



Application for licence

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

Licence number	L9352/2022/1
Applicant	Whitmore Gardens Pty Ltd
ACN	054 147 223
DWER file number	DER2022/000455
Premises	'Southdale Pet Meats' 49 Butcher Road DARLING DOWNS WA 6122
Date of report	25 March 2024
Status of report	Final

1. Purpose and scope of assessment

Whitmore Gardens Pty Ltd (the applicant) is seeking retrospective approval to operate its existing pet meat processing facility near Byford. A licence application was submitted under Division 3 Part V of the *Environmental Protection Act 1986* (EP Act) on 1 September 2022.

This report sets out the delegated officer's assessment of potential risk events arising from emissions and discharges that are generated from abattoir operations at the premises.

In completing the assessment documented in this report, the department has considered and given due regard to its regulatory framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

2. Application details

Overview of existing premises

'Southdale Pet Meats' is an existing operational pet meat processing facility on the outskirts of Byford, about 30 km south of Perth.

The facility operates as a 'service kill' pet meat knackery that is capable of processing about 500 tonnes of pet meat per year. It is an approved abattoir under the *Western Australian Meat Industry Authority Act 1976* and is categorised by the WA Meat Industry Authority as a facility that meets Australian Standards and relevant legislation and is inspected by the WA Department of Health and relevant local government authority.

Table 1 describes the prescribed premises category the application is subject, as defined in Schedule 1 of the Environmental Protection Regulations 1987.

Table 1: Prescribed premises category

Classification of premises	Assessed throughput (as per application)
Category 15: Abattoir: premises on which animals are slaughtered.	Existing: not more than 1,000 tonnes per year (liveweight)
	Proposed expansion: not more than 10,000 tonnes per year (liveweight)

Background

The applicant established and has operated the facility since 1980 and has undertaken incremental expansion works since this time. Historical upgrade works in the 1990s were subject to works approvals, however, the operational capacity has not previously triggered the prescribed threshold for requiring a licence.

Until recently, the facility has operated under an historical planning approval as a pet meat processing facility, in which on-site slaughtering of animals was not permitted, likely due to the zoning of the land and proximity of nearby land uses. Notwithstanding this, the applicant has been slaughtering some animals on-site for many years.

In August 2015, the Shire of Serpentine-Jarrahdale (Shire) issued retrospective development approval (DA) for change of use (to allow on-site slaughtering of animals), with a restricted annual production of 1,000 tonnes of processed meat.

In June 2022, the Shire issued DA for a significant expansion to the existing facility, to enable the processing of animals for human consumption.

The applicant has sought changes to the DA to increase the permitted annual production to 3,375 tonnes of processed meat (both pet meat and meat for human consumption), or 10,000 liveweight tonnes (5,000 tonnes carcass weight).

Existing abattoir and operation

The existing abattoir complex is used for both the slaughter and processing of live and dead animals for pet food.

The abattoir complex is situated on 6.4 ha of land that comprises a concrete lairage area, a small and basic kill floor and boning room; two refrigeration units (one fixed and one mobile), and three water tanks that form part of the existing wastewater treatment system that has an historical approval issued under the *Health Act 1911*. The remainder of the site comprises an old horse racing track.

Current annual kill rates are in the order of 100 horses, 100 cattle and 200 sheep/goats. About 80% of animals processed through the facility have been killed off-site and are either butchered immediately after being brought to site or stored within mobile refrigeration units ahead of being processed; live animals brought to site may be kept for up to 3 days before being slaughtered.

Wastewater management

The existing wastewater treatment system uses basic solids removal and settling (primary treatment only), prior to on-site disposal (irrigation) over the old horse racing track.

Wastewater from the kill floor is washed into a bucket trap and an interceptor trap, before being pumped to a 2.5 kL tank fitted with a filter to retain suspended solids. Water from the first tank overflows into a second tank, and then to a third and final tank, where the water is considered to be 'treated', prior to being blended with groundwater and irrigated over the horse racing track.

