



<b>Licence Number</b>	L5199/1983/12
<b>Licence holder</b>	Western Australian Meat Marketing Co-operative Ltd
<b>Registered business address</b>	Unit1/3 DeVlamingh Avenue EAST PERTH WA 6004
<b>File Number</b>	DER2014/001668-1
<b>Duration</b>	16 October 2011 to 15 October 2021
<b>Date of Amendment:</b>	9 October 2019
<b>Date of issue</b>	15 September 2011
<b>Prescribed Premises</b>	Category 15: Abattoir Category 16: Rendering operations Category 55: Livestock saleyard or holding pen as defined in Schedule 2
<b>Premises</b>	WAMMCO International – Katanning Abattoir Great Southern Highway KATANNING WA 6317 Legal description - Lot 3 on Diagram 42266, as depicted in Schedule 1.

This amended licence is granted to the licence holder, subject to the following conditions, on 9 October 2019, by:

### **Manager, Process Industries**

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

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## Introduction

This introduction is not part of the licence conditions.

### DWER's industry licensing role

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

DWER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DWER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DWER 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/licence holder 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.

### Premises description and licence summary

WAMMCO slaughters up to one million animals (primarily sheep and occasionally goats) per annum in the abattoir complex providing meat predominantly for the export market. The rendering plant receives animal by-products from slaughtering (including blood, offal, and paunch) processed in cookers, cake presses and driers to produce blood, meat and bone meal products, gall concentrate and tallow. These products are sold on domestic and overseas markets.

Two boilers fuelled by dehydrated refined waste oil are operated to generate steam to run the cookers and provide hot potable water for use in the slaughter house. Gases generated from operation of the rendering plant cookers pass through a wet scrubber treatment process and condenser prior to discharge to air. This maximises the treatment of water soluble and odorous gases through the WWTS reducing odour emissions for the site. All animal by-product from slaughtering suitable for rendering, is required to be rendered within 24 hours of slaughter of the animals to minimise the generation of malodours.

The WWTS receives wastewater from abattoir operations and rendering activities at the premises. The existing WWTS infrastructure includes solids and fats separation units (inclusive of the new DAF plant installed under works approval W6230/2019/1), a rotary screen and a series of anaerobic and aerobic treatment ponds. Wastewater from abattoir and rendering operations has very high Biological Oxygen Demand (BOD) and the role of the anaerobic treatment cycle is to reduce BOD prior to oxidative treatment of the wastewater. Treated wastewater from the final aerobic pond (Pond 3 in Figure 1 below) is periodically pumped to one of several areas authorised to receive treated wastewater via irrigation. In addition, to manage wastewater volumes and rainfall inputs to ponds over the winter months, wastewater from the final aerobic pond (Pond 3) may be transferred to other ponds for storage and evaporation over the summer months. Solid animal carcasses (mortalities) and other solid animal waste material (e.g. sheep heads & hide trimmings) are disposed of in an on-site burial pit. Sheep skins are salted and cured in large tumblers and are baled up and stored on pallets pending off site sale and export. Manure is disposed of off-site.

Following installation of the RO plant (works authorised under this licence amendment), treated wastewater from the final treatment pond will be transferred daily to supply feed water for further treatment by reverse osmosis. The treated water output from the RO plant (permeate), produced at the rate of 200kL per day, will be temporarily stored in tanks and used for non-food handling requirements including water supply to the rendering plant cooling towers and wet scrubber and for stockyard (lairage) cleaning purposes.

Operational hours are generally from 7am to 3.30pm Monday – Thursday and 7am -12noon Friday and Sunday for livestock deliveries. Slaughtering occurs from 6am – 4.10pm Monday-Thursday and 5.30am – 1pm Friday. The rendering plant generally operates from 8am – 8pm Monday to Friday. Additional slaughtering and rendering operations may occur on Saturdays.

## Amendment October 2019

The licence holder submitted a licence amendment application on 13 June 2019 seeking authorisation to install, commission and operate a reverse osmosis water treatment plant. The licence holder included in this application updated information on infrastructure and storage facilities in relation to prescribed activities. The CEO in applying the requested amendment and taking into consideration the licence expiry date and operation of new and existing equipment at the premises has issued an amended licence in an updated licence format.

