



Licence number	L6964/1997/11
Licence holder	City of Armadale
Registered business address	7 Orchard Avenue ARMADALE WA 6112
DWER file number	DER2016/001003-1
Duration	06/09/2013 to 05/09/2029
Date of amendment	18/08/2023
Premises details	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

Prescribed premises category description (Schedule 1, Environmental Protection Regulations 1987)	Assessed design capacity
Category 57: Used tyre storage (general)	250 tyres at one time
Category 61: Liquid waste facility	99 tonnes per annual period
Category 62: Solid waste depot	Combined total of 100,000 tonnes per annual period
Category 64: Class II or III putrescible landfill site	

This licence is granted to the licence holder, subject to the attached conditions, on 18 August 2023 by:

**MANAGER WASTE INDUSTRIES
REGULATORY SERVICES**

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

Licence history

Date	Reference number	Summary of changes
05/09/2013	L6964/1997/11	Licence granted
29/05/2016	L6964/1997/11	Notice of Amendment of Licence Expiry Dates
01/12/2016	L6964/1997/11	Amendment Notice 1 to incorporate regulatory controls for the landfill gas extraction and flare system constructed under W5608/2014/1
18/04/2018	L6964/1997/11	Amendment Notice 2 to enable changes to waste acceptance requirements
07/01/2020	L6964/1997/11	Amendment to include Category 57 for the storage of up to 250 tyres at one time and the use of an alternative daily cover material.
18/08/2023	L6964/1997/11	Department initiated amendment to landfill cover requirements and groundwater monitoring resulting from the assessment of Works Approval W6814/2023/1.

Interpretation

In this licence:

- (a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a condition, each row in a table constitutes a separate condition;
- (d) any reference to an Australian or other standard, guideline, or code of practice in this licence:
 - (i) if dated, refers to that particular version; and
 - (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

Waste acceptance

1. The licence holder must only accept onto the premises waste of a type that:
 - (a) does not exceed the rate at which that waste is received; and
 - (b) meets the relevant acceptance specification.
 as set out in Table 1.

Table 1: Waste acceptance criteria

Waste type	Rate at which waste is received	Acceptance specification
Clean fill	Combined total of no more than 100,000 tonnes per annual period	None specified.
Inert Waste Type 1		
Inert Waste Type 2 (excluding tyres)		
Putrescible Waste		
Special Waste Type 1		(a) Must be wrapped or otherwise contained in a manner that prevents asbestos fibres entering the atmosphere; (b) Must be labelled or marked with the words "CAUTION ASBESTOS" in letters not less than 50 mm high; and (c) Must keep a permanent register of each waste load accepted at the premises, including the date, name of the person depositing waste and the vehicle registration number.
Hazardous Waste	No more than 99 tonnes per annual period	(a) Paints and resins only.
Tyres	No more than 100 tonnes per annual period	None specified.

2. The licence holder must ensure that where waste does not meet the waste acceptance criteria set out in condition 1, it is removed from the premises by the delivery vehicle or, where that is not possible, stored in a quarantined storage area or container and removed to an appropriately authorised facility as soon as practicable.

Waste processing and landfill cover

3. The licence holder must ensure that the waste types specified in Table 2 are only subjected to the corresponding process(es), subject to the corresponding process limits and/or specifications.

