

Lower Namoi Alluvium Groundwater Source Status Update

Department of Climate
Change, Energy, the
Environment and Water

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February 2024



Presentation agenda and main messages

Contents of this presentation:

- Accounts and usage information.
- Climate, groundwater age, extraction density, and groundwater level update.

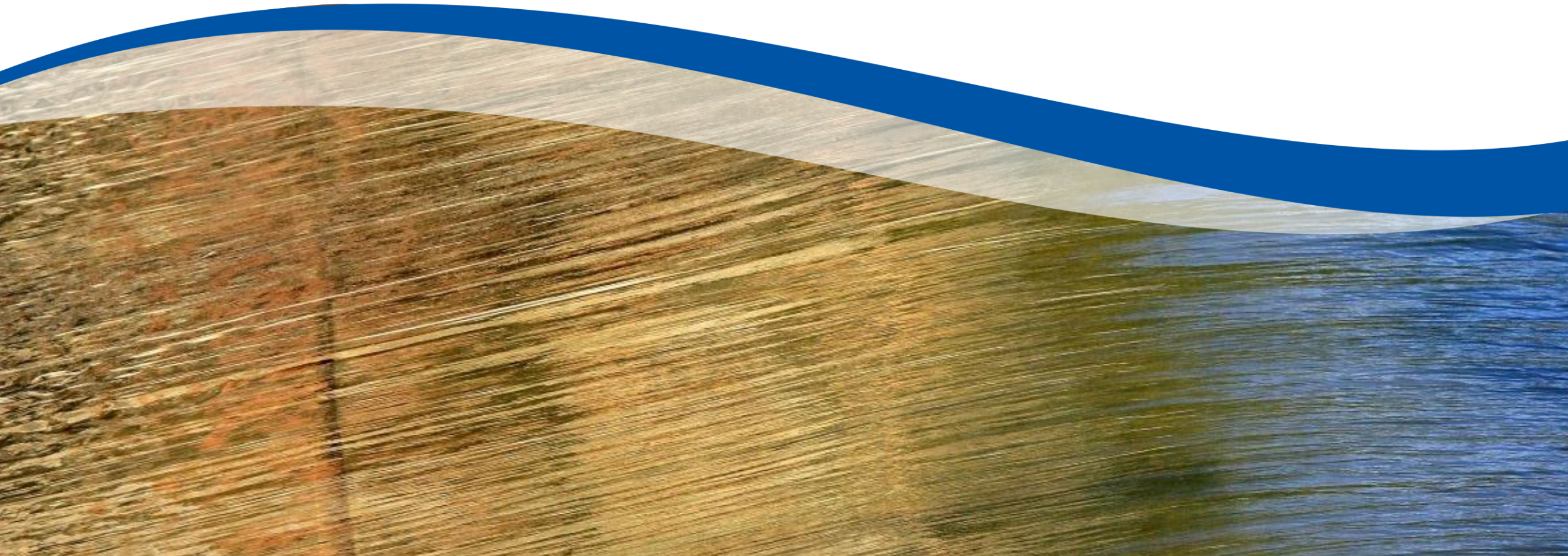
Main messages:

- The third-party impact assessment criteria for temporary trades will commence for the Lower Namoi Groundwater Source from 1 July 2024.
- A third-party consent process for temporary trades will commence 1 July 2024 – Water NSW to discuss.
- There has been good recovery in the far east of the Lower Namoi.
- Culgoora, Wee Waa and Merah North sections show some recovery since 2020, however to a lower level than the last recovery event around 2012 at most sites.
- The Cubbaroo and Burren Junction sections show no notable response to the wetter period since 2020 other than less seasonal drawdown in response to extraction.
- Based on current pumping trends, groundwater levels are likely to continue to decline over time in the areas north of the Kamilaroi Highway between the Culgoora and Cubbaroo Sections.

Third Party Consent for Groundwater Temp Trades



Update



What is Third Party Consent?



Third party consent is a process where the applicant of a temporary trade can seek consent from impacted third-party bore holders to allow the temporary trade to go ahead where all other assessment criteria pass the impact assessment

WaterNSW made the decision to pause the Third-Party Consent Process



In November 2023, WaterNSW made the decision to pause the Third-Party Consent process, while;

- We undertook a thorough review of all legislative instruments
- Completed a privacy impact assessment, in line with the NSW PPIP Act

WaterNSW Review of Third-Party Consent



WaterNSW reviewed the Third-Party consent process that was in place for Groundwater temporary Trades, and found;

- The process was not meeting BLR Bore customer needs
- The process was not applying modern privacy principles
- The process was not meeting the intent of Water Sharing Plan principles

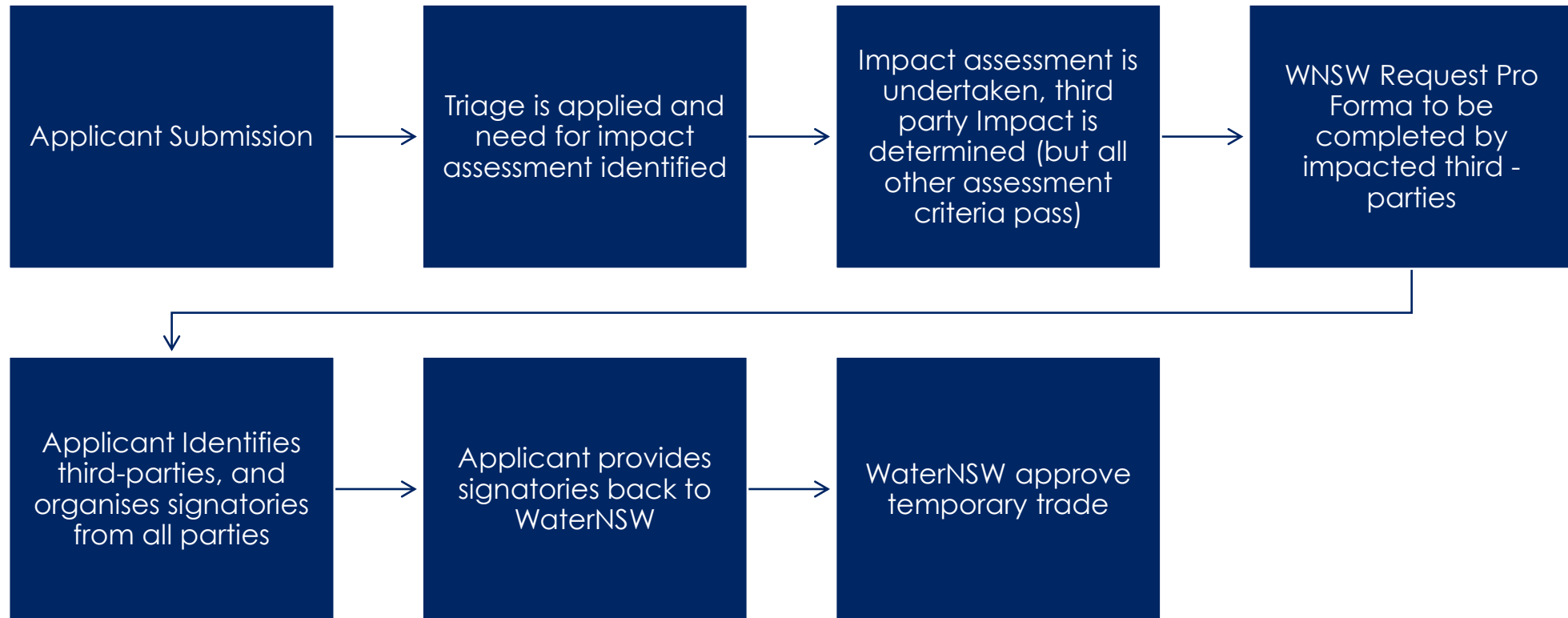
WaterNSW will re-commence Third-Party Consent Process



From July 1 2024, WaterNSW will re-commence Third-Party Consent;

- With a re-designed process to ensure that the process meets modern privacy principles
- In conjunction with a resource impact assessment (where required), ensuring dealing principles are adhered to as intended

New Third-Party Consent Process



Contact details



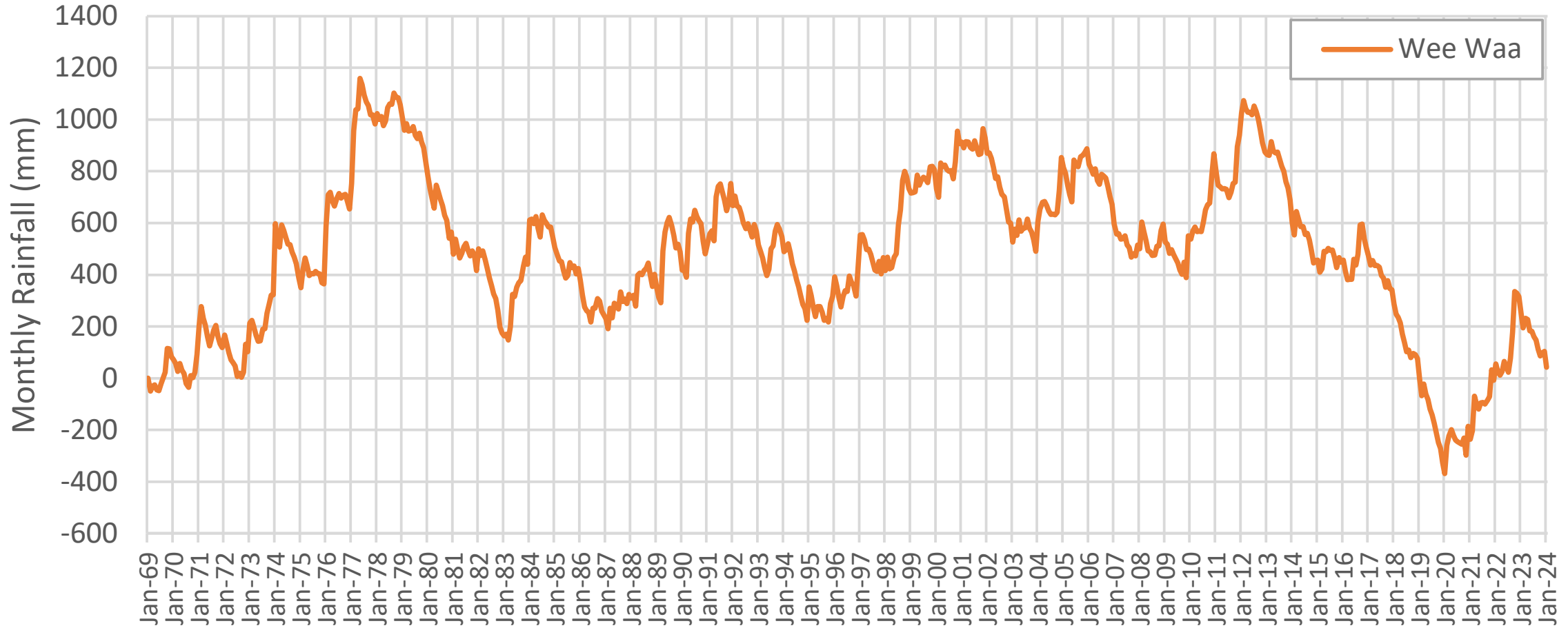
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Groundwater status update – February 2024

