

**IN THE MATTER** of the Resource Management Act 1991

**AND**

**IN THE MATTER** of applications for resource consent by the Central Plains Water Trust and a notice of requirement for the designation of land by Central Plains Water Limited associated with the construction and operation of the Central Plains Water Scheme

---

**SUPPLEMENTARY STATEMENT OF EVIDENCE OF RICHARD DE JOUX ON BEHALF  
OF THE NORTH CANTERBURY FISH AND GAME COUNCIL**

---

## 1. INTRODUCTION

### Qualifications and experience

- 1.1 My name is Richard Trevor de Joux. My qualifications and experience, and the basis on which I have prepared evidence for this hearing, are set out in my evidence in chief dated May 2008.

### Scope of evidence

- 1.2 I have been asked by Fish and Game to review the accuracy of hydrological modelling in Mr Tipler's supplementary statement of evidence dated 4 July 2008.

## 2. MR TIPLER'S SUPPLEMENTARY EVIDENCE

- 2.1 At paragraph 11 reference is made for the need for a 40 m<sup>3</sup>/s take from the Waimakariri River. My modelling was always based on the need for a 40 m<sup>3</sup>/s take.
- 2.2 At paragraph 12 Mr Tipler refers to the need for a reliability of 98%. Most existing schemes operate on reliabilities considerably lower than that. The text refers to the 20/40/280 regime having a 95.5% reliability but the tables refer to 96.5%. I have run my model using the 20/40/280 regime assuming that CPW also have access to 11.5 m<sup>3</sup>/s of other "A" Winter water – the reliability is 96.9%. I have received confirmation from Mr Tipler that the CPW NTP regime is 96.5%.
- 2.3 I have examined the tabulated flow distributions provided in paragraph 18 of Mr Tipler's supplementary evidence dated 4 July 2008. A question may arise as to why the interquartile value for the "20-40-260 CPW NTPL class B restricted to when flow is over 100 m<sup>3</sup>/s" regime is lower than the reported values in the table despite the median flow being higher.
- 2.4 The interquartile flow is simply the difference in flow rates between the 1<sup>st</sup> quartile (75% exceedance) and 3<sup>rd</sup> quartile (25% exceedance) flows. The effect of not allowing CPW abstraction until flows exceed 100 m<sup>3</sup>/s results in more water being retained in the river at the lower flow range, hence the higher 1<sup>st</sup> quartile flow of 45.65 m<sup>3</sup>/s cf 41.0 m<sup>3</sup>/s for other regimes. Conversely, the regime forces the abstraction of CPW water at higher flow rates than the other regimes, so the 3<sup>rd</sup> quartile flow

reduces from around 115 m<sup>3</sup>/s to 109 m<sup>3</sup>/s. This results in the interquartile flow for the regime being lower than the other regimes. The regime does provide higher median and 1<sup>st</sup> quartile flows.

2.5 Mr Tipler states that there is very little difference in average flows between the regimes. This is true, however there is a relatively larger difference in the median flows.

### 3. CONDITIONS OF CONSENT CRC061972

3.1 The text of this consent is to take and use up to 40 m<sup>3</sup>/s water from the Waimakariri River for irrigation and water storage etc.

3.2 Proposed conditions 2 to 6 are proposed mitigation regarding flow sharing and when water can be used etc. I can find no mention within the consent specifying the amount of water that can be taken as Class A and Class B. Condition 2 only refers to Class B water. There are no conditions that refer to Class A minimum flows.

3.3 I do not see the relevance of condition 13, which refers to an intake on the Rakaia River. CRC061972 refers specifically to the Waimakariri River only.

3.4 Flow monitoring conditions need to be sorted out. Condition 13 and 18 both refer to previous Environment Canterbury standard conditions. They need to be combined and refined to reflect the monitoring required for the scheme.

**R de Joux**

**August 2008**