

IPC Public Hearing TAHMOOR SOUTH

Fifteen Minute Presentation by Dr Philip Pells
17 February 2021

WORLD HERITAGE

NSW GOV. STATEMENT

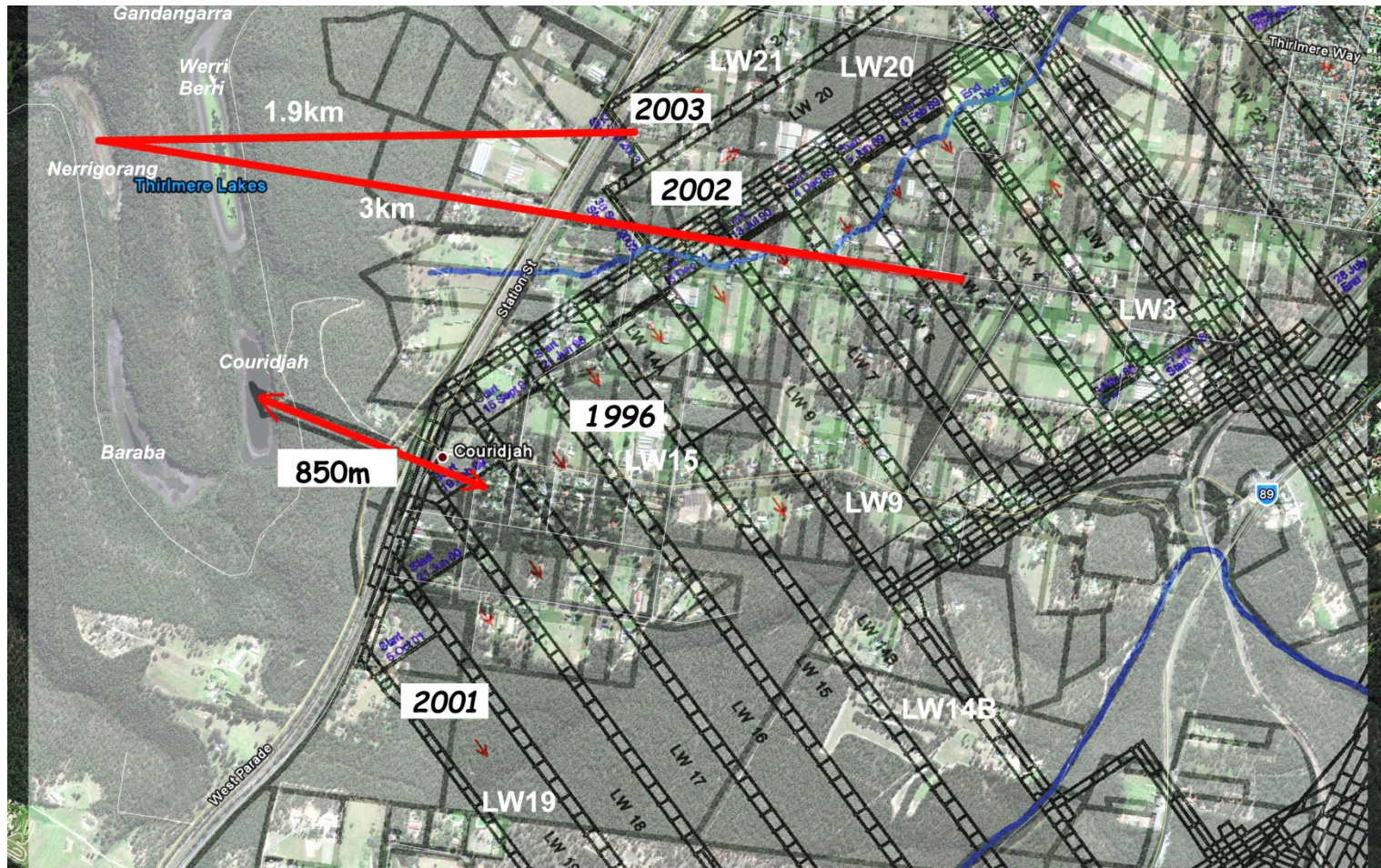


Within Thirlmere Lakes National Park are five unpolluted fresh water lakes approximately 15 million years old. Over time, lakes and wetlands normally dry out through the build-up of sediments. However, at Thirlmere Lakes the combined size and shape of the lakes' catchment area has slowed this aging process and the stability of the landscape has enabled many aquatic organisms to evolve in isolation. Consequently, this area is an outdoor laboratory of great scientific importance. The lakes sustain large numbers of plankton, midge larvae (belonging