Lower Namoi Groundwater Source

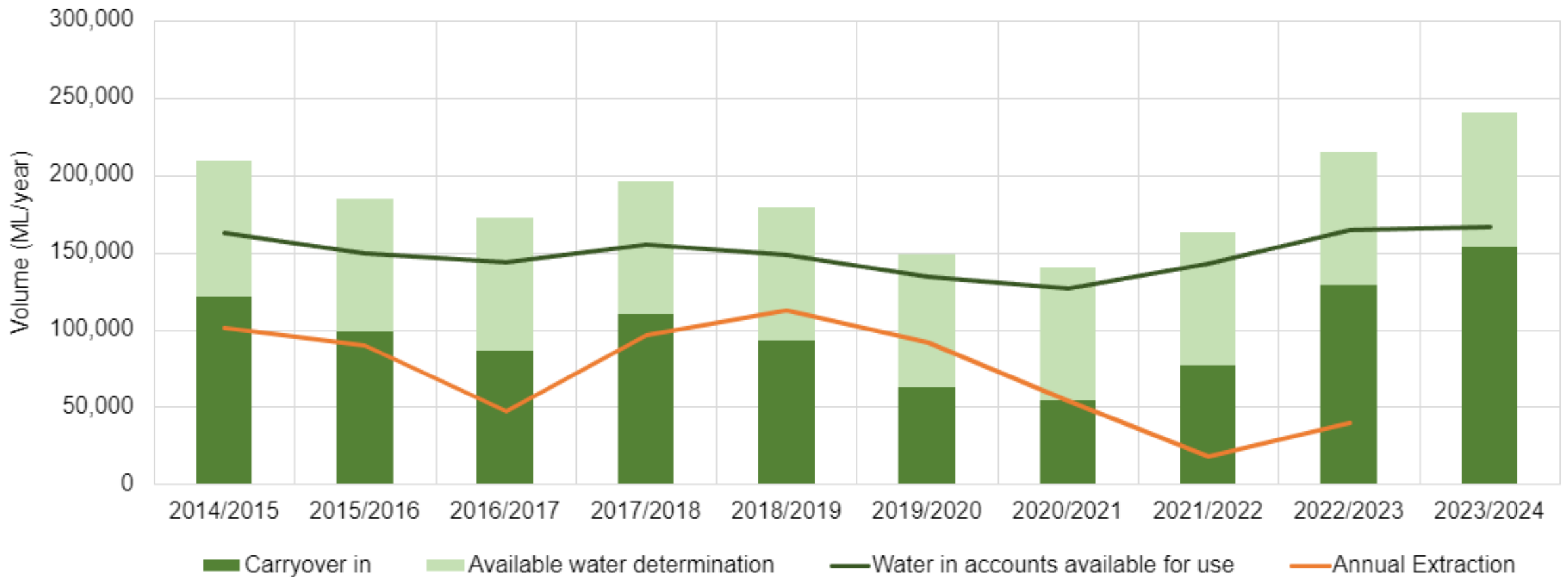
Rainfall Trends – Wee Waa



A 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 indicates periods of above average rainfall.

Accounts – Lower Namoi Groundwater Source



Lower Namoi – 2023/2024 account summary

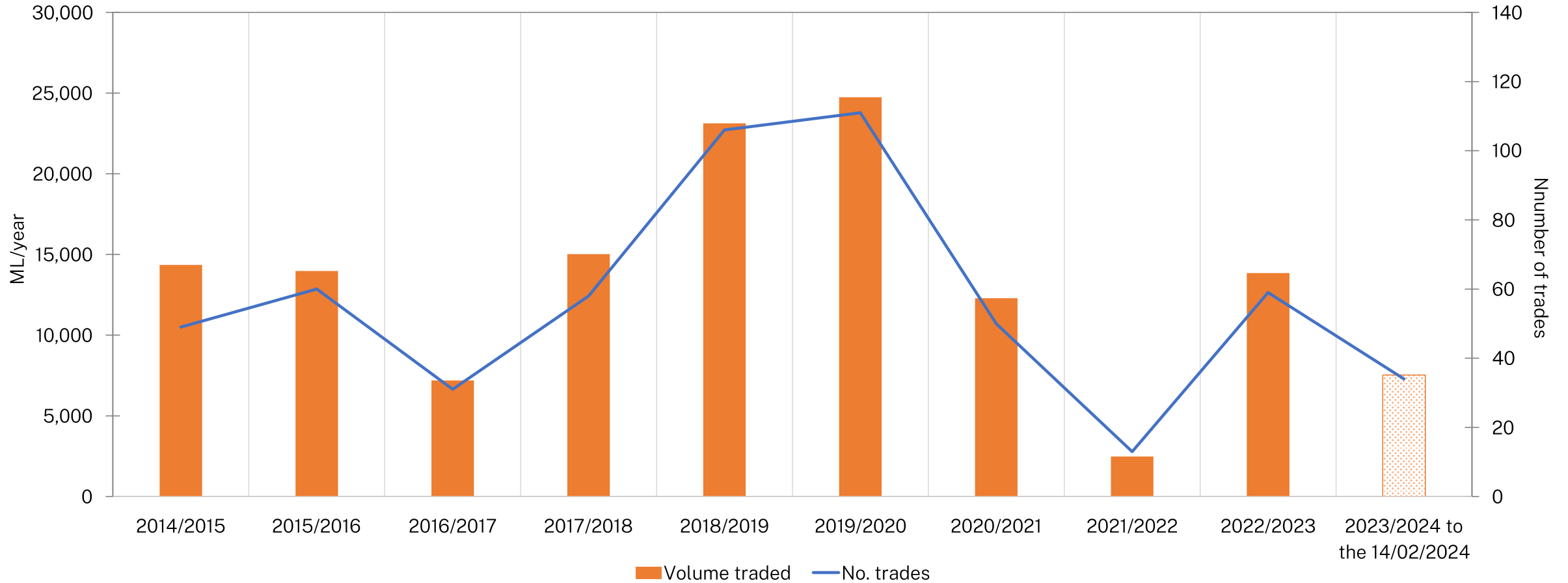


LTAEL (ML/year)	Local Water Utility Entitlement (LWU) AWD	Aquifer Access Licence (AAL) AWD	Total water in accounts (ML) [AWD + carryover]	Total water available for use (ML)
88,255	4,407	81,586	239,793	166,444

LTAEL = long term average annual extraction limit as listed in the water sharing plan for the Lower Namoi
ML/year = megalitres (one million litres) per water year
AWD = Available water determination

- The ‘theoretical maximum’ that could be used in the Lower Namoi: ~167,579 ML/year
 - AAL = 2 ML/share or 2 time your shares.
 - LWU = allocated shares (no carry over available for local water utilities)
[AAL total shares of 81,586 x 2 + LWU of 4,407 = 167,579]
- Total water available for use from water accounts = 166,444 ML
- Total water available for use from water accounts is 99% of the theoretical maximum for 2023/2024 (166,444 / 167,579 = 99%) i.e. the water accounts are almost completely full.

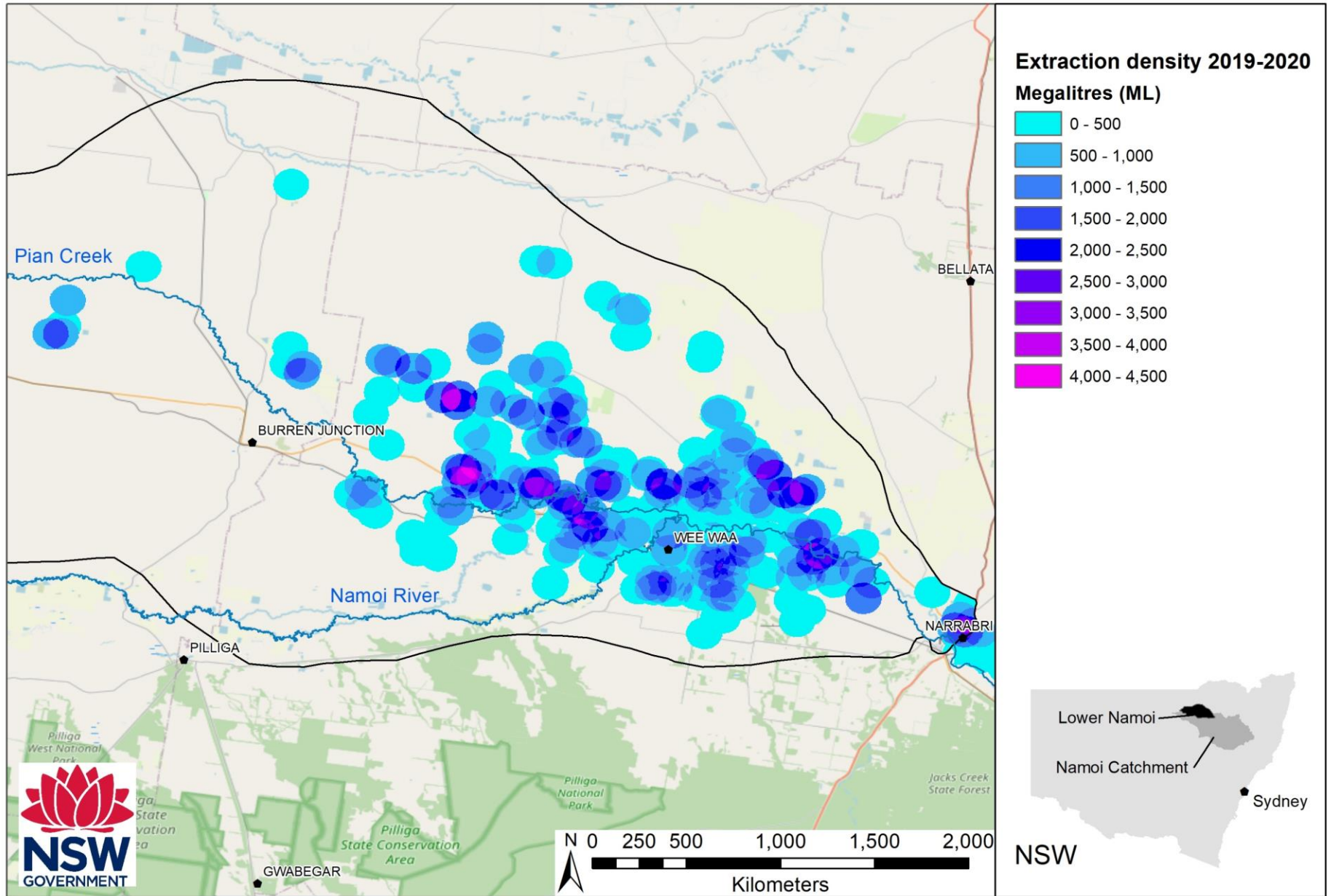
Groundwater temporary trade (71T Dealing) statistics (inclusive of all trades)



