

Licence

L7819/2002/9	
TYMC Pty Ltd 614 566 684	
5 Harmans Mill Road, METRICUP WA 6280	
DER2013/000256-1~5	
16/05/2014 15/05/2034	
26 September 2023	
Margaret River Winemakers 5 Harmans Mill Road METRICUP WA 6280	
Legal description -	
Lot 112 on Plan 40318 Certificate of Title Volume 25189 Folio 794	

Prescribed premises category description	Assessed production
(Schedule 1, <i>Environmental Protection Regulations 1987</i>)	capacity
Category 25: Alcoholic beverage manufacturing – premises on which an alcoholic beverage is manufactured and from which liquid waste is or is to be discharged onto land or into water	Not more than 1,400 kL of alcoholic beverage (wine, gin, vodka, fortified wines) produced per annual period.

This licence is granted to the licence holder, subject to the attached conditions, on 26 September 2023, by:

Manager, Process Industries an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
11/02/2005	L7819/2002/3	Licence re-issue category 25 winery
09/02/2006	L7819/2002/4	Licence re-issue category 25 winery
08/02/2007	L7819/2002/5	Licence re-issue category 25 winery
04/04/2007	L7819/2002/6	Licence re-issue category 25 winery
15/05/2008	L7819/2002/7	Licence re-issue category 25 winery
15/05/2009	L7819/2002/8	Licence re-issue category 25 winery, 1400 tonne annual crush
15/12/2011	L7819/2002/8	Department initiated licence amendment to require an environmental improvement plan to address upgrading the wastewater treatment plant performance.
23/01/2014	L7819/2002/8	Licence transferred to Margaret River Winemakers Pty Ltd
08/05/2014	L7819/2002/9	Licence re-issued (conversion to REFIRE format)
26/04/2016	L7819/2002/9	Notice of Amendment of Licence Expiry Dates Expiry date changes from 15 May 2019 to 15 May 2034
16/05/2022	L7819/2002/9	Notice of Amendment of Licence – Schedule 2 revised reporting date for AER. From 30/12/2023 AER reports are to be submitted biennially thereafter.
03/08/2023	L7819/2002/9	Licence amendment application to include the production of spirits (distillery). Department initiated amendments to update format of licence and reinstate annual reporting.
26/09/2023	L7819/2002/9	Transfer of licence to TYWC Pty Ltd

Interpretation

In this licence:

- (a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a condition, each row in a table constitutes a separate condition;
- (d) any reference to an Australian or other standard, guideline, or code of practice in this licence:
 - (i) if dated, refers to that particular version; and

- (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

1. The licence holder must ensure that the volume of alcoholic beverages listed in Table 1 do not exceed the corresponding limit.

Table 1: Production limits

Be	verage type	Production throughput limit
1	Total combined (Wine, gin, vodka and fortified wines)	<1400 kL per annual period
2	Distilled spirits (gin and vodka)	<7.5 kL per annual period

Infrastructure and equipment

2. The licence holder must ensure that the site infrastructure and equipment listed in Table 2 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 2.

Table 2: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
Winery building		
 Wine production infrastructure consisting of: Hopper and crusher/destemmer 48 wine fermentation tanks with a total volume of 614,660 litres. 73 wine storage tanks with a total volume of 741,669 litres. Concrete floor that drains to pipes connected to two concrete collection sumps. Bottling infrastructure. 	 (a) All wastewater generated from beverage manufacturing must be directed to the wastewater treatment system. (b) The collection sumps that collect wastewater from the winery building must be regularly pumped to the wastewater treatment plant to prevent the sumps overtopping; (c) Sludge must be removed at least annually from the collection sumps for off-site disposal by a licensed controlled waste contractor; (d) All grape solids (marc) must be stored on the solid Waste Storage Pad prior to off-site disposal. 	As shown in Schedule 1, Figure 1 as Winery Solid waste storage pad shown as 'solids' on Schedule ,1 Figure 1