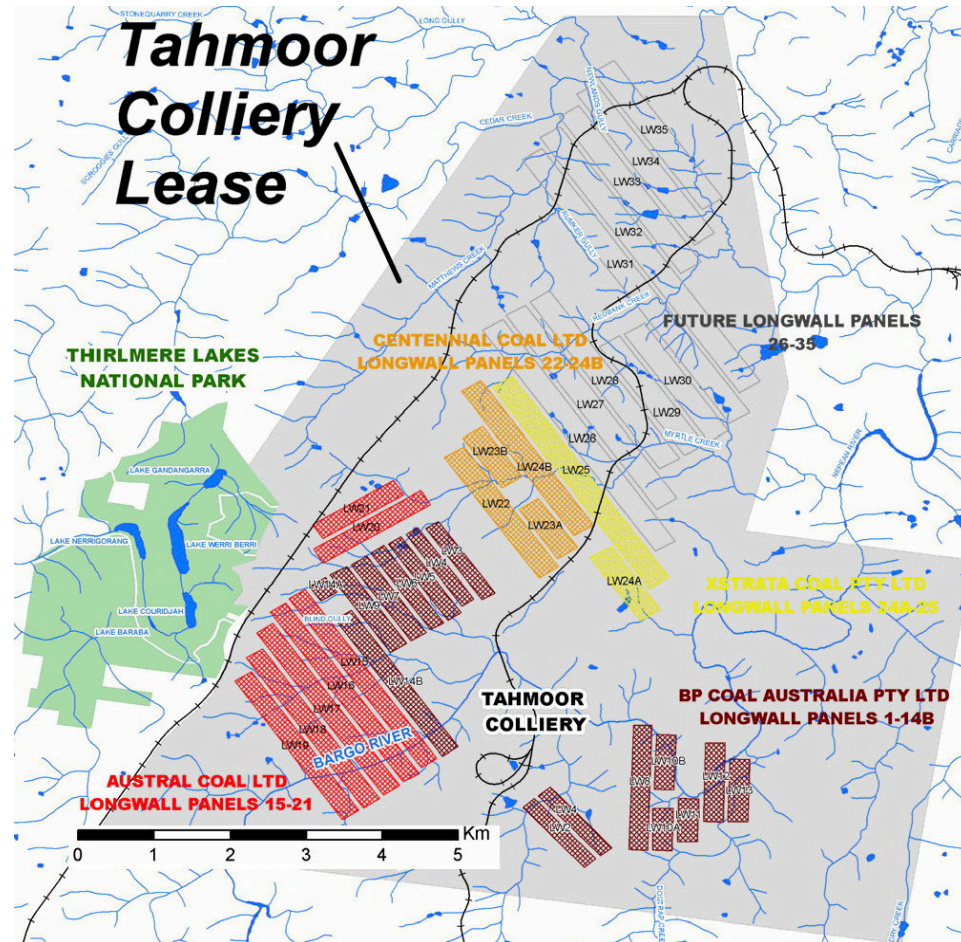
to the genus *Chaevorous*) and the freshwater sponge *Radiospongilla sceptra*, which are unique to the lakes and a few other restricted locations. The lake edges support freshwater plants such as floating herbs, rushes and waterlilies. On the slopes and ridges surrounding the lakes are eucalypt woodlands dominated by Sydney Peppermint, Red Bloodwood and Rough-barked Apple. The lakes are the traditional home of the Dharawal and Gundungurra Aboriginal people.

