Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L6964/1997/11
Licence Holder	City of Armadale
File Number	APP-0026170
Premises	City of Armadale Landfill and Recycling Facility 145 - 147 Hopkinson Road HILBERT WA 6112 Legal description – Lot 600 on Deposited Plan 400460 Certificate of Title Volume 2828 Folio 800 As defined by the premises map attached to the revised licence
Date of Report	09/01/2026
Decision	Revised licence granted

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1. Decision summary

Licence L6964/1997/11 is held by the City of Armadale (licence holder) for the City of Armadale Landfill and Recycling Facility (the premises), located at 145-147 Hopkinson Road, Hilbert.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the premises. As a result of this assessment, revised licence L6964/1997/11 has been granted.

The revised licence issued as a result of this amendment consolidates and supersedes the existing licence previously granted in relation to the premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

The premises currently operates as a landfill and recycling facility, accepting domestic putrescible waste, residential waste, and commercial and industrial waste from the City of Armadale area.

On 1 March 2024, the licence holder submitted an application to the department to amend L6964/1997/11 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). During the assessment of the application, the licence holder was requested to clarify proposed increases to category throughputs. The licence holder confirmed only an increase to the throughput for category 61 was being sought. The following further amendments are being sought:

- The inclusion of a new transfer station and associated infrastructure
- An increase to category 61 assessed design capacity
- An increase to the acceptance rate for hazardous wastes
- Inclusion of additional waste types for acceptance, including additional hazardous wastes
- Updates to waste storage locations
- The removal of condition 6(c) for maintenance and operation of a sprinkler system for controlling waste fires
- Updating the annual period to the financial year for simplified reporting.

Infrastructure and equipment detailed in the application includes the new transfer station receival platforms, a household hazardous waste handling area, a household hazardous waste storage shed, a tyre storage area, plant and machinery compound, cardboard and polystyrene compactor, oil shed, storage shed, mattress storage area, e-waste storage bin, asbestos acceptance bin, water storage tanks, diesel storage tank, primary and secondary weighbridges, leachate ponds, landfill cells and a landfill gas flare. The locations of key infrastructure and waste receival and storage locations are shown in Figure 1.

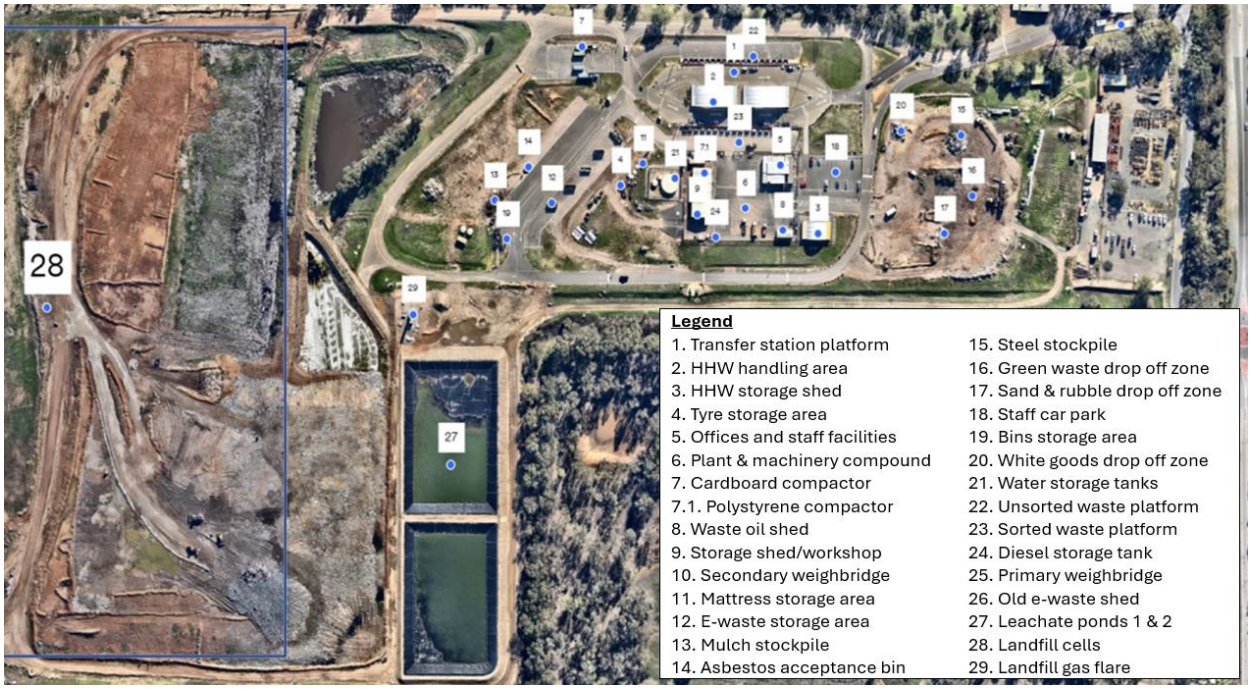

Figure 1: Site layout map

Types of waste proposed to be included in the licence are mattresses, cardboard, polystyrene, plastic, green waste, mulch, sand and rubble, used oil, white goods, diesel, e-waste, steel, batteries and general inert and putrescible waste. The licence holder is currently permitted to accept hazardous waste limited to paints and resins, but is applying to accept other types of hazardous waste, including wastes listed under the Household Hazardous Waste Program (Waste Authority 2025).

The licence holder has applied for the removal of the condition in the licence requiring maintenance and operation of a sprinkler system. The sprinkler system was removed when the new transfer station was constructed. The licence holder has proposed the sprinkler system is no longer required and any fires can be controlled with water supplies and equipment on site. Larger fires are proposed to be controlled by emergency services.

This amendment is limited only to changes to category 61 and category 62 activities from the existing licence. No changes to the aspects of the existing licence relating to category 57 and category 64 have been requested by the licence holder.

Table 1 below outlines the proposed changes to the existing licence.

