Government of Western Australia
Department of Environment Regulation

# Licence

## *Environmental Protection Act 1986*, Part V

## Licensee: Ferngrove Vineyards Ltd

## Licence: L7716/2001/8

**Registered office:** 100 Mill Point Road
SOUTH PERTH WA 6151

**ACN:** 080 659 114

**Premises address:** Ferngrove Winery
276 Scrubiup Road
Frankland WA 6396
Being Lot 22 on Plan 22229 and Lot 23 and 24 on Plan 38229 as depicted in Schedule 1

**Issue date:** Thursday, 18 December 2014

**Commencement date:** Monday, 22 December 2014

**Expiry date:** Saturday, 21 December 2019

**Prescribed premises category**
Schedule 1 of the *Environmental Protection Regulations 1987*

| Category number | Category description | Category production or design capacity | Approved premises production or design capacity |
|---|---|---|---|
| 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. | 350 kilolitres or more per year | 5,600 kilolitres per annual period |

**Conditions**
This Licence is subject to the conditions set out in the attached pages

Officer delegated under section 20
of the *Environmental Protection Act 1986*

# Contents



# Introduction

This Introduction is not part of the Licence conditions.

**DER's industry licensing role**
The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

**Licence requirements**
This licence is issued under Part V of the Act Conditions contained within the licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:
http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

**Licence fees**
If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

**Ministerial conditions**
If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

**Premises description and Licence summary**
The Ferngrove Winery with surrounding vineyards was first established in 1997 and now covers about 480 hectares. The winery has a capacity to receive about 8,000 tonnes of grapes annually of which 3,000 tonnes are produced on the local vineyards while additional grapes are sourced from external suppliers.

The winery is located about 5 kilometres northwest of the Frankland River. The surrounding land use is primarily agriculture and tree lot plantations with some adjacent viticulture. The Quindinup Nature Reserve is located about 4 kilometres to the south east. There are no private residences located within one kilometre of the winery infrastructure, wastewater treatment system or solid waste storage area. The landscape consists of gently undulating hills averaging 250 m AHD, mostly of weathered granite and sands derived from weathered gravels and sandy clay loams. The premises vineyards drain mostly to the north along non-perennial water courses draining into the Franklin River about eight kilometres to the east. Depth to groundwater is not known at the site.

The main discharge from the Premises is treated wastewater. The wastewater treatment system consists of underground sumps, from where wastewater is pumped to the screen a series of small concrete settling ponds. Overflow from the ponds gravity feeds to a series of six wastewater treatment tanks from which treated wastewater is irrigated to 4.2 hectare cleared area on the Premises. The irrigation system is automatically activated by wastewater levels within the holding tank. About 3.3 kilolitres of wastewater is produced per tonne of grapes crushed and about 0.25 tonne of marc per tonne crushed. Marc, lees, perlite and diatomaceous earth waste produced during the wine-making process is temporarily stored on the solid waste storage area during vintage prior to transport for composting and spreading offsite.

This licence is the successor to licence L7716/2001/7 and includes the conversion of the licence to a REFIRE format. The licences issued for the Premises since 15/12/2011 are:

| Instrument log | | |
|---|---|---|
| **Instrument** | **Issued** | **Description** |
| L7716/2001/7 | 15/12/2011 | Licence re-issue |
| L7716/2001/8 | 18/12/2014 | Licence re-issued and converted to REFIRE format |

**Severance**
It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

**END OF INTRODUCTION**

# Licence conditions

## 1 General

### 1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears

1.1.2 For the purposes of this Licence, unless the contrary intention appears.

**'Act'** means the *Environmental Protection Act 1986;*

**'annual period'** means the inclusive period from 1 October until 31 September in the following year;

**'AS/NZS 5667.1'** means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples;*

**'AS/NZS 5667.10'** means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters;*

**'averaging period'** means the time over which a limit or target is measured or a monitoring result is obtained;

**'CEO'** means Chief Executive Officer of the Department of Environment Regulation;

**'CEO'** for the purpose of correspondence means;

Manager Licensing (South Coast)
Department of Environment Regulation
120 Albany Hwy
ALBANY WA 6330
Telephone: (08) 9842 4567
Facsimile: (08) 9841 7105
Email: southcoast@der.wa.gov.au;

**'code of practice for the storage and handling of dangerous goods'** means document titled "Storage and handling of dangerous goods: Code of Practice" published by the Department of Mines and Petroleum, as amended from time to time;

**'dangerous goods'** has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*;

**'emission point L1'** means the treated wastewater emission point from the Premises authorised under this Licence, being the discharge to the irrigation area from the final holding tank as depicted in Schedule 1;

**'environmentally hazardous material'** means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum;

**'fugitive emissions'** means all emissions not arising from point sources;
**'hardstand'** means a surface with a permeability of $10^{-9}$ metres/second or less;

**'irrigation area'** means the 4.2 hectare area that is subject to the irrigation of treated wastewater as depicted in the Premises Map in Schedule 1;

**'leachate'** means liquid released by or water that has percolated through waste and which contains some of its constituents.

**'lees'** means the material which accumulates in the bottom of grape juice or wine fermentation tanks;

**'Licence'** means this Licence numbered L8042/2004/4 and issued under the Act;

**'Licensee'** means the person or organisation named as Licensee on page 1 of the Licence;

**'marc'** means grape material (mainly skin, pulp and seeds) which is left over after grape crushing and pressing;

**'NATA'** means the National Association of Testing Authorities, Australia;

**'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;

**'Premises'** means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

**'Schedule 1'** means Schedule 1 of this Licence unless otherwise stated;

**'Schedule 2'** means Schedule 2 of this Licence unless otherwise stated;

**'spot sample'** means a discrete sample representative at the time and place at which the sample is taken;

**'treated wastewater'** means wastewater that has been treated by the 'wastewater treatment system';

**'usual working day'** means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia; and

**'wastewater treatment system'** means the system for treating wastewater at the Premises and comprises of the screen, settling ponds, series of six treatment tanks and filter prior to irrigation.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

**1.2 General conditions**

1.2.1 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:
(a) pollution;
(b) unreasonable emission;
(c) discharge of waste in circumstances likely to cause pollution; or
(d) being contrary to any written law.

1.2.2 The Licensee shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

1.2.3 The Licensee, except where storage is prescribed in section 1.3, shall ensure that environmentally hazardous substances are stored in accordance with the code of practice for the storage and handling of dangerous goods.

