



Decision Document

Environmental Protection Act 1986, Part V

Proponent: Water Corporation

Licence: L6640/1994/11

Registered office: 629 Newcastle Street
LEEDERVILLE WA 6007

Premises address: Gnarabup Wastewater Treatment Plant
Lot 603 on Plan 19971 Gas Bay Road,
GNARABUP WA 6285

Issue date: Thursday, 24 October 2013

Commencement date: Tuesday, 1 November 2011

Expiry date: Monday, 31 October 2033

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER) CEO delegated officer has decided to issue an amended licence. The delegated officer considers that in reaching this decision, he has taken into account all relevant considerations and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Rebecca Griffiths
Licensing Officer

Decision Document authorised by: Caron Goodbourn
Delegated Officer



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1 Purpose of this Document

This decision document explains how CEO delegated officer has assessed and determined the application and provides a record of the decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to the delegated officer's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.



2 Administrative summary

Administrative details		
Application type	Works Approval <input type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input checked="" type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	54	356m ³ /day
Application verified	Date: N/A	
Application fee paid	Date: N/A	
Works Approval has been complied with	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Compliance Certificate received	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		



3 Executive summary of proposal and assessment

Gnarabup Wastewater Treatment Plant (WWTP) is licenced to treat up to 356 cubic meters per day of raw wastewater (sewage). It treats wastewater to a secondary standard and consists of an Intermittently Decanted Extended Aeration (IDEA) plant. Treated wastewater is infiltrated into three onsite infiltration ponds. Waste activated sludge is collected and dried in sludge drying beds prior to disposal. Leachate from the sludge drying beds is returned to the plant for processing.

The Gnarabup WWTP is surrounded by natural bushland. The nearby residential area of Gnarabup is located approximately 300m north of the WWTP. The Indian Ocean is located approximately 200m to the west. The plant is located on the Leeuwin Naturaliste Ridge and the land under the site is considered the Kilcarnup exposed dunes (organic) phase. The soil in this region is calcareous deep sands (with topsoils stained dark by organic matter). The WWTP area is completely cleared of native vegetation. The groundwater is stated to be about 10-15 m below the surface.

Water Corporation requested an amendment to the licence to be in line with similar operations, which allows for the measurement of inflow or the option of either inflow or outflow for determining the volume of treated wastewater discharged to infiltration areas. The amendment application outlines the operation of a metering device (Magflow meter) for monitoring the volumes of wastewater flowing into the plant. The inflow measurements are used as a substitution for the volume of treated wastewater discharged from the final combined settling tank. Due to this being a tank-type plant, Water Corporation state that there is little influence of rainfall and evaporation on the hydraulic balance of the plant compared to the throughput. Therefore, the inflow measurement is considered an adequate indicator of outflow.

This amendment also includes a conversion into the new licence format. The expiry date of the licence has also been extended in accordance with DER's Guidance Statement: Licence Duration, revised May 2015. The licence will now expire 31 October 2033.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Interpretation	L1.1.2	Definitions have been altered in line with DER's current licensing process.	N/A
General conditions	N/A	The Previous licence included 'General Conditions' G1, G2 and G3. These conditions related to monitoring and reports and specific requirements on tankering of wastewater. These conditions have been moved to the appropriate sections of this licence.	<i>Environmental Protection Act 1986</i> (EP Act) <i>Environmental Protection (Unauthorised discharges) Regulations 2004</i> (UDR)
Premises operation	L1.2.1 – 1.2.7	<u>Emission Description</u> <i>Emission:</i> Treated wastewater effluent discharged to the infiltration basins. <i>Impact:</i> Contamination of surrounding land, surface water and groundwater with an increase of nutrients, heavy metals and other contaminants. Gas Bay, part of Cape Naturalist is located about 200 m from the WWTP. <i>Controls:</i> Two intermittently decanting extended aeration (IDEA) plants are used to treat the wastewater. The IDEA treatment process consists of three phases, aeration, settling and decanting. These phases allow physical, chemical and biological processes to occur within the tank before the water is passed through to the final treatment tank. Groundwater monitoring bores 1/99 and 2/99 and shore sample points monitor the	<i>Environmental Protection Act 1986</i>