The CEO has:

- extended the licence by 2 years (amended expiry date to 15 October 2021);
- corrected and updated definitions, adding new definitions as required;
- transferred the majority of existing licence conditions to the new format with minimal or no changes;
- added a new conditions set (Section 6) – Authorised works, to allow for installation and subsequent commissioning and ongoing operation of the reverse osmosis plant;
- added a condition (Condition 7) specifying a requirement that brine and other RO cleaning wash-down waste is either to be temporarily stored in an enclosed tank or discharged to the WWTS, subject to further information on options for disposal of this waste being presented for assessment (Condition 25 - authorised works section);
- converted all previous - 'Attachments' in the licence to 'Schedules' including deletion of the redundant Annual Audit Compliance Report (AACR) and notifications forms set out previously in Attachment 1 of the licence;
- included additional site infrastructure plans to Schedule 1 of the licence and inserted an infrastructure and equipment table in Schedule 3;
- corrected licence condition numbers following the removal of redundant conditions and addition of new conditions; and
- updated the style and appearance of the licence.

The licences and works approvals issued for the premises since 15 September 2011 are:

Instrument log		
Instrument	Issued	Description
L5199/1983/12	15 September 2011	New licence
L5199/1983/12	21 June 2012	Licence amendment - administrative and minor changes to conditions
L5199/1983/12	29 April 2016	Notice of Amendment of Licence Expiry Dates – extended licence expiry date to 15 October 2019
W6230/2019/1	26 June 2019	Works approval to authorise upgrades to the wastewater treatment system (installation and commissioning of new DAF)
L5199/1983/12	9 October 2019	Licence amendment application to authorise works for the installation and operation of the RO plant and operation of the new DAF plant. Includes CEO initiated amendment to extend the licence expiry date to 15 October 2021, and update licence 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*;

**'animal waste material'** means blood, bone, fat, offal and condemned carcasses;

**'APHA-AWWA-WEF'** means American Public Health Association (APHA) – American Water Works Association (AWWA) – Water Environment Federation (WEF);

**'AS/NZS'** means the most recent version (unless otherwise stated) of the specified Australian and New Zealand Standard as jointly published by Standards Australia International Ltd, Sydney and Standards New Zealand, Wellington;

**'AS 3543'** means the Australian Standard AS 3543: *Use of standard Ringelmann and Australian Standard miniature smoke charts*;

**'AS/NZS 5667'** means the most recent version and the relevant parts of the Australian and New Zealand series of guidance standards on Water Quality Sampling; (see also AS/NZS);

**'brine'** refers to the concentrated salt waste generated as a result of the automatic daily flushing of filter membranes in the reverse osmosis water treatment plant;

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

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

Director General  
Department administering the Environmental Protection Act 1986  
Locked Bag 10  
Joondalup DC WA 6919  
[info@dwer.wa.gov.au](mailto:info@dwer.wa.gov.au)

**'DAF'** means dissolved air flotation and refers to part of the primary wastewater treatment infrastructure used for suspended solids and fats separation and removal;

**'dark smoke'** refers to smoke classified in accordance with AS 3543 as having a Ringelmann shade 4 or greater;

**'dB'** means decibel, a unit of measurement of sound level;

**'gas emission treatment system'** refers to the wet scrubber and the condenser unit and associated interconnecting transmission pipelines (treating condensable gases) prior to vapour being emitted to air via the condenser unit outlet as shown in the rendering plant infrastructure plan in Schedule 1;

**'heavy rainfall'** means where more than 25 millimetres of rainfall is received over a 24 hour period;

**'irrigation area'** means the areas designated for disposal of treated wastewater as depicted in the premises map in Schedule 1;

**'licence'** means this licence numbered L5199/1983/12 and issued under the Act;

**'licence holder'** means the person or organisation named as licence holder on page 1 of the licence;

**'mg/L'** means the concentration of an aqueous solution (expressed as milligrams per litre) and is the ratio of the mass of specific solute to the volume of solution (not solvent);

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

**'Pond system 1'** refers to the series of anaerobic (1) and aerobic ponds (3) for the treatment, storage and evaporation of wastewaters generated by the abattoir and rendering operations and transferred to the ponds following primary treatment through a solids trap, screening and fats separation unit, as shown in the wastewater treatment ponds plan in Schedule 1;

