Amendment Report

Application for Licence Amendment

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

Licence Number	L7749/1999/9
Licence Holder	Stella Bella Wines Pty Ltd
ACN	079 217 164
File Number	DEC6515/1
Premises	Stella Bella Wines 365 Brockman Highway, KARRIDALE WA 6288 Legal description – Lot 101 on diagram 64801 As defined by the premises maps attached to the Revised Licence
Date of Report	18/03/2025
Decision	Revised licence granted

Table of Contents

1. Purpose and Scope of amendment

1.1 Licence background and history

The premises is located within the Shire of Augusta Margaret River, 2.3 km east of Karridale townsite. Stella Bella is a contract winemaking facility established in 1996, that is authorised under licence L7749/1999/9 to produce up to 750 kilolitres of wine and 225 kilolitres of non-alcoholic beverages per annual period and discharge treated wastewater to land through the irrigation of 5.26ha of grapevines.

Works approval W17/99/1 was granted to the previous licence holder in 2005 to develop a wastewater treatment strategy to suit the present and future expansion of the winery. With a change of ownership of the premises in late 2006, a transfer of W17/99/1 was granted to Stella Bella Wines Pty Ltd (the licence holder) in 2007. The works approval was for an increase to the wastewater irrigation area, the construction of an aerobic bioreactor, with a 260kL buffer lagoon to manage the high waste volumes during vintage and a membrane filter post aerobic treatment all under PLC control. Amended W17/99/1 issued to the licence holder contained the following conditions and discharge limits for the authorised irrigation area (5.26 ha of vines).

The Works Approval holder shall ensure that the solid and liquid waste disposal system is designed and constructed such that:

(i) *there is no runoff of wastewater from the premises;*

(ii) *there is sufficient storage capacity throughout the Wet Season when discharge from the wastewater treatment system to the irrigation area will not be authorised to occur;*

(iii) *there is no surface crusting, sealing, water-logging or development of anaerobic conditions within the approved irrigation area as identified in Attachment 1;*

(iv) *uncontaminated stormw ater is diverted away from the wastewater treatment system;*

(v) *treated wastewater samples can be collected easily from the wastewater treatment system immediately prior to discharge to the authorised irrigation area;*

(vi) *an approved flow measurement device is installed either on the inlet or outlet of the wastewater treatment system, capable of accurately and continuously measuring the volume of water in cubic metres per day;*

(vii) *it is capable of reducing Total Suspended Solids to levels that do not contribute to reduced soil porosity or the development of anaerobic conditions within the authorised irrigation area;*

(viii) *in discharging treated wastewater to the authorised irrigation area the pH can be adjusted to between 6.5 and 8.5; and*

(ix) *in discharging treated wastewater to the authorised irrigation area, the following loading rates are not exceeded:*

(a) *Nitrogen – 180 kilograms per hectare per year*

(b) *Phosphorus – 20 kilograms per hectare per year; and*

(c) *Biological Oxygen Demand – 30 kilograms per hectare per day.*

It must be noted that the above loading rate limits for Nitrogen and Phosphorous, which are limits on the current licence are not site specific or scientifically robust but were taken from the department's guideline titled Water Quality Protection Note 22, Irrigation of nutrient rich wastewater, Table 2. These tables have been superseded by the need for a site-specific assessment or Nutrient Irrigation Management Plan (NIMP) to determine the applicable nutrient loading rates.

1.2 Scope of amendment

After receiving a development grant to help fund an expansion to the winery, the licence holder consulted with DWER around what was required to amend their licence and increase production. Through the consultation and application process and after reviewing the current

licence it was discovered that DWER's understanding of the current licence differed to the licence holders. Where DWER understood the licence holder to be irrigating treated wastewater directly from a lined storage dam which is not considered surface water, the licence holder confirmed that they had been discharging winery wastewater directly into the freshwater on-stream 40 ML dam, then irrigating from this dam as they believed the dam is not surface water. This is an incorrect assumption with the dam being on-stream and licenced under the RIWI Act as surface water.

Under the RIWI Act, the dam is licenced (SWL169465(4)) for an entitlement to take 38,000 kL of surface water per year for horticultural purposes and winery processing purposes. This licence regulates the take of surface water and does not allow for discharge into the dam.

DWER advised the licence holder that the dam was surface water and the process of discharging straight to surface water had not been assessed or approved. DWER advised that since the discharge has not been assessed, redirecting the waterflow away from the onstream dam is needed.

Subsequently, the licence holder applied on the 27 October 2023 to the department to amend licence L7749/1999/7 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments were sought:

- Update the flow pathway of wastewater through the WWTP into an existing 1 ML holding pond away from the 40ML onstream storage dam
- Establish a new 0.93 ha disposal (irrigation) area at the North end of the property.
- Increase the assessed wine production capacity from 750 kL to 1,310 kL per annual period through a proposed extension to the winery building and luminosa celler
- Remove category 24 non-alcoholic beverage manufacturing from the licence.

