

**BEFORE THE COMMISSIONER ON BEHALF OF
THE OTAGO REGIONAL COUNCIL**

Application No. RM18.004

BETWEEN

PIONEER ENERGY LIMITED

Applicant

AND

OTAGO REGIONAL COUNCIL

Consent Authority

SUPPLEMENTARY EVIDENCE OF ANTONY WILLIAM JACK

**GALLAWAY COOK ALLAN
LAWYERS
DUNEDIN**

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SUPPLEMENTARY EVIDENCE OF ANTONY WILLIAM JACK

1. My full name is Antony William Jack.
2. I am employed as a civil engineer at Pioneer Energy Ltd. My qualifications and experience are set out in my primary evidence.
3. This evidence responds to the statement of evidence of Jayde Couper, received 28th June 2022.
4. I also refer to the supplementary evidence prepared by Mr Nicolson.

Lake Onslow Model

5. Para 10 of Mr Couper's evidence states that "*when using the model, the user must be cognisant of the issues and consider conclusions in light of the uncertainty they create*". I concur and in creating the model it was never intended to provide a definitive answer to what the lake would have looked like if the existing consent was fully exercised to its limit. The model was intended to be a tool that allows the relative comparison between the existing consented environment (scenario B) and what it may have looked like if the proposed variation was in place (scenario C). It is accepted that there are limitations in the model but the limitations apply equally to the simulation of Scenario B and Scenario C.
6. Para 10(c) of Mr Couper's evidence states that the least conservative correction factor of 0.688 has been used in the s42A assessment of effects. Correction factor (CF) was used to scale the synthetic inflow hydrograph to best match actual inflows. The CF was determined using a mass balance of inflows, outflows and change in lake storage for a given time period. The time periods were selected to allow defined lake change to be assessed, along with not having significant undeterminable losses due to lake spillage. The calculation of the CF itself is not without some margin of error as there are likely errors in the storage curves for Lake Onslow, errors in outflow measurements and some losses through evaporation and loss to ground. The calculated CF is in the range of 0.61-0.688. I agree that the CF of 0.688 used in the s42A report is

appropriate. I also note that when a lower CF is applied to the synthetic inflow hydrograph a there is reduced apparent difference between scenarios B & C which may have the appearance of understating the impacts of the proposed variation.

7. Mr Couper states in Para 12 of his evidence that Figure 1 of Ms Coates' evidence is different to the version of the model assessed in the s42A report. It is also different to the version of the model with the 0.688 correction factor applied. It appears that Ms Coates has based her assessment on the model with a CF of 1.5 applied to the synthetic inflow hydrograph. However, I do not agree that this makes her evidence as a whole inaccurate as the model provides an indication of relative difference between scenarios B & C. In fact, at higher CF values the results of the model demonstrate increased differences between scenario B & C. Therefore, Ms Coates conclusions based on a model with a CF of 1.5 would tend to be more conservative.

Date: 30 June 2022

A handwritten signature in black ink, appearing to read 'Antony William Jack', written in a cursive style.

Name: ANTONY WILLIAM JACK