



## Application for Works Approval

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

---

<b>Works Approval Number</b>	W6634/2022/1
<b>Applicant</b>	JD Organics T/A GO Organics
<b>ACN</b>	154 081 651
<b>File number</b>	DER2021/000679
<b>Premises</b>	Garden Organics 276 Aurisch Road, Boonanarring WA 6503 Legal description - Part Lot 12 on Diagram 92147 As defined by the Premises map and coordinates in Schedule 1 of the works approval
<b>Date of report</b>	9 June 2022
<b>Proposed Decision</b>	Works approval granted

**Stephen Checker**  
**MANAGER WASTE INDUSTRIES**  
**REGULATORY SERVICES**

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

# Table of Contents

<b>1. Decision summary</b>	<b>1</b>
<b>2. Scope of assessment</b>	<b>1</b>
2.1 Regulatory framework	1
2.2 Application summary and overview of premises	1
2.3 Proposed throughput changes	1
<b>3. Risk assessment</b>	<b>3</b>
3.1 Source-pathways and receptors	3
3.1.1 Emissions and controls	3
3.1.2 Receptors	7
3.2 Risk ratings	9
3.3 Detailed risk assessment – odour emissions from operation	12
3.3.1 Hazard characterisation and potential impacts	12
3.3.2 Current situation	12
3.3.3 Odour assessment	12
3.3.4 Criteria for assessment	13
3.3.5 Applicant controls	13
3.3.6 Key findings	13
3.3.7 Consequence	14
3.3.8 Likelihood of Risk Event	14
3.3.9 Overall rating of odour risk	14
3.4 Detailed risk assessment – leachate associated with operation	14
3.4.1 Hazard characterisation and potential impacts	14
3.4.2 Criteria for assessment	14
3.4.3 Applicant controls	15
3.4.4 Key findings	15
3.4.5 Consequence	15
3.4.6 Likelihood of Risk Event	15
3.4.7 Overall rating of leachate risk	15
<b>4. Consultation</b>	<b>16</b>
<b>5. Conclusion</b>	<b>16</b>
<b>References</b>	<b>18</b>
<b>Appendix 1: Application validation summary</b>	<b>19</b>

Table 1: Additional throughput per stage	2
Table 2: Throughput increase for each stage	3

**No table of figures entries found.**

Figure 1: Sensitive receptors.....8

## 1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6634/2022/1 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary and overview of premises

On 11 November 2021, JD Organics trading as GO Organics (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to the expansion of the existing composting facility at the premises, to cater for an increased demand for organic waste disposal, including Food Organics and Garden Organics (FOGO) materials. The Premises is approximately 15 km north of Gingin.

The Premises has been in operation since 2015 and is currently licenced, under Licence L8887/2015/1, to compost up to 44,500 tonnes per annual period of organic solid waste including FOGO, green waste, sawdust, pinebark, spent compost mushroom and manures. The Premises also accepts and composts up to 5,000 tonnes per annual period of liquid waste.

Composting currently occurs within an enclosed composting shed with an odour extraction system, as well as outdoors on concrete and asphalt hardstands. Leachates are captured via a leachate collection and pond system. The licence currently requires monitoring of seven groundwater bores and surface water monitoring of the leachate ponds.

This applicant proposes to increase compost production to 124,000 tonnes per annum which will include 104,000 tonnes of solid waste and 20,000 tonnes of liquid waste. The largest increase will be an additional 52,000 tonnes of FOGO waste. The main process change will be the introduction of 12 fully enclosed, forced aeration pasteurization bunkers. The additional infrastructure will be developed in a staged approach (three stages) as the demand for product increases.

The premises relates to the categories and assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6634/2022/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6634/2022/1.

### 2.3 Proposed throughput changes

The application proposes an additional three solid waste feedstocks and an additional five liquid waste feedstocks. Table 1 below outlines the proposed throughput increase for the three stages and the additional feedstocks that will be introduced at each stage.

Animal mortalities will consist mainly of spent hens and egg shells. Due to the odourous nature of this feedstock pasturisation will only occur within the pasteurisation bunkers.

The additional liquid feedstocks are proposed to be added to ground garden organics or pasturised FOGO material. The liquid waste will be added to the mix on a concrete mixing pad, from the delivery vehicle. In the event that there is no compost batch being prepared when a delivery of industrial wash waters arrives onsite, the liquid waste will be transferred to one of the available storage ponds, pending subsequent incorporation into the compost process.

**Table 1: Additional throughput per Stage**

Stage (see works approval for corresponding infrastructure)	Additional feedstocks added to composting process	Additional throughput	Total throughput
Stage 1	<ul style="list-style-type: none"> <li>• Animal mortalities</li> <li>• Acid sulphate soils</li> <li>• Commercial food wastes (vermicompost)</li> </ul>	44,000 tpa	93,500 tpa
Stage 2	<ul style="list-style-type: none"> <li>• D300 Non-toxic salts</li> <li>• L150 Low strength washwaters</li> <li>• M130 Coolants and glycols</li> <li>• C100 Alkalis</li> <li>• B100 Acids</li> </ul>	8,500 tpa	102,000 tpa
Stage 3	No new feedstocks	22,000 tpa	124, 000 tpa

Table 2 shows the proposed throughput increase for each feedstock.

