



## Application for Works Approval

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

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<b>Works Approval Number</b>	W3086/2025/1
<b>Applicant</b>	City of Greater Geraldton
<b>Application number</b>	APP-0030173
<b>Premises</b>	Meru Waste Disposal Facility Landfill Road NARNGULU WA 6532  Legal description - Lot 203 on Plan 403161;  Lot 204 on Plan 403161; and Part of Lot 2268 on Plan 250829  As defined by the premises map attached to the issued works approval and by the coordinates in Schedule 3 of the works approval
<b>Date of report</b>	17 December 2025
<b>Decision</b>	Works approval granted

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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 time limited operation of the premises. As a result of this assessment, works approval W3086/2025/1 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

The City of Greater Geraldton (the applicant) holds licence L9127/2018/1 for the operation of the Meru Waste Disposal Facility located at Lot 203 on Plan 403161, Lot 204 on Plan 403161 and Lot 2268 on Plan 250829. The premises is licensed to accept up to 100,000 tonnes per annum of Class II and Class III putrescible wastes and currently has 5 landfill cells with a further 7 cells proposed for future disposal needs. Cells 1 and 4 are unlined Class II cells that currently only accept inert waste. Cell 2 is clay lined for Class II putrescible waste disposal. Cells 3 and 5 are lined with Geosynthetic Clay Liner (GCL) and High-Density Polyethylene (HDPE) for Class III waste disposal. Cells 1 to 5 are still actively accepting waste however all are nearing the end of their lifespans.

On 25 July 2025, the applicant applied for a works approval under section 54 of the *Environmental Protection Act 1986* (EP Act) for the construction and time limited operation of a sixth cell for the continued disposal of putrescible wastes (Figure 3). This cell will be GCL and HDPE lined to Class III standard, which will provide an additional 7 years of landfill capacity.

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 W3086/2025/1 and in Table 1 below. 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 W3086/2025/1.

**Table 1: Proposed premises production capacity**

Prescribed Premises category description (Schedule 1, EP Regulations)	Proposed production capacity
Category 64 Class II or III putrescible landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the Landfill Waste Classification and Waste Definitions 1996, is accepted for burial.	100,000 tonnes per annum

### 2.3 Exclusions to the works approval

The leachate pond associated with the landfill cell construction is approved infrastructure that is existing and operational at the premises. No significant modifications will be made to the leachate pond, however its design capacity to accept leachate from cell 6 and modifications allowing the tie-in of the leachate pipework during construction will be assessed as part of this decision report.

The emission of landfill gas generated from the decomposition of wastes over the operational lifespan of cell 6 will be assessed within this application. The construction and operation of the landfill gas management infrastructure network was recently assessed by the department under an amendment to licence L9127/2018/1 granted on 3 November 2025.

### 3. Landfill operation

The premises operates from 7:30 am to 4:30 pm daily, with the exception of major public holidays. Existing infrastructure includes:

- Weighbridge;
- Administration office;
- Reuse shop and recycling drop off area;
- Liquid waste pond area;
- Scrap metal area;
- Wood area;
- Greenwaste area;
- Mattress area;
- E-waste area;
- Two stormwater infiltration ponds;
- Two leachate ponds;
- C & D stockpile area; and
- Class II & III landfill cells.

#### 3.1 Waste acceptance

Cell 6 will be classified as a Class III landfill cell to accept the following wastes:

- Putrescible wastes;
- Contaminated solid wastes;
- Inert Waste Type 1;
- Inert Waste Type 2 tyres and plastics;
- Special Waste Type 1 asbestos;
- Special Waste Type 2 biomedical wastes; and
- Special Waste Type 3 PFAS impacted solid wastes.

Clean fill and uncontaminated fill will also be accepted for the purpose of daily waste cover.

Upon entering and once weighed, accepted loads will be directed to the designated area for unloading or disposal in the active cell and tip face. The tip face will be clearly signed, and the premises operator will ensure the load is in the correct location for appropriate management or disposal.

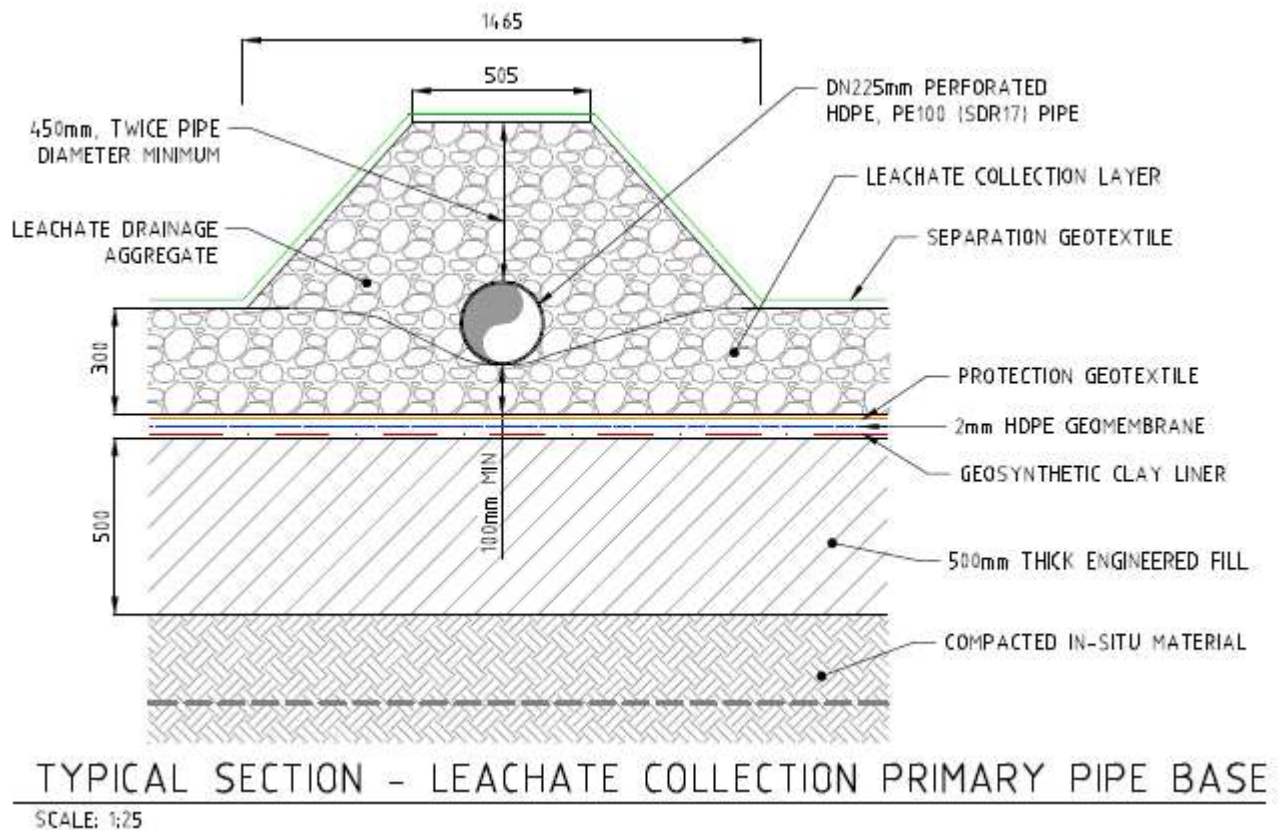
Where non-conforming waste material is discovered within a vehicle, the vehicle will be denied access. Alternatively, if a vehicle is supposedly carrying a clean stream, such as green waste, but it is identified as being contaminated following inspection, this material will be directed to the landfill and charged the relevant disposal costs. If asbestos is identified, the asbestos would be removed from the material in accordance with the premises asbestos management procedures.