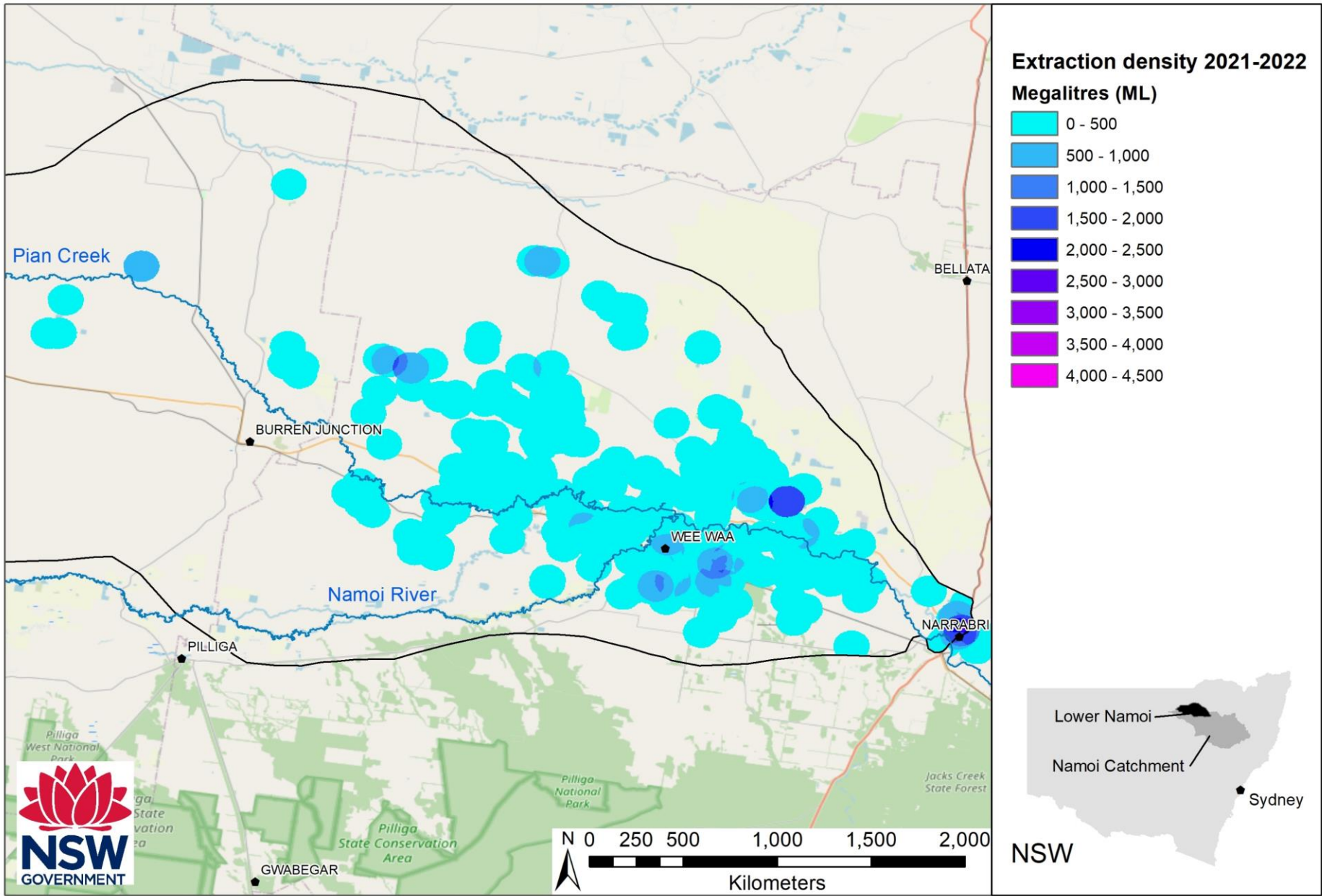
- 2023/2024 to 14 February: 34 applications in the Lower Namoi have been processed with 8,203 ML applied for and 7,530 ML approved.
- 23 of the 34 applications were sent to the department for impact assessment.
- The 23 sent for assessments represents 5,369 of the 7,530 traded = 89 % of the total traded volume to date.
- 673 ML has been refused based on impact assessment.

Extraction density maps

- The following map shows metered extraction for 2019/2020 (drought year) and 2021/2022 (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.

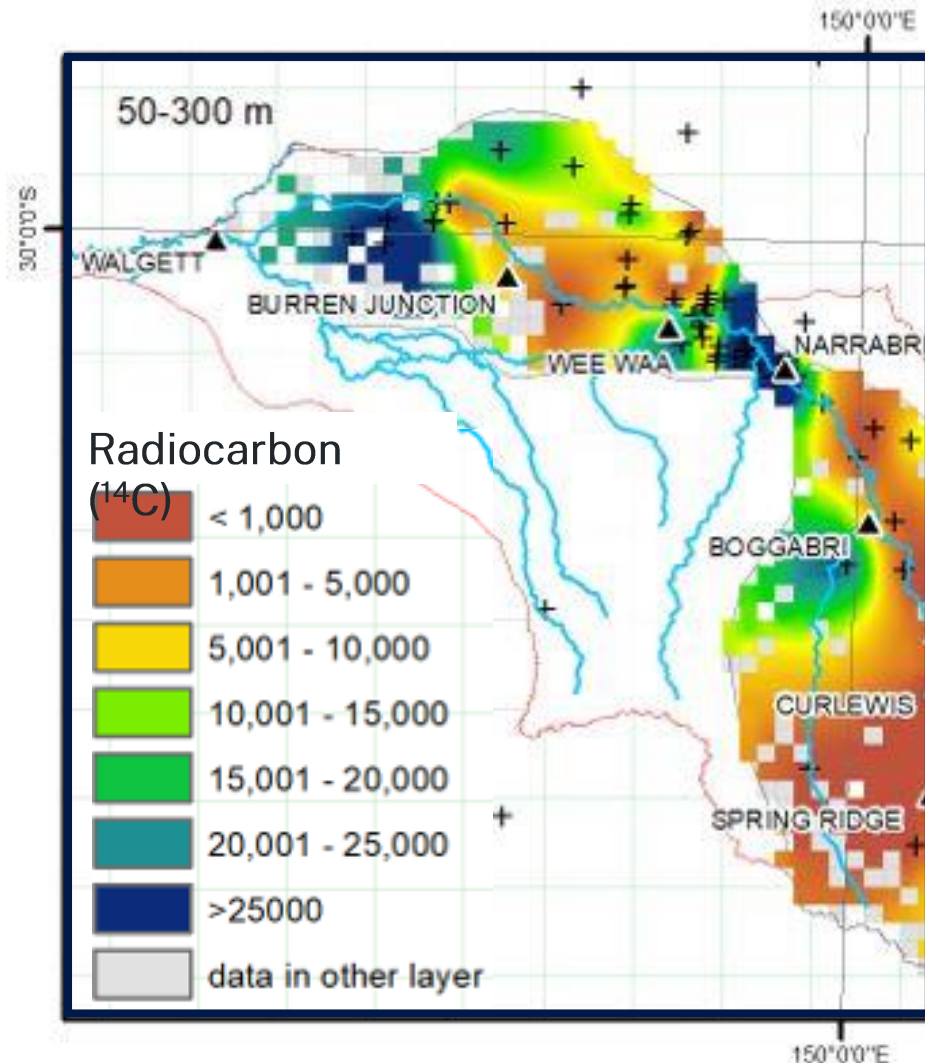


Extraction density 2019/2020



Extraction density 2021/2022

Groundwater age

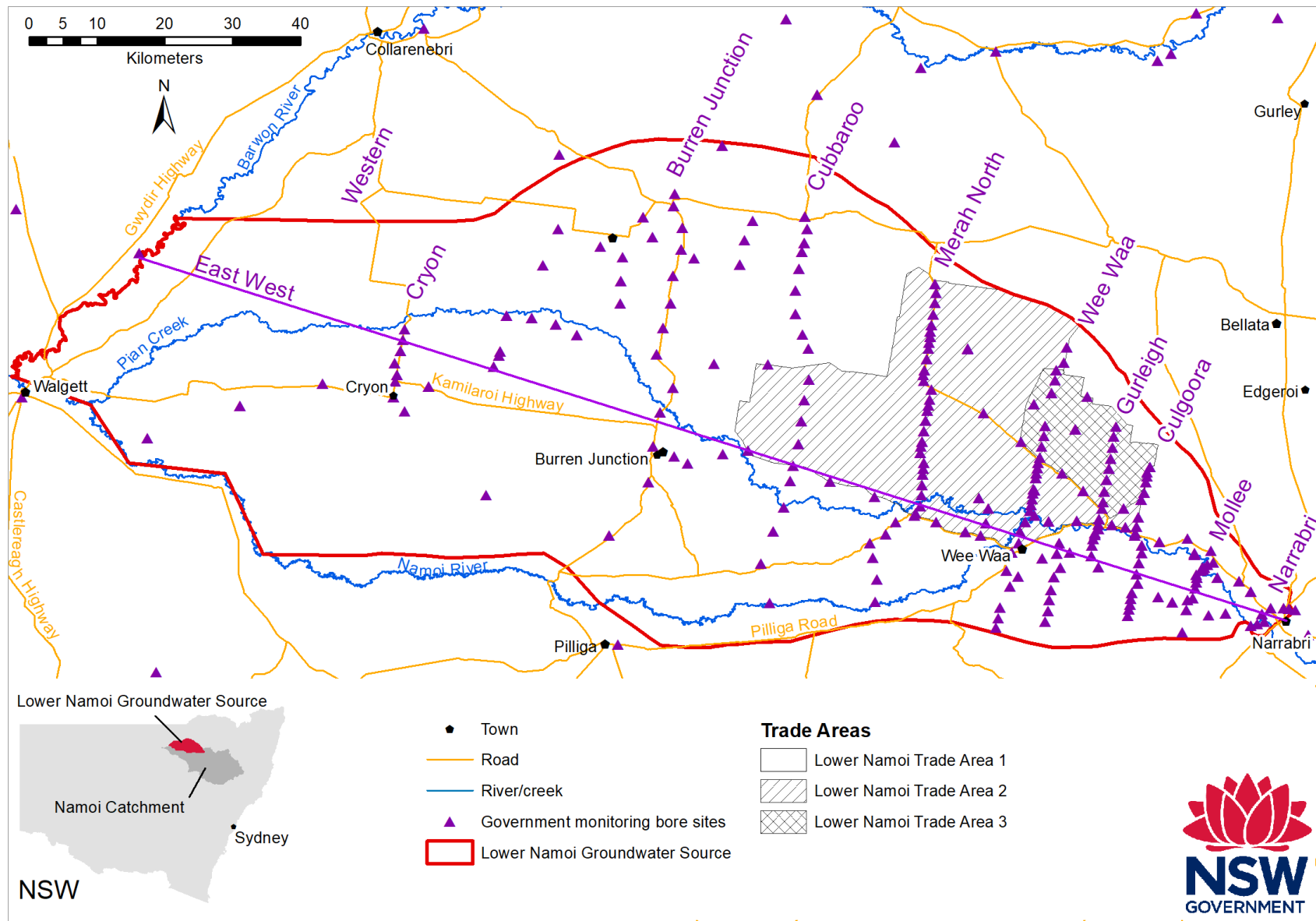


- The Department is working with Australia's Nuclear Science and Technology Organisation (ANSTO) to date groundwater to help inform groundwater management.
- The groundwater is dated using radiocarbon (^{14}C).
- Groundwater age in the Lower Namoi Alluvium ranges from 1,000 to 25,000 years old.

