

Decision Report

Application for Works Approval

Part V Division 3 of the Environmental Protection Act 1986

Works Approval NumberW6582/2021/1ApplicantResource Accommodation Management Pty LtdACN158 999 958File numberDER2021/000389PremisesNorseman Accommodation Village Wastewater Treatment
Plant

51 Richardson Street NORSEMAN WA 6443

Legal description Lot 874 on Plan 172130

Date of report10 May 2022

Decision Works approval granted

Steve Checker MANAGER WASTE INDUSTRIES REGULATORY SERVICES an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6582/2021/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) 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.

2.2 Application summary and overview of premises

On 2 July 2021, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to a wastewater treatment plant at the premises to support the Norseman Accommodation Village. The premises is approximately within the town of Norseman, WA 6443.

The premises relates to the category and assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6582/2021/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6582/2021/1.

3. Risk assessment

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.

3.1 Source-pathways and receptors

Emissions and controls

The key emissions and associated actual or likely pathway during premises construction which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Vehicle and plant	Air /	Management:
	movements on unsealed areas, excavation,	windborne pathway	 Water will be available on-site for dust suppression and used if required.
	movement and storage of earth		Monitoring:
	material and dust lift off from cleared surfaces		 Visual inspections of dust will be carried out regularly;
	Sullaces		 An incident reporting system will be maintained to assist in managing environmental incidents.
Noise	Vehicle movements, pumps, and construction machinery	Air / windborne pathway	No specific controls proposed or expected to be required
Unintentional	Leaks or spills of	Direct	Management:
discharge onto soils	hydrocarbons or chemicals from vehicles and plant	discharge, infiltration	 Spill kits will be available on-site;
		and overland flow	 Any spills will be controlled, contained, and cleaned up in accordance with a Spill Management Procedure.
			Monitoring:
			 Visual inspections of the soil surface around hydrocarbon usage areas will be carried out regularly;
			 Spill kits will be inspected on a regular basis and replenished as required; and
			 An incident reporting
Windblown	Construction waste	Air /	Management:
rubbish	and litter	windborne pathway	 Construction waste will be collected in skip bins at a dedicated waste storage area; and
			 Waste will be disposed of at a licensed facility.
Operation	·		·
Untreated	Leaks or spillage of	Direct	Management
wastewater and sludge/ biosolids	untreated wastewater or sludge/ biosolids due to pipe or tank	discharge, infiltration and overland flow	 The WWTP will be installed as per manufacturer specifications and tested during commissioning for leaks;
	burst		 WWTP tanks will be installed on a firm, solid, elevated pad of 75 - 100 mm compacted

Emission	Sources	Potential pathways	Proposed controls
			sand or other consolidated fill;
			 The underlying pad will extend 1000 mm past the sides of all equipment;
			 The WWTP includes process alarms and volumetric meters to notify the operator of system upsets;
			 All wastewater storage & pipe components of the WWTP will be impermeable (i.e. Alkatuff HDPE) and have an average tank thickness of 7 – 10 mm as per AS 4766;
			 Sufficient freeboard will be maintained within each tank to ensure overspill does not occur;
			 A landscaped earth bund will be implemented around the WWTP;
			• Any incident involving a spill of untreated sewage will be responded to immediately with contaminated soil removed and taken by a licensed transporter to a licensed facility. Remediation actions will be taken to minimise the risk of reoccurrence; and
			• Sludge to be removed on a regular basis in accordance with the <i>Environmental Protection (Controlled Waste) Regulations</i> 2004.
			Monitoring:
			 Regular inspections will be conducted of the WWTP area, including pipelines for leaks and spillages;
			 An incident reporting system will be maintained to assist in managing environmental incidents.
Treated	Discharge of treated	Direct	Management:
wastewater	wastewater to flatbed irrigation area	discharge, infiltration and overland flow	 Wastewater will be treated to a secondary level (Low ERL) required for irrigation as per DoH guidelines;
			 The irrigation beds will be sized in accordance with AS1547
			 Wastewater will be evenly distributed over the irrigation area;
			 Appropriate fencing and signage will be installed at the irrigation area as per DoH requirements.
			 The plant is expected to have an output of 51.5m³/day and the expected water quality

