Government of Western Australia
Department of Water and Environmental Regulation

# Licence

| | |
|---|---|
| **Licence number** | L7359/1995/10 |
| **Licence holder** | Oakover Vineyards Pty Ltd |
| **ACN** | 009 359 835 |
| **Registered business address** | 14 Yukich Close<br>MIDDLE SWAN WA 6056 |
| **DWER file number** | APP-0026235 / DEC35/1~2 |
| **Duration** | 14/09/2015 to 13/09/2034 |
| **Date of amendment** | 03/10/2025 |
| **Premises details** | Nikola Estate<br>148 Dale Road<br>MIDDLE SWAN WA 6056<br>Legal description -<br>Lot 103 on Plan 77141<br>As depicted in Schedule 1 |

| **Prescribed premises category description** (Schedule 1, ***Environmental Protection Regulations 1987***) | **Assessed production 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. | <1,750 kilolitres of wine or juice processed per annual period<br>< 2500 tonnes of grapes crushed per annual period |

This licence is granted to the licence holder, subject to the attached conditions, on 03 October 2025, by:

Caron Goodbourn Digitally signed by Caron Goodbourn
Date: 2025.10.03 13:11:46 +08'00'

MANAGER, PROCESS INDUSTRIES

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

# Licence history

| Date | Reference number | Summary of changes |
|---|---|---|
| 13/09/2010 | L7359/1995/9 | Licence re-issued |
| 13/09/2013 | L7359/1995/9 | Transfer of licence from Constellation Wines Australia Pty Ltd to Accolade Wines Australia Pty Ltd |
| 18/12/2014 | L7359/1995/9 | Licence amended to a new format |
| 10/09/2015 | L7359/1995/10 | Licence re-issued. |
| 29/4/2016 | L7359/1995/10 | Amendment by notice to extend expiry date 13 September 2034 |
| 10/01/2020 | L7359/1995/10 | Transfer of Licence from Accolade Wines Australia Pty Ltd to Oakover Vineyards Pty Ltd. |
| 03/10/2025 | L7359/1995/10 | Department initiated licence amendment as an outcome of a licence review. Includes reducing the assessed production capacity from 7000 to 1,750 kL per annual period at the licence holders request, updates to the licence format and additional regulatory controls and emission monitoring.requirements. |

# 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:

## Infrastructure and equipment

**1.** The licence holder must ensure that the site infrastructure and equipment listed in Table 1 is maintained and operated in accordance with the corresponding operational requirement set out in Table 1.

**Table 1: Infrastructure and equipment operational requirements**

| | Site infrastructure and equipment | Operational requirement | Infrastructure location – Schedule 1: |
|---|---|---|---|
| **Winery production** | | | |
| 1. | **Winery building** consisting of drained hardstand floor and housing the following wine processing equipment:<br>i. Crushers.<br>ii. Presses.<br>iii. Fermenters and wine storage tanks and barrels.<br>iv. Barrel washer.<br>v. Bottling.<br><br>**Outdoor hardstand** consisting of an impervious concrete area with drains and collection sumps, that houses the following wine processing equipment:<br>i. Marc storage area.<br>ii. Tank farm. | a) All infrastructure used for the production and bottling of wine (excluding water tanks) must be operated within the winery building.<br>b) All wastewater, leachate or contaminated stormwater generated from the winery building and outdoor hardstand area must be collected and drained to one of the collection sumps.<br>c) All wastewater collected in the sumps must drain to the WWTP.<br>d) Sumps must be kept free of solids to facilitate the free flow of water to the WWTP<br>e) Lees must only be stored onsite in impervious storage prior to offsite removal.<br>f) Measures must be taken to exclude as far as possible uncontaminated stormwater from accessing the hardstand drains, sumps and WWTP.<br>g) Wastewater drainage system (including any sumps, pipelines, and drainage channels) and concrete flooring or hardstands must be maintained to prevent wastewater or product leaks to underlying soils.<br>h) All leachate generated from the marc storage area must drain to a collection sump.<br>i) All grape marc must be stored within the designated marc storage area prior to offsite disposal. | Shown as:<br>Winery<br>Marc storage area |
| **Wastewater treatment plant (WWTP)** | | | |
| 2. | **Winery wastewater treatment plant** placed on a bunded hardstand compound. The WWTP consists of consisting of the | a) Any tank or vessel that does not have a gravity over-flow to another storage vessel must be able to provide visual indicators of fault conditions and/or high-water level alarms that are | Shown as:<br>WWTP<br>FM1<br>SP1 |