Table 1: Proposed design capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
57 Used tyre storage (general)	250 tyres at one time	No change	N/A
61 Liquid waste facility	99 tonnes per annual period	5,000 tonnes per annual period	The licence holder has applied to increase the acceptance rate for hazardous liquid wastes and include additional hazardous liquid waste types for acceptance.
62 Solid waste			The licence holder has

depot 64 Class II or III putrescible landfill site	Combined total of 100,000 tonnes per annual period	No change	applied to increase the acceptance rate for hazardous solid wastes and include additional hazardous solid waste types for acceptance. This does not change the overall design capacity for category 62, which will remain as a combined capacity of 100,000 tpa with category 64.

2.3 Part IV of the EP Act

The premises boundary falls within the boundary of two Ministerial Statements (MS):

1. MS 845 (4 November 2020) relates to potential corridors and areas for future installation of water and wastewater pipelines and associated infrastructure. The proponent is the Water Corporation.
2. MS 595 (31 March 2025) relates to the design, construction and use of approximately 32 kilometres of highway. The proponent is the Commissioner for Main Roads Western Australia.

These Ministerial Statements are not relevant to the premises or this amendment application submitted by the licence holder.

2.4 Works approval W6814/2023/1

Works approval W6814/2023/1 was issued on 18 August 2023 for landfill capping, the construction of two new leachate ponds and leachate management pipework, relocation of the landfill gas flare, decommissioning and construction of a vehicle washdown facility, stormwater drainage, associated pipework, and new groundwater monitoring wells at the premises.

Construction of the two new leachate ponds and leachate management pipework has been completed, and compliance documentation submitted to the department. The relocation of the landfill gas flare has also been completed. The department has determined to add this completed and assessed infrastructure to the licence as part of this amendment.

During the assessment of this application, an update on the stages of landfill capping under W6814/2023/1 was sought from the City of Armadale. The City of Armadale confirmed no stages of capping have yet been completed. The proposed date for the finalisation of landfilling was early 2025, however the proposal to send waste to a waste to energy plant has been delayed, and consequently landfilling is still underway at the premises. A new proposed date for capping and closure is as yet undetermined.

2.5 Consolidation of licence

The licence was consolidated during a previous amendment to the licence on 7 January 2021 by incorporating changes made under Amendment Notices 1 and 2.

Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

2.6 Noise emissions

The current operating hours of the premises are Monday to Sunday 8:00 am to 4:45 pm. The premises operates on public holidays except for New Year's Day, Good Friday and Christmas

Day. As part of the validation process of the application, the licence holder was requested to provide a noise modelling report due to the proximity of noise-sensitive receptors to the transfer station. This information was required to inform the risk assessment for potential noise impacts from the operation of the new transfer station. An acoustic report was prepared on 26 February 2025 by a noise consultant and provided to DWER on 18 March 2025 (AES 2025). Noise emissions for four operational scenarios were modelled in the report:

1. Scenario 1 represented all the fixed plant and mobile equipment operating simultaneously (worst case scenario).
2. Scenario 2 represented a short time operation for a loader loading bricks into a truck at the brick stockpile area.
3. Scenario 3 represented the hook lift truck emptying waste into the landfill.
4. Scenario 4 represented vehicle doors closing on site.

The report identified multiple scenarios where noise levels are non-compliant with assigned noise levels in the Environmental Protection (Noise) Regulations 1997. The report proposed several options for controlling noise at the premises:

- The dozer and the Tana compactor should not operate in the landfill at the same time.
- If the Tana compactor is operating in the landfill, the dozer should be replaced with a loader.
- On Sundays and public holidays, either the dozer or the Tana compactor should not be operated in the landfill
- During the “night” (8 am to 9 am) on Sundays and public holidays, no equipment should operate onsite.
- Relocation of the brick stockpile to the area west of the transfer station if possible.

The acoustic report was referred to the department’s Environmental Noise Branch (ENB) for assessment. ENB’s comments are summarised as follows:

- The methodology of the noise modelling conducted and the predicted noise emission levels appear to be appropriate.
- Noise generated from scenario 1 does not comply with the assigned noise levels:
  - on Monday to Saturday at four neighbouring residences;
  - between 9am and 4:45pm on Sundays and public holidays at five neighbouring residences;
  - between 8am and 9am on Sundays and public holidays at six neighbouring residences.
- Noise generated from scenario 2 does not comply with the assigned noise levels:
  - between 9am and 4:45pm on Sundays and public holidays at three neighbouring residences;
  - between 8am and 9am on Sundays and public holidays at four neighbouring residences.
- Noise generated from scenarios 3 and 4 does not comply with the assigned noise levels:
  - Between 8am and 9am on Sundays and public holidays at four neighbouring residences.
- The report’s recommendation that replacing the dozer with a loader will substantially

reduce noise emissions during the scenario 1 operation between Monday and Saturday is possible, however it would need to be confirmed whether the dozer can be replaced by a loader.

- The report's recommendation that either the dozer or the compactor should not be operated in the landfill on Sundays and public holidays is not likely to achieve sufficient noise reduction to comply with assigned noise levels during Sundays and public holidays for the scenario 1 operation. In addition to restricting the operation of either the dozer or the Tana compactor during this time, additional measures to reduce noise from other major plant may be required.
- The report's recommendation that no equipment operates between 8am and 9am on Sundays and public holidays is likely to be an effective option for the site to be compliant with assigned noise levels for all four scenarios during this time. ENB strongly recommended this control be implemented.
- The report's recommendation that the brick stockpile be relocated to the western area of the transfer station may be a sufficient control to address non-compliances with assigned noise levels on Sundays and public holidays during scenario 2 operations.
- The noise assessment used noise modelling, but did not measure noise levels at the receiving locations (the neighbouring residences). Noise compliance should be demonstrated by measuring noise at the receiving locations. ENB recommended environmental noise measurements be conducted at some of the nearest receiving locations to demonstrate compliance.

Delegated Officer summary:

Appropriate proposed controls in the report have been incorporated into the licence as regulatory controls as per ENB's recommendations.