It does not appear that water quality testing is undertaken prior to irrigation or that disposal is undertaken at sustainable application rates (i.e., in accordance with a nutrient mass balance to determine appropriate application rates for each nutrient) and in a manner that protects the environment; it is simply irrigated as a means of disposal, without consideration of nutrient loading.

Solid waste management

Solids removed from the wastewater stream, paunch materials, offal and animal carcasses are removed from the premises on a daily basis to Harvey Beef for rendering. Deceased animals that are unsuitable for processing are also removed from the premises for rendering.

Manure from the lairage yard is scraped up and temporarily stockpiled on a hardstand pad, prior to off-site removal on a quarterly basis to a composting facility.

Odour management

Despite there being sensitive receptors (dwellings) within 500 m, the facility has generally operated without incident in terms of nuisance odour, likely due to the relatively small scale of operations, low volumes of wastewater that are managed within enclosed wastewater treatment tanks, and other operational measures, such as containment and regular off-site removal of offal and other renderable materials.

Proposed expansion and operation

The application includes a proposal to replace existing infrastructure with new, purpose built infrastructure that will modernise the facility and enable meat to be produced for human consumption, including compliance with required food safety standards.

The proposal includes decommissioning and replacing the existing wastewater treatment system with a new system that is designed to treat the wastewater streams from the processing of both pet meat and meat for human consumption.

Proposed expansion works

The proposal includes the construction of a new abattoir building (as an extension that will operate separate to the existing pet meat building), comprising a new kill floor, boning room, and butcher shop, cool room/freezer, and other ancillary infrastructure. The existing open-sided lairage will partially remain and will be reconfigured.

The new kill floor and boning room will be equipped with a modern rail dressing system, that will enable significant processing efficiencies and increased throughput compared to the

existing stationary hook system in place at the pet meat abattoir.

Whilst the existing pet meat processing activities will continue at the premises unchanged, the proposed expansion will increase annual throughput at the premises from around 500 tonnes to 3,375 tonnes (see table below).

Species	No. animals (yearly)	Average LW (kg)	Total LW (tonnes)	Max LW (tonnes)
Existing pet meat abattoir				
Cattle	100	450	45	-
Horses	100	450	45	-
Small animals*	200	35	7	-
Existing annual throughput				200
Proposed abattoir expansion				
Cattle	6,000	510	3,060	3,500
Horses	500	450	225	250
Pet meat (general)	-	-	-	200
Sheep (small)	45,000	30	1,350	1,400
Sheep (large)	30,000	65	1,950	2,000
Sheep (rams)	6,000	85	510	520
Proposed annual throughput				7,870
Proposed maximum throughput				10,000

*Sheep, goats, chickens, kangaroos.

Wastewater management

A similar, but larger, wastewater treatment system is proposed using basic solids removal, settling and aeration (primary treatment only), comprising 3 x 50 kL poly tanks fitted with aerators, which will replace the existing system.

Washdown from lairage, both kill floors and boning floors will be directed via spoon drains into a grease trap before being pumped up through 1 mm solids separator, that will be collected and disposed to covered offal bins (to be collected daily by Harvey Beef) and wastewater drained to the three new treatment tanks.

Screened wastewater will then flow into tank #1 (50 kL) fitted with an aerator; overflow from this tank will flow into tank #2 (50 kL) fitted with an aerator; and finally, overflow from this second tank will flow into tank #3 (50 kL) for final settling and storage, prior to discharge via controlled irrigation (see below).

The volume of wastewater generated from the expansion operation is estimated to be around 9 kL per week, of which 2.7 kL per week will be reused for lairage washdown, resulting in 6.3 kL of freshwater being introduced into the system per week. Based on this, a total of 329 kL/yr of treated wastewater will require disposal via irrigation, noting there will also be no irrigation during winter, to ensure aerobic conditions are established in the soil after irrigation.

A water balance of the expansion operations has indicated about 102 kL of wastewater will be generated during the wet months of June to September (inclusive); an additional, fourth tank (50 kL) will be installed to provide additional storage capacity (200 kL total).

