

Before a Hearings Panel of the Canterbury Regional Council

Under Resource Management Act 1991

In the matter of applications for Regional Council Resource Consents to take and use water in the Upper Waitaki

COMMENTS ON OVERSEER REMODELLING

May it please the Commissioners

1. Comments on Overseer Remodelling

2. The purpose of this report is to assist the Commissioners and s42A officers with the processes undertaken by UWAG applicants with respect to the completion of the Farm Environmental Management Plan (FEMPS) and the remodelling of overseer for all applicants following the audit report completed by Mr McNae. This report, together with the remodelled overseer results and final FEMPS tabled by the UWAG applicants to enable further response commentary by the s42A officers scheduled for Monday 19 April 2010.

3. If required by the Commissioners for the s42A officers the consultant employed by UWAG to complete overseer remodelling and finalisation of the FEMPS can be available for questioning by the Commissioners at the resumed hearing.

4. Completion of FEMPS

5. When the FEMPS were tabled during the applicant's presentation by Begley, de Joux, Johnston and McCabe, they were submitted in draft form for the following reasons:

5.1 The site specific assessment of risks had not been undertaken for all properties prior to the completion of the draft FEMPS. These site specific factors have assessed the actual and potential risks to ground water and surface water contamination or nutrient buildup resulting from the physical farm layout, and farm operational requirements where such risks would not be reflected in overseer modelling for the property. More particularly, they have taken account of stream and swamp locations, areas that may be subject to ponding, farm tracking and stock movement patterns – particularly in association with the requirement for stream and swamp boundary protection areas.

5.2 The onsite inspection and risk assessment in the FEMPS has also taken account of the conversion process associated with renewals and any interim protection requirements.

6. In the case of renewals of existing consents the onfarm risk assessment incorporated into the FEMPS have taken account of any actual risks associated with the existing development as well as the potential risks associated with new areas. The onfarm risk assessment was undertaken by an independent two person team involving onfarm inspection and dialogue with the existing farm manager. Risk areas were assessed independently with proposals to mitigate the risk incorporated into the final FEMPS being agreed to by all land owners.
7. **Overseer Remodelling**
8. Following the audit report undertaken by Mr McNae it was determined that the overseer files for all UWAG applicants needed to be remodelled to ensure those “high and medium” risks (significant risks) identified were re-evaluated by qualified overseer operators and amended accordingly.
9. Issues of low risk identified by McNae were not amended given that they were unlikely to affect overall overseer outcomes. A chart summarising the changes made to overseer files showing a summary of the changes made; the additional information supplied to clarify issues it raised by the McNae audit and the details of other risks identified that were not amended is attached and forms part of this commentary.
10. The remodelling was undertaken by approved overseer operators familiar with the applicants’ property.
11. Any risks identified as low risk issues will be remodelled prior to the first audit report for the Canterbury Regional Council in conjunction with the Applicant to reflect further on farm information relating to wool weights, drainage information etc.
12. Dunstan Peaks and Riverside were not audited in the initial audit report undertaken by McNae. However in this remodelling exercise the high and medium risks that had been identified in the McNae audit for other properties have been incorporated into the Dunstan Peaks and Riverside “remodelled” overseer results these factors include rainfall, irrigation areas, irrigation application depths N applied etc.

13. Meetings were held with those fertiliser representatives of Ravensdown and Balance prior to the remodelling work undertaken to compare the results with the initial workshop in Twizel and the audit results undertaken by McNae.
14. It is accepted that for new UWAG applicants irrigation will be a new development. Their decisions on rates of fertiliser application, pasture growth, stock carrying capacity were based on district wide averages and on the advice of farm consultants such as Mr McFarlane appearing as a witness for UWAG. There is the potential that these figures will change when irrigation commences. Any changes will need to fit with the on farm thresholds as determined by the WQS.
15. For those existing applicants their fertiliser application rates, pasture figures and stock carrying capacity were based on known perimeters and likely perimeters following any conversion to centre pivots or more efficient irrigation systems.
16. **Overseer and Pasture Export**
17. Most of the UWAG applicants are irrigating a small percentage of their overall property to guarantee a supply of winter feed and provide on farm sustainability – regardless of weather conditions.
18. The version of overseer used only allowed 50% of the pasture grown to be exported from that block.
19. In some cases, for example lucerne blocks 100% of the pasture grown is exported for winter feed as balage or hay as a cut and carry operation. Accordingly the figures for that block are likely to be conservative.
20. In remodelling overseer the fertiliser representatives following discussion with Mr Andy McFarlane have inputted all irrigation areas as “developed” rather than “highly developed” this follows Mr McFarlane’s advice to the hearing having regard to his consultancy on particular high country properties (notably Haldon Station and others) that it was unlikely that these properties would reach a highly developed state.
21. A key common area that differed among the fertiliser representatives was the use of the relative productivity function. Those applicants that had their overseer

