Amendment Report

Application for Licence Amendment

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

Licence Number	L7811/2002/4
Licence Holder	William Richard Cocking
File Number	DER2017/000227-1
Premises	Wourie Pool Farm Mogumber-Yarawindah Road MOGUMBER WA 6506 Legal description – as per the licence granted 07 March 2023
Date of Report	07 March 2023
Decision	Revised licence granted

Jarrod Abrahams

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

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Tables and Figures

1. Decision summary

Licence L7811/2002/4 is held by William Richard Cocking (Licence Holder) for the Wourie Pool Farm (the Premises), located on Mogumber-Yarawindah Road at the lots shown in Table 1 below.

Table 1: Land within the premises

Lot Number	Plan/Diagram Number	Volume	Folio
893	Plan 3194	1731	684
905	Plan 3377		
84	Deposited Plan 228035		
143	Deposited Plan 228037		
364	Deposited Plan 246404		
462	Deposited Plan 246401		
463	Deposited Plan 246402		
479	Deposited Plan 246411		
499	Deposited Plan 246403		
748	Deposited Plan 249565		
794	Deposited Plan 249585		
795	Deposited Plan 249586		
796	Deposited Plan 249587		
797	Deposited Plan 249588		
841	Deposited Plan 249608		
803	Deposited Plan 412147	2975	283
804	Deposited Plan 412147		284
1159	Diagram 5041	1537	826
1248	Diagram 5318		827
52	Plan 22293	2141	425
127	Deposited Plan 35464	1897	848

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L7811/2002/4 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment 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.

The assessment also gives specific regard to the *Western Australian guidelines for biosolids management* (DEC 2012) (herein referred to as the Biosolids Guideline).

2.2 Application summary

On 9 June 2022, the Water Corporation submitted an application to the department on behalf of the Licence Holder to amend Licence L7811/2002/4 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- An extension of the Premises to include Lot 127 on Deposited Plan 35464; and
- The storage and application of biosolids within four paddocks located on Lot 127.

The amendment is being sought as the Licence Holder has recently purchased Lot 127 for the extension of their farming activities.

This amendment is limited only to changes to the Premises area. No change to the throughput of the existing Licence relating to Category 61A or the manner in which activities are performed has been requested by the Licence Holder. Table 2 below outlines the proposed changes to the existing Licence.

Table 2: Proposed category amendments

<table>
<tr><th>Category</th><th>Current throughput capacity</th><th>Description of proposed amendment</th></tr>
<tr><td>61A</td><td>50,000 tonnes per annual period</td><td>The addition of Lot 127 on Deposited Plan 35464 to the Premises. The lot is comprised of the following paddocks:
<table>
<tr><th>Paddock Name</th><th>Area Ha</th><th>Treatable ha</th></tr>
<tr><td>WP24</td><td>61</td><td>22</td></tr>
<tr><td>WP21</td><td>113</td><td>77</td></tr>
<tr><td>WP22</td><td>73</td><td>44</td></tr>
<tr><td>WP23</td><td>105</td><td>39</td></tr>
<tr><td>WP25</td><td>147</td><td>122</td></tr>
</table>
Biosolids will be applied to the treatable areas of the paddocks. The proposed crop type post application will be Canola and Wheat with the following expected requirements:
• Crop Nitrogen requirement (CNR) 120kg/ha; and
• Crop Phosphorus requirement (CPR) 21kg/ha.</td></tr>
</table>

Following consultation on the draft amendment, the Licence Holder also requested that requirements to apply biosolids within 7 days of receipt at the Premises between 1 October and 31 May and within 30 days of receipt between 1 June and 30 September be removed.

2.3 Premises summary

2.3.1 Overview

The Licence Holder receives biosolids for land application to farm paddocks under contract with the Water Corporation. DWER understands that the contract requires the Licence Holder to be compliant with the *Western Australian guidelines for biosolids management* (DEC 2012) (Biosolids Guidelines). Biosolids are received in the form of lime-amended biosolids (LAB) or dewatered biosolids cake, as described below:

- Biosolids cake – produced at the Beenyup and Woodman Point Wastewater Treatment Plants (WWTP). Raw sludge is stabilised by anaerobic digestion at 35ºC for a minimum of 20 days, producing biosolids which meet the P3 pathogen grade. The liquid biosolids are dewatered, resulting in biosolids cake. The cake has an average of 80% water with the balance being solids.
- LAB – produced at the Subiaco WWTP. The raw sludge is first dewatered and then stabilised with the addition of lime. The pH is maintained above 12 for three days to achieve the P3 pathogen grade.

Biosolids production from Water Corporation's metropolitan operations involves the following processes:

- Mechanical screening, followed by settling and skimming for the removal of large floating objects, sand, grit and settleable organic solids.
- Biological breakdown and stabilisation. Microorganisms in the wastewater feed on the sewage and convert them into mostly organic solids.
- Extensive stabilisation by anaerobic digestion. This achieves stabilisation of organic matter and reduces the quantity of solids and level of pathogens. The stabilised solids produced during the digestion process are termed 'biosolids'.
- Addition of a polymer to assist with mechanical dewatering which results in a black, soft-textured substance with an earthy odour and easy handling properties.

2.3.2 Operations

Upon receival, biosolids are stored in designated stockpile areas within the various paddocks scheduled for land application. Storage includes:

- A flat stockpile area (slope gradient ≤3%) and will incorporate suitable buffers distances to sensitive receptors and restricted stormwater ingress.
- Protection from unauthorised access.
- Signage.

Biosolids products may be stored on the Premises for up to seven days prior to application during the warmer months of October to May and for up to 30 days from June to September.

Biosolids are applied by even spreading across paddocks and incorporating into the soil to a depth of approximately 75 mm. Incorporation occurs generally within 36 hours of application or as soon as conditions are suitable to do so without causing damage to the soil structure, generation of dust or erosion.

Biosolids application rates are calculated to maximise nutrient availability for the crop without providing excess nutrient or other contaminants which may otherwise leach into the environment. The quantity of biosolids applied per hectare is restricted by one of three factors:

- nitrogen limited biosolids application rate (NLBAR);
- phosphorus limited biosolids application rate (PLBAR); or
- contaminant limited biosolids application rate (CLBAR).

The NLBAR and PLBAR are the rates at which biosolids can be applied without exceeding the annual nutrient requirements of the crop or vegetation grown on the land. The CLBAR is the rate at which biosolids can be applied without exceeding the maximum allowable concentration of contaminants in the soil.

The Licence Holder did not provide any paddock specific sampling results for the proposed Lot 127 area. The Delegated Officer has used information from an adjacent premises (L9179/2018/1) as an indicator of potential soil conditions within Lot 127. In the absence of site-specific sampling, this information is considered a reasonable estimation due to the proximity and similar soil properties described in regional soil mapping.

The sampling from the adjacent premises considered soils to be Category 2 and 3, in accordance with Table 9 of the Biosolids Guideline. Category 2 and 3 soils indicate a low risk of phosphorus losses and biosolids application may be conducted on the basis of the nitrogen requirement of the crop. In accordance with the Biosolids Guideline, PLBAR is excluded from the application rate calculations for these categories. This is because application at NLBAR in these soil types has been demonstrated to not result in phosphorus leaching. A summary of the soil sampling results is contained in Table 3.

Table 3: Soil samples from three paddocks within a premises adjacent to the south of Lot 127

Analyte	Units	Reporting limit	Paddock		
			J4	J9	J10
PRI (1:20)	mL/g	1	24	16	19
Phosphorus (Colwell)	mg/kg	1	21	26	44
Cation Exchange Capacity	meq/100g	0.01	6.8	4.5	5.8
Reactive Iron	mg/kg	1	500	460	680
Clay (0.002mm)	%w/w	0.1	1	1	2
Organic Matter	%w/w	0.1	4.2	4.1	4.6
Bulk density	kg/L	0.1	1.7	1.7	1.5

Prior to the application of biosolids to paddocks within the Premises, the Licence Holder is required to submit a Review of Environmental Factor (REF) to the Department of Health and DWER. The REF document details the specific paddock area and quantity of biosolids to be applied, based on the contaminant/pathogen grading of sampled biosolids and the results of soil investigations on the application area. A specific REF is created and submitted for every paddock proposed to have an application of biosolids in each year. A simplified REF may be submitted where a REF with all relevant information and supporting documentation related to the property is available or known.

