**BEFORE THE ENVIRONMENT COURT**

| | |
|---|---|
| *In the matter of* | appeals under clause 14 of the First Schedule to the Resource Management Act 1991 concerning proposed One Plan for the Manawatu-Wanganui region. |
| *and* | **FEDERATED FARMERS OF NEW ZEALAND**<br>**ENV-2010-WLG-000148** |
| *and* | **MINISTER OF CONSERVATION**<br>**ENV-2010-WLG-000150** |
| *and* | **HORTICULTURE NEW ZEALAND**<br>**ENV-2010-WLG-000155** |
| *and* | **WELLINGTON FISH & GAME COUNCIL**<br>**ENV-2010-WLG-000157** |
| *and* | **DAY, MR ANDREW**<br>**ENV-2010-WLG-000158** |
| *and* | **MANAWATU-WANGANUI REGIONAL COUNCIL**<br>*Respondent* |

# FURTHER INFORMATION BY ANTHONY PAUL RHODES AND JEREMY DAVID NEILD AS REQUESTED BY COMMISSIONER MILLS

Dated: 8 May 2012


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## FURTHER INFORMATION BY ANTHONY PAUL RHODES AND JEREMY DAVID NEILD AS REQUESTED BY COMMISSIONER MILLS

1. Mr Mills, from the Environment Court requested a breakdown of the Table 24 (page 1475) cashflow per farm for the purpose of enabling comparison of the projected cost of compliance with current dairy farm expenditure.

2. Data in Table 24 represents the projected average annual expenditure by farmers as they act to meet the requirements of compliance with the Clean Streams Accord, current consent conditions, and Rules 13-1, 13-3, 13-5 and 13-6. As described in Tables 21-23, this involves a combination of both increased annual recurring expenditure, and one-off investment in items which continue to provide benefit over an extended period of time.

### Methodology

3. Expenditure on items of a capital nature are appropriately amortised over the effective life of the investment. Consistent with analysis elsewhere in the report, an interest rate of 6.5% has been applied, together with the following period of amortisation:

| | |
|---|---|
| Preparation of a one-off FARM strategy | 20 years |
| Creation of a wetland attenuation zone | 30 years |
| Construction of a wintering/stand-off pad | 20 years |
| Improve effluent storage pond | 20 years |
| Modify effluent irrigation system | 10 years |

4. In this analysis we have only included the costs of implementing Rule 13.6 (discharge of farm animal effluent to land and air) and Rule 13.1 (intensive dairy farming) under the notified version of proposed One Plan (NVPOP). These two rules focus on reducing nitrogen discharges to the environment across the target Water Management Zones (WMZ's).

5. The other rules costed in Table 24 are applicable to all dairy farmers in the region (compliance with the Clean Streams Accord, current consent conditions and Rules 13-3, 13-5) and accordingly are not included in this analysis.

6. Rules 13.6 and 13.1 represent $69m (84%) of the $82m total net present cost for implementing POP on 428 dairy farms in the targeted water management zones, Table 26 (a). The other significant cost will be complying with the Clean Streams Accord which has significant cost for a small number of farms (estimated at 5%) who will bear a disproportionate large expenditure to achieve compliance around stock crossings.

**Estimated Annual Average Cash Flow per Farm**

7. As indicated in our report, the cost of compliance is estimated to differ across each of the four groups of farms in the target WMZ's. Accordingly, we have estimated the annual cash flow for each group of farms, and for the total group, as shown in Table 1.

**Table 1. Annual cash flow in 2009/10 dollars for four groups of farmers in the target Water Management Zones in the NVPOP to meet Rule 13.1 and 13.6**

| | Group 1 (48 farms) | Group 2 (86 farms) | Group 3 (142 farms) | Group 4 (152 farms) | Combined Groups (428 farms) |
|---|---|---|---|---|---|
| Year 1-5 | $33,268 | $16,799 | $6,577 | $4,935 | $11,041 |
| Year 6-10 | $40,493 | $23,078 | $7,921 | $5,142 | $13,633 |
| Year 11-15 | $42,910 | $32,708 | $7,911 | $5,469 | $15,951 |
| Year 16-20 | $42,910 | $32,708 | $7,911 | $5,469 | $15,951 |
| Year 21-25 | $72,817 | $33,232 | $8,403 | $3,849 | $18,999 |
| Year 26-30 | $72,817 | $33,232 | $8,403 | $3,849 | $18,999 |

8. Costs across each five-year period fluctuate as additional mitigation strategies are implemented to meet the period N-loss target, and as the period over which previously implemented mitigation costs have been amortised expires.

