

Decision Report

Application for Works Approval

Part V Division 3 of the Environmental Protection Act 1986

Works Approval Number	W6644/2022/1
Applicant	Shire of East Pilbara
File number	DER2018/001042-6~97
Premises	Newman Wastewater Treatment Plant Great Northern Highway
	Legal description Crown Reserve 45776 Windell Location 144 Lot 144 on Plan 192902 NEWMAN WA 6873
Date of report	15 August 2022
Decision	Works approval granted

Melissa Chamberlain A/MANAGER WASTE INDUSTRIES REGULATORY SERVICES

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Table of Contents

1.	Decis	ion summary	1
2.	Scope	e of assessment	1
	2.1	Regulatory framework	1
	2.2	Application summary and overview of premises	1
3.	Risk a	assessment	2
	3.1	Source-pathways and receptors	2
		3.1.1 Emissions and controls	2
		3.1.2 Receptors	3
	3.2	Risk ratings	3
4.	Consi	ultation	7
5.	Concl	usion	7
Refe	rences	5	7
		I: Summary of applicant's comments on risk assessment and draft	8
		2: Application validation summary	

Table 1: Proposed applicant controls	.2
Table 2: Sensitive human and environmental receptors and distance from prescribed activity	.4
Table 3: Risk assessment of potential emissions and discharges from the Premises during construction, commissioning and operation	.4
Table 4: Consultation	7

Figure 1: Distance to sensitive receptors	1
---	---

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 the premises. As a result of this assessment, works approval W6644/2022/1 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 13 January 2022, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The applicant has identified a risk of uncontrolled discharge associated with possible failure of the existing clarifier onsite. The application is to undertake upgrade works to the clarifier and associated infrastructure at the premises. Upgrade works include:

- Temporarily re-configure the existing Orbal Reactor as an aerated lagoon and reconfigure the Emergency Storage Pond (ESP) as a settling basin for retention of solids. This is expected to last 4 weeks.
 - Existing screening system retained for pre-treatment of incoming wastewater;
 - No change to current operation of Orbal Reactor;
 - Mixed liquor discharged from Orbal Reactor to downstream Distribution Chamber;
 - Existing DN375 clarifier bypass line intersected and redirected to inlet of ESP;
 - Reconfiguration of the existing ESP to a temporary passive settling basin for the period that the clarifier is offline;
 - New DN380 outlet pipeline between ESP and TW storage pond;
 - New Solids retention curtain in ESP.
 - This arrangement will be operated as a continuous inflow, constant volume, gravity profile system. As mixed liquor is discharged into the ESP, treated water at the northern outlet end will be displaced to the downstream treated wastewater storage pond.
- Partial excavation/ cut of the existing ESP to remove scouring and any vegetation with reconstruction of existing embankments to achieve the existing grade;
- Installation of DN380 PE pipework from existing DN375 DICL clarifier bypass pope to the new DN380 PE inlet at IL 5390 of the ESP. This includes all required trenching, the installation of a new T-piece from the existing DN375 DICL clarifier bypass pipe and two buried knife gate isolation valves;
- Installation of DN375 PE pipework connecting the ESP to the Treated Wastewater Pond (TWWP). This includes all required trenching and the

installation of a buries knife gate isolation valve. The outlet of the ESP is to be a 90 degree elbow facing upwards with flange to be level with the water surface at TWL 539. The inlet to the TWWP is to be straight DN375 PE pipe.

- The knife gate valves shall be installed with a cast, in-situ concrete supporting block, including bond breaking membrane, in accordance with Water Corporation standard drawing BD62-2-1. The valves should be installed with trafficable access covers, calve spindle extension and SN8 PVC pipe to encase spindle;
- Installation of HDPE lining on the base and all internal embankments of the ESP, including around the existing inlet, new inlet and new outlet.

The premises is approximately 2 km north of Newman, within the P1 Public Drinking Water Source Area (PDWSA)

The upgrades are not proposed to result in a change in discharge quality, nor an increase in discharge volume or treatment capacity at the premises. Upgrades are designed to lower the risk of discharge due to potential failure of the clarifier. The Delegated Officer has consulted with DWER Water Source Protection branch regarding this matter and is satisfied that specific expert advice regarding impacts to the Pi PDWSA area from the proposed works are not required.

The premises relates to the category and assessed production / design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6644/2022/1. 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 W6644/2022/1.

