

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of applications for water permits to abstract water, land use consents to excavate and disturb the bed of the Homestead Stream, the construction and operation of a dam and discharge of water from a dam for the proposed Forevan and Winterberg activities

BY ROBERT HAY ROBERTSON
Applicant

TO ENVIRONMENT CANTERBURY
Local Authority

**SUPPLEMENTARY EVIDENCE OF DAVID WILLIAM STEWART
IN SUPPORT OF THE APPLICATIONS BY ROBERT HAY ROBERTSON**

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1. This supplementary evidence covers two issues. Firstly there is a response to the Section 42A Report 14 with regard to the calculation of annual allocation for consents CRC031592 and CRC032220. Secondly there is a list of corrections to the report titled "Report Foveran and Winterberg: Summary AEE for resource Consent Applications" prepared for Environment Canterbury by Environmental Associates Ltd June 2008. A copy of the Summary AEE is **attached** to this evidence as "A".

SECTION 42A REPORT

2. When Permit CRC031592 was first applied for in 2003, annual allocations were not part of the application. In late 2006, Environment Canterbury ("ECAN") requested further information, part of which was an assessment of annual volume required for the area to be irrigated. Simon Johnson, a consultant for ECAN at the time, explained the system to calculate the annual volume and included the calculations in an email dated 26 January 2007. A copy of that email and calculations is **attached** to this evidence as "B".
3. The Section 42A Officer's Report (s42A) for Robertson, R.H. (Report 14) states in paragraphs 85 – 87 (pages 15 and 16) that the s42A report writer has used the "...CRC's GIS system to confirm the parameters used by the applicant."
4. The layer in the GIS system that the report writer refers to is a layer that is available only to ECAN staff using the ECAN computer.
5. Jeromy Cuff, a Land Resource Scientist with Environment Canterbury in Timaru, noted in an email to Raineffects Ltd that there is a discrepancy with the quoted PAW mean of 90mm used by the s42A report writer and the proper interpretation of the soils layer on the ECAN GIS system. A copy of that email is **attached** as "C".
6. In that email, he also rated the accuracy of the GIS layer used by the S42A report writer and stated it had a category "u" defined as "...estimated from relationships with other soils but with an unknown level of accuracy...". In the final sentence he states "In my opinion, predicted soil attribute values based on this level of estimation (accuracy) could be regarded as less than indicative".
7. The net result of the s42A report writer's calculations using this unreliable data are a 25% reduction in the total annual allocation of water to Permit CRC031592.
8. Similarly, the s42A report writer has used the same unreliable GIS layer to calculate the annual volume required for permit CRC032220, the abstraction of 320 l/s from the Winterberg Dam for irrigation. The result is similar with a 25% reduction in annual allocation compared with that originally applied for.
9. This difference in annual allocation between the originally applied for volume and that

calculated by the s42A report writer only became available with the publication of the s42A reports.

10. Because the GIS data used by the s42A report writer appears unreliable, a soil survey of the areas planned to be irrigated using permits CRC031592 and CRC032220 has been commissioned. Mr Trevor Webb, a respected soil scientist with Landcare Research, has agreed to undertake the work and will produce a soil map, PAW ratings and a report for all the map units in the defined area.
11. I understand that Mr Webb will undertake soil sampling on 22 and 23 August 2008. At this stage, it is hoped to have this information to provide to the Commissioners before the Hearing closes. Once the information is available, an accurate figure for PAW can be calculated and an appropriate annual allocation derived for both the previously identified permits.

CORRECTIONS TO AEE

12. **In Section 1.1 page 3**

The word "potential" needs to be included at the start of the second sentence.

13. **Section 2.6 Page 16**

Delete fourth paragraph beginning with "The annual surface water..."

14. **Section 3.1 Page 17 third line down**

Current irrigation area is 216 ha not 233ha

15. **3.1.2 Winterberg**

First sentence should read "It is proposed that the new irrigation area covered by abstraction from the Winterberg Dam will be 690 hectares.

16. **Table 3.1**

Replace Table 3.1 with this new table.

Table 3.1 Winterberg Dam Water Balance (estimate)

Parameter	Volume (m³)		
Natural Annual Inflow			
Mean catchment inflow (0.161m ³ /s)	5077300		
Rainfall Contribution (direct) 28 ha@460mm	128800		
<i>Total</i>		<i>5206100</i>	
Natural Outflow			
Maintenance Outflow/Leakage(from Dam) (estimated average = 6 l/s)	189200		
Evaporation - 28ha@700mm/yr	196000		
<i>Total</i>		<i>385200</i>	
Net Annual Storage (inflow-natural outflow)			4820900
Irrigation Requirement (outflow)			
CRC032220	3657000		
<i>Total (690ha)</i>		<i>3657000</i>	
Net Balance			+ 1163900*

*Note that this volume is available for any augmentation.

17. **Page 23 paragraph 1**

Replace the first paragraph with the following paragraph.

“The water balance for the Winterberg Dam in Table 3.1 shows that the net available storage per annum is approximately 5 Mm³. From this storage about 3.7 Mm³ is required for irrigation of the 690ha proposed to be irrigated. A further 1.2 Mm³ of water (per annum) is available from the Winterberg Dam for augmentation if required”.

18. **Page 26 second bullet point half way down**

Area total should be 690ha not 401ha.

David Stewart
20 August 2008

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