Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Department initiated licence review

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L8321/2008/2
Licence Holder	Margaret Rive Wine Production Pty Ltd
ACN	158 503 470
Premises	Margaret Rive Wine Production Pty Ltd Cnr Payne an Treeton Roads JINDONG WA 6280 Legal description – Being lot 3955 on Plan 203041 & Lot 1 on Diagram 87982
Date of report	02/10/2025
Decision	Licence granted

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1. Overview

1.1 Premises Overview

Margaret River Wine Production Pty Ltd (MRWP/ Licence Holder), own and operate a winery and packaging facility located in Jindong, approximately 17km Southwest of Busselton. The wine packaging facility is currently leased to SMYBB Pty Ltd (Sanector) but remains under the control of the licence holder. The 47ha's of vineyard, where wastewater is irrigated to, is owned by QWIL Investments Pty Ltd, is also under the control of the licence holder.

The premises is classified as a Category 25: Alcoholic beverage manufacturing facility under Schedule 1 of the Environmental Protection Regulations 1987, with an assessed production capacity of 9,000 kL of wine processed per annual period.

The licence was transferred to MRWP in December 2012. In 2014, the licence was reissued (but not reassessed) in a new format. Due to the licence never having undergone a full risk-based review since being issued and being one of the largest beverage producers, the department determined to initiate a review of the licence.

The existing licence authorises the irrigation of treated wastewater to a 1Ha woodlot and 47Ha of vines. Winery wastewater is treated in a 1000kL Sequence Batch Reactor (SBR) tank before being directed to either a 'woodlot' irrigation area, or into a groundwater intercepting soak before being irrigated over 47ha of vines.

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

1.2 Licence Review

On 21 August 2024, the department initiated a review of the licence in accordance with the *Guideline: Industry Regulation licence reviews* and *Procedure: Industry Regulation licence reviews*.

Beverage production such as wineries can have significant environmental impacts through nutrient export in the absence of adequate waste management practices (dealing with the treatment wastewater and solid wastes) and require site-specific risk-based regulatory controls. This review considers the infrastructure and activities in place to minimise, monitor, and control risks associated with the production, handling, storage, and emission of wastes at the premises, and will address the following aspects:

- an update of the format of the licence;
- consideration of previous licenses and works approvals issued to the licence holder;
- a review of the risk profile of emissions from the premises;
- a review of the current licence conditions with regard to adequacy and appropriateness for current activities or operations on the premises;
- review whether any additional regulatory controls are required to mitigate risk or emissions; and
- consider current scientific knowledge related to the operations on the premises.

Under section 59 of the EP Act the department may amend a licence at any time. Based on the outcomes of this licence review, the department will give effect to the findings in accordance with the procedure specified in section 59B of the EP Act.

Upon informing the licence holder of the licence review, the licence holder provided relevant information regarding their procedures and management on site as well as accommodating a site visit from department officers. In response to the department's review letter and discussion the licence holder confirmed that the volume of third-party liquid waste currently accepted at the facility is minimal and infrequent and as such, Category 61 – liquid waste facility can be removed from the review assessment and licence.

The licence holder also intends to install two additional tank farms on site. Shire planning approval has already been granted for one of these, while approval for the second is currently pending. These proposed developments will be incorporated into this amendment to streamline the regulatory process and avoid the need for a separate licence amendment application in the near future.

1.2.1 Current wastewater disposal and irrigation controls

Treated wastewater is currently being directed to either a groundwater soak for dilution with bore (Leederville aquifer) and groundwater (superficial aquifer) prior to vineyard irrigation, or directly to a woodlot. However, there is no system in place to quantify flows to the soak versus to the woodlot. As the soak intercepts groundwater, this effectively alters the approved discharge to land (vineyard) to a discharge to water (groundwater).

The previous licence is deemed to have inadequate conditions in place to effectively manage the environmental risks associated with the disposal and irrigation of such large volumes of wastewater. The Licence only has four broad conditions relating to wastewater irrigation practices, which aim to prevent soil erosion, sodicity, toxicity, and runoff, but lack specific parameters or monitoring requirements to ensure these outcomes are achieved. Additionally, critical factors such as irrigation timing relative to nutrient uptake, depth to groundwater,

wastewater storage capacity, and nutrient loading rates have not been considered. These elements are essential for protecting soil and groundwater quality and preventing environmental harm and have therefore been taken into account when setting new monitoring conditions on the licence.

Delegated Officer Summary:
The discharge of wastewater to groundwater has not been formally assessed and as such requires an impact assessment to be undertaken. The Delegated Officer will authorise ongoing discharge to the groundwater until a full assessment of its impact is completed by the licence holder.