Longwalls Closest to Thirlmere Lakes

Dates and Distances

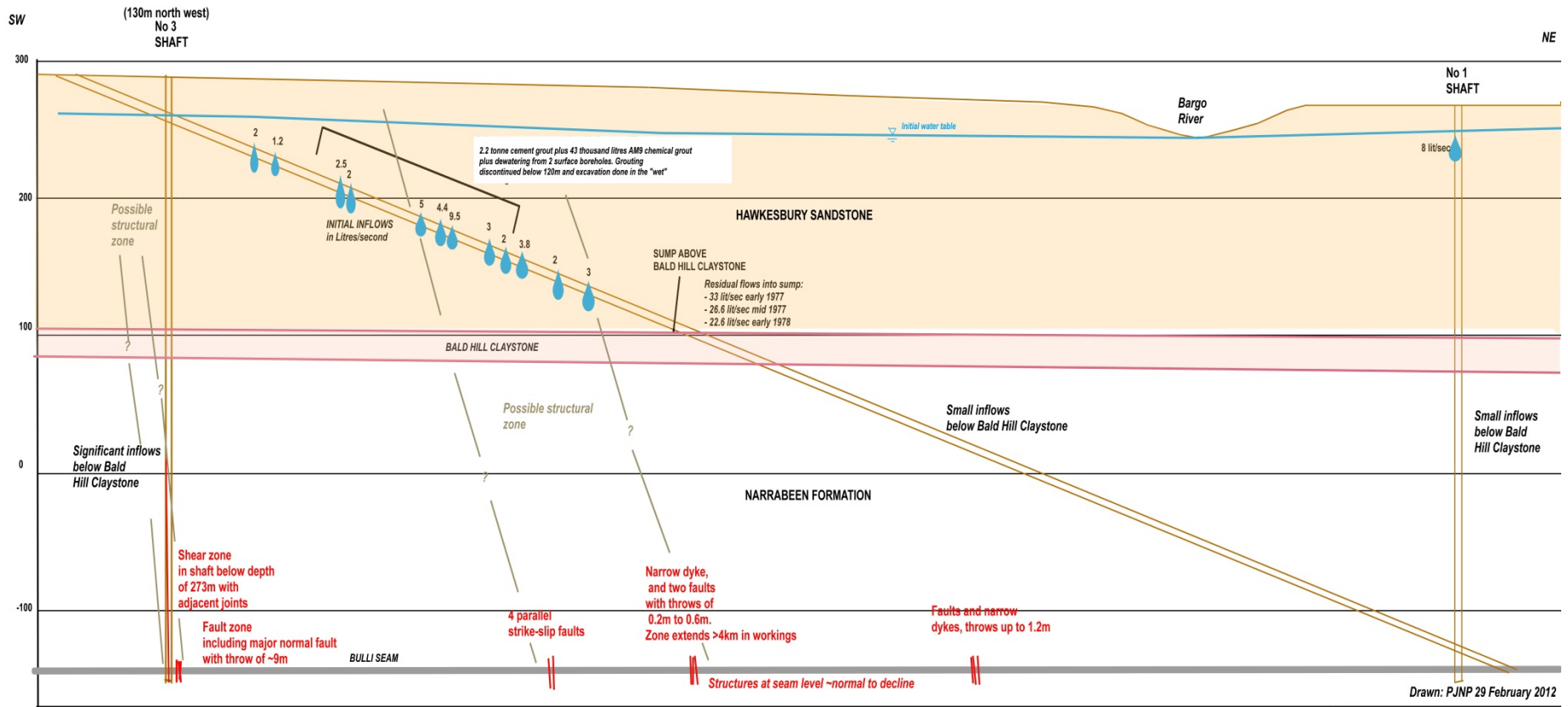


Initial Mining by 3 different Companies including longwalls closest to Lakes; inflows into the mine discharged to Bargo River

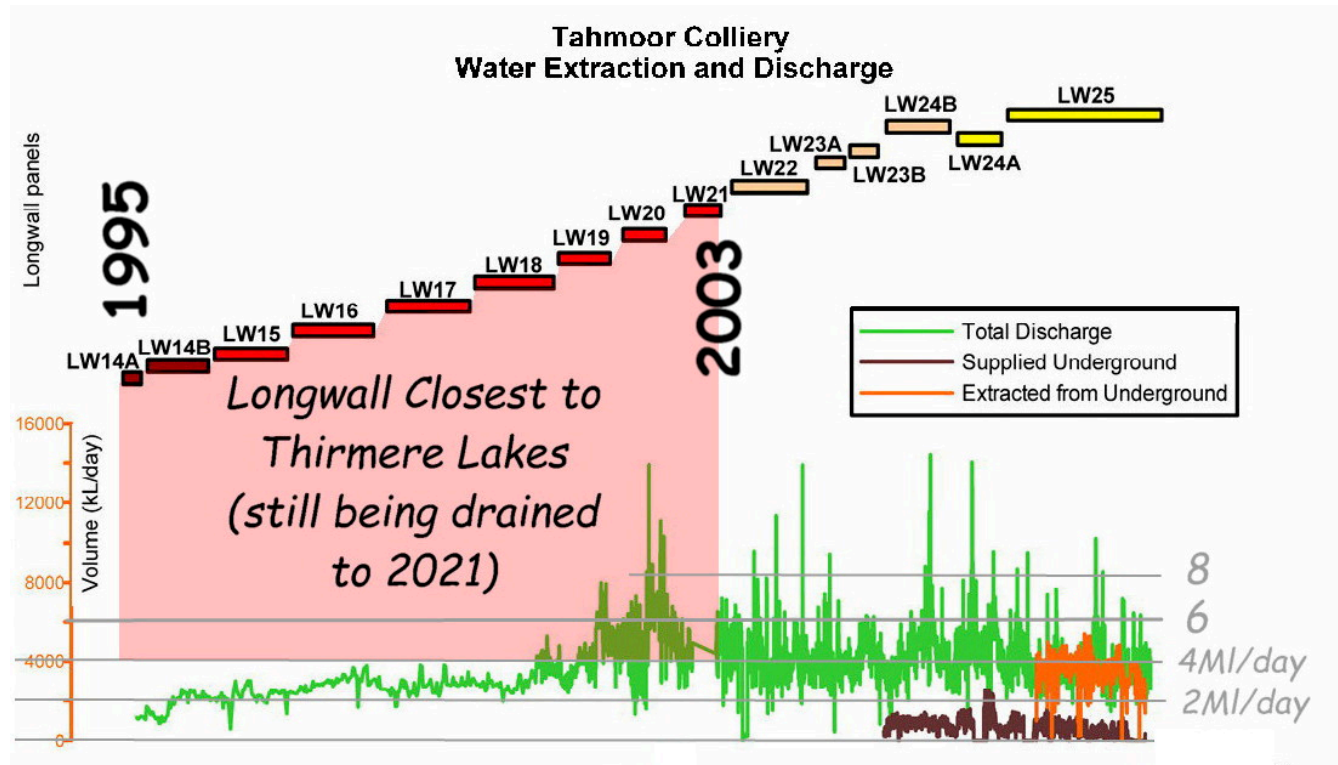


Tahmoor Decline

Substantial Inflows from the Hawkesbury SST (22 lit/sec 1978)



Water pumped from Tahmoor Mine up to 2010



"In the last 4-5 year period, total water make has been fairly steady at around 3-4ML/day"
p50 GW Assessment)