Nutrient management

The nitrogen and phosphorus concentrations of the wastewater are required to model the nutrient and water balances of the system. Two samples of wastewater from the existing treatment system have been analysed, which indicate average concentrations for biological oxygen demand (BOD) of 118.5 mg/L, total suspended solids of 26.5 mg/L, nitrogen of 36 mg/L, and phosphorus of 0.4 mg/L.

Irrigation will continue to occur over the old horse racing track, in addition to a small tree lot. One of four sprinklers will be used at any one time; the radius of each sprinkler is 45 m, equating to a total irrigation area of 1,590 m², in which a pasture crop will be grown and harvested each year.

Broadscale mapping information indicates the premises lies predominantly within the 'Pinjarra P3 phase' soil unit, which is described as '*Flat to very gently undulating plain with deep, imperfect to poorly drained acidic gradational yellow or grey-brown earths and mottled yellow duplex soils, with loam to clay loam surface horizons*' (DPIRD 2021).

Irrigation of wastewater is proposed to be conducted in accordance with a determined nutrient balance, where there is a net uptake of nutrients. Irrigation will typically occur from October to May, with maximum irrigation rates expected at the end of winter (October), when irrigation of the wastewater stored over winter will commence. Maximum monthly irrigation rates will be capped at 60 kL (i.e., over double the expected wastewater generation rates). It is expected to take about 3 to 4 months to irrigate the winter-stored wastewater.

The expected dryland pasture yield for the Darling Downs area is 10 t/ha/yr; based on the nitrogen and phosphorus content of pasture being 20 kg-N/t and 3 kg-P/t, and offtake of 0.3 t/ha/yr is required to remove phosphorus and 3.0 t/ha/yr to remove nitrogen. With nitrogen being the nutrient in excess, 3.0 t/ha/yr will be mechanically harvested and removed off-site each year.

Solid waste management

Solids removed from the wastewater stream, paunch materials, offal and animal carcasses will continue to be removed from the premises on a daily basis to Harvey Beef for rendering. Deceased animals that are unsuitable for processing will also continue to be removed from the premises for rendering.

Manure from the lairage yard will continue to be scraped up and temporarily stockpiled on the existing hardstand pad, prior to off-site removal on a quarterly basis to a composting facility.

Odour management

The applicant recognises there is an increased risk of odour generation and off-site impacts due to the increase in throughput and consequently, an increase in the overall footprint of abattoir activities at the premises.

An operational odour analysis conducted for the expanded operations identified the key odour sources being the wastewater treatment plant and disposal of treated wastewater, external contractors collecting and removing offal, renderable materials and blood wastes, and the lairage yards. The analysis concludes that each of these aspects present a low risk of odour under normal operating conditions, with the following contingency actions being proposed to address upset conditions:

- in the event of poor quality of treated wastewater, chemical and UV light treatment will be conducted, to further polish the wastewater prior to irrigation; and
- in the event there is insufficient capacity for storing offal and renderable material waste bins, immediate removal of bins will be arranged, or the bins moved into the cool rooms until they can be removed off-site.

Exclusions to this assessment

The following matters are out of the scope of this assessment and have not been considered within the risk assessment detailed in this report:

- activities unrelated to the prescribed activity, such as the storage and handling of meat products;
- food safety, hygiene and animal welfare requirements;
- domestic wastewater (sewage) and municipal solid waste disposal; and
- land use zoning and compatibility with surrounding land uses.

3. Other approvals

Planning approvals

The applicant has obtained DA for the proposed expansion works (both pet meat and meat for human consumption), with a restricted annual production of 1,000 tonnes of processed meat.

A development application (DA) for the proposed increase in production capacity (to 10,000 liveweight tonnes per annum) and upgrade of the wastewater treatment system is pending with the Shire.

4. Consultation

The application was referred to relevant public authorities and adjacent landholders and was advertised for public comment on the department's website during October 2022.