The Delegated Officer considers that:

1. A full REF covering the Lot 127 property has not been submitted or able to be located within the department's records. A full REF was located for paddock WP25 (formerly airstrip paddock), however this did not cover the remainder of the lot. Therefore, a REF with all relevant information and supporting documentation related to the property (Lot 127) is not available or known to the department.
2. In accordance with the Biosolids Guideline, a full REF will be required for paddocks within Lot 127. For all new proposed biosolids land applications the REF must contain all the relevant information.

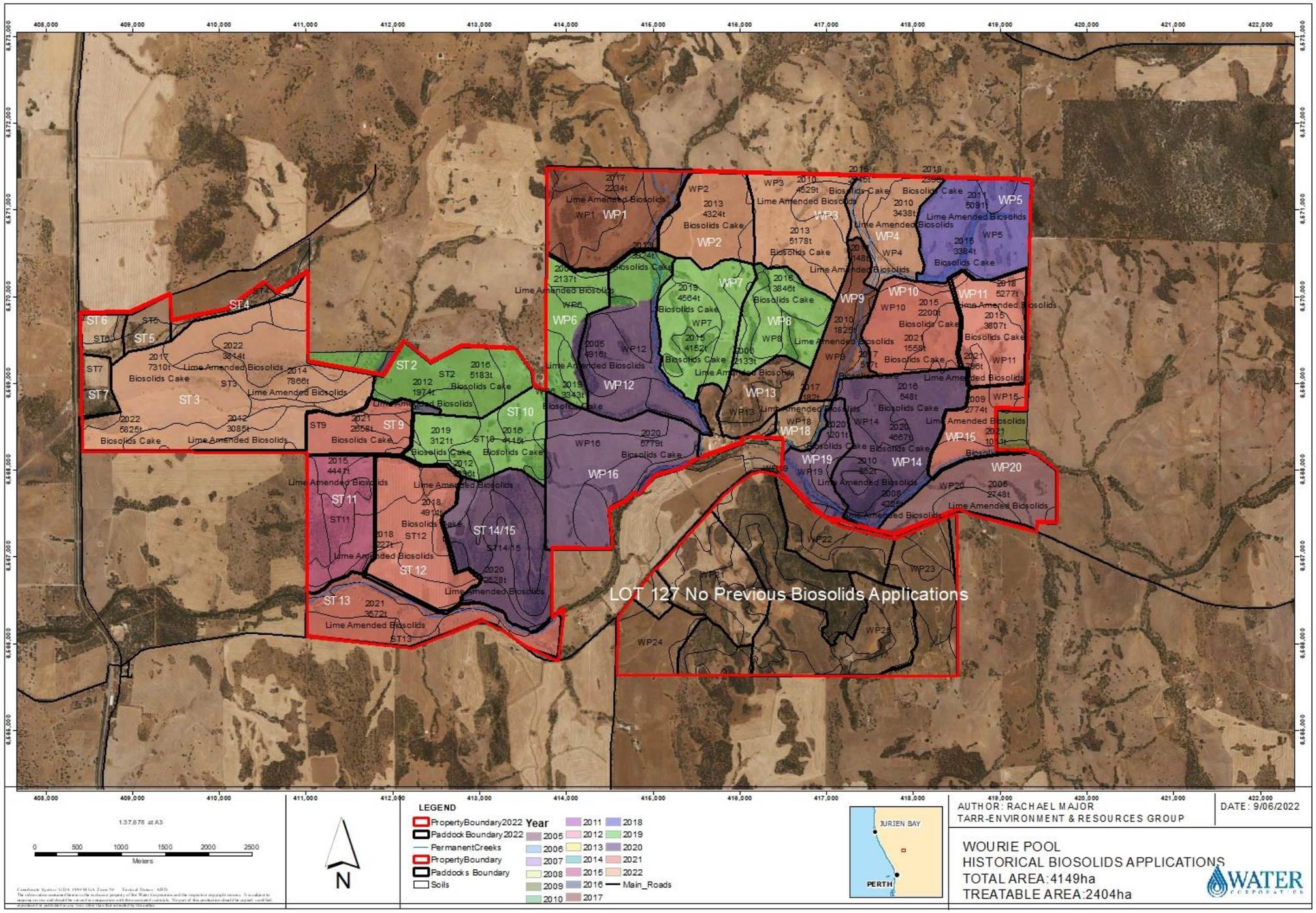


Figure 1: Proposed Premises boundary, paddocks and historical biosolids application

Licence: L7811/2002/4

2.4 Consolidation of Licence

As part of this amendment package the department has consolidated the licence by incorporating changes made under the amendments as summarised in Table 4.

Table 4: Licences consolidated in this amendment

Instrument	Issued	Summary of approval
L7811/2002/4	19/05/2020	Amendment to increase the maximum capacity of Category 61A from 10,000 tonnes to 50,000 tonnes per annual period
L7811/2002/4	16/05/2022	Notice of Amendment of Licence Annual Reporting Conditions
L7811/2002/4	07/03/2023	Amendment to include Lot 127 on Deposited Plan 35464 within the Premises

The obligations of the Licence Holder have not changed in consolidating the licence. The department has not undertaken any additional risk assessment of the Premises related to previous amendments.

In consolidating the licence, the CEO has:

- corrected clerical mistakes and unintentional errors.

The full consolidation of licence conditions as they relate to this Revised Licence are detailed in Section 5.1. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

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 operation which have been considered in this Amendment Report are detailed in Table 5 below.

Table 5 also details the control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 5: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Storage and application of biosolids to paddocks within Lot 127	Air/windborne pathway causing impacts to health and amenity	Biosolids are not applied immediately before or during strong winds. Biosolids incorporation into topsoil will not occur when weather conditions are considered unfavourable.

Emission	Sources	Potential pathways	Proposed controls
Odour	Storage and application of biosolids to paddocks within Lot 127 Storage of biosolids for more than 7 days between 1 October to 31 May and more than 30 days between 1 June to 30 September	Air/windborne pathway causing impacts to amenity	Biosolids will not be stored or applied to areas located within 100 metres of residential homesteads within the lot. Biosolids will not be stored or applied to areas located within 1,000 metres of residential homesteads external to the lot. Biosolids are incorporated into the topsoil within 36 hours of application unless soil and weather conditions are considered unfavourable.
Nutrients and contaminants within biosolids		Direct discharge to land causing impacts to soil quality and terrestrial ecosystems	Biosolids will not be stored or applied to areas located within 50 metres of the banks of non-perennial watercourses. Biosolids will not be stored or applied to areas located within 100 metres of the Moore River. Biosolids will not be stored in areas with a slope gradient greater than 3%. Biosolids will not be applied to land at a rate of more than 25 dry tonnes per hectare for lime-amended biosolids or 10 dry tonnes per hectare for biosolids cake. Biosolids will not be applied to land slopes with a gradient greater than 12%. Biosolids will not be applied to land in excess of the limiting factor for a particular paddock, crop type and biosolids composition. Biosolids are not applied immediately before or during heavy rain or strong winds. Soil conservation practices will be implemented to minimise erosion where biosolids are applied to land with a slope gradient of 6-12%. Only biosolids with a contaminant grade of 2 or higher will be accepted and applied to land.
		Surface runoff causing direct and indirect impacts to terrestrial ecosystems	
		Surface runoff causing impacts to water quality and aquatic ecosystems	
		Infiltration through soil to groundwater causing impacts to groundwater quality and downgradient receptors	
Pest and disease vectors		Air/windborne pathway causing impacts to health and amenity	Biosolids are incorporated into the topsoil within 36 hours of application unless soil and weather conditions are considered unfavourable. Only biosolids with a pathogen grade of 3 or higher will be accepted and applied to land.