**Table 2: Throughput increase for each feedstock**

<b>Input Materials</b>	<b>Current Throughput</b>	<b>Proposed Throughput</b>	<b>Throughput Change</b>
Greenwaste	30,000	33,000	1,000
Jarrah sawdust	1,000		
Pinebark	1,000		
Spent mushroom	1,000	1,000	0
Food organic waste and garden organic waste	8,000	60,000	52,000
Poultry bedding	1,500	7,000	3,500
Cow bedding	1,500		
Sheep bedding	500		
Animal Mortalities		500	500
Acid Sulphate Soils (PASS)		500	500
Commercial Food Wastes (Vermi Composting)		2,000	2000
K110 Grease trap waste	5,000	11,500	6,500
K200 Food and Beverage Processing Waste			
K100 Animal Effluent and Residues			
D300 Non-Toxic Salts		7,000	7,000
L150 Low Strength Washwaters			
M130 Coolants and Glycols		1,500	1,500
C100 Alkalis			
B100 Acids			
<b>Total</b>	<b>49,500</b>	<b>124,000</b>	<b>74,500</b>

NOTE - The Shire of Gingin have advised DWER that the applicant is not permitted to accept non-organic waste types under their planning scheme until such time that a scheme amendment is approved. DWER has provided advice to the Shire as to which feedstocks may be considered non-organic. As the authorisation of the acceptance of new or increased feedstocks at the Premises is a matter for licence rather than this works approval, a future application for licence amendment will be required to increase operational waste acceptance onsite. LGA comment will be sought and consideration will be given by DWER to LGA/planning requirements at the time of assessment of any such application.

### 3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

#### 3.1 Source-pathways and receptors

##### 3.1.1 Emissions and controls

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

operation which have been considered in this decision report are detailed in Table below. Table also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

**Table 3: Proposed applicant controls**

Emission	Sources	Potential pathways	Proposed controls
<b>Construction</b>			
Dust	Vehicle movements Earth works	Air/windborne pathway	Distance to receptors Use of water carts Site speed limits
Noise	Vehicle movements Earth works	Air/windborne pathway	Site speed limits Distance to receptors Use of broadband reversing alarms Appropriate maintenance of all plant machinery and equipment is conducted on a regular basis.
<b>Operation of premises at increased capacity</b>			
Odour	Waste acceptance Composting Turning of windrows Leachate pond	Air/windborne pathway	Pasteurisation of odourous feedstocks within an enclosed shed or bunker Distance to receptors Spent mushroom compost, poultry, cow and sheep bedding processed within 48 hours FOGO and grease trap waste processed on receipt to site Monitoring of moisture and temperature
Leachate	Waste acceptance and composting Storage of leachate in leachate pond Seepage through hardstand areas and ponds Damage/rupture of pond liner Overtopping of ponds; Run-off from hardstand	Seepage through soil and transport through groundwater	All activities occur on the compost area hardstand or within buildings with concrete floors and leachate collection systems. Comprehensive stormwater management system to collect and retain contaminated surface water runoff Additional contingency ponds.
Noise	Waste acceptance and composting activity Vehicle movement Product screening Product bagging	Air/windborne pathway	Composting activities only to occur between 7am and 7pm Site speed limits Use of windrows as noise abatement screens Distance to receptors Use of broadband reversing alarms



Emission	Sources	Potential pathways	Proposed controls
			Product bagging occurs within a shed
Dust	Waste acceptance and composting activity Vehicle movement	Air/windborne pathway	Distance to receptors Maintaining adequate moisture levels in product (25% to 40%) Turning via frontend loader Use of water carts Site speed limits
Particulates, noxious gases and smoke	Compost fire	Air/windborne pathway	Regular visual inspection of windrows to identify smouldering areas or smoke; Significant volumes of air blown through the forced aeration pasturisation windrows to maintain the windrow temperature below 70 o Celsius; Windrow moisture content maintained between 40% and 60% and finished product stockpile at minimum 25%; Compost windrows turned regularly to aerate the windrow material and reduce the heat build-up; Pasteurisations bunkers designed as individual compartments, with a fire-wall between each bunker; Fire/smoke alarms in each bunker; • Weekly temperature monitoring of the windrowed material; Adequate vehicle access to individual material windrows for firefighting purposes; Mobile equipment and staff available to rapidly move material away from the area of ignition; Composting hardstands well away from surrounding bushland, with leachate ponds between; Shire approved Bushfire Management Plan to manage bushfire impact; Large volume water tanks of firefighting water; Appropriate firefighting equipment on site and adequate training for site operating staff; Staff living in the adjacent farmhouse (950 m northeast) to identify and manage afterhours fires; and, Appropriate site security to reduce the likelihood of vandals entering the site. 150kL water tank, 20kL water cart, fire

Emission	Sources	Potential pathways	Proposed controls
			hydrant filling point, pumps and hoses permanently on site expanded facility includes an additional 2 x 150kL water tank Implementation of a Fire Management Plan
Pathogens	Compost	Direct contact	Production of products is carried out in accordance with AS4454.