Reference pending publishing: ANSTO, 2023. ANSTO C-1900 Milestone III Report – Improving Groundwater Sustainability and Renewability Using Isotope Hydrochemistry. Prepared by ANSTO for the Department of Planning and Environment.

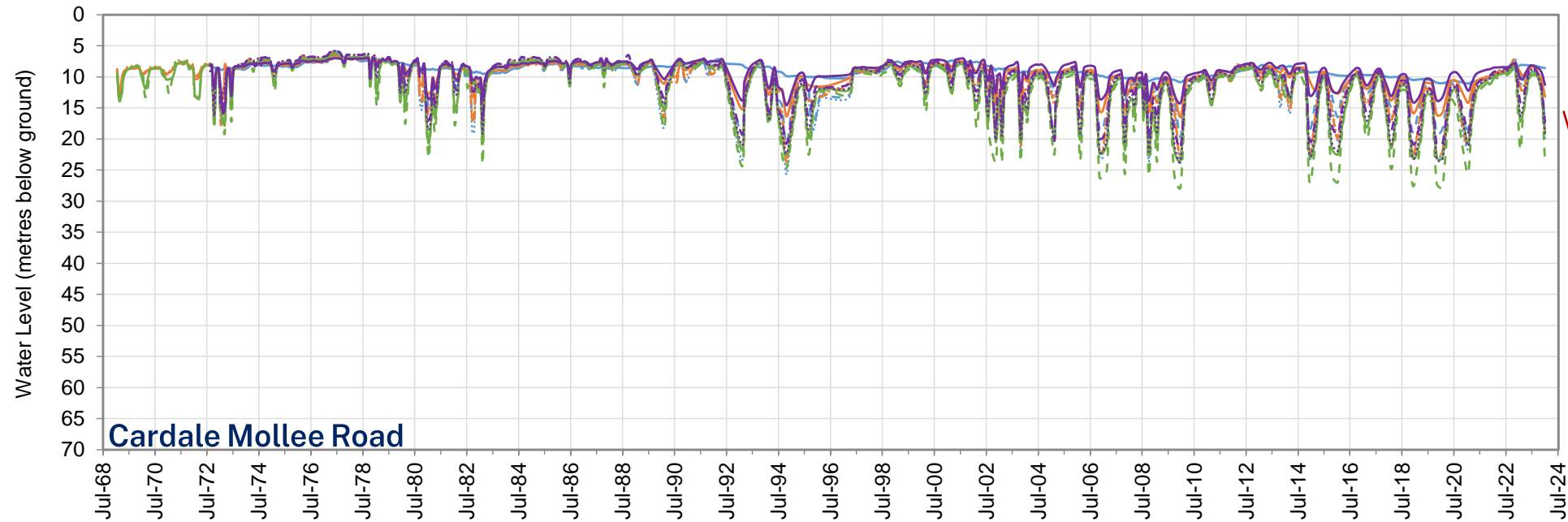
Hydrograph Location Overview

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



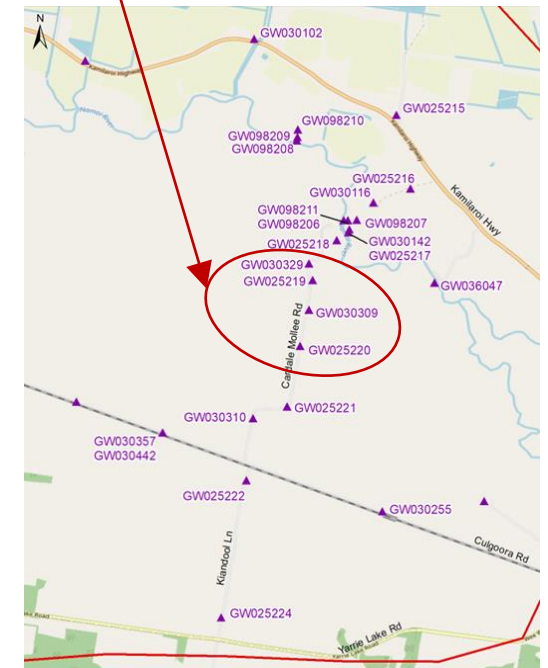
- Generally, north-south section of hydrographs are displayed, in an order from east to west within the Lower Namoi
- Each graph is the same horizontal scale (1968 to 2024). The vertical scale range has been set at 70 m.

Mollee Section

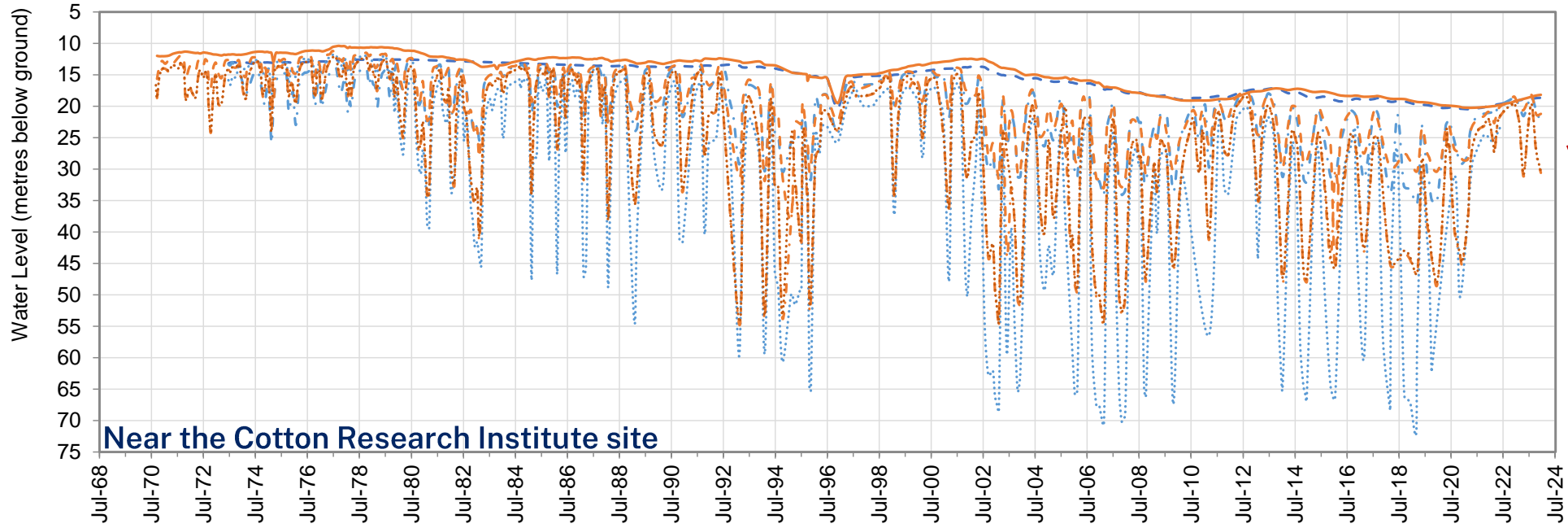
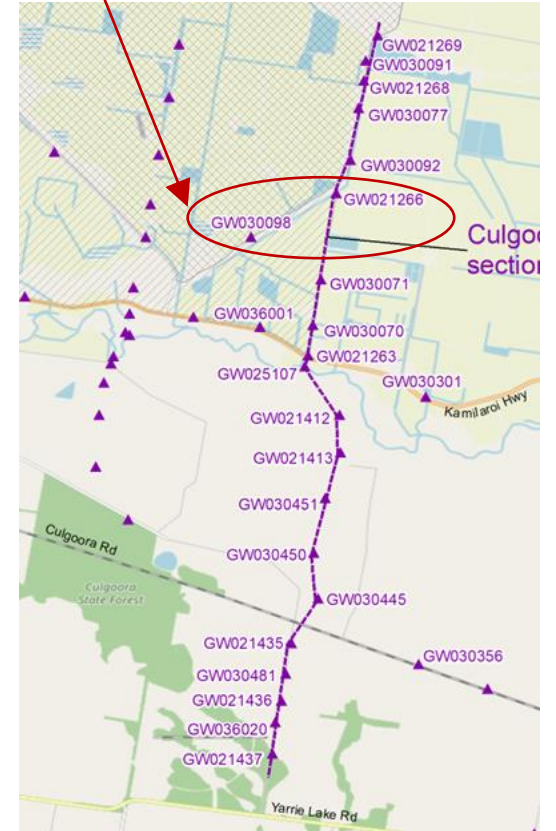


Cardale Mollee Road

- GW030329 - Pipe 1, Screen: 12 - 16 m
- GW025219 - Pipe 1, Screen: 34 - 35 m
- GW025220 - Pipe 1, Screen: 24.4 - 30.5 m
- - - GW030309 - Pipe 2, Screen: 51 - 53 m
- - - GW030329 - Pipe 2, Screen: 25 - 31 m
- - - GW025219 - Pipe 2, Screen: 44 - 47 m
- - - GW025220 - Pipe 3, Screen: Missing m
- GW030309 - Pipe 3, Screen: 84 - 85 m
- GW030329 - Pipe 3, Screen: 53 - 59 m
- GW025219 - Pipe 3, Screen: 56 - 61 m
- GW030309 - Pipe 1, Screen: 18 - 20 m