The licence holder subsequently withdrew the increased throughput and extension to the winery building and luminosa cellar aspect of the application after a loss of funding.

Therefore, the amendments being sought by the licence holder and assessed under this amendment report are:

- Establishment of a new 0.93 ha disposal (irrigation) area at the North end of the property.
- Remove category 24 non-alcoholic beverage manufacturing from the licence.

1.3 Regulatory framework

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.

2. Other approvals

Local government

The Shire of Augusta Margaret River advised that they received a development application from the licence holder for the proposed new buildings and irrigation area, which was subsequently cancelled after the loss of funding resulted in no new building developments. The shire advised no development approval is needed if no increase of production is occurring and no new clearing of land.

Environmental Protection Act (Clearing Regulations) 2004 (EP Clearing)

The licence holder may need to clear up to 45 trees to install the proposed pipeline for wastewater irrigation.

DWER refused an application to clear native vegetation. The grounds for refusal were:

- the loss of native vegetation that may represent the 'Empodisma peatlands of southwestern Australia' threatened ecological community,
- the loss of native vegetation that may contain individuals of and/or suitable habitat for threatened flora species Reedia spathacea,
- the loss of native vegetation growing in association with a watercourse,
- the potential to impact on surface water hydrology,
- the loss of 0.04 ha of native vegetation composed of suitable foraging habitat for black cockatoos,
- the loss of 0.04 ha of native vegetation that forms part of a mapped ecological linkage,
- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- indirect impacts to adjacent native vegetation protected and conserved under an Agreement To Reserve (ATR) under the Soil and Land Conservation Act 1945.

Licence holder to note that the granting of this licence amendment does not constitute an approval to clear ahead of being granted a clearing permit.

Rights in Water and Irrigation Act 1914 (RIWI)

The premises has an existing licence (SWL169465) to take surface water from the Lower Blackwood, Rushy Creek for 38, 000 kL for winery production, horticulture, and storage of surface water under the RIWI Act. The licence holder has a sufficient water allocation for their production capacity.

Summary: The delegated officer notes that there may be sensitive vegetation along the creek line susceptible to clearing.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway, and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Amendment Report are detailed in Table 1 below. Table 1 also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence holder controls

Emission	Sources	Potential pathways	Proposed controls
Nutrient laden wastewater generated from processing and cleaning of the alcoholic /nonalcohol beverage manufacturing equipment and packaging.	Operation of winery and beverage facility, including production and bottling	Infiltration through soils and overland runoff	Captured on outside hardstand and inside enclosed building hardstand and directed to the WWTP via central drains to the collection sump.
Chemical laden wastewater generated from the storage, cleaning, and processing of alcoholic beverage manufacturing equipment.	Storage and use of chemicals	Infiltration through soils and overland runoff	
Nutrient laden solids and leachate from marc/lees prior to removal offsite.	Management of winery / nonalcoholic beverage solid waste	Infiltration through soils and overland runoff	Leachate and contaminated stormwater drain to sump and directed to WWTP. Waste and sludge are composted and spread to land Waste is placed in sealed bins on the bunded hardstand. Marc and lees stored on clay with internal drainage directed to 1ML storage dam. Bunding around the leachate collection area directing effluent to drain. Spoon drain to prevent clean stormwater entering/washing marc pad in severe weather conditions.
Odour from wastewater processing	Management of alcohol manufacturing wastewater	Air/windborne	Air is pumped into the 150 kL aerobic tank Diffusers are inspected annually for life expectancy. Distance to nearby residences Aerators to be installed if pond becomes odorous.
Spills, leaks and overtopping of wastewater containments with nutrient laden wastewater and sludge processed through the WWTP		Infiltration through soils and overland runoff	Routinely inspections of the WWTP operations. Designed to process 30 kL/day Automatic process 13 kL treated storage tank has an overflow facility 500mm from tank lip, if this is reached wastewater flow to the sump and returned to the 135 kL storage tank, Sludge can be removed when tanks are emptied. WWTP manual valve is shut off when winery is not operational or heavy rainfall is experienced to prevent overtopping. 15 kL sump has high and low floats. Manual isolation valves to redirect wastewater