No public submissions were received within the specified timeframe.

Public authorities

The Department of Primary Industries and Regional Development (DPIRD) considers the abattoir to be a small-scale operation that potentially carries a low environmental risk, with waste emissions four-fold lower than the industry standard (given up to 80% of animals are killed off-site). The department notes this application proposes that 100% of animals slaughtered for human consumption will be slaughtered on the premises.

DPIRD has reviewed the nutrient balance and is satisfied the proposed upgraded wastewater treatment plant, with increased water balance and proposed increased irrigation rates, will be acceptable with the proposed offtake strategy and winter storage of wastewater.

The Shire advises:

- the existing abattoir operations were previously approved under Town Planning Scheme 2 that dates back to the 1980s; subsequent to this, in June 2020 the Shire issued a planning approval for an abattoir expansion with a capped maximum meat production of 1,000 tonnes of product per year;
- should the applicant wish to increase production capacity, a new DA is required, and that any licence issued by the department should reflect the maximum capacity approved by the Shire (application has since been submitted);
- a building application has been received for the new abattoir building, cool room and water tanks, but not for the new wastewater treatment plant. The Shire also note some inconsistencies between the application submitted to them and to that referred by the department (application has since been submitted); and
- a subdivision of the land to the west of the abattoir (Lot 9003) was approved by the Western Australian Planning Commission (WAPC) in September 2016; a subdivision clearance application has been lodged with the Shire and WAPC to create 23 rural living lots ranging in size from 0.4 to 1.49 ha. The approved subdivision layout and building envelope plan was based on buffers to the existing abattoir operations and the adjacent poultry farm; the Shire consider it important the existing buffers are not increased that would potentially extend into the approved building area on the lots being created.

The Shire has requested the department not progress the licence application until the above matters have been addressed.

5. Risk assessment

Determination of emission, pathway and receptor

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

To establish a risk event there must be an emission, a receptor which may be exposed to that

emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account identified potential source-pathway and receptor linkages. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls, these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in the below table.

Risk assessment table

The table below describes the risk events associated with the proposal consistent with the *Guideline: Risk Assessments* (DWER 2020). The table identifies whether the risk events are acceptable and tolerated, or unacceptable and not tolerated, and the appropriate treatment and degree of regulatory control, where required.