| | Site infrastructure and equipment | Operational requirement | Infrastructure location – Schedule 1: |
|---|---|---|---|
| | following equipment:<br>i. Concrete holding sump (equipped with a high-level alarm)<br>ii. Delivery pump to the system from sump<br>iii. Primary Aeration and heavy solids removal screen.<br>iv. Secondary Aeration and light solids removal screen.<br>v. Primary tank (settling / holding) (45 kL)<br>vi. Secondary tank (settling / holding) (45 kL).<br>vii. Heavy duty water filters located by the secondary tank.<br>viii. Irrigation pump located at the secondary tank.<br>ix. Flow meter (FM1) located at the disc filter.<br>x. Sample Tap (SP1) | triggered.<br>b) All wastewater generating activities must cease if a high-level alarm is triggered in the WWTP. Wastewater generating activities must not recommence until sufficient wastewater storage is made available by off-site disposal or additional wastewater storage tanks are installed.<br>c) The concrete sump must be kept free of sludge to ensure free flow of wastewater to the WWTP.<br>d) During vintage the primary and secondary tanks must be inspected daily and during non-vintage must be inspected once per week for overtopping or spills. Inspection findings must be recorded as per condition 12.<br>e) Sample tap (SP1) must be maintained at the outlet of the secondary settling/ holding tanks capable of collecting wastewater for the purpose of sampling.<br>f) A volumetric flow meter (FM1) must be maintained at the outlet of the secondary settling / holding tank to accurately measure the cumulative volume of wastewater discharged to the land application area (LAA).<br>g) Monthly irrigation volume of FM1 must be recorded.<br>h) End of month photographs must be taken of the FM1 meter face, clearly showing the meter read.<br>i) Wastewater treatment compound hardstand and all tanks and pipes to be maintained free of cracks and leaks. | |
| **Land application area (LAA)** | | | |
| 3. | 1.9 Ha Land application area (LAA) consisting of:<br>i. Pipeline connected from the outlet of the secondary tank (45 kL) to a sprinkler system.<br>ii. Planted with kikuyu grass. | a) Wastewater must only be applied to the LAA<br>b) Wastewater must be evenly distributed over the entire LAA.<br>c) No irrigation of wastewater during the months of June, July and August.<br>d) All wastewaters being irrigated must pass through the flow meter FM1 before being discharged to the LAA.<br>e) At least once every irrigation month, the entire length of the wastewater | Shown as:<br>Land application area. |

| | Site infrastructure and equipment | Operational requirement | Infrastructure location – Schedule 1: |
|---|---|---|---|
| | | pipeline and sprinkler system must be visually inspected for leaks or breaks, and the inspection date and findings recorded as per condition 12.<br>f) At the end of each irrigation month a reading of the flow meter (FM1) must be photographically recorded<br>g) No marc or other organic waste to be applied to the LAA.<br>h) Pasture must be managed as per Condition 5. | |

## Site Improvements

### Groundwater monitoring bore suitability report

**2.** The licence holder must prepare and submit to the CEO by 30 April 2026 an audit report on the suitability of the existing groundwater monitoring bore network.

**3.** The report required by condition 2, must include:

(a) an audit of existing groundwater monitoring bores (GW1, GW2, and GW3) against the specifications depicted in Schedule 1, Figure 4;

(b) where the audit determines that one or more of the monitoring bores fail to meet the depicted specifications, the report must proposed upgrade works which may include construction of new monitoring bores in a more appropriate location; and

(c) the report must be prepared by a suitably qualified person and contains the printed name and qualifications of that person.

### Site infrastructure report

**4.** The licence holder must prepare and submit a report to the CEO by 30 November 2025 on the site's infrastructure including the following:

(a) a map of the winery building and outdoor hardstand area labelling the location of the collection sumps and drains; and.

(b) a map of the wastewater treatment plant labelling the location of the sample tap.

### Pasture management (LAA)

**5.** The licence holder must ensure that:

(a) a healthy grass pasture must be maintained over the LAA;

(b) the pasture must be mechanically cut and harvested at least once every month during the annual period;

(c) harvested pasture must be removed from the LAA on the same day it was harvested and record the date the harvest occurred and;

(d) the harvested pasture must be weighed or its weight estimated and recorded with the methodology used to estimate the weight described.

## Emissions and discharges

### Authorised emissions limits

**6.** The licence holder must ensure that emissions from the discharge point listed in Table 2 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 7.

**Table 2: Emission limit values**

| Discharge point | Parameter | Limit (including units) | Sampling |
|---|---|---|---|
| LAA as shown in Schedule 1, Figure 2. | pH | Between 5 and 8.5 | Spot sample |
| | SAR:EC ratio | Must not fall within the "soil structural problems likely" range as shown in Schedule 1, Figure 3. | |
| | Volume (kL) of wastewater irrigated. | <5,250 kL per annual period. | |
| | | <585 kL per month during May and September. | |
| | | 0 kL per month during June, July and August. | |
| | Total nitrogen | <235 kg/ha/annual period | Annual loading (see Schedule 2) |
| | Total phosphorus | <30 kg/ha/annual period | |
| | BOD | <1,500 kg/month | Monthly loading. |

## Monitoring

### *Monitoring of emissions to land*

**7.** The licence holder must monitor emissions in accordance with the requirements specified in Table 3, and record the results of all such monitoring.