Daily waste covering is undertaken as per the existing licence requirements. Cover material will be obtained from the excavated surplus overburden soils. The placement of daily cover will be conducted as part of the environmental management processes, to discourage vermin and prevent litter, odour, dust emissions and potential impacts on amenity.

## 4. Cell 6 class III landfill engineering and design

The northern boundary of cell 6 will tie into the southern side of the still active cell 5 at the existing intercell bund. The cell 6 class III landfill comprises of an engineered composite lining system consisting of the following elements (in order of installation):

- Prepared sub-base;
- Engineered fill layer;
- Geosynthetic clay liner;
- HDPE (high density polyethylene) double textured geomembrane;
- Cushioning protection geotextile;
- Leachate collection system; and
- Separation geotextile.



**Figure 1: Typical basal lining system**

During construction an approved qualified surveyor will survey each layer of the composite liner system. The surveyor will use this data to prepare as-built drawings including:

- Formation excavation levels;
- Top of engineered fill layer levels;
- Construction details including levels and slope angles for the basal liner system;
- Location of leachate collection pipework including connections of primary pipework to secondary pipework;
- Top of leachate drainage aggregate collection layer levels including mounding of material over pipework (top of bank and bottom of bank each side of mound);

- Locations and identification marks of each geosynthetic panel, including anchor trenches;
- Locations of damaged areas and penetrations; and
- Locations of patch repairs.

## 4.1 Construction quality assurance

During cell construction, an approved qualified surveyor will survey each layer of the composite liner system. A leak detection survey will be undertaken on the geomembrane layer following installation of the leachate drainage layer and before the separation geotextile installation. A dipole survey will be conducted over the surface area of the completed leachate drainage layer and on the protection geotextile-covered side slopes in accordance with ASTM D7007 to identify any potential holes in the geomembrane. Any anomalies detected in the underlying geomembrane will be repaired by the contractor as directed by the CQA consultant.

## 4.2 Landfill stability

The geotechnical stability of the landfill is a key factor that may impact the integrity of the landfill environmental controls. Loss of integrity of the landfill liner can result in the contamination of groundwater and soils.

A filling and closure management plan was completed in 2020 by Bowman and Associates, with a second revision of the plan being completed by SMEC in 2021. A masterplan was then completed by ASK Waste Management in 2022. These reports have informed the final landform design, which were used by Talis Consultants to develop the conceptual stability site model. Bowman and Associates recommends that the final landform should be designed to have 1V:3H slopes with 5 m horizontal benches every 10 m in vertical height, up to a maximum height of 47 m AHD (top of waste), being approximately 26 – 27 m in vertical height above surrounding ground levels.

Existing cell 5 and proposed cell 6 have been developed in accordance with the Bowman and Associates design. Talis Consultants undertook a stability risk assessment to support the design of cell 6 to evaluate the geotechnical stability under static and seismic conditions. Due to the absence of specific Australian standards, the assessment followed international best practices and the UK Environment Agency's guidelines.

For the limit state equilibrium analyses, Talis Consultants have considered a factor of safety of  $\geq 1.5$  is appropriate when using peak shear strength parameters under static loading, a factor of safety of  $\geq 1.2$  under earthquake loading for an operating base earthquake, and a factor of safety of  $\geq 1.1$  for a safety evaluation earthquake / maximum credible earthquake.

For the closed form interface analyses, construction plant and gas pressures, Talis Consultants have considered a factor of safety of 1.3 is appropriate when using conservative peak shear strength parameters, and a factor of safety greater than unity for reduced post peak shear strength parameters. Talis Consultants have assessed the risk of failure of the lining system in terms of interface stability with acceptable tension induced in the lining system geosynthetics.

For temporary waste slopes where the slopes will be buttressed with the filling operations in the adjacent cell over a short period of time, Talis Consultants have considered a factor of safety of  $\geq 1.3$  is appropriate when using peak shear strength parameters under static loading.

The following key conclusions and recommendations were made by Talis Consultants in the stability risk assessment for cell 6:

- The factors of safety for the short- and long-term stability of the basal and side slope lining system is acceptable.
- The effects of leachate pore pressure on the temporary waste slopes have been assessed with conservative pore-water pressure in the waste mass taken as a function of the overburden stress. Acceptable factors of safety have been determined and are considered acceptable.
- The finite difference liner integrity analysis demonstrates that strains developed in the HDPE

geomembrane from the modelled waste mass are significantly lower than the maximum allowable HDPE geomembrane strain values and are considered acceptable.