	Site infrastructure and equipment	Operation	al requirement	Infrastructure location
	In-floor drainage system. Spirits production infrastructure consisting of: a 300L still	wine of must waste be rer	e-alcoholised wine, spoilt or waste or waste spirits (heads or tails) not be disposed of to the ewater treatment plant, but must moved from the premises for off- isposal at a licensed liquid waste y.	
Wa	stewater treatment plant			
2	 Wastewater treatment plant (WWTP) consisting of: Inflow meter (M1) Rotary solids screen 1 kL solids bin pH meter 25 kL raw water buffer tank 25 kL pH adjustment tank 14 kL emergency overflow tank connected to the pH adjustment and raw water buffer tanks. 2 x 60 kL aeration tanks with submersible aerators 2 x 45 kL aeration tanks with submersible aerators 32kL aeration tank multi compartment clarifier tank 5 kL irrigation tank Volumetric flow meter (M2) located on the outlet from the irrigation tank (once installed) 32 kL irrigation storage tank 10kL emergency overflow tank connected to irrigation tank Wastewater sampling point (W1) 	 tre thr wa (b) Wa froma sai (c) Irri by stowed (d) All mu oved (d) All mu oved (e) Spins oved (f) Slu an ae ad oved (g) Some pair oved (h) Floom ma oved (i) Un volume 	wastewater from the wastewater eatment system must be directed rough a flowmeter (M2) to the astewater irrigation area (L1) astewater sampling point (W1) on the irrigation tank must be aintained to allow wastewater mples to be collected. igation tank manual switch for pass to the 32-kL irrigation orage tank must be maintained in orking condition. pumps, floats and pipe works ust be inspected daily to ensure leaks and are operating in orking condition. beed of aerators must be spected daily to prevent foaming er the top of the aeration tanks. udge must be removed at least nually from the clarifying, ration tanks, raw water and pH justing tanks, by a licensed ntrolled waste carrier. bids bin must be emptied once a onth to the solid waste storage d. bw meter (M2) must be aintained to enable the mulative volume of treated astewater discharged to the gation areas to be accurately easured and recorded. htil Flow meter (M2) is installed, lumes of inflow through flow eter (M1) must be measured and corded.	As shown in Schedule 1 Figure 2 as: Flow meter M1 Rotary screen 1 kL bin pH meter raw water buffer tank 25 kL pH adjusting tank 14 kL emergency overflow tank 60 kL aeration tank and 60 kL 45 kL aeration tank 32 kL Clarifier 5 kL irrigation tank 10 kL overflow tank W1 M2(flowmeter) Solid waste storage pad shown as 'solids' on Schedule ,1 Figure 1
Tre	ated wastewater disposal (in	igation)		
	 1.5 Ha wastewater irrigation area (L1) consisting of: delivery drippers and 	(a) Only t applie(b) Only t	treated wastewater must be ed to L1; healthy vegetation must be red with wastewater.	As shown in Schedule 1 Figure 2 as: L1 (irrigation

	Site infrastructure and equipment	Оре	erational requirement	Infrastructure location
	pipeworkmixed grass pasture		No irrigation generated run-off, spray drift or discharge occurs beyond the boundary of the premises.	area)
		(d)	Wastewater must be evenly distributed over the irrigation area.	
		(e)	No soil erosion must occur.	
		(f)	Irrigation must not occur in areas that are visibly waterlogged.	
		(g)	Irrigation to L1 north and south paddocks must alternate each day of irrigation.	
		(h)	Irrigation within sections of north and south paddocks (6 sections) must be manually rotated every 3 days.	
		(i)	Irrigation must not occur on days when rainfall is above 1 mm.	
		(j)	All sprinklers and pipework must be inspected monthly for blockages and leaks and repaired.	
Sol	id waste disposal (storage pa	ad)		
	Solid waste storage pad consisting of a bunded concrete hardstand with sealed drainage sump.	(a)	All marc, lees, screening solids, and other organic solid wastes must be stored within the solid waste storage pad.	As shown in Schedule 1 Figure 2 as: 1 kL bin
		(b)	All leachate and contaminated stormwater collected within the bunded hardstand sump must be pumped to the WWTP.	Solid waste storage pad shown as 'solids'
		(c)	All organic waste material stored in the soild waste storage pad must be removed offsite each year.	on Schedule ,1 Figure 1