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Construction works / expansion works								
Construction of new abattoir building, boning room, cool room, lairage, wastewater treatment plant	Noise and fugitive dust associated with construction civil earthworks, construction works, etc.	Unreasonable interference with the health, welfare, comfort, convenience, or amenity of nearby receptors (>500 m)	Construction works during normal day time hours	Minimal impacts to amenity on local scale Slight	Not likely to occur in most circumstances Unlikely	Low Acceptable, not subject to conditions	The site is an existing operational abattoir; providing construction works are conducted during normal day time working hours (i.e., no evening or nighttime works) the delegated officer does not reasonably foresee that noise and dust from construction works will significantly differ from existing operational levels at the site.	None specified.
Operations								
Category 15: Abattoir – expanded operations								
Lairage – short-term holding of animals, prior to slaughter	Nutrient-laden leachate (from manure)	Seepage/infiltration, causing contamination of shallow groundwater	Covered yard with concrete-lined floor to provide maximum groundwater protection	Low-level on-site impacts Minimal off-site impacts on local scale Minor	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The lairage is a covered (roofed yard) constructed with an impermeable concrete-lined floor with drainage to a concrete-lined settlement tank, from where washdown of residual manure in the yard is settled and transferred to the wastewater treatment plant. The delegated officer is satisfied the infrastructure will ensure the risk of uncontrolled discharges from lairage operations is acceptable.	<ul style="list-style-type: none"> - Infrastructure design and operational requirements specified in infrastructure table; - Floor and drains must be maintained to ensure integrity is sustained; - Floor must be washed down at the end of each day that animals have been held within the yard - Wash down wastewater must be directed to the settlement sump
		Uncontrolled discharge/runoff, causing soil, groundwater, or surface water contamination	Residual manure and urine wash down directed to a settlement tank via drains	Low-level on-site impacts Minimal off-site impacts on local scale Minor	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	To ensure an acceptable level of risk is maintained during ongoing operations, these controls will be imposed on the licence and required to be maintained as minimum infrastructure requirements.	
	Odour, from manure accumulated in yards	Unreasonable interference with the health, welfare, comfort, convenience, or amenity of off-site receptors (>500 m)	Appropriate containment of animals with lairage and regular removal of manure and washdowns to minimise manure buildup	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	The odour assessment conducted for the expansion proposal (EAQ 2023) identifies the lairage, by its size and nature, as being a primary and continuous source of odour at the premises. Regular removal of manure from the floor, followed by washdown to remove any residual manure, is required to minimise the risk of odour generation from increased lairage operations for the expansion proposal. To ensure an acceptable level of risk is maintained during ongoing operations, these controls will be imposed on the licence and required to be maintained as minimum operational requirements.	- Manure must be removed daily from the lairage floor, followed by wash down to remove any residual
	Noise, from animals and machinery movements		Appropriate short-term containment of animals with lairage	Minimal impacts to amenity on local scale Slight	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	The site is an existing operational abattoir; providing operations are conducted during normal day time working hours (i.e., no evening or nighttime operations) the delegated officer does not reasonably foresee that increased throughput at the facility will significantly differ from existing operational levels at the site.	None specified.
Slaughtering and processing of animals, including handling and storage of organic byproducts/waste	Nutrient-laden wastewater (from kill floor washdown)	Direct discharge of raw wastewater to the environment from leaks or failure of wastewater collection infrastructure (drains, pipes, sumps, etc.), causing soil, groundwater or surface water contamination	Kill floor constructed with concrete-lined floor and purpose-built drainage system All washdown from floors drain to spoon drains with bucket traps catch large particles	Low-level off-site impacts on local scale Moderate	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The existing abattoir and new abattoir building will be constructed with impermeable concrete-lined floors with an appropriate drainage system that ensures blood and other liquids are removed from the area for treatment, which is consistent with modern abattoir industry standards. All washdown from floors drain to spoon drains where bucket traps will be located to catch any large particles during floor washdown events. The delegated officer is satisfied the infrastructure will ensure the risk of uncontrolled discharges from abattoir operations is acceptable. To ensure an acceptable level of risk is maintained during ongoing operations, these controls will be imposed on the licence and required to be maintained as minimum infrastructure requirements.	<ul style="list-style-type: none"> - Infrastructure design and operational requirements specified in infrastructure table; - Floors and drains must be maintained to ensure integrity is sustained
	Odour, from handling of blood	Unreasonable interference with the health, welfare, comfort, convenience,	Blood is collected and contained within a sealed tank and removed from the	Low-level off-site impacts on local scale	Not likely to occur in most circumstances	Medium Acceptable, subject to regulatory	The bleeding area of the kill floor will be bunded where blood will be pumped directly from the bund to an outdoor storage tank (sealed) and removed from the premises each working day (no on-site processing of blood). The delegated officer is satisfied this method of handling and managing	<ul style="list-style-type: none"> - Blood must be pumped directly to storage tank; - Storage tank must be maintained in a sealed state;