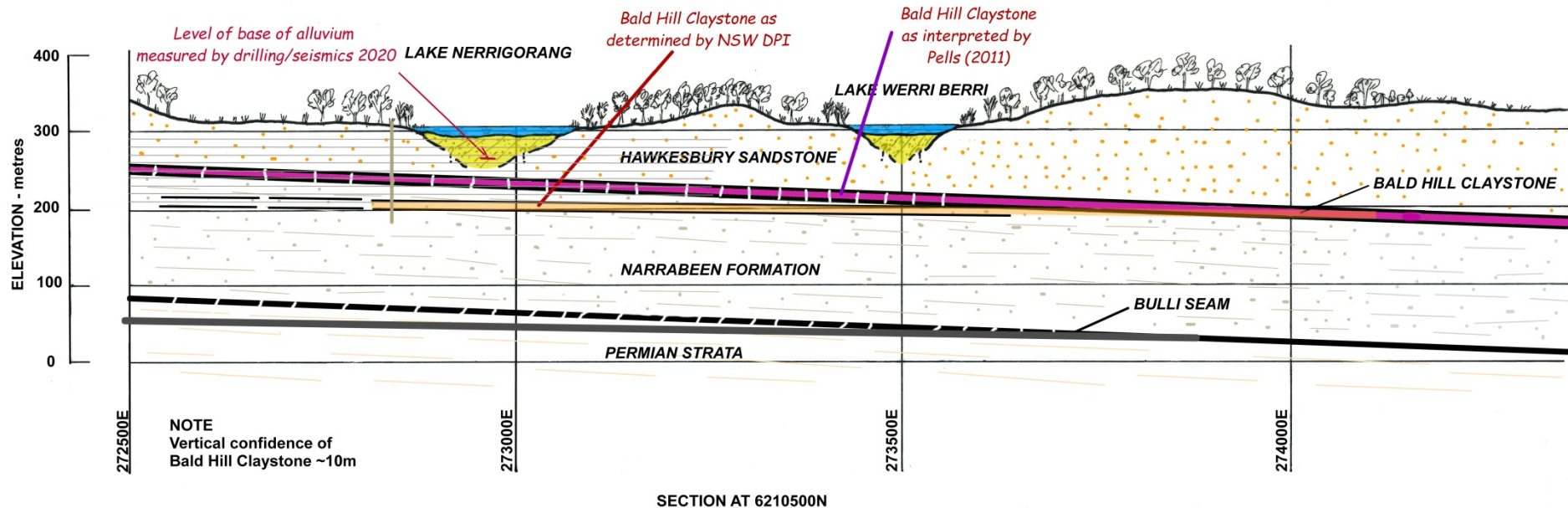
Inflows of groundwater into the area of Longwalls 14 to 21 have continued for 40 years and would continue at least until completion of Tahmoor South

West-East Geological Section

The Bald Hill Claystone is not an aquiclude of substance, Viz:

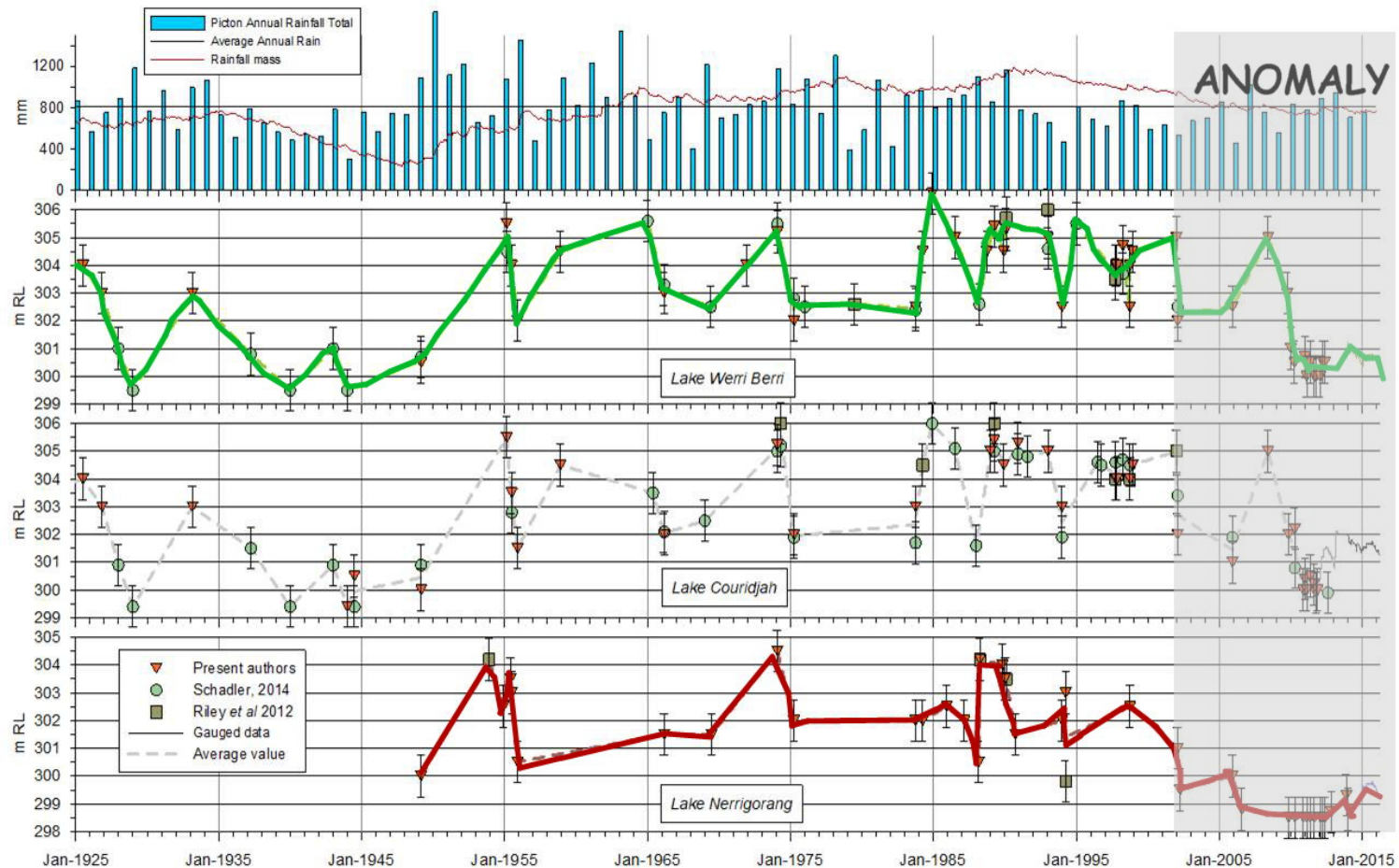
“Bald Hill Claystone

- Is not a classic lacustrine or marine shale.*
- Significant evidence of a volcanic source.*
- The observation of brittle “Natural Fractures” and non-swelling cays indicate that this claystone is not a regional aquitard.”* TRP Science day August 2020