Emission	Sources	Potential pathways	Proposed controls				
			during operation is:				
			(a) TSS: 30mg/L				
			(b) BOD5: <20mg/L				
			(c) pH: 6.5-8.5				
			(d) Chlorine: 0.2 – 2.0 mg/L				
			(e) <i>E.coli</i> : <1000 CFU/100mL				
			(f) TN: 14mg/L				
			(g) TP: 11.25mg/L				
			Monitoring:				
			• All wastewater samples will be collected in accordance with AS 5667.10 Water Quality - Sampling Guidance on Sampling of Waste Waters, DoH guidelines (DoH, 2011), and works approval requirements;				
			 External analysis of water quality samples will be submitted to a laboratory with current NATA accreditation where required; 				
			• Verification and validation monitoring will be conducted in accordance with DoH guidelines (DoH, 2011) during commissioning to ensure its adequacy to treat the wastewater and to confirm the system is properly set up;				
			• A flow meter will be installed to record the volume of treated wastewater discharged to the irrigation area; and				
			 An incident reporting system will be maintained to assist in managing environmental incidents. 				
Odour	Untreated	Air /	Management:				
	wastewater	windborne pathway	 The WWTP has been designed as a containerised system with enclosed treatment, storage, and irrigation tanks to ensure odour levels are kept to a minimum; 				
			 All tanks will be vented as per AS 3500; and 				
			 Sludge will be stored in sealed tanks, and collected on a regular basis in accordance with the Environmental Protection (Controlled Waste) Regulations 2004. 				
			Monitoring:				
			 The WWTP is to be inspected prior to filling with water to ensure it has been constructed according to manufacturer specifications; 				

Emission	Sources	Potential pathways	Proposed controls
			 Regular inspections of the WWTP will include an assessment to determine if there are any unplanned sources of odour; and
			 An incident reporting system will be maintained to assist in managing environmental incidents.
			Note: The applicant provided an Odour Impact Assessment on 10 December 2021 which included a screening analysis and subsequently a detailed odour analysis. This concluded that the risk of odour impacts is considered low with no foreseeable circumstances where odour emissions could impact at the nearest sensitive receptor.
Noise	Pumps and splitter/	Air /	Management:
	transfer units	windborne pathway	 Compliance with the Environmental Protection (Noise) Regulations 1997; and
Vibrations			 Containment of all above ground mechanical equipment within a 10 ft shipping container.
			Monitoring:
			 No specific noise monitoring is proposed as noise emissions are not expected to be significant; and
			 An incident reporting system will be maintained to assist in managing environmental incidents.
Chlorine	Unintentional leaks	Direct	Management:
discharge	or spills	discharge, infiltration and overland flow	 Chlorine will be stored and fully contained in a bunded storage area within the WWTP prescribed premises; and
			 Spills will be controlled, contained, and cleaned up in accordance with a spill management procedure.
			Monitoring:
			 Chemical storage areas will be inspected on a regular basis;
			 Spill kits will be inspected on a regular basis and replenished as required; and
			 An incident reporting system will be maintained to assist in managing environmental incidents.

Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 and Figure 1 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

 Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity					
Residential Premises	5 x within 100 m of the Premises boundary 3 x between 90 m – 120 m from the sprayfield 1 x within 150m of the WWTP infrastructure					
Norseman Free RV Site	Immediately to the east of the Premises boundary					
Dundas Shire Works Yard	Immediately to the north of the Premises boundary					
Norseman Sporting Complex	~100 m east of the Premises boundary					
Environmental receptors	Distance from prescribed activity					
Lake Cowan – Salt Lake	~ 530 m west of the Premises boundary					
Groundwater licenses -Mining processing	 1.9 km north, north-east of the Premises boundary; 2.4 km east, south-east of the Premises boundary; and 3.2 km north east of the Premises boundary. 					
Underlying groundwater (non-potable purpose	es)					
Goldfields Proclaimed Groundwater Area						
Salinity 14,000 – 35,000 mg/L						
Depth to groundwater ~31 - 35 mbgl						



Figure 1: Distance to sensitive receptors – Human



Figure 2: Distance to sensitive receptors – Environmental

3.2 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 potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), 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 works approval 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 Table 3.