**Table 3: Monitoring of emissions to land**

| Emission point | Monitoring location | Parameter | Units | Frequency [2] | Averaging period[3] | Method |
|---|---|---|---|---|---|---|
| LAA as shown in Schedule 1 Figure 2 | Wastewater sampling point SP1 as shown in Schedule 1 Figure 2. | Volumetric flow rate (cumulative) | L/day | Continuous when discharging | Daily | N/A |
| | | pH[1] | - | Monthly when irrigation takes place | Spot sample | AS/NZS 5667.1 and AS/NZS 5667.10 |
| | | Electrical conductivity (EC)[1] | dS/m | | | |
| | | Total nitrogen | mg/L | | | |
| | | Total phosphorus | | | | |
| | | Total dissolved solids | | | | |
| | | Total suspended solids | | | | |

| Emission point | Monitoring location | Parameter | Units | Frequency [2] | Averaging period[3] | Method |
|---|---|---|---|---|---|---|
| | | BOD | | | | |
| | | Potassium | | | | |
| | | Sodium ion ($Na^+$) | | Twice yearly, once in vintage (March) and once post-vintage (May) | | |
| | | Calcium ion ($Ca^{2+}$) | | | | |
| | | Magnesium ion ($Mg^{2+}$) | | | | |
| | | SAR | - | | | |

[1]In field non-NATA accredited analysis permitted for pH and electrical conductivity.

[2]Sample must be collected at least 21 days apart from each sampling date.

### *Monitoring of ambient soil*

**8.** The licence holder must monitor soil for concentrations of the identified parameters in accordance with Table 4.

**Table 4: Monitoring of ambient soil concentrations.**

| Monitoring location LAA as shown in Schedule 1: , Figure 2. | Parameter | Unit | Frequency |
|---|---|---|---|
| **Land application area:** S1, S2, S3: Samples to be taken from topsoil 1 (0-200mm), topsoil 2 (200-600mm) and subsoil (600mm to bottom of root zone) at each monitoring point. | pH[1] | - | Six monthly (Once in April and once in October). |
| | Sodium | mg/kg | |
| | Magnesium | | |
| | Calcium | | |
| | Total Kjeldahl nitrogen (TKN) | | |
| | Total nitrogen (TN) | | |
| | Total phosphorous (TP) | | |
| | Total plant available phosphorous (Colwell method) | | |
| | Potassium | | |
| | Cation exchange capacity (CEC) | meq/100g | |
| | Phosphorus buffering index (PBI) | - | |
| | Electrical conductivity (EC) | dS/m | |
| | Exchange sodium percentage (ESP) | % | |
| | Total organic carbon | | |

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

### *Monitoring of ambient groundwater*

**9.** The licence holder must monitor groundwater in accordance with the requirements specified in Table 5 and record the results of all such monitoring.

**Table 5: Monitoring of ambient groundwater concentrations**

| Monitoring bore location | Parameter | Units | Frequency[2] | Averaging period | Sampling method |
|---|---|---|---|---|---|
| GW1, GW2, GW3. | Standing water level | m(mbgl) | Quarterly (February, May, August and November). | Spot sample | In-field measurement |
| | pH[1] | - | | | AS5667.1<br>AS5667.11 |
| | Total nitrogen (TN) | mg/L | | | |
| | Total Kjeldahl nitrogen (TKN) | | | | |
| | Total phosphorous (TP) | | | | |
| | Total reactive phosphorous (TRP) | | | | |
| | Total dissolved solids (TDS) | | | | |
| | BOD | | | | |
| | EC | dS/m | | | |
| | SAR | - | | | |

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

Note 2: if sampling occurs and the bore is dry the applicant must re-attempt sampling XX TIME, if still dry then this is to be recorded.

**10.** The licence holder must ensure that:

(a) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;

(b) all soil sampling is conducted in accordance with AS 4482.1 and AS4482.2;

(c) all groundwater sampling is conducted in accordance with AS5667.1 and AS5667.11

(d) unless specified, all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

## 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 maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

(a) the calculation of fees payable in respect of this licence;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 1;

(c) findings of the inspections undertaken in accordance with condition 1.

(d) monitoring programmes undertaken in accordance with conditions 7, 8, and 9; and

(e) complaints received under condition 11 of this licence.

**13.** The books specified under condition 12 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the licence holder for the duration of the licence; and

(d) be available to be produced to an inspector or the CEO as required.

**14.** 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 an Annual Audit Compliance Report in the approved form by 31 August each year.