### 3.1.2 Receptors

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

**Table and**

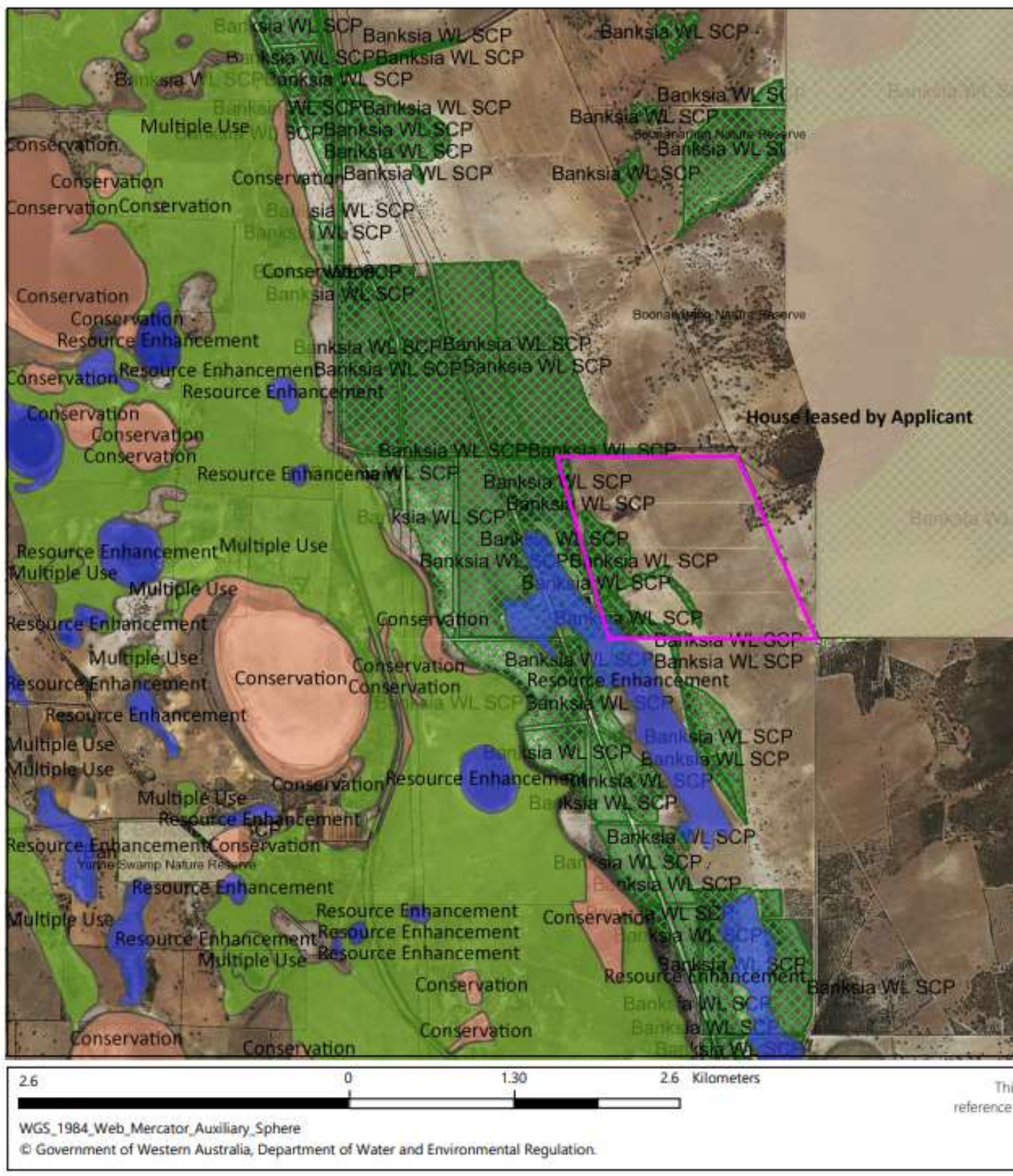
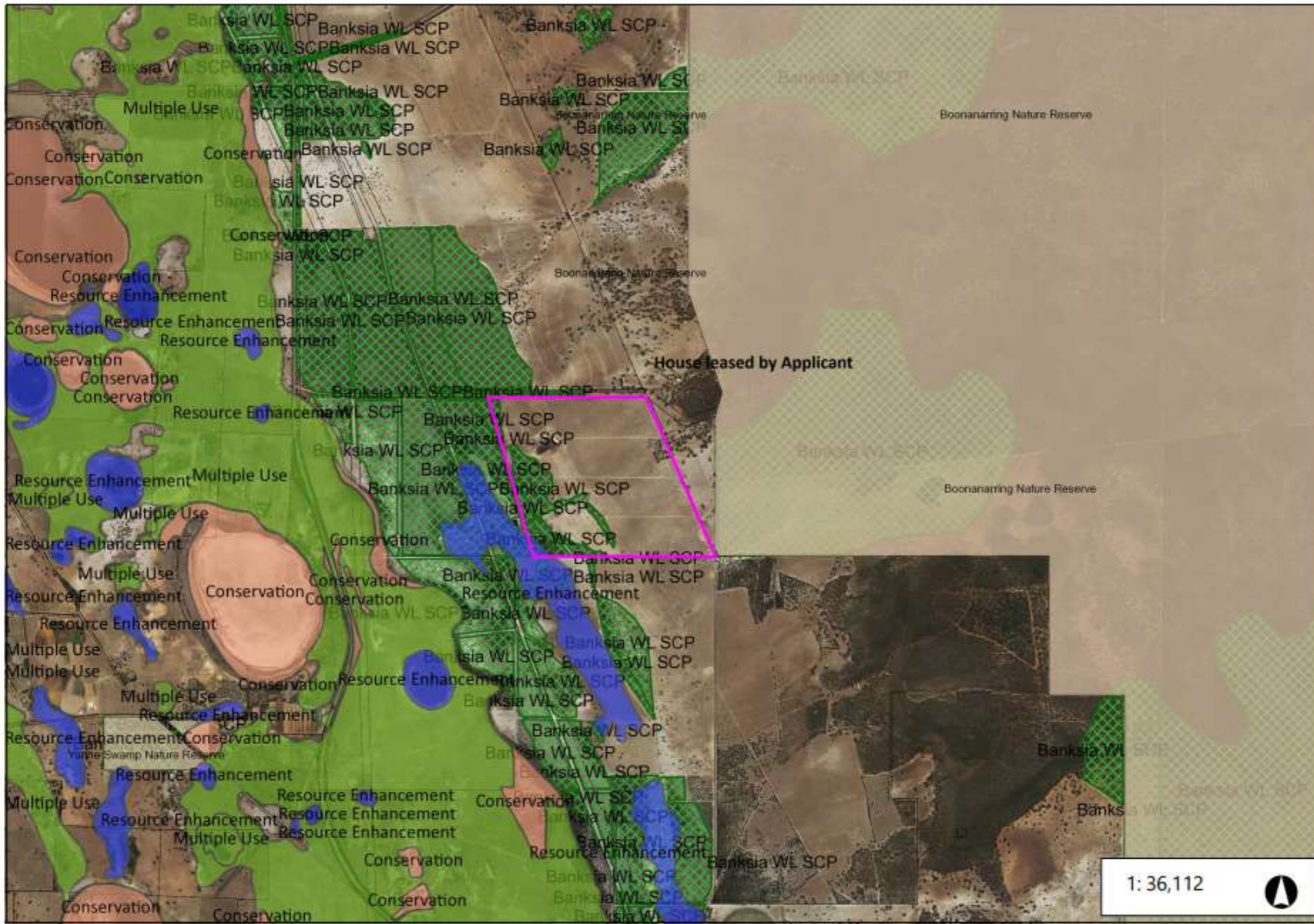