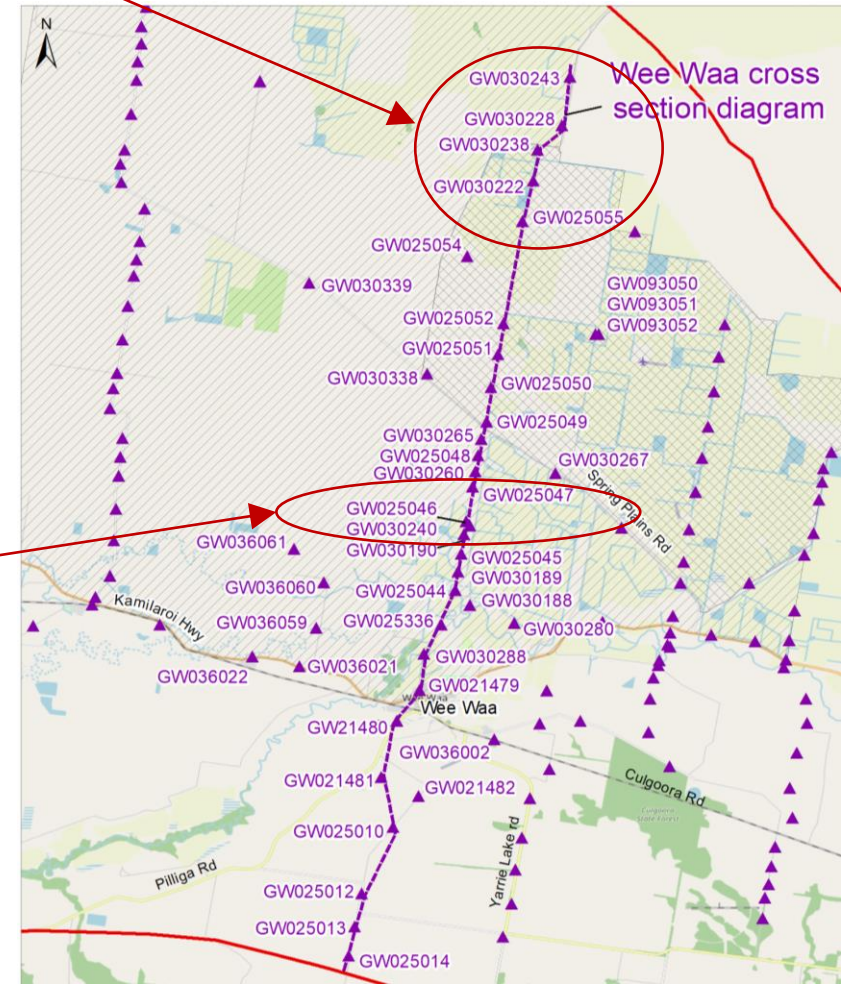
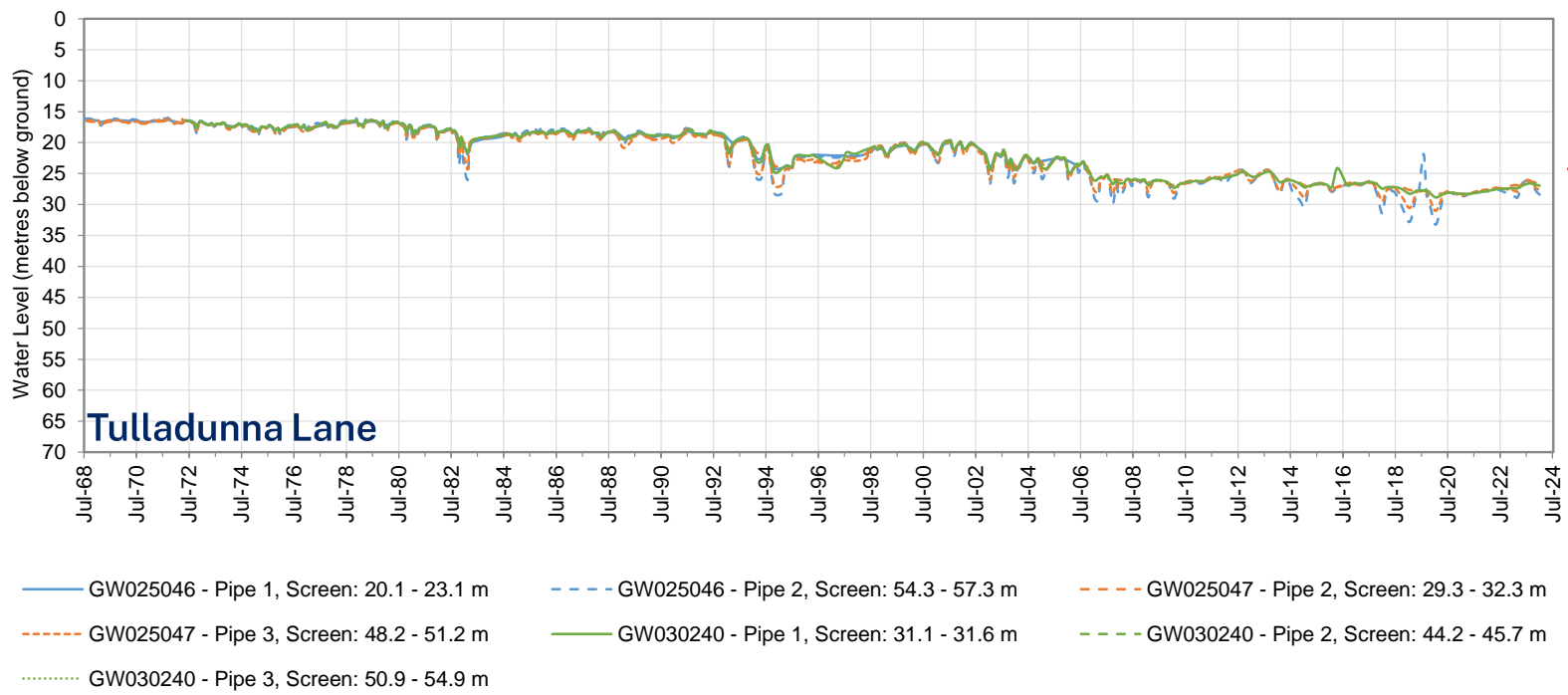
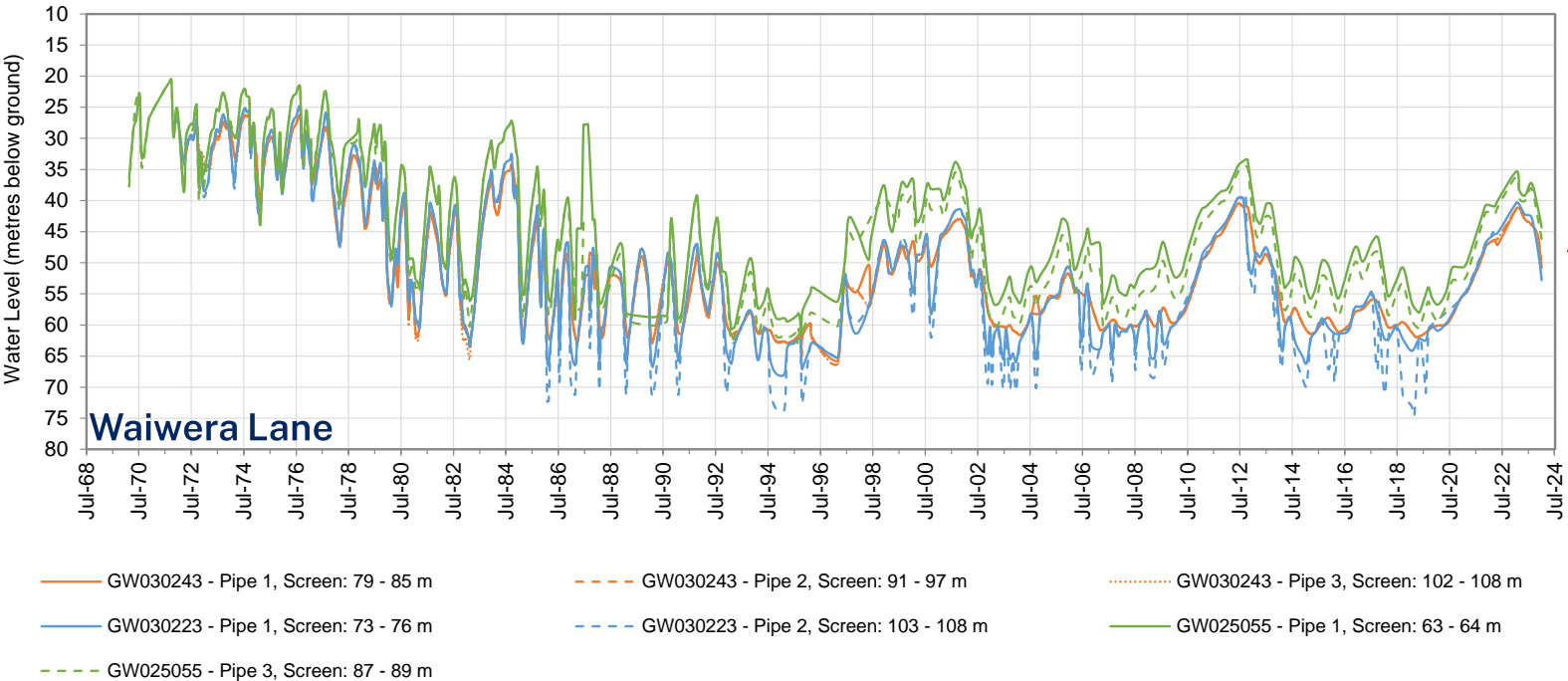


Culgoora Section

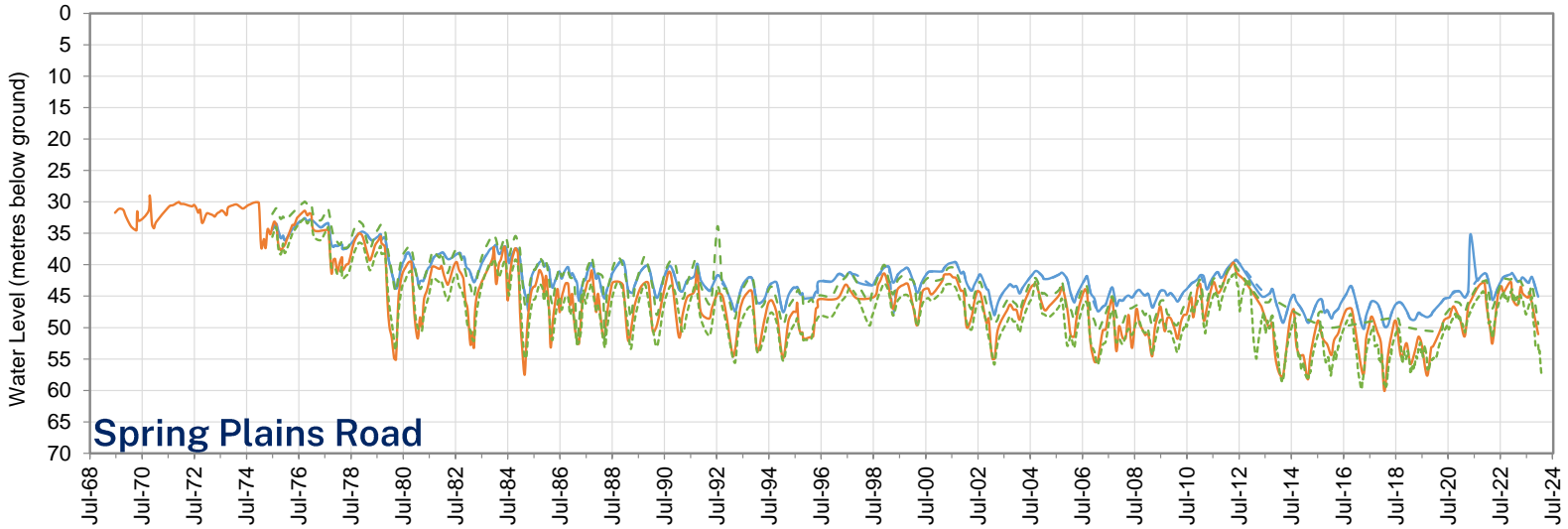


- GW021266 - Pipe 2, Screen: 38 - 40 m
- GW021266 - Pipe 3, Screen: 64 - 70 m
- GW021266 - Pipe 4, Screen: 107 - 113 m
- GW030098 - Pipe 1, Screen: 15 - 21 m
- GW030098 - Pipe 2, Screen: 58 - 64 m
- GW030098 - Pipe 3, Screen: 73 - 88 m
- GW030098 - Pipe 4, Screen: 100 - 113 m

