
Fwd: Andréassian review of water loss from Waratah Rivulet and a couple of other relevant docs

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From: Peter Turner <peter.turner.home@gmail.com>

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Subject: Andréassian review of water loss from Waratah Rivulet and a couple of other relevant docs

To: chris.armstrong@chiefscientist.nsw.gov.au

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Hi Chris and Leah, attached is the previously mentioned review of Waratah Rivulet and Woronora River water loss estimates and modelling completed in 2010 on behalf of the SCA by Prof. Vazken Andréassian from the Université Pierre et Marie Curie Paris.

In brief it estimates between 1.5 and 5.4 MI/day are being lost from the Waratah Rivulet - and possibly from the Woronora Reservoir catchment as a result of water being diverted into subsidence cracks and then joining regional groundwater flows that take water away from the local storage catchment. The average inflow to Woronora Reservoir is 18 MI/day - though the range can be 0 to 180 MI/day.

Complicating this finding is poor quality data and the possibility water loss from Woronora River that the review suggests would reflect 'natural' leakage, under the assumption that the river is not directly undermined and so is not effected by mining. Natural leakage is possible, but its also possible that 'far field' horizontal effects from nearby mine subsidence may cause or exacerbate leakage on the Woronora River. This is discussed in the attached comments on the proposed water management plan (WMP) for the next set of longwalls to be extracted as part of the 2009 approved expansion of the Metropolitan Colliery. BHP have reported far field movements at up to 5km (reference in the attached).

The Andréassian review highlights a lack knowledge and understanding of mining impacts.

I hope you'll find time to read the comments on the WMP, as they give an insight into how the approval and compliance process works, or may fail to work, in the Special Areas. In short, Peabody make important assumptions but don't test them and DoPI evidently don't have resources/time to check. Related to the assumption that Woronora River is not a mining effected watercourse, the comments doc includes a map showing the relationship of Metropolitan Colliery to the Woronora Special Area, nearby mines and iron springs on Woronora River as mapped by a PAC panel in 2010. The 2010 PAC panel (see ref. 2 in attached) concluded it was likely mining at Metropolitan Colliery was effecting Woronora River.

You may think the comments on setting a benchmark for iron levels in water entering Woronora River from Waratah Rivule are an exercise in hair splitting, but the PAC Panel for the project was concerned to ensure there was no further degradation in the quality of water entering Waratah Rivulet. Prior to mining Waratah Rivulet was a pristine stream (see the second attached Jankowski paper). The 2012 Annual Review for the Metropolitan Colliery shows iron levels in water reaching the Woronra Reservoir from the Waratah Rivulet reaching the SCA's bulk water supply agreement limit of 1.0 mg/l.

The current WMP is a second revision, they were required to revise the first draft when I pointed out to DoPI that it included an essentially hidden redefinition of the baseline period to include the first set of longwalls of the expansion project. DoPI agreed this was inappropriate. Peabody had hoped to have the WMP approved by November-December 2013; I gather a decision will be made this week.

Attached are two 2010 papers from the SCA's principle scientist Jerzy Jankowski; they give a good summary of the public concerns of the SCA wrt Waratah Rivulet. The rivulet is a case study of impacts suffered by other watercourses in the Special Areas.

Cheers, Peter

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4 attachments



44_Draft Final Report_SCA_Report_VA.pdf

1561K



**jankowski_Surface-Groundwater Connectivity in Longwall Mining Impacted Catchment
Part2__IAH_2010.pdf**

736K



**jankowski_Surface-Groundwater Connectivity in Longwall Mining Impacted Catchment
Part1__IAH_2010.pdf**

818K



**some_comments_on_the_revised_water_management_plans_for_Metrop_LWs23-
27_Peter_Turner_140317.pdf**

771K