



Your ref: PA21/358: RF:wj
Our ref: RF10038-02, PA 044053
Enquiries: Jane Sturgess, Ph 9550 4228

Shire of Serpentine Jarrahdale
6 Paterson Street
Mundijong WA 6123

Attention: Ryan Fleming

Dear Ryan

LOT 504 YANGEDI ROAD, KEYSBROOK – AMENDMENT TO ABATTOIR – AMENDED NUTRIENT AND IRRIGATION MANAGEMENT PLAN

Thank you for providing the amended nutrient and irrigation management plan (NIMP) received 16 August 2021 for the Department of Water and Environmental Regulation (Department) to consider.

The Department has reviewed the *Nutrient and Irrigation Management Plan: Lot 504 Yangedi Rd, Keysbrook* (Revision 6 dated August 2021) and provides the attached further comments for your consideration.

These comments should be reviewed and actioned alongside comments from the Department of Primary Industries and Regional Development and the Shire. If there are any conflicts between comments from different parties it is expected that document author will mediate an agreed position between the relevant parties.

Where the Department has a statutory role, planning applications should be considered prior to the Department issuing any relevant permits, licenses and/or approvals.

In the event there are modifications to the proposal that may have implications on aspects of environment and/or water management, the Department should be notified to enable the implications to be assessed.

Should you require any further information on the comments please contact the undersigned on 9550 4228.

Kwinana Peel Region

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Ordinary Council Meeting - 15 November 2021

Yours sincerely



Jane Sturgess
Acting Program Manager – Planning Advice
Kwinana Peel Region

24 / 09 / 2021

Cc: Leon van Wyk
Department of Primary Industries and Regional Development

Attachment 1 - Department of Water and Environmental Regulation comments on the amended Nutrient and Irrigation Management Plan: Lot 504 Yangedi Rd, Keysbrook

Contact for further information: Jane Sturgess on 9550 4228

Topic	Issue	Suggested changes	Author's Response	DWER's Response
	<p>Compliance with relevant policies, regulations and guidelines.</p> <p>The abattoir proposal subject to the following policies, regulations, guidelines and plans:</p> <p><i>Environmental Protection Peel Inlet - Harvey Estuary Policy (EPP) (EPA,1992);</i></p> <p><i>State Planning Policy 2.1 (SPP 2.1) Peel Harvey Coastal Plain Catchment (WAPC, 2003); and</i></p> <p><i>Environmental Protection (Abattoir) Regulations 2001</i></p> <p>The proposal does not demonstrate compliance with the referenced polices and regulations, and further details are provided below.</p>	<p>Further detail below.</p>		