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

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation 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.

Emission	Sources	Potential pathways	Proposed controls		
Construction					
Dust	Vehicle movements, excavation, earthworks etc.	Air / windborne pathway	Water cart used for dust suppression		

Table 1: Proposed applicant controls	Table 1	1:	Proposed	applicant	controls
--------------------------------------	---------	----	----------	-----------	----------

Emission	Sources	Potential pathways	Proposed controls		
Noise	Vehicle movements, excavation, earthwork.	Air / windborne pathway	None specified		
Leachate	Dewatering and desludging of existing ponds 1 and 2	Seepage to soil and groundwater	None specified		
Wastewater or treater wastewater spills	Direct discharge by spillage during upgrade works	Overland flow	None specified		
Windblown waste	Construction waste	Air/ windborne pathway	Dispose of all waste materials generated during construction operations regularly and in accordance with local by-laws.		
			Area shall be left free of waste materials at completion of works.		
			Bins will be onsite to prevent littering.		
Potentially contaminated	General construction activities	Overland flow	Groundworks and excavations shall be kept free of water;		
stormwater			Construction materials including concrete, services etc., will be placed on dry ground;		
			The contractor shall be responsible for preventing the works becoming flooded from any runoff or rainfall.		
			Where excavations become wet from stormwater or are below the water table due to rainfall events, the contractor shall promptly remove water by pumping or other suitable means.		
			Stormwater will be discharged into the sludge drain bed		
Operation					
Operation of upgraded WWTP	Discharge of treated wastewater/ wastewater	Overland flow	None specified		

3.1.2 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
P1 PDWSA - Newman Water Reserve	Within the P1 Public Drinking Water Source Area
	Wetland area is approximately 11.5km west south-west from existing-use bore field (E- Line and K-Line bores – located approximately 11.7km east north-east of Newman)
	Wetland Area is approximately 2.6km south of future-use bore field (Homestead Creek)
Residential premises – Town of Newman	~1,538m south of Premises Boundary and ~1,779m south east of the BHP wetland area.
Indigenous Location – Parnpajinya Aboriginal Association Incorporated	~1,302m south east of the Premises Boundary, and ~1,132.9m south of the BHP wetland area
Environmental receptors	Distance from prescribed activity
TEC buffer zone – Ethel Gorge aquifer stygobiont community – Endangered	Within the buffer zone
RIWI groundwater zone – Pilbara	Within the RIWI Pilbara Groundwater Area
Groundwater Area	Salinity value of 500-1000.
	Depth to groundwater varies from 11.5 mbgl to 6.1 mbgl
RIWI surface water zone –Pilbara Surface Water Area	Within the RIWI Pilbara Surface Water Area.
Threatened Fauna:	~740m north east of the BHP wetland area, and ~1280m north east of the Premises
Bird – P4	Boundary
Minor unnamed waterway	Flows through northern side of wetland area
Homestead Creek – Non Perennial, Minor waterway	Flows ~1,326.8m east north-east of the BHP Wetland area, and ~2,067m north east of the Premises Boundary



Figure 1: Distance to sensitive receptors – Human

Works Approval: W6644/2022/1



Figure 2: Distance to sensitive receptors - Environment

Works Approval: W6644/2022/1

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 W6644/2022/1 that accompanies this decision report authorises construction and time-limited operations. 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 amendment is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises. 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					Disk astis a 1			
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Construction								
Reline the ESP with HDPE liner and install Silt Curtain	Dust	Air/ windborne	Native vegetation, TECs	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 3	The Delegated Officer considers the applicants controls and distance to sensitive receptors adequate for managing the risk of dust impacts.
	Noise		N/A	None specified	C = Slight L = Unlikely Low Risk	N/A	N/A	The Delegated Officer considers the provisions under the Noise Regs and the lack of sensitive receptors nearby negates the need to condition noise controls.
	Leachate	Infiltration	Groundwater – Proclaimed area; Surface water – Proclaimed area; PDWSA P1 area; Native vegetation; TECs;	None specified	C = Moderate L = Unlikely Medium Risk	N/A	<u>Condition 1, Table 1</u> <u>Condition 6 and 7</u>	The Delegated Officer considers the condition for installation of HDPE liner requiring a CQA level of certification and the meeting of detailed installation specifications detailed in Schedule 3 to the licence mitigates the risk of leachate occurring from the installed HDPE liner in the ESP.