1.2.2 Nutrient loading limits

The previous licence emissions to land loading limits were taken from the generic water protection loading recommendations outlined in the previous version of Water Quality Protection Note (WQPN) 22 published in 2008. The updated version of WQPN 22 recommends site specific assessment that considers environmental constraints and public health risks for wastewater irrigation consistent with the methods set out in the *NSW EPA Environmental Guidelines on the Use of Effluent by Irrigation.*

This means that there has been no site-specific assessment of the irrigation of wastewater and no way of telling if a sustainable nutrient and water balance is occurring. The premises currently discharges wastewater to both a soak and to a 1 Ha woodlot, without any distinction of wastewater volumes to each area. Furthermore, the woodlot has been largely cleared of trees meaning there is little to no nutrient uptake occurring in this disposal area.

A Nutrient Irrigation Management Plan (NIMP) provides a structured approach to identifying and minimising environmental risks associated with wastewater irrigation and should provide a site-specific plan to manage water and nutrient input to optimise pasture or crop growth while preventing contamination of water resources, avoiding soil degradation or contamination, and protecting the values of nearby natural assets.

Delegated Officer Summary:
A site-specific NIMP must be developed to manage wastewater irrigation practices. The NIMP provides a structured approach to identifying and minimising environmental risks by managing water and nutrient inputs in a way that supports optimal crop or pasture growth and nutrient uptake. It also ensures protection of water resources, prevents soil degradation or contamination.

1.2.3 Wastewater monitoring

Wastewater monitoring results indicate that the treated wastewater is generally of suitable quality for irrigation in terms of nutrient content. However, one ongoing concern is the Sodium Adsorption Ratio (SAR). SAR is a critical measure of the balance between sodium, calcium, and magnesium in irrigation water. Elevated SAR levels can lead to sodium accumulation in the soil, which disrupts soil particle bonding and causes dispersion. This reduces soil permeability, impairs drainage, and can result in surface crusting and erosion. Over time, these effects degrade soil structure, limit plant growth, and increase the risk of salinity-related issues.

Figure 1 and 2 show the sites historic levels and where those levels sit against soil degradation.

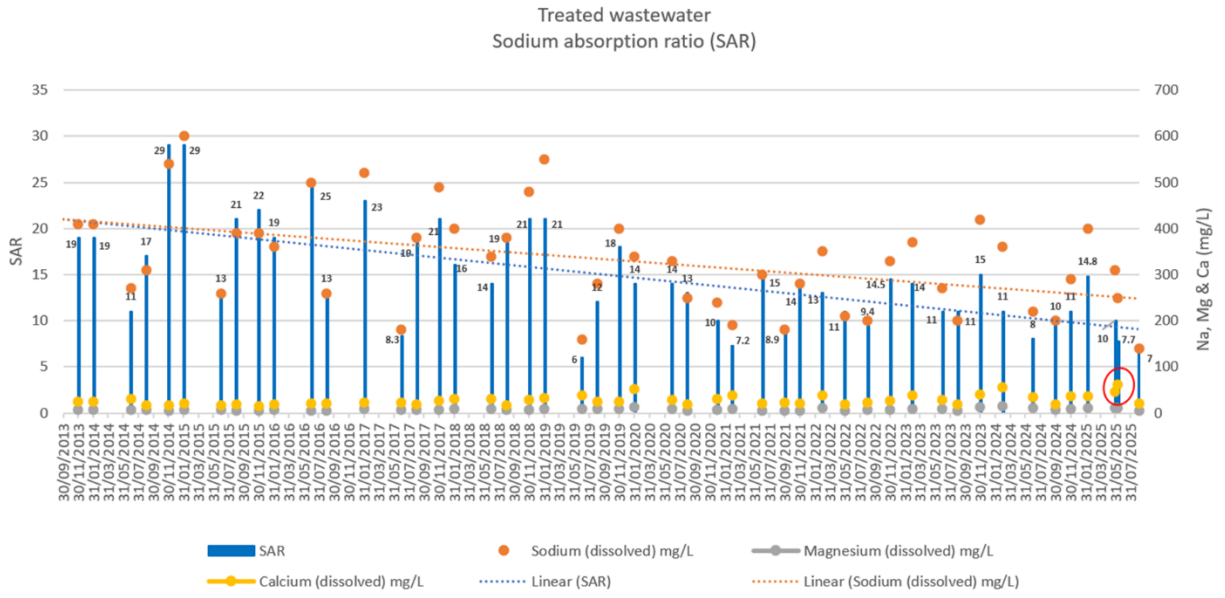
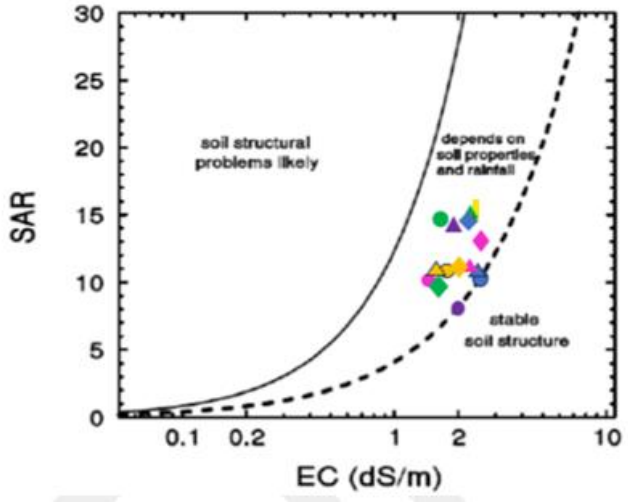