- All limit equilibrium factor of safety calculated for the cell 6 side slopes during the seismic conditions are in excess of the minimum values for both peak and post peak scenarios and are considered acceptable.
- The waste mass model used the temporary waste slopes formed between the cell 6 intercell bund and cell 5 waste mass to determine the calculated factor of safety, which is considered acceptable.
- The limit equilibrium analysis for the capping assessment show that undrained conditions meet the minimum required factor of safety.
- The limit equilibrium analysis for the capping assessment show that drained conditions do not meet the minimum required factor of safety. The analyses of the proposed 1V:3H capping slope with a weak interface (post peak linear low density polyethylene (LLDPE) Geotextile/Geonet interface friction) fails to meet the minimum factor of safety under no loading, operating base earthquake and safety evaluation earthquake peak ground accelerations. The proposed 1V:3H profile is steeper than is recommended by BPEM and may also cause long term maintenance issues from potential erosion and gullyng of the restoration soil profile.
- With regards to the closed form analysis, the assessment of the stability of the capping system with regards to interface friction and parallel submerged ratio, has demonstrated that a satisfactory factor of safety will be achieved for the proposed capping and restoration slopes under static conditions for the scenarios assessed, but may not be acceptable if peak ground accelerations are applied.
- It should be noted that the factor of safety for the LLDPE/Geonet-Geotextile interface decreases as the parallel submerged ratio increases. As part of the detailed capping design during the selection of materials the interface friction angles should be determined to ensure the minimum factor of safety is achieved, and effective drainage of the slope is maintained.
- Analysis for construction plant upon the capping system has shown that a factor of safety of 1.25 exists for plant working on the steepest capping slope of 1V:3H, during capping construction activities.
- Analysis of gas pressures has demonstrated that for the interfaces considered in the capping system acceptable factors of safety are maintained when an adequate gas collection/extraction system is provided.
- In order to minimise the potential of tension in the underlying geosynthetic lining system, that the capping restoration soils are placed/spread upslope greater than 1 m thickness.
- The proposed final fill profile is reviewed in line with due consideration on the selection of geosynthetics during capping works to ensure that the interface shear strengths are sufficient to prevent the development of tension in the geosynthetics and ensure an adequate factor of safety against rupture is achieved.

### 4.3 Leachate management

A leachate collection system will be installed within the base of cell 6 which is an extension of the existing system installed in cell 5, to collect and direct leachate towards the existing leachate pond located to the east of cells 5 and 6 for storage and evaporation. The collection system will consist of:

- 300 mm thick highly permeable low calcareous aggregate leachate collection layer;
- DN225 HDPE perforated primary pipework;
- DN160 HDPE perforated secondary pipework; and

- Separation geotextile.

The leachate collection system incorporates an aggregate drainage layer, and a network of primary and secondary leachate collection pipes connected to the leachate collection sump in cell 6. The 300 mm thick aggregate drainage layer consists of low calcareous aggregate with a hydraulic conductivity of  $>1 \times 10^{-3}$  m/s.

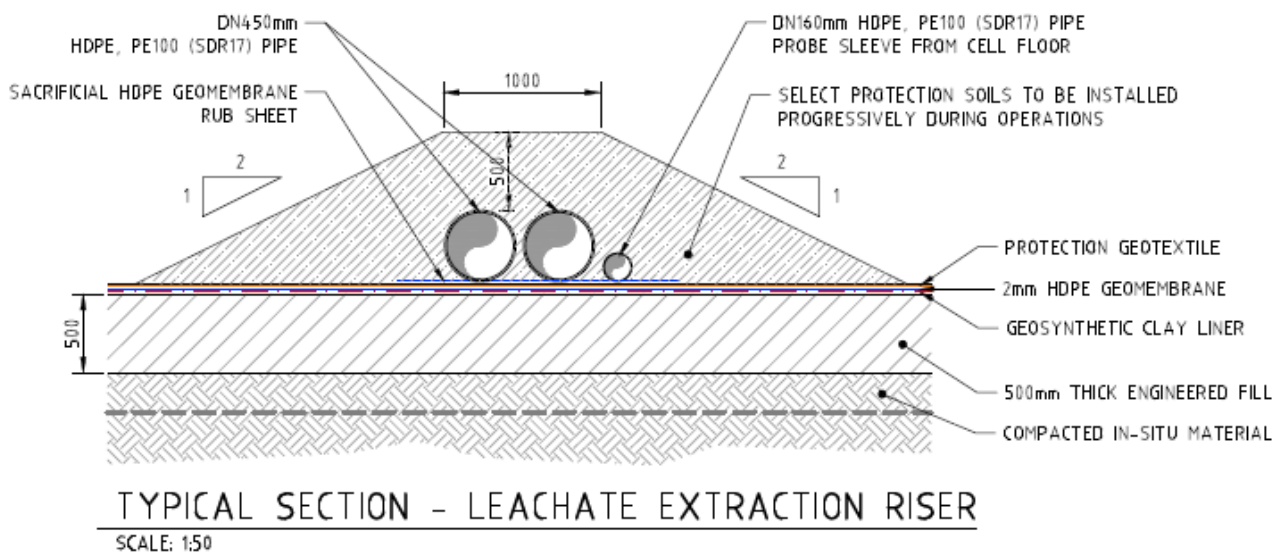
The pipe network consists of a DN160 HDPE perforated secondary pipes at maximum 25m spacings connected to a DN225 HDPE perforated primary pipe to direct leachate to the cell 6 sump for extraction. The base of the cell has been designed with 3% cross falls to the primary spine drains with minimum 1% falls orientated diagonally across the cell base to direct leachate towards the collection sump located in cell 6.

A leak detection survey will be undertaken on the geomembrane layer following installation of the leachate drainage layer and before the separation geotextile installation. A dipole survey will be conducted over the surface area of the completed leachate drainage layer and on the protection geotextile-covered side slopes in accordance with ASTM D7007 to identify any potential holes in the geomembrane. Any anomalies detected in the underlying geomembrane will be repaired by the Contractor as directed by the CQA consultant.

Leachate will be pumped by automatic pumps with the ability to manually override the system if required. Leachate extraction points are checked regularly to ensure pumps are operating effectively, to determine the head and quality of leachate, and to ensure compliance with assessment criteria and compliance limits. The leachate will be transferred from the sumps via pipework to the existing leachate pond.

The existing leachate pond is lined with a composite geosynthetic lining system featuring a 2.0 mm HDPE geomembrane overlaying a GCL, with an existing operational storage capacity of 17.592 m<sup>3</sup>.

Talis Consultants was commissioned to assess the combined leachate generation potential of cell 5 and cell 6 including leachate generated in the 'worst-case' scenario during consecutive wet years, with an additional 1-in-100 year, 24-hour storm event, without overtopping. The assessment was undertaken using the Hydrologic Evaluation of Landfill Performance software program. Talis found that the existing leachate pond had sufficient capacity for both cell 5 and cell 6 leachate plus 'worst case' scenario inputs without the leachate pond overtopping, therefore additional leachate storage is not required at this time.