Works approval W6582/2021/1 that accompanies this decision report authorises construction and commissioning ONLY. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the commissioning phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. operation of the WWTP and sprayfield. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 3: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events				Risk rating ¹	Annlinent		Justification for	
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	additional regulatory controls
Construction								
	Dust	Air/windborne pathway	Residences within 100m of the premises boundary	Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1 (j) and (k)	The Delegated Officer considers the inclusion of applicant dust controls sufficient to mitigate the risk of dust impacting the nearest sensitive receptors.
Placement and installation of WWTP infrastructure and associated equipment including vehicle movements Construction of earthen	Noise	causing impacts to health and amenity			C = Slight L = Possible Low Risk	Ν	N/A	No specific controls provided for noise impacts. The Delegated Officer considers the risks of noise impacts can be adequately regulated under the <i>Environmental</i> <i>Protection (Noise)</i> <i>Regulations 1997.</i>
bunds.	Hydrocarbon spills or leaks	Direct discharge to land	Residential premises within 100m of the premises boundary RIWI groundwater area		C = Slight L = Possible Low Risk	Y	N/A	The Delegated Officer considers the applicants controls and the depth to groundwater sufficient to mitigate the risks of hydrocarbon spills during construction.

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
	Wind-blown litter	Air/windborne pathway causing impacts to health and amenity	Residences within 100m of the premises boundary		C = Slight L = Possible Low Risk	Y	N/A	The Delegated Officer considers the applicants controls sufficient to mitigate the risks of wind-blown litter.
Operation (including commis	sioning)							
	Noise				C = Slight L = Possible Low Risk	Y	Conditions 4 – 11: Commissioning and Time limited Operations	The Delegated Officer considers the risks of noise impacts can be adequately regulated under the <i>Environmental</i> <i>Protection (Noise)</i> <i>Regulations 1997.</i>
Operation and commissioning of WWTP leaks or spillages Commissioning of sprayfield	Odour	Air/windborne pathway causing impacts to health and amenity	Residences within 100m of the premises boundary	Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	Conditions 4 – 11: Commissioning and Time limited Operations	The applicant provided an Odour Impact Assessment on 10 December 2021 which included a screening analysis and subsequently a detailed odour analysis. This concluded that the risk of odour impacts is considered low. The Delegated Officed considers the commissioning conditions of the works approval

Risk events			Risk rating ¹	Applicant		Justification for		
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	controls sufficient?	Conditions ² of works approval	additional regulatory controls
								ensure the WWTP is constructed and operated to achieve this low risk rating. Operational conditions may be required on the Licence.
	Untreated wastewater and sludge/biosolids	Direct discharge	Residential premises within 100m of the premises boundary		C = Minor L = Unlikely Medium Risk	Y	Conditions 4 – 11: Commissioning and Time limited Operations	The Delegated Officer considers the depth to groundwater, commissioning and time limited operations conditions sufficient in mitigating the risk of untreated wastewater being discharged to land. Operational conditions may be required on the Licence.
	Treated wastewater	to land	RIWI groundwater area Lake Cowan		C = Slight L = Possible Low Risk	Y	Conditions 4 – 11: Commissioning and Time limited Operations	The delegated officer noted that the application does not appear to consider nutrient loading in sizing the treated wastewater disposal area. <i>AS1547 - On-site</i> <i>domestic</i> <i>wastewater</i> <i>management</i> only has been used for determining the irrigation area However, based on the requirements of

Risk events			Risk rating ¹	Annligert		Justification for		
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	additional regulatory controls
								recognised nutrient loading standards, such as DWER's WQPN22, the area required for irrigation of the nutrient rich wastewater would significantly greater than the 0.4 ha proposed. The Delegated officer considers the risk to groundwater and sensitive receptors low however, due to the significant depth to groundwater, the salinity levels of the groundwater and that there are no groundwater dependent ecosystems in the proximity of the WWTP. The Delegated Officer considers the beneficial use of groundwater in the area is for mining processing and therefore is at low risk of impact from on from the operations of this WWTP.
	Chemical spills				C = Minor L = Rare Low Risk	Y	Conditions 4 – 11: Commissioning and Time limited Operations	The Delegated Officer considers the depth to groundwater, commissioning and

Risk events						Annlisont		Justification for
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	additional regulatory controls
								time limited operations conditions sufficient in mitigating the risk of chemical spills. Operational conditions may be required on the Licence.
	Treated wastewater spray drift	Air/windborne pathway causing impacts to health and amenity	Residences within 100m of the premises boundary		C = Slight L = Unlikely Low Risk	Ν	Conditions 4 – 11: Commissioning and Time limited Operations	No specific applicant controls relating to spray drift. The Delegated Officer considers the discharge method lowers the risk of spray drift to nearest receptors. Operational conditions may be required on the Licence.