Works Approval: W6644/2022/1

Risk events					Risk rating ¹	•		hustification for
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Windblown waste	Construction waste	Air/ windborne pathway	Native vegetation	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 4	The Delegated Officer considers the risk of windblown waste to be adequately managed by the applicants controls which have been conditioned on the works approval.
General construction activities	Potentially contaminated stormwater	Overland flow	Groundwater – Proclaimed area; Surface water – Proclaimed area; PDWSA P1 area; Native vegetation; TECs; BHP wetland area	Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 5	The Delegated Officer considers the addition of condition 4 aid in ensuring that contaminated stormwater is adequately managed onsite.
Commissioning								
Commissioning of lined ESP	Leaks or ruptures of pipes and infrastructure conveying treated wastewater/ wastewater	Direct discharge to land	Groundwater – Proclaimed area; Surface water – Proclaimed area; PDWSA P1 areal Native vegetation; TECs; BHP wetland	None specified	C = Moderate L = Unlikely Medium Risk	Y	<u>Condition 11, Table 3, Row</u> 2.	The Delegated Officer considers the commissioning requirements and conditions requiring that no leaks or defects occur within the pipework adequately mitigates the risks of spills resulting in unauthorised discharge to land.
	Leachate	Infiltration	Groundwater – Proclaimed area; Surface water –	None specified	C = Minor L = Unlikely	Y	Condition 1. Table 1 Conditions 6 and 7	The plant is located in a highly sensitive PDWSA P1 area.

Works Approval: W6644/2022/1

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
			Proclaimed area; PDWSA P1 area; Native vegetation; TECs;		Medium Risk		<u>Condition 11, Table 3, Row</u> <u>1</u>	The Delegated Officer considers the condition requiring CQA certification of installation and specifications of the HDPE liner mitigates the risk of leachate impacts from the ESP.
Operation					·			
	Leaks or ruptures of pipes and infrastructure conveying treated wastewater/ wastewater	Direct discharge to land	Groundwater – Proclaimed area; Surface water – Proclaimed area; PDWSA P1 areal Native vegetation; TECs; BHP wetland	None specified	C = Slight L = Unlikely Low Risk	Y	Condition 11, Table 3, Row 2.	The Delegated Officer considers the construction and cqa requirements adequately mitigates the risks of spills resulting in unauthorised discharge to land.
Operation of lined ESP	Leachate	Infiltration	Groundwater – Proclaimed area; Surface water – Proclaimed area; PDWSA P1 area; Native vegetation; TECs;	None specified	C = Minor L = Unlikely Medium Risk	Y	Condition 1, Table 1 Conditions 6, 7, 11	The plant is located in a highly sensitive PDWSA P1 area. The Delegated Officer considers the condition requiring CQA certification of installation and specifications of the HDPE liner mitigates the risk of leachate impacts from the ESP.

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.

Works Approval: W6644/2022/1

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 07 March 2022	None recieved	N/A
Applicant was provided with draft documents on 07 July 2022	Comments received on 26/07/2022, Refer to Appendix 1	Refer to Appendix 1

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 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
Works Approval History – Page 2	Amendment to Summary of Changes for current works approval to remove reference to clarifier upgrades.	Summary of Changes amended to reflect updated works approval scope.
Condition 2, Table 2	Remove access roads, parking areas, hardstands and inlet works from works approval as these are not within the current scope of works	Table 2 updated to reflect to updated works approval scope.
	Applicant indicated the knife gate valve location is presented on figure 2	'as indicated by Figure 2' listed as the infrastructure location
Schedule 1, Figure 1	Applicant provided an updated figure 1 which correctly represents the current scope of works.	Figure 1 amended to reflect the new figure provided by the applicant.
Decision Report – Section 2.2	Applicant indicated some works listed which are now out of the current scope of works.	Removed reference to works out of the current scope of works.
Decision Report – Section 3.1.1, Table 1	Applicant indicated that any stormwater will be discharged into the sludge drain bed.	Table 1 updated accordingly.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMM	ARY (a	as updated from validat	tion checklist)				
Application type							
Works approval	\boxtimes	Cat 54					
Licence		Relevant works approval number:	Licence			Relevant works approval number:	
		Has the works approval been complied with?			Yes 🗆 No 🗆		
		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			pproval	
		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		13/01/2022					
Applicant and Premises details	S						
Applicant name/s (full legal name	e/s)	Shire of East Pilbara					
Premises name		Newman Wastewater Treatment Plant					
Premises location		Crown Reserve 45776 Windell Location 144, Lot 144 on Plan 192902 NEWMAN WA 6753 Great Northern Highway					
Local Government Authority		Shire of East Pilbara					
Application documents							

