



## Application for Works Approval

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

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<b>Works Approval Number</b>	W6544/2021/1
<b>Applicant</b>	Mortlock Malt
<b>File number</b>	DER2021/000218
<b>Premises</b>	Mortlock Malt 6013 Northam-Pithara Road KARRANADGIN WA 6460  Legal description Lot 81 on Deposited Plan 68682 Certificate of Title Volume 2773 Folio 699
<b>Date of report</b>	11/10/2021
<b>Decision</b>	Works approval granted

**Chris Malley**

**Manager, Process Industries**

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

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## 1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6544/2021/1 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

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

### 2.2 Application summary

On 19 April 2021, Mortlock Malt (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 establishment of a malting facility on a rural property at 6013 Northam-Pithara Road (the premises), approximately 16 kilometres north of the town of Goomalling, in the Shire of Goomalling.

The premises relates to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6544/2021/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6544/2020/1.

### 2.3 Overview of the premises

The proposed malting facility is expected to produce between 300 and 400 tonnes of malt per year for use in the production of craft beers and spirits, equating to approximately one seven tonne batch of malt processed each week. The malting facility will have the capacity to operate 24 hours a day seven days a week but is expected to operate at 50 per cent capacity in its initial production phase. Once production reaches full capacity, most production activities will be limited to being undertaken during daylight hours.

Barley will be transported to the premises by trucks accessing the premises from the Northam-Pithara Road between November and December each year. Traffic movements to the premises are expected occur between 9am to 5pm. The water used to support the premises will be drawn from a combination of scheme water, groundwater and rainwater sources.

The malting process will be undertaken within a designated shed. The process comprises three steps: steeping, germination and kilning. Steeping involves immersing barley grain in aerated water for up to eight hours. In between these immersions, water is drained from the grain and the grain is transferred from steeping tanks to germination boxes for root and shoot production. Humidity and temperature are controlled in the germination boxes. A false-floor comprised of mesh will be situated inside the germination boxes to retain grain solids. Once the barley shoot is about three quarters the length of the grain, the germination of the grain is halted by kilning, which dries the grain and promotes the development of colour and flavour. Accumulated dry waste will be manually collected and disposed of, as required.

Wastewater from the malting process will gravity-flow from the germination beds to a collection sump located adjacent to the malting shed and on to an evaporation pond situated down-gradient of the malting shed, in a natural drainage depression at the premises. At full capacity, the premises is

expected to generate 30,000 litres of wastewater each week.

The infrastructure proposed to be constructed at the premises includes the following:

- two polyethylene water tanks with a total capacity of 200,000 litres;
- up to six grain silos to provide the premises with up to 600 tonnes of grain storage;
- an enclosed steel shed with a dust extraction system which will house the malting facility;
- a fuel-oil heated steam boiler to generate heat for malt kilning;
- a collection sump constructed out of medium-density polyethylene (MDPE) and incorporating an in-built sediment basket to capture sediment leaving the malting process;
- a clay-lined evaporation pond for storage and evaporation of wastewater, and
- a 13,500 L self bunding fuel storage tank.

On 22 October 2020, the applicant received Development Approval from the Shire of Goomalling (the Shire) for the premises.

## 2.4 Exclusions to the premises

This Decision Report does not consider the toilet facilities and associated septic system that will support the premises. The applicant has stated that sewage from the toilet facility will be treated by a dedicated septic treatment system. Disposal of sewage to the evaporation pond has not been assessed in this application and therefore is not authorised under the works approval.

It should be noted that the applicant will require approval for the Construction or Installation of an Apparatus by the Executive Director, Public Health (Department of Health) for the septic system.