**Key Findings:**

The Delegated Officer considers that:

1. The design specifications of cell 6 are consistent with the specifications expected for Class III landfill cells. The suitability of the construction in the context of the premises location will be considered in the risk assessment.
2. A leachate balance assessment found that the premises infrastructure is able to manage its leachate within the existing leachate pond over the modelled 5-year worst-case period without the leachate pond overtopping.
3. The landfill stability report indicates a number of factors of safety cannot be achieved for the proposed capping system and that the works approval holder should give consideration to the recommendations of Talis Consultants.

## 4.6 Landfill gas management

The decomposition of the organic content within the landfill cells will result in the generation of gas which contains methane, carbon dioxide and other volatile organic compounds. These gases contribute to the effects of climate change, produce an odour, reduce amenity, impact human health and present explosive risks. To ensure these impacts are mitigated, an extensive network of landfill gas extraction wells and transmission pipework is intended for installation across the premises. The wells will extract landfill gas via an active vacuum system from cells 5 and 6 and transfer it to the flare for thermal destruction.

The landfill gas management system was recently assessed by the department under a separate application to amend the premises operating licence L9127/2018/1, which was granted on 3 November 2025. No further assessment will be undertaken in this decision report.

## 4.7 Cell closure

The applicant proposes to progressively cap cells 5 and 6. The proposed capping system, commencing from the top of the waste mass, is as follows:

- 300 mm thick earthen cover layer;
- 0.6 m of low permeability clay capping;
- 1.5 mm linear low density polyethylene textured geomembrane;
- Protection geotextile;
- Revegetation layer at least 1,000 mm thick consisting of clean locally sourced soil with a top mulch.

The landfill closure management plan will be assessed under a separate works approval in due course.

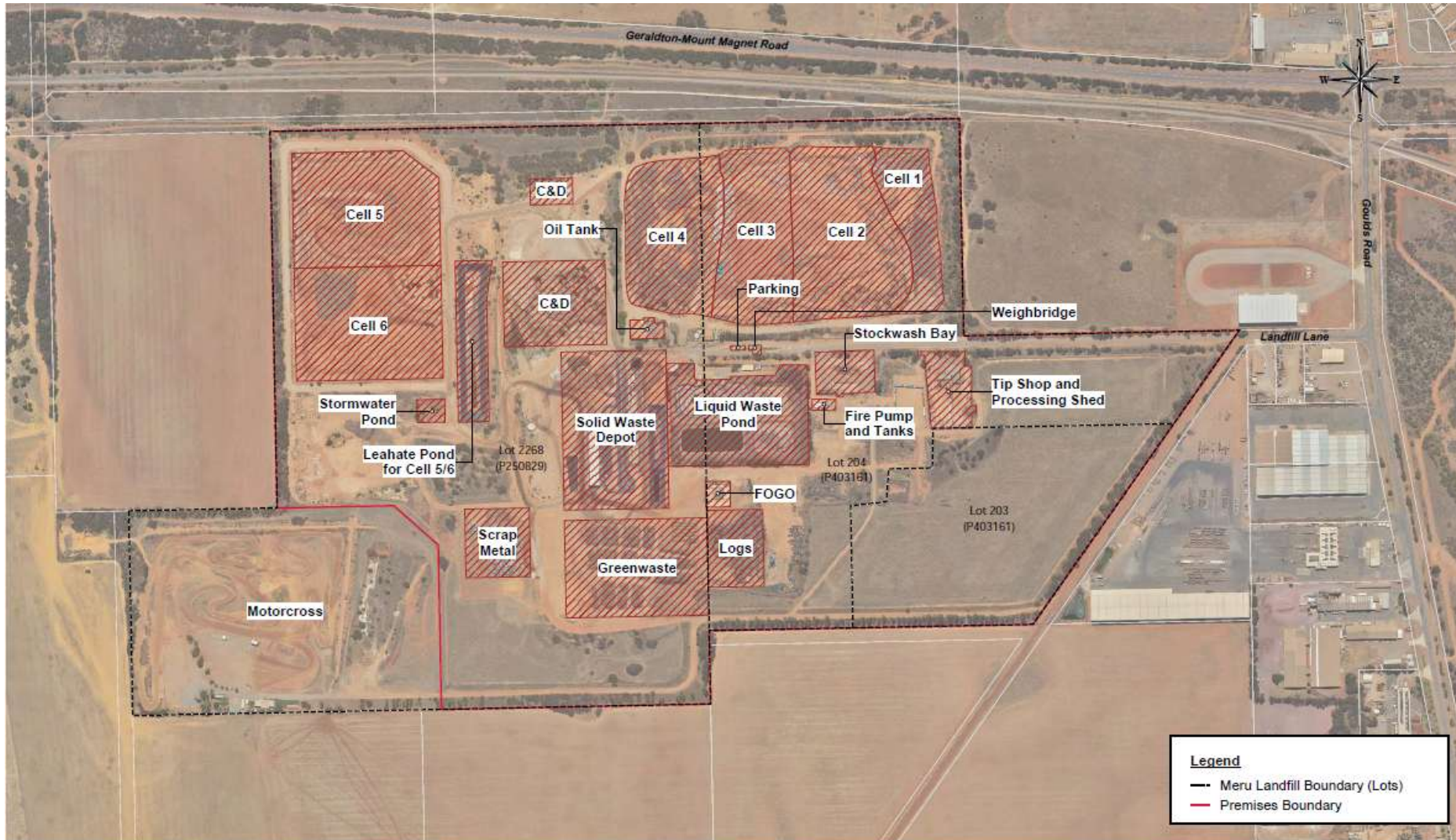


Figure 3: Premises layout showing cell 6

## 5. Location and siting

The premises is located approximately 6 km southeast from the town centre of Geraldton. Covering an area of 90 hectares, it is bound by general industrial estates to the south, east and west and separated from farmland to the north by the Geraldton-Mount Magnet Road. The premises is zoned as use for public purposes under the City of Greater Geraldton Local Planning Scheme No. 1.

### 5.1 Sensitive human receptors

Table 2 and Figure 4 below provide a summary of potential human receptors that may be impacted as a result of activities upon, or emission and discharges from, the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)). Human receptors have been considered in the risk assessment table in section 6.2.

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

Human receptors	Distance from prescribed activity
Residential premises	Residences located 730 m and 760 m north of premises boundary
Residential suburbs	Karlool located 1.5km northwest of the premises boundary. Wandina located 1.6km southwest of the premises boundary.