1.2.4 The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system.

1.2.5 The Licensee shall:
(a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities at the Premises; and
(b) ensure that no contaminated or potentially contaminated stormwater is discharged to the environment.

**1.3 Premises operation**

1.3.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit, and/or target in this section.

1.3.2 The Licensee shall ensure no wastewater gains access to the environment other than treated wastewater discharged to the emission point L1 as depicted in Schedule 1.

1.3.3 The Licensee shall ensure that all wastewaters from alcoholic beverage manufacturing operations including wash down water, by-products wastewater and contaminated run-off are directed to a wastewater treatment system.

1.3.4 The Licensee shall ensure that waste material is only stored and/or treated within areas or compounds provided with the infrastructure detailed in Table 1.3.1.

| Table 1.3.1: Containment infrastructure | | |
|---|---|---|
| **Storage vessel or compound** | **Material** | **Infrastructure requirements** |
| Solids separator and settling ponds | Wastewater, marc, lees and other organic solid wastes | Impermeable concrete lined |
| Sumps, aeration, settling and holding tanks | Wastewater | Sealed impermeable tank/ vessel |
| Solid waste storage area | Marc, lees, screening solids, wastewater treatment sludge and other organic solid wastes | Solid waste storage area |

1.3.5 The Licensee shall ensure that where wastes produced on the Premises are not taken off-site for lawful use or disposal, they are managed in accordance with the requirements in Table 1.3.2.

| Table 1.3.2: Management of Waste | | |
|---|---|---|
| **Waste type** | **Disposal strategy** | **Operational requirements** |
| Treated wastewater | Irrigation | The Licensee shall ensure:<br>(a) Irrigation only occurs within the irrigation area;<br>(b) no irrigation generated run-off, spray drift or discharge occurs beyond the boundary of the Premises;<br>(c) treated wastewater is evenly distributed over the irrigation area;<br>(d) no soil erosion occurs;<br>(e) vegetation cover is maintained over the wastewater irrigation areas; and<br>(f) irrigation does not occur on land that is water logged. |
| Marc, lees and other organic solid wastes | Disposal offsite | The Licensee shall ensure:<br>(a) temporary storage in the solid waste storage area |

1.3.6 The Licensee shall manage the wastewater treatment system such that:
(a) overtopping of the wastewater treatment system tanks does not occur;
(b) stormwater runoff is prevented from entering the wastewater treatment system;
(c) there is no discernible seepage loss from the wastewater treatment system; and
(d) vegetation and floating debris (emergent or otherwise) is prevented from growing or accumulating in the wastewater treatment system.

# 2 Emissions

## 2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit or target specified in any part of section 2 of this Licence

### 2.2-2.4 Point source emissions to air, surface waters and groundwater

There are no specified conditions relating to point source emissions to air, surface waters or groundwater in this section.

## 2.5 Emissions to land

2.5 1 The Licensee shall ensure that where waste is emitted to land from the emission points in Table 2.5.1 and identified on the Premises map in Schedule 1 it is done so in accordance with the conditions of this licence

**Table 2.5.1: Emissions to land**

| Emission point reference | Emission point reference on Premises map | Description | Source including abatement |
|---|---|---|---|
| L1 | Irrigation field | Discharge from wastewater treatment system to on-site irrigation field | Treated wastewater from wastewater treatment system |

2.5.2 The Licensee shall not cause or allow emissions to land meet the limits listed in Table 2.5.2.

**Table 2.5.2: Emission limits to land**

| Emission point reference | Parameter | Limit (including units) | Averaging period |
|---|---|---|---|
| L1 | pH | ≥5.0 – ≤10.0 (range) | Spot sample |
| | Load of total nitrogen | ≤480 kg/ ha/ year | Annual |
| | Load of total phosphorus | ≤120 kg/ ha/ year | Annual |
| | Load of biochemical oxygen demand | ≤30 kg/ ha/ day | Monthly |

2.5.3 The Licensee shall target emissions to land to meet the levels specified in Table 2.5.3.

**Table 2.5.3: Emission targets to land**

| Emission point reference | Parameter | Target (including units) | Averaging period |
|---|---|---|---|
| L1 | pH | >6.0 – <9.0 (range) | Spot sample |
| | Total suspended solids | <100 mg/L | |
| | Total nitrogen | <30 mg/L | |
| | Total phosphorus | <7.5 mg/L | |

### 2.6-2.8 Fugitive emissions, odour and noise

There are no specified conditions relating to fugitive emissions, odour or noise in this section.

# 3 Monitoring

## 3.1 General monitoring

3.1.1 The licensee shall ensure that:
(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10; and
(c) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

3.1.2 The Licensee shall ensure that monthly monitoring is undertaken at least 15 days apart.

3.1.3 The Licensee shall record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.

3.1.4 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

3.1.5 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

## 3.2-3.4 Monitoring of point source emissions to air, surface water and groundwater

There are no specified conditions relating to monitoring of point source emissions to air, surface water or groundwater in this section.

## 3.5 Monitoring of emissions to land

3.5.1 The Licensee shall undertake the monitoring in Table 3.5.1 according to the specifications in that table.

Table 3.5.1: Monitoring of emissions to land

| Emission point reference | Monitoring point location | Parameter | Units | Averaging Period | Frequency |
|---|---|---|---|---|---|
| L1 | M1 - Outlet from storage tank of wastewater treatment plant | pH[1] | - | Spot sample | Monthly when irrigating |
| | | Total biological oxygen demand | mg/L | | |
| | | Total dissolved solids | | | |
| | | Total nitrogen | | | |
| | | Total phosphorus | | | |
| | | Total suspended solids | | | |
| | | Volumetric flow rate | $m^3$/day | Monthly | Continuous |

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

### 3.6 Monitoring of inputs and outputs

3.6.1 The Licensee shall undertake the monitoring in Table 3.6.1 according to the specifications in that table.

| Table 3.6.1: Monitoring of inputs and outputs | | | | |
|---|---|---|---|---|
| **Input/ Output** | **Parameter** | **Units** | **Averaging period** | **Frequency** |
| Grapes crushed | Grapes | tonnes | Annual total | Annual tonnes crushed |
| Alcoholic beverage produced | Alcoholic beverage | kilolitres | Annual total | Annual kilolitres produced |

### 3.7 Process monitoring

There are no specified conditions relating to process monitoring in this section.

### 3.8 Ambient environmental quality monitoring

There are no specified conditions relating to ambient environmental quality monitoring in this section.

### 3.9 Meteorological monitoring

There are no specified conditions relating to meteorological monitoring in this section.