3.1.2 Receptors

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

Table 6 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 6: Sensitive human and environmental receptors and distance from prescribed activity

Receptors	Distance from prescribed activity
Human receptors	
Sensitive receptor – Residential homestead R1 (Residence 12 from previous decision)	Located within the proposed new Premises area, adjacent to the west of paddock 21 and north of paddock 24
Sensitive receptor – Residential homestead R2 (Residence 10 from previous decision)	Approximately 430 m west of the proposed new Premises boundary and paddock 24
Sensitive receptor – Residential homestead R3 (Residence 11 from previous decision)	Approximately 290 m east of the proposed new Premises boundary and 335 m east of paddock 23
Sensitive receptor – Residential homestead R4 (Residence 9 from previous decision)	Approximately 1.5 km southwest of the proposed new Premises boundary and paddock 24
Sensitive receptor – Residential homestead (Residence 13 from previous decision)	Located within the Premises boundary on Lot 893 on Plan 3194
Sensitive receptor – Residential homestead (Residence 14 from previous decision)	Located within the Premises boundary on Lot 893 on Plan 3194
Sensitive receptor – Residential homestead (Residence 15 from previous decision)	Located within the Premises boundary on Deposited Plan 412147
Sensitive receptor – Residential homestead (Residence 16 from previous decision)	Located within the Premises boundary on Lot 804 on Deposited Plan 412147
Sensitive receptor – Residential homestead (Residence 17 from previous decision)	Located within the Premises boundary on Lot 52 on Plan 22293

Receptors	Distance from prescribed activity
Sensitive receptor – Residential homestead (Residence 1 from previous decision)	Approximately 1 km from the Premises boundary
Sensitive receptor – Residential homestead (Residence 2 from previous decision)	Approximately 1.91 km from the Premises boundary
Sensitive receptor – Residential homestead (Residence 3 from previous decision)	Approximately 1.55 km from the Premises boundary
Sensitive receptor – Residential homestead (Residence 4 from previous decision)	Approximately 990 m from the Premises boundary
Sensitive receptor – Residential homestead (Residence 5 from previous decision)	Approximately 1.03 km from the Premises boundary
Sensitive receptor – Residential homestead (Residence 6 from previous decision)	Approximately 1.18 km from the Premises boundary
Sensitive receptor – Residential homestead (Residence 7 from previous decision)	Approximately 175 m from the Premises boundary
Sensitive receptor – Residential homestead (Residence 8 from previous decision)	Approximately 1.06 km from the Premises boundary
Environmental receptors	
Underlying groundwater – Combined - Fractured Rock West (unconfined)	Limited information is available about groundwater at the Premises. Previous REFs and assessments have assumed that groundwater occurs more than 10 mBGL.
Surface water – Minor non-perennial watercourse	A number of minor non-perennial watercourses are located within the proposed new Premises area. The watercourses generally drain northward towards the Moore River or are intercepted by farm dams located within the new Premises area.
Surface water – Moore River	Approximately 160 m north of the proposed new Premises boundary and paddock 22.

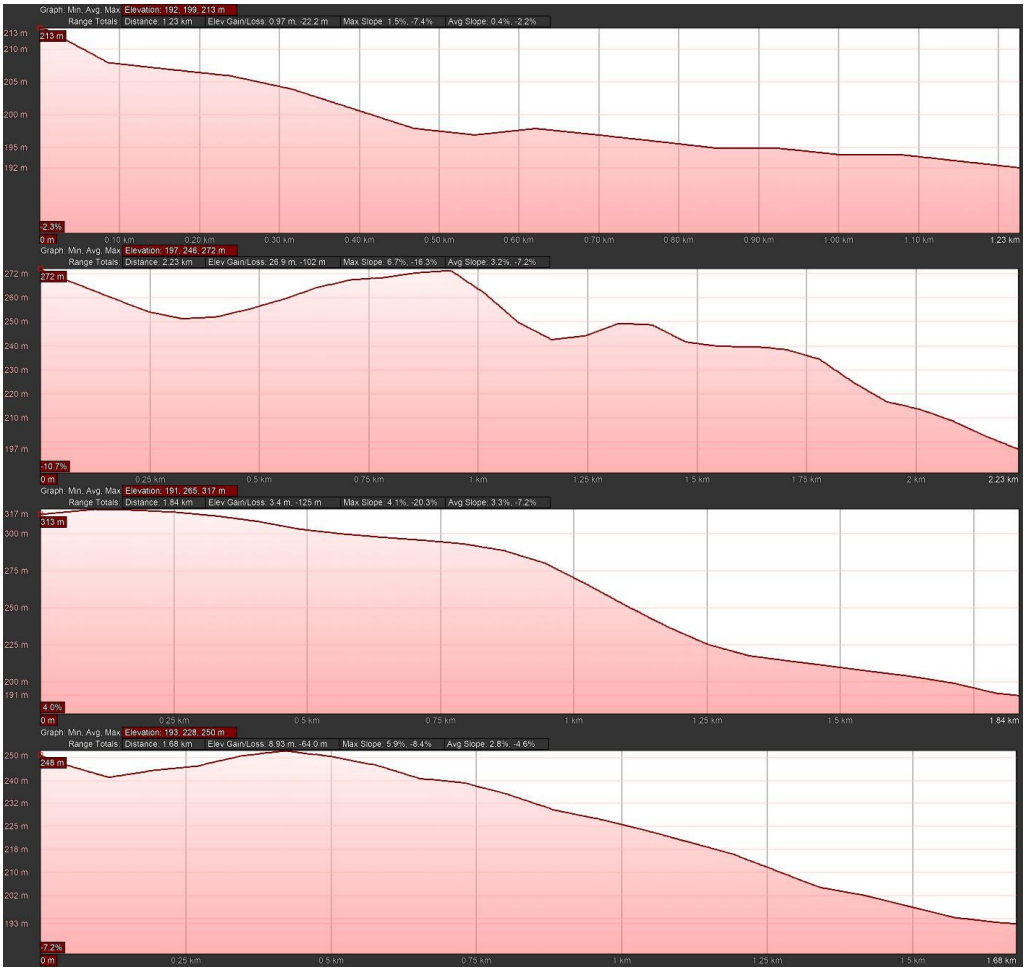
Receptors	Distance from prescribed activity
Threatened flora – *Beaufortia eriocephala* (Woolly Bottlebrush)	Located within road reserve adjacent to the proposed new Premises boundary, approximately 430 m west of paddock 22. Considered Priority 3 under the Priority Flora List. The species is subject to management under the Western Australian Wildlife Management Program No. 28 Declared Rare and Poorly Known Flora in the Moora District.
Threatened flora – *Darwinia carnea* (Mogumber and Narrogin Bell) population 3b and 3c	Located within the proposed new Premises area, approximately 300 m west of paddock 25. Listed as critically endangered under the *Biodiversity Conservation Act 2016* (WA) and endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth). The species is subject to management under the *Mogumber and Narrogin Bell (Darwinia carnea) Recovery Plan* (DEC 2009) which has been adopted as an Interim Recovery Plan (WA) and a National Recovery Plan (Cwth).
Threatened flora – *Darwinia acerosa* (Fine-leaved Darwinia)	Approximately 260 m east of the proposed new Premises boundary and 320 m east of paddock 23. Listed as endangered under the *Biodiversity Conservation Act* 2016 (WA) and endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth). The species is subject to management under the Western Australian Wildlife Management Program No. 28 Declared Rare and Poorly Known Flora in the Moora District.
Priority flora – *Calothamnus pachystachyus*	Located within the proposed new Premises area, approximately 300 m west of paddock 25. Listed as priority 4 in the Priority Flora List.

3.1.3 Pathways

Information relating to pathways and conditions at the Premises are provided in Table 7.

Table 7: Potential pathways and environmental conditions relevant to the Premises

Aspect	Details
Meteorology	The SILO database offered by the Queensland Department of Environment and Science provided the following information, based on records for the area from 1992 to 2021: • The majority of rainfall occurs between May and October, with larger volumes falling in the winter months and peaking in July. • The average annual rainfall is 502.6 mm. • Annual potential evapotranspiration is 2183 mm.

Aspect	Details
Geology and soils	The following soil systems are mapped as occurring across the area proposed for inclusion in the Premises, shown in order of their proportion: • Julimar System: Moderately dissected areas with gravelly slopes and ridges and minor rock outcrop over weathered granite and granitic gneiss. Loamy gravel, shallow duplexes and pale deep sand common. • Yarawindah System: Dissected lateritic plateau with rolling to undulating low hills and undulating rises; loamy gravel, loamy earth, loamy duplex, some rock; weathered schist and some gneiss. • Udamong System: Partially stripped lateritic plateau with undulating low hills to gently undulating rises. Loamy gravel, minor pale sand and clay; deep weathered granitic gneiss, gneiss and schist. • Wannamal System: Alluvial plain and fans; Brown and red loamy earths, Yellow/brown sandy duplexes, loamy duplexes.
Topography	The Lot 127 area proposed for inclusion in the Premises is situated on a generally north facing hill side, ranging from approximately 313 mAHD at its highest point on the southern boundary to approximately 186 mAHD at the northwestern boundary. Paddock areas within Lot 127 generally have average slopes between approximately 3 % – 6 %. The approximate elevation profile across Lot 127 as estimated by the Google Earth digital elevation model is contained in Figure 2 below.  **Figure 2: Lot 127 South-North elevation profile at approximately 1km intervals**

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete they have not been considered further in the risk assessment.

Where the Licence Holder 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 Licence Holder'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 Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 8.