Works

3. The licence holder must install the infrastructure in accordance with the requirements specified in Table 3.

Table 3: Infrastructure requirements – flow meter

Infrastructure	Installation requirements	Infrastructure location	Timeframe
Flow meter M2 capable of measuring all wastewater discharges from irrigation tank through discharge point L1 as shown in Schedule 1 Figure 2	Must be installed on the outflow pipe that discharges wastewater from the irrigation tank to the irrigation area	As depicted in Schedule 1, Figure 2: Map of the site layout of the premises, labelled as M2	Must be installed within 30 days from the 3 August 2023.

4. The licence holder must within 30 days of the flow meter installation required by condition 3, submit to the CEO photographs as evidence demonstrating compliance with the requirements of condition 3.

Emissions and discharges

Wastewater discharges to land

- **5.** The licence holder must ensure only treated wastewater is discharged to land at the discharge point specified in Table 3.
- **6.** The licence holder must ensure that emissions from the discharge point listed in Table 3 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 6.

Table 4: Emission and discharge limits

Discharge point (L1)	Parameter	Limit
Treated wastewater from	•	5.5 to 8.5
W1 irrigated to L1 as shown in Schedule 1 as	Load of total nitrogen	≤ 180 kg/ha/annual period
Figures 1 and 2	Load of total phosphorous	≤ 20 kg/ha/annual period
	Load of biological oxygen demand	≤ 1500kg/ha/month

Monitoring

Monitoring of emissions to land

7. The licence holder must monitor emissions in accordance with the requirements specified in Table 4 and record the results of all such monitoring.

Table 5: Monitoring of emissions to land

Discharge point	Parameter	Units	Averaging period	Frequency
M2 as shown in Schedule 1 Figure 2	Discharge volume	m ³ or kilolitres	Monthly	Continuous monthly flow meter reading
W1 shown in Schedule 1	pH ¹	pH unit	Spot	Monthly during December to
Figure 2	Electrical conductivity ¹	dS/m	sample	June
	Biochemical oxygen demand			
	Total dissolved solids			
	Total nitrogen	mg/L		
	Total phosphorous			
	Total suspended solids			

Note 1: In-field non-NATA accredited analysis permitted

Note 2: Samples must be taken at least 30 days apart

Note 3: Samples must be taken twice during this period at least 3 months apart.

- **8.** The works approval holder must record the results of all monitoring activity required by condition 7.
- 9. The licence holder must ensure that:
 - (a) all water samples are collected and preserved in accordance with AS/NZS5667.1;
 - (b) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured).

Improvements

- **10.** The licence holder must submit to the CEO, by 31 May 2024, a nutrient and irrigation management plan (NIMP). The NIMP must:
 - (a) describe the irrigation area, irrigation discharge rates, irrigation schedule and irrigated crop or vegetation.
 - (b) demonstrate that the wastewater irrigation rates and schedule of application do not saturate the soil, infiltrate past the root zone of the crop or contaminate the soil;
 - (c) provide site-specific nutrient loading rates, based on the irrigated crops' ability to assimilate nutrients and remove nutrients through harvesting; and
 - (d) demonstrate how vegetation within the irrigation area will be maintained with a healthy coverage over the irrigation area during the irrigation period (December June).

Records and reporting

- **11.** The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:
 - (a) the name and contact details of the complainant, (if provided);
 - (b) the time and date of the complaint;
 - (c) the complete details of the complaint and any other concerns or other issues raised; and
 - (d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.
- **12.** The licence holder must:
 - (a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
 - (b) prepare and submit to the CEO by no later than 31 December each annual period an Annual Audit Compliance Report in the approved form.
- **13.** The licence holder must submit to the CEO by no later than 31 December after each annual period for the conditions listed in Table 6, and which provides information in accordance with the corresponding requirement set out in Table 6.