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
		or amenity of off-site receptors (>500 m)	premises daily No on-site processing of blood	Moderate	Unlikely	controls	blood will limit the exposure and minimise the risk of nuisance odour. To ensure an acceptable level of risk is maintained during ongoing operations, these requirements will be imposed on the licence as operational controls.	- Blood must be removed from the premises within 24 hours
	Odour, from the kill floor and boning room floor		Largely enclosed environment in which slaughtering and butchering of live animals and/or butchering of refrigerated carcasses will occur	Minimal impacts to amenity on local scale Slight	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	The odour assessment conducted for the expansion proposal (EAQ 2023) identifies the kill floor as a low impact odour source where odours will be confined to the kill floor itself, given animals will be killed, gutted and butchered and refrigerated, and the nature of the kill activity taking into account food safety standards means the soil gut waste must be removed immediately and the floor washed clean before the next kill can occur. Also, freshly butchered meat has negligible odour at the source. The delegated officer is therefore satisfied the kill floor does not pose a significant risk of causing off-site odour impacts.	None specified.
	Odour, from handling of solids and renderable material (offal, paunch, animal carcasses, etc.)		All renderable materials are collected and contained within covered waste bins and removed from the premises daily No on-site rendering or cooking of solids	Low-level off-site impacts on local scale Minimal off-site impacts on wider scale Moderate	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	The odour assessment conducted for the expansion proposal (EAQ 2023) identifies the waste handling and storage areas as being a low impact odour source under normal operating conditions, given solids (skins, fats, offcuts, gut and offal) will be collected and immediately binned into covered waste bins that will be removed off-site at least once every 2 days and typically every day, depending on the volume of daily kills. The waste bins are filled and closed and remain closed until off-site removal. However, the odour assessment recognises the risk of malodour in the event that raw carcasses and wastes are not contained and treated effectively, given the inherent putrescible nature of the material. Therefore, to ensure an acceptable level of risk is maintained during ongoing operations, the above requirements will be imposed on the licence as operational controls.	- Gross solids must be removed from the kill floor and immediately binned into covered waste bins, prior to wash down; - Bins must be maintained in a covered state whilst awaiting off-site removal; - Bins must be removed from the premises within 48 hours
	Odour, from solids screening		Gross solids removed from the kill and boning room floors Grease trap bucket, followed by 1mm screen Solids collected and binned in covered bins	Low-level off-site impacts on local scale Minimal off-site impacts on wider scale Moderate	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	Wastewater from the lairage, kill and boning floors flow into a grease trap bucket before being pumped through a stainless steel solids separator where any solids ≥1 mm will be collected and binned in the covered waste bins, along with other gross solid wastes. The odour assessment conducted for the expansion proposal (EAQ 2023) identifies solid waste screening to be a primary source of odour and has the potential to be a continual problematic odour source if the proposed management procedures are not strictly adhered to, i.e., wastes are not collected and binned, wastes washed away to be contained in the wastewater tanks, grease trap not emptied regularly, etc. Therefore, to ensure an acceptable level of risk is maintained during ongoing operations, the above requirements will be imposed on the licence as operational controls.	- Grease trap must be emptied and cleaned daily; - All solids that have been screened must be collected and immediately binned into covered waste bins; - Drainage system must be inspected daily and action taken to address blockages
	Noise, from slaughtering activities		Operating hours limited to normal day time hours All processing occurs within enclosed buildings	Minimal impacts to amenity on local scale Slight	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	The site is an existing operational abattoir; providing operations are conducted during normal day time working hours (i.e., no evening or nighttime operations) the delegated officer does not reasonably foresee that increased throughput at the facility will significantly differ from existing operational levels at the site.	None specified.
Wastewater management	Odour, from wastewater treatment		Wastewater treatment occurs within a series of enclosed tanks	Low-level off-site impacts on local scale Minimal off-site impacts on wider scale Moderate	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	Screened wastewater will be transferred to a series of enclosed tanks for treatment, the first two of which are fitted with aerators, and a final settling and storage tank. The system is designed to be enclosed – there are no open treatment or storage ponds, which are common sources of odour at larger abattoir operations. The odour assessment conducted for the expansion proposal (EAQ 2023) identifies the wastewater tanks as a primary source of odour and has the potential to be a continual problematic odour source if the proposed management procedures are not strictly adhered to (such as proper screening of solids) or in the event of equipment failure (such as the aerators). As a contingency, the applicant has proposed chemical and UV light treatment to further polish the treated wastewater before irrigation to land. In	- Infrastructure design and operational requirements specified in infrastructure table; - Influent must be properly screened to removal all solids; - Tanks must remain enclosed with sealed pipework; - Aerators must be maintained to function continuously; - Chemical and UV light treatment must be implemented to further treat poor quality wastewater

