



Application for works approval

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

Works approval number	W6699/2022/1
Applicant	Caves Road Margaret River Pty Ltd
ACN	647 913 906
DWER file number	DER2022/000266
Premises	Caves Road Farms 5103 Caves Road COWARAMUP WA 6284
Date of report	1 May 2023
Status of report	Final

1. Purpose and scope of assessment

Caves Road Margaret River Pty Ltd (Caves Road Farms/the applicant) is seeking to establish a small outdoor piggery. An application for works approval was submitted under Division 3 Part V of the *Environmental Protection Act 1986* (EP Act) on 17 June 2022.

This report sets out the delegated officer's assessment of potential risk events arising from emissions and discharges that will be generated from the intensive keeping of animals on 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

Caves Road Farms proposes to establish a small scale, outdoor rotational piggery at its existing mixed species farming operation on the outskirts of Cowaramup.

The proposal comprises a 15 sow farrow-to-finish operation, in which animals will be reared in a free range setting over two 18 ha operational areas that will be rotated, using moveable skid shelters and huts and feeding equipment (no fixed infrastructure). Three areas within each operational area will be sectioned off for the different stages of production using moveable hot wires: one for lactating sows and sucker piglets; a second for gestating sows; and a third for growing out weaners through to slaughter weight.

Following 2 years of operation on one 18 ha area, all piggery activities will be rotated to the second, alternate 18 ha area. The first area will then be remediated over the following 2-year period, with accumulated nutrients removed through a hay and silage cropping program.

With each sow expected to raise up to 16 piglets per year, the total composition of animals on the premises will be 107 at any one time (equates to 112 standard pig units, SPUs). The applicant is aware the scale of the proposed development does not trigger the prescribed threshold for category 69: intensive piggery of 500 animals, as defined in Schedule 1 of the *Environmental Protection Regulations 1987*; however, has chosen to apply for a works approval.

Table 1: Prescribed premises category

Classification of premises	Assessed production capacity (as per application)
Category 69: Intensive piggery: premises on which pigs are fed, watered and housed in pens.	107 animals (112 SPUs)

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:

- historical and existing rearing of livestock (other than pigs) on the premises, including the land for production of venison, cattle, sheep and goats;
- surface water and groundwater licensing requirements (subject to separate approvals under the RIWI Act); and
- land use zoning and compatibility with surrounding land uses.

3. Industry guidelines

The *National Environmental Guidelines for Rotational Outdoor Piggeries* (NEGROP) (Australian Pork Ltd 2013) provides a general framework for managing the environmental issues associated with outdoor piggeries in Australia.

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

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

Table 2: Summary of Caves Road Farm proposal against NEGROP criteria

NEGROP aspect	Risk criteria	Risk rating
Natural resources and amenity		
Soils of pig paddocks	Paddocks used to run pigs:	
	<ul style="list-style-type: none"> are suited to growing crops or pastures that can be cut and carted 	2
	<ul style="list-style-type: none"> have a soil depth of at least 1 m 	1
	<ul style="list-style-type: none"> have soils that are well structured, non-rocky, non-saline and non-sodic 	1
	<ul style="list-style-type: none"> have soils that are loam to light clay in texture 	1
	<ul style="list-style-type: none"> are prone to waterlogging 	3
	<ul style="list-style-type: none"> are located above the 1:100 year flood level 	1
Groundwater quality and availability	<ul style="list-style-type: none"> have slopes of 0 – 2% 	3
	The depth to groundwater is sometimes present at a depth of less than 2 m below the ground surface of paddocks used to run pigs	4
Surface water quality and availability	Water for potable use is sourced from bores within 1 km of the piggery	4
	Paddocks used to run pigs:	
	<ul style="list-style-type: none"> are located within 100 m from the closest watercourse 	4
	<ul style="list-style-type: none"> are located within 800 m from the closest major water supply 	4
	<ul style="list-style-type: none"> don't comply with the buffer distances in Table 8.1 of the NEGROP but there are vegetative filter strips (VFS) or terminal ponds between these areas and all watercourses 	3
Community amenity	<ul style="list-style-type: none"> are located above the 1:100 year flood level 	1
	There is ample allocation and supply of surface water that is a suitable quality to meet requirements for use in the piggery	1
Community amenity	The pig paddocks will always meet the minimum fixed separation distances specified in Table 8.2 of the NEGROP	1
	Surrounding land is all designated rural and is not designated for future development or rezoning	1
Design and operation		
Nutrient budgeting and monitoring	The quantity of nutrients deposited over the paddocks as pig manure will be estimated before or within the first 12 months of the pigs moving onto an area and a pig-crop/forage/pasture rotation able to remove the added N, P & K or achieve sustainable soil nutrient levels over a maximum of six years is planned	1
	Soil sampling will occur before the commencement of each pig phase that is expected to exceed 24 months in length; at the end of any 24 month period in which pigs are stocked on	1