Nutrient Balance	<p>A nutrient balance for the site is required to confirm assumptions that are included in the NIMP. A nutrient balance completed by the Department derived from information provided in the NIMP, shows the nutrient input from the irrigation of wastewater (as well as solid wastes) to be significantly higher than the input rate targets of 45 kg/ha/year for nitrogen and 6.5 kg/ha/year for phosphorus.</p> <p>The nutrient inputs are in contrary to the <i>Hydrological and nutrient modelling of the Peel-Harvey catchment</i> (DoW, 2011) and <i>Water Quality Improvement Plan for the Rivers and Estuary of the Peel-Harvey System</i> (EPA), 2008). Simply diluting the wastewater captured in the washdown pond to be irrigated onto a larger area does not reduce the amount of nutrients discharging into the catchment every year. The nutrient balance of liquid and solid waste (including composted manure, fertiliser application to paddocks, fodder, grazing animals, animals in holding pens, etc) are to meet the required nitrogen and phosphorus input targets.</p> <p>Also, the NIMP states that sheep are not fed up to 24 hours prior to</p>	<p>As per the <i>Environmental Protection (Abattoir) Regulations 2001, Industry Regulation fact sheet – Abattoir</i>, and <i>Water Quality Protection Note 98 – Rural Abattoirs</i> (WQPN 98) (DWER, 2007), wastewater is to be processed through a wastewater treatment system. This involves the use of biological treatments to stabilise and reduce residual organic matter as well as on-site management requirements to meet nutrient input targets for the entire lot. WQPN 98 provides guidance on the two-step process for treating liquid wastewater.</p> <p>Update the nutrient balance to incorporate all phosphorus and nitrogen inputs encompassing best management practices across the property.</p>	<p>Nutrient balance amended after wastewater testing, and review of the calculation approach.</p> <p>Please refer to Section 3.2. After a site visit on 23/07/2021, the applicant is processing lambs and not sheep. The issue 6 was amended taking this information into account.</p>	<p>How is it that the nutrient concentrations are lower than the industry average?</p> <p>As per <i>Environmental Protection (Abattoirs) Regulations 2001</i>, abattoirs with a production or design capacity between 100 and 1,000 tonnes per year are required to install treatment systems. Dilution does not treat wastewater, nor reduce the yearly export loads.</p> <p>Diluting wastewater does not decrease the annual nutrient load. Irrigating this untreated wastewater increases nutrients and groundwater head, thus increasing movement towards Punrak Drain.</p> <p>Not addressed in NIMP</p>
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	<p>arrival at the abattoir to minimise manure inputs. However if processing is delayed and the sheep are put into the holding areas for up to 5 days, the sheep will be fed. This will be an addition of nutrients. The holding areas are not lined with concrete and therefore an addition of N and P to be included in the nutrient calculations.</p>			
Separation to Groundwater	<p>Figure 7 includes minimum groundwater level contours. This does not demonstrate the requirement of 2m separation to the maximum groundwater.</p> <p>Abattoir and irrigation areas are to be sited in locations where there is a greater than 2m separation to the maximum groundwater level. Modelling carried out by the Department indicates the depth to maximum groundwater is less than 2m. Required separation to groundwater is not achieved in the proposed increased irrigation area.</p>	<p>The figures must include the maximum groundwater level contours taken from the Department's Lower Serpentine hydrological studies. This can be accessed by contacting the Department.</p> <p>The additional 2ha irrigation area is not supported due to insufficient clearance from groundwater.</p>		<p>Not addressed in NIMP</p> <p>Again, the method in how the maximum groundwater level was determined was not included. Additional wastewater within existing 3ha irrigation area not supported. Required separation to groundwater is not achieved. Increasing irrigation of diluted wastewater only increases hydraulic head.</p>

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Nutrient Application	<p>As detailed above, dilution does not reduce the yearly export loads of nitrogen and phosphorus, nor remove pathogen content. It just spreads out the application of nutrients over time as well as being an inefficient use of water by irrigating over winter months when irrigation is not required and increases groundwater movement by increasing the groundwater head.</p> <p>Also, the set rate of fertiliser applied to paddocks (6.5kg/ha/year phosphate) does not comply with best practice management. Soil and tissue testing should be undertaken to determine minimum fertiliser requirements to ensure nutrients stay on the property and not end up in the catchment.</p>	<p>As per the <i>Environmental Protection (Abattoir) Regulations 2001</i>, a wastewater treatment system is to be installed and used to treat wastewater. Prior to any application through irrigation, the treated wastewater should then be sampled to determine that this liquid (in addition to the site's solid waste nutrient input) can meet the nutrient targets required in the referenced policies, guidelines and plans. Wastewater to then be held in suitably sized tanks when water is then required for irrigation.</p> <p>Further advice regarding nutrient requirements for desired pasture growth can be found here https://estuaries.dwer.wa.gov.au/strategies/sustainable-agriculture/soil-testing/</p>		<p>Not addressed. As above regarding dilution not a method of wastewater treatment for the reduction of annual nutrient loads.</p> <p>Not addressed in NIMP</p>