An additional condition requiring noise emissions to comply with the Environmental Protection (Noise) Regulations 1997 has been added to the licence.

Conditions requiring an updated noise assessment to measure noise levels at receiving locations have been added to the licence as per ENB's recommendation.

2.7 Noise complaints

As of 25 November 2025, there are no recorded noise complaints in the department's complaints records system for this premises to date.

2.8 Other complaints

Since the last amendment to licence L6964/1997/11 on 18 August 2023, there have been two recorded odour complaints (September 2023 and April 2025) and one hazardous materials complaint (February 2025) regarding this premises.

2.9 Fire

2.9.1 Current fire management at the premises

There have been reports of fire occurring at the premises. Most occurrences of fire have been reported to have been in the landfill area, with unknown causes. Some fires at the premises

have been attributed to lithium batteries.

The licence holder has identified areas at the premises with severe fire risk. These include the landfill tip face, green waste storage area, mulch pile, tyre storage area, mattress storage area, household hazardous waste shed, and oil shed.

Current fire-fighting equipment at the premises includes:

- 2x front end loaders
- 1x 38-tonne Tana compactor
- 1x 23-tonne dozer
- 1x 12,000 L water cart
- 2x hook lift trucks
- 2x small flatbed trucks
- Fire extinguishers in all buildings
- 1x 195,000 L water tank connected to the site bore that refills automatically
- 4x 1,000 L IBC water tanks
- 1x fire hydrant next to the 195,000 L water tank. The licence holder has advised this hydrant is to fight fires on the transfer station platform area and can be used as a refilling station for small fire appliances. However, due to minimal water storage and pressure, trucks also need to leave site to refill at the closest hydrants.

Current fire prevention activities at the premises include maintenance of fire breaks, weed control, landfill capping, applying daily cover or soil at the active landfill area, maintaining a limited mulch stockpile, and minimum separation distances between waste stockpiles.

The licence holder has advised that fire wash water from a fire in the landfill can be captured in the leachate ponds, and fire wash water from a fire at the transfer station can be captured in a self-contained sump and subsequently pumped out and disposed of.

2.9.2 Guidance on fire management

The Department of Fire and Emergency Services (DFES) has published guidance on fire safety considerations. Guidance Note 3 on fire safety considerations for open yard storage (DFES 2020a) contains the following key recommendations:

- There should be *"physical non-combustible barriers between amounts of fuel, or adequate distance between amounts of fuel."*
- *"Limiting piles to a size where a developed fire can be contained or extinguished by suitably trained and clothed site personnel, using fire extinguishers and or fire hose reels is always an optimum strategy…The next best practice would be to limit piles to a size where if fully involved in fire, it could be extinguished using only the water stored on a responding fire appliance."*
- *"There is a requirement in AS2419.1 to provide fire hydrant coverage to all areas of open yard storage exceeding 500m^2."*
- *"Fire hydrant systems should be provided, located, and designed to operate at a residual pressure in accordance with the provisions of AS2419.1 as it applies to open yard hydrant coverage."*
- *"Every part of all storage, production equipment and plant in the protected area is to be within reach of a 10m hose stream issuing from a nozzle at the end of a maximum 60m length of hose connected to a fire hydrant outlet."*

- *"Where any part of the fire hydrant pipework is situated above ground and within 150m of any structure in the protected area, fire hydrants shall be placed not more than 60m apart along the pipe work."*
- *"Hydrants shall be sited at an accessible location and at a minimum two sides of storage area to allow firefighting from an upwind direction."*
- *"The number of fire hydrant outlets required to discharge simultaneously for protected open yards shall be determined in accordance with Australian Standard 2419.1, Table 3.3 at a flow rate and pressure in accordance with Table 2.2 and Table 2.3."*
- *"Further to the provisions of AS2419.1, the positioning of hydrants should not require a fire appliance or firefighter to pass within 10 metres of stored materials to make a connection to a fire hydrant."*

Guidance Note 4 on fire prevention and management in a recycling facility (DFES 2020b) contains the following key recommendations:

- *"The waste facility is to have a fire hydrant system installed appropriate to the risks and hazards of the facility."*
- *"The design of the fire hydrant system is to have enhanced standard of performance when combustible waste material is not protected by a fire sprinkler system, including having an additional fire hydrant outlet required to flow simultaneously for any open yard storage and for any non – sprinklered internal stockpiles, see below table."*

Fire compartment floor area of non-sprinklered building	Area of open yard (used for stockpiles)	No. of fire hydrants required to flow
≤ 500 m^2	≤ 3,000 m^2	2
> 500 m^2 ≤ 5,000 m^2	> 3,000 m^2 ≤ 9,000 m^2	3
>5,000 m2 ≤ 10,000 m2	>9,000 m^2 ≤ 27,000 m^2	4
>10,000 m2	>27,000 m^2	5 (or More)
Minimum fire hydrant for non-sprinklered buildings and external storage		

- *"Refer to Australian Standards AS 2419.1 – 2005 for fire hydrant system design requirement of buildings that are protected by a fire sprinkler system."*

Guidance Note 2 (DFES 2023) provides guidance on the bulk storage of rubber tyres. This guidance has been used previously to determine conditions on tyre storage at the premises. No change to the quantity of tyres accepted has been proposed through this amendment application. Existing conditions on tyre storage in the licence remain valid, with the inclusion of the requirement for tyres to be stored on a hardstand.

The DFES Information Note on bulk green waste storage fires contains information on green waste storage requirements (DFES 2014). The storage of green waste has the potential for spontaneous combustion to occur if not managed properly. The department has used this guidance to include conditions on green waste and mulch stockpile sizes, separation distances, and storage timeframes.

Delegated Officer summary:

In determining the risk of fire at the premises, the Delegated Officer has considered the occurrence of fires and proposed increased types and volumes of waste, including hazardous waste types, as well as the licence holder's request to remove the condition

relating to maintaining a sprinkler system.