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

Note 2: Proposed applicant controls are depicted by standard text. Bold and underline text depicts additional regulatory controls imposed by department.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 09 September 2021	None received	N/A
Local Government Authority advised of proposal on (28/09/2021)	None received	N/A
Department of Health (DoH) advised of proposal (28/09/2021)	DOH approved the proposal on 29/07/2021 for a maximum volume of 46,800L/day and under condition that where applicable, approval from the Department of Water and Environmental Regulation for prescribed premises required. Discharge effluent quality to meet Department of Water and Environmental Regulation requirements.	N/A
Nearest sensitive receptors advised of the proposal via mail on 11/10/2021	None received	N/A
Applicant was provided with draft documents on 25/3/2022		N/A

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

- 1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
- 2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
- 3. DWER 2020, Guideline: Risk Assessments, Perth, Western Australia.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)						
Application type						
Works approval	\boxtimes					
		Relevant works approval number:	Licence			Relevant works approval number:
		Has the works approval been complied with?		Yes 🗆 No 🗆		
Licence		Has time limited operations under the works approval demonstrated acceptable operations?		Yes 🗆 No 🗆 N/A 🗆		
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes 🗆 No 🗆		
		Date Report received:				
Renewal		Current licence number:	Renewal			
Amendment to works approval		Current works approval number:	Amendment to works approval		proval	
		Current licence number:	Amendment to licence			
Amendment to licence		Relevant works approval number:			N/A	Relevant works approval number:
Registration		Current works approval number:	Registration			Current works approval number:
Date application received		2 July 2021				
Applicant and Premises details						
Applicant name/s (full legal name/s)		Resource Accommodation Management Pty Ltd				
Premises name		Norseman Accommodation Village Wastewater Treatment Plant				
Premises location		Lot 874 on Plan 172130 51 Richardson St, NORSEMAN WA 6443				
Local Government Authority		Shire of Dundas				
Application documents						
HPCM file reference number:		DER2018/001042-5~84 DWERDT473778				
Key application documents (addi	Application Form					

to application form): Supporti		ng Docume	nt		
Scope of application/assessment					
	Works approval				
Summary of proposed activities or changes to existing operations.	Construction of a sewage treatment plant and irrigation field service the Norseman Gold Project accommodation village. It w accept wastewater from the mine site accommodation unit ablution blocks and the kitchen facility. Wastewater will be pumpe through dedicated plumbing pipework to the offsite WWTP locate approximately 800 m from the accommodation village. Wastewate will be treated to a Low ERL quality via high efficiency biomodule and disposed via a flatbed subsurface irrigation system at th WWTP site.				
Category number/s (activities that ca	use the p	remises to	become prescribed premises)		
Table 1: Prescribed premises categor	ries				
Prescribed premises category and description	Proposed production or design capacity				
Category 85: Sewage facility: Premise	s –	51.5 m ³ /day			
 (a) on which sewage is treated (e septic tanks); or (b) from which treated sew discharged onto land or into way 					
Legislative context and other approvals					
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes 🗆	No 🖂	Referral decision No: Managed under Part V ⊠ Assessed under Part IV □		
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes 🗆	No 🖂	Ministerial statement No: EPA Report No:		
Has the proposal been referred and/or assessed under the EPBC Act?	Yes 🗆	No 🖂	Reference No:		
			Certificate of title ⊠		
			General lease Expiry:		
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ⊠	No 🗆	Mining lease / tenement Expiry:		
	1		Other evidence \Box Expiry:		

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Has the applicant obtained all relevant planning approvals?	Yes □ No ⊠ N/A □	Currently applying for approval from the DoH No proof of Planning approval has been provided but they state they will be in contact with the LGA and WAPC			
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes 🗆 No 🛛	CPS No: N/A No clearing is proposed.			
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes 🗆 No 🛛	No clearing is proposed.			
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes 🗆 No 🖂	Licence / permit not required.			
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ⊠ No □	 Name: Goldfields Groundwater Area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes □ No ⊠ N/A □ Regional office: Goldfields 			
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes 🗆 No 🛛	Name: N/A			
Is the Premises subject to any other Acts or subsidiary regulations (e.g. Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx)	Yes ⊠ No □	Controlled waste regs – collection and transportation of the sludge			
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes □ No ⊠				

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)						
Is the Premises subject to any EPP requirements?	Yes □ No ⊠					
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes □ No ⊠					