Emission	Sources	Potential pathways	Proposed controls
			to 1ML holding dam. Manual value to prevent stormwater on hardstand being diverted to WWTP and to the 40 ML onstream dam. 75 kL HDPE lined emergency wastewater sump. 1 ML storage pond is clay lined and will be fitted with level sensor/ float valve, with a 10 cm freeboard and routinely inspected to prevent overflow.
Nutrient rich wastewater to land Wastewater to land with excessive hydraulic loading	On site disposal of wastewater via irrigation to land 0.93 ha	Infiltration through soils and overland runoff	Inspect irrigation routinely when operating. Tall fescue harvest to remove nutrients – a combination of temperate and Mediterranean for year-round growth. Record monthly irrigation volumes. Flow meter on offtake of 1ML storage pond. Monthly irrigation wastewater pH and EC monitoring. Quarterly BOD, TN, TP SAR pH and EC analysis of wastewater. Record irrigation, rainfall and next day's rain forecast on days that irrigation takes place during May – September. No wastewater irrigation take place during or within 24 hours of forecast rain. Limit maximum irrigation rate to 5-fold lower than the lowest hydraulic conductivity of the soil. That is no greater than 20mm/hour. Measure SAR:EC ratio of irrigation water and correct with liquid lime dosing to maintain SAR:EC ratio below 5. Annual nitrogen and phosphorus balance showing that nutrients applied by waste irrigation are removed by cropping program. Sprinklers are set 15 m apart. The vineyard seeders fit down 3 m rows and the harvester capable of maneuvering around the sprinklers.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the delegated officer has excluded employees, visitors, and contractors of the licence holders from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 2 below provides a summary of potential human and environmental receptors that may be impacted because of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed

activity

Human receptors	Distance from prescribed activity
Residential premises	819 m north of WWTP, 294 m north of irrigation area 1000 m east of WWTP, 1000 m southeast of irrigation area. 380 m south of WWTP, 830 m south irrigation area
Environmental receptors	**Distance from prescribed activity**
Two threaten fauna (Birds) •Specially protected – migratory •Threatened - Endangered	Located within the premises
Environmental Sensitive Area - wetland	520 m northeast of the WWTP and 290 m east of the irrigation area
Rights to Water and Irrigation Act 1914 (RIWI) Proclaimed Blackwood Groundwater Area, Cape to Cape South, Combined Leeuwin Surficial / Fractured rock aquifer	Groundwater linked to surface water tributary. Test pit indicated no groundwater at 2.5 metre below ground in July 2023. Peak groundwater likely below or at 2 metres from ground.
RIWI, Proclaimed Lower Blackwood River Surface Water Area First order Rushy Creek	Runs through the premises, 75 m north of WWTP, 280 m south of irrigation area.
Soils – Glenarty gentle slope phase – 216WvGL3	Sandy loam with gravel to a gravelly loam over a clay structure. Good drainage, seepage to waterway. Slope of irrigation area 12.5 % moderate slope (measured from Geocortex). Potential for uncontrolled runoff and erosion from surface flows.

3.2 Site inspection

A site inspection by DWER staff at the premises on 17 September 2019 took photos showing that the 75-kL emergency overflow sump was filled with rushes/sedges growing on the bottom of the liner. The department is unclear if the pond liner has been compromised through the growth of this vegetation.

Delegated Officer summary: Conditions for maintaining permeability will be imposed requiring that the 75kL sump is maintained free of vegetation.

3.3 DWER wastewater suitability for irrigation review

3.3.1 Existing wastewater quality

Stela Bella provided twelve wastewater quality samples from October 2019 to September 2022 taken from a tap in the pipeline between the 150kL tank and discharge tank. The wastewater data was accompanied by laboratory analysis sheet. The samples taken from the treated wastewater storage tank are considered representative of the water quality of the proposed wastewater irrigation. The delegated officer used the applicants submitted wastewater data and 2022 – 2023 Annual Environmental Reports (AER) submitted water quality data, assessing 18 water quality samples from October 2019 to September 2023, see Table 3.

Table 3: Wastewater quality (supplied by the applicant)

Date	BOD mg/L	EC mS/m	TDS mg/L	TN mg/L	TP mg/L	TSS mg/L	pH
10-Oct-19	18	120	910	5.9	0.74	95	8.1
11-Dec-19	37	223	1470	19.4	12.36	133	8.6
1-Apr-20	18	245	1610	1.7	0.31	50	8.3
9-Sep-20	21	149.3	960	3	1.96	50	8
9-Dec-20	12	180.9	1212	12.3	6.68	50	8.6
25-Mar-21	88	197.6	1400	12.4	3.27	50	7.1
20-May-21	398	201	1580	34.4	2.98	75	8
12-Aug-21	12	40.1	244	0.9	0.05	50	6.6
8-Sep-21	3	55	308	3.4	0.14	18	6.6
8-Dec-21	7	223	50	1.8	0.22	50	6.5
14-Apr-22	293	151.8	1,467	0.2	0.6	167	7.8
16-Jun-22	12	630	12	1.4	0.03	50	6.6
8-Sep-22	7	103.6	620	7.6	2.2	18	8.2
20-Jan-23	16	176.4	1,200	18	14	61	8
17-Mar-23	4,500	168.3	1,700	0.1	9.5	160	4.7
15-Jun-23	78	94.7	660	7.8	1.2	190	7.8
13-Sep-23	76	130.4	990	3	0.4	190	7.7
Average	**329.18**	**181.77**	**964.29**	**7.84**	**3.33**	**85.71**	**7.49**
Typical average of raw winery wastewater[1]	8,858	192.5		110	52	760	5
Primary effluent quality following treatment[2]	120-250			30-55	6-14		
Secondary effluent quality following nutrient removal treatment[2]	20-30			10 - 50	6-12		
Nutrient removal effluent quality following nutrient removal treatment[2]	5 - 20			5 - 20	<2		
ANZECC 2000 – Primary Industries[3]	<15		3000	25 – 125[4]	0.8 - 12[4]		6-9