Historical Levels to 2015

The anomaly commencing in about 2001 is unexplained

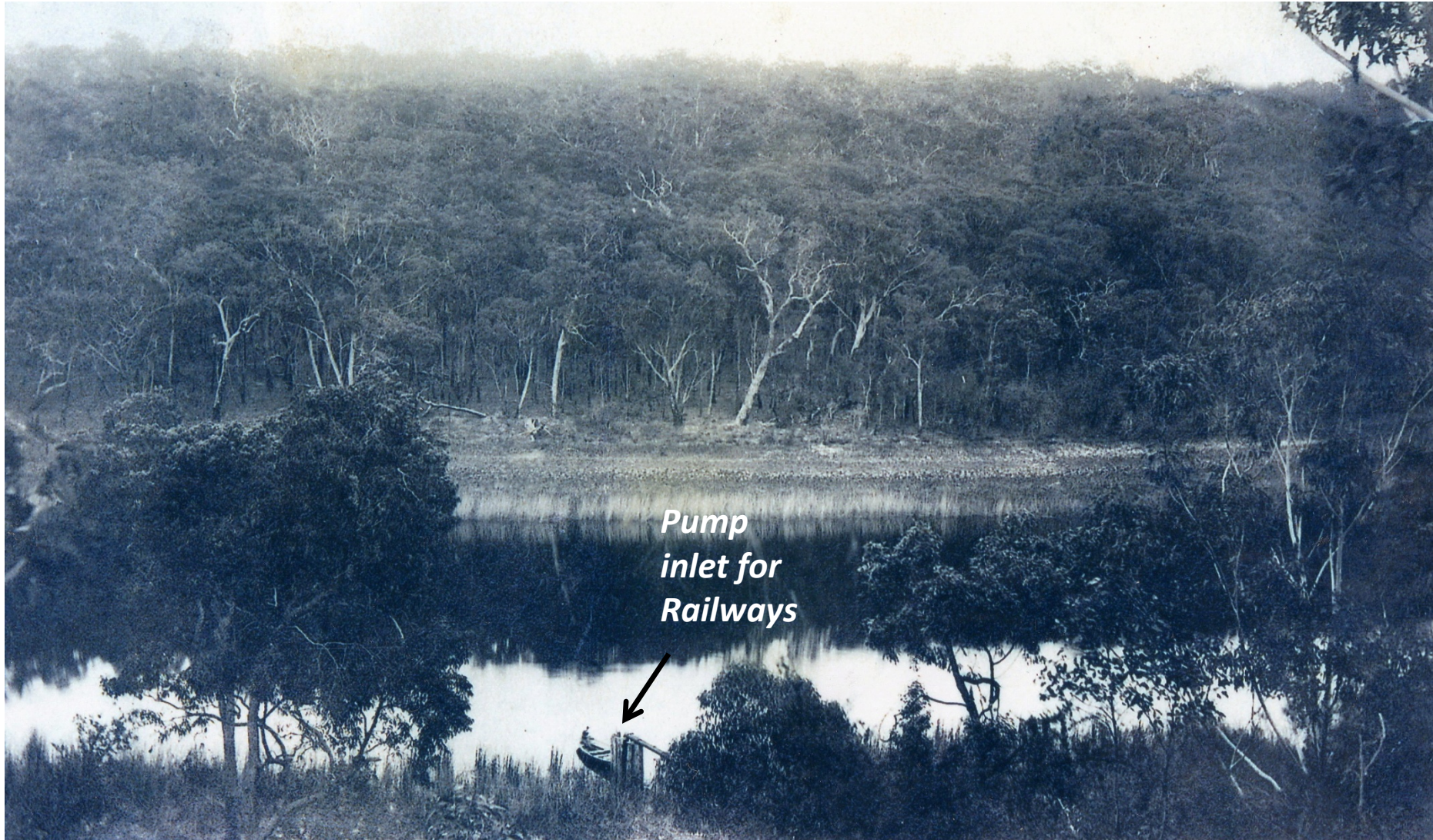


Earliest drawing of Couridjah
1877



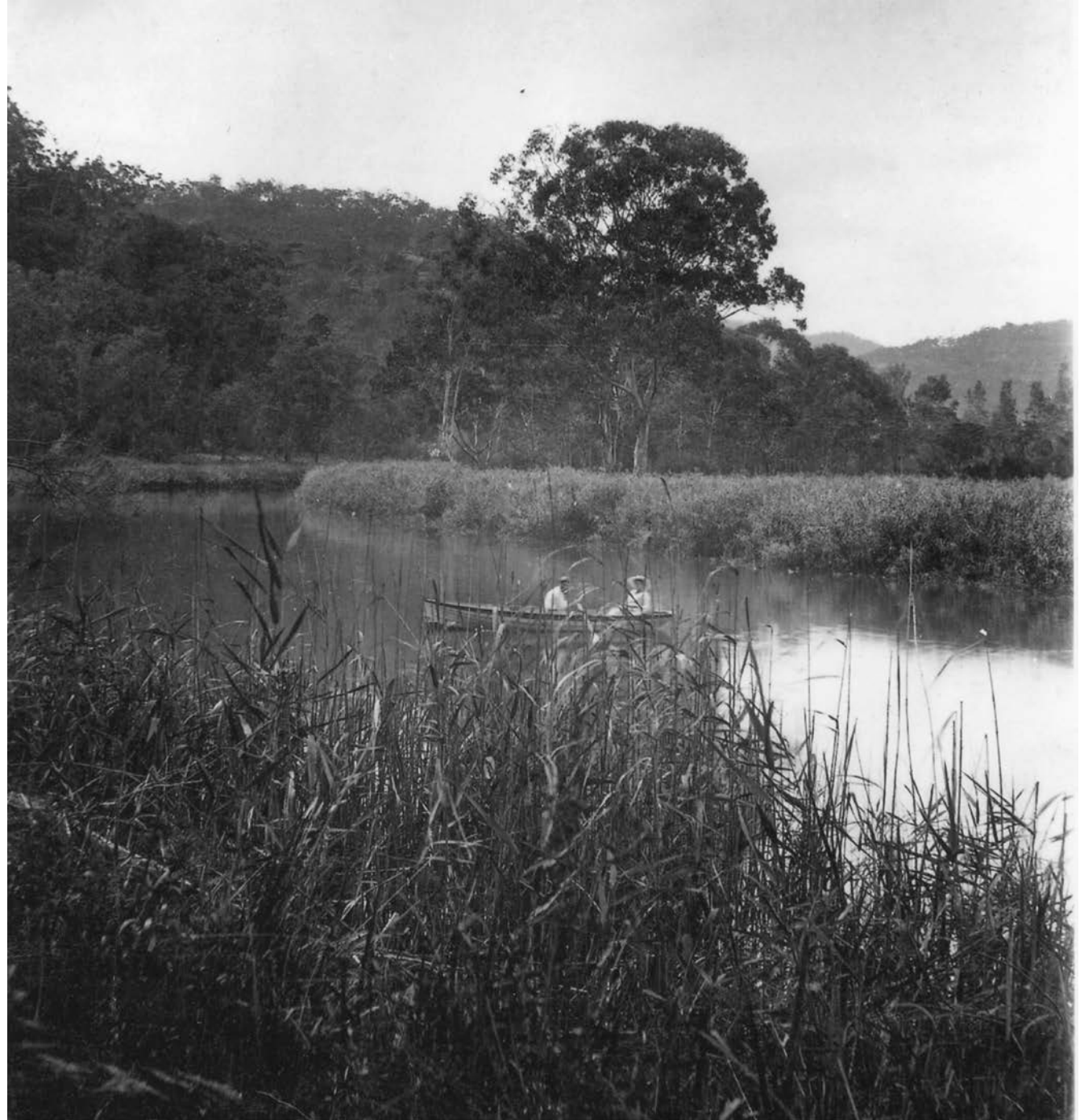
Lake Couridjah 1884

(Photo Royal Astronomer NSW)