Figure 1 below provides a summary of potential human and environmental receptors that may

be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

**Table 4: Sensitive human and environmental receptors and distance from prescribed activity**

Human receptors	Distance from prescribed activity
Residential Premises	<p>Closest residential receptor is located approximately 1,000 m north-east of the prescribed activities, and approximately 280 m from the Premises boundary.</p> <p>This receptor will be leased by the applicant to house employees.</p>
	<p>Residential receptor located approximately 2 km west of the Premises boundary.</p>
Environmental receptors	Distance from prescribed activity
<p>Groundwater - Water is considered to be fresh (0-500 mg/L TDS) which may have a beneficial value for drinking water, non-potable use, irrigation and livestock use.</p>	<p>Based on the groundwater monitoring data, groundwater across the site within the superficial aquifer was encountered between 11 and 24 metres below ground level (mbgl). Site investigations identified that the confined aquifer (Leederville) is located approximately 60 mbgl. The inferred groundwater flow of the superficial aquifer is east to west towards the series of unnamed lakes, with the confined aquifer having an inferred flow direction towards the south-west.</p> <p>Groundwater at recently installed Bore 8 struck water at 9.8 mbgl.</p>
Resource Enhancement Wetland	<p>The south-west corner of the Premises partially overlaps the mapped wetland.</p>
White lake	<p>Located 1.5 km west of the Premises boundary</p>
Threatened ecological community – Banksia dominated woodlands of the Swan Coastal Plain	<p>Mapped within the Premises boundary. Approximately 40 m west of the prescribed activities</p>
DBCA managed land – Boonanarring Nature Reserve	<p>Adjacent to the south-east corner of the Premises boundary</p>
DBCA managed land – Yurine Swamp Nature Reserve	<p>2.7 km south-west of the Premises boundary</p>



2.6 0 1.30 2.6 Kilometers

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
© Government of Western Australia, Department of Water and Environmental Regulation.