The Revised Licence L7811/2002/4 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. the storage and application of biosolids to land.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

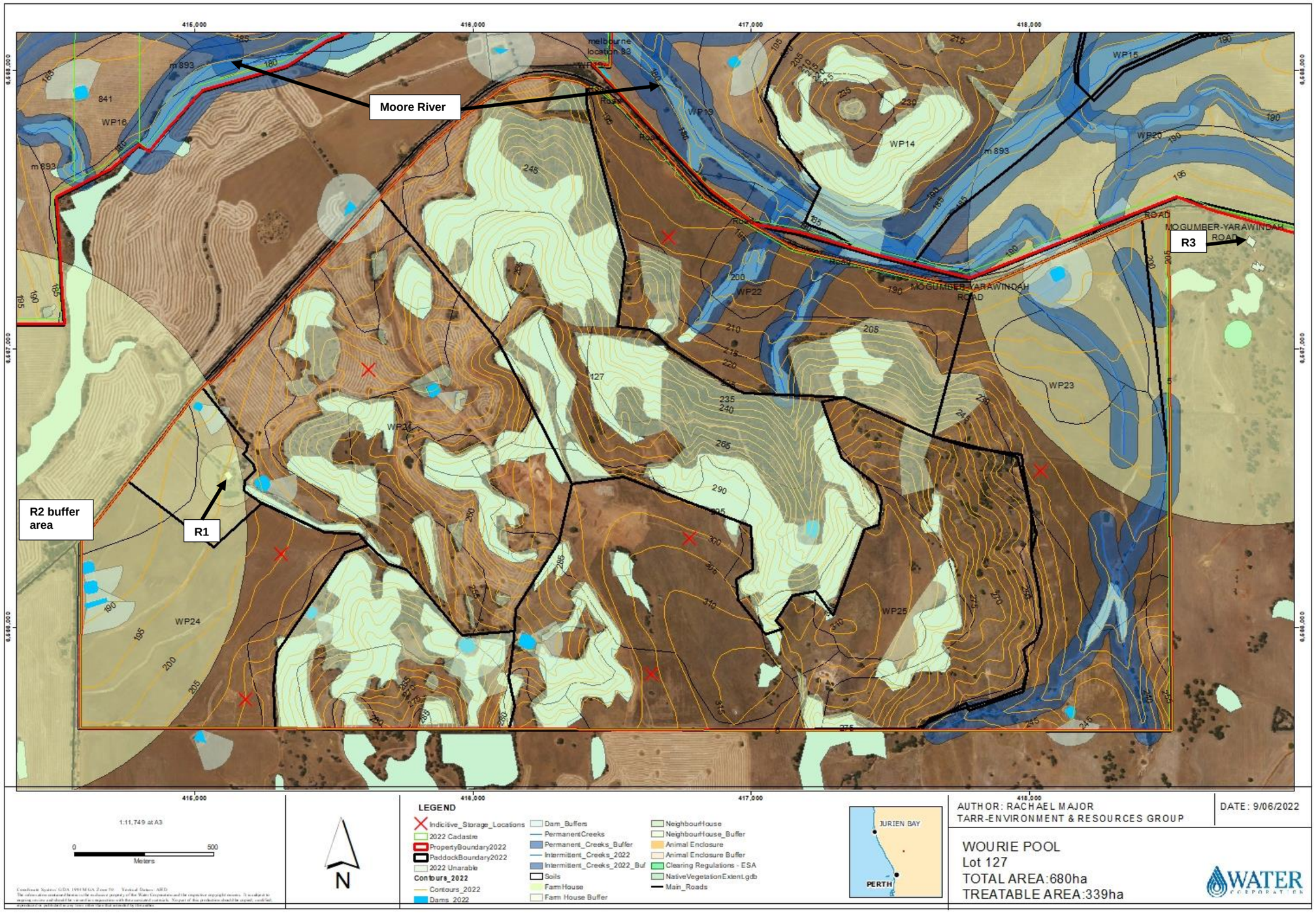


Figure 3: Lot 127 paddocks, potential receptors, storage locations and buffer distances

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Table 8. Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls	Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Operation								
Storage and application of biosolids to paddocks within Lot 127	Dust	Air/windborne pathway causing impacts to health and amenity	Sensitive receptors (R1, R2, R3, R4)	Refer to Section 3.1.1	C = Slight L = Possible **Low Risk**	Y	Condition 2: Waste processing limits and specifications Condition 4: Review of environmental factors	Based on the siting of the paddocks and the Licence Holder not applying biosolids during strong winds, the risk event is considered to have minimal impact to amenity at a local scale. The risk event could occur at some time due to the extended storage of biosolids. The Delegated Officer considers that the Existing Licence conditions are sufficient and no additional regulatory controls are required.
	Odour	Air/windborne pathway causing impacts to amenity		Refer to Section 3.1.1	C = Minor L = Possible **Medium Risk**	Y	Condition 2: Waste processing limits and specifications Condition 4: Review of environmental factors	The Premises will accept biosolids up to Pathogen Grade 3, which have the potential for offensive odours to be generated in the absence of management controls. Based on the siting of the paddocks, the Licence Holder's proposed controls and the potential storage of biosolids for extended periods, the risk event is considered to have low-level impact to amenity at a local scale and could occur at some time. The Delegated Officer considers that the Existing Licence conditions are sufficient and no additional regulatory controls are required.
	Nutrients and contaminants within biosolids	Direct discharge to land causing impacts to soil quality and terrestrial ecosystems	Threatened and priority flora species: – *Darwinia carnea* (CR) – *Darwinia acerosa* (EN) – *Calothamnus pachystachyus* (P4)	Refer to Section 3.1.1	C = Major L = Rare **Medium Risk**	Y	Condition 1: Waste acceptance specifications Condition 2: Waste processing limits and specifications Condition 3 - Extended storage requirements (bunding) Condition 4: Review of environmental factors	The Delegated Officer has considered the comments provided by the Species and Communities Assessment Team of the Department of Biodiversity, Conservation and Attractions (DBCA). The application of biosolids within Lot 127 was initially considered to have the potential to cause impacts to populations of conservation significant flora species known to occur in the area. The flora species, *D. carnea* and *D. acerosa*, are listed as critically endangered and endangered respectively. Given their small range and limited population numbers, habitat containing the species has a high conservation value. Accordingly, the Delegated Officer considers that the risk event has the potential to cause short-term impact to an area of high conservation value. Information provided by DBCA following completion of a targeted flora survey on Lot 127 suggests that further controls relating to *D. acerosa* and *D. carnea* populations would not be required. Neither species were able to be located within areas located downslope of the proposed biosolids applications. Accordingly, the Delegated Officer considers that the risk event may only occur in exceptional circumstances.
		Surface runoff causing direct and indirect impacts to terrestrial ecosystems						
		Surface runoff causing impacts to water quality and aquatic ecosystems Infiltration through soil to groundwater causing impacts to groundwater quality and downgradient receptors	Surface water Underlying groundwater		C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1: Waste acceptance specifications Condition 2: Waste processing limits and specifications Condition 4: Review of environmental factors	Based on the siting of the paddocks and proposed operations in accordance with the Biosolids Guideline, the risk event is considered to have low level offsite impacts at a local scale. The risk event will probably not occur in most circumstances, due to the Licence Holder's proposed controls.
	Pest, pathogen and disease vectors	Air/windborne pathway causing impacts to health and amenity Attraction and harbouring of pests causing impacts to health and amenity	Sensitive receptors (R1, R2, R3, R4)	Refer to Section 3.1.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1: Waste acceptance specifications Condition 2: Waste processing limits and specifications Condition 4: Review of environmental factors	The Premises will accept biosolids up to Pathogen Grade 3, which have the potential to impact human health. Based on the Licence Holder's proposed controls and buffer distances to residences, the risk event is considered to have low level adverse health effects, mid-level impact to amenity and will probably not occur in most circumstances.
Storage of biosolids at the Premises for more than 7 days between 1 October to 31 May and more than 30 days between 1	Odour	Air/windborne pathway causing impacts to amenity	Sensitive receptors	Refer to Section 3.1.1	C = Minor L = Possible **Medium Risk**	Y	Condition 1: Waste acceptance specifications Condition 2: Waste processing limits and specifications Condition 4: Review of environmental factors	The Premises will accept biosolids up to Pathogen Grade 3, which have the potential for offensive odours to be generated in the absence of management controls. Based on the information contained in the Biosolids Guideline, the risk event is considered to have low-level impact to amenity at a local scale and could occur at some time during periods of extended storage. The Delegated Officer considers that the Existing Licence conditions are sufficient and no additional regulatory controls are required.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
June to 30 September	Nutrients and contaminants within biosolids	Surface runoff causing impacts to terrestrial and aquatic ecosystems Infiltration through soil to groundwater causing impacts to groundwater quality and downgradient receptors	Surface water Underlying groundwater	Refer to Section 3.1.1	C = Moderate L = Unlikely **Medium Risk**	N	**Condition 2 [Table 2(b)(c)] - Extended storage requirements**	Based on the existing and proposed controls implemented by the Licence Holder, the risk event is considered to have low level offsite impacts at a local scale and will probably not occur in most circumstances. The Delegated Officer considers that bunding of storage areas when biosolids are stockpiled for extended periods requires specification as a regulatory control. This is a control listed in the Biosolids Guideline.
	Pest, pathogen and disease vectors	Air/windborne pathway causing impacts to health and amenity Attraction and harbouring of pests causing impacts to health and amenity	Sensitive receptors	Refer to Section 3.1.1	C = Moderate L = Possible **Medium Risk**	N	**Condition 2 [Table 2(b)(c)] - Extended storage requirements**	The Premises will accept biosolids up to Pathogen Grade 3, which have the potential to impact human health. Based on the information contained in the Biosolids Guideline, the risk event is considered to have low level adverse health effects, mid-level impact to amenity and could occur at some time. The Delegated Officer considers that further controls for extended storage are required as regulatory controls. These controls have been informed through advice provided by a stable fly specialist from the Department of Primary Industries and Regional Development.