**'permeate'** refers to the portion of the reverse osmosis feedwater collected after it has passed through all the RO membranes, otherwise referred to as the product water;

**'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 Schedule 1;

**'psi'** means pounds per square inch, a unit of measurement of pressure;

**'PVC'** means polyvinyl chloride;

**'RO'** means reverse osmosis;

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

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

**'Schedule 3'** means Schedule 3 of this licence unless otherwise stated;

**'Schedule 4'** means Schedule 4 of this licence unless otherwise stated;

**'solid waste'** means waste that:

- (a) has an angle of repose of greater than 5 degrees; and
- (b) does not contain, or is not comprised of, any free liquids; and
- (c) does not contain, or is not comprised of, any liquids that are capable of being released when the waste is transported; and
- (d) does not become free flowing at or below 60 degrees Celcius or when it is transported; and
- (e) is generally capable of being moved by a spade at normal temperatures (i.e. is spadeable)

**'treated wastewater/s'** refers to wastewater from abattoir and rendering operations that has undergone anaerobic and aerobic treatment prior to reaching the third and final wastewater pond in Pond system 1,

**'WWTS'** means wastewater treatment system; and

**'works'** refers to the installation of a reverse osmosis plant as described in Schedule 4 and subject to conditions 25 - 30 of this licence.

## **2. AIR POLLUTION CONTROL CONDITIONS**

### **DUST – GENERAL REQUIREMENT**

1. The licence holder shall not allow visible dust to cross the boundary of the premises.

### **STACK - DARK SMOKE EMISSIONS**

2. The licence holder shall ensure that the emission of dark smoke from any chimney stack does not continue for greater than a period of four (4) minutes in aggregate in any one (1) hour period.
3. The licence holder shall ensure that the emission of dark smoke from the entire licensed premises does not continue for greater than a period of twenty (20) minutes in aggregate in any twenty-four (24) hour period.

### **RENDERING PLANT - GASES TREATMENT SYSTEM**

4. The licence holder shall operate the rendering facility such that the gas emission treatment system is operational whenever the cooker(s) is (are) in use.
5. The licence holder shall direct all condensable gases from the cooker(s) to the condensers.

### **WASTE MATERIAL**

6. The licence holder shall:
  - (a) ensure all animal waste material is rendered or disposed off site within twenty-four (24) hours of the slaughter of the animal or receipt of the material;
  - (b) ensure that all animal waste material disposed off site is directed to a licensed landfill or rendering facility; and
  - (c) notify the CEO in writing prior to disposing of any animal waste material in accordance with condition 6(b) of this licence.
7. The licence holder shall upon commencing commissioning and ongoing operation of the reverse osmosis plant installed in accordance with the works conditions in this licence, direct all wastewater generated as a result of daily flushing (brine) and other periodic cleaning of reverse osmosis plant filter membranes either to a storage tank or to the WWTS.

## **3. WATER POLLUTION CONTROL CONDITIONS**

### **WASTEWATER TREATMENT**

8. The licence holder shall direct all wastewater generated by the abattoir, through a solid trap, rotary screen and fat separation (DAF) equipment prior to discharge to the wastewater treatment ponds.
9. The licence holder shall direct all wastewater generated by the rendering facility through a solid trap, rotary screen and fat separation (DAF) equipment prior to discharge to the wastewater treatment ponds.
10. The licence holder shall direct all wastewater generated by the lairage run-off and truck washdown through a solid settlement sump prior to discharge to the wastewater treatment ponds.

### **DISCHARGE TO PINWERNYING CREEK**

11. The licence holder shall ensure raw, treated or other contaminated wastewaters are not discharged to the Pinwernying Creek or its tributaries.