[1]Mosse K.P.M., Patti A.F., Christen E.W., Cavagnaro T.R. 2011 *Review: Winery wastewater quality and treatment options in Australia Vol 17, 111 – 122*. Australian Journal of Grape and Wine Research. Available at: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1755-0238.2011.00132.x

[2] Treatment process category D from Appendix 6 of ARMCANZ and ANZECC 1997. *National Water Quality Management Strategy – Australian Guidelines for Sewerage Systems – Effluent Management*. Commonwealth of Australia.(NWQMS)

[3] National Water Quality Management Strategy Paper No. 4 – Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3 Primary Industries, 2000, ANZECC and ARMCANZ (ANZECC 2000).

[4] ANZECC 2000, requires site specific assessment to determine actual value

Biological oxygen demand

The National Water Quality Management Strategy guidelines for sewerage systems and effluent management (NWQMS) recommends that for primary treatment systems, typical biological oxygen demand (BOD) ranges for treated effluent should range between 120-250 mg/L. Wastewater from the existing treatment system at the premises is typically within this

range apart from three incidents over the last 4 years. There was one sample of BOD reported as 4, 500 mg/L in January 2023. It is noted that the addition of an aspirator in the 1 ML treated wastewater holding pond will reduce BOD.

Nutrient levels

Nutrients including total nitrogen and total phosphorus where within reported levels for effluent management recommendations for primary treated systems under the NWQMS.

pH

The pH of the wastewater was consistently changing from acidic to alkaline with a mean value of 7.49. Apart from one sample in March 2023(4.7), all samples were within an acceptable range.

Total dissolved solids / electrical conductivity

The electrical conductivity (EC) of the wastewater were consistently within DPIRDs 2022 irrigation categories of moderately salty (456 – 1425 mg/L) to salty (1425 – 2850 mg/L). Noting June 2022 sample was 4,032 mg/L. Where irrigation of EC above 1425 mg/L will result in a minimum 25% yield loss, which increases with the increase in salts within the wastewater. The applicant intends to irrigate a moderately tolerant salt crop of tall fescue and sample for SAR:EC ratio of irrigation-treated wastewater and correct with liquid lime dosing to maintain SAR:EC ratio below 5.

The delegated officer considers the wastewater suitable for irrigation. A condition for three yearly soil sampling to monitor soil health and plant nutrient uptake ability is to be added to the licence. Monitoring soil health can ensure proactive management actions can be undertaken by the licence holder to ensure dispersive soils are not caused by long-term irrigation activities.
The delegated officer notes that the NIMP provided was based on the licence holder increasing their wine production to 1,310kL per annual period. Considering the licence holder is no longer seeking an increase in wine production, the numbers and figures provided in the NIMP may no longer be relevant. A new NIMP must be developed if the licence holder proceeds with an irrigation area.

3.4 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and consider potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete, they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the licence holder'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 licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The revised licence L7749/1999/7 that accompanies this Amendment Report authorises emissions associated with the operation of the premises i.e., winery with WWTP, irrigating treated wastewater to land.

The conditions in the revised licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 4. Risk assessment of potential emissions and discharges from the premises during operations

