



Port Marlborough
**Marlborough
Environment
Awards 2025**

Sound environmental
management is good business

CATEGORY SPONSOR:



Judges' Report

CATEGORY:

Wine Industry

Rose Family Estate 1978 – Liquid Waste Reduction

INTERVIEWED	Nick Entwistle (Chief Winemaker) and Lindsay Parkinson (CEO)
DATE	6 December 2025
JUDGES	Andy Frost, Heath Stafford, Tracy Taylor

INTRODUCTION

The Rose family have farmed alongside the Wairau River since 1870. Phil and Chris Rose first planted their vineyard in 1978 and released the first vintage wine in 1991. They built their winery in 2002 and it now crushes 10,000T of grapes.

GENERAL INFORMATION

Rose Family Estate (RFE) has continually demonstrated their commitment to sustainability in a number of ways. They joined the SWNZ programme in 2009. They have planted riparian areas on their vineyards and have gifted land for a cycleway past their vineyard. In 2006 they were certified carbon neutral which continued for 6 years but eventually the compliance costs and carbon credit availability were too problematic to maintain carbon neutrality so let it go.

There are many other examples of efforts to be more sustainable, such as, RFE investing in harvesting equipment that selects grapes-only during machine harvesting and superfluous material like stems, leaves and canes (MOG) are left behind in the vineyard and don't add to the waste stream in the winery. They were early adopters of green spreading of grape marc fresh into the vineyard daily so there are no issues with storing marc and toxic leachate and odour. The grape marc is spread in a thin layer in the vineyard direct from the winery and it is invisible within days of it being spread, having been assimilated into the soil and/or eaten by birds and soil fauna. Marlborough District Council is in favour of this green spreading process. The Chief Winemaker is actively involved in the Circular Wine Group and the Sustainability Steering Group and RFE is committed to learning from others and sharing knowledge from their experiences.

RFE has a formal ESG policy in place with four pillars;

1. From land to table – plastic and packaging, climate change, energy, water.
2. Grown with conscience – plant protection and soil, ethical procurement.
3. Grounded in family – people, community engagement.
4. Leading with transparency – governance ethics, communication.

THE PROJECT

The liquid waste reduction project aims to reduce or remove unnecessary waste streams and develop sustainable strategies to deal with remaining waste streams. To achieve these goals RFE has installed a state-of-the-art wastewater treatment plant and a wastewater distribution field.

The system consists of;

- 850m³ wastewater treatment plant capable of processing 200m³ per day (10,000t production facility) over a 4-6 week harvest period - installed in March 2023.
- A 650kL bioreactor capable of reducing BOD below 500mg/L
- A 4ha effluent distribution field where treated wastewater is distributed evenly over a mixed sward groundcover under an automated system.

The system consists of;

- Primary screening.
- Primary clarification.
- pH adjustment.
- 650kL bioreactor.
- Secondary clarification.
- Return activated sludge system which collects the micro-organisms and reuses them in the bioreactor.
- Irrigation pump.

The system has received a 100% pass from Marlborough District Council on their annual inspection in August 2024.



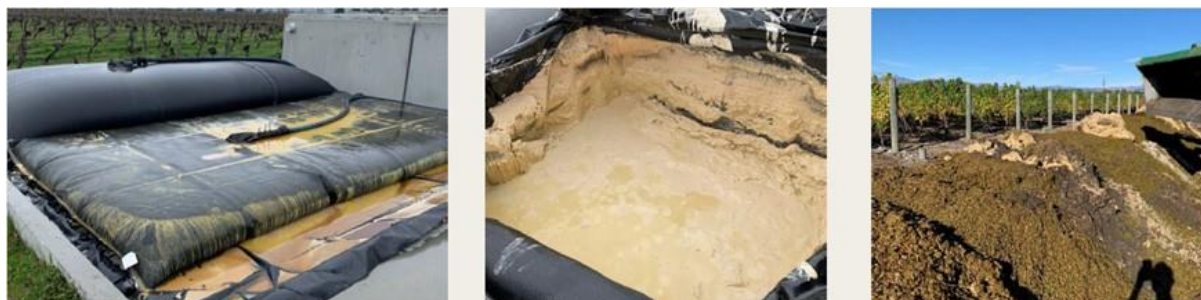
Photo courtesy of Nick Entwistle

PROBLEMS AND HOW THEY HAVE BEEN TACKLED

Fermentation lees

The dead yeast cells following ferment are known as fermentation lees and they are filtered out using a Rotary Drum Vacuum (RDV) which contains a filter medium of Perlite. Perlite is essentially glass that has been heated till it pops like popcorn. It is usual practice to dump the perlite and lees in landfill, but the RFE system allows for the perlite waste to be dealt within the winery.

- The perlite and lees waste are pumped into permeable plastic bags sitting in a bund where the liquid drains and is pumped into the wastewater treatment system and the dry residue is spread on the vineyard floor – diverting 50,000L of lees away from landfill, and returning 3.75t of potassium to the soil annually.



Wastewater treatment biosolids

Biosolids – high and low BOD biosolids sludge from wastewater settling tanks historically has been sent to Council oxidation ponds, but this system separates the solids from the fluid in the same way the fermentation lees are, with the solids combined with grape marc and returned to the vineyard and the fluid going through the treatment system eventually being applied to the wastewater field (paddock). This process diverts 130,000L of biosolids away from Council oxidation ponds annually and recaptures high BOD leachate that feeds the bioreactor throughout the year.



THE JUDGES WERE IMPRESSED BY

- The company ethos of continuous improvement in the environmental and sustainability space.
- Recognising the problem and being committed to fixing it or at least making it a better system than the previous one.
- The company is prepared to invest in the right plant and equipment to enable better environmental outcomes.
- The company is constantly researching and looking for ways to improve processes so that waste is reduced.

- Putting science behind the decisions they make. Engaging an environmental expert to overview the project to ensure all aspects of the environment aren't harmed in the process.
- The company ethos of wanting a reputation for excellence in everything they do including the environment and sustainability – and putting words into actions.
- The desire to share knowledge as well as learn from others.

PROBLEMS AND HOW THEY HAVE BEEN TACKLED

The challenges with waste that all wineries encounter are;

- Grape marc from pressed grapes and wine (skins and seeds).
- Lees from - juice, yeast – post ferment, bentonite post fining and filtration.
- Perlite waste from RDV filtration.
- Wastewater – high volume and high Biological Oxygen Demand (BOD) from cleaning.
- Biosolids – high and low BOD biosolids sludge from wastewater settling tanks.

SUMMARY

The implementation of this state-of-the-art wastewater treatment plant has been very effective at reducing a significant amount of liquid and solid waste from going to landfill and council oxidation ponds. RFE have a history of being sustainable and caring for the environment, and the judges applaud their commitment to continual improvement. RFE have a very collaborative working style and actively share ideas and experiences as well as having open minds to learn from others.

SUGGESTIONS

- If any hay is produced from the effluent field, it shouldn't be fed to lactating cows – it will cause metabolic disorders like milk fever due to high potassium.
- If the effluent area is ever replanted in grapes there will likely be issues with magnesium deficiency in the vines due to high potassium levels in the soil and it will require managing.
- Continue to investigate multi-use geobags, and if possible, those that can be truly recycled.