The Delegated Officer has determined to remove the requirement to maintain a sprinkler system, however additional conditions have been added to the licence to prevent and control the risk of fire. These include maximum stockpile sizes, minimum separation distances between waste types, storage requirements, maximum storage times for certain wastes, and fire suppression controls. Conditions requiring the licence holder to provide an updated fire management plan that has been reviewed by a suitably qualified professional in the field of fire management and firefighting have also been included in the licence.

2.10 Leachate and contaminated stormwater

2.10.1 Current leachate and contaminated stormwater management

Stormwater at the premises is primarily directed to perimeter drains, which flow into a natural watercourse north of the premises. There is currently a stormwater pond in the landfill area where surface water runoff is directed and evaporated. After completion of landfill capping and closure under works approval W6814/2023/1, stormwater flow is expected to follow the general flow path offsite as depicted in Figure 2.

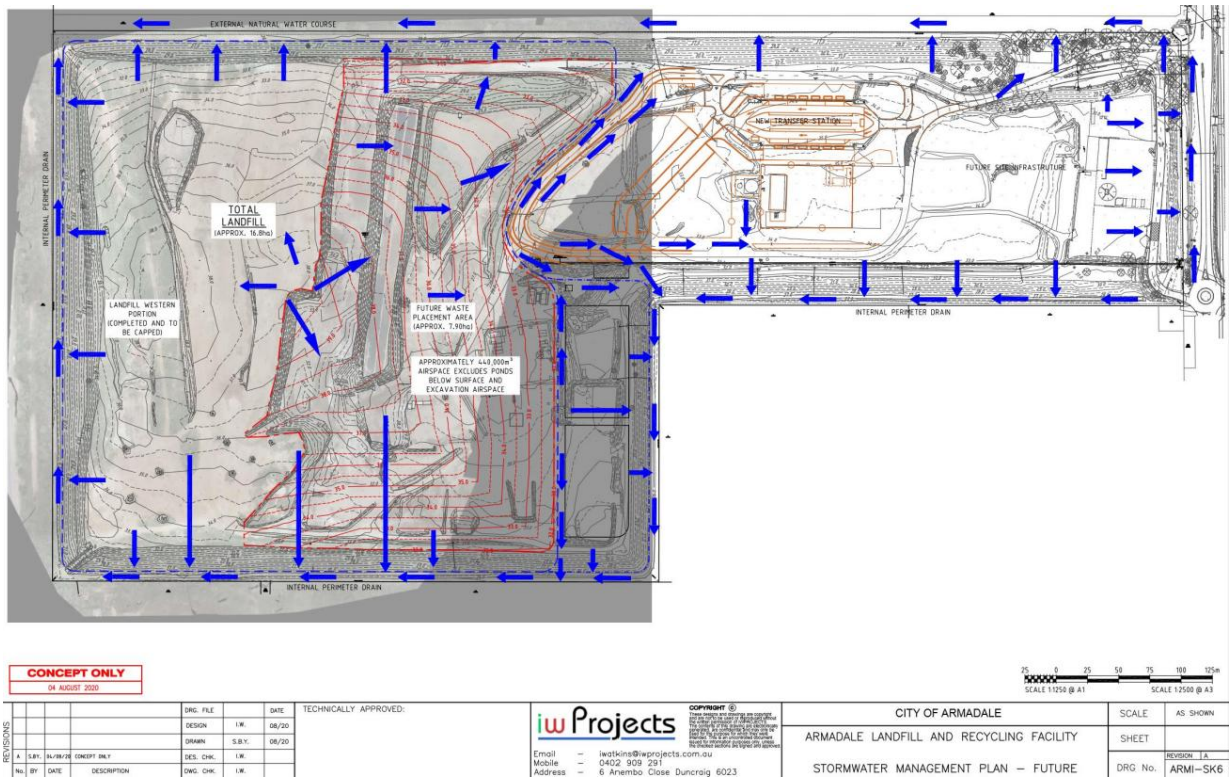

Figure 2: Proposed stormwater and drainage flow at the premises following completion of capping stages under W6814/2023/1

The licence holder has advised that contaminated stormwater can be captured in a self-contained sump at the transfer station receival platform, or in the leachate ponds.

The licence holder aims to minimise leachate generation by diverting surface water away from open landfill cells, covering waste as soon as possible, and achieving a suitable final waste profile in the landfill. Leachate is primarily currently managed by collection in the leachate ponds where it is evaporated or recirculated onto the waste mass in the landfill.

Delegated Officer summary:

The Delegated Officer considers the operation of the new transfer station, the receival of additional waste types and increased acceptance rate of waste poses an increased risk for contaminated stormwater and leachate generation. This is particularly the case for wastes such as mattresses, which are currently stored on bare ground. Mattresses are a class II putrescible waste which, in addition to the decomposition of materials such as polyurethane and vinyl into a number of toxics, are often sprayed with flame retardants, pesticides and PFAS-containing protective sprays such as scotch guard, which have potential to be liberated in leachate if the mattresses get wet.

Methods for contaminated stormwater and leachate capture and management proposed by the licence holder have been added to the licence as conditions. The Delegated Officer has also determined to include conditions on improved storage of waste types that have the potential to generate leachate, such as hardstands and maximum storage times.