**15.** The licence holder must submit to the CEO by no later than 31 August after the end of the annual period, an Annual Environmental Report for that 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: Environmental reporting requirements**

| Condition | Requirement |
|---|---|
| N/A | Summary 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. |
| 1 | (i) Volumes (kL) of wine or juice produced each annual period<br>a) Tonnes of grapes crushed per annual period<br>b) Volumes of juice accepted at the winery for further processing.<br>c) Amount (tonnes/$m^3$) of solid organic waste removed off site each annual period and where the waste was disposed to. |
| 6, Table 2 | d) Wastewater monitoring data in tabulated form that includes the sample date compared to the discharge emission limits. If emission limits have been exceeded an explanation of why and what actions will be taken to ensure limits are met in the future.<br>e) Present monthly and annual tabulated loadings of nitrogen, phosphorus and |

| Condition | Requirement |
|---|---|
| | BOD applied to the land application (LAA) using the Nutrient Loading Spreadsheet in Schedule 2. |
| 7, Table 3 | (ii) Monthly volume (m3 or kL) of wastewater applied to the LAA.<br>f) Wastewater monitoring data in tabulated and graphical form including the sampling date.<br>g) An assessment and interpretation of the data including comparison to historical trends and loading limits (minimum of 5 years).<br>h) Dated photos of flowmeter reading to be taken at the end of each irrigation month including serial number. |
| 8, Table 4 | i) Soil monitoring data in tabulated and graphical form including the sampling date.<br>j) An assessment and interpretation of the data including comparison to historical trends (minimum of 5 years). |
| 9, Table 5 | k) Groundwater monitoring data in tabulated and graphical form including the sampling date.<br>l) An assessment and interpretation of the data including comparison to historical trends (minimum of 5 years). |
| 11 and 12 | m) Summary of complaints recorded, and all books/report complete for the annual period. |

# Definitions

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

**Table 7: Definitions**

| 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 are available on the Department's website). |
| annual period | a 12 month period commencing from 01 August until 31 July of the immediately following year. |
| averaging period | means the time over which a limit is measured or a monitoring result is obtained. |
| BOD | biological oxygen demand |
| books | has the same meaning given to that term under the EP Act. |
| CEO | means Chief Executive Officer of the department.<br>"submit to / notify the CEO" (or similar), means either:<br>Director General<br>Department administering the *Environmental Protection Act 1986*<br>Locked Bag 10<br>Joondalup DC WA 6919<br>or:<br>info@dwer.wa.gov.au |
| department; DWER | means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3. |
| dS/m | deci-Semiens per metre |
| discharge | has the same meaning given to that term under the EP Act. |
| 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). |
| leachate | liquid released by or water that has percolated through waste and which contains some of its constituents. |
| lees | 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. |

| Term | Definition |
|---|---|
| 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 solid grape material (mainly skin, pulp and seeds) which is left over after grape crushing and pressing. |
| mg/L | milligrams per litre |
| mgbl | metres below ground level. |
| monthly period | means a one-month period commencing from the first day of a month until the last day of the same month. |
| 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. |
| post-vintage | the period of time after the peak of grape crushing (typically April-December). |
| pollution control equipment | means the infrastructure in Table 1 used to control emissions through means of: storage, diversion, treatment or transportation. |
| 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 in Figure 1, in Schedule 1 to this licence. |
| prescribed premises | has the same meaning given to that term under the EP Act. |
| spot sample | a discrete sample representative at the time and place at which the sample is taken. |
| SAR | sodium adsorption ratio |
| Suitably qualified person | means a person that is a qualified driller, a qualified geotechnical professional or hydrogeologist or an Accredited Soil Scientist accredited by Soil Science Australia (or equivalent accreditation). |
| vintage | the period of time during which the first and last grapes of the season are received for crushing (typically January-March). |
| waste | has the same meaning given to that term under the EP Act. |

