



Application for licence

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

Licence number	L9288/2021/1
Applicant	Fusina Pty Ltd
ACN	008 911 546
DWER file number	DER2020/000649
Premises	Corackerup Farming 4298 Boxwood Hill – Ongerup Road COWALELLUP WA 6336
Date of report	17 January 2023
Status of report	Final

1. Purpose and scope of assessment

Fusina Pty Ltd (the applicant) is seeking retrospective approval to operate its existing piggery complex near Ongerup. A licence application was submitted under Division 3, Part V of the *Environmental Protection Act 1986* (EP Act) on 10 December 2020.

This report sets out the delegated officer's assessment of potential risk events arising from emissions and discharges that are generated from existing piggery 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

'Corackerup Farming' is an existing intensive piggery complex that has been operating since the early 1980s in the small rural location of Cowalellup, about 350 km southeast of Perth.

The existing premises comprises a mixed indoor piggery complex (conventional and deep litter sheds) with a combined design capacity of 2,688 standard pig units (SPU) and is certified under the Australian Pork industry-sponsored quality assurance program, "APIQ", which requires the operator to have in place all relevant state and local government approvals to operate.

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 design capacity (as per application)
Category 2: Intensive piggery: premises on which pigs are fed, watered and housed in pens.	2,576 animals (2,688 SPUs equivalent) at any one time

Background

The applicant has operated the piggery complex since 1988 and has undertaken several expansions since this time. The piggery operations and expansions have not been subject to a works approval, or planning approvals issued by the Shire of Gnowangerup (shire).

The applicant is also seeking retrospective planning approval from the shire, that it is operating within local government environmental requirements, as part of its ongoing APIQ certification requirements.

Existing piggery design and operation

The existing piggery complex comprises a 200 sow farrow-to-finish operation, in which animals are bred and initially reared in conventional indoor sheds, before being transferred to deep litter shelters for weaning and grow out.

There are three conventional indoor sheds which comprise concrete slatted floors and operate with a pull-plug flushing system. Piggery effluent is flushed via gravity to a series of evaporation ponds using an open gravitational trench system. There is no primary screening in place – solids are left to settle within the first two ponds, with overflow to subsequent ponds. Wastewater disposal is via evaporation due to the local climate (high annual moisture deficit, i.e., low rainfall and high evaporation). Ponds are desludged once every three years, with sludge mixed with spent bedding from the deep litter shelters and spread over paddocks on the premises (see below).

After the farrowing stage, there is a 4 – 6 week weaning stage in which weaners from the

different farrowing pens are kept together in two deep litter 'weaner' shelters. The shelters, which are located separately to the conventional sheds, comprise a roofed structure over a concrete base with straw used for bedding. Up to 70 animals are kept in each shelter. Spent bedding is removed from each shelter once every four weeks and is stockpiled (see below).

At around 8 – 9 weeks of age, animals are moved from the weaner shelters to two deep litter 'eco shelters' for grow out. The eco shelters are located adjacent to the weaner shelters and also comprise roofed structures over a concrete base with straw used for bedding. Up to 140 animals are kept in each shelter. The two shelters are divided into four 'divisions' with waste removed from each division at least once every two weeks over an eight-week period and stockpiled (see below).

Spent bedding removed from the shelter complex is stored in a large stockpile at the western end of the shelter complex over a three-year period, where sludge removed from the ponds is added and mixed. At the end of each three year period, the solid waste mixture is then spread on paddocks over the premises at an elevated rate (about 6 tonne/ha) – the paddocks are then cropped every year over the following three years with a grain wheat/barley-lupin-pasture cropping program. A total of 376 ha is available for spreading; according to the site's nutrient balance about 38% of the piggery waste can sustainably be spread on-site and the remaining 62% must 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:

- other general farming activities being conducted on the premises, including but not limited to machinery movements, land application of synthetic fertilisers, extensive agriculture such as paddock grazing of other animals, etc.;
- vehicle (i.e., livestock truck) movements on private or public roads; and
- land use zoning and compatibility with surrounding land uses.