Table 6: Annual Environmental Report

Condition

1	Tabulated monthly volumes in kL and types (wine, gin, vodka, fortified wines etc) of beverage products produced.
N/A	(a) The amount of marc, lees and other organic waste removed off the solid's storage pad and the carrier who removed the material.
	(b) Details of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken.
	(c) A copy of the daily log demonstrating the date of the inspection of the WWTP including visual inspection of the pumps, floats, manual switches, and aerator speeds, signed daily by the inspector.
	(d) A copy of the log recording the date of irrigation, and rainfall recorded by the closest Bureau of Meteorology weather station.
6 Table 3	Calculation of the monthly loads of BOD, TN and TP through the application of wastewater applied to the irrigation area, using the Nutrient Loading Spreadsheet in Schedule 2
7 Table 4	(a) Volume (m ³) of wastewater discharged to L1, including monthly and annual volumes, presented in tabulated form, including the meter reading numbers and date of reading.
	(b) Wastewater monitoring data in tabulated and graphical form including the sampling date.
	(c) An assessment and interpretation of the water quality data including comparison to historical trends.
	(d) Copies of laboratory sample analysis reports.
	(e) Copy of water quality sampling methods and procedures.
11	A summary of complaints

Definitions

In this licence, the terms in Table 7 have the meanings defined.

Table 7	': Defii	nitions
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Term	Definition
ACN	Australian Company Number
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12 month period commencing from 1 November until 31 October of the immediately following year.
AS/NZS 5667.1	means the current version of Australian / New Zealand Standard AS/NZS 5667.1 Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples
AS/NZS 5667.10	means the current version of Australian / New Zealand Standard AS/NZS 5667.10 Water Quality – Sampling, Part 10: Guidance on sampling of waste waters
averaging period	means the time over which a limit is measured or a monitoring result is obtained

Term	Definition
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer of the Department.
	"submit to / notify the CEO" (or similar), means either:
	Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919
	or:
	info@dwer.wa.gov.au
Department	means the department established under section 35 of the <i>Public Sector</i> <i>Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
discharge	has the same meaning given to that term under the EP Act.
dS/m	deciseimens per metre
emission	has the same meaning given to that term under the EP Act.
EP Act	Environmental Protection Act 1986 (WA)
EP Regulations	Environmental Protection Regulations 1987 (WA)
hardstand	means a surface with a permeability of 10 ⁻⁹ metres/second or less.
healthy vegetation	means vegetation that is living and can actively take up water and nutrient
lees	means the material which accumulates in the bottom of grape juice or wine fermentation tanks
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
marc	means grape material (mainly skin, pulp and seeds) which is left over after grape crushing and pressing.
NATA	means the (Australian) National Association of Testing Authorities
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
monthly period	means a one-month period commencing from the first of a month until the last day of that same month.
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map Figure 1 in Schedule 1 to this licence.

Term	Definition
prescribed premises	has the same meaning given to that term under the EP Act.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).



Figure 1: Map of the boundary of the prescribed premises (in pink), irrigation area L1 (yellow) and site layout.

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WWTP site layout map

The site layout of the WWTP within the prescribed premises is shown in the map below (Figure 2).

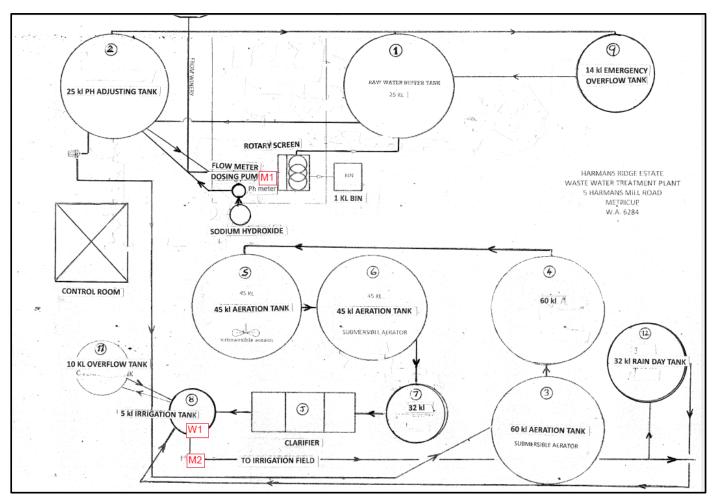


Figure 2: Map of the WWTP site layout, with the location of flow meters (M1 and M2) and wastewater monitoring point (W1). L7819/2002/9