**END OF CONDITIONS**

## Schedule 1: Figures

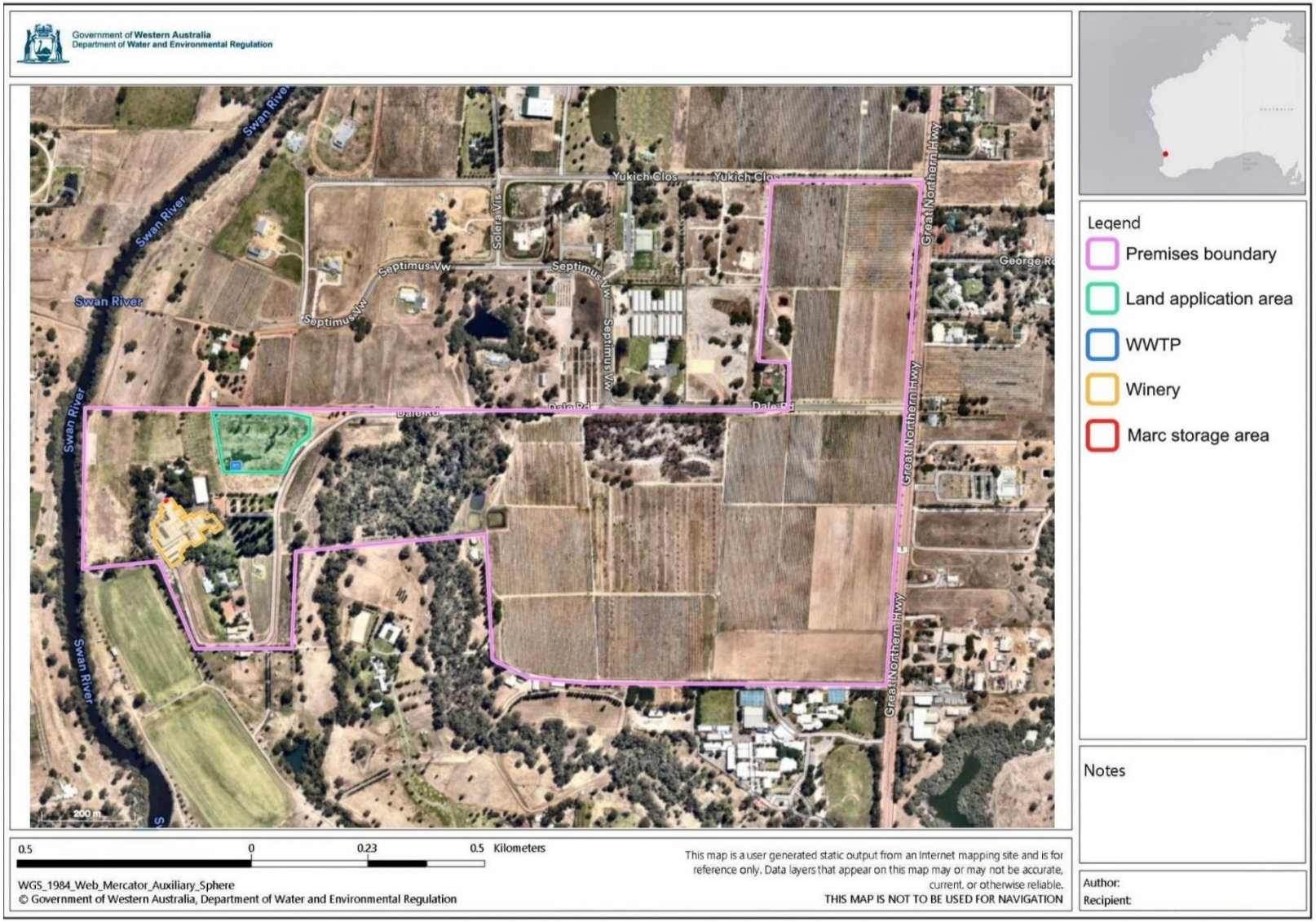


**Figure 1: Map of the boundary of the prescribed premises boundary and premises infrastructure.