modelled by Mr Gordon McCormick were identified in the McNae report as “relative productivity too low” Mr McCormick has provided an explanation as to his reasoning behind using the relative productivity function. This area of difference was identified in 30(a) in the McNae audit report.

22. Advanced stock reconciliation was not completed for eight applicants. This is due to those applicants having a very accurate understanding of the existing stock units carried on their properties and providing these for overseer remodelling purposes.
23. Some applicants have “low pasture production” identified as a risk on some blocks of their farms. For the majority the low pasture production is accurate e.g. Lilybank – Pringle – the Pringle is native, steep unimproved high country. Waitangi – unimproved hill block – unimproved steep hill country with no fertiliser inputs.
24. DCD – nitrification inhibitor is unable to be remodelled in overseer for specific areas of the farm. An overseer DCD cannot be selected solely for irrigated areas but must be based on whole farm operation. This has meant that some applicants who wish or are using DCD have left this unselected.
25. As indicated above a large number of mitigation measures identified in the applicants FEMP’S have been unable to be incorporated in overseer. For example settling basins, fencing waterways, riparian plantings and culverts and restricting stock access to waterways. This has meant that the outputs from overseer do not fully take into account all of the mitigation measures to be implemented and therefore the overseer outputs are likely to overestimate actual nutrient figures.
26. There are a small number of applicants who exceed the threshold set out in the WQS at the develop setting this is mainly due to incorrect information used when determining the thresholds in the WQS but the inability to model all of the mitigation measures also plays a part. This report is provided for the purposes of assisting Mr McNae in any review of the remodelled results.

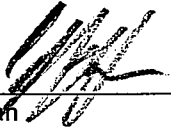
Dated at Christchurch this

7th

day of

April

2010



EJ Chapman

Counsel for the Upper Waitaki Applicants Group

Table 1: Changes made to Overseer files when remodelling undertaken

		DETAILS OF CHANGES MADE	ADDITIONAL INFORMATION	DETAILS OF OTHER RISKS IDENTIFIED THAT WERE NOT AMENDED
Glenmore		Rainfall figures changed, irrigation area changed to developed	Overseer has not been run with the full farm area (only 3000ha) as the WQS Threshold has been based on excluding extreme slopes. These extreme slopes do not have any fert inputs	No wool weights entered
Anderson	Bog Roy	Irrigation area increased to 228ha proposed all spray, irrigation application rate amended to reflect actual., 60ha shared with Rostriever	60ha shared @ 696mm, remaining own @ 720mm application rate	
	Rostriever	Rainfall amended. Irrigation area amended to include own and shared with Bog Roy (60ha shared - Lake Benmore, 30ha own - Lake Aviemore) No advanced stock recc completed due to the farm owner giving the actual SU figures. No N on irrigation area, low P on irrigation area	60ha shared @ 696mm, 30ha of own with current consent.	
Maree Horo	Ribbonwood	Irrigation rate added for all 3 locations, Irrigation area amended to 535ha (320ha removed added to dryland, rainfall figures changed, NO P applied to River flat and top hill. Drainage still unknown for all blocks. V Low clover in hill blocks due to minimal fert history and climate. Rainfall figures changed, relative productivity figures amended and supplement removed from the irrigated areas		