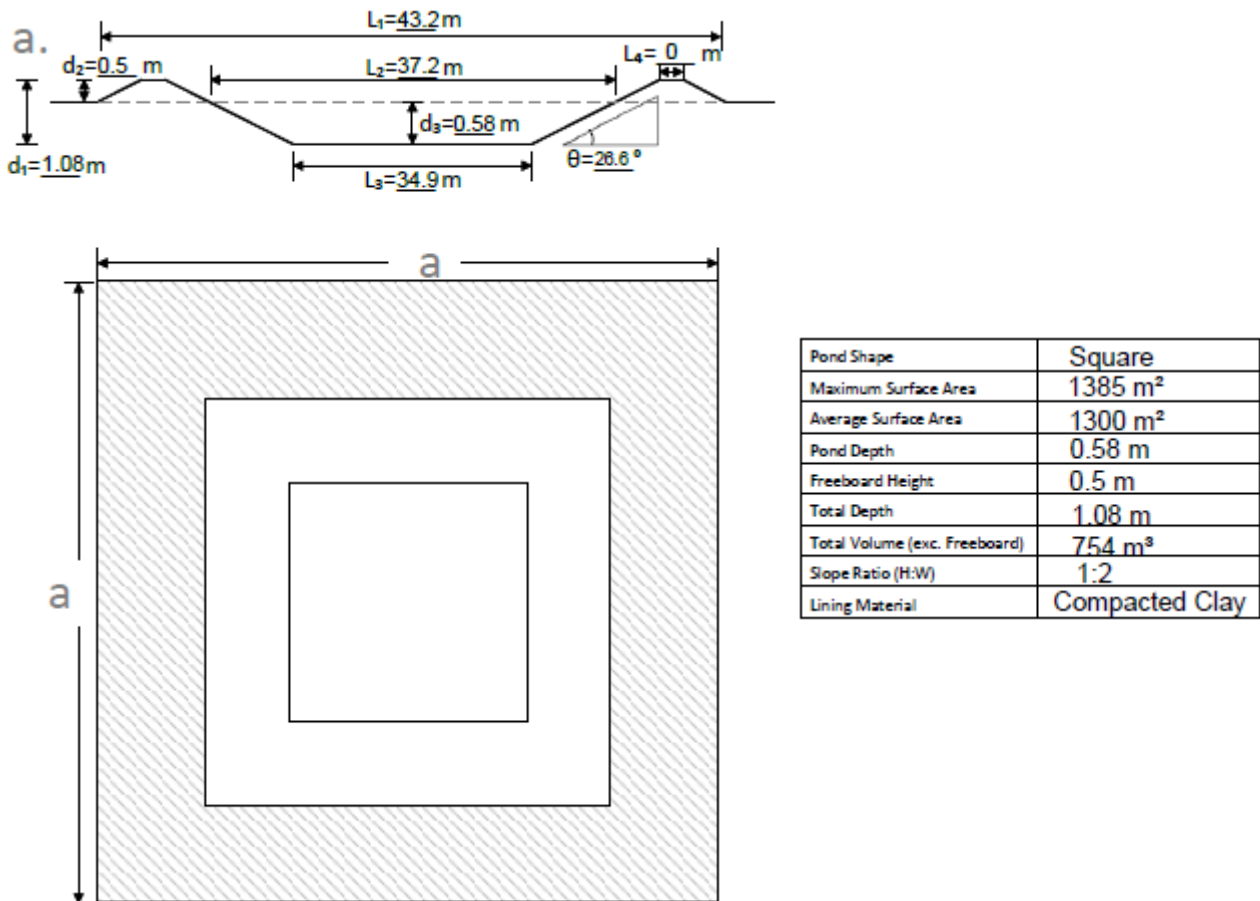
Furthermore, depending on the class of fuel stored within the 13,500 L fuel tank, the applicant may need to seek a Dangerous Goods licence from the Department of Mines Industry Regulation and Safety (DMIRS).

## 3. Evaporation pond design review

The applicant proposes to build a clay-lined evaporation pond to contain and dispose of wastewater produced during the malting process. The evaporation pond was sized using the Bureau of Meteorology's Daily SILO data for the location over a 50-year period. The SILO Database maintains Australian climate data from 1889 to the present and provides daily meteorological datasets for a range of climate variables in ready-to-use formats suitable for modelling, research, and climate applications. The SILO data was also used as it provided a factor of safety within the model by overestimating the amount of rainfall the evaporation pond was anticipated to receive, due to the reduction in rainfall received in south-Western Australia over the past 20 years.