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
							the event of continued poor quality wastewater that causes off-site odour impacts, wastewater will be removed off-site by a liquid waste contractor. Therefore, to ensure an acceptable level of risk is maintained during ongoing operations, the above requirements will be imposed on the licence as infrastructure design and operational controls.	
	Odour, from irrigation of wastewater		Irrigation via coarse droplet network of sprinklers, to minimise the propensity to vapourise and be carried off-site Minimum setback to off-site premises (>300 m) Discharge criteria to be met to ensure low odour generation	Low-level off-site impacts on local scale Minimal off-site impacts on wider scale Moderate	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	Treated wastewater will continue to be irrigated as per existing on-site practices, with increased volumes due to the expansion. There are no records of odour complaints from existing practices. The odour assessment conducted for the expansion proposal (EAQ 2023) identifies the irrigation area as a primary source of odour and has the potential to be a continual problematic odour source if treated wastewater of poor quality is being irrigated. To ensure an acceptable level of risk is maintained during ongoing operations, controls will be added to the licence to specify the infrastructure and area in which irrigation is authorised and the conditions in which irrigation may occur.	<ul style="list-style-type: none"> - Infrastructure design and operational requirements specified in infrastructure table; - Wastewater may only be irrigated during optimal weather conditions
Irrigation of nutrient-laden treated wastewater over 0.16 ha of pasture crop	Leaching or runoff of nutrients from irrigated wastewater	Contamination of soil, shallow groundwater Soil acidification Excessive build-up of soil N or P	Wastewater to be applied evenly across utilisation area, with bespoke application rates determined based on soil and cropping requirements	Mid-level on-site impacts Moderate	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	<p>Current wastewater disposal practices involve irrigation within a re-purposed horse racing track. Whilst only dealing with low volumes (~500 L/d), the wastewater is irrigated as a means of disposal over bare earth, with no crops grown and harvested, and no consideration for nutrient loading. Due to the sandy clay nature of the on-site soils, it is possible that past practices have resulted in excessive accumulation of nutrients in the soil profile.</p> <p>Given the expansion proposal will generate significantly greater volumes of wastewater, a nutrient management plan has been prepared that demonstrates how the nutrients applied to land will be removed via an offtake strategy, and how management of wastewater during winter will be acceptable. A flow meter will be installed to measure irrigation volumes, and any excess wastewater (volume or nutrients) that cannot be used by the crop will be removed off-site by a liquid waste contractor.</p> <p>The delegated officer has reviewed the plan and considers careful management and regular monitoring is required to maintain the soil's capacity to absorb nutrients and limit water repellence and ensure that nutrient leakage to groundwater and other forms of land degradation do not occur. Such controls will be imposed on the licence as operational controls as they are critical for ensuring an acceptable level of risk is maintained during ongoing operations.</p> <p>Controls include the requirement for soil testing before and after the application of manure, to allow the ability to track movement of P and other nutrients down the soil profile and indicate if there is leaching at greater depth. Limits will also be applied to the licence regarding P application rates, to address the risk of over-application and nutrient leaching.</p>	<ul style="list-style-type: none"> - Wastewater must be applied at a rate that does not exceed the nutrient and daily water requirements of the crop being grown, the water holding capacity of the soil and the lower limit of the soil moisture for the crop; - Wastewater must only be applied within the delineated wastewater utilisation area, with even distribution and only onto the actively growing crop; - No irrigation during winter; - Must conduct soil testing of nutrients, before first application each season; - Soil testing must be conducted at regular depths down the soil profile

6. Decision

The delegated officer has determined that ongoing operation of an abattoir complex at the premises, including an expansion and increase in production capacity to 10,000 liveweight tonnes per annum (equating to around 5,000 tpa carcass weight, or 3,375 tpa processed product), does not pose an unacceptable risk of impacts to public health or the environment. This determination is based on the following:

- the small scale and nature of the abattoir operation (relative to other abattoirs in the State), with sufficient separation to off-site (human) receptors;
- low volumes of wastewater being generated;
- renderable materials and other solid wastes being removed from the premises (no on-site processing or cooking); and
- wastewater being managed within an enclosed tank system (no open treatment or storage ponds).