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

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 9 provides a summary of the consultation undertaken by the department.

Table 9: Consultation

Consultation method	Comments received	Department response
Local Government Authority advised of proposal (26 July 2022)	The Shire of Victoria Plains did not provide any comments.	N/A
Department of Health (DoH) advised of proposal (26 July 2022)	DoH replied on 24 August 2022 stating that they have no objection to the proposal subject to the proponent applying for approval to use biosolids in compost with the DoH and ensuring all DWER requirements are met. Further information on the requirements can be sourced from https://ww2.health.wa.gov.au/Articles/F_I/Guidance-on-applying-for-approval-to-use-biosolids-in-compost and the Biosolids Guideline.	The Delegated Officer notes that a full Review of Environmental Factors (REF) has not previously been submitted in relation to Lot 127. This has been communicated with the Licence Holder through this Decision Report and submission of the full REF has been requested.
Department of Biodiversity, Conservation and Attractions (DBCA) advised of proposal (26 July 2022)	DBCA replied on 26 August 2022 providing the following comments: *Darwinia carnea* (CR) is known from only two natural and three translocated populations occurring on lateritic gravel on hilltops near Narrogin and amongst massive laterite on breakaways in the Mogumber area. Population 3B is located within Lot 127 and population 3C is located adjacent (to the south on Lot 1806). Population 3B was last surveyed by DBCA staff in 2012 when 8 mature plants were located on the top of the gravelly slopes and hilltops. Population 3C was surveyed in 2018 when 23 mature plants and 16 juveniles were recorded on the top of the breakaway. These two subpopulations are contiguous across the two lots and appear to only occur at the top of the breakaway. Subpopulation 3B is on the 290m contour line, which is close to the highest point of lot 127. It is therefore assumed that run-off should not directly impact this species. The application indicates these locations are approximately 300 metres west of a proposed biosolids application area and given the importance of this population to the conservation of a critically endangered species, care should be taken to ensure that these populations are protected from potential secondary impacts from the biosolid application and that buffers be applied as appropriate. *Darwinia acerosa* (EN) is only known from 8 populations within a small range of approximately 50km North South, between Wannamal and Koojan. Subpopulation 6 was recorded in 1982 and contained 1000 plants, however it has not been relocated since. The location description for subpopulation 6 is 7km W of Great Northern Highway along Mogumber-Yarrawindah Rd, then 500 m S across cleared paddock to a steep hillside. Due to the age of the record, coordinates were determined using a map rather than a GPS, which plot the location within lot 5 (adjacent to lot 127) Consequently, the mapped location is likely to be inaccurate and the exact location is unknown. DBCA staff have tried to relocate subpopulation 6 within lots 4 and 5, with no success, It is possible that the actual location of the subpopulation 6 is within the Lot 127, subject to this proposal, as the site description corresponds and it appears to contain suitable habitat. However, DBCA has been unable to gain access to Lot 127 to confirm the species presence/absence. As it is considered likely that *Darwinea acerosa* (endangered) occurs on Lot 127 and	To address the potential for impacts to conservation significant species, the existing conditions requiring buffer distances within the licence will be modified to include an appropriate buffer for threatened flora populations. Further consultation was undertaken to determine an applicable buffer distance within the condition. It was determined that 50 m would be appropriate. The Delegated Officer notes that the existing location information for the occurrence of *Darwinia acerosa* is inaccurate and it may occur in suitable habitat in the immediate area. In consideration of the proposed condition requiring activity buffer areas around threatened flora populations on the Premises, the Delegated Officer considers that the Licence Holder will need to determine if and/or where the species is present within Lot 127 in order to appropriately enact those buffers (where required). A condition has been added that requires a targeted flora survey across Lot 127 prior to the application of biosolids. The Delegated Officer considers that other concerns regarding impacts to watercourses and the potential for nutrient runoff to impact on the downslope population of *Beaufortia eriocephala* are appropriately managed through the existing licence conditions restricting biosolids application to only occur under certain slope and weather conditions. The Licence Holder (via Water Corporation) provides a Review of Environmental Factors (REF) to DWER and the Department of Health, prior to each application on individual paddocks within the licensed area. They list the biosolids composition and application rate within this document, due to variability over time (both in the biosolids and receiving soils). An example of the typical biosolids composition based on previous application years was provided to DBCA. The Licence Holder is only authorised to accept biosolids graded as P3 C2 or higher quality in accordance with the Biosolids Guideline.

<table>
<tr><th>Consultation method</th><th>Comments received</th><th>Department response</th></tr>
<tr><td></td><td>hence has the potential to be impacted by the proposed activity, a targeted flora survey for this species should be completed prior to approval. If threatened flora is found to be present, mitigation measures should be undertaken to avoid impacts. If impacts are unable to be avoided and are deemed acceptable, a section 40 authorisation under the Biodiversity Conservation Act is required.

Beaufortia eriocephala (P3) Population 6 is recorded within a road reserve adjacent to Lot 127. The application indicates this is approximately 430 m west of a proposed biosolids application area. As this population appears to be located low in the landscape it may be impacted by run off from the application area.

Other general comments:

• There are several WA Herbarium specimen records of priority species collected in the vicinity of the application area, including Tetratheca plumosa (P1), Synaphea rangiferops (P2) and Calothamnus pachystachyus (P4). These species don’t seem to have been included in the assessment process.

• The proponent (via DWER) has not provided any information on the composition of the biosolids, how they will be applied, or how they will be managed to reduce / mitigate impacts to the three flora species mentioned above. Therefore it is difficult to quantify potential impacts.

• There appears to be a number of natural watercourses on / and bordering Lot 127 (i.e. Wourie Pool). Potential runoff of the biosolids into the waterways requires clarification in case it has any potential for direct / indirect impacts to these conservation significant flora species and their habitat.

• Potential direct / indirect impacts to conservation significant flora habitat may result from groundwater contamination, surface water pollution and direct run off result in nutrient enrichment of the species habitat. The risk to these flora species could potentially increase significantly if they are located lower in the landscape relative to the surrounding biosolid application areas.

• If threatened flora is likely to be impacted by the proposal (directly or indirectly) a section 40 authorisation under the Biodiversity Conservation Act is required.

Further advice was provided on 5 September 2022 that a 50 m buffer area would be appropriate and that mapping of the Darwinia carnea population can be provided to the Licence Holder.</td><td></td></tr>
<tr><td>DBCA comments provided to Licence Holder and copied to DWER following additional consultation (25 October 2022)</td><td>DBCA is satisfied there is little risk to Darwinia carnea (CR) Pop 3B given its location high in the landscape with a reasonable buffer of remnant vegetation between it and the surrounding arable land where the biosolids are to be applied.