The evaporation pond has been designed with a default 10% pond safety factor such that it will have sufficient capacity to contain 33,000 litres of wastewater per week. The design also includes sufficient capacity to accommodate rainfall resulting from a 1:20 average recurrence interval (ARI) winter rainfall season. The evaporation pond design dimensions are illustrated in Figure 1. The pond will be constructed to provide a maximum evaporative surface area of 1385 m<sup>2</sup>, when the maximum water-level depth (excluding freeboard) of 0.58 m is reached. An additional 500 mm of freeboard has been accounted for in the design of the evaporation pond to allow for heavy rain and wave action during storm events. The evaporation pond will be established with above-ground embankments 0.5 metres in height and two metres in width. Depth to groundwater at the premises is six metres. The evaporation pond is proposed to have a below ground of depth of approximately 0.6 metres, with the balance of the evaporation pond's capacity provided by the embankments established above ground level. Therefore, the base of the evaporation pond is expected to be more than 5 metres above the underlying groundwater table.

The evaporation pond will be lined with a clay liner constructed using clay soil material sourced from the premises. This clay soil material has been previously tested in accordance with *Australian Standard 1289.6.7.1—2001: Soil strength and consolidation tests - Determination of permeability of a soil - Constant head method for a remolded specimen*. The results of this testing determined the clay soils at the premises can achieve a permeability of  $1 \times 10^{-9}$  metres per second. The applicant has advised the final the evaporation pond will be achieve a permeability equal to or less than  $1 \times 10^{-9}$  metres per second.



**Figure 1 Mortlock Malt works approval application pond design**

DWER received advice regarding the design, construction and siting of the evaporation pond from the Department of Primary Industries and Regional Development (DPIRD) on 6 July 2021. DPIRD advised that based on the proposed depth of the evaporation pond and the depth of the local groundwater profile, the evaporation pond would achieve the minimum distance requirement of two metres between the base of the evaporation pond and the groundwater profile, as per the requirements contained in *Water Quality Protection Note 27 Liners for containing pollutants, using engineered soils* (WQPN 27).

DPIRD advised that the use of local clay soils to line the evaporation pond would be compliant with the requirements of WQPN 27. DPIRD advised the department that soil-based liners should comprise natural in-situ low-permeability soils which have been grubbed to remove stones and plant roots, ripped, and watered to achieve the optimum moisture content. These clay liner soils also need to be compacted then rolled to achieve the final containment structure. DPIRD advised that the soil testing undertaken for the local clay soil profile by the applicant determined that a permeability of  $1 \times 10^{-9}$  metres per second can be achieved. Therefore, DPIRD expects the clay soil-based liners constructed on the evaporation pond to achieve an acceptable level of permeability.

The applicant undertook design of the wastewater evaporation pond, including water balance modelling, dimensions and construction methodology, in consultation with DPIRD. The applicant provided a water balance model to demonstrate the capability of the proposed evaporation pond to contain expected wastewater inflows, alongside intercepted rainfall. The evaporation pond water balance model was calculated using a 2-year cycle starting in May, with the first modelled year comprising a 1:20 ARI rainfall year. The second year comprises an average rainfall year and demonstrates how the evaporation pond water balance adjusts to an average rainfall year after receiving elevated rainfall over the previous year. A third-year depicting the expected water balance during an average rainfall year was also included in the model. The water balance model results indicate that even during the 1:20 ARI rainfall year (the worst-case modelled scenario) neither the proposed evaporation pond maximum capacity or maximum depth (excluding freeboard) are likely to be exceeded. During a normal rainfall year, the volume of water contained in the evaporation pond is not anticipated to exceed 75 percent of the evaporation pond's maximum capacity or maximum depth (excluding freeboard).

Based on the proposed design and construction of the evaporation pond, DPIRD advised the evaporation pond is considered to present a low-risk of emission to the environment

The Delegated Officer identified no notable issues with the applicant's water balance model and considers its inputs are appropriate in the context of this application. The Delegated Officer agrees with the outcomes of the applicant's water balance model but notes it did not include inflow from the surrounding catchments into its calculations, despite the proposed location in a natural depression. The applicant has proposed above ground embankments to prevent inflow from the surrounding catchment.

