

Dairyshed Effluent Survey

2007/2008 Report



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Dairyshed Effluent Survey

Introduction

This report summarises the results of the 2007/2008 Marlborough Dairyshed Effluent Survey. The purposes of the Dairyshed Effluent Survey are:

- To prevent contamination of groundwater and waterways and the degradation of soil by promoting good dairy effluent management.
- To gain information on the level of dairyshed effluent compliance in Marlborough.
- To ensure compliance with the rules regarding dairy effluent.
- To provide farmers with information about dairy effluent systems and their management.

As part of the 2007/2008 dairyshed effluent survey Council staff inspected all of Marlborough's 60 dairy farms during the summer period to determine if their effluent systems and management complied with the rules in the relevant resource management plan (see Appendix A and B) or the resource consent.

Based on observations made on site, the dairy effluent system is given one of the following ratings:

- **Compliance** - Full compliance with rules or resource consents;
- **Compliance (Marginal)** - Complying with rules or resource consents, the system or its management should be improved to ensure continued compliance;
- **Non-compliance (Minor)** - A level of non-compliance with rules and/or resource consents, and some potential for environment degradation;
- **Non-compliance (Major)** - Non-compliance with rules and/or resource consents resulting in a greater potential for environmental degradation.



Effluent scrapers minimise water use, which minimises the volume of effluent to be disposed of.



Regular system maintenance is necessary.

Results

The results from the 2007/2008 Marlborough Dairyshed Effluent Survey are outlined below.

Compliance Rates

45 (75%) dairy effluent systems were in compliance at the time of the first visit. Of the complying effluent systems, 15 (25%) were rated as being compliance (marginal).

15 (25%) dairy effluent systems were in non-compliance at the time of the first visit. This year no systems were considered to be in non compliance (major).

Comparison with Previous Surveys

The table below shows the compliance rates during the previous eight surveys.

Year	Compliance	Non-Compliance
2007/08	75%	25%
2006/07	79%	21%
2005/06	87.5%	12.5%
2004/05	78%	22%
2003/04	81%	19%
2002/03	76%	24%
2001/02	47%	53%
2000/01	75%	25%

Non-Compliance (Major)

The 2007/08 season is the first season that there has been no non compliance (major). This is a significant improvement on that seen in previous years.

Year	Non-Compliance (Major)
2007/08	0%
2006/07	3%
2005/06	3%
2004/05	7%
2003/04	6%
2002/03	6%
2001/02	20%

Enforcement Action

Council has the option of undertaking enforcement action to ensure compliance. This could involve issuing an Abatement Notice requiring that certain works be undertaken or seeking that certain activities cease; issuing an Infringement Notice (requiring the payment of a fine of up to \$1,000); undertaking prosecution action, which has a maximum penalty of \$200,000 or two years imprisonment or obtaining an Enforcement Order, which is basically the Court ordering someone to undertake certain works or cease certain actions.

The table below summarises enforcement action taken over the previous seven seasons.

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
No. of Abatement Notices Issued	8	4	0	4	1	0	0
No. of Infringement Notices Issued	0	0	0	2	0	0	0
Prosecution Action Initiated	0	0	1	0	0	0	0
Enforcement Order	0	0	0	0	0	1*	0

* In response to non-compliance in the 2006/07 season an enforcement order was obtained from the Environment Court. This matter is still being worked through during the 2007/08 season.

Back Up Systems

A back up system (e.g. ponds) is required to ensure that effluent will be managed in accordance with the rules, regardless of weather conditions or mechanical failure.

Of the 60 farms visited 57 had some form of back up. However, in reality a number of these back up systems need improving and would probably not be compliant in prolonged heavy rain.

Ponds must be kept only partially full so as allow sufficient room to store effluent should there be heavy rain. It was noted that most effluent ponds were completely full and therefore unable to be used for further storage should it rain.

Ponds should be sealed to prevent contaminants leaching through the soil profile and into groundwater.

The volume of storage necessary is dependent on factors such as expected rain fall, soil types, topography, ground water levels, location of waterways and herd size.

Effluent carts and large ponds allow flexibility alleviating the need to spread during wet conditions.



A method of storing effluent is necessary as even well maintained systems need repairing during the dairy season.