# 4 Improvements

4.1.1 The Licensee shall complete the improvements in Table 4.1.1 by the date of completion in Table 4.1.1.

| Table 4.1.1: Improvement program | | |
|---|---|---|
| **Improvement reference** | **Improvement** | **Date of completion** |
| IR1 | The Licensee shall provide to the CEO a report on the solid waste storage area at the Premises which includes:<br>1) certification of the solid waste storage area hardstand and leachate collection liner permeability;<br>2) a water balance for the solid waste storage area for leachate and potentially contaminated stormwater;<br>3) a standard operating procedure for solid waste and leachate management; and<br>4) any plans and requirements for the upgrading the solid waste storage area. | 31/03/2015 |

| | | |
|---|---|---|
| IR2 | The Licensee shall provide to the CEO a report on the wastewater treatment system and irrigation area at the Premises which includes:<br>1) an assessment of the performance of the wastewater treatment system and the quantity and quality wastewater irrigated at the Premises against the guidelines:<br>(a) Grape and Wine Research and Development Corporation 2011, *Winery wastewater management and recycling operation guidelines*, Commonwealth of Australia; and<br>(b) Department of Water 2008, *Water quality protection note 22 irrigation with nutrient rich wastewater*, Government of Western Australia.<br>2) a schedule proposing the actions and timeframes for undertaking improvements required at the Premises identified through the assessment process required under improvement reference IR2 (1). | 30/09/2015 |
| IR3 | The Licensee shall provide to the CEO an amended Nutrient Irrigation Management Plan which shall incorporate the outcomes of the assessment process required under improvement reference IR2. | 30/12/2015 |

# 5 Information

## 5.1 Records

5.1.1 All information and records required by the Licence shall:
- (a) be legible;
- (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) except for records listed in 5.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  - (i) off-site environmental effects; or
  - (ii) matters which affect the condition of the land or waters.

5.1.2 The Licensee shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
- (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.

5.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

5.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

## 5.2 Reporting

5.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 62 calendar days after the end of the annual period. The report shall contain the information listed in Table 5.2.1 in the format or form specified in that table.

**Table 5.2.1: Annual Environmental Report**

| Condition or table (if relevant) | Parameter | Format or form[1] |
|---|---|---|
| - | 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 | None specified |
| Condition 3.1.1 | A list of monitoring methods used to collect and analyse monitoring samples required by any condition of this licence. | None specified |
| Condition 3.1.3 and 3.1.4 | Calibration report | None specified |
| Condition 3.5.1, Table 3.5.1 | a) Summary of all monitoring data for emissions to land which shall include:<br>i) data in a table format for the annual period;<br>ii) data in graphical format for trend analysis to include at least the last four years data where available; and<br>iii) an assessment of emission monitoring data against targets specified under condition 2.5.3.<br>b) Contaminant load to land for the monitored parameters (except pH) as:<br>i) kg/ day and kg/ ha/ day monthly average; and<br>ii) total annual loading kg/ year and kg/ ha/ year.<br>c) Copies of original monitoring reports submitted to the Licensee by third parties. | None specified |
| Condition 3.6.1, Table 3.6.1 | Summary of all input and output monitoring data which shall include data in a table format for previous annual periods where available | None specified |
| 5.1.3 | Compliance | Annual Audit Compliance Report (AACR) |
| 5.1.4 | Complaints summary | None specified |

Note 1: Forms are in Schedule 2

## 5.3 Notification

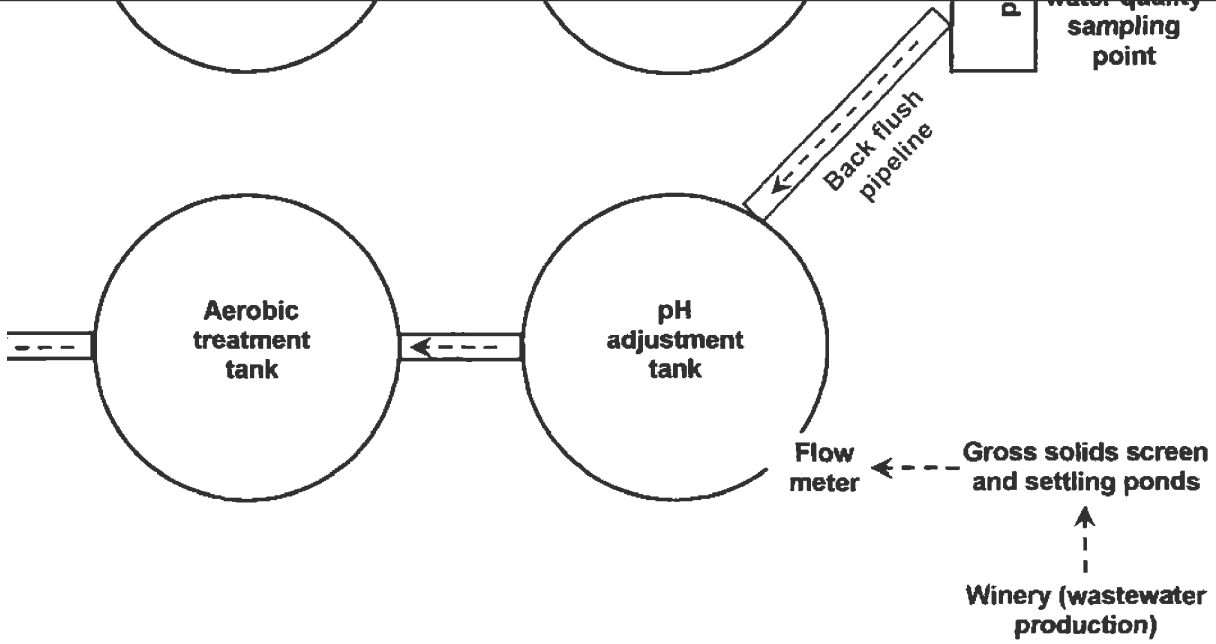
5.3.1 The Licensee shall ensure that the parameters listed in Table 5.3.1 are notified to the CEO in accordance with the notification requirements of the table.