	an area for any length of time; and at the end of any subsequent 24 month period that includes a pig phase	
	Soil sampling will produce a set of samples that are representative of the expected nutrient-rich area of each block of paddocks	1
	Soil sampling depths and analysis parameters will be in accordance with Table 15.1 of the NEGROP	1
	Before the commencement of a pig phase expected to exceed 24 months in length the results of soil testing will show the soil properties are below the trigger values of sustainability in Section 15 of the NEGROP or similar to those of a background plot or they are satisfactory to DWER	1
Distribution of manure nutrients	In breeder paddocks, shelters and/or feeding points will be moved at least every 3 months to promote more even nutrient deposition over the land	1
	In grower paddocks, shelters and/or feeding points will be moved at least every 6 weeks to promote more even nutrient deposition over the land	1
	Spent bedding produced from the shelters will be removed from the pig paddocks and taken off-site	1
Nutrient loss prevention	Potential nutrient loss pathways are identified in a Nutrient Management Plan which also includes an action plan for addressing these concerns	1
	Nutrient export from pig paddocks will be minimised by selecting sites with a gentle slope and maintaining sufficient groundcover over the paddocks for most of the year in conjunction with structures that effectively limit erosion (e.g., contour banks) and runoff	2
	Nutrients in runoff or soil eroded from the pig paddocks will be controlled through meeting the recommended buffer distances specified in section 8.1 of the NEGROP and appropriately designed VFS at least 10 m wide	1
	Wallows will be lined with clay-loam to clay soils	1
Mortalities management	Dead pigs will be removed from the paddocks daily	1
	Mortality management will always occur within 24 hours of death	1
	Mortality management will be by rendering (off-site)	1
	To be prepared for a mass mortalities event, there is a suitable site selected and a detailed plan for managing mass mortalities	1
Paddock rehabilitation	Inspection of each block of paddocks to identify soil erosion or structural issues will occur on completion of the pig phase and a plan to address the issues is developed and implemented within a month of inspection	1
	Where significant soil erosion has resulted from the pig phase, the site will be remediated by back-filling the eroded area with soil and growing a pasture ley crop in the first year after the pig phase	1
	Where significant soil compaction has resulted from the pig phase, the site will be remediated by growing a pasture ley crop in the first year after the pig phase and by only cultivating soil when the moisture content is between wilting point and field capacity	1

	Wallows will be remediated when they are replaced and if needed within 3 months of completion of the pig phase by deep ripping the soil, applying gypsum, filling with soil and levelling to match the slope of the land	1
	Before a new pig phase commences, pasture or a forage crop will be well established over the whole paddock area	1
Odour, dust and noise	Odour, dust and noise will be minimised by maintaining clean dry bedding in shelters; promptly remediating and/or replacing wallows and other wet areas if they become odorous; ensuring noisy activities only occur during the day; ensuring dust does not reach nuisance levels off-farm	1
	There is a complaints management procedure in place that includes complaints recording, investigation, corrective action and appropriate consultation	1
	Mediation will be used to try and settle disputes with neighbours if there are issues	1

Summary of risk against NEGROP criteria

The paddocks proposed to run pigs are not ideally suited for this purpose due to potential perched water in the winter months – careful management (as detailed in the sections above) and regular monitoring would be required to ensure nutrient leakage to groundwater and other forms of land degradation, and contamination of surface waters, are minimised.

The low risk determined for many of the design and operational aspects of the proposed piggery are solely based on the applicant's commitment to comply with the specified criteria.

4. Other approvals

Planning approvals

The proposed piggery received planning approval on 5 April 2023 from the Shire of Augusta Margaret River (shire).

The shire received several submissions from adjoining landowners raising concerns about the compatibility of a piggery in this location and potential land use conflicts.

5. Consultation

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

Public authorities

The Department of Primary Industries and Regional Development (DPIRD) considers the proposal presents a low risk to the environment, due to the small scale and relatively large rotational areas. DPIRD also considers the applicant has adequately addressed the management of nutrients and separation distances to surface water bodies and other nearby sensitive receptors.