Regional Action Plan and Clean Streams Accord

Fonterra, in conjunction with groups representing central and local government, has produced the Dairying and Clean Streams Accord. This Accord sets national targets to deal with water quality issues as a result of dairying. Council, in partnership with Fonterra, produced a Regional Action Plan which details a local commitment towards achieving the goals of the Accord. A copy of the Marlborough Regional Action Plan is attached as Appendix C. The Regional Action Plan includes the following targets:

- That the rate of non-compliance (minor) should not exceed 15% in one season.
- That there shall be no incidents of non-compliance (major).

The target with respect to non compliance (major) has been met this season. However, the non compliance rate (minor) is considerably higher than the target set for non compliance (minor).

To comply with the target set in the Regional Action Plan there is going to need to be a decrease in the percentage of farms in non compliance (minor).

Overloading of Effluent



**Pipes behind irrigator should be in a straight line.
Pipes with kinks and bends will slow irrigator
movement.**

Obtaining Information

Fonterra has produced a website that provides information for farmers about dairying in an environmentally sustainable manner. This website has been set up to be easy to use as well as interesting. The address for the website is www.envirodirect.co.nz.

Another website that may be of interest to farmers is the Marlborough District Council website (www.marlborough.govt.nz). This website has information about Marlborough's environment such as rainfall data, riverflow levels etc.

In conjunction with the Marlborough District Council, DEXCEL has produced booklets on managing effluent and waterways. Copies of these booklets were provided to farmers this survey, and about three years ago. Additional copies of these booklets can be obtained from the Marlborough District Council, on 520 7400.

Posters that outlined, "Tips for Operating an Environmentally Sustainable Dairy Effluent System" were provided last survey. It is intended that these posters be put up in the cowshed as a reminder to farm owners and staff. Additional copies of these posters can be obtained from the Marlborough District Council on 520 7400.



Cow stuck in effluent pond. Effluent ponds should be fenced for safety and regularly de-sludged.

MAKE EFFLUENT MANAGEMENT A PRIORITY ON YOUR FARM

Tips For Operating An Environmentally Sustainable Dairy Effluent System

- Move stationary irrigators before each milking
- Check travelling irrigators daily
- Move travelling irrigator's anchor before the run is finished
- Set travelling irrigators on fastest speed
- Spread the effluent from 100 cows evenly over at least 3-4 hectares each year
- Maintain a 20 metre buffer between the effluent disposal area and any waterway
- Avoid spreading effluent during heavy rain
- Check effluent pond to ensure:
 - No leaks/overflows
 - Adequate storage
 - Free from excessive weeds or crusting
- Have a back-up system to be used in the event of mechanical failure or heavy rain eg pond, second pump etc
- Have system, including pumps, fully serviced pre-season
- Check sumps/stone traps and remove solids regularly
- Train staff in effluent management
- Divert stormwater from cow shed roof away from dairy effluent system

Penalties:

If the effluent system does not comply with the rules, managers, shareholders and owners may all be liable, ensure they manage effluent appropriately, or you may also be liable.

Penalties include:

- A \$750 infringement notice
- A fine of up to \$200,000 or up to two years in prison

For more information:

- Visit www.envirodirect.co.nz
- Talk to Council or an effluent specialist
- Read the rules in the Resource Management Plan or your resource consent
- A full copy of the rules can be obtained from Marlborough District Council (03) 578 9382

Appendix A

Rule 1.7.3 permitted activities (rural zones) – Marlborough Sounds Resource Management Plan

1.7.3 Dairymshed Effluent Disposal

The discharge of contaminants (but excluding hazardous substances) from dairymsheds, or dairy washdown facilities onto or into land in circumstances which may result in that contaminant entering groundwater shall be a Permitted activity provided that:

The discharge shall not be within 20 metres of a surface water body or over any unconfined aquifer;

- There shall be no run-off of contaminants into surface water resulting from the discharge of the contaminant onto or into land;
- The total nitrogen loading on the area to be used for discharging shall not exceed 200 kg N/ha/yr;
- When discharging effluent a buffer zone of a minimum 10 metres in width is to be maintained between the area of discharge and any property boundary;
- The wash water collection, containment and application system shall not be within 20 metres of the boundary of any neighbouring property without that person's prior written consent, a copy of which shall be forwarded to the Marlborough District Council;
- The wash water collection and containment system shall not be within 20 metres of any surface water body;
- The wash water collection, containment and application system shall not be within 20 metres of any area identified by Tangata Whenua as being of special value, or any filed archaeological site;
- There shall be no spray drift beyond the boundary of the land to which the effluent is discharged;
- No objectionable odours shall be able to be detected at or beyond the legal boundary of the land to which the effluent is discharged;
- There shall be contingency measures in place to ensure that there is no contravention of the above conditions in the event of system failure or adverse climatic conditions;
- The system will be monitored by the Marlborough District Council to ensure there is compliance with the above conditions.
- The discharge, after reasonable mixing shall not breach the water quality standard set for the waterbody in Appendix H.