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		<p>water quality downstream of the WWTP.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Moderate <i>Likelihood:</i> Likely <i>Risk Rating:</i> High</p> <p><u>Regulatory Controls</u> Condition 1.2.1 states the volume of sewage authorised to be accepted onto the premises. The 356m³/day limit which was in the previous licence has been carried over to control and manage the volumes accepted to the site. It also replaces condition G2 which required the untreated wastewater to be tankered off site if the plant is likely to exceed the daily limit.</p> <p>Condition 1.2.2 outlines the waste processing occurring onsite that has been assessed. This condition replaces part of previous condition S1(iii) regarding disposal requirements of the sludge and biosolids.</p> <p>Condition 1.2.3 specifies the containment infrastructure on the Premises. This condition has been included to outline the different infrastructure requirements occurring onsite. This condition also replaces previous condition S1 regarding sludge management and the containment infrastructure.</p> <p>Condition 1.2.4 specifies how wastewater treatment infrastructure such as vessels, drying beds and basins, are to be maintained to provide adequate protection to the environment.</p> <p>Condition 1.2.5 replaces previous condition W7 regarding the management of the infiltration areas and the intent to maximise infiltration and contaminated reduction through biological interaction.</p>	



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		<p>Condition 1.2.6 replaces part of previous condition W1(vii) regarding security fencing to prevent unauthorised access to the site and ensure fences are kept locked.</p> <p><u>Residual Risk</u> <i>Consequence:</i> Moderate <i>Likelihood:</i> Possible <i>Risk Rating:</i> Moderate</p>	
Odour	N/A	<p><u>Emission Description</u> <i>Emission:</i> Odour potentially generated on site for the storage and treatment of wastewater <i>Impact:</i> Potential impact on surrounding residents receiving unpleasant odour. DER does not have any record of receiving complaints from the public regarding this premises. <i>Controls:</i> the plant operates at a maximum possible throughput of 356m³/day. The plant is more than 300m away from residents. The IDEA plant uses an aerated tank system which assists in controlling potential odours.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Insignificant <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u> It is considered that odour can be sufficiently regulated under Section 49 of the <i>Environmental Protection Act 1986</i>. No conditions have been included as part of the licence.</p> <p><u>Residual Risk</u> <i>Consequence:</i> Insignificant <i>Likelihood:</i> Unlikely</p>	<i>Environmental Protection Act 1986</i>



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		<i>Risk Rating: Low</i>	
Noise	N/A	<p><u>Emission Description</u> <i>Emission:</i> Unreasonable noise emissions generated from the operation of the equipment associated with the WWTP. <i>Impact:</i> Nuisance impacts to sensitive receptors. <i>Controls:</i> The plant is about 300m away from the nearest sensitive receptors to the north. There is significant buffering bushland between the WWTP and the receptors. The ocean is also to be considered a significant background noise in that area.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Insignificant <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u> No conditions relating to noise are proposed for the licence as any noise emissions are considered low risk and can be adequately managed under the <i>Environmental Protection (Noise) Regulations 1997</i>.</p> <p><u>Residual Risk</u> <i>Consequence:</i> Insignificant <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Low</p>	<i>Environmental Protection (Noise) Regulations 1997</i>
Monitoring general	L2.1.1 – 2.1.4	<p>Condition 2.1.1 requires wastewater to be conducted in accordance with the AS/NZS standards and analysis by a NATA accredited laboratory with the exception of pH and volumetric flow rate which will be measured in the field. This condition has been updated and replaces W5(a) and W5(b) of the previous licence.</p> <p>Condition 2.1.2 requires that quarterly monitoring is undertaken at least 45 days apart</p>	AS/NZS 2031 AS/NZS 5667