3. Industry guidelines

The *National Environmental Guidelines for Indoor Piggeries* (NEGIP) (Australian Pork Ltd 2018) provides a general framework for managing the environmental issues associated with indoor piggeries in Australia.

The criteria outlined in Appendix A of the NEGIP has been used as a baseline for rating the vulnerability of major natural resources from the existing piggery operations and the risk of environmental impacts from the existing design and operational features.

Table 2 provides a summary of the risk of the existing piggery using the NEGIP criteria, where 1 is low risk and 4 is high risk.

Table 2: Summary of Corackerup Farming against NEGIP criteria

NEGIP aspect	Risk criteria	Risk rating
Soils of reuse areas		
Soils of reuse areas	Reuse areas:	
	• are suited to growing a broad range of broad acre crops and pastures	1
	• have a soil depth of at least 1 m	1
	• have soils that are non-rocky, non-saline and non-sodic	3
	• have soils that are sandy in texture	4
	• are not prone to waterlogging	1
	• flood at a frequency of less than once every ten years	1

	<ul style="list-style-type: none"> • have slopes that promote infiltration, rather than runoff or erosion 	1
Groundwater quality and availability	Depth to groundwater always at least 20 m below the ground surface or the base of any piggery infrastructure	1
Surface water quality and availability	The piggery is located within 100 m of the closest watercourse	4
	The piggery is located at least 800 m from the closest major water supply storage	1
	Reuse areas comply with the buffer distances specified in the NEGIP	2
	The piggery is located above the 1:100 year flood line	1
	Reuse areas are located above the 1:100 year flood line	1
Community amenity	The piggery has received no complaints from the public or regulators for at least five years	1
	Levels of odour, dust and noise around the property boundary area not routinely monitored	4
	Surrounding land is all designated rural and is not designated for future development or rezoning	1
	The piggery is partly concealed from roads and neighbours	3
	The entry point to farm provides at least 150 m good visibility in both directions	3
	Vehicle movements and other noisy activities occur only during the day, except under exceptional circumstances	1
	Mechanical equipment used on-farm is generally fitted with manufacturer specified exhaust devices	2
	Dust from traffic movements, manure handling and reuse and feed milling is not specifically controlled but dust does not seem to cause nuisance	2
	There is no complaints management procedure in place	4
	Mediation is used to try to settle disputes with neighbours	1
Design and operation		
Pig housing	The conventional sheds are constructed to maintain temperatures within the required range but require significant mechanical heating or cooling to maintain temperatures at the required range	3
	The deep litter sheds are oriented east-west and constructed to maintain temperatures within the required range with no mechanical heating or cooling	1
	The sheds bases are concreted for both the conventional and deep litter sheds	1
	Feeding systems rarely allow feed to be visible on the floor or in the bedding near the feeders	2
	Naturally ventilated sheds are reasonably well ventilated, as the sheds are separated by a distance of at least 3 times their height	3
	Stocking densities meet the requirements of the Model Code of Practice for the Welfare of Animals: Pigs	1
	Conventional sheds are regularly cleaned to maintain very	2