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION



### Legend

- 4. Geomorphic Wetlands - Swan Coastal Plain (Management)**
- wgs\_wetl\_2 Resource Enhancement
  - Not Assessed
  - Multiple Use
  - Conservation
  - Not Applicable
- 9. DBCA Legislated Tenure**
- National Park
  - SCRM ACT - River Reserve
  - Nature Reserve
  - Conservation Park
  - Section 5(1)(g) Reserve
  - Section 5(1)(h) Reserve
  - State Forest
  - Timber Reserve
  - Marine Park
  - Marine Nature Reserve
  - Marine Management Area
  - Section 34A Freehold
  - Crown Freehold - Dept Managed
  - UCL -Managed Under Section 33(2)
  - Rottnest Island Authority Reserve
  - Botanic Gardens and Parks Auth Reserve

### Notes

Author:  
Recipient:

Figure 1: Sensitive receptors

## 3.2 Risk ratings

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

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table .

Works approval W6634/2022/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

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

**Table 5: Risk assessment of potential emissions and discharges from the premises during construction and operation**

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Construction</b>								
Earthworks and construction of additional infrastructure Vehicle movements	Dust	Air/windborne pathway causing impacts to health and amenity	Closest residential receptor 2 km west of prescribed activities	Refer to Section 3.1.1	C = Slight L = Possible <b>Low Risk</b>	Y	N/A	N/A
	Noise				Refer to Section 3.1.1	C = Slight L = Possible <b>Low Risk</b>	Y	N/A
<b>Operation of additional infrastructure</b>								
Acceptance of 124,000 tpa of waste Composting Turning of windrows Leachate pond	Odour	Air/windborne pathway causing impacts to health and amenity	Closest residential receptor 2 km west of prescribed activities	Refer to Section 3.1.1	Refer to detailed assessment in Section 3.4 below			
Waste acceptance and composting Storage of leachate in leachate pond Seepage through hardstand areas and ponds Damage/rupture of pond liner Overtopping of ponds; Run-off from hardstand Storage of liquid waste in storage ponds	Leachate	Seepage through soil and transport through groundwater causing contamination of groundwater and surface water.	Groundwater – superficial aquifer (11 to 24 mBGL). Resource Enhancement Wetland 185 m south-west of Premises boundary Threatened Ecological Community 40m west of prescribed premises	Refer to Section 3.1.1	Refer to detailed assessment in Section 3.4 below			

Works Approval: W6634/2022/1

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Waste acceptance Composting activities Vehicle movement around site	Noise	Air/windborne pathway causing impacts to health and amenity	Closest residential receptor 2 km west of prescribed activities	Refer to Section 3.1.1	C = Minor L = Rare <b>Low Risk</b>	Y	N/A  Operational conditions are imposed on licence L8887/2015/1.  Further conditions may be imposed once the Licence is amended to accommodate the increased throughput.	This works approval authorises the construction and operation of additional infrastructure only. Licence L8887/2015/1 must be amended to authorise the increased throughput. Therefore, operational requirements regarding the increased waste acceptance and production of compost products have not been conditioned on the works approval.
Waste acceptance Composting activities Vehicle movement around site Storage of greenwaste	Dust	Air/windborne pathway causing impacts to health and amenity	Closest residential receptor 2 km west of prescribed activities	Refer to Section 3.1.1	C = Minor L = Rare <b>Low Risk</b>	Y		
Compost fires	Particulates, noxious gases, smoke and ash	Air/windborne pathway causing impacts to health and amenity from smoke inhalation. Air/windborne pathway causing impacts to the quality of surface water. Direct contact impacting on health of native vegetation located within the Premises boundary and beyond.	Closest residential receptor 2 km west of prescribed activities  Threatened Ecological Community 40 m west of prescribed premises	Refer to Section 3.1.1	C = Major L = Unlikely <b>Medium Risk</b>	Y		
End product	Pathogens	Direct contact causing impacts to human health	End product uses	Refer to Section 3.1.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y		

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

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

Works Approval: W6634/2022/1

IR-T13 Decision report template (short) v3.0 (May 2021)



## 3.3 Detailed risk assessment – odour emissions from operation

### 3.3.1 Hazard characterisation and potential impacts

Odour generated in the compost process is generally associated with receipt, storage, handling and decomposition of putrescible feedstocks, and leachate and runoff generated from feedstock and compost in the initial pasteurisation stages.

