

1. Winery Wastewater & Grape Marc Monitoring Report

(Clr Hope) (Report prepared by Rachel Neal)

E360-006-02

Purpose of Report

1. The purpose of this report is to inform the Committee of the Compliance Group's ongoing monitoring of the discharge of winery wastewater and grape marc to land for the period 1 June 2019 – 31 May 2020.

Executive Summary

2. Council monitored 38 wineries that discharge winery waste to land within the rural environment for the 2019/20 monitoring period.
3. For the 2019/20 monitoring period 18 wineries (47%) were assessed as fully compliant and no wineries were assessed as significantly non-compliant.

RECOMMENDATION

That the information be received.

Background/Context

4. Council has been monitoring the land application of winery wastewater annually since 1999 with reports being produced since 2005.
5. The 2020 New Zealand Winegrowers Annual Report indicates that nationally the 2020 harvest of 457,000 tonnes had increased on the 413,000 tonnes crushed in 2019. The value of New Zealand wine exports grew a further 6% to reach a new record of \$1.92 billion this year.
6. In 2020 Marlborough had a 77.7% proportion of the grapes harvested in New Zealand; with 27,808 producing hectares (compared to 27,176 producing hectares in 2019) and a total of 343,036 tonnes processed (up from 305,467 tonnes in 2019).
7. Liquid waste from the winemaking process predominantly consists of water used for cleaning floors, equipment, fermentation tanks and barrels. Liquid waste is typically seasonal in nature, with the greatest volume generated at vintage time.
8. Winery wastewater can contain some constituents that are an environmental concern. Poor management of the land application of winery wastewater can lead to contamination of surface and ground water and adversely affect soil and plant health.
9. Grape marc is the solid end product once grapes have been pressed for juice. It contains seeds, stems, skins and pulp. In 2020 an estimated 51,400 tonnes of grape marc was produced by Marlborough wineries.

Where monitoring was undertaken

10. There are 40 wineries in Marlborough that discharge winery wastewater to land. 34 wineries are located in the Wairau Plains, one is located north of Blenheim and five are located in the Awatere area. 38 wineries are reported on for this reporting period as two wineries aren't required to provide information until a later date.

11. The wineries within the Riverlands and Cloudy Bay industrial zones that discharge directly to trade waste, and three wineries in the rural zone that have their wastewater taken offsite, were not monitored for this monitoring period.

Proposed Marlborough Environment Plan

12. The MEP Hearings Panel issued their decision on the proposed Marlborough Environment Plan on 21 February 2020. The decisions are now subject to appeal.
13. All permitted activity monitoring completed for the 2020 period was assessed against the appeal version of the MEP.
14. The MEP states that the discharge of agricultural waste, making or compost/storage of agricultural waste and storage of compost must not occur within a Soil Sensitive Area. There are seven wineries that have discharge areas or compost pads within a Soil Sensitive Area.
15. The wineries that have discharge areas or compost pads within a Soil Sensitive Area will need to apply for resource consent which will assess the environmental effects and determine what measures need to be put in place for the discharge to continue. To date four wineries have obtained resource consent to legalise and continue the discharge within a Soil Sensitive Area.
16. Section 20A of the Resource Management Act 1991 (RMA) provides that any existing activity that was formerly a permitted activity, or that otherwise could have been lawfully carried out without a resource consent as a result of a rule in a proposed plan, may continue until the plan becomes operative if all factors within section 20A are satisfied.
17. The three wineries that are discharging waste within a Soil Sensitive Area have existing use rights and therefore may continue the discharge without a resource consent until the plan becomes operative. An application for the discharge must be made within six months of the rule becoming operative.

How monitoring was undertaken

18. The 40 wineries that discharge wastewater to land are monitored according to resource consent conditions and/or the permitted activities standards under the MEP. Inspection templates were forwarded to wineries prior to vintage highlighting what information and records are required from them to demonstrate compliance with resource consent conditions and/or MEP permitted activity standards. For this reporting period 38 wineries have been assessed to date and are reported on.
19. There are currently 24 wineries assessed under the permitted activity standards and 16 wineries assessed under resource consent.
20. Only one onsite inspection was completed for the 2020 period. The one inspection was completed in early March prior to the COVID-19 lockdown.
21. Resource consent conditions for discharge of winery wastewater to land are imposed based on the individual wastewater system and local environments; therefore, conditions vary for each winery.
22. The MEP permitted activity standards for discharge of winery wastewater include: pH level parameters; nitrogen loading to the land; no ponding or anaerobic soil conditions; buffer zones to boundaries, water bodies and bores; no use of a high rate discharge system onto land with a slope greater than 7 degrees; and no discharges into surface water bodies, within a Soil Sensitive Area or within a Groundwater Protection Area.
23. Additional monitoring is undertaken for the wineries that compost and/or spread grape marc directly to land to ensure appropriate location, leachate collection and compliance with the MEP standards or resource consent conditions.
24. A traffic light system is used to determine the compliance with consent conditions or the permitted activity plan rule. Conditions or rules were assessed as:

Green are compliant and no action is required;

Yellow are technically non-compliant for minor breaches with no-adverse environmental effects;

Orange are non-compliant where a breach of a condition or rule which may cause an actual adverse effect or potential environment effect; and

Red are significantly non-compliant, where a persistent or significant breach has occurred.

