

BEFORE THE HEARINGS PANEL

IN THE MATTER of hearings on submissions
concerning the Proposed
One Plan notified by the
Manawatu-Wanganui
Regional Council

**SUPPLEMENTARY EVIDENCE OF GREG JOHN CARLYON
FOR THE WATER HEARING
ON BEHALF OF HORIZONS REGIONAL COUNCIL**

1. INTRODUCTION AND BACKGROUND

1. I have prepared this report as supplementary evidence to my Section 42A report. It has been compiled in response to evidence received from experts on behalf of submitters to the Water provisions of the Proposed One Plan (POP).
2. I have spent some time reading through the evidence and what pleased me most was that there is general agreement that:
 - (i) our water and river resources are important to our Region and they require careful management;
 - (ii) water quality in our rivers is not as good as it could be, even though there is still dispute around just how bad the water quality situation is, and how quickly we should be moving as a community to fix the problem; and
 - (iii) controls need to be in place to manage the allocation of water, but there is still much disagreement around how this allocation should occur.
3. Interestingly, while most parts of the Water provisions of the POP have been challenged by submitters, the challenges are not all of a similar nature. There are two clear points of view emerging – those that believe the policies are not strong enough, and that the timeframes proposed are too lenient, versus those that believe the policies are too strong, the timeframes are too short, and that the economic implications of change have not been worked through. Personally, I believe the POP strikes a balance between these two ends of the spectrum in presenting an approach that is positive and realistic for the Region to achieve over meaningful timeframes.
4. There will no doubt be questions about whether Horizons has considered the alternatives presented by submitters. However, with the exception of proposals by Fonterra, no alternative approaches to that presented in the POP have come forward during the submission process. There have certainly been many suggestions for minor changes, and those that have merit have been worked through with submitters and/or been recommended for adoption. However, I would simply classify most of the submissions as being either supportive or critical of what has been proposed, ie. pointing out faults or problems without offering alternatives. The one notable exception was the Fonterra group of submissions.
5. Fonterra has proposed that the FARM Strategy and associated regulation be dropped in favour of a strengthened non-regulatory approach to managing on-farm and off-farm pollution issues. Although Fonterra had alluded to a non-regulatory approach since our earliest One Plan discussions, we had not seen it clearly set out till we received its

evidence. In my opinion, this is far too late in the process to be seeking such a radical departure from what has been proposed – particularly when set against a backdrop of dairy farmer push-back around environmental management, and a track record of non-delivery by Fonterra and the dairy sector in terms of environmental performance. So while Fonterra's proposal may seem to have merit at a cursory level, I believe it still lacks the rigour and substance needed for it to be given serious consideration at this time.

6. By way of example, Fonterra Co-Operative Ltd have made applications to the Regional Council for the ongoing discharge of waste material to land from their Longburn and Pahiatua milk processing plants. The Longburn plant application anticipates a total loss for the irrigation block of 38 kg/ha/year after improvements are made. This decreases from the current 71 kg N/ha/year. This loss, while in excess of the highest One Plan standard in Table 13.1, pales by contrast to the proposed loss over the 100 ha Fonterra farm at Pahiatua of 151 N/ha/year. This discharge is in a key target catchment (Mangatainoka) and the nutrient budgets prepared for existing rules, let alone those prepared in the One Plan for key target catchments, have produced automatic responses from Overseer suggesting a reassessment or alternative approach to the discharge. The tables are appended to this evidence.
7. There has been no attempt by Fonterra to find alternative approaches to discharging nutrients at these high levels, and no discussion with the Regional Council about appropriate mitigation techniques. This application and our recent experience further cast doubt on Fonterra's actual corporate commitment to reducing nutrient losses.

2. KEY POINTS

8. There is agreement that water is important to this Region – economically, socially, environmentally and culturally.
9. There is general agreement that the water resource needs to be managed.
10. There is agreement that we should be controlling the allocation of water, but there is a level of disagreement around who should get priority at times of low flows in our rivers.
11. There is a level of disagreement around the state of water quality in the Region (ie. not that it is degraded, but rather about the extent of degradation) and this is leading to disagreement around the urgency with which these issues should be addressed.