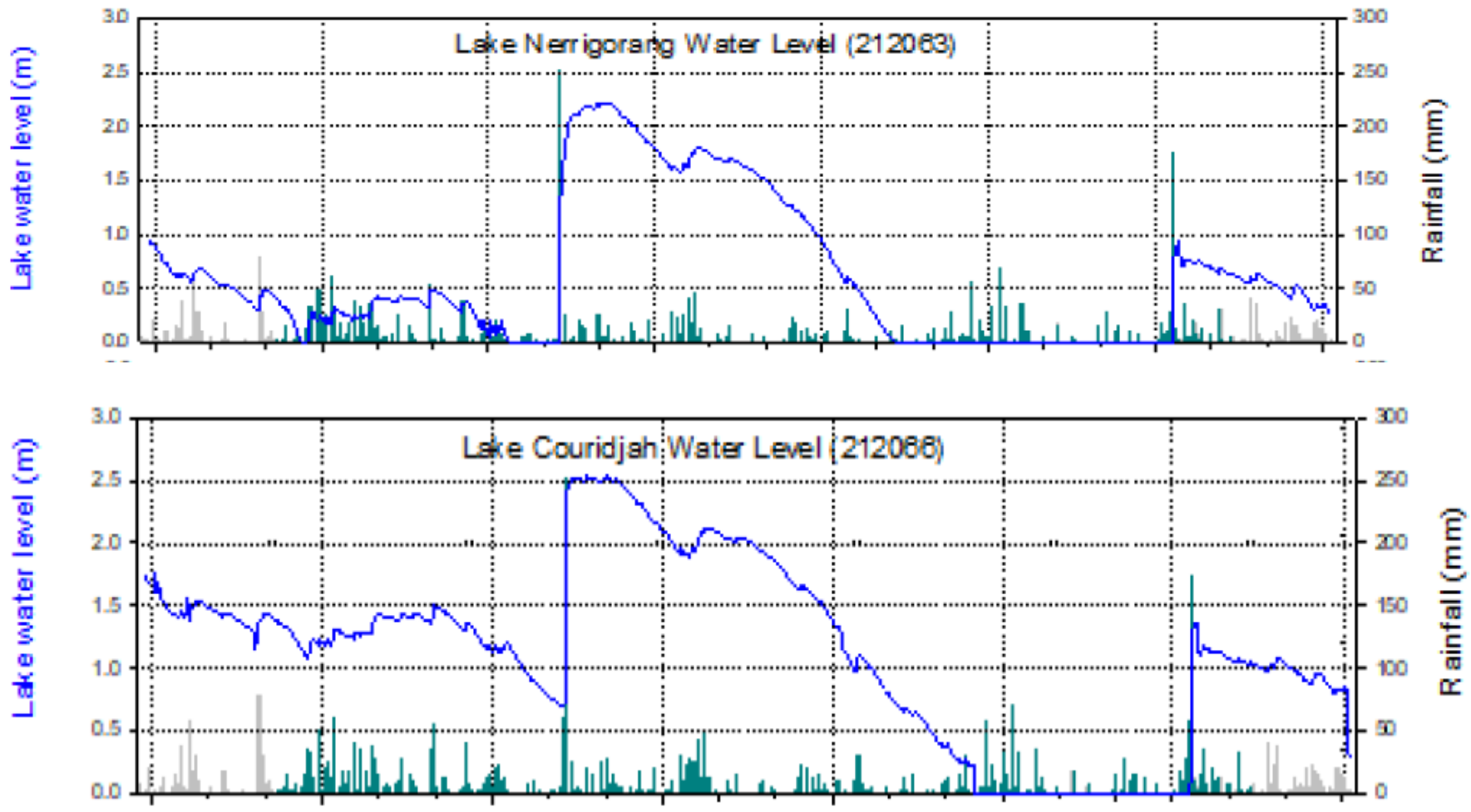
*Between
Lake
Couridjah
and Lake
Baraba*

1884



Water levels from depth recorders

January 2014 to January 2021



“With respect to the nearby Thirlmere Lakes”

(Exec. Sum. p(ii) Tahmoor South Groundwater Assessment)

Statement

“Cumulative effects of mining activities, including historical operations at Tahmoor Mine, have been modelled and quantified and assessed as being minor. This is supported by recent findings from NSW Gov. Thirlmere Lakes Research Program (TLRP) which found no evidence for effects from longwall mining on the water balance of the lakes”

I am a member of the Expert Review Panel for TLRP and I know that both the sentences quoted above are untrue. There have been no findings of the TLRP published to date. Progress reports for sub-studies under the TRLP have been presented at public forums but on the basis of being un-reviewed and not integrated into conclusions. This can be verified by the project managers, Dr T Prichard and Mr M Keogh of NSW DPI.






The above false statement is repeated in different forms multiple times throughout the Proponents groundwater and surface water report.

The following was presented to the IPC Hearing on 15 February.


This is un-reviewed, un-endorsed by the TLRP, is contradicted by other work and should not be used as the basis of decision making.

Thirlmere Lakes

- The University of NSW Water Research Laboratory has undertaken significant research into water levels at Thirlmere Lakes.



