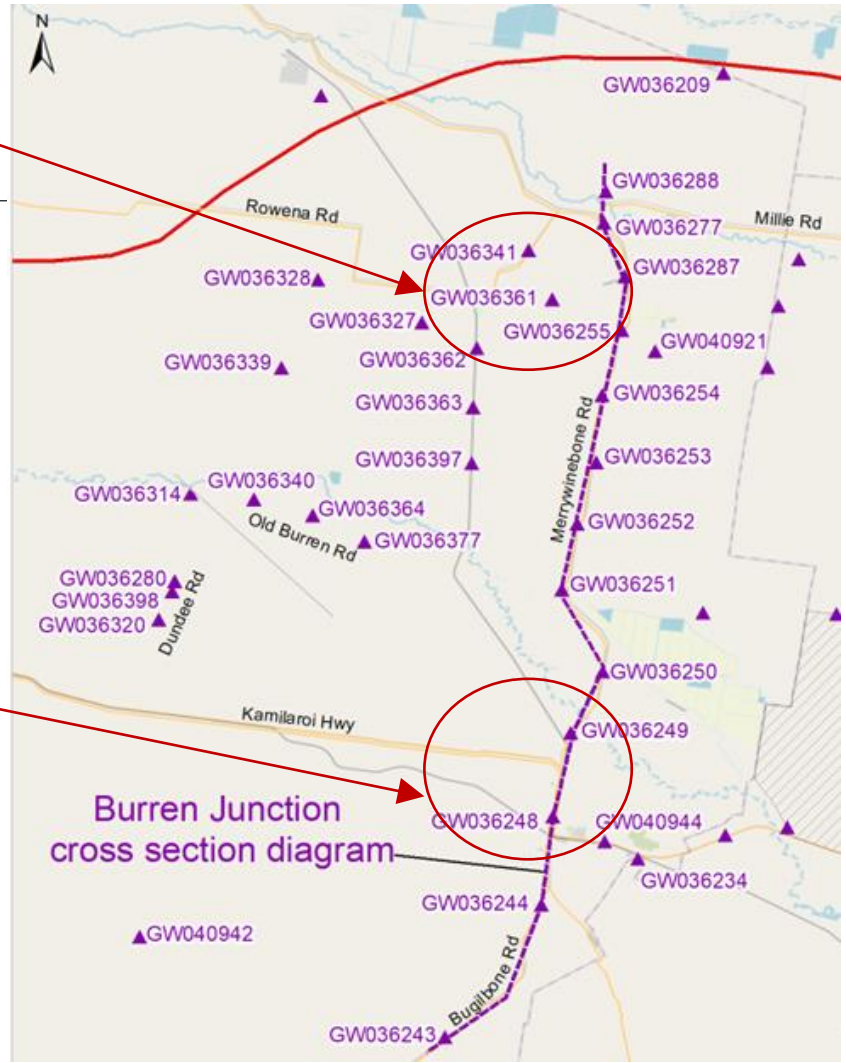




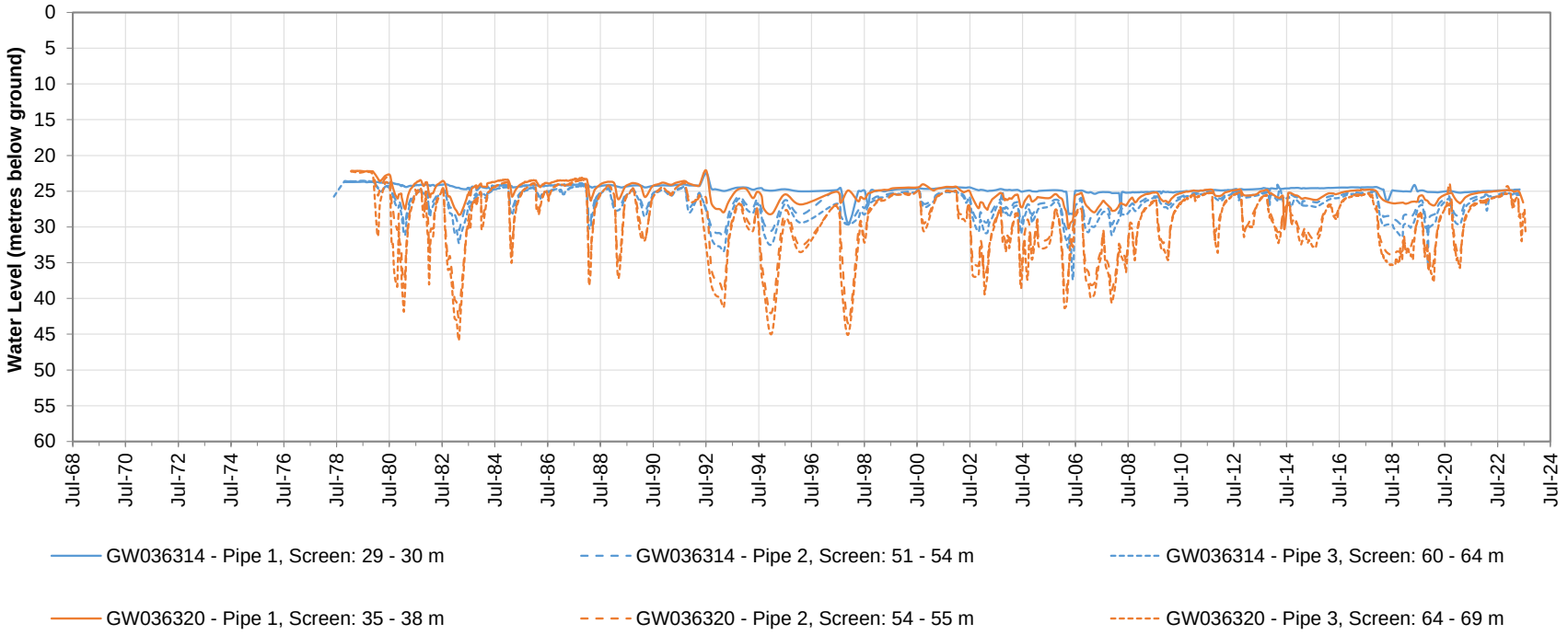
Burren Junction Section

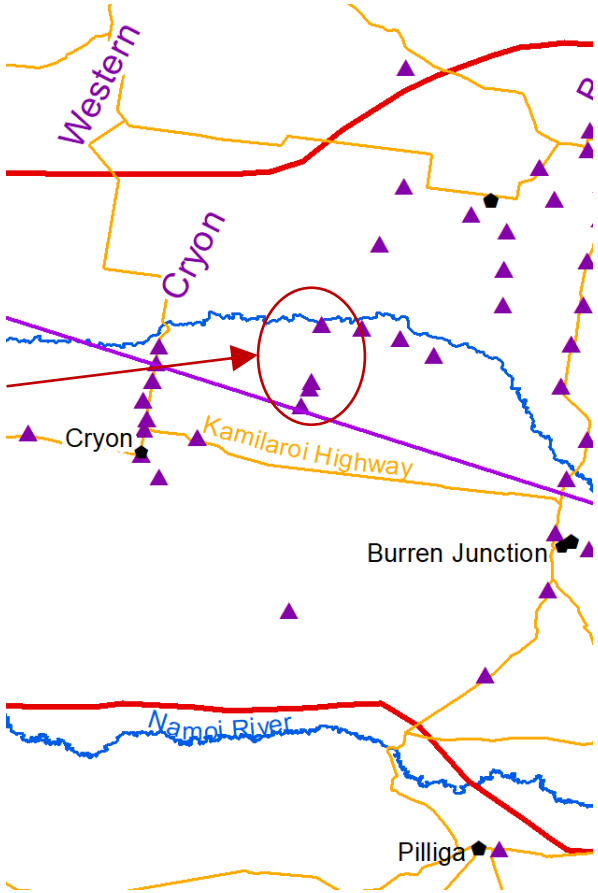






Cryon Section



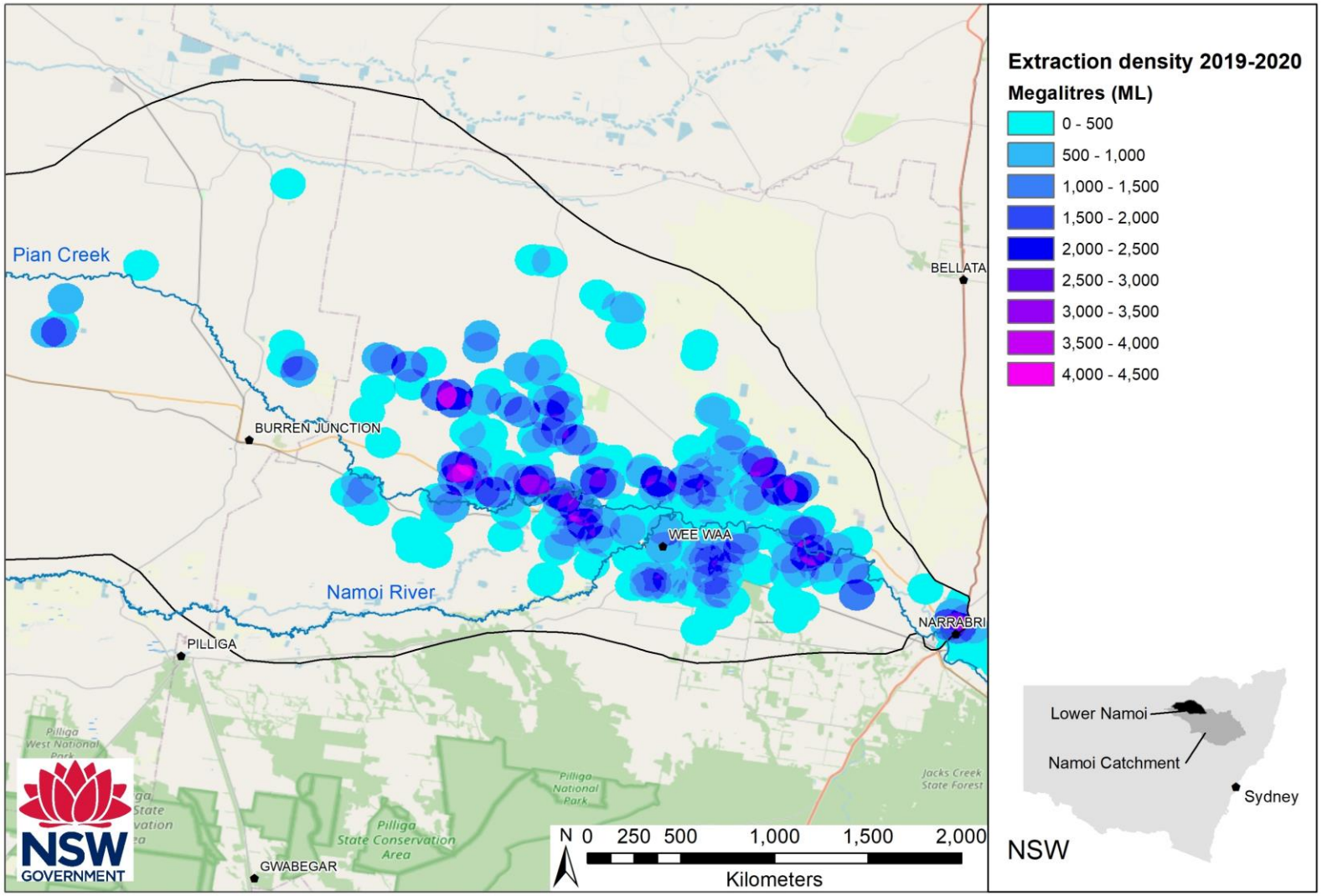


Dundee Road

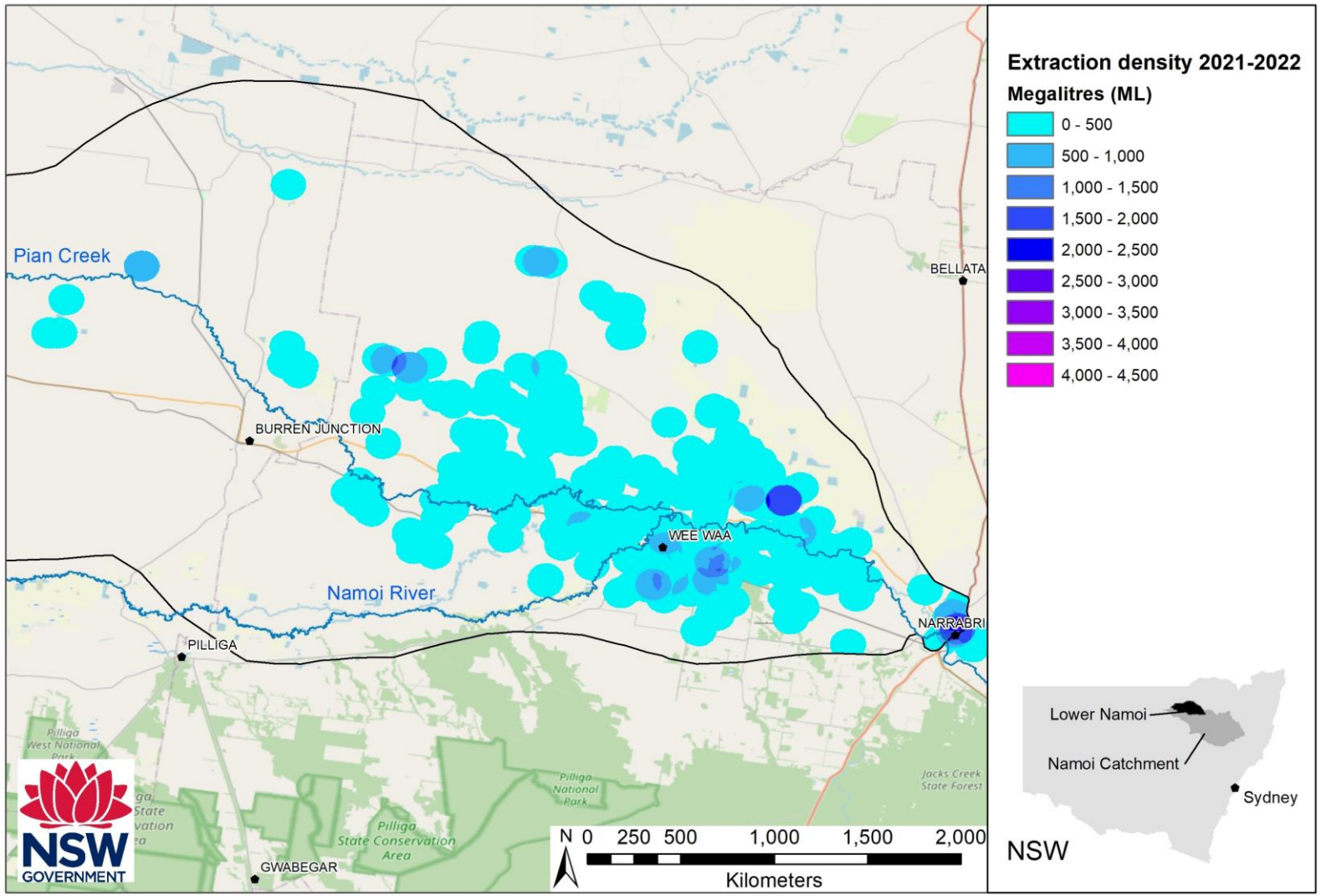
Extraction density maps

- The following maps plot the recorded groundwater extraction from all bores across the Lower Namoi for 2019/2020 (drought year) and 2020/2021 (wet year).
- Each bore is plotted with a 2 km buffer.
- The buffer is coloured based on the volume extracted by the bore.