Schedule 2: Nutrient loading calculator

days	as ¹ : size, volume irrigat	ed, irrigation					Annual per	riod (as defi	ned by you	Ir licence) ²				Volume irrigated	
	Size (ha)		January	Februar y	March	April	Мау	June	July	August	Septemb er	October	Novemb er	Decemb er	during annual period (kL) ³
EXAMPLE irrigation	25 volume volume	kL	20,000	20,000	18,000	15,000	0	0	0	0	15,000	18,000	20,000	25,000	151,000
area:	days of irrigation	days/mont h	29	28	30	25	0	0	0	0	20	25	30	27	
Irrigation	volume irrigated	kL													
Area 1:	days of irrigation	days/mont h													
Irrigation	volume irrigated	kL													
Area 2:	days of irrigation	days/mont h													
Irrigation	volume irrigated	kL													
Area 3:	days of irrigation	days/mont h													
	EXAMPLE sampling	date:	20/01/20 22	15/02/20 22	17/03/20 22	19/04/20 22	12/05/20 22	12/06/20 22	9/07/20 22	15/08/20 22	12/09/20 22	15/10/20 22	13/11/20 22	7/12/202 2	
	EXAMPLE total nitrog	ien mg/L	13.2	21.3	17.6	19.2	42.4	25.1	30.4	40.3	34.8	38.7	44.6	47.3	
	EXAMPLE BOD	mg/L	4.8	12.1	6.1	4.9	4.8	4.1	3.3	5.2	4.4	5.2	5.1	7.5	
Wastewater		Sampling date:													
quality ⁴	For wineries to inc	dicate sampling period:5													
	Total nitrogen	mg/L													
	Total phosphorus	mg/L													
	Biochemical oxygen demand	mg/L													
Nutrient and I	BOD loadings ⁶		January	Februar v	March	April	Мау	June	July	August	Septemb er	October	Novemb er	Decemb er	kg/ha/annual period ⁷
EXAMPLE tota	al nitrogen loadings		10.6	17.0	12.7	11.5					20.9	27.9	35.7	47.3	183.5
EXAMPLE BO)D loadings	kg/ha/mo nth	3.8	9.7	4.4	2.9					2.6	3.7	4.1	7.5	38.8
		11011			7.7									-	
	0	kg/ha/day	0.13	0.35	0.15	0.12					0.13	0.15	0.14	0.28	
	Total nitrogen	kg/ha/day kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		
	Total nitrogen Total phosphorus	kg/ha/day kg/ha/mo nth kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		
	Total nitrogen	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		
Irrigation Area 1 Irrigation	Total nitrogen Total phosphorus Biochemical oxygen demand	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/mo	0.13	0.35							0.13	0.15	0.14		
Area 1	Total nitrogen Total phosphorus Biochemical oxygen demand Total nitrogen	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/day kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo	0.13	0.35							0.13	0.15	0.14		
Area 1	Total nitrogenTotal phosphorusBiochemical oxygen demandTotal nitrogenTotal phosphorusBiochemical oxygen	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/day kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		
Area 1 Irrigation	Total nitrogenTotal phosphorusBiochemical oxygen demandTotal nitrogenTotal phosphorus	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/day kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		
Area 1 Irrigation Area 2	Total nitrogenTotal phosphorusBiochemical oxygen demandTotal nitrogenTotal phosphorusBiochemical oxygen	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/day kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		
Area 1 Irrigation Area 2	Total nitrogenTotal phosphorusBiochemical oxygen demandTotal nitrogenTotal phosphorusBiochemical oxygen demandDiochemical oxygen demandTotal nitrogenTotal nitrogenTotal nitrogen	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/day kg/ha/day kg/ha/day kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		
Area 1	Total nitrogen Total phosphorus Biochemical oxygen demand Total nitrogen Total phosphorus Biochemical oxygen demand Total nitrogen Total nitrogen Total nitrogen Total nitrogen Total nitrogen	kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/day kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth kg/ha/day kg/ha/day kg/ha/day kg/ha/mo nth kg/ha/mo nth kg/ha/mo nth	0.13	0.35							0.13	0.15	0.14		

Licence limits ⁸							
		kg/ha/annual period	kg/ha/mo nth	kg/ha/d ay			
Irrigati on area 1	ΤN						
	TP						
	BO D						
Irrigati on area 2	ΤN						
	TP						
	BO D						
Irrigati on area 3	ΤN						
	TP						
	BO D						

NOTE 2 - This sheet should be completed for your annual period as defined by your licence.