However, without confirmation of where Darwinia acerosa (EN) Pop 6 occurs and given that other populations of D. acerosa are known to occur lower in the landscape, it is difficult to confirm that it would not be impacted by biosolid application. As discussed, DBCA will endeavour to undertake a survey for this population as soon as possible. A DBCA staff member will contact the property owner to arrange a site visit, which would likely be in late November.</td><td>Noted and considered when addressing Licence Holder comments on the draft amendment.</td></tr>
<tr><td>Licence Holder was provided with draft amendment on 16 September 2022</td><td>The Licence Holder responded on 26 October 2022 with the following comments:

<table><tr><th>Condition</th><th>Justification for change</th><th>Proposed Condition</th></tr><tr><td>Table 2 (b) Biosolids are applied to land within 7 days of receipt at the premises between 1 October and 31 May, or within 30 days of receipt at the premises between 1 June and 30 September:</td><td>• While we promote minimum storage times the Guideline allows for extended storage beyond 7 days
• The 7-day storage requirement is difficult to achieve from a farming operational perspective due to: Vehicle movement bans, delay in harvest due to extended winter.
• Application to land is generally achieved within 30days but there are times where it cannot be due to climatic conditions, paddocks can become inaccessible for machinery due to excessive rainfall.
• An option for extended storage with additional controls will ensure non-compliance against conditions are minimised.</td><td>Table 2 (b) Where conditions are suitable Biosolids are applied to land within 30 days of receipt at the premises, biosolids to be stored within a bunded paddock area on the premises, if storage period exceeds 30 days;</td></tr><tr><td>(Table 2c) Biosolids are not stored or applied to land within the following minimum buffer distances for specified areas:
(xii) 50 metres – populations of threatened flora</td><td>• This is difficult to achieve without accurate location data for threatened flora populations identified. Shape files only provide an approximate location for the plant and can be inaccurate.
• Biosolids application is strictly to arable, previously cropped areas only so threatened flora will not be affected.</td><td>Remove point (xii)</td></tr></table></td><td><u>Condition 2 Table 2: (b) – Biosolids application timeframes</u>

The Delegated Officer notes that the Biosolids Guideline does give provision for extended storage times of biosolids, provided that additional controls are implemented. However, the proposed change to the condition is not considered suitable. Bunding of storage areas is an additional control for contaminant runoff from the stockpiles but does not address the increased potential for odour generation and attraction of pest, pathogen and disease vectors, particularly during hotter periods of the year.

The Delegated Officer has resolved to amend this requirement with the additional controls listed in the Biosolids Guideline. This will require the following amendments:

Table 2(b):

Between 1 October and 31 May biosolids must be applied to land within 7 days of receipt at the premises, or where that is not possible, in accordance with the requirements of Table 3;

Table 2(c):

Between 1 June and 30 September biosolids must be applied to land within 30 days of receipt at the premises, or where that is not possible, in accordance with the requirements of Table 3;

New Condition:

The licence holder must ensure that stockpiling of biosolids for the storage durations and monthly periods listed in Table 3 occurs in accordance with the corresponding storage requirements set out in Table 3.

Table 3: Requirements for extended stockpiling of biosolids</td></tr>
</table>

<table>
<tr><th>Consultation method</th><th>Comments received</th><th>Department response</th></tr>
<tr><td></td><td>
<table>
<tr><td>Specified actions The licence holder must: (a) conduct a targeted flora survey for the presence of Darwinia acerosa within Lot 127; and (b) prepare and submit to the CEO a report on that survey. The targeted flora survey and report required by condition 12, must be undertaken in accordance with the Technical Guidance: Flora and Vegetation Surveys. The licence holder must not accept or apply biosolids onto Lot 127 until the report required by condition 12 has been submitted to the CEO</td><td>Biosolids application to Lot 127 will not impact declared rare flora population for the following reasons:
The Licence currently has conditions specific to runoff control (slope, incorporation, weather constraints and soil conservation) therefore low risk of inundation
Biosolids application is strictly to arable areas only, which in this case are previously ploughed areas, therefore the existence of D. acerosa within the arable area is extremely low (impossible)
Application maps, pre-start inductions and scheduled (bi-weekly) compliance checks assist full licence compliance and therefore implementation of runoff controls to manage any inundation risks
The Licence holder will allow DBCA access to Lot 127 to undertake flora surveys. Water Corporation will coordinate access in consult with Rosemarie Rees ad Bree Phillips from DBCA.
DBCA have confirmed biosolids applications pose little risk to existing populations, therefore the same would stand for emerging populations given biosolids are only apply to arable areas, buffer are installed for environmental sensitive areas, including declared flora, and existing runoff controls on the licence adequately manage inundation risks.
As shown in map 1. The proposed Biosolids application areas represented by yellow polygons.
Known populations of Darwinia are uphill of Lot 127
Biosolids application will not occur within 200m of the known population.</td><td>Remove Specified actions</td></tr>
</table>
The Licence Holder also requested that they be provided with a second 21-day comment period.
</td><td>
<table>
<tr><th>Storage duration</th><th>Monthly period</th><th>Storage requirements</th></tr>
<tr><td>More than 7 days</td><td rowspan="2">1. 1 October to 31 May</td><td>(a) Stockpiles must be covered or otherwise enclosed to exclude vectors and prevent wind-blown material; and
(b) Stockpiles of dewatered biosolids cake must be monitored for flystrike on a fortnightly basis by an entomologist.</td></tr>
<tr><td rowspan="2">More than 30 days</td><td>(a) Stockpiles must be covered or otherwise enclosed to exclude vectors and prevent wind-blown material;
(b) Stockpiles of dewatered biosolids cake must be monitored for flystrike on a fortnightly basis by an entomologist; and
(c) Stockpiles must be stored within a bunded storage area.</td></tr>
<tr><td>2. 1 June to 30 September</td><td>(a) Stockpiles must be covered or otherwise enclosed to exclude vectors and prevent wind-blown material;
(b) Stockpiles of dewatered biosolids cake must be monitored for flystrike on a monthly basis by an entomologist; and
(c) Stockpiles must be stored within a bunded storage area.</td></tr>
</table>
<u>Condition 2 Table 2: (c)(xii) – threatened flora buffer</u>
The potential for inaccuracies with spatial information is noted and in consideration of the Licence Holder’s further consultation with DBCA, the Delegated Officer has resolved to modify this requirement to:
(xii) 50 metres – known locations of threatened flora that occur on Lot 127.
<u>Conditions 12, 13 and 14 – Specified actions for flora survey</u>
The Delegated Officer notes that additional consultation between the Licence Holder and DBCA has resolved that D. carnea would not be impacted by the application due to its known location and uphill/rocky outcrop habitat requirements. However, it is noted from the consultation that Darwinia acerosa still has the potential to be impacted as it may occur lower in the landscape and its occurrence across the lot is still unknown. As this information is not being requested prior to the amendment being granted, the Delegated Officer considers that the intent of the specified action conditions need to be retained. The conditions will be amended in consideration of the Licence Holder’s additional consultation with DBCA to the following:
Condition 13:
The licence holder must conduct a targeted flora survey for the presence of Darwinia acerosa within Lot 127, prior to the storage or application of biosolids within Lot 127.
Condition 14:
The targeted flora survey required by condition 12, must be undertaken in accordance with the Technical Guidance: Flora and Vegetation Surveys or be undertaken by a representative of the Parks and Wildlife Service.
Condition 15 was removed.
</td></tr>
<tr><td>Licence Holder was provided with second draft amendment on 15 November 2022</td><td>
The Licence Holder responded on 25 November 2022 with the following comments:
<table>
<tr><th>Condition</th><th>Justification for change</th><th>Proposed condition</th></tr>
<tr><td>Condition 3 and obligations listed in Table 3</td><td>Operationally there are challenges for the farmer to get their biosolids applied to land within the Guideline requirements, which has only been exacerbated with the current workforce constraints in the region. Therefore, a degree of pragmatism is required to manage the risk associated with biosolids storage.
Implementation of the covering obligations listed in Table 3 will be a challenge and almost impractical. The capacity of the farmer to cover a stockpile, which at times can exceed 2,000m2 is severely constrained in terms of an appropriate cover material, but also the level of OHS risk to when undertaking the activity. Experience within the biosolids program suggests the incidence of stockpiles being struck by flies and then creating a vector risk is low. The risk of wind-blown material is also extremely low given the biosolids cake forms an outer, hardened crust within a relatively short time</td><td>Proposed condition should consider the following practical measures:
Storage > 7days during 1 Oct to 31 May the licensee must:
Undertake weekly inspections of the stockpile to assess if fly breeding within the stockpile is occurring.
If fly breeding is occurring the licensee must immediately treat the stockpile by applying a pesticide control or immediately spreading within application area, including</td></tr>
</table>
</td><td>
The Delegated Officer notes the comments regarding the practicability of the additional control measures for the extended storage of biosolids. As the controls were taken from the Biosolids Guideline and relate to the management of stable fly, the Delegated Officer considered that further advice from the Department of Health and the Department of Primary Industries and Regional Development (DPIRD) were required.
Advice was subsequently provided from DPIRD that was generally supportive of the Licence Holder’s proposed controls, with some modifications. The proposed controls were implemented as regulatory conditions in the Revised Licence, taking into consideration the advice provide from DPIRD.
The condition requiring stockpiles to be stored within a bunded storage area when stored for longer than 30 days has been retained, as this is a clear specification in the Biosolids Guideline and the Licence Holder’s proposed condition is subjective and unenforceable.
In consideration of the Licence Holder and DPIRD comments, the conditions were amended to the following:
Between 1 October and 31 May biosolids must be applied to land within 7 days of receipt at the premises, or where that is not possible:
(i) storage for longer than 30 days must be within a bunded storage area;
</td></tr>
</table>