The Delegated Officer agrees with the applicant and DPIRD's view that the clay soils at the premises can form the basis of a competent clay liner which will inhibit the seepage of nutrient rich wastewater from the evaporation pond. The Delegated Officer notes the applicant has not proposed any construction or quality assurance measures to confirm the constructed clay liner achieves the proposed permeability.

## **4. 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.

### **4.1 Source-pathways and receptors**

#### **4.1.1 Emissions and controls**

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

**Table 1: Proposed emission sources and applicant controls**

Emission	Sources	Potential pathways	Proposed controls
<b>Construction</b>			
Dust	Site preparation works, movement of equipment and vehicles on unsealed areas and the erection of structures.	Air / windborne pathway	<ul style="list-style-type: none"> <li>• Vehicle movements at the site will comply with speed limits.</li> <li>• Construction activities will only be undertaken during daylight hours.</li> </ul>
Noise			
<b>Operation</b>			
Dust	<ul style="list-style-type: none"> <li>• Vehicle movement on the premises;</li> <li>• Storage of raw grain at the premises;</li> <li>• Processing of grain into malt; and</li> <li>• Storage of malt prior to dispatch from the premises.</li> </ul>	Air / windborne pathway	<ul style="list-style-type: none"> <li>• Vehicle speeds at the premises will be managed with speed limits.</li> <li>• Barley will be stored within six 100 tonne grain silos.</li> <li>• Malting activities will be undertaken within an enclosed shed fitted with a dust extraction system which will direct dust through ducting to a cyclone separator to collect solids into bags which will be removed and used as animal feed.</li> <li>• Processed malt is stored and transferred onto trucks within bags.</li> </ul>
Noise			<ul style="list-style-type: none"> <li>• Barley deliveries will occur only in the months of November and December.</li> <li>• The malting activities will be undertaken within an enclosed shed.</li> <li>• Traffic movements to the site will be undertaken between 9am and 5pm daily.</li> <li>• Operations will mainly be undertaken during daylight hours.</li> <li>• Vehicle speeds at the premises will be managed with speed limits.</li> </ul>
Odour			<ul style="list-style-type: none"> <li>• Malting activities will be undertaken within an enclosed shed.</li> <li>• A false floor comprised of mesh with a 1.8 mm aperture will be situated inside the germination vessels to retain solids which would otherwise flow into the evaporation pond.</li> <li>• Solid waste generated from the germination phase (rootlets) will be packaged in bags and transported offsite weekly for animal feed or disposed to a licensed landfill.</li> <li>• Visual housekeeping inspections of the site will be undertaken to ensure rootlets are not stockpiled on site.</li> </ul>
	Storage and evaporation of wastewater from malt production within a constructed pond.		<ul style="list-style-type: none"> <li>• The evaporation pond will be monitored daily for odours.</li> <li>• The buildup of fine solids in the evaporation pond will be monitored and rectified by scraping and removal on an 'as-needs' basis.</li> </ul>
Nutrient rich wastewater from malt production.	Malting facility (germination vessels)	Direct discharge to soil	<ul style="list-style-type: none"> <li>• Wastewater from the malting process (germination vessels) will be directed to a collection sump (PT600 Silt Pit comprised MDPE with dimensions of 600mm x 600mm x 600mm), with a silt basket with capability to remove &gt;99% of particles &gt; 3mm in size to remove fine solids from the wastewater. The sump is located adjacent to the malting shed.</li> <li>• Wastewater be transferred from the collection sump to an evaporation pond via pipeline</li> </ul>



