

# Winery Wastes Survey



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# 1. Introduction

The winery wastes survey is carried out by the Marlborough District Council on an annual basis during vintage to ensure that wastewater and grape marc is managed in a responsible manner.

This survey involves Council staff inspecting wineries to check that their methods of dealing with winery wastewater and grape marc is in accordance with relevant Plan rules and/or Resource Consents. Site visits are conducted during vintage, with follow-up visits being carried out as required.

Marlborough has 43 wineries, 9 of which are located in or adjacent to one of the industrial areas.

As wineries in the industrial area discharge their wastewater and stormwater to reticulated community systems the potential resource management issue differ to those wineries that discharge wastewater to land. Hence industrial wineries are monitored differently to rural wineries. Instead of carrying out site inspections at industrial wineries the stormwater drains downstream of the winery are checked regularly for signs of winery wastewater.

In this report the term 'winery wastes' refers to the wastewater that is produced from the wine making process and does not include human sewage. The term 'grape marc facility' includes all sites that deal with grape marc.



**Disposal area planted as a woodlot**



**Grape marc stored on concrete pad**

# 2. Results

The results for the 2007 winery wastes survey are outlined below:

## Winery Wastewater

During the 2007 survey a total of 43 wineries were visited to assess compliance with rules or resource consents relevant to winery wastewater.

38 (88%) wineries were in compliance at the time of the first inspection during this vintage. Of the complying sites, 7 (16%) had minor issues to address and were considered to be compliance (maintenance).

5 (12%) wineries were in minor non-compliance

## Grape Marc

During the 2007 survey a total of 36 sites that deal with grape marc were visited to assess compliance with rules or resource consents.

All of the grape marc facilities were in compliance at the time of the first inspection during this vintage. However, 2 (6%) of these sites had minor issues to address and were considered to be compliance (maintenance).

## Comparison Between Rural and Industrial Wineries

Generally wineries in the industrial area have a lower rate of compliance than wineries located in the rural areas that have their own on-site wastewater systems.

2 out of the 9 industrial wineries were in non-compliance this vintage. The issue at both of these wineries was, that small amounts of wastewater was being discharged into the stormwater system, which eventually leads to the Wairau Lagoons.

Only 3 out of the 34 wineries in the rural area were in non-compliance.



**Winery wastewater in the stormwater system**

## Comparison with Previous Surveys

The methods of dealing with grape marc have improved considerably to that seen over the last six years. The 100% compliance rate is excellent and sets a standard to be maintained in the future.

It is very positive to see that the standard of wastewater management has increased significantly compared to that noted last vintage.

The table below demonstrates compliance rates over time.

Year of Survey	Grape Marc			Wastewater		
	Compliance	Non-Compliance (Minor)	Non-Compliance (Major)	Compliance	Non-Compliance (Minor)	Non-Compliance (Major)
2007	100%	0	0	88%	12%	0
2006	96%	4%	0	70%	21%	9%
2005	98%	2%	0	80%	20%	0
2004	97%	3%	0	89%	5%	6%
2003	94%	3%	3%	75%	19%	6%
2002	51%	39%	10%	72%	17%	11%

Experience suggests that compliance rates over the years are not only determined by the standard of management and systems, but also the volume of grapes crushed and the length of harvest. Although this is understandable, winery wastewater must be managed to a high standard regardless of work pressures and there must be systems in place and sufficient staff to manage wastewater even at peak times.

## Complaints

Two resource management complaints have been received so far this year with regards to winery operations. One complaint was regarding a wastewater sump overflowing and discharging onto a neighbouring property. The other complaint was regarding light spill from a winery.

During vintage 2006 there were complaints with regards to smelly black water in both the Riverlands Industrial Drain and the Co-op Drain.

During vintage 2005 there were no complaints with regards to winery wastewater or grape marc, however, there were complaints with regards to winery operations, eg. light spill, stereo noise and odour.

## 3. Enforcement

No enforcement action was taken during vintage 2007 with respect to winery wastewater or grape marc. This reflects the considerable improvement in winery wastewater management over that seen during 2006 when six infringement notices were issued.

## 4. Tips for Good Management - Wastewater

Over the years the main cause of wastewater systems being in non-compliance is poor management. Tips for good management are outlined below:

### Regular Checks

One of the most important things that can be undertaken to facilitate good winery wastewater management is to have someone who understands the system checking it regularly to ensure it is operating appropriately. Generally leaving this job to the winemaker is not appropriate as winemakers have other priorities during vintage.

This person needs to check the whole system, including a walk through the disposal area. Experience suggests that observing the disposal area from a distance or vehicle is not always adequate.

Wineries in industrial areas should check the point at which the stormwater from their sites enters the stormwater drain to ensure that there is no wastewater present.



**Walking over the disposal area regularly helps identify issues**



**Fix things properly**

### Fix Problems

In the event of a problem occurring or being anticipated, it is important that immediate action be taken to address the problem. Although this is very obvious, experience suggests that not all sites are proactive at dealing with issues.



## Pre-Vintage Maintenance

The winery wastewater system should be checked and serviced thoroughly before vintage. This could include checking the entire system, cleaning out tanks/sumps, flushing out solids that may have accumulated in pipes, maintaining the pump and irrigator, etc. Fresh water should be run through the system to ensure it is operating to a high standard.

The disposal area should be checked and grass kept short. Any hollows in the disposal area should be filled to avoid run-off and concentration of wastewater in lower areas. Each individual run should be marked appropriately.