Consultation method	Comments received	Department response
	frame, thereby preventing any uplift by prevailing winds. We are not aware of any incident concerning wind-blown material for the entirety of the biosolids program This hardened crust also provides a level of fly control, acting as a moisture barrier. • The requirement to engage an entomologist to determine if a stockpile has been fly struck will also be a challenge. This is primarily based on their availability, particularly the requirement for an entomologist to commute ~200km to assess stockpiles. It would also impose a significant cost on the program. Our understanding is that initially an entomologist was referenced in the Guideline to speciate Stomoxys calcitrans (Stable fly), which is a declared pest. Stable fly is not declared within the Shire of Victoria Plains and therefore doesn't warrant the risk controls proposed. In addition, farmers routinely identify fly strike within their working environment, namely in livestock, therefore they are competent to identify if a stockpile has been affected by flies. In addition, our team routinely inspects stockpiles as part of our fortnightly compliance review, which includes a fly assessment. • The need for bunding is also questionable given the farmers only stockpile on land with a <3% slope and the stockpiles are located downstream of any sensitive receptors. In addition, recommended storage locations are depicted in the Review of Environmental Factors documentation, which is submitted to DWER and DoH for review prior to applications commencing.	incorporation into the sub-surface if environmental conditions are suitable – Stockpiles must be bunded if there is a risk of runoff leaving the application area • Storage > 30days during 1 June to 30 September the licensee must: – Undertake monthly inspections of the stockpile to assess if fly breeding within the stockpile is occurring. – (Refer to conditions referenced in the >7 days condition above)	*(ii) stockpiles of biosolids must be inspected for flystrike on a weekly basis;* *(iii) where any fly larvae or fly pupae are found in a stockpile, a sample must be collected, preserved and sent to the Pest and Disease Information Service for identification; and* *(iv) where stable fly breeding is occurring, the stockpile must be immediately treated by applying a pesticide control and left undisturbed for 2 days prior to re-inspection for fly breeding. The stockpile must not be applied to land until no sign of fly breeding is identified.* *Between 1 June and 30 September biosolids must be applied to land within 30 days of receipt at the premises, or where that is not possible:* *(v) storage for longer than 30 days must be within a bunded storage area;* *(vi) stockpiles of biosolids must be inspected for flystrike on a fortnightly basis;* *(vii) where any fly larvae or fly pupae are found in a stockpile, a sample must be collected, preserved and sent to the Pest and Disease Information Service for identification; and* *(viii) where stable fly breeding is occurring, the stockpile must be immediately treated by applying a pesticide control and left undisturbed for 2 days prior to re-inspection for fly breeding. The stockpile must not be applied to land until no sign of fly breeding is identified.*
Department of Health (DoH) advised of additional changes provided through applicant comments (15 December 2022)	DoH replied on 22 December 2022 stating that they have no objection to the proposed storage changes provided the proponent adhere to the Department of Water and Environmental Regulation requirements and conditions. The proponent should keep a record of fly inspection dates and copies of these records should be provided to the Department of Health upon request.	Noted.
Additional comments received from Department of Biodiversity, Conservation and Attractions (DBCA) following completion of flora survey (2 February 2023)	Advice was provided that a threatened flora survey had been completed on Lot 127 and conditions relating to a 50 m buffer around threatened flora populations would not be required.	The Delegated Officer notes that the targeted flora survey has been completed and additional controls would not be required. The initially proposed conditions have been removed from the Revised Licence.
Department of Primary Industries and Regional Development (DPIRD) advice requested in relation to stable fly management (15 December 2022)	DPIRD provided the following response from a research entomologist involved with monitoring of biosolids storage and application in and around the Shire of Victoria Plains on 17 February 2023: Advice/comment was asked specifically on the following points: 1. Is the Licence Holder correct in their assertion that the hardened crust layer on the outside of the biosolids stockpile will provide some level of fly control? 2. Given that Stable Fly is not a declared pest within the Shire of Victoria Plains, is there a low risk of breeding within the biosolids stockpiles if they are stored for extended periods? 3. Are the site operators likely to be able to detect flystrike within the stockpiles and thus not require monitoring by an entomologist? 4. Where it is suitable for the site operators to conduct monitoring of the stockpiles for flystrike, are the proposed inspection frequencies sufficient? The following specific advise is provided: 1) The hardened crust on the outside layer of a biosolids stockpile does provide some level of fly control by reducing the area available to flies to lay eggs and/or live larvae onto the material. However, this crust does not completely seal the more moist biosolid material underneath, and cracks/fissures form within the crust, which flies prefer to lay into for protection of their eggs and subsequent larvae that hatch.	The Delegated Officer has considered the advice provided by DPIRD in relation to the Licence Holder's proposed controls to manage stable fly occurrence during periods of extended biosolids storage. The Delegated Officer has resolved to implement the comments through the conditions of the Revised Licence.

Consultation method	Comments received	Department response
	2) The Shire of Victoria Plains is not a Declared Shire under the *Biosecurity and Agriculture Management Act 2007 (BAM Act*) where the Stable Fly Management Plan has to be followed, and it is reasonable to say that there is a low risk of stable fly development from biosolid stockpiles if they are stored for extended periods (>1 week) 3) Leaving the responsibility for detecting fly strike (presence of any fly larvae/eggs) within stockpiles to the operators is a reasonable request and rather than engaging an entomologist to monitor the material, it is strongly advised that a sample of any fly larvae (maggots) or fly pupae are found in a biosolid stockpile be sent to an entomologist at DPIRD to confirm if they are stable fly larvae or not – this can only be done under high powered magnification. The maggots should be put into a small vial with 90% ethanol (use any white spirit alcohol like gin or vodka) and sent to DPIRD at South Perth for identification. This is the cheapest and safest way to ensure that the biosolids don't allow stable fly development in an agricultural environment. 4) The proposed alternative controls, suggesting that for storage >1 week between October to May weekly inspections be made is reasonable, but the second point that "if fly breeding is occurring the licence holder must … immediately spread within the application area, including incorporating into the sub-surface.." is NOT a suitable control measure, as it will likely enable any fly larvae or pupae in the biosolids an enhanced opportunity to complete development and emerge as adult flies. Application of a pesticide and leaving undisturbed for 2 days prior to re-inspection for fly breeding is the only and preferred method for control. Secondly, monthly inspections of stockpiles for fly breeding in material stored for >30 days between June to end of September is too long an interval, it should be at least fortnightly, given that we are in an increasingly warmer temperatures (climate change) and flies could lay eggs, pupate and emerge within a month's time within the Shire of Victoria Plains. The Licence Holder is reasonable in their assertion that covering stockpiles of biosolids is a difficult task to undertake and is not essential.	
Licence Holder was provided with third draft amendment on 2 March 2023	The Licence Holder responded on 3 March 2023 with the following comment: There is contradiction between the following two requirements within Table 2 of the licence: *(h) Application to land does not exceed 25 dry tonnes per hectare for the LAB or 10 dry tonnes per hectare for the biosolids cake, unless otherwise approved by the CEO;* *(i) The quantity of biosolids per hectare directly applied to land does not exceed the limiting factor for a particular paddock, crop type and biosolids composition;* The quantity of biosolids applied to land when following requirement (i) may occasionally be higher than the dry tonne volumes stated in requirement (h). As requirement (i) is considered to effectively limit application volumes based on land capability and biosolids content it is requested that requirement (h) be removed. The Licence Holder advised that they wish to waive the remainder of the comment period.	The Delegated Officer has reviewed an historical Environmental Assessment Report (2010) relating to the specification of requirement (h) on the licence. The volumes specified in the requirement were based on the limiting factor information submitted at the time and the requirement pre-dated publication of the Biosolids Guideline. The Delegated Officer considers the requirement for the quantity of biosolids per hectare directly applied to land not exceeding the limiting factor for a particular paddock, crop type and biosolids composition achieves the same intended outcome as requirement (i). Accordingly, the requirement that application to land does not exceed 25 dry tonnes per hectare for the LAB or 10 dry tonnes per hectare for the biosolids cake, unless otherwise approved by the CEO has been removed from the Revised Licence.