Emission	Sources	Potential pathways	Proposed controls
	Storage and evaporation of wastewater from malt production within a constructed pond.	<p>Overland runoff intercepting surface water features.</p> <p>Seepage through the underlying soil profile into groundwater resources.</p>	<p>(gravity flow).</p> <ul style="list-style-type: none"> <li>• Wastewater be transferred from the collection sump to an evaporation pond via pipeline (gravity flow) or if not be able to be, it will be removed from site by a licenced liquid waste contractor.</li> <li>• The evaporation pond will be constructed with above ground embankments to prevent surface water ingress during rainfall events.</li> <li>• The evaporation pond has been designed with a 10 percent safety margin, providing sufficient capacity for approximately 33 kilolitres of wastewater each week together with the rainfall resulting from a 1:20 ARI rainfall year. The design also includes a 500 mm operational freeboard.</li> <li>• The evaporation pond will have dimensions as illustrated in Figure 1 to provide a minimum storage capacity of 754 m<sup>3</sup>.</li> <li>• The evaporation pond will be lined with a clay liner established using locally sourced clay soils to achieve a permeability of 1x 10<sup>-9</sup> m/s. Clay soils at the premises have been previously tested (as detailed in Section 3) and found to be capable of a achieving this permeability.</li> <li>• The evaporation pond will have a minimum separation distance from its lowest point to the local groundwater profile of at least five metres.</li> <li>• The evaporation pond will be visually monitored daily to ensure a minimum freeboard of 500mm is maintained.</li> <li>• The buildup of fine solids in the evaporation pond will be monitored and rectified by scraping and removal on as 'as-needs' basis.</li> </ul>
Chemical and hydrocarbon spills	Fuel storage	Direct discharge to soil and seepage through underlying soil to groundwater	<ul style="list-style-type: none"> <li>• Fuel oil for the boiler is to be stored in a self-bunded 13,500 litre storage tank.</li> </ul>



## 4.1.2 Receptors

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

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

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

Human receptors	Approximate distance from prescribed activity
Rural homesteads and other agricultural infrastructure	<ul style="list-style-type: none"> <li>• 1.5 kilometres east northeast;</li> <li>• 1.9 kilometres south;</li> <li>• 2 kilometres northwest;</li> <li>• 2.4 kilometres south;</li> <li>• 2.7 kilometres west;</li> <li>• 3.9 kilometres northeast; and</li> <li>• 3.9 kilometres north.</li> </ul>
Environmental receptors	Distance from prescribed activity
Local groundwater resources	Not situated within a groundwater area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act). Groundwater salinity in the local area is between 14,000 and 35,000 mg/L total dissolved solids. Depth to groundwater at the premises is approximately six metres below ground level.
Rivers and water courses	A minor (second and first order) ephemeral watercourse intercepts the northern and eastern boundaries of the premises respectively. The watercourse is approximately 100 metres northeast, and down gradient of the proposed evaporation pond location. This watercourse connects with the Mortlock River downstream of the premises.
Local soils	The premises is situated within the 'Wongan Hills 1 Subsystem' soil profile. This soil profile is defined as comprising undulating low hills, with granite rock outcrops. Grey-brown shallow and deep loamy duplex, sandy and loamy earth and shallow and deep sands are characteristic of this soil profile. Common vegetation types associated with this soil profile include Salmon Gum ( <i>Eucalyptus salmonophloia</i> ), <i>Melaleuca</i> sp., <i>Acacia</i> sp., Gimlet ( <i>Eucalyptus</i> sp.) and Mallee ( <i>Eucalyptus</i> sp.).

## 4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and take into account potential source-pathway and receptor linkages as identified in Section 4.1. 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 4.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Works approval W6455/2021/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