	clean lanes, pens and handling areas: pigs are generally clean	
	The bedding in deep litter sheds are mostly kept dry and friable; pigs are generally clean	2
	The inflow or outflow of effluent from sheds is mostly prevented by controls	3
	Water is not used to washdown deep litter housing after spent bedding is removed	Absent
Nutrient content of manure	The quantities of nutrients in effluent and manure that will be applied to land are estimated using general data in publications	3
Effluent collection system	Stormwater runoff, including roof runoff is excluded from entering the effluent collection system	1
	Effluent collection systems (e.g. channels, drains, pipes and sumps) for conventional sheds are pervious as they are not made from concrete (or similar)	4
	Effluent pits, sumps, pipes and drains are absent	4
	Effluent pits and drains have manure solids present in them after flushing or drainage and these are removed less than once a month	4
	There are no specific contingency measures to prevent spills from the system	4
	Flushing channels are flushed at least twice a week	3
	Drains, pits and sumps are inspected at least monthly for solids accumulation, leakage and deterioration	3
Effluent pre-treatment system	There is no solids separation system in place	Absent
Effluent treatment system	The effluent treatment system:	
	<ul style="list-style-type: none"> is designed to capture and store all effluent. However, treatment capacity is compromised because significant isolated sections don't provide active treatment capacity 	3
	<ul style="list-style-type: none"> sometimes produces strong odours, but these don't generally impact beyond the property boundary 	3
	<ul style="list-style-type: none"> is designed to store at least 2 years sludge 	3
	<ul style="list-style-type: none"> is lined with compacted clay 	3
	<ul style="list-style-type: none"> is designed for an overtopping frequency not exceeding 1 in 20 years where effluent disposal is by evaporation 	1
	The depth to the water table from the base of the effluent treatment system is at least 2 m	1
Solid waste storage	Solid waste storage areas are not within a controlled drainage area	4
	The base of solid waste storage areas are not built from well compacted clay or other low permeability material	4
	The depth to water tables beneath the base of manure storage areas exceeds 2 m at all times	1
	Stockpiles are generally managed to maintain low odour emissions	2
Mortalities	Dead pigs are almost always removed from the sheds or	2

management	pens daily	
	Mortalities management always occurs within 36 hours of death	2
	Mortalities management is by burial	3
	Mortalities management areas always provide at least 2 m depth between base level and groundwater	1
	Mortalities are always promptly covered with at least 300 mm of soil and continuously kept covered	1
	Mortalities management does not occur within a controlled drainage	4
	In the case of a mass mortalities event, there is a suitable site selected but no real plan for managing mass mortalities	3
Reuse areas	The nutrients in manure are budgeted to ensure they are applied at rates that are based on expected nutrient removal by crop or pasture harvest using historical property crop yields	1
	Nutrient export from reuse areas is not specifically prevented	4
	Manure is spread evenly and at times when active plant growth is expected	1
	Manure is spread at any time of the day, or commonly on weekends or public holidays	4
	Soils of reuse areas are not regularly tested	4

Comparison with the NEGIP

The existing piggery complex is sited on priority agricultural land and is well separated from populated areas and other sensitive human and environmental receptors, which reduces the risk of common environmental issues associated with conventional indoor piggeries, such as managing odour. Its location in a climate with high annual moisture deficit (i.e., low rainfall and high evaporation) further reduces the risk of environmental issues as effluent from the conventional sheds can be evaporated, thereby negating the need for disposal to land.

The design and operation of the conventional piggery sheds appears to be consistent with the NEGIP from an animal welfare standard, in terms of stocking densities, ventilation and general animal cleanliness and husbandry. However, the associated effluent collection, treatment and storage system does not appear to entirely comply with the NEGIP, due to the use of open drains and sumps that have not been constructed with concrete or similar impervious material. The design and construction standard of the existing evaporation ponds is also unclear.

The design and operation of the deep litter shelters appears to be consistent with the NEGIP; it is noted the shelter floors are not washed out after spent bedding is removed.

Solid waste storage does not comply with the NEGIP, as the area does not comprise an impermeable, bunded area. Mortalities management by burial, whilst not preferred, is acceptable subject to a higher degree of controls as per the NEGIP.

The management of solid waste material (spent bedding and pond sludge) by land application once every 3 years at the proposed loading rates, and in conjunction with the 3-yearly cropping program, is problematic as there is an expectation that applied nutrients will simply be stored in the soil and wait to be used each year – careful management and regular soil testing is required to ensure that nutrient leakage to groundwater and other forms of degradation do not occur during the course of each 3-year period.

Excess solid waste must be removed from the premises; additional properties must be identified in advance and the suitability of those properties must firstly be determined in the same manner as this assessment, including calculation of application rates based on soil-

landscape characterisation and soil testing. Additional approvals under the EP Act may also be required, if spreading more than 1,000 tonnes per year on a single premises.

4. Other approvals

Planning approvals

A retrospective development approval for an intensive piggery of up to 5,000 pigs was issued by the shire in August 2017. An advice note of the approval advises the applicant to contact the department about licensing requirements for ongoing piggery operations.