### **MANAGEMENT OF WASTEWATER TREATMENT PONDS**

12. The licence holder shall manage and operate the wastewater treatment ponds in a manner such that:
  - (a) all uncontaminated stormwater is diverted away from the ponds, to minimise the threat of erosion of pond embankments or flooding;
  - (b) leakage from, or overtopping of the ponds does not occur;
  - (c) trapped overflows are maintained on the discharge from the anaerobic treatment pond to prevent carry over of surface floating matter to the subsequent treatment ponds;
  - (d) aerobic and maturation pond surfaces are kept clear of floating matter and algal mats. Vegetation on inner pond embankments of ponds shall not interfere with the integrity of pond walls or adequate water surface aeration, or mask overtopping or other leakage. Vegetation on the anaerobic pond shall not interfere with the integrity of the crust; and
  - (e) a crust is maintained on the anaerobic pond(s) to minimise the emission of offensive odours and to enhance the breakdown of unstable organic matter.

### **TREATED WASTEWATER IRRIGATION**

13. The licence holder shall dispose of treated wastewaters by irrigation such that:
  - (a) wastewater is evenly distributed over the irrigation area;
  - (b) no soil erosion or ponding of wastewaters occurs;
  - (c) a healthy vegetation cover is maintained over the effluent irrigation areas;
  - (d) there is no direct runoff, spray drift or discharge beyond the boundaries of the premises; and
  - (e) irrigation shall not occur onto flooded areas.
14. The licence holder shall manage the application of wastewater to the irrigation areas to ensure that the following nutrient loading rates are not exceeded:
  - (a) nitrogen - less than 250 kilograms per hectare per year; and
  - (b) phosphorus – less than 60 kilograms per hectare per year.

### **MONITORING REQUIREMENTS - GENERAL SAMPLING**

15. The licence holder shall collect, preserve and analyse all water samples in accordance with AS/NZS 5667.
16. The licence holder shall submit all water samples to a laboratory with current NATA accreditation for the analyses specified for analysis in accordance with the current "Standard Methods for Examination of Water and Wastewater-APHA-AWWA-WEF".

## MONITORING REQUIREMENTS

17. The licence holder shall maintain a device for measuring monthly cumulative volumes of wastewater discharged from the final outlet of the pond system for irrigation to land.
18. The licence holder shall, **every three months**, collect a representative sample of wastewater discharged to the on-site irrigation area. The following parameters shall be determined:
- pH;
  - 5-day biochemical oxygen demand (BOD<sub>5</sub>);
  - total suspended solids;
  - total dissolved solids;
  - total nitrogen; and
  - total phosphorus.

*With the exception of pH, all measurements are to be reported in mg/L.*

19. The licence holder shall collect samples of water from Pinwernying Creek (“the creek”) of which the premises is part of the headwaters, at the sampling locations specified in Column 1 of Table 1, tested for the parameters specified in Column 2 and at the sampling frequency specified in Column 3 of Table 1.

**Table 1: Pinwernying Creek water sampling**

Column 1	Column 2	Column 3
Sampling Location	Parameters analysed	Sampling frequency
<p>A = the point where the creek passing under Trimmer Road enters the licensed premises, as shown in Schedule 1 Premises map.</p> <p>B = the point where the creek branch that passes through point A leaves the premises, as shown in Schedule 1 Premises map.</p>	<p>Total Nitrogen, Total Phosphorus, and Oil and Grease.</p>	<p><b>Monthly</b> (with the sample to be collected on the same day each month). Samples shall also be collected the day following a heavy rainfall event (that is, where more than 25 millimetres of rainfall is received over a 24 hour period)</p> <p>Sampling shall commence <b>1 May each year</b> or the week of first flow in the creek, whichever occurs first, and conclude 30 September each year or when flow in the creek ceases, whichever occurs last.</p>

*All measurements are to be reported in mg/L.*

## 4. SOLID WASTE POLLUTION CONTROL CONDITIONS

### SOLID WASTE REMOVAL

20. The licence holder shall, aside from those materials referred to in condition 21, remove solid waste generated at the premises (including desludging waste) for off-site disposal.
21. The licence holder shall only bury animal carcasses and solid animal waste material on the premises.
22. The licence holder shall take the following measures when burying waste referred to in condition 21 on the premises:
  - (a) dispose of waste in a defined trench at least 50 metres from the premises boundary or a watercourse or a water body;
  - (b) cover waste with at least 230 mm of cover material at least weekly;
  - (c) ensure the base of the trench shall be at least two metres above the highest known groundwater table; and
  - (d) shall cover waste with a final soil cover of at least one metre.