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

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

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Reasoning
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Construction</b>								
Site preparation works, movement of equipment and vehicles on unsealed areas and the erection of structures.	Dust	Air / windborne pathway causing impacts to health and amenity	Rural homesteads and agricultural infrastructure situated between 1.5 and 3.9 kilometres from the premises.	Refer to Section 4.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	No conditions	When the distance between the premises and sensitive receptors is considered alongside the controls proposed by the applicant, the Delegated Officer does not anticipate impacts to the health or amenity of any sensitive receptors in the local area will result from noise or dust generated during the construction of the premises.
	Noise							
<b>Operation</b>								
<ul style="list-style-type: none"> <li>Vehicle movement on the premises;</li> <li>Storage of raw grain at the premises;</li> <li>Processing of grain into malt; and</li> <li>Storage of malt prior to dispatch from the premises.</li> </ul>	Dust	Air / windborne pathway causing impacts to health and amenity	Rural homesteads and agricultural infrastructure situated between 1.5 and 3.9 kilometres from the premises.	Refer to Section 4.1	C = Slight L = Rare <b>Low Risk</b>	Y	Condition 1; Conditions 4 to 6	When the distance between the premises and sensitive receptors is considered alongside the controls proposed by the applicant, the Delegated Officer does not anticipate dust emissions from the operation of the premises will impact the health or amenity of any sensitive receptors. The Delegated Officer considered the applicant's proposed controls appropriate and commensurate with the risk and has imposed relevant infrastructure and operational dust management controls as conditions within the works approval.
	Noise							
	Odour							
Storage and evaporation of wastewater from malt production within a constructed pond.	Nutrient enriched wastewater	Overtopping of the pond leading to overland runoff, potentially impacting soils and surface water quality in the nearby Mortlock River.	Minor ephemeral watercourse situated 100 m down gradient of the evaporation pond	Refer to Section 4.1	C = Minor L = Unlikely <b>Medium Risk</b>	N	<b>Condition 1;</b> <b>Conditions 4 to 6</b>	The Delegated Officer considered the water balance model and agreed with the conclusions that the proposed pond capacity is expected to be sufficient for expected wastewater inflows and a 1:20 ARI rainfall year. The Delegated Officer notes the evaporation pond water balance did not include inflows from catchments into its water balance calculations, despite the proposed location in a natural depression but that the applicant's design includes embankments with a height of at least 500mm above ground level which is considered an adequate measure to prevent rainwater inflow from the catchment. The Delegated Officer has specified the proposed pond design details as infrastructure controls, with maintenance of an operational freeboard during operation to mitigate the risk of pond overflow.
		Seepage through the base of the pond into the soil profile and infiltration to groundwater.	Underlying groundwater resources six metres bgl					C = Moderate L = Unlikely <b>Medium Risk</b>
The Delegated Officer noted that the evaporation pond is proposed to be lined with a compacted clay liner constructed using clay soils sourced from the premises to achieve a permeability of 1x10 <sup>-9</sup> m/s, and that the soils proposed to be used are likely to be capable of achieving this permeability. The applicant did not provide detailed characteristics of the clay liner source material, construction methodology or construction QA/QC measures to demonstrate the capability of the constructed clay liner. Given the distance to groundwater and the soil type on the premises, the Delegated Officer considers that there is a medium risk of seepage of nutrient enriched wastewater from the evaporation pond leading to contamination of the underlying groundwater resource, if the clay liner is not suitably constructed.								
The Delegated Officer has therefore conditioned the works approval to include minimum source material criteria and clay liner construction specifications together with completion of QA/QC tests to ensure the clay liner has achieved the necessary efficacy, prior to use. The QA/QC tests are consistent with those contained in the <i>South Australian Environmental Protection Authority Wastewater Lagoon Construction guidelines</i> , due to the high standard of the testing procedures contained in this guideline and their applicability to wastewater ponds utilised in agricultural settings. The Delegated Officer noted that the applicant proposed to remove solid build up from the pond on an as-needed basis. As solids removal activities have the potential to impact liner integrity (which could lead to leakage through the pond liner) the Delegated Officer has included an operational requirement that sediment removal campaigns are undertaken in a manner which maintains the integrity of the evaporation pond liner. Additionally, the sediments are likely to contain elevated nutrients which could leach out when disposed or stored therefore the Delegated Officer has specified the sediments are not to be								

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Reasoning
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
							disposed on the premises. The Delegated Officer considers the controls detailed above are adequate to prevent adverse impacts to groundwater quality resulting from the operation of the premises.	
Malting facility (germination vessels)		Direct discharge to soil causing soil contamination	Soils		C = Slight L = Unlikely <b>Low Risk</b>	N	Condition 1 <b><u>Conditions 4 to 6</u></b> Wastewater generated during malting will be directed from the germination vessels to a collection sump for filtration, prior to conveyance to the evaporation pond. The sump includes a silt basket to minimise the amount of sediment transferred to the pond in the wastewater. The Delegated Officer has included infrastructure conditions specifying the applicant's design criteria for the collection sump to ensure a sump suitable for filtering wastewater is installed. The Delegated Officer also conditioned the works approval to require the applicant to maintain the collection sump integrity to minimise the risk of leaks/overflow from the infrastructure.	
Storage of hydrocarbons	Hydrocarbon spills	Direct discharge to soil and seepage through underlying soil to groundwater	Underlying groundwater resources six metres bgl		C = Minor L = Rare <b>Low Risk</b>	N	<b><u>Condition 1</u></b> Conditions 4 to 6 Based on the controls proposed by the applicant, the Delegated Officer does not anticipate the storage of hydrocarbons at the premises will result in adverse impacts to the underlying groundwater resources. As the applicant did not specify the design criteria for the proposed self-bunded fuel-oil storage tank the Delegated Officer has conditioned the works approval to require this tank to meet the requirements of AS 1940-2004; <i>The storage and handling of flammable and combustible liquids.</i>	