Monitoring results

25. 38 wineries submitted information (e.g. Annual Reports, wastewater and/or soil sample results) and data (e.g. records of daily wastewater volumes, discharge dates, disposal area sizes, pH records) to demonstrate compliance. Follow up was required with some wineries in order to clarify the information and/or data provided.
26. There is a large range in processing capacity from the smallest rural winery which crushed 22 tonnes, to one of the largest rural wineries which processed just over 32,000 tonnes.
27. This year seven wineries (19%) operating under resource consent and 11 wineries (29%) operating under the permitted activity standards were assessed as **compliant**. Five wineries (13%) operating under resource consent and seven wineries (19%) operating under the permitted activity standards were assessed as **non-compliant**.
28. Overall this year 18 (47%) wineries (up from 16 (44%) in 2019) were fully compliant with all conditions or rules and were assessed as **compliant**. Eight (21%) wineries (no change since 2019) were assessed as **technically non-compliant**. 12 (32%) wineries were assessed as **non-compliant**. Nine of these wineries (24%) had only one condition or rule assessed as **non-compliant** (no change since 2019) and three wineries (8%) had two or more conditions or rules assessed as **non-compliant** (up from two wineries in 2019). No wineries were assessed as **significantly non-compliant**.
29. The areas of non-compliance for this monitoring period were due to exceeding the pH range, wastewater ponding, discharge within a Soil Sensitive Area and exceeding wastewater/soil sampling set limits.
30. It is important to note that the three wineries that were assessed as non-compliant due to waste being discharged within a Soil Sensitive Area have existing use rights under Section 20A of the RMA. These wineries are permitted to continue the discharge to land without resource consent until the MEP becomes operative.
31. The details of the non-compliances will be presented to the Compliance QA panel to determine if/what enforcement action is required.
32. As part of monitoring, information in regards to grape marc disposal is required to be provided. 10 wineries compost their grape marc on site and then spread it under vines as a soil conditioner. 13 wineries spread their grape marc directly to land. 15 wineries have their grape marc transported offsite for compost, stock feed and/or spreading to land.

Future activities

33. For the 2020/2021 monitoring period Council will continue to focus on education about the criteria required for consent conditions, plan rule standards and achieving compliance. This is to ensure accurate data and records are provided to Council to demonstrate compliance and avoid any adverse effects from winery discharges.
34. For the 2021 vintage the wineries will continue to be monitored and site visits will be conducted based on the size and compliance history of the wineries.

Comments

35. Based on the information provided to date for Council's compliance reports for the 2019/2020 season, some wineries still need improved record keeping for the entire reporting period. It is acknowledged that there was added pressure this year due to COVID-19 lockdown restrictions.
36. Grape marc is an industry issue which requires careful management to ensure that there are no adverse environmental effects. Overall an improved management and awareness of grape marc storage was noted in the 2020 vintage year.

Summary

37. The Compliance Group is continuing to take a proactive and constructive partnership approach to monitoring the discharge of winery wastewater and grape marc with education, relationship building and graduated enforcement when required with the key objective being the mitigation of adverse environmental effects.

Presentation

A short presentation will be given by Rachel Neal (10 minutes).

Attachment

Attachment 5.1 Winery Waste Compliance Snapshot 2020

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KEY POINTS Snapshot of the 2020 monitoring programme

- 70%**
Proportion of grapes harvested in NZ
- 343,036**
Tonnes of grapes processed in 2020
- 12%**
Increase in total tonnage processed in 2020 when compared with 2019
- 40**
Wineries discharge to land in the rural area
- 38** Wineries were monitored
- 0** Wineries assessed as significantly non-compliant
- 47%** (18 wineries)
Of wineries complied with all consent conditions and standards
- 32%** (12 wineries)
Of wineries were rated non-compliant.

What was found during the 2020 inspections and Annual Report monitoring

Marlborough District Council monitors all wineries which discharge wastewater to land under the permitted activity standards or resource consent. Only one winery inspection was completed in early March prior to the COVID-19 lockdown. The wineries are monitored according to resource consent conditions and/or the permitted activity standards under the Marlborough Environment Plan (MEP) for the discharge of liquid and solid agricultural waste to land.

Following harvest, many wineries are required to provide an Annual Report which discusses in depth, the compliance of each consent condition. A compliance report is provided to all wineries detailing the compliance status for each consent condition or plan rule.

47% of winery waste discharges (18 wineries) were rated as compliant with all conditions/rules.