3. Risk assessment

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

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in

below.

also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Licence holder controls

Sources	Emission	Potential pathways	Proposed controls
Loading and unloading of waste at the transfer station for storage/ disposal of materials. Vehicle movements.	Dust	Air/windborne pathway	• 11,000L water truck for dust suppression • Vehicle speed controls – 20km/hr speed limit, speed bumps, signs, speed radars • Delay loading/unloading of cover material during adverse weather where possible. Where not possible, avoid dropping loads from a height • Monitoring of dust emissions by staff
	Noise		• Vehicle speed limit of 20km/hr • Vehicle speed controls – 20km/hr speed

Sources	Emission	Potential pathways	Proposed controls
			limit, speed bumps, signs, speed radars • New mobile plant purchased by the City is evaluated to produce low noise levels. • The loader is the only machinery that operates within the platform area. • Loader is fitted with rubber mounting and insulation to prevent vibration/noise. • Regular servicing of machinery. • Low-frequency beepers on machinery and vehicles.
	Odour		• Maintaining an efficient active tipping area to reduce the time between waste being tipped and then compacted. • Minimising the distance waste is pushed around in the active tipping area. • Application of adequate cover material. • Special conditions for excessively odorous material: - Minimum notification period prior to delivery - Delivery only in certain wind conditions (speed and direction) - Maximum quantities of waste to be delivered in a single load or day - Odorous waste is immediately tipped and covered - Odorous loads not pre-arranged for acceptance are inspected and either accepted or rejected • Regular odour monitoring by consultants
Spills, leaks and containment loss during storage of waste liquid/oils	Liquid waste (various household hazardous waste). Hydrocarbons. Contaminated stormwater.	Overland runoff. Soil seepage.	• Waste motor oil is stored in a shed, which can contain spillages • HHW is stored in bunded sea containers stored under a shade sail. Spills are contained in the bunded area • Waste motor oil received is stored in the waste motor oil shed, then moved to the oil storage tank. Waste motor oil is collected by a contractor fortnightly • Fuel is stored in accordance with the *Code of Practice for the Storage and Handling of Dangerous Goods* • Hydrocarbons used for plant maintenance are stored in the storage shed

Sources	Emission	Potential pathways	Proposed controls
			• For spills - Use of spill kits, including Hazchem spill kits, absorbent booms
Storage of all solid waste	Odour	Air/ windborne pathway	• Maintaining an efficient active tipping area to reduce the time between waste being tipped and then compacted. • Minimising the distance waste is pushed around in the active tipping area. • Application of adequate cover material. • Special conditions for excessively odorous material: - Minimum notification period prior to delivery - Delivery only in certain wind conditions (speed and direction) - Maximum quantities of waste to be delivered in a single load or day - Odorous waste is immediately tipped and covered - Odorous loads not pre-arranged for acceptance are inspected and either accepted or rejected • Regular odour monitoring by consultants
	Contaminated stormwater/ leachate	Overland runoff. Soil seepage.	• At the receival platform there is a self-contained sump that will capture contaminated stormwater which will then be pumped out and removed from site for correct disposal • Leachate pond storage and evaporation • Recirculation onto waste surface using high-pressure sprays • Pumping leachate onto dry waste delivered as it is placed into the landfill • For emergency spills of leachate from ponds/landfill cells, leachate is to be suctioned and trucked offsite
	Litter	Air/ windborne pathway	• Delivery trucks required to cover waste • Selecting waste tipping areas to suit weather conditions • Litter screens next to tipping vehicles • Litter fencing around landfill • Removing litter from litter screens at least every two days • Collection of litter beyond the tipping area

Sources	Emission	Potential pathways	Proposed controls
			at least weekly • Collection of litter beyond landfill boundary at least weekly
Waste fire	Smoke	Air/ windborne pathway	Measures to prevent and control fire: • Controlling weeds to reduce fuel loads • Maintaining fire breaks • Capping the landfill • Applying alternative daily cover or soil on areas that are actively being landfilled • Limited mulch stockpile onsite • Maintenance of at least 20 metres separation distance between stockpiles of used vehicle tyres, mattresses, green waste and mulch • Landfill is equipped with an early Fire Warning System • Staff are trained to extinguish small fires by use of fire extinguishers, water carts, plant and equipment, within their level of competency and only if deemed safe to do so. Areas exempted from extinguishing fires include the chemical/HHW shed, and the oil shed. • A fire hydrant has been installed next to the water storage tanks to fight fires on the platform area, and/or as a refilling station for small fire tenders, however due to minimal water storage and water pressure onsite to refill the firefighting appliances, trucks also need to leave site and access the closest fire hydrants to 145 Hopkinson Road Hilbert. • During normal daily operations the following equipment is on site and can be utilised as required: - Front-end loaders x 2 - 38 tonne Tana landfill compactor x 1 - 23 tonne John Deer dozer x1 - Water truck (12,000 litres capacity) - Hook lift trucks x 2 - 2 small flatbed trucks (payload 1,075kg and 2,320kg) - Fire extinguishers in all buildings - Water tank storage (approx. 195,000 litres).

Sources	Emission	Potential pathways	Proposed controls
			- IBC fire water tanks x 4 x 1000 litres per unit (4000 litres) • The 195,000L tank is used to suppress dust and for use during fire emergencies. The big tank used for dust suppression and firefighting refills automatically as the water is used. • Call 000 for larger fires
	Fire wash water	Overland runoff. Soil seepage.	• In the event of a fire on the landfill face all fire water will be captured in the leachate ponds. Should a fire occur on the receival platform there is a self-contained sump that will capture the water which will then be pumped out and removed from site for correct disposal.
Discharging waste to the landfill	Attraction of pests	Disease/ pathogen vectors such as rodents/ birds	• Waste disposed to the landfill is immediately compacted and covered • Minimising the active tipping face area • Scarecrows/decoys to deter birds • Traps/ selected culling
Storage of leachate in new leachate ponds Leaks/ overtopping of leachate ponds	Odour	Air/ windborne pathway	N/A. The department has determined to add the leachate ponds constructed under works approval W6814 to the licence as part of this amendment.
	Leachate	Overland runoff. Soil seepage.	