12. Much has been made of the lack of a comprehensive cost-benefit analysis. However, such analyses are inevitably flawed, because the financial inputs are so volatile. For instance, since Horizons' original evidence for the Water provisions was prepared, the forecast dairy payout for the current season has twice been revised upwards. The result is that the average dairy payout per farm has increased by approximately \$150,000. Such volatility significantly alters the affordability of mitigation options proposed as part of the FARM Strategy, where the average mitigation cost was in the order of \$150,000 per farm over a 20 year period.
13. Fonterra has indicated it would prefer a non-regulatory approach to improving the environmental performance of its suppliers instead of the regulatory (FARMS) approach proposed by Horizons. This shift by Horizons from regulatory to non-regulatory should not be viewed by Fonterra or many of its suppliers as criticism of the huge efforts that have been made in the sector. Many suppliers have made significant progress and are proudly operating under best practice. However, in this Region we are coming into increasing contact with a core of suppliers that have not been complying, and are giving every indication that they will not comply, with the Dairying and Clean Streams Accord (D&CSA) requirements. These same suppliers also have poor compliance records with their existing resource consent conditions. The only way to get this smaller group moving is through compulsion (ie. regulation), with appropriate follow-up monitoring and enforcement.
14. Further, the D&CSA targets do not cover, or are not sophisticated enough, to address all areas on farms that we now know are potentially leaky.
15. Finally, there is an increasing number of farms in the Region that no longer supply Fonterra and therefore are not covered by the D&CSA requirements. We do not want to lose the momentum achieved through the D&CSA, hence a cover-all regulatory approach is proposed.

Greg Carlyon
November 2009

Report from OVERSEER nutrients budget 2008, version 5.3.6.1 on 2/10/2008 10:58 a.m.
Copyright© 2008 AgResearch Ltd. All rights Reserved

Shaun and Rachel Jones
Fonterra Tui
Ranfurly Road
Pahiatua
Tui Nutrient Budget 0708.ovp

Nicola McCarthy
Fonterra

Nutrient Budget

Block Budget for: Current farm Block: Dairy effluent block

	N	P	K	S	Ca	Mg	Na	H+
	(kg/ha/yr)							
Inputs								
Fertiliser, lime	184	0	0	0	0	0	0	0.0
Effluent added	205	34	242	57	52	34	41	-5.2
Atmospheric/Clover N	10	0	0	1	1	1	1	0.0
Irrigation	0	0	0	0	0	0	0	0.0
Slow release	0	3	8	0	9	14	16	0.0
Supplements imported	12	1	10	16	2	25	1	-0.4
Outputs								
Product	50	8	13	2	9	1	4	0.0
Net transfer	57	8	55	11	12	7	8	-1.3
Supplements sold	0	0	0	0	0	0	0	0.0
Atmospheric	152	0	0	0	0	0	0	-0.6
Leaching/runoff	151	2	26	19	28	5	28	-3.6
Immobilisation/absorption	0	17	0	43	0	0	0	-0.5
Change in inorganic soil pool	0	4	166	0	15	61	18	0.4

* Acidity - kg H+/ha

* Maintenance nutrient requirements for this block take account of nutrients added in effluent.

You are already applying in excess of 150 kg N/ha/yr in the effluent. Consider increasing area for effluent application or removing supplements. Also consider stopping N applications to the effluent block. Note that effluent application rates for N may be higher than is allowed by some regional council plans. Please check with the relevant council.

Potential P loss from effluent is high. Check effluent area is large enough. Consider reducing the rate at which effluent is applied or applying effluent in safer months.