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		<p>and annual monitoring is undertaken at least 9 months apart.</p> <p>Condition 2.1.3 requires the Licensee to have all monitoring equipment calibrated in accordance to the manufacturer's specification.</p> <p>Condition 2.1.4 states that if the requirements of calibration cannot be met, the CEO must be notified.</p>	
Monitoring of inputs and outputs	L2.2.1	<p>Condition 2.2.1 replaces condition W2 and has been included in the Licence to require monitoring of the sewage inlet flow. This condition includes the P4 amendment request by Water Corporation. Water Corporation state in the amendment application, that plant is a tank-based system and because of this, there is expected to be such little variance between the inflow and outflow points that the measuring device at the intake of the system is adequate to calculate the volumes discharges to the infiltration areas. The difference between the inflow and outflow volumes is calculated in their application as about 0.23%. This change is considered reasonable and is constant with other similar operations. The requirement to monitor and record the waste that is tankered off-site is also added here</p> <p>These conditions assist in verifying that the treatment plant is operating effectively and to confirm compliance with condition 1.2.1.</p>	N/A
Ambient quality monitoring	L2.3.1 L2.3.2	<p>Condition 2.3.1 replaces W4(a) and W4(b) of the previous licence and has been included to require the Licensee to monitor ambient groundwater quality.</p> <p>Condition 2.3.2 replaces W3 of the previous licence. It has been included as the WWTP is so close to the ocean that the potential discharge from the plant needs to be closely monitored and maintained.</p>	N/A
Improvements	L3.1.1 - 3.1.2	It has been identified that the current groundwater monitoring bores 1/99 and 2/99 have been dry for some time. It is therefore noted that Water Corporation are currently in breach of the previous condition W3 as they state the bores are dry. It is considered	General provisions of the <i>Environmental</i>



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		<p>that these bores have not been maintained.</p> <p>Improvement condition 4.1.1 (IR1) requires the Licensee to submit a report that provides a review of the groundwater monitoring program and how appropriate and effective it is for identifying contamination from the plant.</p>	<i>Protection Act 1986.</i>
Information	L4.1.1 – 4.3.1	<p>Condition 4.1.1 has been included on the licence regarding record keeping for the WWTP.</p> <p>Condition 4.1.2 replaces condition G3 of the previous licence requiring the submission on an Annual Audit Compliance Report.</p> <p>Condition 4.1.3 replaces some of condition G1(iv) requiring the implementation of a complaint management system.</p> <p>Condition 4.2.1 replaces condition G1 that requires the Licensee to submit additional information in the Annual Environmental Report including assessment of monitoring results against previous Licence limits. The standard reporting requirement of 28 days has been extended to 63 calendar days to be in line with the previous licence which allowed for the annual report by 1 September each year.</p>	General provisions of the <i>Environmental Protection Act 1986.</i>
Licence Duration	N/A	The licence expiry has been amended as part of DERs <i>Guidance Statement on Licence Duration</i> until 2033.	<i>Guidance Statement on Licence Duration</i>



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
21/04/2016	Proponent sent a copy of draft instrument	<p>Comments received by email 12/5/2015:</p> <ul style="list-style-type: none">- It is noted no reporting of contaminant load, as per current licence W6. Also no treatment limits.- No emissions paragraph (usually section 2). Is this correct for the new format licences to change the section numbering following this point? All other licences have Monitoring as section 3, so should Monitoring in this licence also be retained as section 3, rather than section 2, just to be consistent? Or 2 Emissions could still be shown, but with a comment 'not relevant'.- References to table numbering needs to be reviewed, and match to section numbering.- Water Corporation asks for 63 calendar days (instead of 62) to standardise reporting date to 1 September each year.- Table 4.2.1, referring to the 'interpretive summary and assessment of ambient groundwater quality monitoring results against relevant assessment levels for water as published in the Assessment and	<p>Responses:</p> <ul style="list-style-type: none">- Agreed This condition has been added into the annual reporting requirements.- If there are no considered emissions the requirement is to now delete the entire section.- Agreed- Agreed- Water Corporation predominantly does this already. This is something licences are moving towards to ensure an evaluation of their own information before providing it to DER.



Date	Event	Comments received/Notes	How comments were taken into consideration
		management of Contaminated Sites Guideline'. Is this requirement now a standard which will be used for all new licences with groundwater monitoring, or is this specific to the Gnarabup WWTP site?	



6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High