The key risks from ongoing operations and expansion largely relate to the management of wastewater, in which significant improvements on current management practices have been made, including a proper nutrient management plan that demonstrates how nutrients applied to land will be removed via an offtake strategy, and no irrigation during the winter months. As these controls are considered critical for maintaining an acceptable level of risk of environmental impacts, they have been imposed on the licence as infrastructure design and operational controls.

The delegated officer has considered advice provided by DPIRD regarding the management and monitoring of wastewater, including soil testing, and has imposed additional controls based on that advice to ensure the risk is acceptable and sustainable.

Other controls proposed by the applicant to manage the risk of odour are also considered critical for maintaining an acceptable level of risk of environmental impacts and have been imposed on the licence as infrastructure design and operational controls.

Holding animals outside of lairage

It is noted from recent aerial imagery that animals are being held intensively within outer paddocks on the premises, which includes the existing irrigation area.

This practice is likely to be contributing nutrients to the landscape (the paddocks appear to be bare, compared to surrounding properties), which have not been considered within the nutrient management plan for the premises.

Additionally, the intensive holding of additional animals on the premises is likely to be contributing to the overall odour footprint of the site and general area; given the proposal to significantly increase throughput (and odour potential) at the premises, the delegated officer considers all potential sources of odour at the premises should be removed where they are not essential to abattoir operations.

Conditions have therefore been added to the licence to require the destocking of the premises and for this practice to cease.

Land use planning

The department recognises the importance of land use planning in the context of the delivery of appropriate public health and environmental outcomes and will have regard to the processes and views of other authorities in its decision making process.

The delegated officer has referred the application to the Shire and notes a planning approval has not yet been issued for the planned expansion. It is understood the Shire is awaiting further information from the applicant with regards to nutrient management on the site, which the department has advised it has assessed and will regulate this aspect under Part V of the

EP Act.

Although the Shire has requested the department not to make a decision on the works approval application until a planning decision has been made, in considering the department's assessment indicates the expansion proposal is acceptable from an environmental perspective and the length of time in which the application has been in progress (submitted in September 2022), the delegated officer has determined to finalise a decision on the application, noting that a planning decision has not yet been made.

The applicant should note a licence granted by the department only provides a defence for offences under Division 3, Part V of the EP Act, provided the conditions contained within the licence have been complied with and not for any offences under planning legislation. An occupier who begins works on or operates a prescribed premises without the necessary approvals from planning authorities does so at their own risk.

Draft decision and applicant comments

Draft licence L9352/2022/1 that accompanies this report authorises emissions and discharges from the expanded operations at the existing abattoir complex (10,000 liveweight tonnes per annum). The proposed conditions in the licence, as outlined in the above risk table, have been determined in accordance with the *Guidance Statement: Setting Conditions* (DER 2015).

The applicant was provided with drafts of the licence and this report on 5 December 2023 and in addition to seeking several minor corrections and clarifications, provided additional information including an updated nutrient management plan, which was considered by the delegated officer, and relevant changes were made to the licence to reflect the updated plan.

7. Conclusion

Based on this assessment, it has been determined that once all relevant planning approvals have been obtained a licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

In accordance with the *Guidance Statement: Licence duration* (DER 2016), the duration of the licence will be 20 years.

References

1. Department of Primary Industries and Regional Development (DPIRD) 2021, Soil Landscape Mapping (DPIRD-027). Accessed from www.data.wa.gov.au.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. DER 2016, *Guidance Statement: Licence duration*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. EAQ Consulting (EAQ) 2023, *Southdale Pet Meats Abattoir: Odour Impact Assessment*, January 2023. Report prepared for Talis Consultants on behalf of Southdale Pet Meats.