**

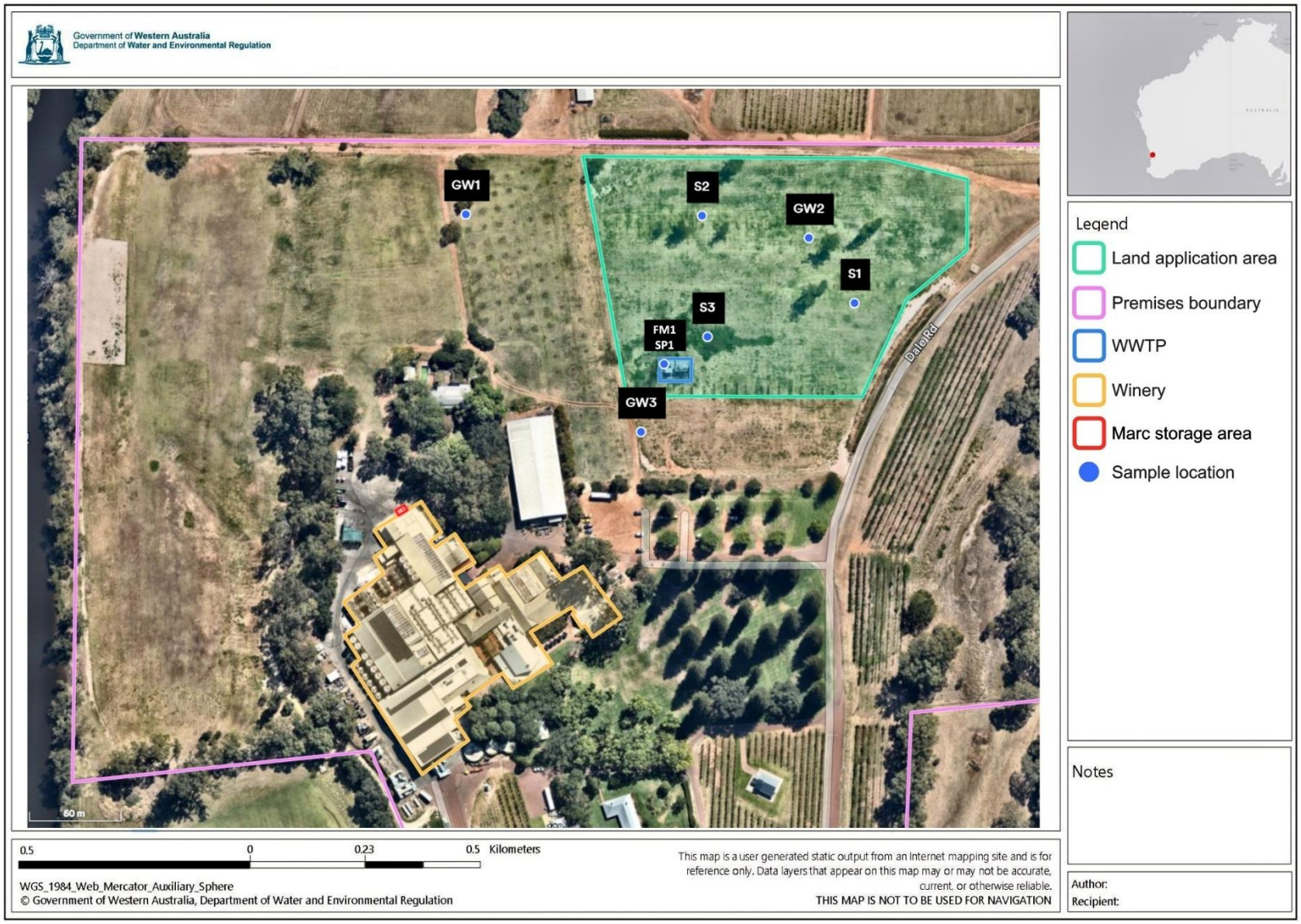


**Figure 2: Land application area (LAA), with groundwater and soil sampling points, wastewater treatment plant (WWTP), marc storage area and winery.**