Figure 1: Historic wastewater SAR results



Legend	Symbol	SAR	EC (dS/m)	SAR:EC Ratio
May/2025		10	2.4	4.2
Feb/2025		14.8	1.4	10.6
Nov/2024		11	1.7	6.5
Sep/2024		10	1.4	7.1
Jun/2024		8	2.0	4.0
Feb/2024		11	2.1	5.2
Nov/2023		15	2.2	6.8
Aug/2023		11	1.7	6.5
Jun/2023		11	2.1	5.2
Feb/2023		14	1.9	7.4
Nov/2022		14.5	2.0	7.3
Aug/2022		9.4	1.6	5.9
May/2022		11	2.0	5.5
Feb/2022		13	2.7	4.8

Figure 2: Soil health graph comparing SAR results compared to EC

Delegated Officer Summary:
The Delegated Officer notes that the licence holder is aware of elevated SAR levels and has actively worked to reduce them over the past decade. The revised licence will include a requirement for a Wastewater Management Plan, which must incorporate a SAR Management Plan, as well as specify a SAR limit. These additions will ensure that SAR is monitored and managed within the irrigation areas.

1.2.4 Environmental water monitoring

The water monitoring program on the current Licence monitors groundwater, surface water and wastewater, with the monitoring program designed to be able to detect nutrients that may be leaching into the groundwater and surrounding environment.

The current groundwater sampling is limited, as there is only a requirement to monitor twice a year, and the monitoring bores are consistently dry during one of these sampling dates. To gain

a more accurate understanding of nutrient movement, it is important to collect groundwater samples at different times of the year. This approach provides a broader overview of site conditions and helps detect nutrient leaching when it is most likely to occur.

In Southwest WA, the distinct wet and dry seasons significantly affect groundwater levels and nutrient mobility. Leaching is more likely during the wet season when the water tables is high due to the natural recharging water table, while nutrient concentrations may peak during the dry season due to reduced dilution. Regular, well-timed monitoring allows for early detection of contamination, identification of long-term trends, and assessment of the effectiveness of nutrient management practices.

If irrigation volumes from the soak (output) exceed the total input volumes of water into the soak, a Licence to Take Water will be required for the superficial aquifer extraction. The licence holder will be required to be install a flowmeter on the soak's irrigation outlet line to enable inputs and outputs to be compared and quantify any amount of water that is being taken from the superficial aquifer. If irrigation volumes from the soak (output) exceed the total input volumes of water into the soak, a Licence to Take Water will be required for the superficial aquifer extraction.

Delegated Officer Summary:
Increased groundwater monitoring will be included as a condition of the Licence to better detect any potential nutrient leaching. The soak will also be added to the licence as sampling point.

The Delegated Officer has reviewed the surface water sampling requirements and considers them of limited value and will take these requirements off the licence. With a Wastewater Management Plan to be implemented along with appropriate irrigation controls, nutrient-rich surface runoff is not expected to occur or to affect the on-site intermittent creek.

1.2.5 Soil Monitoring

There is currently no soil monitoring required on the licence. Soil testing in areas where wastewater is used for irrigation is essential to monitor and manage potential impacts on soil health. It helps identify changes in salinity, nutrient levels, pH, and the presence of contaminants that could affect plant growth or lead to long-term degradation. Regular testing ensures that irrigation practices remain sustainable, support informed nutrient management decisions, and protects both agricultural productivity and surrounding environmental values.

