

# Internal Memo



**To** Angela Stride (NRC) **Date** 19 August 2019  
**From** Jon Williamson **Project No** WWA0046  
**Copy** Martel Letica (WSP-OPUS); Jake Scherburg  
**Subject** **S92 Response to question on interference effect on FNDC bores**

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PDP estimated a 40 m drawdown within each of the FNDC bores based on test pumping results for approximately 2,500 m<sup>3</sup>/day<sup>1</sup>.

These values are indicative of the pumping induced groundwater level drawdown within the bore itself. Whereas, a groundwater model calculates drawdown at the scale of the model grid - in this case for the Aupouri Aquifer Groundwater Model a 50 m cell. Therefore, calculated drawdown is indicative of the average groundwater level in the area adjacent to the bore rather than in the bore itself.

**Table 1** shows the model calculated range in drawdown within the deeper aquifer (bore screened zone) at the two FNDC bores (using the bore nomenclature from the PDP report) with currently consented groundwater takes (including FNDC themselves) and with the proposed Elbury Holdings and Sweetwater Farms groundwater takes (as well as all other pending groundwater takes).

The likely range in impact for both bores is between 0.4 to 0.9 m, which we consider is a no more than minor impact in the context of the applications given:

- the available bore drawdown for an efficiently constructed bore is > approximately 60 m (allowing for screen and pump) of which only approximately 40 m is being consumed by the pumped bores themselves. This means that additional drawdown could be accommodated and still permit the FNDC to meet their demands;
- the fact that PW2 has not been constructed yet and there is opportunity to construct this bore so that it minimises drawdown even further than that demonstrated by the test pumping to date with optimal casing diameter and screen design; and
- the additional social and economic benefit this additional pumping will facilitate in the local community in terms of orchard jobs and flow on effects to local suppliers.

**Table 1. Increase in drawdown at consented FNDC bores with proposed Sweetwater and Elbury groundwater takes.**

Bore	Scenario	Drawdown (m)		
		Currently Consented GW takes (m)	Proposed Elbury & Sweetwater takes (m)	Change in drawdown (m)
PW1	S2 Calibrated-Layer 6	8.2	8.6	0.4
	S3 Low Permeability-Layer 6	11.7	12.6	0.9
PW2	S2 Calibrated-Layer 6	6.9	7.4	0.5
	S3 Low Permeability-Layer 6	10.3	11.2	0.9

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<sup>1</sup> Pattle Delamore Partners Limited (2018). Technical Review of Elbury Holdings Consent Application.

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Yours sincerely,

A handwritten signature in blue ink that reads 'Jon Williamson'.

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