## 5. MONITORING AND REPORTING

23. The licence holder shall provide to the CEO by **1 February** each year, a copy of an Annual Environmental Report containing data collected during the period beginning 1 January and ending on 31 December the previous year. The report shall contain, but not be limited to:
  - (a) monitoring data or other collected data required by any condition of this licence (data should be provided in tables and in graphical format);
  - (b) an explanation of the monitoring data in comparison with past monitoring data collected for previous licences issued under Part V of the Act for the premises;
  - (c) the number and type of complaints received including complainants name, address, nature of complaint (where appropriate cross referenced with prevailing wind directions) and action taken;
  - (d) any changes to site boundaries, location of groundwater monitoring bores, surface drainage channels and on-site or off-site impacts or pollution;
  - (e) the monthly number of animals and tonnages of meat processed; and
  - (f) the annual tonnage of material rendered.
24. The licence holder shall provide to the CEO by **1 February** each year, an Annual Audit Compliance Report indicating the extent to which the licence holder has complied with the conditions of the licence, and any previous licence issued under Part V of the Act for the premises during the period beginning 1 January and ending on 31 December the previous year.

## 6. AUTHORISED WORKS – REVERSE OSMOSIS PLANT

25. The licence holder must, within 90 days of the amendment date of this licence and prior to commencing the works authorised in Condition 26, provide to the CEO a report from an environmental scientist which includes as a minimum:
  - (a) a detailed risk assessment of the impacts of disposing of brine and quarterly RO cleaning waste into the WWTS or to an evaporation pond or similar structure. Assessment on disposal to the WWTS is to include the impact of RO plant waste on the anaerobic and aerobic microorganisms and the effectiveness of biological treatment processes within the pond system including potential impacts on the irrigation of treated wastewater to land over the long and short term; and
  - (b) a risk assessment and provision of all relevant infrastructure design detail related to an alternative method of treatment and disposal of RO plant waste that does not involve disposal to the WWTS.
26. The licence holder must install and undertake the works for the infrastructure and equipment:
  - (a) specified in Column 1; and
  - (b) to the requirements specified in Column 2; of Table 5 in Schedule 4.
27. The licence holder must not depart from the requirements specified in Column 2 of Table 5 in Schedule 4 except:
  - (a) where such departure does not increase risks to public health, public amenity or the environment; and
  - (b) all other conditions in this licence are still satisfied.
28. Subject to condition 27, within 30 days of the completion of the works specified in Column 1 of Table 5 in Schedule 4, the licence holder must provide to the CEO a report from a suitably qualified professional, including photographs of specified infrastructure, confirming each item of infrastructure or component of infrastructure specified in Column 1 of Table 5 in Schedule 4 has been constructed with no material defects and to the requirements specified in Column 2 of Table 5 in Schedule 4.
29. Where a departure from the requirements specified in Column 2 of Table 5 in Schedule 4 occurs and is of a type allowed by condition 27, the licence holder must provide to the CEO a description of, and explanation for, the departure along with the certification required by condition 27(b).