The delegated officer notes that the vineyard is of commercial value to the licence holder, and trusts they are acting within their own interests to manage the quality of water applied to that irrigation area. Therefore, soil monitoring will only be applied to the 'woodlot' irrigation area (L2).

Delegated Officer Summary:
Soil testing will be required in the woodlot irrigation area at least every three years to monitor any long-term impacts from wastewater irrigation on soil health and quality.

1.3 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls, these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the Licence as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 1

Licence L8321/2008/2 that accompanies this decision report authorises emissions associated with the operation of the premises.

The conditions in the issued licence, as outlined in Table 1 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 1: Risk assessment of potential emissions and discharges from the premises during irrigating wastewater.

Risk events				Risk rating [1] C = consequence L = likelihood	New Conditions of licence	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**			
Irrigating with winery wastewater	Nutrient and salt rich wastewater	Infiltration through soil and overland runoff causing ground and surface water contamination	Groundwater, Seasonal minor creek 200m South that runs to Buayanyup River	*C = Minor* *L = Possible* ***Medium Risk***	**Development of a site specific WMP/NIMP** **Irrigation Controls** **Winter Irrigation restrictions** **Addition of Soil monitoring** **Addition of pH and SAR:EC ratio in irrigation limits** **Increase in groundwater monitoring**	**Development of a site specific WMP** Detailed in section 1.2.2 **Irrigation Controls and Winter Restriction:** To minimise the risk of nutrient leaching, surface runoff, and ineffective wastewater application, irrigation of wastewater must only occur in areas where vegetation or crops have been intentionally planted and established. Irrigating onto bare ground, including sand or soil without vegetative cover, does not provide sufficient uptake of nutrients or water and poses a risk to the surrounding environment, including potential contamination of surface and groundwater as well as damaging soil structure. During the winter period, when plant growth slows, rainfall increases, and rainfall exceeds evapotranspiration, the capacity for vegetation to absorb nutrients and water is reduced, and soils become saturated. Irrigating under these conditions significantly increases the risk of runoff and nutrient leaching beyond the root zone, potentially impacting groundwater, surface water bodies. **Monitoring of emissions** Regular testing is essential for maintaining soil health and supporting sustainable irrigation practices. Monitoring provides critical information on the accumulation of salts, nutrients, and other constituents in the soil and surrounding environment, ensuring that irrigation with wastewater does not lead to long-term degradation of soil structure, fertility, or function. A seasonal monitoring approach to

Risk events				Risk rating [1] C = consequence L = likelihood	New Conditions of licence	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors			
						groundwater sampling offers a broader and more representative overview of site conditions. Monitoring groundwater four times a year instead of twice provides a clearer picture of how conditions change across different seasons. Groundwater levels and quality can be affected by rainfall, irrigation, and other site activities, which vary throughout the year. By sampling quarterly, it's easier to detect trends, catch any early signs of contamination, and understand how the site is influencing the environment over time.

Risk events				Risk rating [1] C = consequence L = likelihood	New Conditions of licence	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**			
Discharging wastewater direct to groundwater	Nutrient and salt rich wastewater	Discharge is directly to the environment through a groundwater soak. From this soak, nutrients can migrate through the water table and overflow into streams.	Groundwater, Seasonal minor creek 200m South that runs to Buayanyup River Possibly neighbouring GDE	*C = Minor/ Moderate* *L= Almost Certain* ***High Risk***	Ensuring discharge cannot overflow from soak. Environmental Report to be completed of the environmental impact the discharge of wastewater to the water table may be having.	Preventing wastewater overflow is essential to minimise environmental impacts. When wastewater flows across boundaries it can pollute nearby soil, groundwater, and surface water systems with nutrients. This contamination can degrade aquatic ecosystems and lead to algal blooms in rivers and lakes.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold text** depicts additional regulatory controls imposed by department.

2. Consultation

Table 2 provides a summary of the consultation undertaken by the department.

Table 2: Consultation

Consultation	Comments received	Department response
City of Busselton - 13/9/2024	*There are several development approvals across the site with the most recent approval in 2023. Historic files show that the most recent development approval for an expansion to the winery that included the expansion of the wastewater system was approved by the City on 24 October 2001.* *The wastewater treatment plant design capacity was an average of 75kL/day and a maximum of 150KL/day of wastewater and 40 dry tonnes of solid waste per annum.*	Noted and incorporated into the review findings.
QWIL Investments/Regional Management Services	Confirmed that QWIL Investments is aware and authorises the practice of MRWP irrigating QWIL's vineyard with treated wastewater.	Noted.
A draft licence and amendment report was provided to the licence holder for comment on 5 August 2025 and 19 September 2025	A summary of the licence holder's comments and DWER's response are detailed in Appendix 1	

3. Conclusion

The key findings of the review indicate that there is insufficient information to determine that wastewater discharge and irrigation activities are not causing an alteration to the detriment of the environment and environmental values. The current monitoring program is assessed as being inadequate for the size and scale of the winery and its wastewater emissions and this has now been addressed through revised licence conditions.