**Table 5.3.1: Notification requirements**

| Condition or table | Parameter | Notification requirement[1] | Format or form[2] |
|---|---|---|---|
| 2.1.1 | Breach of any limit specified in the Licence | Part A: As soon as practicable but no later than 5pm of the next working day<br><br>Part B: As soon as practicable | N1 |
| - | Any failure or malfunction of any pollution control equipment or any incident, which has caused, is causing or may cause pollution | | |

Note 1: No notification requirement in the Licence shall negate the requirement to comply with s72 of the Act.
Note 2: Forms are in Schedule 2


Ferngrove Road
L1
M1
Scrubiup Road
Ferngrove Winery
Lot 22 on Plan 22229 and Lot 23 and 24 on Plan 38229
276 Scrubiup Road, Frankland WA 6396
N


sampling
point
Back flush
pipeline
Aerobic
treatment
tank
pH
adjustment
tank
Flow
meter
Gross solids screen
and settling ponds
Winery (wastewater
production)

# Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

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## ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

## SECTION A

**LICENCE DETAILS**

| | |
|---|---|
| Licence Number: | Licence File Number: |
| Company Name:<br><br>Trading as: | ABN: |
| Reporting period:<br><br>_____ to _____ | |

**STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS**

1. Were all conditions of the licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:

# SECTION B

## DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each licence condition that was not complied with.

| a) Licence condition not complied with: | |
|---|---|
| | |
| b) Date(s) when the non compliance occurred, if applicable: | |
| | |
| c) Was this non compliance reported to DER?: | |
| ☐ Yes ☐ Reported to DER verbally<br>Date _____<br>☐ Reported to DER in writing<br>Date _____ | ☐ No |
| d) Has DER taken, or finalised any action in relation to the non compliance?: | |
| | |
| e) Summary of particulars of the non compliance, and what was the environmental impact: | |
| | |
| f) If relevant, the precise location where the noncompliance occurred (attach map or diagram): | |
| | |
| g) Cause of noncompliance: | |
| | |
| h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance: | |
| | |
| i) Action taken or that will be taken to prevent recurrence of the non compliance: | |
| | |

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:

# SECTION C

## SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

| If the licence holder is | | The Annual Audit Compliance Report must be signed and certified: |
|---|---|---|
| An individual | ☐ | by the individual licence holder, or |
| | ☐ | by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf. |
| A firm or other unincorporated company | ☐ | by the principal executive officer of the licensee; or |
| | ☐ | by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation. |
| A corporation | ☐ | by affixing the common seal of the licensee in accordance with the Corporations Act 2001; or |
| | ☐ | by two directors of the licensee; or |
| | ☐ | by a director and a company secretary of the licensee, or |
| | ☐ | if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or |
| | ☐ | by the principal executive officer of the licensee; or |
| | ☐ | by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation. |
| A public authority (other than a local government) | ☐ | by the principal executive officer of the licensee; or |
| | ☐ | by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation. |
| a local government | ☐ | by the chief executive officer of the licensee; or |
| | ☐ | by affixing the seal of the local government. |

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of $50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SEAL (if signing under seal)

Licence: L8042/2004/4 Licensee: Ferngrove Vineyards Ltd
Form: N1 Date of breach:

**Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.**

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

## Part A

| | |
|---|---|
| Licence Number | |
| Name of operator | |
| Location of Premises | |
| Time and date of the detection | |

| **Notification requirements for the breach of a limit** | |
|---|---|
| Emission point reference/ source | |
| Parameter(s) | |
| Limit | |
| Measured value | |
| Date and time of monitoring | |
| Measures taken, or intended to be taken, to stop the emission | |

| **Notification requirements for any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution** | |
|---|---|
| Date and time of event | |
| Reference or description of the location of the event | |
| Description of where any release into the environment took place | |
| Substances potentially released | |
| Best estimate of the quantity or rate of release of substances | |
| Measures taken , or intended to be taken, to stop any emission | |
| Description of the failure or accident | |

## Part B

| | |
|---|---|
| Any more accurate information on the matters for notification under Part A. | |
| Measures taken, or intended to be taken, to prevent a recurrence of the incident. | |
| Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission. | |
| The dates of any previous N1 notifications for the Premises in the preceding 24 months. | |

| | |
|---|---|
| Name | |
| Post | |
| Signature on behalf of Ferngrove Vineyards Ltd | |
| Date | |

Government of Western Australia
Department of Environment Regulation

# Decision Document

## *Environmental Protection Act 1986*, Part V

**Licensee:** **Ferngrove Vineyards Ltd**

**Licence:** **L7716/2001/8**

| | |
|---|---|
| **Registered office:** | 100 Mill Point Road<br>SOUTH PERTH WA 6151 |
| **ACN:** | 080 659 114 |
| **Premises address:** | Ferngrove Winery<br>276 Scrubiup Road<br>Frankland WA 6396<br>Being Lot 22 on Plan 22229 and Lot 23 and 24 on Plan 38229 as depicted in Schedule 1 |
| **Issue date:** | Thursday, 18 December 2014 |
| **Commencement date:** | Monday, 22 December 2014 |
| **Expiry date:** | Saturday, 21 December 2019 |

**Decision**

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Peter van Schoubroeck
Licensing Officer

Decision Document authorised by: Caron Goodbourn
Manager Licensing

# Contents



# 1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

**Works approval and licence conditions**
DER has three types of conditions that may be imposed on works approvals and licences. They are as follows;

**Standard conditions (SC)**

DER has standard conditions that are imposed on all works approvals and licences regardless of the activities undertaken on the Premises and the information provided in the application. These are included as the following conditions on works approvals and licences:

Works approval conditions: 1.1.1-1.1.4, 1.2.1, 1.2.2, 5.1.1 and 5.1.2.

Licence conditions: 1.1.1-1.1.4, 1.2.1-1.2.4, 5.1.1-5.1.4 and 5.2.1.

For such conditions, justification within the Decision Document is not provided.

**Optional standard conditions (OSC)**

In the interests of regulatory consistency DER has a set of optional standard conditions that can be imposed on works approvals and licences. DER will include optional standard conditions as necessary, and are likely to constitute the majority of conditions in any licence. The inclusion of any optional standard conditions is justified in Section 4 of this document.

**Non standard conditions (NSC)**

Where the proposed activities require conditions outside the standard conditions suite DER will impose one or more non-standard conditions. These include both premises and sector specific conditions, and are likely to occur within few licences. Where used, justification for the application of these conditions will be included in Section 4.