Risk Event					Risk rating[1] C = consequence L = likelihood	Justification for additional regulatory controls	Regulatory controls conditioned in licence
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**			
Operations							
Wine and beverage manufacturing and packaging	Nutrient and chemical laden wastewater generated from processing and cleaning of the alcoholic / nonalcoholic beverage manufacturing equipment and packaging	Infiltration through soils contaminating ground and surface water resources. Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Proclaimed Rushy Creek 75 m north of WWTP / manufacturing building. Proclaimed groundwater area linked to surface water.	Captured on outside hardstand and inside enclosed building hardstand and directed to the WWTP via central drains to the collection sump Refer to Table 1	Onsite impacts mid-level, off site impacts low level. C = Moderate The risk event will probably no occur in most circumstances. L- Unlikely **Medium Risk**	All alcoholic beverages are processed and packaged within an enclosed building and tanks stored on an outside concrete hardstand with partial bunding. All spills, wastewater and captured stormwater are directed to a central drain to the 15 kL below ground concrete collection sump. Chemicals used for cleaning are stored in containers within the buildings. Captured stormwater can be diverted to the 1ML treated wastewater storage dam through a manual diversion valve when not in operation. The delegated officer considered the enclosed and outside design of the operation, the distance to Rushy Creek and proclaimed water resources, the porous nature of the soil and assessed the risk as medium. The applicants' controls were assessed and considered sufficient to mitigate the risk of wastewater impacting on the environment causing contamination. The delegated officer will regulate the licence holder's controls, to ensure the risk event is maintained at an acceptable level.	No additional controls
Management of winery / nonalcoholic beverage solid waste	Nutrient laden solids and leachate from marc/lees prior to spreading on site or removal offsite.	Infiltration through soils contaminating ground and surface water bodies. Overland runoff potentially causing ecosystem disturbance or impacting surface water quality		Leachate and contaminated stormwater drain to sump and directed to the WWTP. Refer to Table 1	Onsite impacts mid-level, off site impacts low level. C = Moderate The risk event will probably occur at some time. L = Possible **Medium Risk**	Marc/lees are directed to a hardstand that is partially bunded to exclude surface water ingression. Solid waste is composted (3 –4 months) and up to 10 tonnes of compost each year is spread on vines within the property or taken offsite. A spoon drain diverts clean water in high rainfall events and all leachate/contaminated stormwater is directed to a sump that is connected to the 1ML storage pond. The licence holder has not demonstrated compliance with the department's organic recycling guideline and the compost area and has unknown permeability and clay line thickness. The delegated officer considered the distance to Rushy Creek, the proposed increase in compost from production increase and considered the licence holder's controls to be insufficient and the risk of contamination to soil and water resources to be medium. The delegated officer determined that the licence holder's controls were not sufficient to manage the risk of leachate infiltration through soils contaminating ground and surface water resources from occurring, and considered it necessary to specify the following: • That bunding and spoon drains around the compost pad must be maintained to be capable of preventing all stormwater ingress into the compost facility.	That bunding and spoon drains are maintained and capable of diverting all surface water runoff from entering the compost pad.
Management of alcohol manufacturing wastewater	Odour from wastewater processing and storage.	Air/windborne pathway causing impacts to health and amenity	Rural residences, 819 m north, 1,000 m east, 380 m south of the WWTP.	Air is pumped into aerobic tank, aerator installed and operated in 1ML storage pond, membrane diffuser inspected annually.	Low level impact to amenity C = Minor The risk event will probably no occur in most circumstances. L- Unlikely Medium Risk	With the nature of winery wastewater there is an inherent risk of odour causing impacts to offsite receptors, particularly from settling, aerobic and storage tanks/ponds. The WWTP tanks and ponds are open, the addition of the aspirator in the storage pond and with air released into the aerobic tank will reduce BOD and odour emissions. The delegated officer assessed the risk as medium and does not reasonably foresee off site receptors being impacted by odour from the brewery operations. The delegated officer will regulate the licence holder's controls, to ensure the risk event is maintained at an acceptable level.	Applicants' controls applied
	Spills, leaks and overtopping of wastewater containments with nutrient laden wastewater and sludge processed through the WWTP	Infiltration through soils contaminating ground and surface water bodies. Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Proclaimed Rushy Creek 75 m north of WWTP / manufacturing building. Proclaimed groundwater area linked to surface water.	Daily inspections of WWTP, automatic process, sensor levels on 135 kl storage tank, storage overflow recirculation, 15kL sump has high and low sensors, manual isolation valves, manual diverter on hardstand.	Onsite impacts mid-level, off site impacts low level. C = Moderate The risk event will probably occur at some time. L = Possible **Medium Risk**	Wastewater drains from the winery buildings and hardstand area to the underground 15 kL sump that has high and low sensors. Wastewater is pumped to the above ground 135 kL open concrete storage tank with sensor levels and pumped to the 150 kL open concrete aerobic tank, to the 13 kL treated effluent open tank, to the 1 ML stoarge pond. A 20 kL above ground concrete overflow sump is connected to a lined 75 kL overflow sump that are connected allowing wastewater to be pumped to the 135 kL storage tank. The hardstand area has a manual valve to redirect the flow of stormwater from the WWTP to the waterway. The WWTP is run through an automated process and manual isolation valves are located throughout the WWTP to redirect wastewater. Furthermore, the applicant's proposed wastewater irrigation storage volume relies on using all the containments listed to hold wastewater during wetter months with no freeboard other than 10cm within the 1ML storage pond. The delegated officer has considered the open design of the WWTP containments, that entire WWTP containments were required to be used as storage during winter, the distance to sensitive water resources, the vegetation growing in the 75 kL sump and considered the risk to the environment as medium. The delegated officer determined that the applicants' controls were not sufficient to manage the risk of leaks and spills of containments from occurring, and considered it necessary to specify the following: • 75 kL overflow sump and 1 ML treated wastewater holding pond are maintained free of debris and vegetation.	75 kL overflow sump and 1 ML treated wastewater pond is maintained free of debris and vegetation.
Onsite disposal of wastewater via irrigation to land 0.93 ha	Nutrient rich wastewater to land			Two crops per year of fescue grass, record monthly irrigation volumes and EC and pH. Quarterly	Onsite impacts mid-level, off site impacts low level. C = Moderate The risk event will probably occur at some	The licence holder intends to irrigate all year if a new irrigation area is installed. A review of the submitted nutrient balance indicated that phosphorus loading exceeded land availability, however if the crop was harvested then all applied phosphorus could be removed. The nitrogen and biological oxygen demand analysis indicated that land size was sufficient for loading levels. The licence holder intends to undertake limited monthly and quarterly sampling of the wastewater and record rainfall. The delegated officer considered the licence holders controls, the distance of the irrigation area to ground and surface water,	*Operational* No winter irrigation from June to August. No grazing on irrigation area.