Report from OVERSEER nutrients budget 2008, version 5.3.6.1 on 2/10/2008 10:58 a.m.
Copyright© 2008 AgResearch Ltd. All rights Reserved

Shaun and Rachel Jones
Fonterra Tui
Ranfurly Road
Pahiatua
Tui Nutrient Budget 0708.ovp

Nicola McCarthy
Fonterra

Nutrient Budget

Block Budget for: Current farm Block: No treatment block

	N	P	K	S	Ca	Mg	Na	H+
	(kg/ha/yr)							
Inputs								
Fertiliser, lime	184	0	0	0	0	0	0	0.0
Effluent added	8	2	6	1	4	2	1	-0.4
Atmospheric/Clover N	15	0	0	1	1	1	1	0.0
Irrigation	0	0	0	0	0	0	0	0.0
Slow release	0	3	61	0	9	14	16	0.0
Supplements imported	12	1	10	16	2	25	1	-0.4
Outputs								
Product	50	8	13	2	9	1	4	0.0
Net transfer	57	8	55	11	12	7	8	-1.3
Supplements sold	0	0	0	0	0	0	0	0.0
Atmospheric	65	0	0	0	0	0	0	0.0
Leaching/runoff	47	1	10	19	42	7	27	-2.6
Immobilisation/absorption	0	20	0	-13	0	0	0	0.0
Change in inorganic soil pool	0	-31	-1	0	-47	26	-21	3.1

* Acidity - kg H+/ha

Developing status leads to N immobilisation in soil organic matter over 5-20 years, but then N leaching and nitrate in drainage will increase once full development status has been reached. The N overall farm N leaching status suggests that when full development is reached, N leaching could exceed drinking water standards.

Soil P loss status is high. Check Olsen P levels are within economic optimum levels.

Estimated change in soil P, K and Mg test is -6, 0.0 and 3 respectively. Negative value = depletion and need

Report from OVERSEER nutrients budget 2008, version 5.3.6.1 on 2/10/2008 10:58 a.m.
Copyright© 2008 AgResearch Ltd. All rights Reserved

Shaun and Rachel Jones
Fonterra Tui
Ranfurly Road
Pahiatua
Tui Nutrient Budget 0708.ovp

Nicola McCarthy
Fonterra

Nutrient Budget

Block Budget for: Current farm Block: irrigated block

	N	P	K	S	Ca	Mg	Na	H+
	(kg/ha/yr)							
Inputs								
Fertiliser, lime	390	32	45	495	396	539	667	-14.4
Effluent added	8	2	6	1	4	2	1	-0.4
Atmospheric/Clover N	10	0	0	1	1	1	1	0.0
Irrigation	0	0	0	0	0	0	0	0.0
Slow release	0	3	9	0	9	14	16	0.0
Supplements imported	34	27	119	90	26	29	45	-1.0
Outputs								
Product	58	9	16	3	10	1	4	0.0
Net transfer	67	9	64	12	14	8	10	-1.5
Supplements sold	0	0	0	0	0	0	0	0.0
Atmospheric	145	0	0	0	0	0	0	-0.5
Leaching/runoff	172	2	31	544	125	15	40	-4.4
Immobilisation/absorption	0	28	0	28	0	0	0	-0.6
Change in inorganic soil pool	0	15	67	0	286	561	675	-8.9

* Acidity - kg H+/ha

Nitrate-N losses from this block exceed 11.3 ppm - the drinking water standard. Consider mitigation options to reduce this loss

Developing status leads to N immobilisation in soil organic matter over 5-20 years, but then N leaching and nitrate in drainage will increase once full development status has been reached. The N overall farm N leaching status suggests that when full development is reached, N leaching could exceed drinking water standards.

Total P inputs of fertiliser and effluent (34 kg P/ha/yr) should be lower than maintenance P (11 kg P/ha/yr)

Figure 1. Block Nutrient budgets for an application re the Fonterra Tui Farm site to discharge wastewater to land. This site is located in the Mangatainoka farm and in a target catchment for Rule 13.1. The highest N leaching loss threshold in Table 13.1 is 32 Kg/ha/year. Left: the effluent block report. Middle: no treatment block report. Right: irrigated block.