A response from the shire was not received within the specified time period.

Public submissions

Several submissions were received during the public comment period, predominantly from adjacent landowners, in which concerns were raised about the suitability of a piggery in such a wet location and the potential impacts to human health and the environment, particularly impacts to local amenity from nuisance odour and dust and impacts to the Ellenbrook and Cowaramup Brook surface water catchments and local groundwater resources.

Several other matters were also raised in submissions that are not directly related to emissions and discharges from the proposal and are beyond the scope of Division 3 Part V of

the EP Act, including animal health and welfare, biosecurity and disease, nuisance pests (flies, mosquitoes, and other vermin) and devaluation of land.

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 69: Intensive piggery								
Feeding, watering and housing of animals within paddocks	Nutrient-laden leachate (from manure, urine) accumulated in paddocks	Seepage/infiltration, causing contamination of shallow groundwater	Paddocks with low stocking density (1,600 m ² /SPU) Not allowing pigs to access land when it is waterlogged or inundated over winter – Winter Management Plan being prepared Refer to controls listed in Table 2 for: <ul style="list-style-type: none"> Nutrient budgeting and monitoring; Distribution of manure nutrients Nutrient loss prevention 	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Risk event could occur at some time Possible	Medium Acceptable, subject to regulatory controls	Depth to groundwater has been measured as less than 2 m across the premises during the summer period (2.16 – 0.84 m), with several public submissions raising concerns they have regularly observed heavy waterlogging and localised flooding in the paddocks, especially after heavy rainfall. Several public submissions have also raised concerns about the suitability of the premises as a piggery, and lack of separation and potential impacts to, shallow groundwater. Soils on the premises are deemed suitable for the proposed use as a free-range piggery. Areas of deep sands are reported and these, along with wet areas, will require careful management to ensure the risk of nutrient leakage to groundwater and other forms of land degradation are minimised. The applicant acknowledges there is shallow groundwater the site and that areas of deep sands and other wet areas may become waterlogged during winter or following heavy rainfall. The piggery range area will therefore be fenced and located away from the lowest lying areas on the premises. Should areas within the piggery range become waterlogged, animals will be relocated to higher ground, until the land has dried out. Due to the small size of the piggery and relatively large operational areas, and the proposed rotational cropping plan to remove the accumulated nutrients, the delegated officer is satisfied there is a low risk of nutrient leakage to groundwater. Given the above, the delegated officer considers the risk of nutrient leakage to groundwater and other forms of land degradation occurring can be mitigated with careful management and regular monitoring in place, primarily by excluding animals from accessing areas that are waterlogged or inundated and rotating and cropping paddocks in the proposed manner.	<u>Works controls:</u> <ul style="list-style-type: none"> Establishing fenced off ROP areas CDA to be bunded to prevent surface water ingress into ROP areas Baseline groundwater monitoring and soil testing <u>Operational controls:</u> <ul style="list-style-type: none"> ROP controls, rotations, cropping requirements Waterlogging controls Ongoing groundwater monitoring and soil testing Fertcare accredited agronomist to review the manure application program, with application rates to follow the Fertcare guidelines (with P as limiting factor)
	Surface water runoff contaminated with nutrients (from manure, urine), salts, etc.	Overland runoff from paddocks to on-site drainage lines, causing surface water contamination	Pig paddocks will be fenced to ensure at least 30 m separation to on-site drainage lines VFS will be in place using existing established grasses Contour banks will be constructed across paddocks to divert surface flows to a new dam	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Risk event could occur at some time Possible	Medium Acceptable, subject to regulatory controls	Surface water runoff during rainfall events may become contaminated from pig paddocks and cause impacts to the on-site drainage lines if not controlled. Several public submissions raised concerns about potential impacts to local waterways from uncontrolled runoff from pig paddocks. All pig paddocks will be fenced off to ensure a minimum separation of 30 m to the on-site drainage lines, with VFS in place comprising existing established paddock grasses. Surface water will be managed by the applicant to reduce inundation and waterlogging and to collect surface water in a new dam. This will involve constructing contour drains – the applicant must ensure flows from earthworks and not discharged indiscriminately on neighbouring properties and that stream flows are not significantly diminished or degraded (expert advice should be used to plan the works and use appropriately qualified contractors for construction).	<u>Works controls:</u> <ul style="list-style-type: none"> Construction of contour drains Construction of new runoff dam <u>Operational controls:</u> <ul style="list-style-type: none"> Maintain surface water controls, VFS, buffers
	Odour, from animals and manure accumulated in paddocks	Unreasonable interference with the health, welfare, convenience, comfort or amenity of nearby sensitive receptors (>380 m away and others within 500 m)	Large paddocks with low stocking density (1,600 m ² /SPU) Shelters, feeders, etc. relocated every 3 or 6 weeks	Low level off-site impacts Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, subject to regulatory controls	The NEGROP recommends fixed separation distances of at least 250 m to rural dwellings, 500 m to rural residential areas and 750 m to a townsite. The closest rural dwelling is about 380 m from the proposed pig paddocks, with several other rural dwellings within 500 m. There is also a short-stay accommodation premises within 500 m of the premises. The nearest small town of Gracetown is about 3.4 km northwest. The delegated officer considers outdoor piggeries, in general, pose a lower risk of causing odour impacts, due to the less intensive nature of the operations, and providing they are managed according to sustainable nutrient loading rate criteria. Given the small scale (i.e., well below the prescribed threshold for category 69) and proposed low stocking density (1,600 m ² /SPU), and providing the applicant manages the pig paddocks to ensure even distribution of manure, spent bedding is removed directly from site, etc.,	<u>Operational controls:</u> <ul style="list-style-type: none"> Minimum frequency of shelter rotation, removal of manure and spent bedding from paddocks Maintenance of ground cover over all operational pig areas (no bare patches) No on-site spreading of solid waste