Odour can cause amenity and health impacts to surrounding receptors. Individual responses to odour may vary depending on a person's sensitivity to odours, age, health status and previous exposure patterns to odour. Community impacts from odour can include annoyance, potentially leading to stress, and loss of amenity. Exposure to repeated odour events can create a nuisance effect.

Exposure times and frequency of odour emissions will be dependent on day to day activities and weather conditions. The pathway for odour emissions is air/wind, therefore the prevailing wind direction has been considered. Using information available on the Bureau of Meteorology's website, the closest available weather station for climate data is Gingin Aero (No. 009178. Approximately 29 km away from Boonanarring). Based on the climate data for the Gingin Aero station, the prevailing wind direction is easterly (17 km/h) in the morning and south westerly (21.6 km/h) in the afternoon.

### 3.3.2 Current situation

The current operation at the Boonanarring Composting Facility is licensed (L8887/2015/1) to produce 49,500 tonnes of compost per annual period and has been in operation since 2015. A search of the department's Incidents and Complaints Management System has not identified any complaints regarding odour emissions from the premises.

### 3.3.3 Odour assessment

The applicant commissioned OPAM Consulting to undertake an Operation Odour Analysis for the premises. OPAM concluded with the residual odour impact potential for the facility expansion will be low.

Odour field assessments and odour patrols were carried out between June and August 2021 to assess the premises current odour footprint. Compost odour was recognized at a maximum distance of 550m from the activity boundary. Odours from FOGO, green waste and pond water were recognized between 300 m and 450 m (OPAM, 2021).

With the expanded surface areas for receipt, mixing and composting pads as well as the water and leachate ponds to accommodate the process/feedstock increase (124,000 tpa), it was estimated that the maximum distance at which odour from the premises will be recognized in 1,300 m (OPAM, 2021).

Five tools were used to support the low risk impact assessment, being:

- Operational Odour analysis;
- Location review;
- Odour field assessment;
- Complaint review;and
- Comparative odour footprint.

Technical advice was sought from the department's Air Quality Branch (AQB) on the accuracy of OPAM's findings. AQB determined that the conclusions appear to be reasonable, however some aspects of the odour analysis and proposed operations raise some uncertainty.

One area of uncertainty arises from the fact that the odour field assessment was conducted during current operation which does not include all feedstocks and activities proposed under the facility expansion. Some of the differences between current operation and the proposed expansion that will contribute to odour include:

- It is proposed to deliver the FOGO feedstock to external pads before moving it to the bunkers using front-end loaders. This differs to current trial operations procedures where FOGO feedstock is delivered internally to a shed with negative pressure and recirculation controls;
- It appears that pre-pasteurisation decontamination for the proposed operations will be done in a shed without odour controls;
- Animal mortalities (poultry and eggshells) is a new feedstock with a potentially high odour generating potential that will be delivered onto an external pad before being blended and shaped into windrows in the bunkers;
- Windrows will be moved to new bunkers using front-end loaders after 1 week (FOGO feedstock) or 2 weeks (mortalities) of Stage 1 pasteurisation. This is potentially an odorous activity.
- Delivery of FOGO materials is proposed to occur from 6am to 5pm. The earlier deliveries may occur during stable atmospheric conditions that suppress plume dispersion and consequently increase the potential for odour impacts.

AQB concluded that staging the expansion of throughput in three stages as proposed will assist to mitigate this uncertainty. It was recommended that the performance of controls be verified at the end of each stage to confirm the predicted low risk.

### 3.3.4 Criteria for assessment

There are no set threshold or concentration criteria for odour assessment. Under section 49(5) of the EP Act, it is an offence to emit or cause to be emitted, an unreasonable emission from any premises.

Any unreasonable emission is defined in the EP Act (section 49(1)) as an emission or transmission of noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person.

### 3.3.5 Applicant controls

Section 3.1.1 above (Table ) details the control measures the applicant has proposed to assist in controlling odour emissions.

### 3.3.6 Key findings

**The Delegated Officer has reviewed the information regarding odour emissions and has found:**

1. The odour impact extent from the proposed operations has been estimated to be 1,300 m.
2. The applicant has leased the farmhouse located 1 km north east and the next closest residential receptor is 2 km west of the premises.
3. AQB surmises that the conclusions of the odour analysis appear to be reasonable, however some aspects of the odour analysis and proposed operations contribute some uncertainty.
4. AQB recommend that the performance of controls be verified at the end of each stage to confirm the predicted low risk.

### 3.3.7 Consequence

Given that the distance to the nearest residential receptor (2,000 m), the Delegated Officer has determined that off-site impacts of odour will be minimal. Therefore, the Delegated Officer considers the consequence of odour emissions to be **minor**.