Risk Event					Risk rating[1] C = consequence L = likelihood	Justification for additional regulatory controls	Regulatory controls conditioned in licence
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**			
				BOD, TN, TP, SAR sampling, record rainfall and irrigation, and next days rain forecast, correct for SAR:EC ratio. Annual N and P balance.	time. L = Possible **Medium Risk**	the slope of the land and the licence holder water quality data and determined the risk of contaminating soils, and nearby water resources was medium. The delegated officer determined that the applicants' controls were not sufficient to manage the risk of contaminating soils and water resources from occurring, and considered it necessary to specify the following: • No winter irrigation from June to August. • Monthly wastewater sampling when irrigating for pH, EC, TDS. TSS, BOD, SAR • Two yearly soil sampling for pH, EC, total nitrogen (TP), total phosphorus (TP), phosphorus adsorption, sodicity / exchangeable sodium percentage (ECP), sodium adsorption ratio (SAR) and cation exchange capacity (CEC) • No grazing of irrigation area The delegated officer will regulate the licence holder's controls, to ensure the risk event is maintained at an acceptable level.	A photograph at the end of each month must be taken of the flow meter read (FM1). FM1 Serial number: *Monitoring* Monthly wastewater sampling when irrigating for pH, EC, TDS. TSS, BOD, SAR when irrigating. Three yearly soil sampling for pH, EC, TN, TP, Phosphorus adsorption, Sodicity / Exchangeable sodium percentage (ECP), Sodium adsorption ration (SAR) and cation exchange capacity (CEC)
	Wastewater to land with excessive hydraulic loading				Onsite impacts mid-level, off site impacts low level. C = Moderate The risk event will probably occur in most circumstances. L- Likely **High Risk**	The applicant intends to measure rainfall, check the next day forecast to determine irrigation events. No details of how this will be managed on a day-to-day operational basis have been provided by the applicant. The delegated officer considered the lack of controls to demonstrate adequate irrigation operations during winter, that rainfall exceeds evaporation from May to September, the distance of the irrigation area to proclaimed ground and surface water resources, the soil type, slope of the irrigation area and considered the risk to the environment as high for excessive hydraulic loading. The delegated officer determined that the licence holder's controls were not sufficient to manage the risk of excessive hydraulic loading during high rainfall periods, and considered it necessary to specify the following: • No irrigation from June to August inclusive. • Irrigation restrictions when rainfall is greater than 2 mm in 24 hours.	No irrigation from June to August Irrigation restrictions when rainfall is greater than 2mm in 24 hours

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

4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

Consultation method	Comments received	Department response
Shire of Augusta Margaret River advised of proposal and its subsequent changes on 15 November 2023, 18 December 2023, and 18 January 2024	In August 2024 the shire advised that any development that involved clearing along the creek line on the western boundary is currently not supported due to possible impacts on white bellied frogs and threatened ecological communities of empodisma peatlands.	The delegated officer notes this information and will consider this in the assessment.
Department of Health (DOH) advised of proposal 14 November 2023.	DOH replied on the 7 December 2023 indicating that the licence holder did not have an approval under the Health Act for the wastewater treatment plant and disposal system however the DOH advised that they had no objection to the proposed changes provided the licence holder winery adhere to the conditions of their licence L7749/1999/7.	The delegated officer notes this information and will consider this in the assessment.
Licence holder was provided with draft amendment on 7/02/2024, 2/04//2024, 2/10/2024 & 28/01/2025	Licence holder responded with comments to each draft. The comments relating to the final draft are summarised in Appendix 1.	Refer to Appendix 1

5. Decision

This Amendment Report documents the assessment of potential risks to the environment and public health from irrigating with winery wastewater to a new land area. As a result of this assessment, the delegated officer approves the development of a new irrigation area, to be irrigated with winery wastewater. Revised Licence L7749/1999/9 has been granted with the option to develop the new irrigation area if required by December 2028.