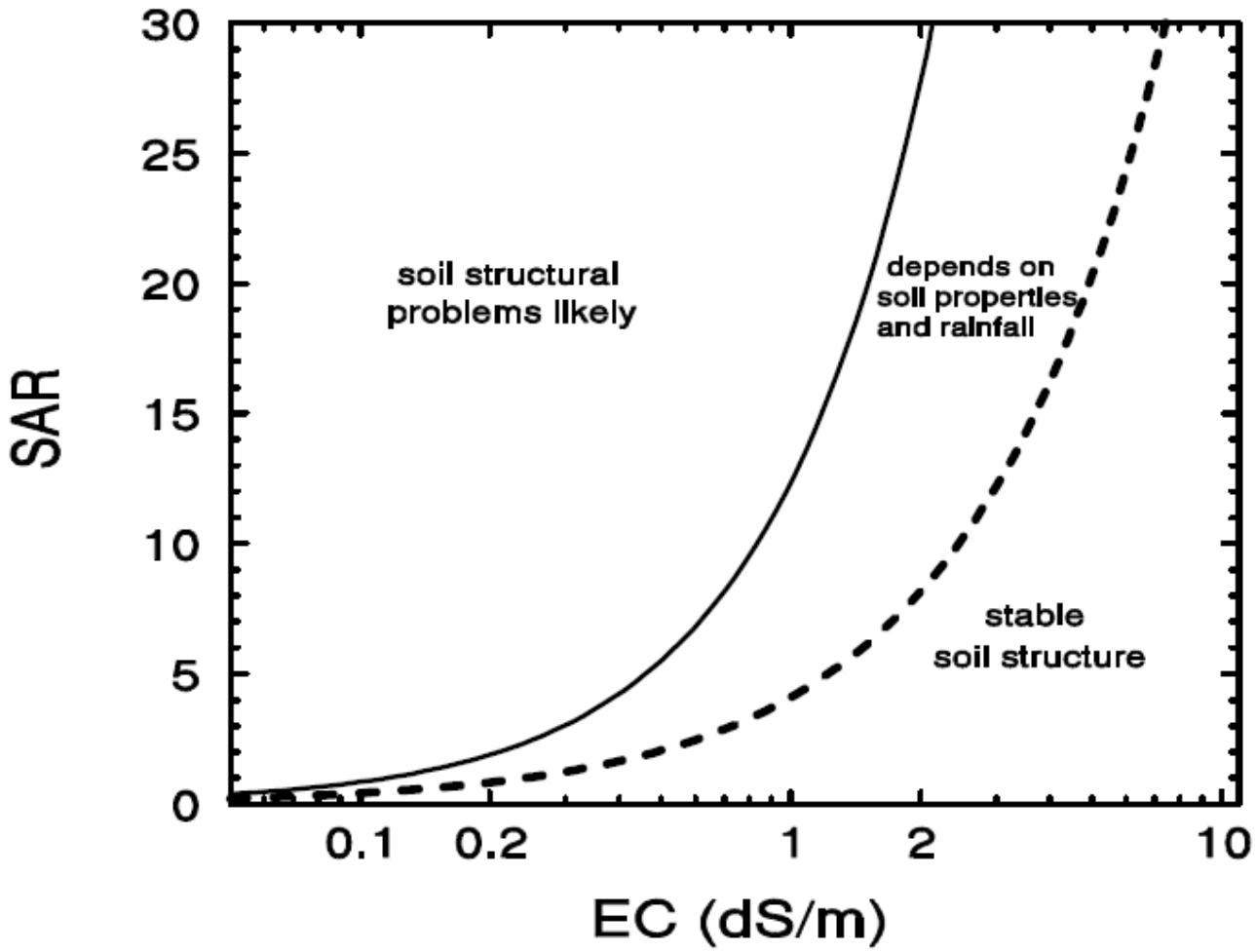


**Figure 3: Relationship between SAR and EC on soil structure.**

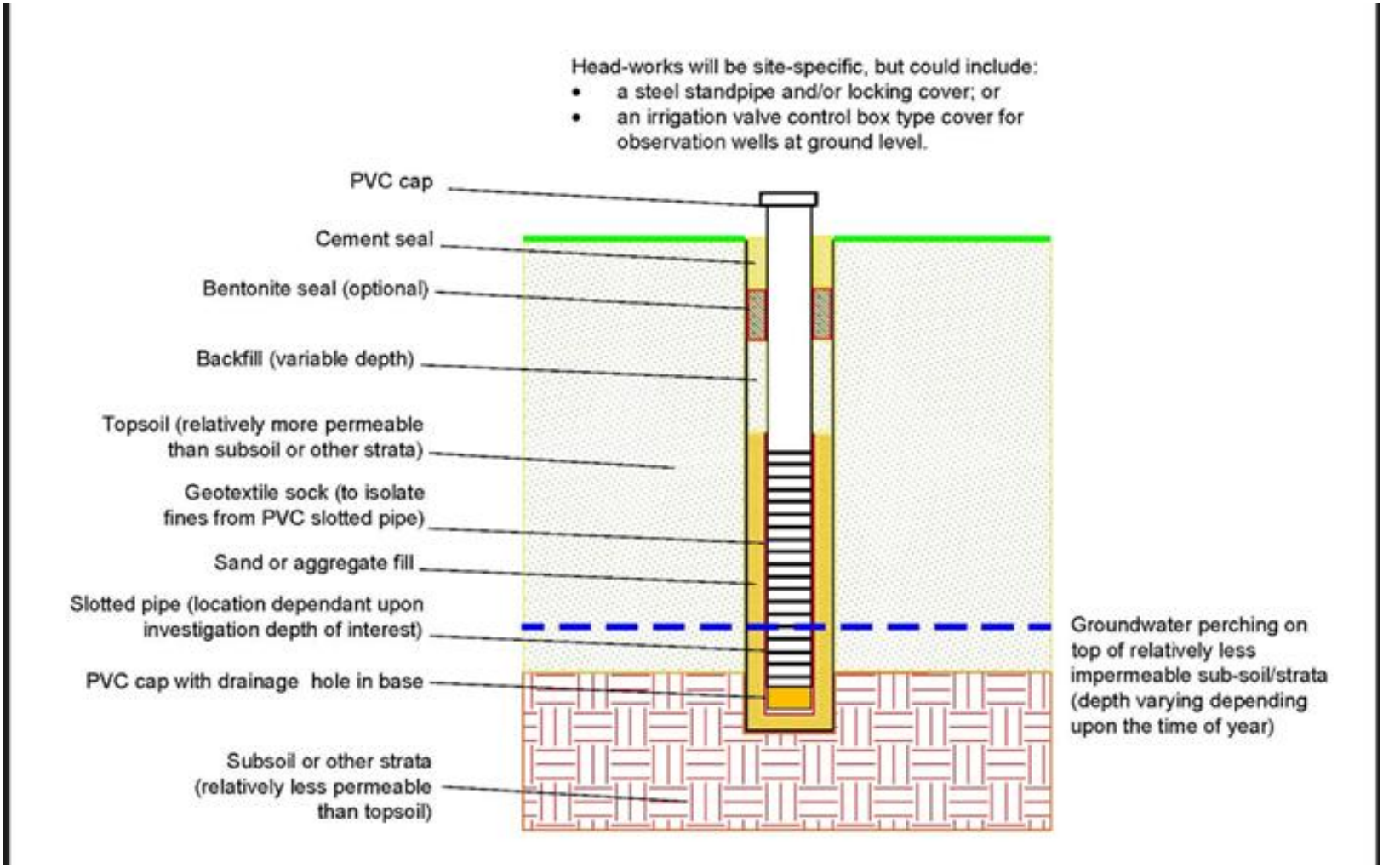


**Figure 4: Monitoring well specification requirements.**

# Schedule 2: Nutrient loading calculator

| Irrigation areas[1]: size, volume irrigated, irrigation days | | | | Annual period (as defined by your licence)[2] | | | | | | | | | | | | Volume irrigated during annual period (kL)[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size (ha) | | | January | February | March | April | May | June | July | August | September | October | November | December | |
| *EXAMPLE irrigation area:* | *25* | *volume irrigated* | *kL* | *20,000* | *20,000* | *18,000* | *15,000* | *0* | *0* | *0* | *0* | *15,000* | *18,000* | *20,000* | *25,000* | *151,000* |
| | | *days of irrigation* | *days/month* | *29* | *28* | *30* | *25* | *0* | *0* | *0* | *0* | *20* | *25* | *30* | *27* | |
| Irrigation Area 1: | | volume irrigated | kL | | | | | | | | | | | | | |
| | | days of irrigation | days/month | | | | | | | | | | | | | |
| Irrigation Area 2: | | volume irrigated | kL | | | | | | | | | | | | | |
| | | days of irrigation | days/month | | | | | | | | | | | | | |
| Irrigation Area 3: | | volume irrigated | kL | | | | | | | | | | | | | |
| | | days of irrigation | days/month | | | | | | | | | | | | | |
| **Wastewater quality[4]** | *EXAMPLE sampling date:* | | | *20/01/2022* | *15/02/2022* | *17/03/2022* | *19/04/2022* | *12/05/2022* | *12/06/2022* | *9/07/2022* | *15/08/2022* | *12/09/2022* | *15/10/2022* | *13/11/2022* | *7/12/2022* | |
| | *EXAMPLE total nitrogen* | *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* | |
| | **Sampling date:** | | | | | | | | | | | | | | | |
| | **For wineries to indicate sampling period:[5]** | | | | | | | | | | | | | | | |
| | Total nitrogen | mg/L | | | | | | | | | | | | | | |
| | Total phosphorus | mg/L | | | | | | | | | | | | | | |
| | Biochemical oxygen demand | mg/L | | | | | | | | | | | | | | |

| Nutrient and BOD loadings[6] | | | January | February | March | April | May | June | July | August | September | October | November | December | kg/ha/annual period[7] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *EXAMPLE total nitrogen loadings* | | | *10.6* | *17.0* | *12.7* | *11.5* | | | | | *20.9* | *27.9* | *35.7* | *47.3* | *183.5* |