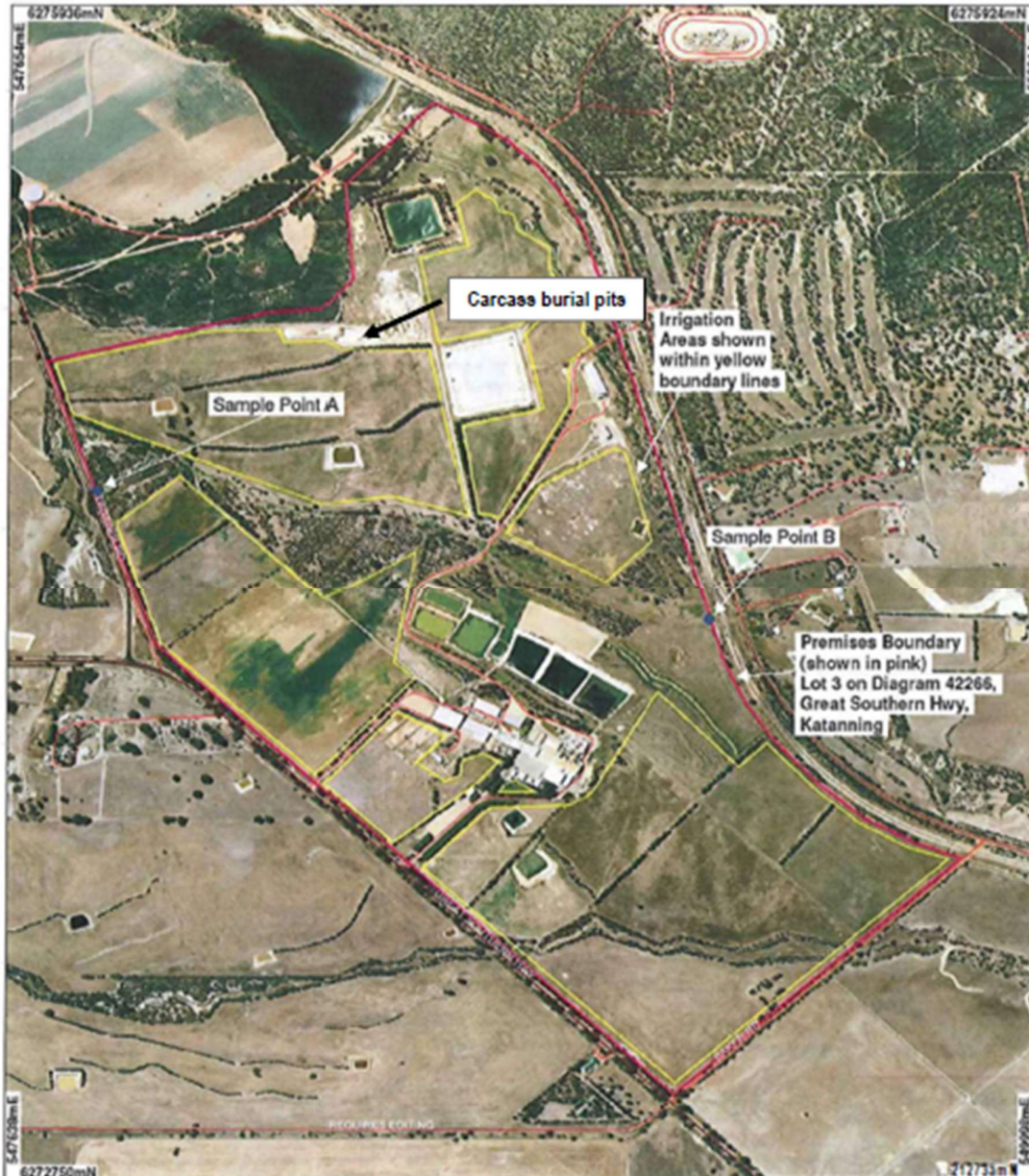
### Works record-keeping

29. The licence holder must maintain accurate books including information, reports and data in relation to the works and the books must:
  - (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) be retained for at least 3 years from the date the books were made;
  - (d) be available to be produced to an inspector or the CEO.
30. The licence holder must comply with a department request within 14 days from the date of the department request or such other period as agreed to by the inspector or the CEO.