The revised licence has been granted in a new format with relevant existing conditions being transferred and redundant conditions removed. New conditions have been imposed on the licence amendment based on the licence holders' controls described above as they are considered reasonable and appropriate to maintaining an acceptable level of risk.

To address the potential impacts to water resources from continued irrigation of winery wastewater (nutrient and salt enriched), and to enable proactive management to protect down gradient Rushy Creek and other water license users, regulatory controls in addition to the applicant derived controls have been imposed on the licence. These are:

New irrigation area (L2)

- A new NIMP is to be developed if the irrigation area is to be constructed.
- No irrigation of treated wastewater from June to August (based on insufficient winter irrigation management controls).
- Three yearly soil monitoring of the irrigation area (L2) to determine the capability of the soils to assimilate treated wastewater, including pH, EC, phosphorus adsorption, total phosphorus, total nitrogen, sodicity / exchangeable sodium percentage (ECP), sodium adsorption ration (SAR) and cation exchange capacity (CEC)
- Revised treated wastewater monitoring program including monthly wastewater

sampling when irrigating for pH, EC, TDS. TSS, BOD, SAR

- The ‘works’ approval for the new optional irrigation area (L2) is only valid until 31 December 2028. If the works are not completed by this date the approval will lapse and the licence holder will have to reapply.

Existing irrigation area

- No irrigation of treated wastewater from June to August (based on insufficient winter irrigation management controls).
- Revised treated wastewater monitoring program to include Sodium ion (Na+), Calcium ion (Ca2+), Magnesium ion (Mg2+) and SAR:EC ratio in the monthly wastewater sampling.

Other

- 75 kL overflow sump and 1 ML treated wastewater pond are kept free of debris and vegetation.

6. Summary of amendments

Table 6 provides a summary of the new and updated licence conditions applied to the licence because of this amendment and will act as record of implemented changes. All changes have been incorporated into the revised licence as part of the amendment process.

Table 6: Summary of licence conditions in this amendment

Existing condition	Condition summary	Revised licence condition	Conversion and proposed amendment notes
N/A	Expiry Date: 18/01/2031	No change	Not changed
N/A	Prescribed Premises Category table	Category removed	Category 24 removed.
	Interpretation and definitions	Definitions located at the back in Table 9 and licence history and interpretation located on page 2.	Definitions are now located at the back of the licence, new definitions have been added.
Condition 1	General conditions under Condition 1 (1.1 to 1.3.3)	Infrastructure is now Condition 1 Table 1	Redundant conditions have been removed. Infrastructure conditions revised to current licensing format.
Condition 2	Emission conditions (2.1 to 2.8)	Condition 2 Table 2	Redundant conditions have been removed. Emission limit conditions revised to current licensing format. Irrigation condition moved to infrastructure and operations table and updated.
Condition 3	Monitoring conditions (3.1 to 3.9)	Condition 3 Table 3 Condition 4,5 & 6	Monitoring conditions revised to current licensing format and updated.
Condition 4	Improvements conditions		Redundant conditions have been removed.
Condition 5	Information (records and reporting conditions ((5.1.1 to 5.3.1)	Conditions 16, 17, 18, 19, and 20	Redundant conditions have been removed. Reporting and record conditions revised to current licensing format and updated.

Existing condition	Condition summary	Revised licence condition	Conversion and proposed amendment notes
Schedule 1	Premises maps	Schedule 1 Figure 1 Schedule 1 Figure 2	Updated maps to reflect changes in the infrastructure and operations.
Schedule 2	AACR	N/A	Redundant attachment. Deleted from Licence Forms accessed at www.wa.gov.au
N/A	New	7 - 15	New licence conditions for the development and operations of an optional irrigation area.