Appendix B

Rule 2.5 controlled activities (rural zones) - Proposed Wairau/Awatere Resource Management Plan

2.5 Discharge of Liquid Wastes and Animal Effluent

2.5.1 Subject to rule 1.8.9 the discharge of any liquid waste or animal effluent onto or into land is a controlled activity subject to the following standards and terms:

2.5.1.1 The characteristics of the waste or effluent shall be such that:

- BOD₅ - 10,000 g/m³
- Faecal coliforms - 1 x 10⁶ /100 mL (median of at least 6 samples taken at monthly intervals)
- Free available chlorine < 2 g/m³.
- Other contaminants shall not exceed the toxicant limits for irrigation water quality which are set out in Appendix P. These limits are derived from the Australian Guidelines for Fresh and Marine Waters (Australian and New Zealand Environment and Conservation Council [ANZECC] 1992)
- No objectionable odours can be detected at or beyond the legal boundary of the area on which the liquid waste is discharged

For the purposes of assessing whether an odour is objectionable or offensive, the opinion shall be sought from an officer of the Council who is responsible for monitoring air quality.

2.5.1.2 The discharge is not within 20m of any surface water body.

2.5.1.3 The discharge shall not be within any class NS catchments defined in Appendix J.

2.5.1.4 The total nitrogen loading on the area of land to be used for the discharge shall not exceed 200 kgN/ha/yr.

2.5.1.5 There is a buffer zone of 10m width between any point of discharge and the legal boundary of the area of land on which the treated animal waste is discharged.

2.5.2 Matters over which the Marlborough District Council Reserves its Control are:

- the location of the area over which the waste is discharged,
- the volume of discharge and application rate,
- the actual and potential effect the discharge may have on surface water bodies,
- duration of the consent,
- monitoring requirements.

Appendix C



Background Information

Dairying and Clean Streams Accord

Dairying is a significant land use in New Zealand. However, there have been increasing concerns regarding the effects of this intensive land use on the quality of water within our streams, rivers, lakes and wetlands.

The Dairying and Clean Streams Accord is an agreement between Fonterra Co-operative Group, regional councils, unitary authorities (such as the Marlborough District Council), the Ministry of Agriculture and Forestry and the Ministry for the Environment to improve the environmental performance of dairying. It establishes a goal of achieving "clean healthy water in dairying areas".

Five priorities for action are identified in the Accord to reduce the impact of dairying on streams, rivers, lakes and wetlands: cattle access to water bodies, dairy herd stream crossings, dairy shed effluent discharges, nutrient management and wetlands. Each of these priorities has a national performance target, as follows:

- Dairy cattle are excluded from 50% of streams, rivers and lakes by 2007, 90% by 2012
- 50% of regular crossing points have bridges or culverts by 2007, 90% by 2012
- 100% of farm dairy effluent discharges comply with resource consents and regional plans immediately
- 100% of dairy farms have in place systems to manage nutrient inputs and outputs by 2007
- 50% of regionally significant wetlands to be fenced to prevent stock access by 2007, 90% by 2012

The Marlborough Regional Action Plan adapts these national targets to local conditions. See inside for Marlborough targets.

Regional Action Plan

The Dairying and Clean Streams Accord represents an industry taking responsibility for improving its environmental management. This initiative therefore presents an opportunity for the Marlborough District Council to assist efforts to improve the sustainability of dairying in Marlborough while exercising its statutory responsibilities under the Resource Management Act 1991.

Regional Action Plans have been developed by Fonterra and each of the regional councils and unitary authorities to assist the implementation of the Accord.