5. Consultation

The application was referred to relevant public authorities and advertised for public comment on the department's website during May 2021.

Public authorities

The Department of Primary Industries and Regional Development (DPIRD) provided comments on the following aspects:

- the use of the first two evaporation ponds appears to be effective at settling out solids, however, notes there is no information on the design and construction standard of the existing ponds. Whilst the application indicates the ponds are lined with clay, there is no details on material testing to confirm the permeability;
- a detailed water balance is required to ensure the evaporation pond are sufficiently sized, to handle the entire quantity of waste that enters them;
- solid waste needs to be stored in a dedicated stockpile area, with an impermeable pad and designed that runoff is captured and contained within a controlled drainage area – it is concerning the application suggests there is no dedicated stockpiled area;
- solid waste applied to land needs to match the demands of the crop(s) grown – there are significant risks associated with the proposal to spread every 3 or 4 years (instead of every year) at elevated rates – with the expectation being that nutrients will simply remain stored in the soil and wait to be used – this warrants annual monitoring of soils down the soil profile, as there is greater chance that nutrients are leached into the environment before they can be taken up by the cropping program, in addition to a contingency plan in the event that nutrient leaching is detected;
- the soil-landscape of the premises is suitable for disposal of solid waste (grey sandy duplex soils with gravelly horizons above clay subsoils), with the main land degradation hazard being wind erosion;
- the application notes there are around 600 mortalities per year (including stillborn) – this number seems quite high and warrants further investigation into the cause(s); and
- a better understanding of the groundwater resources in the area is needed, as the existing cluster of production bores in the centre of the premises cannot be considered representative of the entire premises. Data from DPIRD's [groundwater and salinity online mapping tool](#) indicates when these bores were last monitored in 2003, the watertable was shallow and saline, which is consistent with the bore's landscape position in an area of valley hazard.

The shire advises the piggery is consistent with its local planning scheme and in 2017 it was granted development approval retrospectively, in addition to receiving approval under the shire's health local law.

Public submissions

No public submissions were received during the public comment period.