References

1. Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3 Primary Industries.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. DER, 2014, *Stella Bella Wines Pty Ltd, Licence L7749/1999/7 and decision report, issued 16 January 2014*, Perth, Western Australia
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
5. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
6. DWER 2008, WQPN 22 – Irrigation with nutrient-rich wastewater.
7. DWER 2022, WQPN 73 – Wineries and distilleries.
8. Department of Primary Industry and Regional Development (DPIRD) 2022 *Water salinity and plant irrigation (last edited 2019), Water salinity and plant irrigation | Agriculture and Food*, 2023, Magill, South Australia
9. EPA Guideline for Wineries and Distilleries, Adelaide, South Australia
10. Mosse K.P.M., Patti A.F., Christen E.W., Cavagnaro T.R. 2011 *Review: Winery wastewater quality and treatment options in Australia Vol 17, 111 – 122.* Australian Journal of Grape and Wine Research. Available at: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1755-0238.2011.00132.x
11. NSW Department of Primary Industries 2016, *Primefact1344: Interpreting water quality test results*, Sydney, New South Wales NSW Environmental Protection Authority (EPA) 1998, *Environmental & Health Protection Guidelines: On site sewerage management for single households, NSW EPA Technical Guidelines*
12. Stella Bella Wines Pty Ltd, 2023, *Application and supporting documents for licence amendment L7749/1999/7*, Karridale, Western Australia
13. US Environmental Protection Authority (EPA), 2006*, Process design manual, land treatment of municipal wastewater effluent, Report EPA/625/R-06/016.*
14. White. A, 2024 Email to DWER, *L7749/1999/9 Stella Bella Winery - PROPOSED AMENDMENT TO LICENCE, DRAFT DOCUMENTS – Comments,* 1 November 2024
15. White. A, 2024, Email to DWER, *Stella Bella update and licence amendment*, 11 December 2024.

16. White. A, 2024, Email to DWER, RE: APP-0026110 - NOTICE UNDER SECTION 59(B) OF THE ENVIRONMENTAL PROTECTION ACT 1986 - REGARDING PROPOSED AMENDMENT TO LICENCE L7749/1999/9, 7 March 2025.

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

Condition	Summary of licence holder's comment received on 7/3/2025	Department's response
1	***Winery*** Removal of point 1(e) in Table 1. *Drain filter baskets must be emptied routinely to ensure drains flow otherwise localised could occur within the winery building work area. This seems onerous given there is no reference in the decision document regarding a specific risk it is trying to control and there have been no issues with gross solids entering the WWTP. There is a high risk of administrative non-compliance if the baskets are not emptied every week, regardless of their condition as winery operations occur for most of the year.*	Condition not removed but wording changed from weekly inspection to routinely inspected.
	Wastewater treatment and storage Defining the overflow sump/lagoon. *Could '75kL lined emergency lagoon' be referred to as '75kL HDPE lined overflow sump' throughout the document as lagoon implies a natural water body.*	The name has been changed to ensure there is no confusion on the licence.
	Wastewater treatment and storage Point 2(d) in Table 1 *This condition cannot be complied with as there are occasion where clean stormwater on the concrete hardstand can flow to the WWTP during operations. During operations, runoff is diverted to wastewater in the event of a spill but if rain occurs it can result in clean water flowing to the WWTP. To achieve the licence limits for discharge the licensee diverts clean stormwater away from the WWTP wherever possible to reduce the discharge volume and reduce the hydraulic loading to the WWTP. If the intent of this condition is to prevent rainfall runoff from areas surrounding the infrastructure (not specifically the operational hardstand) from entering the WWTP and holding ponds, then could this be re-worded for clarity to ensure compliance is achievable.*	Condition changed to: All clean stormwater surface flow when operations are not occurring or flow from areas outside winery and WWTP infrastructure must be diverted from entering the WWTP, 75kL HDPE lined overflow sump, collection sumps and 1 ML holding pond
	Question regarding requirement to take photographs of meter face at the end of each month.	The department needs a way to verify meter reads when they are provided each year in the licence holders Annual Environmental Report. Taking a photograph of the meter read once a month is not considered onerous and is becoming a regular condition on licences.
	Irrigation of wastewater to land	Conditioned changed to included 'forecasted rain'.

Condition	Summary of licence holder's comment received on 7/3/2025	Department's response
	Irrigation during rainfall events. *Could forecast please be added because if rain is not forecast and irrigation commences a non-compliance can occur which is outside the control of the licensee.*	
General licence comments	Licence holder would like to further increase current approved application area (L1) and change wording of conditions to include possibilities of irrigation strategies (shandying) and what the new developed NIMP could entail.	This licence amendment has taken considerable time already, with multiple plan changes at all stages through the process. DWER cannot entail 'possibilities' into this licence amendment. The request to increase L1 has come late and with no irrigation strategy. It is in the Northern paddock area which is understood to have no irrigation infrastructure. The possibility of shandying wastewater is a new concept on his site. Any major change that is required by the newly developed NIMP will need to be submitted via a licence amendment, where the specifics can be justified and shown with an outlined irrigation strategy.
5	Request to adjust minimum time between monthly samples to 15 days rather than 21.	Condition updated to 15 days.
Table 8	Summary of compliance against each licence condition is invalid as the AACR covers this aspect.	Agree and summary deleted.
	Extension of licence expiry date since current licence expires in 6 years.	Licence date extended for 20 years.