### 3.3.8 Likelihood of Risk Event

Given the proposed controls, the Delegated Officer has determined that odour emissions, impacting receptors, will probably not occur in most circumstances. Therefore, the Delegated Officer considers the likelihood of odour emissions causing impacts to amenity is **unlikely**.

### 3.3.9 Overall rating of odour risk

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix and determined that the overall rating for the risk of odour emissions is **medium**.

## 3.4 Detailed risk assessment – leachate associated with operation

### 3.4.1 Hazard characterisation and potential impacts

Leachate emissions from composting facilities have the potential to contain nutrients, metals, salts and other soluble or suspended components and decomposition products of the waste. Leachate also generally has a high biochemical oxygen demand.

Without effective containment measures, composting leachate has the potential to infiltrate to soil and groundwater or flow into surface water bodies. This may lead to adverse environmental impacts or affect the beneficial use of these resources. Beneficial use means a use of the environment, or of any portion thereof, which is conducive to public benefit, public amenity, public safety, public health or aesthetic enjoyment and which requires protection.

#### **Hazard to surface water and groundwater**

Groundwater (superficial aquifer) at the premises is between 10 and 24 m below ground level and flows in an east to west direction.

A Resource Enhancement Wetland partially overlaps the south west corner of the premises, which is located down hydraulic gradient from the prescribed activities. Resource Enhancement Wetlands are wetlands that have been partially modified but still support substantial ecological attributes and functions. The expression of contaminated groundwater in this surface water body may result in eutrophication and the excessive growth of algae. Algae growth may impact the survival of existing organisms through light and oxygen restriction and cause the degradation of the surface water value and beneficial use.

Banksia Woodlands of the Swan Coastal Plain threatened ecological community (TEC) is mapped in the vicinity of the prescribed activities. The dominant Banksia species associated with this TEC obtains part of its water needs from groundwater. Changes in groundwater levels, groundwater quality, and seasonal fluctuations in groundwater can influence the structure and composition of Banksia woodlands. In addition this woodland could be impacted through degradation of soil quality in the event of spillages of leachate (due to breakdown in infrastructure) or overtopping of leachate ponds.

Soils within the Premises are defined as “Red and yellow deep sands” This soil type is likely to have very low attenuating capacity for contaminants and therefore if leachate is not sufficiently contained, contaminants may easily pass through the soil into groundwater.

### 3.4.2 Criteria for assessment

The following guidelines are considered appropriate assessment criteria to assess the potential impact on the beneficial use of groundwater.

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality ANZECC & ARMCANZ (2000) for livestock drinking water quality.

The following guidelines are considered appropriate assessment criteria to assess the potential impact on groundwater dependent and freshwater ecosystems and surface water quality.

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality ANZECC & ARMCANZ (2000) for slightly moderately disturbed ecosystems (95% protection level trigger values).

### 3.4.3 Applicant controls

Section 3.1.1 above (Table ) details the control measures the applicant has proposed to assist in controlling leachate emissions.

### 3.4.4 Key findings

**The Delegated Officer has reviewed the information regarding leachate emissions and has found:**

1. The storage and handling of compost and leachates has the potential to impact groundwater and surface water quality if not appropriately contained.
2. The soil type at the premises is likely to be highly permeable.
3. There are several receptors in close proximity.
4. A freeboard of 500 mm will be maintained for all leachate and storage ponds.
5. All new hardstands will be constructed from 650 mm compacted clay, 200 mm compacted gravel, 100 mm compacted limestone and 100 mm recycled asphalt
6. Three new groundwater monitoring bores will be installed

### 3.4.5 Consequence

Based on the proximity of receptors and sensitivity of receiving environment (resource enhancement wetland and TEC), the Delegated Officer has determined that leachate emissions could cause mid-level off-site impacts. Therefore, the Delegated Officer considers the consequence to be **major**.

### 3.4.6 Likelihood of Risk Event

Based on the applicant's proposed controls, the Delegated Officer has determined that leachate emissions may only occur in exceptional circumstances Therefore, the Delegated Officer considers the likelihood of leachate impacts to the human and environmental health to be **rare**.

### 3.4.7 Overall rating of leachate risk

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix and determined that the overall rating for the risk of leachate emissions from operations is **medium**.