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.

**Conditions 2, 3, 7, 8, 9, 10 & 11 comprise records and reporting based conditions imposed by the department**

## 5. Consultation

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

**Table 4: Consultation**

Consultation method	Comments received	Department response
Application advertised on the department's website on 1 June 2021	No comments were received	NA
Local Government Authority advised of proposal on 1 June 2021		
DPIRD advised of proposal on 1 June 2021	DPIRD responded on 6 July 2021. The comments received are summarised in Section 3 of this report.	The Delegated Officer considered DPIRDs comments during the assessment of the proposal and when determining the conditions of the works approval.
Applicant was provided with draft documents on 7 September 2021	The applicant provided responses on the 14 and 17 September 2021. See Appendix 1 for further details.	

## 6. Decision Making

Considering the risk assessment outcomes in Table 3, the Delegated Officer has determined to grant a works approval for the construction and time limited operation of the premises.

In response to the outcomes of the risk assessment, the Delegated Officer determined the applicant's proposed controls were generally reasonable to mitigate the risk of emissions and discharges associated with the premises construction and operation. The applicant's infrastructure and operational controls deemed necessary to maintain an acceptable level of risk were included as works approval conditions. The premises production capacity is related to the size of premises infrastructure therefore infrastructure controls include the number and size of grain storage silos and water tanks.

The Delegated Officer considered the premises water balance modelling to determine that the proposed evaporation pond is expected to be appropriately sized for the expected wastewater volume and significant rainfall but there is a medium risk of impact to local groundwater resources associated with the treatment, storage, and disposal of wastewater. The Delegated Officer therefore determined to apply additional controls to the works approval to mitigate this risk. Additional requirements include:

- liner construction and quality assurance / quality control requirements based on the requirements of the *South Australian Environmental Protection Authority Wastewater Lagoon Construction guidelines*;
- maintenance of liner integrity when removing sediment from the pond;
- prevention of disposal of pond sediment on the premises;
- infrastructure and operational requirements necessary to prevent surface water inflow to the evaporation pond via the collection sump; and
- maintenance requirements for the collection sump to ensure its continued effective operation for removal of sediments from wastewater and transfer to the evaporation

pond.

The Delegated Officer specified compliance reporting and record keeping requirements in the works approval. This includes a requirement for a qualified engineer to certify infrastructure has been constructed in accordance with the specified infrastructure requirements to ensure the integrity of the as constructed infrastructure.

It is expected that the applicant will lodge a licence application following submission of an Environmental Compliance Report. The works approval conditions permit the applicant to operate under time limited operations for 180 days following the submission of the Environmental Compliance Report. DWER will review the information contained in the Environmental Compliance Report during the licence application assessment. This review will be undertaken to determine whether there has been a change to the risk profile of the premises and the need for ongoing monitoring requirements.

## 7. Conclusion

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

## References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Primary Industry and Regional Development 2021, *Referral of a works approval under the Environmental Protection Act 1986 - Request for advice (DWERDT475153)*, 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. Mortlock Malt 2021, *Mortlock Malt Works Approval Application (DWERDT440766)*, Goomalling, Western Australia
6. Mortlock Malt 2021, *Updated Application Form and Supporting Information (A2004357, A2004358 and A2004361)*, Goomalling, Western Australia.