# 2 Administrative summary

| Administrative details | | |
|---|---|---|
| Application type | Works Approval ☐<br>New Licence ☒<br>Licence amendment ☐<br>Works Approval amendment ☐ | |
| Activities that cause the premises to become prescribed premises | **Category number(s)** | **Assessed design capacity** |
| | 25 | 5,600 kilolitres per annual period |
| Application verified<br>Application fee paid | Date: 14 October 2014<br>Date: 27 November 2014 | |
| Works Approval has been complied with<br>Compliance Certificate received | Yes☐ No☐ N/A☒<br>Yes☐ No☐ N/A☒ | |
| Commercial-in-confidence claim | Yes☐ No☒ | |
| Commercial-in-confidence claim outcome | Not applicable | |
| Is the proposal a Major Resource Project? | Yes☐ No☒ | |
| Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*? | Yes☐ No☒ | Referral decision No:<br>Managed under Part V ☐<br>Assessed under Part IV ☐ |
| Is the proposal subject to Ministerial Conditions? | Yes☐ No☒ | Ministerial statement No:<br>EPA Report No: |
| Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)? | Yes☐ No☒<br>Department of Water consulted Yes ☐ No ☒ | |
| Is the Premises within an Environmental Protection Policy (EPP) Area Yes☒ No☐<br>*Environmental Protection South West Agriculture Zone Wetlands Policy 1998* | | |
| Is the Premises subject to any EPP requirements? Yes☐ No☒ | | |

# 3 Executive summary of proposal and assessment

The Ferngrove Winery with surrounding vineyards was first established in 1997 and now covers about 480 hectares. The winery has a capacity to receive about 8,000 tonnes of grapes annually of which 3,000 tonnes are produced on the local vineyards while additional grapes are sourced from external suppliers.

The winery is located about 5 kilometres northwest of the Frankland River. The surrounding land use is primarily agriculture and tree lot plantations with some adjacent viticulture. The Quindinup Nature Reserve is located about 4 kilometres to the south east. There are no private residences located within one kilometre of the winery infrastructure, wastewater treatment system or solid waste storage area. The landscape consists of gently undulating hills averaging 250 m AHD, mostly of weathered granite and sands derived from weathered gravels and sandy clay loams. The premises vineyards drain mostly to the north along non-perennial water courses draining into the Franklin River about eight kilometres to the east. Depth to groundwater is not known at the site.

About 3.3 kilolitres of wastewater is produced per tonne of grapes crushed and about 0.25 tonne of marc per tonne crushed.

The main discharge from the Premises is treated wastewater. The wastewater treatment system consists of underground sumps, from where wastewater is pumped to the screen a series of small concrete settling ponds. Overflow from the ponds gravity feeds to a series of six wastewater treatment tanks from which treated wastewater is irrigated to 4.2 hectare cleared area on the Premises. The irrigation system is automatically activated by wastewater levels within the holding tank. The quality of treated wastewater discharged to the irrigation area is shown by the treatment levels in Table 1.

**Table 1: Treated wastewater discharge quality to irrigation area for data required under the licence for January 2009 to December 2013.**

| Parameter | pH | BOD mg/ L | TSS mg/L | TDS | TN mg/L | TP mg/L |
|---|---|---|---|---|---|---|
| **Treatment target under L8042/2004/4** | >6.0 – <9.0 (range) | None applicable | <100 mg/L | None applicable | <30 mg/L | <7.5 mg/L |
| **January – December 2013 average** | 6.1 | 738.9 | N/A | 1194 | 30.65 | 4.78 |
| **January 2009 – December 2013 min** | 5.1[1] | 242 | N/A | 480[1] | 4.1 | 0.48 |
| **January 2009 – December 2013 max** | 7.1[1] | 4900 | N/A | 1840[1] | 53 | 21 5 |

*Note 1: minimum and maximum values apply only to the 2013 reporting period.*

Marc, lees, perlite and diatomaceous earth waste produced during the wine-making process is temporarily stored on the solid waste storage area during vintage prior to transport for composting and spreading offsite.

| | | |
|---|---|---|
| OSC and NSC | **Operation**<br>**Emission description:**<br>***Emission:*** The quality of treated wastewater and/ or quality of stormwater discharged from the Premises may deteriorate where stormwater is not appropriately managed at the Premises.<br>***Impact:*** Increased contaminated loads in emissions to land and/ or stormwater flow through areas containing leaks/spills (elevated concentrations of nitrogen, phosphorus, low pH and elevated biochemical oxygen demand) discharged to the environment.<br>***Controls:*** Grading of site topography, bunds and physical containment of treatment facilities, dedicated stormwater drainage and site maintenance.<br>**Risk assessment:**<br>**Consequence:** Minor **Likelihood:** Unlikely **Risk Rating:** Moderate<br>**Regulatory Controls:**<br>NSC 1.2.5 has been included to ensure appropriate control and management of stormwater is maintained at the Premises. Where in the uncommon event that stormwater becomes contaminated at the Premises, it is the responsibility of the Licensee to ensure that it is not discharged to the environment.<br>**Residual risk assessment:**<br>**Consequence:** Minor **Likelihood:** Rare **Risk Rating:** Low | the *Environmental Protection Act 1986*<br><br>*Code of Practice for the Storage and Handling of Dangerous Goods*<br><br>*Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*<br><br>*Environmental Protection (Controlled Waste) Regulations 2004*<br><br>*Environmental Protection (Unauthorised Discharges) Regulations 2004* |

| DECISION TABLE | | | | |
|---|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **OSC or NSC** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| **Premises operation** | L1.3.1; 1.3.2; 1.3.3; 1.3.4; and 1.3.6 | OSC and NSC | DER's assessment and decision making are detailed in Appendix A. | General provisions of the *Environmental Protection Act 1986* |
| **Emissions general** | L2.1.1 | OSC | **Operation**<br>Numerical targets and limits are set through OSC 2.5.2 and 2.5.3 of the licence for the discharge of treated wastewater. OSC 2.1.1 includes recording and investigation requirements in the event limits or targets are exceeded. | General provisions of the *Environmental Protection Act 1986* |
| **Point source emissions to air including monitoring** | L2.2 and L3.2 | N/A | **Operation**<br>No point source emissions to air are known to occur from the Premises, therefore no licence conditions are required. | *Environmental Protection (unauthorised discharge) Regulations 2004* |
| **Point source emissions to surface water including monitoring** | L2.3 and L3.3 | N/A | **Operation**<br>No point source emissions to surface water are known to occur from the Premises, therefore no licence conditions are required. | General provisions of the *Environmental Protection Act 1986* |
| **Point source emissions to groundwater including monitoring** | L2.4 and L3.4 | N/A | **Operation**<br>No point source emissions to groundwater are known to occur from the Premises, therefore no licence conditions are required. | General provisions of the *Environmental Protection Act 1986* |
| **Emissions to land including monitoring** | L1.3.5; L2.5.1; L2.5.2; L2.5.3; and L3.5.1. | OSC | DER's assessment and decision making are detailed in Appendix B. | General provisions of the *Environmental Protection Act 1986* |
| **Fugitive emissions** | L2.6 | N/A | **Operation**<br>No fugitive emissions are known to occur from the Premises, therefore no licence conditions are required. | General provisions of the *Environmental Protection Act 1986* |
| **Odour** | L2.7 | OSC | **Operation**<br>No odour emissions are known to occur from the Premises, therefore no licence conditions are required. | General provisions of the *Environmental Protection Act 1986* |