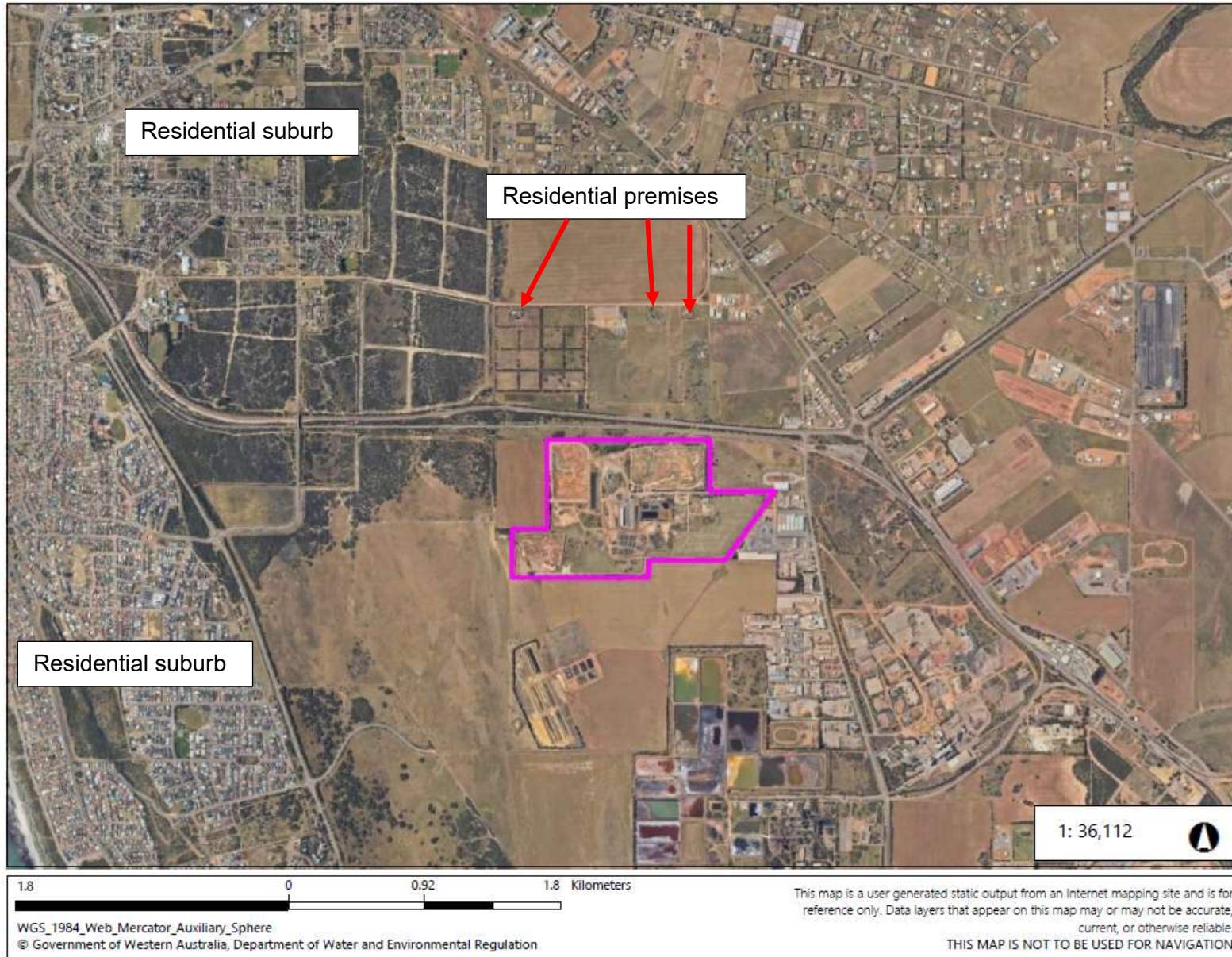
In accordance with the *Guideline: Risk Assessment* (DWER 2020), the delegated officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state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

### 5.2 Sensitive Aboriginal heritage

Two sites of Aboriginal heritage significance that may be impacted as a result of activities upon, or emission and discharges from, the prescribed premises are located within 1 km of the premises boundary:

- Place ID – 26739 GSTCS2 – Artefact scatter AS001/2009
- Place ID – 20854 Geraldton Southern Transport Corridor Field Site 03

These sites have been considered in the risk assessment table in section 6.2.



**Figure 4: Distance to sensitive receptors**

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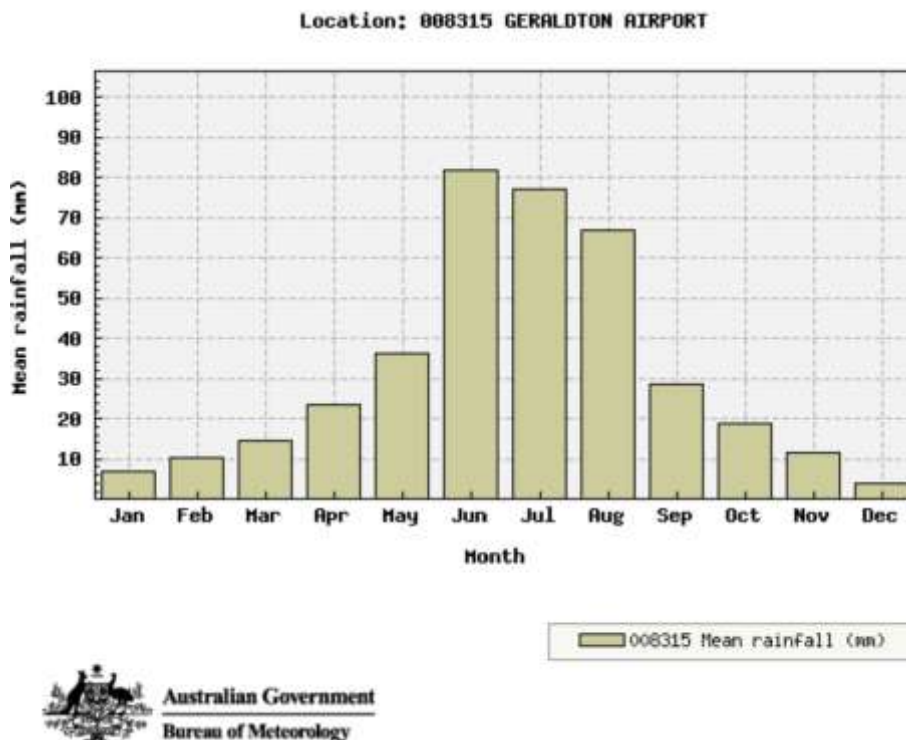
IR-T13 Decision Report Template (short) v3.0 (May 2021)

## 5.3 Environmental siting

### 5.3.1 Rainfall

Rainfall that is insufficiently managed can provide a direct pathway for transmission of contaminants and leachate by overland flow and subsurface seepage. Rainfall that may carry these emissions to sensitive receptors has been considered in the risk assessment table in section 6.2.