3.1.2 Receptors

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

Table 3 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 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Closest neighbouring residences	Approximately 370 m south of the premises boundary and 720 m south of the transfer station.
	Approximately 50 m south of the premises boundary and 280 m southeast of

	the transfer station.
	Approximately 100 m east of the premises boundary and 340 m east of the transfer station.
	Approximately 165 m northeast of the premises boundary 400 m north east of the transfer station.
	Approximately 450 m west of the premises boundary 1,000 m west of the transfer station.
Potential future development area	Lot 9014 on Deposited Plan 428181 is approximately 10 m north of the premises boundary and 55 m north of the transfer station.
Major drains	Approximately 10 m north and south of the premises boundary. The drains connect to the Birriga Main Drain approximately 2.2 km west of the premises.
Environmental receptors	**Distance from prescribed activity**
Surface water	Wungong Brook is approximately 2,500 m northeast of the premises boundary.
	Minor watercourse – closest point is approximately 750 m northeast of the premises boundary and 950 m northeast of the transfer station.
Groundwater	The premises is within the RIWI Act Proclaimed Perth Groundwater Area. Recent groundwater monitoring undertaken as part of the licence requirements indicates there is a perched system below the site, and depth to groundwater across the site varies between ~3.4 mbgl to ~12.6 mbgl, with seasonal variation (JBS&G 2023, Western Environmental 2023). Groundwater in the region is inferred to flow to the southeast.
Soil	The premises is within a moderate to low-risk acid sulfate soil disturbance risk area.
Threatened fauna	Three species of threatened fauna have been identified within 2,500 m of the premises boundary.
Environmentally Sensitive Areas (ESAs)	Seven within 2,500 m of the premises boundary. Closest are the geomorphic wetlands as listed below.
Threatened Ecological Communities (TECs)	Buffer zones for threatened ecological communities exist within 2,500 m of the premises boundary. Closest buffer zone is approximately 1,600 m from the transfer station.
Geomorphic wetlands of the Swan Coastal Plain	Conservation damp lands approximately 1,600 m west of the premises boundary and 2,300 m west of the transfer station.
	Armadale palusplain approximately 1,000 m northeast of the premises boundary and 1,300 m northeast of the transfer station.

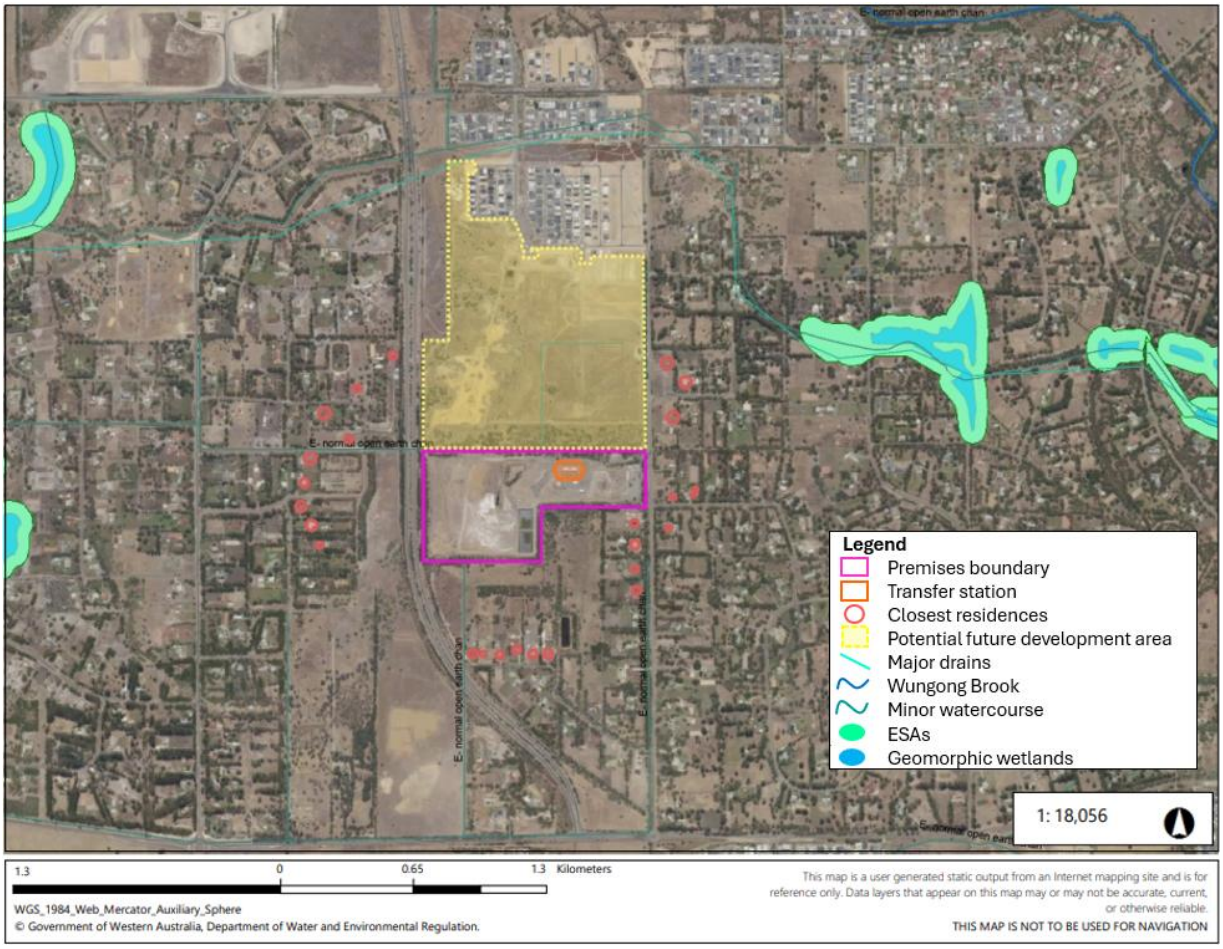

Figure 3: Distance to sensitive receptors

3.2 Risk ratings

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

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

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The revised licence L6964/1997/11 that accompanies this Amendment Report authorises emissions associated with the operation of the premises i.e. operation of the landfill and transfer station.