Based on the assessment outlined in this decision report, the Delegated Officer has determined that the licence will be amended, with conditions applied that are appropriate to the identified controls and necessary to support administrative and reporting requirements.

References

1. City of Busselton 2024, *MARGARET RIVER WINE PRODUCTION PTY LTD, L8321/2008/2 UNDER THE ENVIRONMENTAL PROTECTION ACT 1986 – LICENCE REVIEW NOTIFICATION- COMMENT SOUGHT,* email, received 13 September 2024.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.

4. Department of Water and Environmental Regulation (DWER) 2022, Guideline: Industry Regulation licence reviews, Perth, Western Australia
5. Department of Water and Environmental Regulation (DWER) 2022, Procedure: Industry Regulation licence reviews
6. Department of Water and Environmental Regulation (DWER) 2025 *Water Quality Protection Note No 22*, Irrigation with nutrient-rich wastewater 2025 Perth, Western Australia
7. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.Margaret River Wine Producers 2024, *Annual Monitoring Report,* Kaloorup, October 2024
8. Margaret River Wine Producers 2019, *Annual Monitoring Report,* Kaloorup, October 2019
9. Margaret River Wine Producers 2018, *Annual Monitoring Report,* Kaloorup, October 2018
10. Margaret River Wine Producers: Dargue, P 2024, *L8321/2008/2 Margaret River Wine Production 2024 AER – concerns with SAR,* email, received 18 September 2025.
11. Margaret River Wine Producers *2024, L8321 Licence review – information that would be required to support Category 61 – liquid waste facility*, email, received 5 September 2024.
12. Margaret River Wine Producers: Dargue, P 2024, *L8321 Margaret River Wine Production - Summary of meeting 09/05/2024,* email, received 9 September 2024.
13. Margaret River Wine Producers: Dargue, P 2025, *L8321/2008/2 Margaret River Wine Production Winery - AMENDMENT TO LICENCE, DRAFT ISSUED,* email, received 27 August 2025.
14. Margaret River Wine Producers: Dargue, P 2025, *L8321/2008/2 Margaret River Wine Production Winery – revised (V2) drafts for comment* email, received 30 September 2025.
15. Regenal Management Services 2025, *Margaret River Wine Production - Licence Review L8321/2008/2,* email, received 17 July 2025.

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment received on 27 August 2025 and 30 September 2025	Department's response
-	Addition of a targeted assessment of discharging wastewater to the soak to be completed by December 2025.	Condition added.
8, Table 3: 7(g)	Allowance for missed photographs	Allowance for 3 missed photographs with justification allowed per annual period.
8, Table 3: 9	Requests that all soak related containment be removed as they have no control over groundwater influxes.	The fundamental premise of irrigating, discharging or storing wastewater on-site is to ensure that all wastewater is effectively managed within the prescribed premises boundary and the discharge does not cause an alteration to the detriment of the environment or any environmental values or to public health. The soak is effectively being used a direct discharge to groundwater and to the stormwater drain in the event of the soak contents overflowing during winter high groundwater and rainfall periods. If discharges from the soak cannot be adequately controlled and result in environmental release, then this practice may not be considered acceptable, and the licence holder should consider installing additional winter wastewater storage tanks or other suitable designed containment as a contingency measure.
9, Table 4	SAR:EC ratio to be removed and licence holder to manage and assess impacts.	Limit to remain but adjusted to the "soil structural problems likely" limit. Discussions surrounding SAR levels have been occurring since October 2024. This is a standard limit applied to all newly amended winery licences
15, Table 6	Removal of metals for testing.	Removed for the deeper soil sampling but kept for shallow testing whilst extending the test to be done every 5 years instead of 3. The advice currently is, if a manufacturing company uses copper stills, vats, metal piping etc. that soils require testing.
	Removal of requirement to soil test in L1	Soil requirement to test in the vineyard (L1) has been removed.
	First testing to be done in 2027 rather than 2026 to allow for completion of WMP.	The soil testing should help form a conclusion in the WMP. The delegated officer sees no benefit of waiting another 18 months for the first sample.