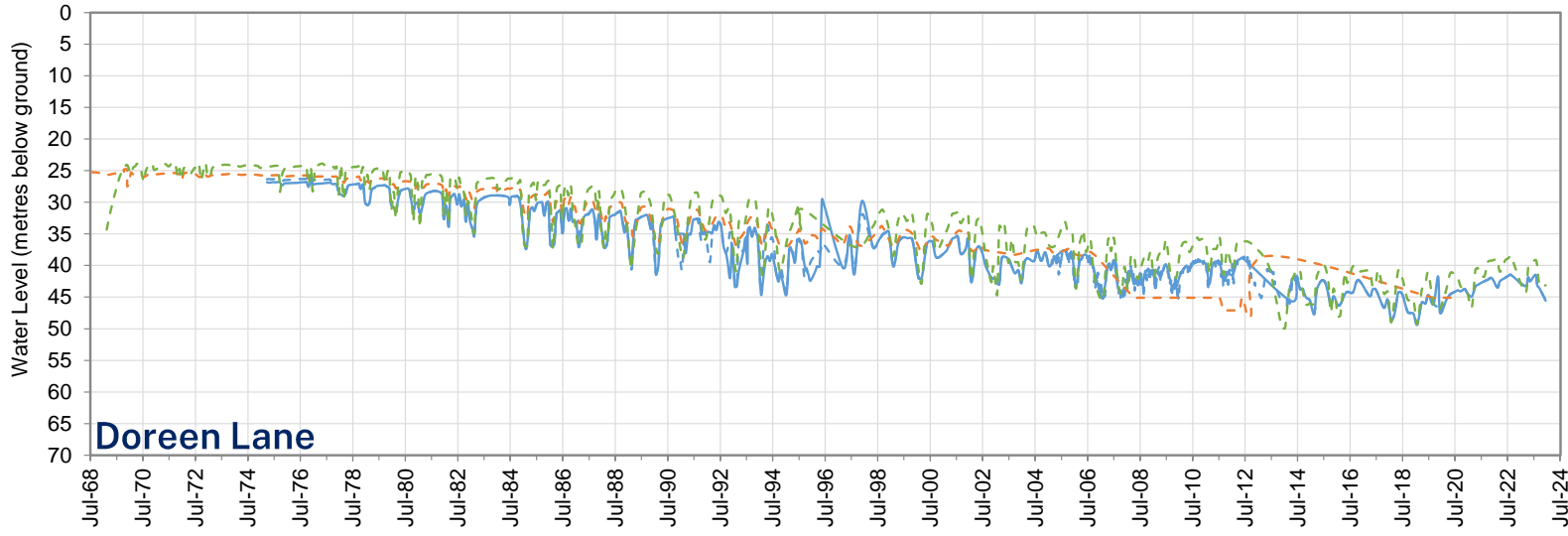
Wee Waa Section



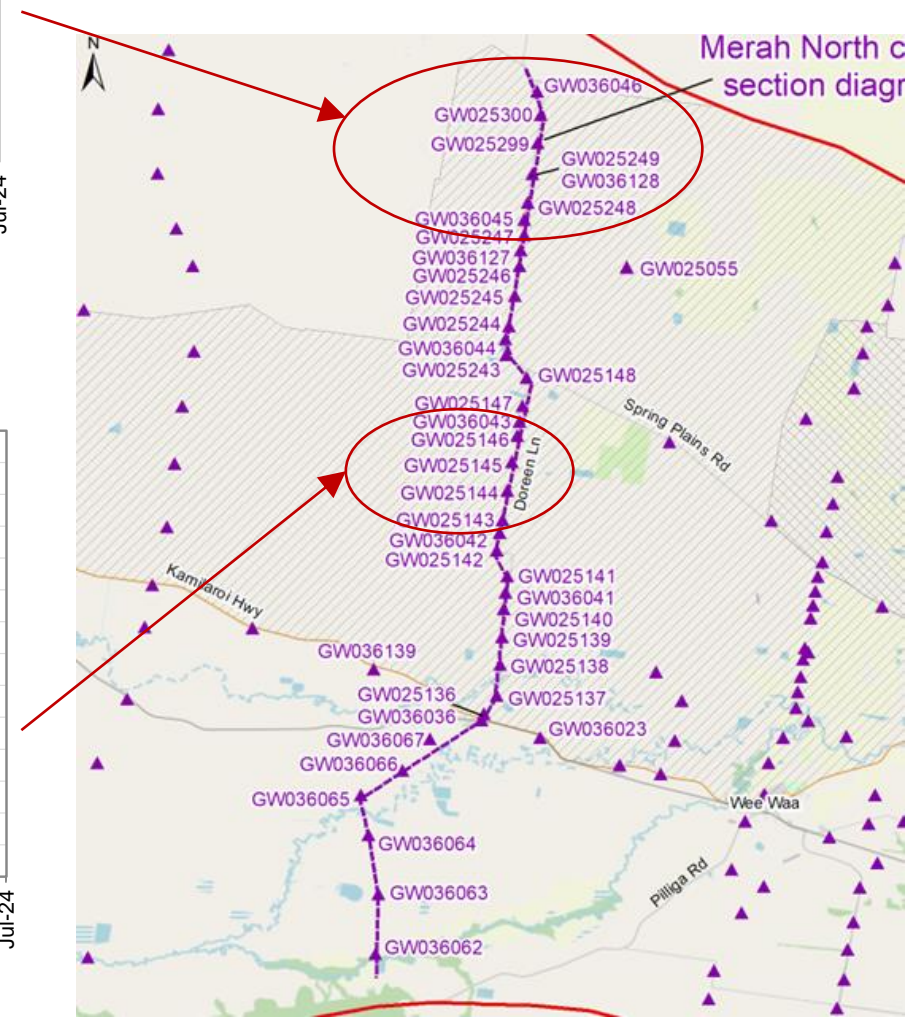
Merah North Section



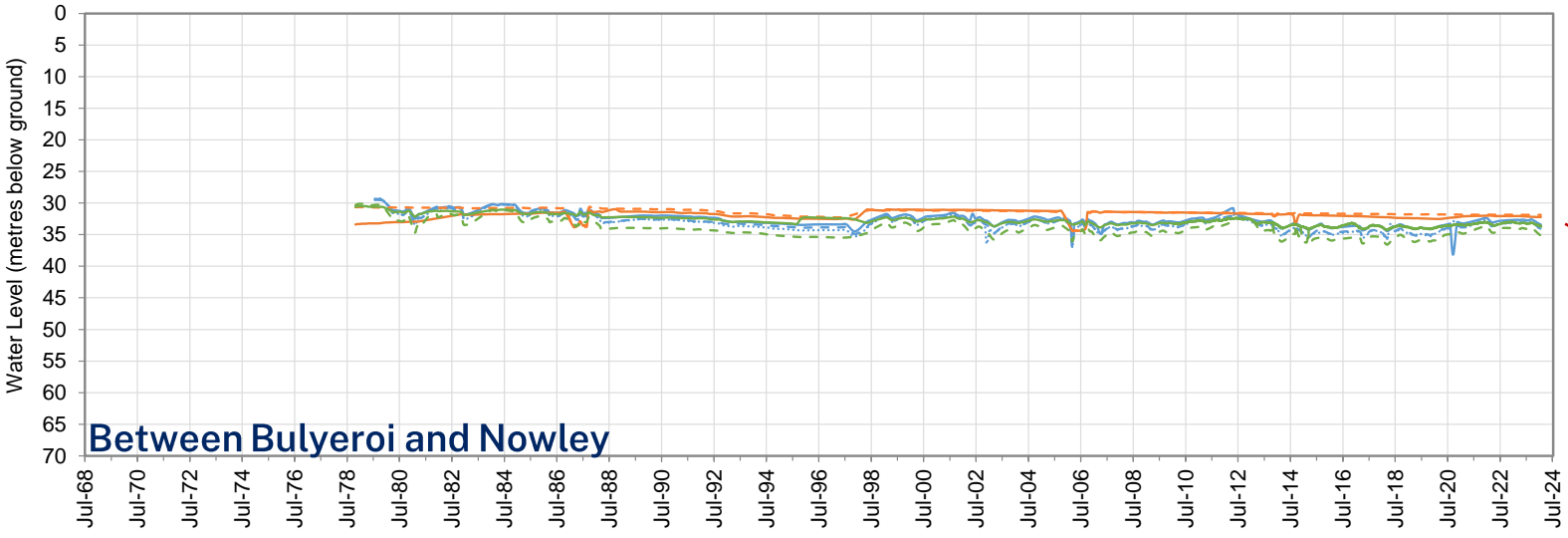
- GW036046 - Pipe 1, Screen: 67 - 69 m
- - - GW036046 - Pipe 2, Screen: 76 - 79 m
- GW025299 - Pipe 1, Screen: 67 - 70 m
- - - GW036045 - Pipe 2, Screen: 72 - 75 m
- - - GW036045 - Pipe 3, Screen: 111 - 116 m



- GW036043 - Pipe 1, Screen: 57 - 60 m
- - - GW036043 - Pipe 2, Screen: 66 - 70 m
- - - GW025145 - Pipe 3, Screen: Depth 70 m
- - - GW025143 - Pipe 3, Screen: Depth 76 m