# Schedule 1: Premises maps and infrastructure layout

## Premises map

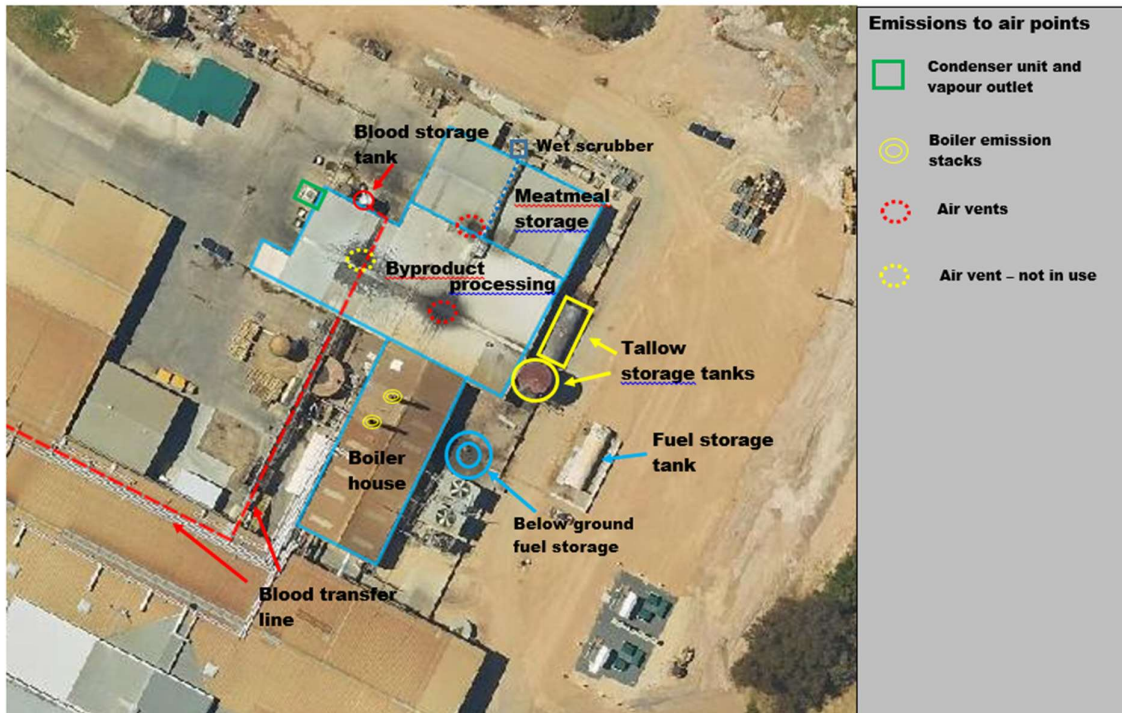
The premises and immediate surrounding lots are shown in the map below. The red line depicts the premises boundary. The yellow lines show the boundaries to authorised irrigation areas.



## Katanning abattoir – key infrastructure



## Rendering plant infrastructure



## Wastewater treatment ponds

Pond system 1 is the series of anaerobic (1) and aerobic ponds (3) for the treatment and storage of wastewaters generated by the abattoir and rendering operations following primary treatment through a solids trap, screening and fats separation.

Pond system 2 is the series of 3 aerobic treatment ponds primarily receiving manure contaminated wastewater from the lairage runoff / wash-down area and may also receive treated wastewater transferred from Pond 3 in pond system 1, to manage winter water levels / treatment by evaporation, between the two pond systems.



## Schedule 2: Prescribed premises categories

The premises prescribed categories under Schedule 1 of the *Environmental Protection Regulations 1987* are listed in the table below.

**Table 3: Prescribed premises categories**

<b>Classification of premises</b>	<b>Description</b>	<b>Approved premises throughput</b>
Category 15	Abattoir: premises on which animals are slaughtered	Not more than 47,000 tonnes per year
Category 16	Rendering operations: premises on which substances from animal material are processed or extracted	Not more than 4,900 tonnes per year
Category 55	Livestock saleyard or holding pens: premises on which live animals are held pending their sale, shipment or slaughter	Not more than 1,200,000 animals per year

## Schedule 3: Infrastructure and equipment

The WAMMCO Katanning Abattoir existing infrastructure, as it relates to Categories 15, 16 and 55 activities, is detailed in the table below and located as referenced on plans in Schedule 1.