The purpose of the Marlborough Regional Action Plan is to detail local commitments toward achieving the Accord's goal, while taking into account local circumstances. The Regional Action Plan records commitments made by Fonterra and the Marlborough District Council to reduce the adverse effects of dairying activities on water and habitat quality in Marlborough. These commitments focus on the priorities for action already established by the Accord. Some of the local targets differ to the national targets, reflecting the relative adverse effects of dairying operations in the local context.

The Regional Action Plan also sets out the respective roles of the Council and Fonterra in achieving the local targets.

The Marlborough Regional Action Plan has been developed with input and support from local Federated Farmer representatives.

To get further information about the Regional Action Plan, or to receive a free copy, please contact either Pere Hawes at the Council on (03) 578 5249 or Fonterra Shareholder Services Contact Centre on 0800 65 65 68

Dairying and Clean Streams Accord



Regional Action Plan for Marlborough

July 2004



Stock access to waterbodies

- ☀ Dairy cattle are excluded from 50% of streams, rivers and lakes by 2007, 90% by 2012

The Council will continue to encourage dairy farmers to prevent stock access to water bodies. This will include working with individual farmers to protect particular rivers and streams from the adverse effects of stock access and general advocacy with groups representing dairy farmer interests.

In most cases, fencing will be the only practical method of excluding stock.

Dairy herd stream crossings

- ☀ 90% of category 1 and 2 dairy herd stream crossings in the Rai River catchment are eliminated by the commencement of milking season (August) in 2006.
- ☀ Except for those stream crossings in the Rai River catchment, 50% of all other crossing points have bridges or culverts by 2007, 90% by 2012.

The Council will continue with the implementation of the existing management strategy for the Rai River catchment.

The adverse effects of dairy herd stream crossings in other areas will be progressively investigated from 2004. The management strategies that are subsequently developed will depend upon the results of monitoring and consultation with the dairy farming community. The investigations will focus on the following areas:

- Canvastown
- Linkwater
- Koromiko/Tuamarina

Management of dairy shed effluent

- ☀ There is no "major" non-compliance with relevant resource consents or permitted activity rules.
- ☀ The rate of "minor" non-compliance with relevant resource consents or permitted activity rules shall not exceed 15% in any one milking season and any instance of "minor" non-compliance shall be rectified to the satisfaction of the Council within 2 weeks.
- ☀ All dairy farmers that require a discharge permit to discharge dairy shed effluent onto land are operating with the necessary consents.

The Council will continue to annually inspect dairy shed effluent discharges and assess the discharge as either in compliance, in "minor" non-compliance or in "major" non-compliance.¹

Currently 26 out of 30 farmers who require resource consents for their effluent discharges have the necessary consents.

Nutrient Management

- ☀ 100% of dairy farms to have in place systems to manage nutrient inputs and outputs by 2007

Fonterra will promote nutrient budgeting systems for all dairy farms, in consultation with the dairy farming community and fertiliser industry.

¹ Major non-compliance is categorised as non-compliance likely to result in significant adverse effects on the surrounding environment and includes unlawful discharges of effluent to water or the excessive application of effluent to land. Minor non-compliance, on the other hand, represents non-compliance that is not likely to result in significant adverse effects on the surrounding environment.

Wetlands

- ☀ 50% of regionally significant wetlands to be fenced to prevent stock access by 2007, 90% by 2012

The Council is currently identify significant natural areas throughout Marlborough. Where significant wetlands are identified on or adjacent to dairy farms, the Council will work with the dairy farmer to protect the wetland from the adverse effects of stock access.

Monitoring and reporting on targets

Fonterra will monitor progress toward achieving these targets. However, the Council has a statutory responsibility to monitor the state of Marlborough's environment, compliance with the permitted activity standards of the Marlborough Sounds Resource Management Plan and Proposed Wairau/Awatere Resource Management Plan, and conditions of resource consents. Where this monitoring information is relevant to ascertain progress toward achieving the targets, the Council will provide this information to Fonterra. Examples include the Council's strategy for eliminating stream crossings in the Rai River catchment and the annual inspections of dairy shed effluent discharges. This will avoid any duplication in monitoring effort.

There is also a need to evaluate the effectiveness of the Regional Action Plan in achieving the overall objective of the Accord (i.e., "clean healthy water in dairying areas") and to ensure that it reflects community expectations. Monitoring of the targets may identify that the targets or implementation actions need to be modified or replaced. For this reason, representatives of the Council and Fonterra will meet on at least an annual basis to evaluate and review the content of the Regional Action Plan.