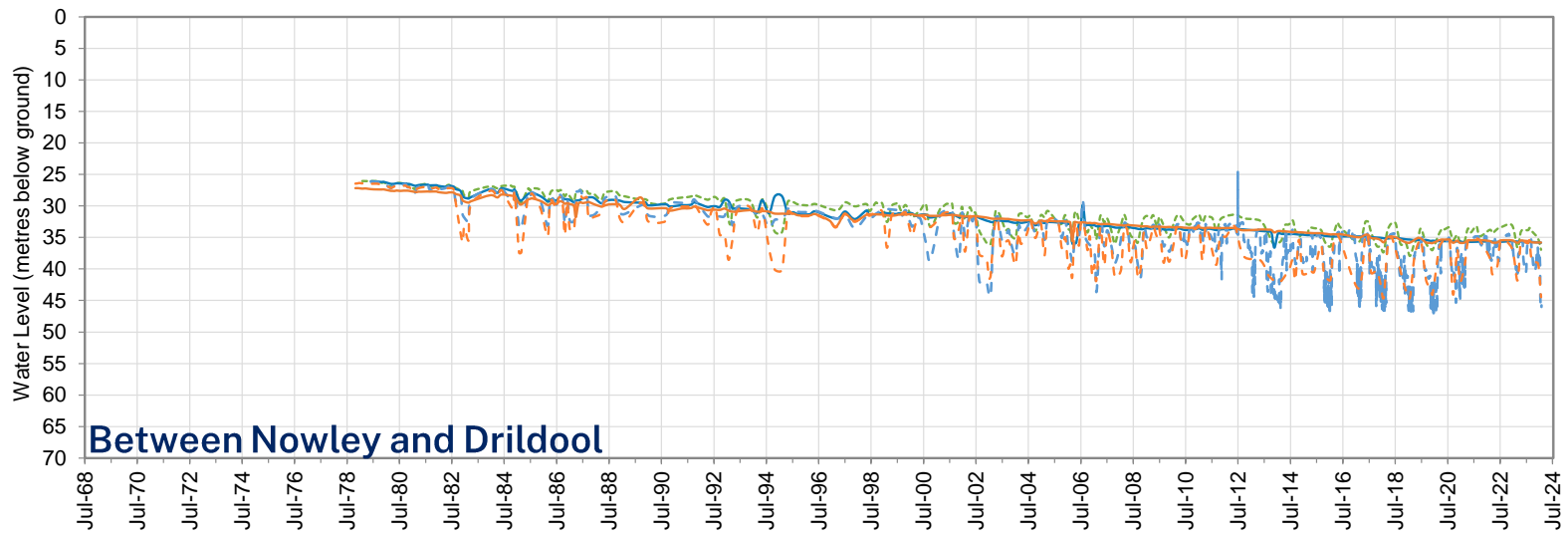


Cubbaroo Section



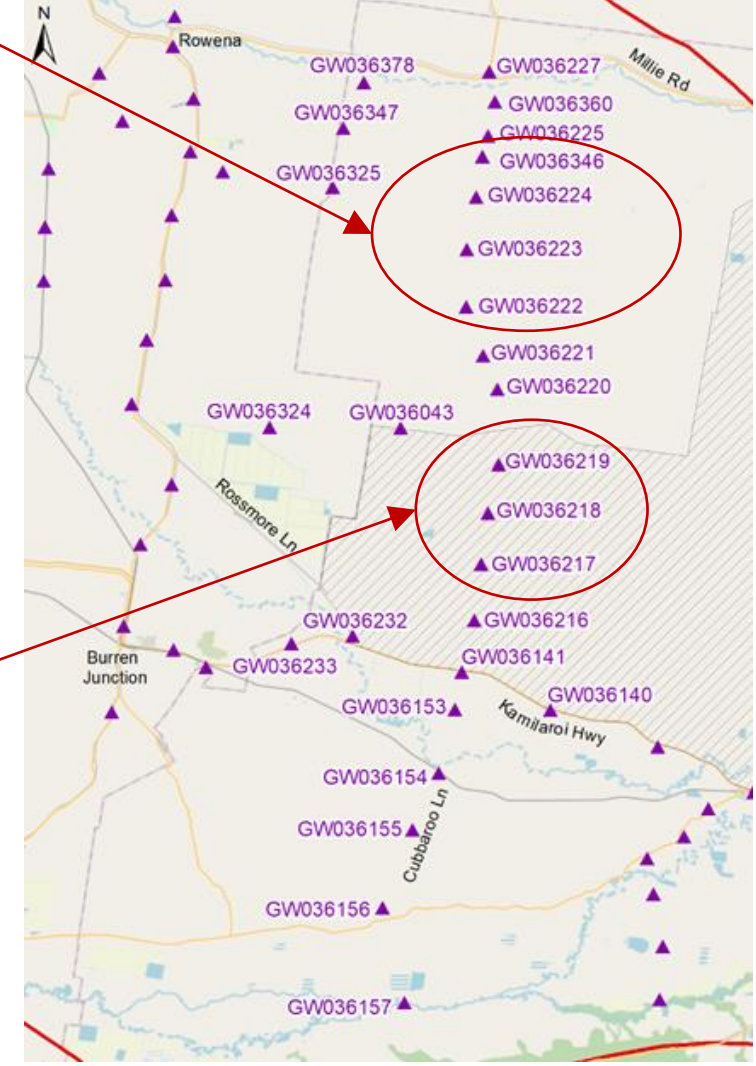
Between Bulyeroi and Nowley

- GW036346 - Pipe 1, Screen: 52 - 55 m
- GW036222 - Pipe 1, Screen: Depth 36 m
- - - GW036346 - Pipe 2, Screen: 73 - 76 m
- - - GW036222 - Pipe 2, Screen: 50 - 53 m
- GW036346 - Pipe 3, Screen: 97 - 100 m
- GW036224 - Pipe 1, Screen: 49 - 52 m
- - - GW036224 - Pipe 2, Screen: 74 - 80 m

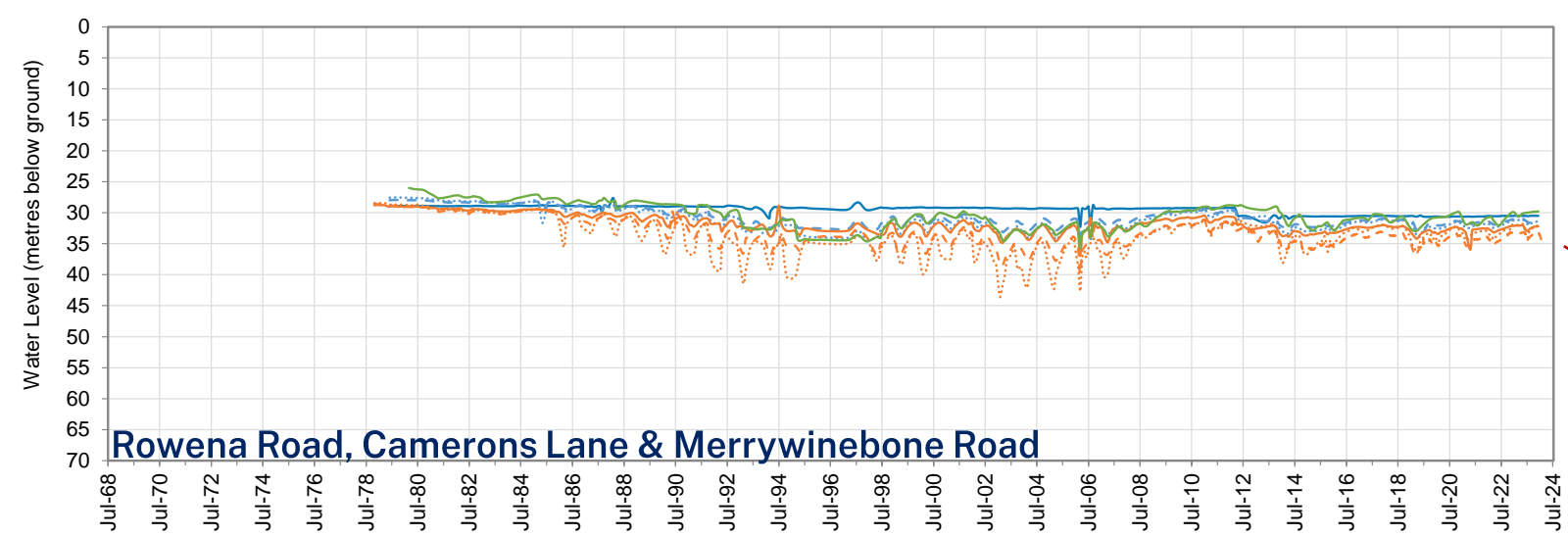


Between Nowley and Drilpool

- - - GW036217 - Pipe 3, Screen: 56.0 - 59.1 m
- GW036218 - Pipe 1, Screen: 33.5 - 36.2 m
- - - GW036218 - Pipe 2, Screen: 54.8 - 61.0 m
- GW036219 - Pipe 1, Screen: 32.9 - 35.9 m
- - - GW036219 - Pipe 2, Screen: 67.1 - 73.2 m