Monitoring and contingency measures	<p>The downstream bores MB2 and MB3 presented increased nitrogen and phosphorus levels in winter 2018. This demonstrates that the site's activities and nutrient application is having an impact.</p> <p>In addition to the above concerns, the report does not include monitoring results from 2019 and 2020, and only includes 2018. With the limited monitoring data, Bassendean soil type and no submission of yearly monitoring reports (previous commitment) this proposal does not give confidence that existing and proposed abattoirs activities are managed in accordance with policy, regulations and guidelines.</p> <p>Also, all sampling is to be conducted using NATA approved techniques and by a NATA approved laboratory. Include a copy of the lab results within the appendices.</p>	<p>As required under the <i>Abattoir Regulations</i>, <i>Abattoir fact sheet</i>, and <i>WQPN 98</i>, the existing activities requires further nutrient management including the requirement for a wastewater treatment system.</p> <p>Also, the proposed contingency measures do not reduce nutrient export loads.</p> <p>Include all the monitoring results from 2018, 2019 and 2020 for each sample result within an appendices. Yearly monitoring reports for existing approved activity to be submitted.</p>		<p>Not addressed. Abattoirs with a production or design capacity between 100 and 1,000 tonnes per year are regulated under the <i>Environmental Protection (Abattoirs) Regulations 2001</i>.</p> <p>As per <i>Abattoir Regulations, Industry Regulation fact sheet - Abattoir</i>, and <i>WQPN 98</i>, all washdown water is to be connected to a wastewater treatment system and output water tested to ensure if meets the nutrient targets. Dilution is not a wastewater treatment system. Diluting effluent does not decrease the annual nutrient load.</p> <p>Although the report states that quarterly water quality sampling has been carried out in 2019 and 2020, these results have not been included and were not submitted to DWER or the Shire as a requirement of previous approval. Nor was water levels. Proponent is not fulfilling previous approval requirements.</p> <p>Section 6.3.4 Groundwater Quality – Why are two standard deviations added to monitoring results for trigger values? Not industry standard. Monitoring results in tables 5.1, 5.2 and 5.3 indicate increased phosphorus levels in the monitoring bore located near the irrigation area. Also, having a trigger value of 30.89 for Total N is a significantly over a level whereby contingency actions are initiated.</p>
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	<p>Lastly, it is not clear where the monitoring bores and irrigation area are located in relation to the abattoir operations. Include a figure that includes the entire site with monitoring bores, production bore, irrigation area, holding yards, wastewater pond, irrigation tanks</p>	<p>Provide amended or additional figures to clearly illustrate the property's operation.</p>		Addressed
Other comments	<p>As per the Regulations, containment areas are to be impermeable with concrete flooring of the sheds, ramps, raceways, pens, composting areas, etc and to be bunded to contain all leachate. The washdown of transport trucks are to occur on sealed surfaces that drain towards the wastewater treatment pond.</p> <p>Clean stormwater should be kept separate from contaminated areas and directed to the stormwater drainage system to infiltrate where practical. Include a stormwater plan that illustrates and demonstrates this.</p>	<p>Provide plans to demonstrate bunded impermeable areas.</p>		<p>Partially addressed. However, demonstration that all operation areas contain impermeable surfaces and bunded have not been included.</p> <p>Not addressed in NIMP</p>

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	<p>Further guidance can be found from:</p> <ul style="list-style-type: none"> • <u>Environmental Protection (Abattoirs) Regulations 2001</u> • <u>Industry Regulation Fact Sheet - Abattoir</u> (DWER, 2018) • <u>Hydrological and nutrient modelling of the Peel-Harvey catchment</u> (DoW, 2011) • <u>Water Quality Improvement Plan for the Rivers and Estuary of the Peel-Harvey System</u> (EPA, 2008) • <u>Environmental Protection Peel Inlet - Harvey Estuary Policy</u> (EPA, 1992) • <u>State Planning Policy 2.1 - Peel Harvey Coastal Plain Catchment</u> (WAPC, 2003) • <u>Water Quality Protection Note 98 – Rural abattoirs</u> (DoW, 2007) • <u>Water Quality Protection Note 39 – Ponds for stabilising organic matter</u> (DoW, 2009) • <u>Water Quality Protection Note 22 – Irrigation with nutrient rich wastewater</u> (DoW, 2008) 			