| | | | |
|---|---|---|---|
| 3; | OSC | Perrigrove Winery discharges treated wastewater to the environment. Accordingly OSC L3.1.1, L3.1.2, L3.1.3, L3.1.4 and L3.1.5 have been included to ensure all wastewater samples are:<br>• collected and analysed following the relevant standards and guidelines;<br>• collected at appropriate time intervals;<br>• collected with appropriately calibrated monitoring equipment; and<br>• that the analysis of relevant samples is undertaken through appropriately accredited facilities, with laboratories to be NATA accredited unless specified otherwise.<br>The methods for monitoring required by the licence are consistent with those proposed by the proponent and are considered appropriate. These conditions are required to ensure that the monitoring data is reliable and accurate. Monitoring is required under OSC 3.5.1 for the quality and quantity of treated wastewater emissions. | General provisions of the *Environmental Protection Act 1986* |
| | OSC | **Operation**<br>Due to the relationship between the tonnes of grapes crushed, volume of alcoholic beverage produced and quantity and quality of wastewater emitted to land OSC 3.6.1 has been included to allow a basic comparison of the Premises production capacity and emission quality and quantity. | General provisions of the *Environmental Protection Act 1986* |
| | N/A | **Operation**<br>There are no process monitoring requirements at the Premises that require licence conditions. | General provisions of the *Environmental Protection Act 1986* |

| | | | |
|---|---|---|---|
| | | DER's assessment and decision making are detailed in Appendix C. | *Protection Act 1986* |
| | OSC | **Operation**<br>Due to the nature of the discharge of treated wastewater to the environment conditions are required to fulfil periodic and annual reporting requirements. OSC 5.3.1 has been included to identify any beaches of limits within the licence, malfunctions with the wastewater treatment system and events that may lead to pollution occurring. | General provisions of the *Environmental Protection Act 1986* |
| | N/A | The licence is a reissue, a five year licence period is considered acceptable due to the generally low risk nature of the operations and the uncertainty regarding the treatment capacity of the wastewater treatment system and nutrient assimilation capacity of the irrigation area. | General provisions of the *Environmental Protection Act 1986* |

# 6 Risk Assessment

*Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management*

**Table 1: Emissions Risk Matrix**

| Likelihood | Consequence | | | | |
|---|---|---|---|---|---|
| | Insignificant | Minor | Moderate | Major | Severe |
| Almost Certain | Moderate | High | High | Extreme | Extreme |
| Likely | Moderate | Moderate | High | High | Extreme |
| Possible | Low | Moderate | Moderate | High | Extreme |
| Unlikely | Low | Moderate | Moderate | Moderate | High |
| Rare | Low | Low | Moderate | Moderate | High |

# Appendix A: Premises operations

## Abnormal operating conditions

**Emission Description – abnormal operating conditions:**

1) **Emission:** Risk of emission may arise under abnormal conditions where wastewater being directed to the irrigation area is at a quality and/ or quality where nutrients cannot be assimilated by resident vegetation and subsequently nutrients may migrate away from the irrigation area.

*Note: this emission is addressed in detail under Appendix B; the regulatory controls referred to below within Appendix A serve to provide some control of the emission risk.*

## Emergency situations

**Emission Description – emergency situations:**

1) **Emission:** Discharge of raw or partially treated wastewater from failed infrastructure.
2) **Impact:** Partially treated and raw wastewater could migrate to groundwater, drainage lines and/ or cause deterioration of the local soil structure.
3) **Controls:** Visual observations of the containment infrastructure integrity.

**Risk Assessment – emergency situations:**

4) **Scope:** This risk assessment is for the emissions that may arise under emergency situations.
5) **Factors of consequence:**
   a) Agents for consideration in this risk assessment include contain elevated concentrations of nitrogen, phosphorus, low pH and elevated biochemical oxygen demand.
   b) The receptors are groundwater and local drainage lines.
   c) Depth to groundwater is not known.
6) **Factors of likelihood:**
   a) The wastewater treatment system has been in operation for about 10 years.
   b) Management systems result in the maintenance of the current treatment performance.
   c) No discharges under emergency situations are known to have occurred.

**Risk assessment finding:**

***Consequence***: Minor (*short to medium term localised alternation to the environment, possible concern/ complaints, minor breach of legal requirements*)
***Likelihood:*** Rare (*no discharges under emergency situations are known to have occurred*)
***Risk Rating:*** Low

**Regulatory Controls – abnormal operating conditions and emergency situations:**

Regulatory controls for the management of abnormal operation conditions and emergency situations are stipulated for section 1 of the licence below.

1) OSC 1.3.1 has been included to ensure that where the descriptive limits detailed in section 1.3 are exceeded, they are appropriately managed;
2) NSC 1.3.2 has been included to ensure that all wastewater that is discharged to the environment is treated and discharged at the approved location; and
3) OSC 1.3.3, 1.3.4, 1.3.5 and 1.3.6 have been included to ensure that: all wastewaters are directed to the wastewater treatment system; waste materials are stored in approved infrastructure; irrigation is undertaken in an appropriate manner; and that the wastewater treatment and storage ponds are managed appropriately.

**Residual Risk – emergency situations:**

4) **Scope:** This residual risk assessment is for emergency situations following compliance with the regulatory controls stipulated above.
5) **Risk assessment finding:**
   ***Consequence***: Minor ***Likelihood:*** Rare ***Risk Rating:*** Low

# Appendix B: Emissions to land

At times the quality of treated wastewater is potentially of a quality not suitable for irrigation as shown by the treatment levels in Table 1. A nutrient irrigation management plan has not been prepared for the Premises and no assessment on the wastewater treatment system treatment capacity with regards to appropriate contaminant concentrations for application to the irrigation area has been undertaken.