- If any 2 km buffers overlap, then the sum total extraction of the overlap is calculated and coloured.
- The method shows areas where extraction is concentrated.

Extraction density 2019/20202



Extraction density 2021/2022



Conclusions

- Decent rainfall has resulted in low groundwater extraction since 2020.
- The carry over and account volumes have increased in the last few years.
- The 2023/2024 Lower Namoi water accounts are 99% full.
- Groundwater levels have recovered in response to the wetter seasons since 2020 in most areas, the best recovery occurring in the eastern end of the water source between Narrabri and Wee Waa.
- The Wee Waa and Merah North Sections show some groundwater level recovery from 2020 to date, recovery has not reached the same level as 2012.
- The hydrographs along the Cubbaroo Section show no notable rise in the groundwater levels since 2020 in response to the wetter seasons.
- The groundwater levels are still at risk of continuing to decline over time with the onset of increased extraction in the areas just north of the Kamilaroi Highway on the Wee Waa, Merah North and Cubbaroo Sections.
- West of Burren Junction the groundwater level trends are generally stable.
- As expected, the density and volume of extraction changes significantly between a dry and wet periods.

Additional information

- The groundwater annual report is available for 2022 for the Lower Namoi Groundwater Source, at:

  www.dpie.nsw.gov.au/water/science-data-and-modelling/groundwater-management-and-science/groundwater-annual-reports

- These reports are due to be updated for 2023 and should be available by the new year.