**Comparison of Cost of Mitigation for a Typical Dairy Farm in Horizons Region**

9. To enable these costs to be evaluated in the context of the current cost of operation and income of a dairy farm, data from the Ministry of Agriculture and Forestry's annual Farm Monitoring report for the Lower North Island dairy model is used[1] .

[1] Lower North Island Dairy - July 2011 ISBN 978-0-478-38477-2 http://www.mpi.govt.nz/news-resources/publications?title=Farm%20Monitoring%20Report

10. This data indicates a range of financial performance over the last four years, reflecting both fluctuations in payout and climate, as shown in Table 2.

**Table 2. Data from MAF Farm Monitoring for 2007/08 to 1010/11**

| | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Four Year Average |
|---|---|---|---|---|---|
| Average area milking platform (ha) | 130 | 130 | 135 | 135 | |
| No. of cows in milk 15 Dec | 360 | 360 | 370 | 370 | |
| Advance payout to 30 June $/kg MS | $6.62 | $4.15 | $5.15 | $6.20 | $5.33 |
| Deferred payment from previous season $/kg MS | $0.81 | $1.00 | $1.05 | $0.95 | $0.95 |
| Seasonal characteristics | Drought | Wet winter, poor spring | Poor spring | Difficult winter/spring | |
| Gross farm revenue | $913,094 | $638,900 | $790,123 | $950,198 | $823,079 |
| Cash farm expenses | $422,394 | $459,900 | $386,394 | $489,694 | $439,596 |
| Cash operating surplus | $490,700 | $179,000 | $403,729 | $460,504 | $383,483 |
| Interest | $144,850 | $142,000 | $160,200 | $134,650 | $145,425 |
| Tax | $50,903 | $61,800 | $40,300 | $78,054 | $57,764 |
| Drawings | $62,000 | $60,000 | $58,000 | $70,000 | $62,500 |
| Discretionary cash (available for principal repayment, farm development and capital replacement) | $232,947 | -$84,800 | $145,229 | $177,00 | $117,794 |

11. Comparing the maximum annual average cost for each farm group as a percentage of cash farm expenses provides an indication of the relative affordability of N-loss mitigation costs, Table 3.

**Table 3. Maximum Annual Cashflow Cost as a Proportion of Current Four-Year Average Cash Farm Expenses**

| | Group 1 | Group 2 | Group 3 | Group 4 | All Groups |
|---|---|---|---|---|---|
| Maximum payment | $72,817 | $33,232 | $8,403 | $5,469 | $18,999 |
| % of cash farm working expenses | 16.6% | 7.6% | 1.9% | 1.2% | 4.3% |

12. Overall, the average cost of N-loss mitigation is equivalent to less than 5% of annual cash farm expenses. This does not appear to be an excessive cost to pay to mitigate off-farm impacts. Clearly, at 16.6%, the cost of mitigation for Group 1 farms is much more significant. For Group 2 farms, an additional cost equivalent to 7.5% of cash farm expenses may be significant in periods of low product returns or lower-than-average production.

13. As has been previously discussed, individual farm modelling and optimisation may indicate a range of less costly solutions, especially for the more capable farm managers.

14. Another method for assessing the affordability of these costs is to consider them in relation to the level of discretionary cash available in the business (also referred to as farm surplus for reinvestment)[2]. A useful index of affordability or resilience is the number of times the amount of discretionary cash can cover the proposed cost, Table 4. Across the period 2007/08 – 2010/11, the average level of discretionary cash was $117,794.

**Table 4. Comparison of maximum annual cost of implementing NVPOP and ability to pay**

| | Group 1 | Group 2 | Group 3 | Group 4 | All Groups |
|---|---|---|---|---|---|
| Maximum cashflow payment | $72,817 | $33,232 | $8,403 | $5,469 | $18,999 |
| Times covered by discretionary cash ($117,794) | 1.62 | 3.54 | 14.02 | 21.54 | 6.20 |

Dated this 8 day of May 2012.

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Anthony Paul Rhodes

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Jeremy David Neild

[2] the cash available from the farm business, after meeting living costs, which is available for investment on the farm or for principal repayments.