## 4. Consultation

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

**Table 6: Consultation**

Consultation method	Comments received	Department response
Application advertised on the department's website on 6 January 2022	No submissions received	N/A
Application advertised in the West Australian on 10 January 2022	No submissions received	N/A
Local Government Authority advised of proposal on 10 January 2022	In a letter dated 12 January 2022 the Shire advised that it is currently assessing an application for Development Approval.	The Delegated Officer considers Development Approval to be a relevant consideration in determining the Works Approval and will defer making a decision until the applicant is able to provide a copy of the approved Development Approval.
	In an email dated 29 May 2022, the Shire provided the approved Development Approval for the premises. Condition 4 of the Development Approval limits waste acceptance on the premises to organic wastes only as per the Shire's planning scheme. The Shire has advised the applicant that a scheme amendment for an Additional Use to be incorporated over the land is required to allow the acceptance of non-organic waste types at the premises.	Noted. As per the planning scheme, non-organic waste types will not be permitted to be accepted on the premises until a scheme amendment is granted and a licence amendment is sought and issued.
Applicant was provided with draft documents on 28 March 2022	The applicant provided an email response on 30 May 2022 with comments on the draft documents. The applicant included an amended waste quantity table removing non-organic materials from the proposed stage 2 development. The applicant also advised that they are intending to apply for a scheme amendment as per the Shire's advice.	Noted. The works approval does not authorise the increase in feedstocks or the acceptance of different waste types. Feedstock waste type acceptance will be addressed in the licence amendment process. The applicant is not permitted to accept non-organic waste types as per the Development Approval until such time that a scheme amendment is approved by the Shire and a licence amendment is sought and issued.

## 5. Conclusion

Based on the assessment in this Decision Report, the Delegated Officer has determined that a

works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

The works approval authorises the construction and time limited operation of the proposed infrastructure. However, it does not authorise the increase in feedstocks or acceptance of additional waste types. Licence L8887/2015/1 will have to be amended to authorise the increase in feedstocks and acceptance of additional waste types. In accordance with the department's *Industry Regulation Guide to Licensing* an application to amend Licence L8887/2015/1 can be submitted at the same time as the Environmental Compliance Report (as required by Condition 2 of this works approval).

It is up to the works approval holder to ensure that all relevant planning approvals are in place for the construction and operation of the facility. The issuing of this works approval does not negate the works approvals responsibilities under other governing bodies.

When applying to amend Licence L8887/2015/1 to include industrial wash waters the department requests that instead of using Controlled Waste Code L150 it is instead applied for the contaminating waste type so that it is clear what the premises will be accepting. For instance, if it is expected that the industrial wash waters will contain oil then list the appropriate oil code like J100 - Waste mineral oils unfit for their intended purpose.

The licence amendment application is also to include a summary of how each solid and liquid waste type will be stored and processed. The current application does not contain sufficient information on how acid sulfate soils will be processed and on which liquid wastes will be stored in the storage ponds.

The increased feedstocks and addition of waste types have been risk assessed as part of this works approval in order to determine if it is appropriate to approve the infrastructure required to support the proposed throughput increase.

## References

1. Air Quality Branch (AQB), Department of Water and Environmental Regulation 2022, Air Quality Technical Advice for Works Approval W6634/2022/1 (DWER Ref: A2085902).
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. OPAM Consulting 2021, Information for the odour risk assessment, Perth, Western Australia (DWER Ref: A2072813)

## Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)				
<b>Application type</b>				
Works approval	<input checked="" type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input type="checkbox"/>	Current works approval number:		
Amendment to licence	<input type="checkbox"/>	Current licence number:		
		Relevant works approval number:	N/A	<input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:	None	<input type="checkbox"/>
Date application received		27/11/2021		
<b>Applicant and Premises details</b>				
Applicant name/s (full legal name/s)		JD Organics t/a GO Organics		
Premises name		Garden Organics		
Premises location		276 Aurisch Road, Boonanarring		
Local Government Authority		Shire of Gingin		
<b>Application documents</b>				
HPCM file reference number:		DER2021/000679		
Key application documents (additional to application form):		Water Balance Model Supporting Information Supporting information with confidential appendixes		
<b>Scope of application/assessment</b>				



**SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)**

Summary of proposed activities or changes to existing operations.	Construction of: <ul style="list-style-type: none"> <li>• 12 fully enclosed pasteurisation bunkers</li> <li>• 2 new hardstands (4 and 5)</li> <li>• 3 new leachate ponds (4, 5 and 6)</li> <li>• Decommissioning and rebuild of leachate pond 1</li> <li>• 2 new liquid waste storage ponds</li> <li>• Finished product storage area</li> <li>• 2 packaging/storage sheds</li> <li>• Decontamination shed</li> <li>• 3 new groundwater monitoring bores</li> </ul>
-------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**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 under existing licence (L8887/2015/1)	Proposed changes to the production or design capacity under this Works Approval
Category 61 – liquid waste facility	5,000 tpa	20,000 tpa
Category 61A – solid waste facility	44,500 tpa	104,000 tpa
Category 67A – compost manufacturing and soil blending	49,500 tpa	124,000 tpa

**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 <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"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry:

**SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)**

		Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Approval: Expiry date: If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Application reference No: Licence/permit No: GWL176152(1)
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Type: Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Regional office: N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: N/A Are the proposed activities/landuse compatible with the PDWSA (refer to <a href="#">WQPN 25</a> )? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State</i>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

**SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)**

<i>Agreement Act xxxx</i>		
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"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: information request Date of classification: N/A