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

Table 4. Risk assessment of potential emissions and discharges from the premises during operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
Operation								
Loading and unloading of waste at the transfer station for storage/disposal of materials. Vehicle movements.	Dust	**Pathway:** Air/windborne pathway **Impact:** Impacts to health and amenity	Neighbouring residences, including from the future development area. Threatened fauna.	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Yes	Conditions 1 and 4. Existing conditions 13 and 14 (now conditions 18 and 19).	N/A. The licence holder's controls in conjunction with existing conditions on dust management are expected to mitigate the risk of dust emissions.
	Noise	**Pathway:** Air/windborne pathway **Impact:** Impacts to amenity	Neighbouring residences, including from the future development area. Threatened fauna.	Refer to Section 3.1	C = Moderate L = Likely **High Risk**	No	**Conditions 1, 20, 21, 22, 23, 24, 25, 26, 27 and 28.**	The Delegated Officer has considered the high risk of noise emissions and determined to incorporate appropriate ENB recommendations as licence conditions. The Delegated Officer considers these additional noise controls are required to minimise the risk of noise impacts.
	Odour	**Pathway:** Air/windborne pathway **Impact:** Impacts to health and amenity	Neighbouring residences, including from the future development area.	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Yes	Conditions 1 and 2. Existing condition 4 (now condition 6).	N/A. The licence holder's controls in conjunction with existing conditions on odour management are expected to mitigate the risk of odour emissions.
Spills, leaks and containment loss during storage of waste liquid/oils	Liquid waste (various household hazardous waste).	**Pathway:** Overland runoff/soil seepage **Impacts:**	Neighbouring residences, such as from the future development area.	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	No	Conditions **1**, 2, **4**, **5**, **14.**	The Delegated Officer has determined to include additional controls on the licence to mitigate the risk of spills, leaks and containment loss of liquid

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
	Hydrocarbons. Contaminated stormwater.	Ecosystem disturbance, impacts to surface water quality, groundwater and soil	Major drains Surface water Groundwater Soil Threatened fauna					waste, waste oil and hydrocarbons.
Storage of all solid waste	Odour	**Pathway:** Air/windborne pathway **Impact:** Impacts to health and amenity	Neighbouring residences, including from the future development area.	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Yes	Conditions 1 and 2. Existing condition 4 (now condition 6).	N/A. The licence holder's controls in conjunction with existing conditions on odour management are expected to mitigate the risk of odour emissions.
	Contaminated stormwater/ leachate	**Pathway:** Overland runoff/soil seepage **Impact:** Ecosystem disturbance, impacts to surface water quality, groundwater and soil	Neighbouring residences, such as from the future development area. Major drains Surface water Groundwater Soil Threatened fauna	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	No	Conditions **1**, 2, **4**, 14 and 16.	Controls proposed by the licence holder to manage contaminated stormwater and leachate have been added to the licence. The Delegated Officer has also determined to include specified storage requirements such as bunded hardstands/bins, and maximum storage times for waste types that pose a risk of leachate generation. These storage and management requirements are also intended to aid the capture of leachate on the premises.
	Litter	**Pathway:** Air/windborne	Neighbouring residences,	Refer to	C = Minor	Yes	Conditions 1 and 4.	N/A. The licence holder's controls in conjunction

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
		pathway **Impact:** Impacts to health and amenity	such as from the future development area. Major drains Surface water Threatened fauna	Section 3.1	L = Possible **Medium Risk**		Existing conditions 4, 13 and 14 (now conditions 6, 18 and 19).	with existing conditions on windblown waste management are expected to mitigate the risk of windblown waste.
Waste fire	Smoke	**Pathway:** Air/windborne pathway **Impact:** Ecosystem disturbance and impacts to health and amenity	Neighbouring residences, including from the future development area. Threatened fauna	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	No	Conditions **1**, 2, **4**, **5**, 8, 10, **12**, and **13.** Existing conditions 4 and 9 (now conditions 6 and 11).	The Delegated Officer has considered the risk of fire occurring at the transfer station, waste storage areas and the landfill, and the applicant proposed controls. The Delegated Officer has determined to include additional controls relating to fire prevention and management to the licence in line with published guidance. The Delegated Officer has determined to remove the requirement for a sprinkler system, subject to the addition of these additional controls.
	Fire wash water	**Pathway:** Overland runoff/soil seepage **Impact:** Ecosystem disturbance, impacts to surface	Neighbouring residences, such as from the future development area. Major drains Surface water	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	No	Conditions **1**, **4**, **12**, and **13.** Existing conditions 6 and 7 (now conditions 8 and 9).	Current storage methods of waste types such as mattresses are not conducive to fire wash water being captured in the event of a fire. The Delegated Officer has determined to add

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
		water quality, groundwater and soil	Groundwater Soil Threatened fauna					additional controls on fire prevention and management and has also included specified storage requirements such as bunded hardstands/bins for waste types that pose a high fire risk. These storage requirements are intended to aid the capture of contaminated fire wash water in the event of a fire.
Discharging waste to the landfill	Attraction of pests	**Pathway:** Disease/pathogen vectors such as rodents/birds **Impact:** Impacts to health and amenity	Neighbouring residences, including from the future development area.	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Yes	Conditions 2, 3, and 4. Existing condition 4 (now condition 6).	N/A. The licence holder's controls in conjunction with existing conditions on pest management are expected to mitigate the risk of pests.
Storage of leachate in new leachate ponds Leaks/overtopping of leachate ponds	Odour	**Pathway:** Air/windborne pathway **Impact: Impacts** to health and amenity	Neighbouring residences, including from the future development area.	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	N/A	Conditions **1**, **16.** and **34.**	The licence holder has not proposed controls for the leachate ponds, as they were not considered in the application. However, as the leachate ponds have been constructed and approved, this assessment has included their addition in the licence with conditions for operation, maintenance, inspection and reporting.
	Leachate	**Pathway:** Overland runoff/soil seepage **Impact:** Ecosystem disturbance, impacts to surface water quality, groundwater and soil	Neighbouring residences, such as from the future development area. Major drains Surface water Groundwater		C = Moderate L = Unlikely **Medium Risk**			

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
			Soil Threatened fauna					

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

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

4. Consultation

Table 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 (05/05/2025)	A residential development company responded on 26/05/25 to query when landfill capping might be completed at the premises, as the Decision Report for works approval W6814/2023/1 relating to capping works indicated that capping was proposed to be completed by early 2025.	The department advised that DWER's licensing function is limited to assessment of emissions and discharges from proposed activities, and that it would be best to contact the City of Armadale regarding proposed landfill capping dates as they are the premises operator and the relevant planning authority.
Department of Fire and Emergency Services (DFES) advised of proposal (05/05/2025)	DFES responded on 30/06/2025 advising that they have no comment.	N/A
Neighbouring resident advised of proposal (05/05/2025)	None received.	N/A
Licence holder was provided with draft amendment (08/12/2025)	The licence holder provided comments on 22/12/2025. Refer to Appendix 1	Refer to Appendix 1

5. Conclusion

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

5.1 Summary of amendments

Table 6 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the revised licence as part of the amendment process.