**Table 1: Treated wastewater discharge quality to irrigation area for data required under the licence for January 2009 to December 2013.**

| Parameter | pH | BOD mg/ L | TSS mg/L | TDS | TN mg/L | TP mg/L |
|---|---|---|---|---|---|---|
| **Treatment target under L8042/2004/4** | >6.0 – <9.0 (range) | None applicable | <100 mg/L | None applicable | <30 mg/L | <7.5 mg/L |
| **January – December 2013 average** | 6.1 | 738.9 | N/A | 1194 | 30.65 | 4.78 |
| **January 2009 – December 2013 min** | 5.1[1] | 242 | N/A | 480[1] | 4.1 | 0.48 |
| **January 2009 – December 2013 max** | 7.1[1] | 4900 | N/A | 1840[1] | 53 | 21.5 |

*Note 1: minimum and maximum values apply only to the 2013 reporting period.*

**Emission Description:**

1) **Emission:** Emission of treated wastewater to the irrigation area is authorised under the licence Where wastewater being directed to the irrigation area is at a quality and/ or quality where nutrients cannot be assimilated by resident vegetation, nutrients may migrate away from the irrigation area.
2) **Impact:** Nitrogen and phosphorus could migrate to groundwater, drainage lines and/ or cause deterioration of the local soil structure.
3) **Controls:** The Licensee maintains a wastewater treatment system and directs treated wastewater to the irrigation areas. Appropriate hydraulic loads and contaminant concentrations have not been determined for application to the irrigation area.

**Risk Assessment:**

4) **Scope:** This risk assessment is for the emissions to land.
5) **Factors of consequence:**
   a) Agents for consideration in this risk assessment include nitrogen and phosphorus. Wastewater may also be of a low pH value and/ or have elevated biochemical oxygen demand.
   b) The receptors are groundwater and local drainage lines.
   c) Depth to groundwater is not known.
6) **Factors of likelihood:**
   a) The wastewater treatment system has never been formally assessed for its treatment capacity with regards to appropriate contaminant concentrations and hydraulic loads for application to the irrigation area.
   b) Management systems include the maintenance of the current treatment performance standard, treated wastewater discharge quality is subject to considerable variation at times and some elevated contaminant concentrations.
   c) The quality of treated wastewater applied to the irrigation area is potentially at times not suitable for irrigation. Further investigations are required to establish appropriate treatment levels for application to the irrigation area to provide appropriate performance benchmarks for the wastewater treatment system.

**Risk assessment finding:**

***Consequence:*** Minor (*short to medium term localised alternation to the environment, possible concern/ complaints, minor breach of legal requirements*)
***Likelihood:*** Likely (*current practices are for irrigation to the environment, current discharge monitoring data shows elevated contaminant levels at times which are not adequately justified for application to the irrigation area*)
***Risk Rating:*** Moderate

**Regulatory Controls:**

Regulatory controls for the management of emissions to land.

7) OSC 1.3.5 has been included to ensure that irrigation is undertaken in an appropriate manner.
8) OSC L2.5.1 has been included to stipulate the treated wastewater emission points to land that require regulation. Where waste is emitted to land from these emission points it is required to be done so in accordance with specifications in the associated table and subsequent conditions pertaining to limits and targets (L2.5.2 and L2.5.3).
9) OSC L2.5.2 has been included to ensure that emissions to land do not occur that exceed the values listed within table 2.5.2. See rationale for limits and targets table below.
10) OSC L2.5.3 has been included to ensure that emissions to land are targeted below the values listed within table 2.5.3. See Rationale for limits and targets table below.

**Residual Risk:**

10) **Scope:** This residual risk assessment is for emissions to land following compliance with the regulatory controls stipulated above.
11) **Risk assessment finding:**
***Consequence:*** Minor
***Likelihood:*** Likely
***Risk Rating:*** Moderate

**Rationale for limits and targets**

OSC 2.5.2 and 2.5.3 have been included to ensure the discharge of treated wastewater meets appropriate interim levels, supported by the targets and limits for the parameters specified in the table below. The targets and limits are considered interim values subject to further investigations that are required to establish appropriate treatment levels for application to the irrigation area and to provide appropriate performance benchmarks for the wastewater treatment system. The process and rationale for further investigations are detailed under Appendix C.

| Rationale for limits and targets table | | | |
|---|---|---|---|
| **Parameter** | **Target** | **Limit** | **Justification and source** |
| Hydraulic load | None applicable | None applicable | The nutrient irrigation management plan for the Premises is dated 2006 and does note assess or determine an appropriate hydraulic loading rate for the application of treated wastewater to the irrigation area. The process and rationale for further investigations are detailed under Appendix C. |

| Rationale for limits and targets table | | | |
|---|---|---|---|
| **Parameter** | **Target** | **Limit** | **Justification and source** |
| pH | >6.0 – <9.0 (range) | ≥5.0 – ≤10.0 (range) | **1)** The nutrient irrigation management plan for the Premises is dated 2006 and does note assess or determine an appropriate emission rate for pH.<br>**2)** Under the *Environmental Protection (Unauthorised Discharge) Regulations 2004* it is an offence to discharge materials with a pH of less than 4 or greater than 10.<br>**3)** Under the ANZECC[1] guidelines irrigation is recommended to occur within the range of 6.0 to 9.0 pH units.<br>**4)** A target corresponding to the ANZECC values is considered appropriate. Treatment standards are often within the target range. Treatment for balancing pH is relatively simple and meeting the target range is not unreasonable.<br>**5)** A limit taking into consideration the values applied under the *Environmental Protection (Unauthorised Discharge) Regulations 2004*, ANZECC[1] guidelines and historic treatment standard of the wastewater treatment system, noting the generally acidic nature of winery wastewater, supports the requirement for a discharge limit range of ≥5.0 to ≤10.0 pH units. |
| Total suspended solids | <100 mg/L | None applicable | **1)** The nutrient irrigation management plan for the Premises is dated 2006 and does note assess or determine an appropriate loading rate for total suspended solids.<br>**2)** Elevated total suspended solids can lead to clogging of irrigation equipment and subsequent uneven application of irrigation waters. Elevated total suspended solids are also an indicator of increased contaminants in the treated wastewater and can result in reduced treatment performance.<br>**3)** The target of 100 mg/L is considered appropriate and to serve as a maximum interim concentration with lower concentrations expected to coincide with improvements in the wastewater treatment system and lower concentrations of other contaminants.<br>**4)** Considering historical emission concentration levels it is not appropriate to set a lower concentration target or any limit. The capacity of the wastewater treatment system to address total suspended solids concentration is further addressed in Appendix C. |