E.g. If your annual period is from 1 October to the 30 September in the following year, for the 2022-2023 annual period, you should include data from January - September 2023, and October - December 2022.

NOTE 3 - Volume irrigated during the annual period (kL), for each irrigation area is the sum of the monthly volumes irrigated to that area.

E.g. For the example shown: Volume irrigated during annual period = 20,000 (Jan) + 20,000 (Feb) + 18,000 (Mar) + 15,000 (Apr) + 15,000 (Sep) + 18,000 (Oct) + 20,000 (Nov) + 25,000 (Dec) = 151,000 kL. Noting that for the example there was no irrigation during the months of May, June, July or August.

NOTE 4 - The sampling and analysis of your wastewater quality should be undertaken in accordance with your licence conditions.

For sampling less often than monthly, i.e. quarterly, 6-monthly, or annually: for months where no sampling is required, wastewater quality should be taken to be equivalent to the most recent sample taken. E.g. Quarterly sampling during Feb, May, Aug and Nov - total nitrogen concentrations were analysed to be 7, 11, 8 and 13 mg/L respectively in the wastewater. For March and April, as February was the most recent sample taken, total nitrogen concentration is estimated to be 7 mg/L. Similarly, for June and July, as May was the most recent sample, total nitrogen concentration is estimated to be 11 mg/L. There will be no sampling date associated with non-sampling months.

If your licence requires you to monitor loading rates for additional parameters (e.g. inorganic nitrogen, reactive phosphorus etc.) additional copies of this sheet should be completed for the additional parameters.

NOTE 5 - For wineries to indicate sampling period - this row is only required to be completed if your licence condition specifies a sampling period e.g. pre-vinatge, peak vintage, late vintage, post vintage, non-vintage. Indicate which sampling date corresponds with which period.

NOTE 6 - Parameter loading (TN, TP or BOD) each month per hectare for each irrigation area (kg/ha/month): monthly concentration of parameter (TN, TP or BOD) in mg/L * monthly volume of wastewater irrigated to irrigation area (kL) ÷ 1000 size of irrigation area

E.g. Using the example shown, for total nitrogen for January: 13.2 mg/L * 20,000 kL / 1,000 = 264 kg/month. 264 / 25 ha = 10.6 kg/ha/month (for January).

Loading of parameter (BOD) each day per hectare for each irrigation area (kg/ha/day): BOD loading (kg/ha/month) ÷ number of days of irrigation during that month. E.g. Using the example shown, for BOD for October: 3.7 kg/ha/month / 25 days of irrigation during October = 0.15 kg/ha/day (for October)

NOTE 7 - To calculate annual loading of parameter (TN, TP or BOD) per hectare (kg/ha/annual period): sum of monthly loadings (kg/ha/month). You should calculate an annual loading (kg/ha/annual period) for each relevant parameter for each irrigation area.

E.g. Using the example shown, for total nitrogen: 10.6 (Jan) + 17 (Feb) + 12.7 (Mar) + 11.5 (Apr) + 20.9 (Sep) + 27.9 (Oct) + 35.7 (Nov) + 47.3 (Dec) kg/ha/month = 183.5 kg/ha/annual period

NOTE 8 - Relevant licence limits to be entered. Where TN = total nitrogen, TP = total phosphorus, and BOD = biochemical oxygen demand. Once applicable licence limits have been entered, the calculated loadings will become red text if they exceed the relevant limit.

Note: Licence holders can request a digital Excel spreadsheet (with in-built formulas) on request.

Send all requests to info@dwer.wa.gov.au

Attention: Process Industries and quote the licence number.