Classic Properties	Maryburn	Region changed, Relative productivity for Centre pivot and dryland blocks amended, NO P applied to swamp - correct. Farmer gave accurate SU figures so no requirement for Advanced stock reconciliation. Irrigation application rate changed to 570mm		
Hope	Grampians	Irrigation application rate changed to 600mm for Pivot A and added for Pivot B and C. Rainfall figures changed. Drainage info included	Ravensdown rep to provide explanation of relative productivity	No wool weights entered
McAughtrie	Willowburn	Ewe liveweight lowered to 60kg, R2 cattle in trading are dairy grazers. Region changed.	proportion of water take is part of the Govt race application. 1451kg/yr N removed via wetland - once removed from total N leached then below threshold. Potential plans are to use some N inhibitor on certain areas of the farm, as yet these areas are undecided.	No wool weights entered
The Glens		Application rate for both blocks changed to 600mm. Effluent applied on effluent block, Olsen P levels are desired/future not present	Ravensdown rep to provide explanation of relative productivity, water take is part of Govt race application.	
Riverside	Greenfields	wasn't audited in the first report for unknown reasons. Water take is part of Government race application. Changes made: region changed to high country, rainfall amended to actual, irrigation area changed to 85ha, N application on irrigated land amended to 200kg/ha from 250 kg/ha		
Dunstan Peaks/Twin Burn/Clifton Downs		hasn't been audited as yet, application rate checked = 600mm, rainfall checked, irrigation areas checked, proposed all spray irrigation	Two different Overseer files but numbers have been combined as farms are run as one	

Bellfield Land Co	Quailburn Downs	2 separate reports run with 750mm and 820mm irrigation application rate. 750mm results used, Over threshold with 820mm. Region changed, V Low clover on the 3 blocks is correct due to climate and fert inputs	Existing and new irrigation	
Lilybank		2 separate reports run with 425mm and 170ha and then 170+70ha and 425mm. still under with the additional 70ha. MaCauley block changed to developed, No N applied is correct, drainage for all blocks still unknown, Olsen P relative to P applied over a number of years. Low productivity and pasture production on Pringle correct due to altitude, climate, location and undeveloped. Low P applied on proposed irrigation blocks correct.	Deer pace fencelines has been left checked in all blocks that have deer to identify a worst case scenario, although the risk assessment identified no evidence of pacing.	No wool weights entered
Otamatapaio		215kg/yr N removed via wetland, Glenburn borders ticked as borders Rainfall changed, Olsen P on dryland paddocks to be confirmed via soil testing. Drainage still unknown for 3 blocks. Proposed all spray at Otamatapaio.	Existing irrigation, Otamatapaio portion in these hearings. Lake consent irrigation areas included,	No wool weights entered Pature intake too low for irrigated blocks? Clarification required as to what this is based on.
Twin Peaks		Region changed to high country, irrigation area changed to 72ha		No wool weights entered
Glentanner	Catherine Fields	additional 20ha irrigation, 17kg of P given from neighbouring property	All female cattle is correct	No wool weight entered

Waitangi		Region changed, Lucerne, Irrigated and paddocks developed. . Low pasture production for unimproved hill block - correct due to unimproved, no fert history, climate and altitude. No advanced stock recc as farm owner had accurate figures	Naturally high Olsen P on undeveloped blocks - soil tests confirm	
Grays Hills		rainfall changed, drainage information added for 2 blocks, v low clover is correct for 2 blocks due to minimal fert history, and climate. No advanced stock recc due to farmer having accurate figures, Pasture production for hill and unimproved block low is correct due to UNIMPROVED, minimal fert and seed history and climate.		
Aviemore Ltd	Otematata	Irrigation area amended to better reflect current practice. Application rates amended. 92 units of N included in fert calc section, drainage included combined threshold with Otematata. Awakino irrigation area removed due to being below the Waitaki dam. Irrigation areas amended, irrigation application rate amended, rainfall for unimproved block changed to 750mm		
	Otematata Aviemore		Ravensdown rep to proved explanation of relative productivity	No wool weight entered. Weaning weight was indicated by the applicant so remains at 30kg.
Birchwood Run	West Edge Ltd	Irrigation appalication rate changed to 600mm for all, region changed, drainage info added, Olsen P changed to better reflect actual		
Totara Peaks		Region changed to high, Olsen P for dryland block amended to 20, drainage info added		Wool weight remains at what was in the original report

Graham or Te Aka		Changed irrigation application rate to 600mm, region changed, no advanced stock recc completed due to farmers having accurate figures,		
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