

CASE STUDY: YEALANDS WINES, MARLBOROUGH

Water softener keeps wine flowing

With water being a crucial component in wine making and the Marlborough region renowned for water with high levels of manganese, Davey have customised a water softening system to help keep one Marlborough vineyard producing world-class wines without interruption.

Marlborough is New Zealand's largest wine producing region. Each year, over 140 wineries make around 300,000 tonnes of the world's finest Sauvignon Blanc, Pinot Noir and Chardonnay. One of the largest wineries in the region is Yealands Estate in the Awatere Valley. Established in 2008 it has been a carbon neutral winery since day one and with a coastal climate and diverse terroir produces around 27,000 tonnes per year of award-winning wine.



THE CHALLENGE:

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Yealands pumps water from the Awatere River which is predominantly utilised for cleaning tanks, hoses and general winery equipment before and after it is used. This water is pre-treated and stored in a million-litre tank and then passes through further filtration including UV sterilisation before being used in the winery.

"One of the biggest issues we have is that the river is quite high in manganese and the levels fluctuate throughout the season. It is very hard to remove and can build up in the tank and the water lines around the winery and block our filters, causing quite a lot of issues – no food safety or wine quality issues – it's just operational, however it can cost us time and money," says Anthony Walkenhorst, Senior Winemaker/Winery Manager at Yealands Wine Group.

Greg Somerville, Managing Director at Think Water Marlborough was approached by Yealands to propose a solution.

"Our historical relationship of working on water treatment solutions with Davey, their commercial water treatment capability along with the confidence we have in the water softener systems, all made them the right partner for the job," he says.

"After collating onsite information, we worked together to design a prebuilt drop-in containerised water treatment system which was easily retrofitted into the existing water infrastructure. Prebuilding the system off site simplified the process and limited disruption to winery operations."

The Davey Solution

Manganese is not uncommon in water however, because it oxidises slower than iron, it is often more difficult to remove. The Davey Ion Exchange Water Softener efficiently removes manganese from the source water. It operates by attracting minerals and metals in the water to negatively charged resin beads inside the water softener tanks. The resin beads are then flushed of these minerals in a process called regeneration, so the process can start all over again. This critical regeneration process occurs using treated water, so the minerals don't contaminate the process, making for a more effective exchange process and better treated water quality.



The Davey solution was designed to treat high flows and manganese levels:

Davey Manganese Treatment Capacity	Units	Value
Manganese	mg/L	1.91
Peak flow through treatment process	m³/h	33

KEY BENEFITS

- No manganese scaling of pipes, tanks and equipment
- Less frequent replacement of downstream water consumables
- Better tasting water and wine
- Increased lifespan of water-using equipment
- Better energy efficiency and reliability with water using equipment

The softener has been in place at Yealands since Spring 2023 and regular water testing has shown it is effective in removing the unwanted manganese from the water. Anthony says that while the softener has done its job, they are working through removing residual manganese from their pipework.

“A word of caution – if you do have high manganese in your water, you want to get onto it early. If we’d installed a softener when the winery was built, we wouldn’t have this problem, but it’s definitely good that we’re not adding to it anymore,” he says.

“With wine making we’ve only got one chance of making a wine per year and we need all the equipment to be running at 100 percent in that short harvest window.” Anthony Walkenhorst, Senior Winemaker & Winery Manager at Yealands Wine Group