| *EXAMPLE BOD loadings* | | *kg/ha/month* | *3.8* | *9.7* | *4.4* | *2.9* | | | | | *2.6* | *3.7* | *4.1* | *7.5* | *38.8* |
| | | *kg/ha/day* | *0.13* | *0.35* | *0.15* | *0.12* | | | | | *0.13* | *0.15* | *0.14* | *0.28* | |
| Irrigation Area 1 | Total nitrogen | kg/ha/month | | | | | | | | | | | | | |
| | Total phosphorus | kg/ha/month | | | | | | | | | | | | | |
| | Biochemical oxygen demand | kg/ha/month | | | | | | | | | | | | | |
| | | kg/ha/day | | | | | | | | | | | | | |
| Irrigation Area 2 | Total nitrogen | kg/ha/month | | | | | | | | | | | | | |
| | Total phosphorus | kg/ha/month | | | | | | | | | | | | | |
| | Biochemical oxygen demand | kg/ha/month | | | | | | | | | | | | | |
| | | kg/ha/day | | | | | | | | | | | | | |
| Irrigation Area 3 | Total nitrogen | kg/ha/month | | | | | | | | | | | | | |
| | Total phosphorus | kg/ha/month | | | | | | | | | | | | | |
| | Biochemical oxygen demand | kg/ha/month | | | | | | | | | | | | | |
| | | kg/ha/day | | | | | | | | | | | | | |

| Licence limits[8] | | | | |
|---|---|---|---|---|
| | | kg/ha/annual period | kg/ha/month | kg/ha/day |
| Irrigation area 1 | TN | | | |
| | TP | | | |
| | BOD | | | |
| Irrigation area 2 | TN | | | |
| | TP | | | |
| | BOD | | | |
| Irrigation area 3 | TN | | | |
| | TP | | | |
| | BOD | | | |

**Explanatory notes and calculations:**

White cells should be filled in where applicable. Pale yellow cells will calculate automatically.

| |
|---|
| NOTE 1 - Where there is irrigation to more than 3 areas, additional copies of this sheet should be completed. |
| NOTE 2 - This sheet should be completed for your annual period as defined by your licence.<br>*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.<br>*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.<br>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.<br>*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.*<br>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<br>size of irrigation area<br>*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).*<br><br>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.<br>*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.<br>*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.