Works Approval: W6644/2022/1

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)			
HPCM file reference number:	DER2018/001042-6~97		
Key application documents (additional to application form):	Proof of occupier status Site and Works Overview Specification for construction WC Technical Advice Newman Recycled Water Scheme Approval Premises Siting & Location Cost Estimate Newman emergency bypass – 10 Jan 2022		
Scope of application/assessment			

	Works approval				
	Scope:				
	Temporarily re-configure the existing Orbal Reactor as an aerated lagoon and use the Emergency Storage Pond (ESP) as a setting basin for retention of solids. The configuration of such a system is outlined as follows:				
	- Existing screening system retained for pre-treatment of incoming used water.				
	-No change to current operation of Orbal Reactor.				
	Mixed liquor discharged from Orbal Reactor to downstream Distribution Chamber.				
	 Existing DN375 clarifier bypass line intersected and redired to inlet of ESP. 				
	-ESP used as a passive setting basin to try to retain as much biomass as possible.				
	-New DN380 outlet pipeline between ESP and TW storage pond.				
	-New Solids retention curtain in ESP.				
Summary of proposed activities or changes to existing operations.	This arrangement would be operated as a continuous inflow, constant volume, gravity profile system. As mixed liquor is discharged into the ESP, treated water at the northern outler end will be displaced to the downstream TW storage pond.				
	The mixed liquor diversion pipeline between the existing Distribution Chamber and the ESP is about 40m in length. Installation of the pipeline will require:				
	-Excavation up to 3m deep immediately adjacent the Distribution Chamber,				
	 Intersection of the existing DN375 Ductile Iron bypass line to install a t-piece connection and DN380 sluice gate isolation valves on each branch, and 				
	-Varied excavation depths of 2-3m between the tee and the ESP inlet, which will be at low level in the pond embankment so that the pipe is free-draining by gravity.				
	"Emergency Standby" System Installation Sequence				
	 Reconnect and install HDPE liner in ESP, HDPE liner shall be a 2mm double-sided textured HDPE liner that meets all the minimum characteristics defined in table 2(b) of the GR1- GM13 standards. 				
	-Install new DN380 PE diversion pipework and fittings between the existing Distribution Chamber and the ESP				
	-Install new DN380 outlet pipe between ESP and TW storage basin.				
	-Install solids retention curtain in ESP.				
	Inspection and Testing				
	HDPE LINER				
	Seam weld testing				
	All seams, welds and patches shall be tested and recorded as part of the Contractor's quality assurance documentation. The liner ITP				

Works Approval: W6644/2022/1

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)				
	must demonstrate compliance to the testing specification given here and in the liner manufacturers specification.			
	Testing must include:			
	-Contractor onsite destructive and non-destructive tests as specified			
	-Third-party destructive seam testing at a NATA lab approved by the Superintendents Representative as specified here.			
	-Testing and inspection of the liner must be compliant to the standards (versions current at the time of Tender).			

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description		Assessed production or design capacity	
Category 54: sewage facility – premises on which sewage is treated or from which treated sewage is discharged onto land or into waters.			
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		
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes □ No ⊠		
Has the proposal been referred and/or assessed under the EPBC Act?	Yes 🗆 No 🖂		
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes 🛛 No	D 🗆	Certificate of title
Has the applicant obtained all relevant planning approvals?	Yes 🗆 No	D □ N/A ⊠	
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes 🗆 N	0 🛛	No clearing is proposed.

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)				
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: Type: Pilbara Groundwater Area; and Pilbara Surface Water Area Has Regulatory Services (Water) been consulted? Yes I No IN/A I Regional office: North West		
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ⊠ No □	Name: Newman Water Reserve Priority: P1 Are the proposed activities/ landuse compatible with the PDWSA (refer to <u>WQPN 25</u>)? Yes I No I N/A I		
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 □			
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes □ No ⊠			
Is the Premises subject to any EPP requirements?	Yes □ No ⊠			

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