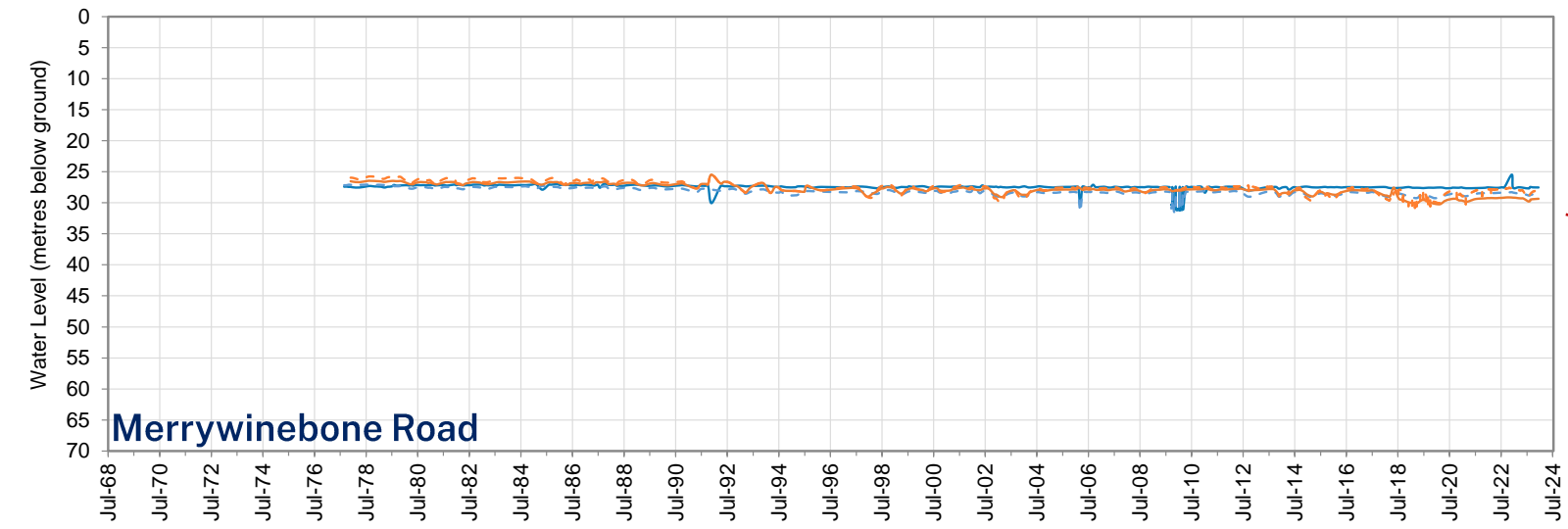


Burren Junction Section



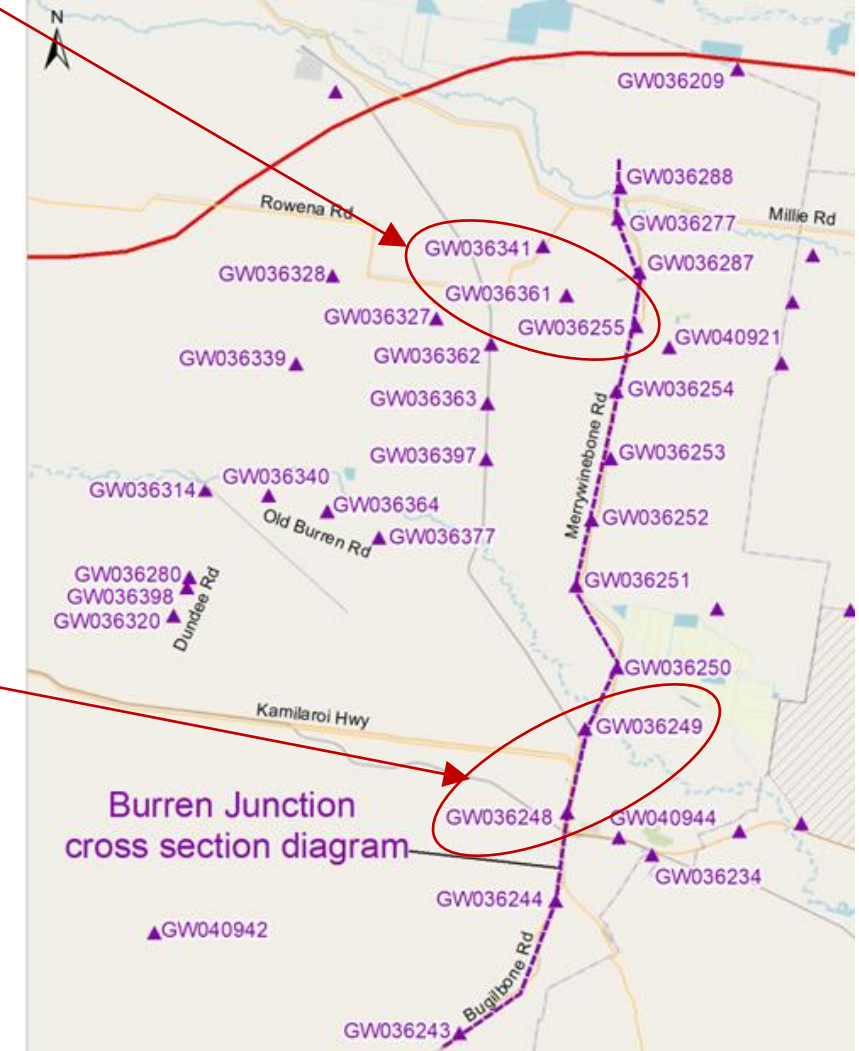
Rowena Road, Camerons Lane & Merrywinebone Road

- GW036341 - Pipe 1, Screen: 40 - 43 m
- - - GW036341 - Pipe 2, Screen: 66 - 72 m
- ⋯ GW036341 - Pipe 3, Screen: 82 - 88 m
- GW036255 - Pipe 1, Screen: 61 - 64 m
- - - GW036255 - Pipe 2, Screen: 76 - 79 m
- ⋯ GW036255 - Pipe 3, Screen: 113 - 115 m
- GW036362 - Pipe 1, Screen: 85 - 91 m



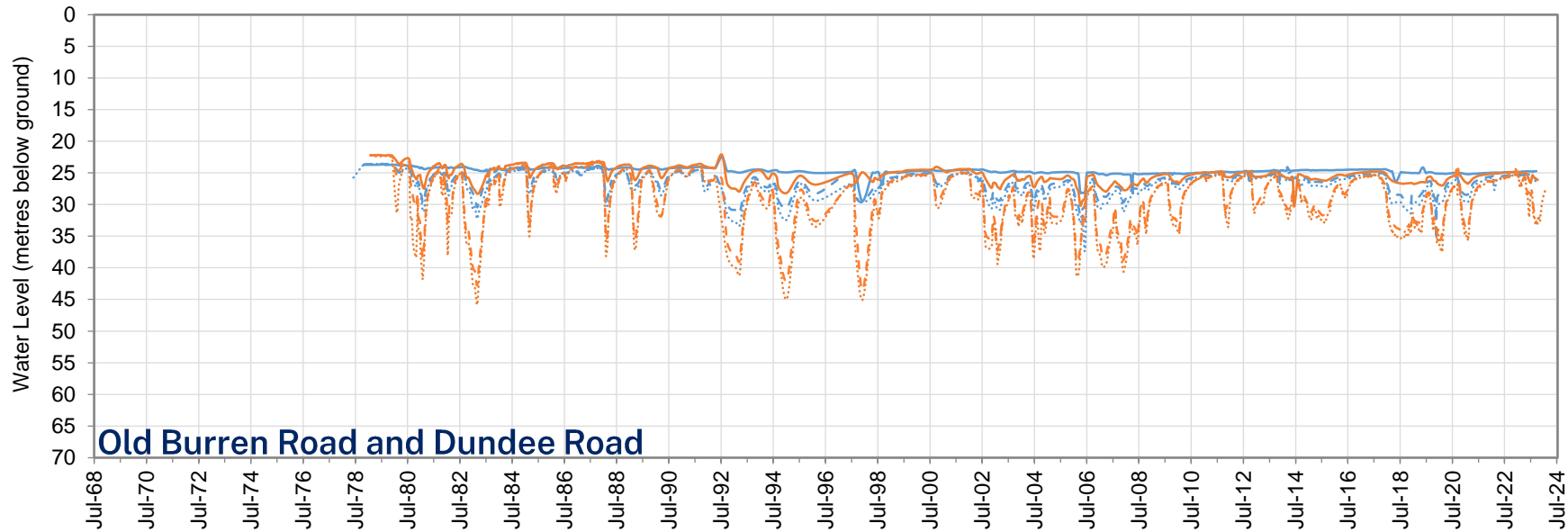
Merrywinebone Road

- GW036248 - Pipe 1, Screen: 27 - 30 m
- - - GW036248 - Pipe 2, Screen: 64 - 68 m
- GW036249 - Pipe 1, Screen: 42 - 45 m
- - - GW036249 - Pipe 2, Screen: 62 - 68 m



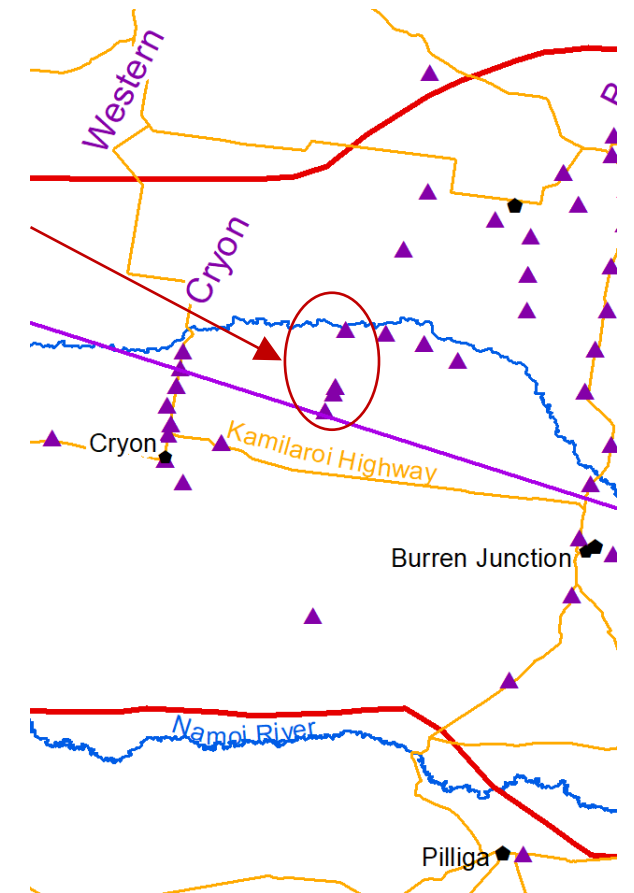
Burren Junction cross section diagram

Cryon Section



Old Burren Road and Dundee Road

- GW036314 - Pipe 1, Screen: 29 - 30 m
- - - GW036314 - Pipe 2, Screen: 51 - 54 m
- GW036314 - Pipe 3, Screen: 60 - 64 m
- GW036320 - Pipe 1, Screen: 35 - 38 m
- - - GW036320 - Pipe 2, Screen: 54 - 55 m
- GW036320 - Pipe 3, Screen: 64 - 69 m



Status report summary – Lower Namoi



- The third-party impact assessment criteria for temporary trades will commence for the Lower Namoi Groundwater Source from 1 July 2024.
- A third-party consent process for temporary trades will commence 1 July 2024 - WaterNSW process.
- The carry over and account volumes have restored over the last few years in response to reduced extraction.
- Culgoora, Wee Waa and Merah North sections show some recovery since 2020, however to a lower level than the last recovery event around 2012 at most sites.
- The Cubbaroo and Burren Junction sections show no notable response to the wetter period since 2020 other than less seasonal drawdown in response to less extraction.
- Based on current pumping trends, groundwater levels are likely to continue to decline over time in the areas north of the Kamilaroi Highway between the Culgoora and Cubbaroo Sections.
- To the east of the Mollee Section and to the west of Burren Junction, the groundwater level trends are generally stable.

Additional information

- The 2023 groundwater annual report for the Lower Namoi is available under the 'Reports' section at:

<https://www.dpie.nsw.gov.au/water/science-data-and-modelling/groundwater-management-and-science/groundwater-document-library>

- Groundwater level information is freely available from the WaterNSW 'Real-Time Data':

[Real-time water data \(waterNSW.com.au\)](http://waterNSW.com.au)

- The Real-Time Data website will be eventually be superseded by the WaterNSW 'WaterInsights':

[WaterInsights-WaterNSW](#)