**Remove weeds from around sprinklers**

## Independent Professional

With larger wastewater systems, it is advisable to employ an independent professional that specialises in winery wastewater to inspect the system on an annual basis and provide advice.

## Contingency Plan

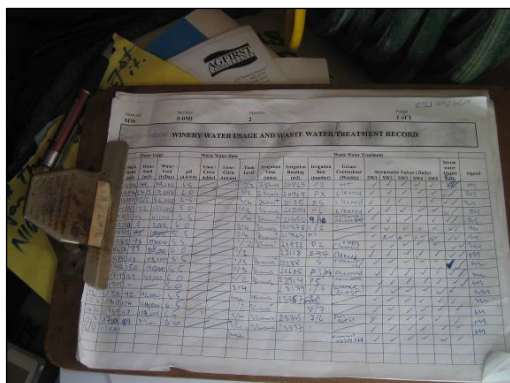
The wastewater system should be designed and have infrastructure in place to deal with wastewater in the event of the unexpected occurring, such as an early vintage, a high volume harvest, mechanical failure or adverse weather conditions.

## Increase the Disposal Area Size

If there is any increase in the expected tonnage to be crushed, the size of the wastewater system and disposal area should be re-assessed and appropriate upgrades/extensions made. This may require resource consent and wineries should be thinking ahead. It is advisable to have a disposal area that is larger than generally required to allow for high tonnage years.



**Installation of a 9 hectare disposal area**



**Simple but effective record keeping in the field**

## Record Keeping

Records should be kept that outline information such as pH of wastewater, volume of wastewater discharged to each part of the disposal area, discharge rate, weather conditions, break down, maintenance etc. Not all wineries have an accurate recording system. These systems do not need to be complex, a note book and a responsible staff member will suffice.

## Sampling

Soil should be sampled on a regular basis so that changes can be noted and, if necessary, fertiliser remediation undertaken. Wastewater and groundwater sampling is also advisable.

## pH

All wineries should have a system in place of measuring and recording pH of the wastewater prior to a discharge occurring. Winery wastewater should only be discharged to land if the pH is between 4.5 and 8.



**Automatic pH adjustment system**

## Read the Resource Consent

Resource consents are granted subject to compliance with conditions. It is important that the consent and associated conditions are read and systems put in place to ensure compliance. All staff involved in the wastewater system should be familiar with this document.

## 5. Proposed Wairau/Awatere Management Plan

The discharge of winery wastewater, leachate and grape marc to land is regulated by rules in the Proposed Wairau/Awatere Resource Management Plan (refer to Appendix A & B). Those discharges that do not comply with these rules should change their system or obtain resource consent. If the discharge fully complies with these rules a certificate of compliance is generally obtained from Council.

A number of wineries have resource consents for their winery wastewater discharge. These resource consents are subject to compliance with certain conditions. Often conditions require that an annual report be prepared, soil and/or wastewater samples be taken and that certain wastewater records be kept.



**Wastewater in the stormwater system**



**Moveable grape marc auger**

## Appendix A

### **Rural Zone, Proposed Wairau/Awatere Resource Management Plan states:**

#### **1.8.9 Liquid Wastes**

The discharge of liquid waste from the processing of fruit, vegetable, shellfish, fish or animal products onto or into land is a permitted activity subject to the following conditions:

1.8.9.1 The characteristics of the waste shall be such that:

- BOD<sub>5</sub> - 5,000g/m<sup>3</sup>
- faecal coliforms - 100/100 mL
- free available chlorine < 1 g/m<sup>3</sup>
- 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.

1.8.9.2 The total nitrogen loading on the land to be used for the discharge shall not exceed 200kg N/ha/yr.

1.8.9.3 The discharges shall be applied evenly over the disposal area at a rate not exceeding 10mm/day.

1.8.9.4 The discharge shall not be within 20 metres of any surface water body.

1.8.9.5 There shall be no runoff of the waste into any surface water body.

1.8.9.6 A buffer zone of a minimum of 10 metres width shall be maintained between the area of discharge and the legal boundary of the land on which the liquid waste is discharged.

1.8.9.7 The discharge shall not be within any class NS catchment defined in Appendix J.



## **Appendix B**

### **Rural Zone, Proposed Wairau/Awatere Resource Management Plan states:**

#### **1.8.10 Solid Waste**

The discharge of solid waste from the processing of untreated timber, fruit, vegetable, and shellfish products onto or into land is a permitted activity subject to the following conditions:

- 1.8.10.1 The waste shall not contain any substances classified as eco-toxic under the Hazardous Substances and New Organisms Regulations.
- 1.8.10.2 The discharge shall not be within any class NS catchment defined in Appendix J.
- 1.8.10.3 The characteristics of the waste shall be such that no shellfish flesh is included.
- 1.8.10.4 No objectionable odours can be detected at or beyond the legal boundary of the area of land on which the waste is discharged.
- 1.8.10.5 The total nitrogen loading on the land shall not exceed 100 kg N/ha/yr.
- 1.8.10.6 The amount of solids applied shall not exceed a depth of 50mm per year, measured when applied.
- 1.8.10.7 The discharge shall not be within 20 metres of any surface water body.
- 1.8.10.8 There shall be no runoff of contaminants from the waste into any surface water body.
- 1.8.10.9 A buffer zone of a minimum of 5 metres width shall be maintained between the area of discharge and the legal boundary of the area of land on which the waste is discharged.

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