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 delegated officer considers there is a low risk of odour from the piggery significantly impacting on the amenity and health of off-site human receptors.	
	Dust, from animals and machinery movements		Large paddocks with low stocking density (1,600 m ² /SPU) Maintenance of groundcover in paddocks Provision, maintenance and remediation of wallows	Low level off-site impacts Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	Some additional dust is expected during operation of the piggery; however, given the small scale of the proposed piggery, separation to nearby receptors and being located in a rural area, and if ground cover is maintained over active pigs areas (for managing land degradation issues), the delegated officer does not reasonably foresee dust levels reaching nuisance levels off the premises.	None specified.
	Noise, from animals and machinery movements		Sufficient separation distance in place to nearby human receptors Low animals numbers	Low level off-site impacts Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	Some additional noise is expected during operation of the piggery; however, the nature of animal noise and machinery movements is likely to be similar to existing activities at the premises, and given the small scale of the proposed piggery, separation to nearby receptors and being located within a rural area, the delegated officer does not reasonably foresee off-site receptors being impacted by noise.	None specified.

7. Decision

The delegated officer has determined the proposal to establish an outdoor rotational piggery, with an assessed capacity of 112 SPUs, 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 proposed piggery, which does not trigger the prescribed threshold;
- being suitably located on priority agricultural land; and
- the proposal complies with relevant environmental guidelines (NEGROP), including the management of nutrients, separation distances to water bodies and other sensitive receptors, mortalities and groundwater monitoring.

To minimise the potential for impacts to human health and the environment, the applicant has proposed the following controls, which will be imposed on the works approval as they are critical for ensuring an acceptable level of risk can be maintained during operations:

- fencing the piggery range area, away from the lowest lying areas on the premises and watercourses; and
- construction of contour drains that divert surface water runoff from the piggery range area to a new dam, i.e., away from existing drains/waterways on the premises.

In addition, the applicant proposes to conduct groundwater monitoring and soil testing on a biannual basis, to provide assurance that piggery operations are not impacting on groundwater quality.

The delegated officer is satisfied the above controls and monitoring lower the overall risk profile of the premises, and adequately address the concerns raised in public submissions regarding the impacts to local amenity from odour and dust and impacts to the Ellenbrook and Cowaramup Brook surface water catchments and local groundwater resources.

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.

Having regard to the above, the delegated officer initially declined to make a determination on the works approval application, until a planning decision had been made on the proposal.

Draft decision and applicant comments

Draft works approval W6699/2022/1 that accompanies this report authorises construction only. The proposed conditions in the works approval, 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 works approval and this report on 11 October 2022 and sought only minor corrections and clarification.

As the proposed operation does not trigger the prescribed threshold for either category 2 or 69, a licence is not required for operation of the premises.

8. Conclusion

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

References

1. Australian Pork Ltd 2013, *National Environmental Guidelines for Outdoor Rotational Piggeries* (NEGROP).
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

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