The Midwest region experiences a mediterranean climate with hot dry summers and mild wet winters. The Bureau of Meteorology (BoM) data for the Geraldton Airport weather station (BoM site 008351) shows that the area in the vicinity of the premises has an average annual rainfall of 383.0 mm (based on data from 2011 to 2025), with the majority of rainfall received between April and September (Figure 5).



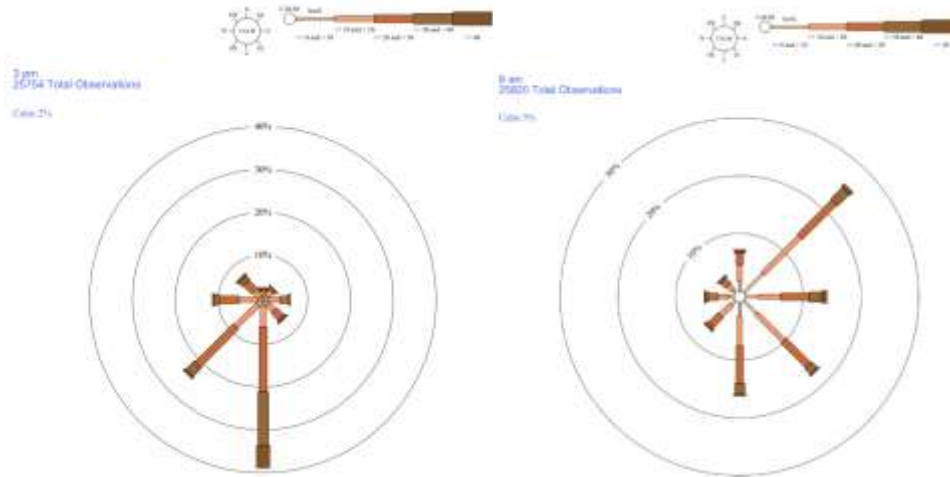
**Figure 5: Average annual rainfall at Geraldton Airport**

Source: Bureau of Meteorology website [www.bom.wa.gov.au](http://www.bom.wa.gov.au) (BoM site 008315)

### 5.3.2 Wind direction and strength

Prevailing wind patterns can provide a direct pathway for transmission of dust and odours by air, so prevailing wind patterns that may carry these emissions to sensitive receptors have been considered in the risk assessment table in section 6.2.

The closest BoM weather station which previously recorded wind frequency data is the now closed Geraldton Airport Comparison weather station (BoM site 008051). Prevailing winds during mornings are on average from the south and southwest, and swing variably to the northeast and the south during afternoons (Figure 6).



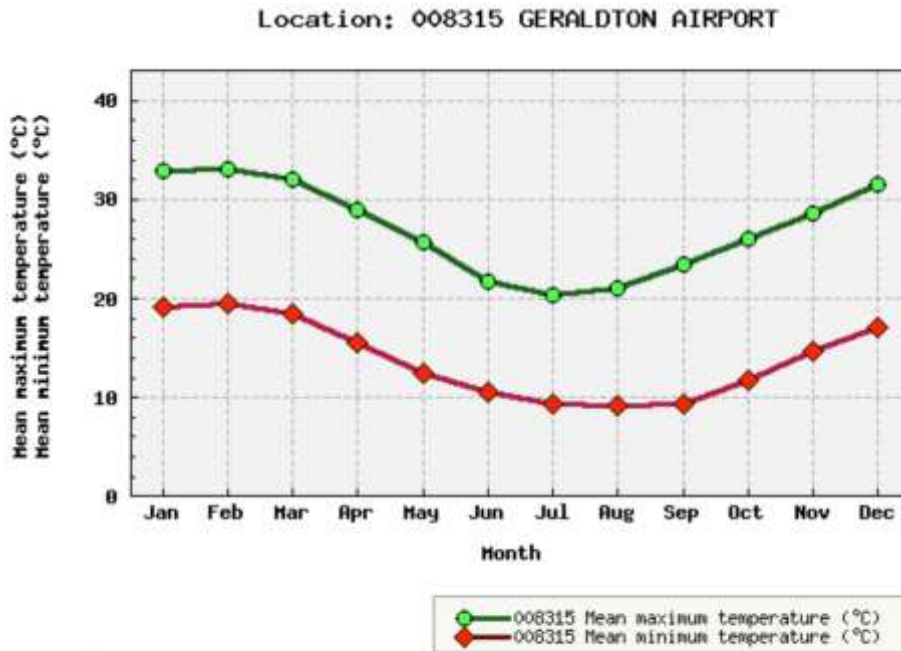
**Figure 6: Wind roses for 9 am and 3 pm at Geraldton Airport Comparison**

Source: Bureau of Meteorology website [www.bom.wa.gov.au](http://www.bom.wa.gov.au) (BoM site 008051)

### 5.3.3 Temperature

Temperature fluctuations can influence the generation of odours and in conjunction with prevailing winds provide a direct pathway for transmission of odours by air, so adverse temperatures that may generate odours which impact sensitive receptors have been considered in the risk assessment table in section 6.2.

The BoM data for the Geraldton Airport weather station (BoM site 008351) shows that the area in the vicinity of the premises has an average maximum temperature ranging from 33.1°C to 20.4°C in summer and 19.5°C to 9.1°C in winter (Figure 7).



**Figure 7: Average maximum and minimum temperatures at Geraldton Airport**

Source: Bureau of Meteorology website [www.bom.wa.gov.au](http://www.bom.wa.gov.au) (BoM site 008315)

### 5.3.4 Hydrogeology

The premises is located within the Arrowsmith Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914*. Depth to groundwater is 10 – 20 m BGL while groundwater salinity is 3000 – 7000 mg/L.

The underlying maximum seasonal potentiometric head recorded is at an approximate elevation of 3.5 m AHD within the cell 6 development area, with regional data groundwater flow toward the west, generally toward the Indian Ocean. The proposed landfill base in cell 6 is at approximately 7 m at its lowest point. No superficial or perched groundwater has been identified in any of the investigation works.

Two groundwater bore users are located 900 m north and 1.15 km southwest of the premises boundary.