21% of wineries (8 wineries) were rated technically non-compliant;

24% of wineries (9 wineries) were rated non-compliant with 1 condition/rule; and

8% of wineries (3 wineries) were rated non-compliant with 2 or more conditions/rules.

Three wineries that were assessed as non-compliant for discharging waste within a Soil Sensitive Area, have existing use rights under Section 20A of the Resource Management Act (RMA) and may continue the discharge without resource consent until the PMP becomes operative.

- Common Areas of Non-compliance:**
- pH parameters exceeded
 - Discharge within Soil Sensitive Area
 - Surface ponding
 - Wastewater/soil parameters exceeded
- Industry Issues and Challenges**
- **Stormwater diversion**
Reduce the volume of wastewater created
 - **Contingency plans**
The majority of wineries have little or no storage
 - **Grape Marc storage**
The location and facility must be suitable

Summary of Compliance Rating System

Results reported in this snapshot reflect the compliance of each permitted activity standard or resource consent condition, the lowest rated condition is the overall compliance level. For example a wastewater discharge consent could have 25 conditions of which 23 are rated compliant (green), 1 is rated minor non-compliance and 1 is rated non-compliance – the consent is rated non-compliance.

Full Compliance	Technical non-compliance	Non-compliant	Significantly Non-compliant
100% compliance with all consent conditions/ permitted activity standards assessed	Non-compliance with conditions which are considered to only have minor or no adverse environmental effects. E.g. failure to keep records	Breach of effects based/best practice conditions/rules that cause minor actual or potential environmental effects. E.g. ponding of wastewater remediated immediately.	Significant breach of effects based/best practice conditions/ rules that cause actual or potential environmental effects. E.g. multiple exceedances of parameters or wastewater reaching a waterway.

Winery Wastewater

- Winery wastewater consists of water used for:
- Cleaning floors
 - Equipment
 - Fermentation tanks and barrels



Grape Marc

Grape Marc is the seeds, skins and stalks left once the juice is squeezed from the grapes.



COMPLIANCE SNAPSHOT

Rural Winery Wastewater and Grape Marc Monitoring



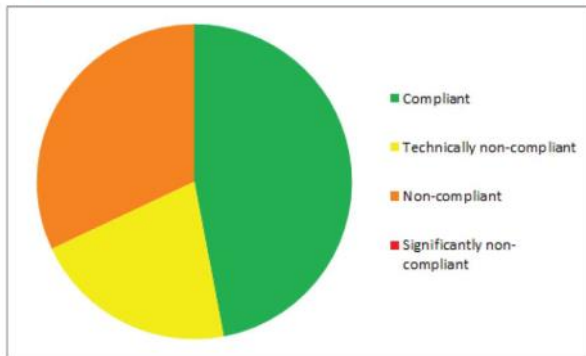
Compliance snapshot

Monitoring for the 2019/20 monitoring period was predominantly a desktop exercise and relied on each winery to provide detailed and sufficient records to demonstrate compliance.

The types of wastewater systems vary throughout Marlborough due to the range in production sizes at each winery. The systems vary from basic settling systems to complex systems using automotive aeration and microorganism selection for treatment.

Wastewater is spread in a variety of locations including in wood lots, under grape vines or in pastoral paddocks. Grape marc is stored in a 'compost' type facility on site at the winery, spread immediately under vines or in pastoral lots or it is sent to other rural locations.

Compliance Levels 2020 vintage



Wastewater Spread to Land - examples of compliance and non-compliance from previous surveys



Overwatering causing ponding



Overwatering causing ponding

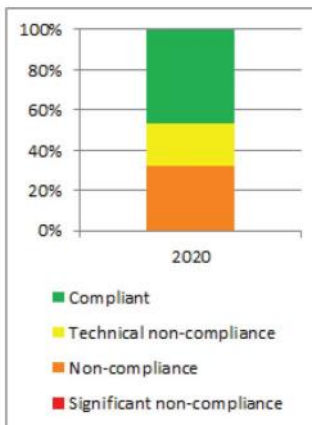
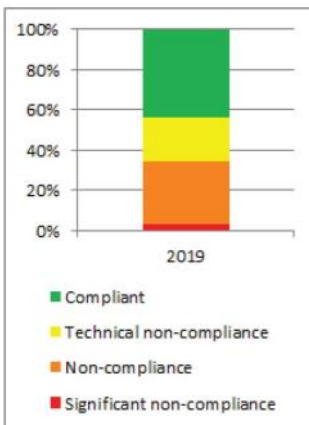


Low rate application system



Well monitored application

Compliance Levels over the last two vintages



Grape Marc Storage



Grape marc stored to land with no leachate collection



Sealed storage area with leachate collection

For More Information

For more information on compliance and enforcement monitoring undertaken by Marlborough District Council, contact the Environmental Protection Group

Phone: 03 520 7400
 Email: monitoring@marlborough.govt.nz
 Website: www.marlborough.govt.nz



MARLBOROUGH DISTRICT COUNCIL