Finding 1: The lakes are controlled by the climate



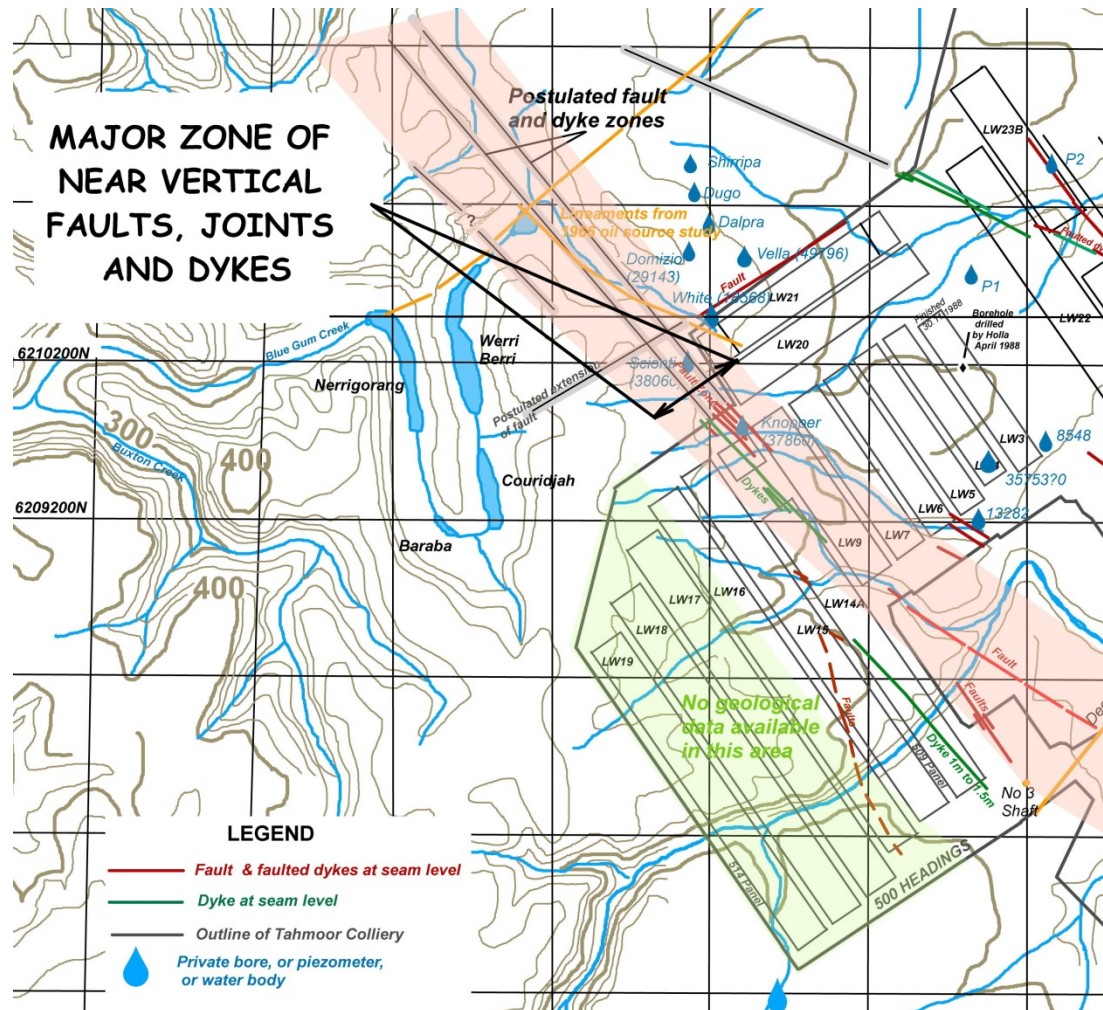
Thirlmere Lakes are sensitive to the climate, especially the rainfall and evaporation. Over the past 4 years, the evaporation has been much greater than the rainfall. When this happens, the lakes lose water slowly and eventually dry out. Current evidence does not show that the lake water levels are influenced by changes in the deep groundwater table (or nearby longwall mines).

LIVESTREAM

13 | Tahmoor South Project

11:25:37

Geological structures transmitting water. These are not properly shown or assessed in Section 3.7.3 (nothing available from LW16 to LW19)



Affected Bores

Section 3.8.1 indicates only two bores have been affected by Tahmoor Colliery.

I personally have interviewed the owners of five private bores above Tahmoor Colliery who stated that they had lost most or all of their groundwater supply as mining approached and passed beneath their properties.

REF P05.M2 Rev B

DATE: 22 September 2011, Updated 7 December 2011, Updated 20 January 2012

This is simply additional evidence that longwall mining at Tahmoor, as at Appin, Dendrobium etc etc has impacted significantly on near surface groundwater regimes. Quantification of 'significant' is a function of a particular river, creek, bore, dam or lake.

Proponents calculations of increase water of leakage from Thirlmere lakes

(p102 Table 5-6 APR Groundwater Assessment)

Water Depth	INCREASE IN LEAKAGE DUE TO TAHMOOR NORTH AND SOUTH ABOVE NATURAL LEAKAGE		
	Werri Berri	Couridjah	Nerrigorang
m			
2	200%	525%	157%
4	32%	380%	27%

It must be understood that determining the impact of leakage on the water levels of the Thirlmere Lakes is mathematically difficult because this is due to a change in the difference between two big quantities – Rainfall Runoff **IN** and Evapotranspiration **OUT**. Based on my calculations the changes computed by the Proponent are significant.

UNESCO World Heritage

The reason why the lakes are important

Under the 1972 World Heritage Convention, a World Heritage property - as defined in Articles 1 and 2 of the *Convention* - can be inscribed on the List of World Heritage in Danger by the Committee when it finds that the condition of the property corresponds to at least one of the criteria in either of the two cases described below (paragraphs 179-180 of the *Operational Guidelines*):

Inscription of a site on the List of World Heritage in Danger requires the World Heritage Committee to develop and adopt, in consultation with the State Party concerned, a programme for corrective measures, and subsequently to monitor the situation of the site. All efforts must be made to restore the site's values in order to enable its removal from the List of World Heritage in Danger as soon as possible.

Any reasonable assessment of the situation should conclude that impacts on the Thirlmere Lakes is a political matter of National importance – no different to the Great Barrier Reef.