### 5.3.5 Surface water

The Greenough River and Tributaries catchment area proclaimed under the *Rights in Water and Irrigation Act 1914* is located adjacent to the south eastern boundary of the premises and 900 m southeast of the proposed cell 6 development area.

### 5.3.6 Threatened and priority flora and fauna

No threatened or priority flora or fauna were located within the premises boundary. One endangered flora species is located within a 1 km radius of the premises boundary. This sensitive receptor has been considered in the risk assessment table in section 6.2.

## 6. 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.

### 6.1 Source-pathways and receptors

#### 6.1.1 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 3 below. Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

**Table 3: Proposed applicant controls**

Sources	Emission	Potential pathways	Proposed controls
<b>Construction</b>			
Construction of landfill cell 6	Dust	Air/windborne pathway	<ul style="list-style-type: none"> <li>Vehicles to be restricted to maximum signposted speed limits.</li> <li>Frequent use of a water cart in construction zones</li> <li>No construction or earthworks during high winds</li> </ul>
	Noise	Air/windborne pathway	<ul style="list-style-type: none"> <li>Where occasional out of hours construction work is necessary, 5 days' notice will be given and complaints monitored. Excess noise emissions will result in out-of-hour approval being rescinded</li> <li>All mobile machinery equipped with broadband reversing alarms</li> <li>Best practice means to minimise noise</li> <li>Regular maintenance of mobile machinery and equipment</li> </ul>
	Odour	Air/windborne pathway	<ul style="list-style-type: none"> <li>Waste operations near the tie-in area will be minimised where possible</li> </ul>
	Sediment laden stormwater	Subsurface seepage	<ul style="list-style-type: none"> <li>Implementation and maintenance of a surface water management system consisting of a series of perimeter drains diverting to a stormwater infiltration pond</li> </ul>
<b>Operation</b>			
Operation of landfill cell 6	Dust	Air/windborne pathway	<ul style="list-style-type: none"> <li>Covering of waste during transport</li> <li>Vehicles to maintain minimum speed limits</li> <li>Use of a water cart to wet haul roads as necessary</li> <li>Appropriate handling and unloading of waste to minimise dust generation</li> </ul>
	Noise	Air/windborne pathway	<ul style="list-style-type: none"> <li>Operational hours are restricted to 07:30 am to 4:30 pm every day</li> <li>All mobile machinery equipped with broadband reversing alarms</li> <li>Regular maintenance of mobile machinery and equipment</li> </ul>
	Odour	Air/windborne pathway	<ul style="list-style-type: none"> <li>Consideration of meteorological conditions during material handling</li> <li>Daily cover and compaction of waste</li> <li>Immediate burial of highly odorous wastes on acceptance at the weighbridge</li> <li>Regular maintenance and monitoring of the leachate treatment system</li> <li>Installation of a landfill gas management system</li> <li>Odour complaint system and follow-up investigations/actions</li> </ul>

Sources	Emission	Potential pathways	Proposed controls
Operation of landfill cell 6	Asbestos dust	Air/windborne pathway	<ul style="list-style-type: none"> <li>All asbestos and asbestos containing materials (ACM) accepted at the premises are placed in the designated disposal area and covered with 500 mm of cover soil immediately after deposit</li> <li>As soon as practicable and before compaction, ACM wrapped in heavy duty plastic must be covered with a layer of soil at least 300 mm thick or with a layer of dense, inert and incombustible material at least 1 m thick</li> <li>Record disposal locations as grid references on a premises plan</li> <li>No asbestos waste or ACM deposited within 2 m of the final tipping surface of the landfill</li> <li>Operate the landfill such that any existing asbestos waste or material containing asbestos deposited at the premises remains undisturbed</li> <li>Make all records available for viewing by an inspector upon request</li> </ul>
	Unauthorised fire – smoke and fire spread	Air/windborne pathway	<ul style="list-style-type: none"> <li>Fire response infrastructure and equipment, including mobile water cart, fire extinguishers, surface water dams, and fire breaks located around the premises</li> <li>All staff trained in appropriate fire response techniques</li> </ul>
	Landfill gas	Air/windborne pathway	<ul style="list-style-type: none"> <li>Applicant controls for landfill gas management were recently assessed by the department under a licence amendment, which was granted on 3 November 2025.</li> </ul>
	Leachate and contaminated surface water	Subsurface seepage	<ul style="list-style-type: none"> <li>Installation and maintenance of a leachate collection system, consisting of in-cell subsurface drains to an existing leachate pond.</li> <li>Capture of contaminated surface water in the leachate collection system.</li> <li>Progressive capping of landfill cells to minimise infiltration of water.</li> </ul>
	Windblown wastes	Air/windborne pathway	<ul style="list-style-type: none"> <li>Maintenance of fencing 1.8m high</li> <li>Use of litter screens at the tipping face</li> <li>Daily compaction of waste</li> <li>Daily removal of windblown waste from fences and access roads</li> </ul>
	Pests and vermin	Air/windborne pathway	<ul style="list-style-type: none"> <li>Application of adequate cover material</li> <li>Regular monitoring for vermin and feral animals</li> <li>Vermin control such as baiting and trapping</li> </ul>
	Weeds	Air/windborne pathway Biological	<ul style="list-style-type: none"> <li>Awareness of declared/noxious weed management through the premises induction. The induction will include information pertaining to weeds of concern occurring at the, as well as the</li> </ul>

Sources	Emission	Potential pathways	Proposed controls
		transfer	hygiene and reporting requirements associated with weed management <ul style="list-style-type: none"> <li>• Vehicles entering/exiting the premises will be free of soil, mud, and vegetative material</li> <li>• Vehicles to adhere to established roads and tracks to prevent the spread of weeds within the premises</li> <li>• Regular monitoring of weeds across the premises to be undertaken by all staff</li> <li>• Regular weed management methods to be undertaken via manual removal and/or or by chemical application prior to flowering periods</li> </ul>

## 6.2 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 6.1. 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 6.1), 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 4.