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

In relation to the initial amendments proposed in the application (addition of Lot 127), the Delegated Officer considers that the existing conditions within the licence are sufficient and no additional regulatory controls are required. This is due to the key management controls of the Biosolids Guideline already being specified as conditions.

The Licence Holder subsequently requested additional amendments to licence conditions which were not proposed in the application. These amendments related to application and storage timeframes for biosolids stockpiles. The Delegated Officer determined that additional regulatory controls were required in relation to the proposed changes. These controls were informed through advice provided by a stable fly specialist from the Department of Primary Industries and Regional Development.

During determination of the application the Licence Holder undertook consultation with the Parks and Wildlife Service of the Department of Biodiversity, Conservation and Attractions. Consultation was in relation to threatened flora species (*Darwinia acerosa*) having the potential to be impacted by emissions and discharges resulting from the activities proposed within Lot 127. As a result, a targeted flora survey for the presence of *D. acerosa* was conducted that determined that additional controls were not required.

The Licence Holder should be aware that the provision which allows submission of a simplified REF for Lot 127, does not appear to have been met. Lot 127 constitutes a property which has not previously had any application of biosolids and there is no known record of a full REF for the lot. Accordingly, submission of a full REF will be required. A full REF for paddock WP25 (formerly airstrip paddock) was located, however the remainder of Lot 127 (paddocks WP21-24) was not included. The Licence Holder should consider the information available in the full REF for paddock WP25.

5.1 Summary of amendments

5.1.1 Application related amendments

Table 10 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 10: Summary of licence amendments

Condition no.	Proposed amendments
Premises details: Legal description	Lot 127 on Deposited Plan 35464 Certificate of Title Volume 1897 Folio 848 was included in the legal description of the Premises.
2 - Table 2	To address comments provided by the Licence Holder, the following requirement was removed from the *Process limits and/or specifications* column of Table 2: *Biosolids are applied to land within 7 days of receipt at the premises between 1 October and 31 May, or within 30 days of receipt at the premises between 1 June and 30 September* The requirement was replaced by the following: *Between 1 October and 31 May biosolids must be applied to land within 7 days of receipt at the premises, or where that is not possible:* *(i) storage for longer than 30 days must be within a bunded storage area;*

Condition no.	Proposed amendments
	(ii) stockpiles of biosolids must be inspected for flystrike on a weekly basis; *(iii) where any fly larvae or fly pupae are found in a stockpile, a sample must be collected, preserved and sent to the Pest and Disease Information Service for identification; and* *(iv) where stable fly breeding is occurring, the stockpile must be immediately treated by applying a pesticide control and left undisturbed for 2 days prior to re-inspection for fly breeding. The stockpile must not be applied to land until no sign of fly breeding is identified.* *Between 1 June and 30 September biosolids must be applied to land within 30 days of receipt at the premises, or where that is not possible:* *(i) storage for longer than 30 days must be within a bunded storage area;* *(ii) stockpiles of biosolids must be inspected for flystrike on a fortnightly basis;* *(iii) where any fly larvae or fly pupae are found in a stockpile, a sample must be collected, preserved and sent to the Pest and Disease Information Service for identification; and* *(iv) where stable fly breeding is occurring, the stockpile must be immediately treated by applying a pesticide control and left undisturbed for 2 days prior to re-inspection for fly breeding. The stockpile must not be applied to land until no sign of fly breeding is identified.*
2 - Table 2	To address comments provided by the Licence Holder, the following requirement was removed from the *Process limits and/or specifications* column of Table 2: *Application to land does not exceed 25 dry tonnes per hectare for the LAB or 10 dry tonnes per hectare for the biosolids cake, unless otherwise approved by the CEO*
Definitions	Added definition: *bunded storage area –* *means an area provided with a physical barrier that retains or excludes run-off from stockpiles of biosolids.*
	Added definition: *Pest and Disease Information Service –* *means the Pest and Disease Information Service of the Department of Primary Industries and Regional Development.*
	Added definition: *preserved –* *in relation to sampling of fly larvae or fly pupae, means placed in a small vial filled with 90% ethanol.*
Schedule 1: Premises map (Figure 1)	The Premises map (Figure 1) was updated to include Lot 127 within the boundary of the prescribed premises.

5.1.2 Consolidation and conversion

Table 11 provides a summary of the licence conditions consolidated and converted in this amendment and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 11: Consolidation of licence conditions in this amendment

Existing condition	Condition summary	Revised licence condition	Conversion notes
N/A	Licence duration: 13/11/2011 to 13/11/2031	Licence duration: 14/11/2011 to 13/11/2031	An error in the starting date of the licence was corrected.
N/A	Premises details: Legal description	Premises details: Legal description	The corresponding Certificate of Title Volume and Folio numbers were included for the lots.
10	Annual Audit Compliance Report (AACR)	10	In accordance with the Notice of Amendment of Licence Reporting Requirements, the specific submission date for the AACR was listed.
11	Annual Environmental Report (AER)	11	In accordance with the Notice of Amendment of Licence Reporting Requirements, the AER was changed to a biennial Environmental Report and the specific submission date was listed.
Table 5	AER Requirements Table	Table 5	In accordance with the Notice of Amendment of Licence Reporting Requirements, the table name was changed to Environmental Report.

References

1. Department of Agriculture, Water and the Environment (DAWE) 2021, *Conservation Advice for Darwinia carnea (Mogumber and Narrogin Bell)*, Canberra, Australia.
2. Department of Environment and Conservation (DEC) 2009, *Mogumber and Narrogin Bell (Darwinia carnea) Recovery Plan*, Perth, Western Australia.
3. DEC 2012, *Western Australian guidelines for biosolids management*, Perth, Western Australia.
4. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
5. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
6. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Application type					
Works approval	☐				
Licence	☐	Relevant works approval number:		None	☐
		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:			
Amendment to works approval	☐	Current works approval number:			
Amendment to licence	☒	Current licence number:	L7811/2002/4		
		Relevant works approval number:		N/A	☐
Registration	☐	Current works approval number:		None	☐
Date application received		9 June 2022			
Applicant and Premises details					
Applicant name/s (full legal name/s)		William Richard Cocking			
Premises name		Wourie Pool Farm			
Premises location		Lot Number / Plan/Diagram Number			
		893 / Plan 3194			
		905 / Plan 3377			
		84 / Deposited Plan 228035			
		143 / Deposited Plan 228037			
		364 / Deposited Plan 246404			
		462 / Deposited Plan 246401			
		463 / Deposited Plan 246402			
		479 / Deposited Plan 246411			
		499 / Deposited Plan 246403			
		748 / Deposited Plan 249565			
		794 / Deposited Plan 249585			
		795 / Deposited Plan 249586			
		796 / Deposited Plan 249587			
		797 / Deposited Plan 249588			

	803	Deposited Plan 412147
	804	Deposited Plan 412147
	841	Deposited Plan 249608
	1159	Diagram 5041
	1248	Diagram 5318
	52	Plan 22293
Local Government Authority	Shire of Victoria Plains	
Application documents		
HPCM file reference number:	DWERDT615839	
Key application documents (additional to application form):	Historical biosolids application map Human receptor buffer map Watercourse buffer map	
Scope of application/assessment		
Summary of proposed activities or changes to existing operations.	**Licence amendment** An increase to the premises boundary to include 5 additional paddocks for the application of biosolids. The paddocks are located in LOT 127 ON DEPOSITED PLAN 35464.	

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**	**Proposed changes to the production or design capacity (amendments only)**
Category 61A: Solid waste facility	Assessed – 50,000 tonnes per annual period.	None proposed

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:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Certificate of title ☒ General lease ☐ Expiry: Mining lease / tenement ☐ Expiry: Other evidence ☐ Expiry:
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	Approval: Expiry date: If N/A explain why? Consistent with existing farming use

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 ☒	Application reference No: N/A Licence/permit No: N/A 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 ☒	Application reference No: Licence/permit 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: N/A Type: N/A Has Regulatory Services (Water) been consulted? Yes ☐ No ☐ N/A ☒ Regional office: Swan Avon
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ 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 ☐	Environmental Protection (Controlled Waste) Regulations 2004
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	

Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☐ No ☒	Classification: N/A Date of classification: N/A