Table 6: Summary of licence amendments

Condition no.	Proposed amendments
Cover page	• DWER INS-0001396 file number added. • Assessed design capacity for category 61 increased from 99 tonnes per annual period to 5,000 tonnes per annual period.
Licence history	• Details of current amendment added.
New condition 1	• Infrastructure and equipment table added with operational requirements.

Condition 1 (now condition 2)	• Waste types added to waste acceptance table. • Hazardous waste types (including household hazardous waste) added. • Acceptance rate for hazardous waste increased from 99 tonnes per annual period to 5,000 tonnes per annual period. • Note 1 on Controlled Waste added. • Note 2 on Dangerous Goods Safety Act 2004 codes of practice added. • Note 3 on the Household Hazardous Waste Program and Paintback Scheme added.
Condition 3 (now condition 4)	• Process limits and specifications added for all waste types, including mattresses, hazardous waste and waste oil.
New condition 5	• Condition on immediately recovering, or removing and disposing of spills of hazardous waste outside of an engineered containment system added.
Condition 6 (now condition 8)	• Condition requiring maintenance and operation of a sprinkler system removed.
Condition 8 (now condition 10)	• Separation distance between stockpiles of tyres and other waste increased from 18 m to 20 m. • Separation distances between stockpiles of mattresses, green waste, mulch and other waste types added.
New conditions 12 and 13	• Condition requiring the development, review and submission of an updated Fire Management Plan added.
Condition 10 (now condition 14)	• Conditions on directing contaminated stormwater to a sump or leachate ponds added.
New condition 16	• Conditions on leachate management added.
Condition 14 (now condition 19)	• Sprinklers removed from dust suppression methods.
New conditions 20 - 21	• General conditions on noise emissions added.
New conditions 22 - 25	• Conditions on the requirement for an updated noise assessment added.
New conditions 26 - 28	• Conditions on a Feasibility Assessment added.
Condition 20 (now condition 34)	• Condition numbers in the Annual Environmental Reporting requirements updated. • Reporting requirements for stormwater, leachate and noise control measures added. • Reporting requirements for the leachate ponds added.
Definitions	• Definitions added: *AS 1940:2017, AS 3745, Controlled Waste, Hazardous Waste, HDPE, Paintback Scheme, suitably qualified professional in the field of fire management and firefighting.* • Definitions amended: *annual period* amended from 1 August until 31 July to 1 July until 30 June, as requested by the licence holder.
Schedule 1	• Figure 2: Premises layout map updated • Figure 3: Emissions and monitoring points map updated with new location of landfill gas flare.

	• Figure 4: Stormwater and drainage flow map added.
Schedule 3	• Items accepted under the Household Hazardous Waste Program added.

References

1. Acoustic Engineering Solutions (AES) 2025, *Acoustic Report for Armadale Landfill and Recycling Facility, Document Number AES-890407-R01-A-26022025*, Perth, Western Australia. [DWER Reference APP-0026170].
2. Australian Standard 2419.1:2021, *Fire hydrant installations Part 1: System design, installation and commissioning*
3. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Department of Fire and Emergency Services (DFES) 2014, *Information Note: Bulk Green Waste Storage Fires*, Perth, Western Australia.
5. Department of Fire and Emergency Services (DFES) 2023, *Guidance Note: GN02 Bulk Storage of Rubber Tyres Including Shredded and Crumbed Tyres*, Perth, Western Australia.
6. Department of Fire and Emergency Services (DFES) 2020a, *Guidance Note: GN03 Fire Safety Considerations for Open Yard Storage*, Perth, Western Australia.
7. Department of Fire and Emergency Services (DFES) 2020b, *Guidance Note: GN04 Fire Prevention and Management in a Recycling Facility*, Perth, Western Australia.
8. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
9. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
10. JBS&G 2023, *City of Armadale Compliance Groundwater Monitoring Event – September 2022 Armadale Landfill and Recycling Centre*, prepared for the City of Armadale. [DWER reference DWERDT840054].
11. Waste Authority 2025, *Household Hazardous Waste Program.* Available at: https://www.wasteauthority.wa.gov.au/programs/view/household-hazardous-waste (Accessed 28 July 2025).
12. Western Environmental 2023, *Armadale Landfill and Recycling Facility Summer 2023 Groundwater Monitoring Event*, prepared for City of Armadale, West Perth, WA. [DWER reference DWERDT840054].

Appendix 1: Summary of licence holder's comments on risk assessment and draft conditions

Condition	Summary of licence holder's comments	Department's response
Condition 4, Table 3 Putrescible Waste (Mattresses) Waste receipt, handling and storage (b)	The licence holder requested the number of mattresses permitted to be stored on site at any one time be increased from 30 to 80, with the following justification: • *"The City collects on average 45-55 mattresses per week mostly from residents and illegal dumping cleanups.* • *Current contractors that service the City do so weekly with a minimum requirement for collection of 50 per collection.* • *Maximum of 30 mattresses onsite does not enable the City to provide cost effective and sustainable waste services and does not allow for future population growth."*	The request has been accepted. The maximum number of mattresses permitted to be stored on site at any one time has been increased from 30 to 80. The Delegated Officer considers additional conditions relating to mattress acceptance, storage, and processing that have been added as part of this amendment provide sufficient controls for the relevant waste quantity.