Works approval W3086/2025/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 4 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 4: 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 regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Construction</b>								
Construction of landfill cell 6	Dust	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Residential premises	Refer to Section 6.1	C = Minor L = Possible <b>Medium Risk</b>	Yes	N/A	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of dust under most circumstances. Any residual risk relating to the unauthorised discharge of dust emissions will be regulated under the general provisions of the EP Act.
	Noise			Refer to Section 6.1	C = Moderate L = Possible <b>Medium Risk</b>	Yes	N/A	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of noise under most circumstances. Any residual risk relating to the unauthorised discharge of noise emissions will be regulated under the <i>Environmental Protection (Noise) Regulations 1997</i> .
	Odour			Refer to Section 6.1	C = Moderate L = Possible <b>Medium Risk</b>	Yes	N/A	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of odour emissions under most circumstances. Any residual risk relating to the unauthorised discharge of dust emissions will be regulated under the general provisions of the EP Act.
	Sediment laden stormwater	<b>Pathway:</b> Subsurface seepage <b>Impact:</b> Groundwater sources	Arrowsmith Groundwater Area Groundwater users	Refer to Section 6.1	C = Moderate L = Possible <b>Medium Risk</b>	Yes	N/A	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of sediment laden stormwater under most circumstances. Any residual risk relating to the unauthorised discharge of sediment laden stormwater will be regulated under the general provisions of the EP Act.
<b>Operation (including time-limited operations)</b>								
Operation of landfill cell 6	Dust	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Residential premises	Refer to Section 6.1	C = Minor L = Possible <b>Medium Risk</b>	Yes	Condition 18	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of dust under most circumstances. Any residual risk relating to the unauthorised discharge of dust emissions will be regulated under the general provisions of the EP Act.
	Noise	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Residential premises	Refer to Section 6.1	C = Minor L = Possible <b>Medium Risk</b>	Yes	Condition 18	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of noise under most circumstances. Any residual risk relating to the unauthorised discharge of noise emissions will be regulated under the <i>Environmental Protection (Noise) Regulations 1997</i> .

Risk events					Risk rating <sup>1</sup>	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Operation of landfill cell 6	Odour	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Residential premises	Refer to Section 6.1	C = Minor L = Possible <b>Medium Risk</b>	Yes	Conditions 15 and 18	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of odour emissions under most circumstances.  Cover requirements during time limited operations have been added to the works approval in line with the cover requirements of the operating licence L9127/2018/1.
	Asbestos dust	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Residential premises	Refer to Section 6.1	C = Major L = Unlikely <b>Medium Risk</b>	Yes	Conditions 14 and 15	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of asbestos dust emissions under most circumstances.  Waste acceptance and waste processing requirements during time limited operations have been added to the works approval in line with the requirements of the premises operating licence L9127/2018/1.
	Unauthorised fire – smoke and fire spread	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity and protected vegetation	Residential premises and suburbs Aboriginal heritage sites Surrounding farmland Endangered flora species	Refer to Section 6.1	C = Major L = Possible <b>High Risk</b>	Yes	Condition 15	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of unauthorised fires under most circumstances.  Existing conditions of the operating licence L9127/2018/1 will adequately regulate the incidence of unauthorised fires. These requirements have therefore not been duplicated in the works approval.
	Landfill gas	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Residential premises	Refer to Section 6.1	C = Major L = Unlikely <b>Medium Risk</b>	N/A	N/A	Landfill gas will be generated from the decomposition of wastes over the operational lifespan of cell 6 which will passively vent over time. The Delegated Officer considers there to be a medium risk of impacts from the emissions of landfill gases during operational activities.  Upon reaching the end of the lifespan of cell 6, a landfill gas management infrastructure network will be constructed and operated to remove landfill gas from the landfill cell and transfer it to the flare for destruction.  Construction of the landfill gas monitoring wells for installation across all cells 1 to 6 was recently assessed by the department under a separate application to amend the premises operating licence L9127/2018/1, which was granted on 3 November 2025.

Risk events					Risk rating <sup>1</sup>	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Operation of landfill cell 6	Leachate and contaminated surface water	<b>Pathway:</b> Subsurface seepage <b>Impact:</b> Groundwater sources	Arrowsmith Groundwater Area Groundwater users	Refer to Section 6.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Yes	Conditions 1 to 5, 6 to 9, 10 to 12, 14 to 15, 16 to 18	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of leachate and contaminated surface water under most circumstances.  As this risk is mitigated by adequate implementation of these applicant controls, the Delegated Officer shall enforce these controls via construction, operational and maintenance conditions on the works approval.  Waste acceptance and waste processing requirements during time limited operations have been added to the works approval in line with the requirements of the premises operating licence L9127/2018/1.
	Windblown wastes	<b>Pathway:</b> Air/windborne pathway <b>Impact:</b> Health and amenity	Residential premises Surrounding farmland	Refer to Section 6.1	C = Minor L = Possible <b>Medium Risk</b>	Yes	Condition 15	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of windblown wastes under most circumstances.  Existing conditions of the operating licence L9127/2018/1 will adequately regulate windblown wastes.
	Pests and vermin	<b>Pathway:</b> Air/windborne pathway Biological transfer <b>Impact:</b> Health and amenity	Residential premises	Refer to Section 6.1	C = Moderate L = Possible <b>Medium Risk</b>	Yes	Condition 15	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of pests and vermin under most circumstances.  Existing conditions of the operating licence L9127/2018/1 will adequately regulate pests and vermin.
	Weeds	<b>Pathway:</b> Air/windborne pathway Biological transfer <b>Impact:</b> Amenity and species diversity	Endangered flora	Refer to Section 6.1	C = Moderate L = Possible <b>Medium Risk</b>	Yes	N/A	The Delegated Officer considers the controls proposed by the applicant are sufficient to mitigate the risk of weeds under most circumstances.  Existing conditions of the operating licence L9127/2018/1 will adequately regulate weeds. These requirements have therefore not been duplicated in the works approval.

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.

## 7. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

**Table 5: Consultation**

Consultation method	Comments received	Department response
Application advertised on the department's website on 8/10/2025	None	N/A
Application advertised in the West Australian on 13/10/2025	None	N/A
Applicant was provided with draft documents on 09/12/2025	<p>The applicant was required to provide geotextile minimum values for thickness, mass per unit area and separation tear strength.</p> <p>The consultant on behalf of the applicant advised on 16/12/2025 that the Technical Specification document included to-be-confirmed minimum values as they are dependent on the outcome of a liner protection test which will confirm the ability of the proposed geotextile to protect the geomembrane from the overlying aggregate combination under the site-specific loading conditions. Following a conforming test, the values for those parameters can be confirmed from the Material Quality Assurance (MQA) documentation of the conforming product.</p>	The delegated officer is satisfied that the geotextile minimum values for thickness, mass per unit area and separation tear strength can be provided in the Environmental Compliance Report.

## 8. Conclusion

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

## References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.