6. 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 2020a). 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					
Category 2: Intensive piggery								
Holding, feeding and watering of animals within conventional sheds	Nutrient-laden effluent (spilt feed, water, urine, faeces), accumulated in sheds	Seepage/infiltration, causing contamination of shallow groundwater	Applicant advises the conventional sheds comprise concrete slatted floors with a pull-plug flushing system Effluent flushed to a series of effluent holding ponds via open gravitational drains	Low level on-site impacts Minor	Will probably not occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The conventional sheds have been constructed with a concrete base and concrete under-floor effluent collection channels with fully slatted flooring, which is consistent with the NEGIP. The effluent collection system comprises a "pull-plug" system, where effluent is stored in underfloor pits beneath the slatted flooring. The pits are drained regularly, via gravity release pipes, into open drains that direct effluent to a series of evaporation ponds. Open drains are preferred (for ease of inspection and cleaning); however, the drains do not appear to be impervious (concrete, fibreglass or other impervious material), which is a requirement of the NEGIP to prevent nutrient seepage. There are seven evaporation ponds which the applicant advises are clay lined; however, it is unclear to what standard the ponds have been constructed (depth of clay, compaction, permeability, etc.). Depth to groundwater in the area is about 20 m, with quality brackish to saline (non-potable). Soils are grey sandy duplex soils over clay subsoils. Providing the infrastructure is maintained to design standard, the ongoing risk of groundwater contamination from ongoing operation of the conventional shed complex appears to be acceptable.	- Infrastructure design and operational requirements specified in infrastructure table - All infrastructure must be maintained to ensure integrity is sustained
		Overtopping of effluent holding ponds, runoff to nearby watercourse, causing surface water, soil contamination or groundwater contamination	Applicant advises the combined capacity of the 7 effluent holding ponds is sufficient to contain the volumes of effluent without the risk of overtopping Diversion of roof stormwater away from ponds	Low level on-site impacts Minor	Will probably not occur in most circumstances Unlikely		Medium Acceptable, subject to regulatory controls	The evaporation ponds have a combined storage capacity that exceeds the estimated influent from the conventional sheds (760 m ³ /month). The annual water balance indicates the ponds are sufficiently sized to ensure the frequency of spill events are less than an average of one in 20 years, assuming that most of the stored effluent is evaporated during the spring and summer period and the ponds are relatively empty at the start of each winter season. The site is located in a climate with high annual moisture deficit (i.e., low rainfall and high evaporation). According to the applicant, the pond system does not overtop; the seventh pond is currently being used for storing clean stormwater, as there is sufficient holding capacity within the six other ponds. Providing a minimum freeboard is maintained, the ongoing risk of impacts from pond overtopping appears to be acceptable.
	Odour, from effluent accumulated in conventional shed drains, open drainage channels and effluent holding ponds	Unreasonable interference with the health, welfare, convenience, comfort and amenity of nearby sensitive receptors (3 within 5 km radius)	Pull-plug system flushed once a week Ponds are desludged every 3 years	Low level off-site impacts to amenity Minor	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	The NEGIP recommends fixed separation distances of at least 250 m to rural dwellings and 750 m to a townsite. The closest rural dwelling is about 1.5 km northwest of the conventional sheds and two others within a 5 radius. The nearest small town of Ongerup is about 13 km to the north. There is no recorded history of nuisance odour complaints according to the Shire of Gnowangerup from historical operations at this site, likely due mainly to there being few sensitive receptors in proximity. The absence of a solids separation system (screw press, screens, filters, etc.) is noted, where solids are not screened and flushed straight into the evaporation ponds. This aspect is inconsistent with the NEGIP and may impact the efficiency and effectiveness of the wastewater treatment process by buildup of sediment and increase the risk of odour generation. The absence of primary/anaerobic ponds is also noted as being inconsistent with the NEGIP. Providing the effluent collection system is managed according to NEGIP requirements (i.e., frequent flushing, solids separation, daily visual checks for blockages, ponds desludged when required, etc.), and considering the lack of odour complaints from historical operations, the ongoing risk of off-site odour impacts appears to be acceptable.	- Frequency of shed flushing specified - Routine inspections for blockages