| Rationale for limits and targets table | | | |
|---|---|---|---|
| **Parameter** | **Target** | **Limit** | **Justification and source** |
| Total nitrogen | <30 mg/L | ≤480 kg/ ha/ year | **1)** The nutrient irrigation management plan for the Premises is dated 2006 and does note assess or determine an appropriate loading rate for total nitrogen.<br>**2)** Under the DoW[2] guideline recommendation 52 states that irrigation of wastewater should not occur at concentrations >30 mg/L based on a risk category of D and site specific variables. Current operations exceed this treatment standard at times with average concentrations for the 2013 operational period equal to this concentration level.<br>**3)** Under the DoW[2] guideline recommendation 52 states that irrigation of wastewater should not occur at loads >480 kg/ ha/ year based on a risk category of D and site specific variables.<br>**4)** The irrigation area has not been confirmed to constitute a 'D' risk category location.<br>**5)** Under the ANZECC[1] guidelines irrigation is recommended to occur within a maximum short term range of 25-125 mg/L. Treatment standards for total nitrogen are within or below this value range for all samples, supporting the need for a site specific assessment, as referred to in Appendix C.<br>**6)** A concentration limit cannot be set due to uncertainty of the impact of the discharge at current concentrations, at times elevated compared to guideline triggers and possible limitations of the existing wastewater treatment system. |

| Rationale for limits and targets table | | | |
|---|---|---|---|
| **Parameter** | **Target** | **Limit** | **Justification and source** |
| Total phosphorus | <7.5 mg/L | ≤120 kg/ ha/ year | 1) The nutrient irrigation management plan for the Premises is dated 2006 and does note assess or determine an appropriate loading rate for total phosphorus.<br>2) Under the DoW[2] guideline recommendation 52 states that irrigation of wastewater should not occur at concentrations >7.5 mg/L based on a risk category of D and site specific variables. Current operations at times exceed this treatment standard with average concentrations for the 2013 operational period below this concentration level.<br>3) Under the DoW[2] guideline recommendation 52 states that irrigation of wastewater should not occur at loads >120 kg/ ha/ year based on a risk category of D and site specific variables.<br>4) The irrigation area has not been confirmed to constitute a 'D' risk category location.<br>5) Under the ANZECC[1] guidelines irrigation is recommended to occur within a maximum short term range of 0.8-12 mg/L. Treatment standards for total phosphorus are all within or exceed this value range, supporting the need for a site specific assessment, as referred to in Appendix C.<br>6) A concentration limit cannot be set due to uncertainty of the impact of the discharge at current concentrations, at times elevated compared to guideline triggers and possible limitations of the existing wastewater treatment system. |
| Total biochemical oxygen demand | None applicable | ≤30 kg/ ha/ day | 1) The nutrient irrigation management plan for the Premises is dated 2006 and does note assess or determine an appropriate loading rate for biochemical oxygen demand.<br>2) Under the DoW[2] guideline recommendation 47 states that irrigation of wastewater should not occur at concentrations >30/ kg/ ha/ day. Current operations have maintained loading rates within this limit.<br>3) Under the DoW[2] guideline recommendation 48 states that irrigation of wastewater should not occur at concentrations >150 mg/L. Current operations have never attained this treatment standard with average concentrations for the 2012/ 2013 operational period about five times this concentration level.<br>4) Considering historical emission concentration levels it is not appropriate to set a concentration target or any limit. The capacity of the wastewater treatment system to address biological oxygen demand concentration is further addressed in Appendix C. |

Note 1: Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand (ANZECC & ARMCANZ) 2000, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
Note 2: Department of Water (DoW) 2008, *Water Quality Protection Note 22 irrigation with nutrient rich wastewater.*

# Appendix C: Improvements

The improvement conditions are implemented with regards to emissions to land. Supporting information relevant to the improvement conditions, with regards to the emission description and risk assessment, are detailed above under Appendix B *Emissions to land*. There is no nutrient irrigation management plan for the Premises to inform the appropriate application of treated wastewater from the wastewater treatment system to the irrigation area. Further investigations are required to establish appropriate treatment levels for the application of treated wastewater to the irrigation area and to provide appropriate performance benchmarks for the wastewater treatment system. The quantity, quality and timing of treated wastewater currently applied to the irrigation area is potentially, at times, not suitable for irrigation. The integrity and appropriate management of the solid waste storage area is currently unconfirmed.

**Regulatory Controls:**

1) **Improvement reference IR1:** an assessment of the solid waste storage area is required with regards to the permeability of the hardstand and ability to adequately control leachate and potentially contaminated stormwater. No direct emissions are expected to result from the temporary storage of waste within the solid waste storage area.
2) **Improvement reference IR2:** an assessment of the performance of the wastewater treatment system and the quantity and quality wastewater irrigated at the Premises is required to determine appropriate performance benchmarks for the wastewater treatment system and application rates to the irrigation area. The following guidelines are identified as the most appropriate reference documents to base the assessment on:
   a) Grape and Wine Research and Development Corporation 2011, *Winery wastewater management and recycling operation guidelines*, Commonwealth of Australia;
   b) Department of Water 2008, *Water quality protection note 22 irrigation with nutrient rich wastewater*, Government of Western Australia

   The assessment required under condition IR2) component 1) will serve to determine:
   c) the performance of the existing wastewater treatment system compared to best practice in the industry: and
   d) the appropriate application rate of treated wastewater to the irrigations area with regards to hydraulic loading rates and nutrient concentration levels.

   The assessment required under condition IR2) component 2) will serve to ensure that the Licensee adequately identifies areas for improvement in the treatment and application of wastewater at the Premises and provides appropriate timeframes for implementing any required improvements.
3) **Improvement reference IR3:** the assessment required under condition IR2) will serve to inform the development of a nutrient irrigation management plan for the Premises and include the relevant details referred to under the guidelines:
   a) Department of Water 2008, *Water quality protection note 22 irrigation with nutrient rich wastewater*, Government of Western Australia; and
   b) Department of Water 2010, *Water quality protection note 33 nutrient and irrigation management plans*, Government of Western Australia.

**Residual Risk:**

4) **Scope:** This residual risk assessment is for the emission risk subject to the successful fulfilment and implementation of any improvements required following the fulfilment of conditions IR1, IR2 and IR3 as identified through improvement condition regulatory controls.
5) **Risk assessment finding:**
   ***Consequence:*** Insignificant (*localised, limited impact where the quality and quantity of discharge to the environment should not pose an unacceptable risk or result in an unacceptable impact*)
   ***Likelihood:*** Unlikely (*implementation of any improvements required following the fulfilment of conditions IR1, IR2 and IR3 are expected to adequately reduce emission risk*)
   ***Risk Rating:*** Moderate