**Table 4: WAMMCO Katanning abattoir existing infrastructure**

Existing Infrastructure		Site Layout Plan Reference
<b>Ref</b>	<b>Prescribed Activity Category 15: Abattoir and lairage</b>	
Animals (sheep & occasionally goats) are held in the livestock holding yards (lairage) pending arrival at the abattoir floor. Animals are slaughtered and processed to produce meat for human consumption.		
1	Covered livestock holding pens (lairage) with raised slatted floor. Concrete hardstand below slopes downwards connecting to an open concrete channel collecting and conveying wash down water to solids settlement sump	Sheep Yards 1 & 2 in Katanning abattoir key infrastructure in Schedule 1
2	Manure storage area and solids settlement sump	
3	Open concrete spoon drain – conveys manure contaminated wastewater from the solids settlement sump to aerobic pond	Wastewater drains from solids settlement and Pond system 2 in Wastewater treatment ponds in Schedule 1
4	3 x clay lined aerobic/evaporation ponds (Pond numbers 5, 6 and 7)	Pond system 2 in Wastewater treatment ponds in Schedule 1
5	Abattoir facility (animal processing including slaughter room floor and boning room)	Slaughter Room & Abattoir Facility Part 1 in Katanning abattoir key infrastructure in Schedule 1
<b>Prescribed Activity Category 16: Rendering</b>		
Rendering of animal material derived from the onsite abattoir (including offal and blood) to produce tallow, meat meal bone meal, blood meal and gall concentrate.		
6	Key infrastructure includes a cooker, cake presses-, driers, blood tank (10kL storage capacity), tallow storage tanks (46kL & 115kL storage capacities), 2 x boilers (each 5000kW capacity) and associated emissions stacks, cooling towers, wet scrubber, condensing unit with vapour stack/outlet	Rendering plant infrastructure in Schedule 1
<b>Wastewater Treatment System infrastructure</b>		
7	Concrete sump (5kL capacity), pump and pipeline to rotary screen	Wastewater sump in Katanning abattoir key infrastructure in Schedule 1
8	Rotary screen installed on a raised steel platform	Rotary Screen in Katanning abattoir key infrastructure in Schedule 1
9	Waste bin receiving separated solid waste via chute from the rotary screen	Located below the rotary screen
10	Dissolved Air Flotation (DAF) plant installed within a concrete hardstand	DAF in Katanning abattoir key infrastructure in Schedule 1
11	1 x clay lined anaerobic pond (Pond number 1)	Pond System 1 in Wastewater treatment ponds in Schedule 1
12	2 x clay lined aerobic / evaporation ponds (Pond numbers 2 and 8)	
13	1 x clay lined final treated wastewater storage / evaporation pond (Pond number 3)	
14	Extraction pump, flow meter and PVC pipelines conveying treated wastewater from the final pond to irrigation areas	Not specified
15	Specified irrigation areas	Marked by yellow boundary lines in Premises map in Schedule 1
<b>Carcass management infrastructure</b>		
16	Carcass burial pit	Carcass burial pits in Premises map in Schedule 1
<b>Fellmongering infrastructure</b>		
17	2 x skins processing and storage sheds, includes tumble driers, salt store, baling equipment	Skin Shed 1 & 2 in Katanning abattoir key infrastructure in Schedule 1

## Schedule 4: Works – Reverse osmosis plant

At the time of assessment, emissions and discharges from the works listed in Table 5 (and their subsequent operation) were considered in the determination of the risk and related conditions.

**Table 5: Authorised works**

Column 1	Column 2
Infrastructure	Design specifications
1 x <i>Integra</i> I INT BW30-200 model Reverse Osmosis Plant	4 sets of housings (pressure vessels rated to pressure of 300psi) each containing 3 spiral wound thin film composite polyamide membranes
Pumps <sup>1</sup> and associated infrastructure	1 x low pressure stainless steel feed pump (4kW motor) and low pressure PVC piping (treated wastewater in-feed line)
	1 x 36 inch automatic, back washable filter
	Depth filters – 2 housings per train with 5 micron and 1 micron cartridge filters. Suspended solids filter housings with 5 x 40 inch filter elements
	1 x high pressure stainless steel pump (15kW motor)
Anti-scalant dosing system	Not specified
Control panel	Control panel including alarm system, on/off auto switch for pumps and LED display for monitored values
Accessories - include flow meters, valves, pressure gauges, feed and permeate conductivity meters, low/no flow protection, sampling ports	Not specified
Storage tanks	1 x 50kl feed water tank
	4 x 50kL permeate tanks
Permeate distribution pipeline	300 mm diameter PVC pipeline (as shown in Works plan – location of Reverse Osmosis plant and associated infrastructure)

**Note: 1** - Noise emissions from all operating centrifugal pumps is <85dB

**Note: 2** – Quarterly membrane cleaning cycle products consist of a mixture of citric acid, caustic soda and ethylene diamine tetra acetic acid (EDTA)

## Works plan - location of reverse osmosis plant and associated infrastructure