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
	Odour, from deceased animals		Deceased animals are removed from pens and buried 5 times a week Animals covered with 100 mm soil	Low level off-site impacts to amenity Minor	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	Dead animals are buried on-site, which is an acceptable, but not preferred, method of disposal (rendering and composting are preferred methods for managing mortalities under the NEGIP). The burial pit on-site comprises a simple excavated trench away from the shed complex. Depth to groundwater in the area is about 20 m, with quality brackish to saline (non-potable). Soils are grey sandy duplex soils over clay subsoils. The frequency of removal from the pens and method of burial appear to be consistent with the NEGIP. Providing the minimum requirements outlined in the NEGIP are being implemented, the ongoing risk of off-site odour impacts from mortalities management appears to be acceptable.	- Dead pigs must be removed from pens and buried within 24 hours of death; - Burial pit location and burial requirements specified; - Mass mortalities contingency plan must be in place
	Noise, from animals and machinery movements		None specified	Low level off-site impacts to amenity Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	Some noise is expected during piggery operations, with the nature of animal noise and machinery movements consistent with that expected from general farming activities in a rural area. There is sufficient separation in place (>4.5 km to nearest rural dwelling, >13 km to nearest populated area); it is not reasonably foreseeable that noise will impact on the amenity of off-site human receptors.	None specified
Holding, feeding and watering of animals within deep litter shelters	Nutrient-laden leachate from spent bedding (spilt feed, urine, faeces), accumulated in shelters	Seepage/infiltration, causing contamination of shallow groundwater	Applicant advises the deep litter shelters comprise concrete base	Low level on-site impacts Minor	Will probably not occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The deep litter shelters have been constructed with a concrete base, which is consistent with the NEGIP. Providing the deep litter shelters are managed according to NEGIP requirements, the ongoing risk of groundwater contamination from ongoing operation of the deep litter shelters appears to be acceptable.	None specified
	Odour, from spent bedding accumulated in shelters	Unreasonable interference with the health, welfare, convenience, comfort and amenity of nearby sensitive receptors (3 within 5 km radius)	Spent bedding replaced every 4 – 8 weeks, depending on class of pigs	Low level off-site impacts to amenity Minor	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	The NEGIP recommends fixed separation distances of at least 250 m to rural dwellings and 750 m to a townsite. The closest rural dwelling is about 1.5 km northwest of the conventional sheds and two others within a 5 radius. The nearest small town of Ongerup is about 13 km to the north. There is no recorded history of nuisance odour complaints according to the Shire of Gnowangerup from historical operations at this site, likely due mainly to there being few sensitive receptors in proximity. Spent bedding is removed from the weaner huts every 4 weeks and every 8 weeks within each division of the grow-out shelters. This removal frequency is consistent with the NEGIP. Providing the deep litter shelters are managed according to NEGIP requirements, the ongoing risk of off-site odour impacts from ongoing operation of the deep litter shelters appears to be acceptable.	- Minimum frequency of spent bedding removal, as per NEGIP
	Odour, from deceased animals		Deceased animals are removed from pens and buried 5 times a week Animals covered with 100 mm soil	Low level off-site impacts to amenity Minor	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	Mortalities in the deep litter shelters are managed in the same manner as the conventional sheds (refer to above), which appears to be acceptable.	Refer above
	Noise, from animals and machinery movements		None specified	Low level off-site impacts to amenity Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	Noise from operation of the deep litter shelters is not expected to differ significantly from the conventional sheds (refer to above), which appears to be acceptable.	None specified
Category 2: Solid waste storage and utilisation								
Transfer of spent bedding from deep litter shelters Stockpiling of spent bedding Mixing pond sludge with spent	Nutrient-laden leachate from spent bedding, mobilised by surface water runoff	Uncontrolled discharge, runoff to nearby watercourse, causing surface water contamination, impacts to health of native vegetation	Stockpiling spent bedding on bare ground Mixing sludge with stockpiled bedding	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Expected to occur in most circumstances Almost certain	High Acceptable, subject to multiple regulatory controls	Spent bedding removed from the deep litter shelters appears to be stockpiled on the bare ground at the western end of the shelters, which is inconsistent with the NEGIP that requires solids storage on impermeable, bunded areas to protect water resources. Controls in the form of improvement conditions have therefore been added to the licence to require upgrades to ensure compliance with this aspect of the NEGIP.	- Improvement conditions to require construction of an impermeable bunded area for storage of spent bedding and pond sludge, and a containment pond

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
bedding, in preparation for spreading	Odour, from stockpiles, mixing of pond sludge	Unreasonable interference with the health, welfare, convenience, comfort and amenity of nearby sensitive receptors (3 within 5 km radius)	Spent bedding stockpiled in large windrows	Low level off-site impacts to amenity Minor	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	The NEGIP recommends fixed separation distances of at least 250 m to rural dwellings and 750 m to a townsite. The closest rural dwelling is about 1.5 km northwest of the conventional sheds and two others within a 5 radius. The nearest small town of Ongerup is about 13 km to the north. There is no recorded history of nuisance odour complaints according to the Shire of Gnowangerup from historical operations at this site, likely due mainly to there being few sensitive receptors in proximity. Providing that spent bedding is stored and managed according to NEGIP requirements, the ongoing risk of off-site odour impacts from ongoing stockpiling of spent bedding appears to be acceptable.	- Stockpile management specified, in accordance with NEGIP
Category 2: Solid waste utilisation								
Spreading of solid waste (spent bedding mixed with pond sludge) over minimum 376 ha of dryland cropping land	Leaching or runoff of nutrients from spread waste	Contamination of soil, causing contamination of shallow groundwater Soil acidification Excessive build-up of soil P	Solid waste is evenly spread at a consistent application rate (6 t/ha)	Low-level on-site impacts Minor	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The delegated officer has considered advice provided by DPIRD on the applicant's proposal to spread composted manure on the premises and has determined there is a risk of nutrient leakage to groundwater and other forms of land degradation from the 3-yearly application rate of 6 t/ha over the available 292 ha of cropping land. Careful management and regular monitoring will be required to ensure that nutrient leakage to groundwater and other forms of degradation do not occur. At the proposed spreading rate, up to 38% of the solid waste generated by the piggery over a 3-year period can be spread on the premises, with the remaining 62% required to be removed off-site. As the proposed controls are critical for maintaining an acceptable level of risk, they will be imposed on the licence as ongoing operational controls.	- Waste utilisation areas delineated on licence; - Maximum application rates specified; - Spreading requirements specified; - Excess solid waste must be removed from site; - Annual soil sampling requirements
	Odour, from spread solid waste	Unreasonable interference with the health, welfare, convenience, comfort and amenity of nearby sensitive receptors (3 within 5 km radius)	Not spreading within 25 m of premises boundary Timing of spreading during optimal weather conditions	Low level off-site impacts to amenity Minor	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	There are 3 receptors within proximity to the paddocks where waste is spread, therefore careful management and timing of solid waste spreading is required to minimise off-site amenity impacts. The NEGIP provide detailed recommendations on the optimal times and conditions for solid waste spreading, such as not spreading if heavy rain is expected or has fallen over the past 48 hours, spreading during conditions that maximise odour dispersion, incorporating spread manure into the soil as soon as practicable after application, etc.	- Must only spread during optimal weather conditions, as per NEGIP