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

Condition	Summary of applicant's comment	Department's response
Works approval Condition 6, Table 1.	The applicant provided a map of the location of the following: malting shed, grain silo, evaporation pond, fuel oil storage tank, collection sump, water tanks and direction of wastewater. The applicant provided information that the processed malt is to be stored inside the Malting Shed on pallet racking in a mix of 25 kg, 500 kg and 1000 kg bags.	DWER notes this information and will update works approval conditions and the decision report to reflect this information.
Works approval Condition 6	The applicant provided information on the dust extraction system for the cleaning operations. Indicating that a vacuum extracts the dust from the cleaner and directs the dust through ducting to a cyclone separator to collect the solids and directs them into 1,000 kg bag. The full bags are taken off site and used as animal feed. The raw grain is transferred to the malting vessel via a sealed chain-disk-system and does not produce dust during operations.	DWER notes this information and will update works approval conditions and the decision report to reflect this information.
Works approval Condition 1, Schedule 2 Table 3	The applicant requested to increase silos from 4 to 6 to allow better segregation but will maintain a maximum storage capacity of 400 tonnes	DWER notes this information and will update works approval conditions and the decision report to reflect this information.
Works approval Condition 1, Schedule 2 Table 3	The fuel oil storage is bunded with a volume of 10,000 L and would like to increase this to 13,500 L of fuel oil storage in a self-bunded tank for efficiency reasons.	DWER notes this information and will update works approval conditions and the decision report to reflect this information.
Decision report Section 4.1.2 Receptors	The Mortlock River is located 9km from the premises and not 100m from the boundary.	A first order stream (eastern boundary) and second order stream (northern boundary) of the Morlock River occurs along the boundaries of the premises. There were no changes to the assessment.



## Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY				
Application type				
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		19 April 2021		
Applicant and Premises details				
Applicant name/s (full legal name/s)		Rex Henry Rowles and Simone Louisa Rowles		
Premises name		N/A – Family property.		
Premises location		Lot 81 on Plan 68682		
Local Government Authority		Shire of Goomalling		
Application documents				

HPCM file reference number:	DER2021/000218	
Key application documents (additional to application form):	Initial application contained in DWERDT440766. Additional information provided by the applicant in A2004357, A2004358 and A2004361.	
<b>Scope of application/assessment</b>		
Summary of proposed activities or changes to existing operations.	<p>Construction of a malting operation which will produce up to 300 tonnes of malt per year. The malting process is comprised of three steps: steeping, germination and kilning.</p> <p>The steeping process is the stage of the operation that has the most potential to create emissions. Water used in the steeping process will have to be managed but is not expected to contain harmful chemicals or pollutants. Wastewater is to be managed through a wastewater evaporation pond.</p>	
<b>Category number/s (activities that cause the premises to become prescribed premises)</b>		
<b>Table 1: Prescribed premises categories</b>		
<b>Prescribed premises category and description</b>	<b>Proposed production or design capacity</b>	
<p>Category 18: Food processing: Premises (other than premises within category 24) —</p> <p>a) on which vegetables are, or fruit or meat is, preserved, cooked, dried, canned, bottled or processed; and</p> <p>b) from which liquid waste is or is to be discharged onto land or into waters.</p>	The premises will have a maximum design capacity of 400 tonnes per annum and an estimated production capacity of 300 tonnes.	
<b>Legislative context and other approvals</b>		
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"/>	N/A
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?		
Has the proposal been referred and/or assessed under the EPBC Act?		
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title provided from 2012. A review of DWER databases shows the lot in question is owned the applicants.
Has the applicant obtained all	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Approval attached to the application supporting documents. However, this

relevant planning approvals?		approval mentions it does not comprise a building permit.
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"/>	Some clearing of the property likely to be required to support the installation of the infrastructure. Clearing permit unlikely to be required, given clearing can likely be covered under exemptions to the clearing requirements specified in Regulation 5, Item 1 (Clearing to Construct a Building) of the <i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i> .
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?		
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Not detailed by the applicant.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Application area situated within the Avon River Catchment Area. Mortlock River, which feeds into the Avon River, is situated on the boundaries of the Lot the subject of the application.
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i> , <i>Environmental Protection (Controlled Waste) Regulations 2004</i> , <i>State Agreement Act xxxx</i> )		
Is the Premises within an Environmental Protection Policy (EPP) Area?		
Is the Premises subject to any EPP requirements?		
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?		