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Guideline: Risk Assessments (DWER 2020).

7. Decision

The delegated officer has determined that ongoing operation of an intensive piggery complex on the premises, with an assessed design capacity of 2,688 SPUs, does not pose an unacceptable risk of impacts to public health or the environment, providing the following aspects are addressed to ensure compliance with the NEGIP:

- the upgrading of the open effluent drains with concrete or similar impervious material; and
- construction of an impermeable, bunded area for stockpiling spent bedding and pond sludge.

The remaining aspects of the operation, such as the siting, design and day-to-day management of the piggery have been assessed as being consistent with the NEGIP and do not pose an unacceptable risk of impacts to on- and off-site receptors. This is based on the following:

- being located in a climate with high annual moisture deficit, which lowers the overall risk of environmental impacts commonly associated with wet conditions;
- the piggery complex being located on priority agricultural land and well separated from populated areas and nearby (human) sensitive receptors;
- both the conventional and deep litter sheds have been constructed with a concrete base; and
- evaporation ponds having sufficient storage capacity so that they spill no more frequently than an average of one in 20 years and assumed are fit for purpose (clay-lined).

Key risks from ongoing operations of this piggery largely relate to the management of solid waste, i.e., the stockpiling and subsequent spreading of spent bedding and pond sludge over paddocks on the premises. This aspect requires careful management and regular monitoring to ensure that nutrient runoff and leakage, and other forms of land degradation do not occur.

The delegated officer is satisfied the above controls and monitoring lower the overall risk profile of the premises and are critical for maintaining an acceptable level of risk of impacts during operations; as such they will be imposed on the licence as infrastructure controls.

Applicant comments on drafts

Licence L9288/2021/1 that accompanies this report authorises emissions and discharges from ongoing operations of the existing piggery complex (2,688 SPU capacity). The proposed conditions in the licence, as outlined in the above risk table, have been determined in accordance with the *Guideline: Setting Conditions* (DWER 2020).

The applicant was provided with drafts of the licence and this report on 13 December 2022 and commented that many of the proposed conditions are excessive for 'this type of piggery and its location'. The department considers all proposed conditions are consistent with the minimum requirements of the NEGIP.

The applicant also appears to give significance to annual audits conducted by APL under the APIQ program; however, the delegated officer notes these audits are a simple on-farm QA assessment with the primary focus being animal welfare. Whilst the APIQ audits are an important tool in their own right, they do not include an assessment against the design and operational aspects of the NEGIP, or the ongoing environmental performance of a piggery.

8. Conclusion

Based on this assessment, it has been determined a licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Australian Pork Ltd 2018, *National Environmental Guidelines for Indoor Piggeries* (NEGIP).
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2019, *Guideline: Industry Regulation Guide to Licensing*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.