Table 2: Waste processing

Waste type	Process(es)	Process limits and/or specifications
Clean fill	Receipt, handling, and storage prior to offsite disposal or disposal via landfill	<ul style="list-style-type: none"> (a) Waste must be disposed at least 35 metres from the premises boundary; (b) Waste must be placed within a defined trench or within an area enclosed by earthen or other bunds; (c) Non-greenwaste tipping areas must be restricted to a maximum linear length of 30 metres; (d) Waste must be initially spread in layers not more than 500 mm thickness prior to being compacted; (e) Waste must be placed and compacted to ensure all landfill faces are stable and capable of retaining cover material; and (f) The active landfill area must be managed so that at no time does landfilling result in an exposed face exceeding two metres in vertical height.
Inert Waste Type 1		
Inert Waste Type 2 (excluding tyres)		
Putrescible Waste		
Special Waste Type 1	Receipt, handling, and storage prior to disposal via landfill	<ul style="list-style-type: none"> (a) Must be deposited into a designated asbestos disposal area within the landfill; (b) Must not be deposited within two metres of the final tipping surface of the landfill; (c) All locations used for disposal must be recorded as grid references on a premises plan and this plan must be kept as a permanent record; (d) Covering of the waste must be witnessed and the register referred to above must be signed by the close of the day; (e) No works shall be carried out on the landfill that could lead to a release of asbestos fibres; and (f) Records must be made available for viewing by an Inspector upon request.
Hazardous Waste	Receipt, handling, and temporary storage prior to disposal off-site	<ul style="list-style-type: none"> (a) Must not be landfilled at the premises; (b) Hazardous waste must be stored in dedicated impermeable and bunded storage containers ('stillages') provided by the Paintback Scheme; and (c) Paint must not be decanted or treated on the premises.

Waste type	Process(es)	Process limits and/or specifications
Tyres	Receipt, handling, and temporary storage prior to disposal off-site	(a) Must not be landfilled at the premises; (b) Must be stored at the location specified in Schedule 1: Figure 2; (c) No more than 250 tyres shall be stored at the premises at any one time; (d) Must be stored in the following arrangement; (i) Stacked on their side or in the laced storage format depicted in Schedule 2: Figure 4; (ii) Individual tyre stacks do not exceed 3.7 m in height and 60 m ² in area (Figure 5); (iii) Tyre piles contain a maximum of four tyre stacks with a minimum separation distance of 2.5 metres between each tyre stack (Figure 6); (iv) A minimum separation distance of 18 metres is maintained between each Tyre Pile (Figure 7); and (v) Tyre stacks and Tyre Piles are located at least 18 metres from any combustible material, wall, building or premises boundary. Refer to Schedule 2 (Figures 5-7) for additional detail on tyre stack heights, stack separation and pile separation requirements.

4. The licence holder must ensure that cover is applied and maintained on landfilled waste types in accordance with the corresponding timescale, material and depth requirements in Table 3 and that sufficient stockpiles of cover are maintained on the premises at all times.

Table 3: Cover requirements

Waste type	Timescale	Material	Depth
Inert Waste Type 1	No cover required		
Inert Waste Type 2 (excluding tyres)	Daily	Clean fill or Alternative Daily Cover	At least 150 mm of Clean fill; or Alternative Daily Cover applied in accordance with the manufacturer's specifications.
Putrescible Waste			
Inert Waste Type 1	Intermediate	Clean fill	At least 500 mm.
Inert Waste Type 2 (excluding tyres)			
Putrescible Waste			
Special Waste Type 1	As soon as practicable after deposit and prior to compaction	Clean fill or Inert Waste Type 1	At least 300 mm.
		Solid waste	At least 1000 mm.

Emissions and discharges

Landfill gas emissions

5. The licence holder must ensure that the emissions specified in Table 4, are discharged only from the corresponding discharge point and only at the corresponding discharge point location and height.

Table 4: Authorised discharge point

Emission	Discharge point	Discharge location	Discharge point height (m)
Combustion at landfill gas flare	Landfill gas flare (A1)	As shown in Schedule 1: Figure 3	10

Fire management

6. The licence holder must:
- ensure that at all times, fire-fighting equipment and systems are in good working order and capable of preventing the spread of a minor waste fire;
 - maintain a stockpile of sufficient clean fill cover material for the smothering of waste in the event of a fire;
 - maintain and operate a sprinkler system for controlling waste fires that:
 - has suitable connections available for water trucks and the on-site bore system; and
 - is tested in November of each annual period.
 - ensure that water and other waste that may result from firefighting activities on the premises is captured and contained within the premises; and
 - ensure that any fires on the premises are extinguished as soon as possible.
7. The licence holder must immediately notify the CEO of:
- any fire on the premises; and/or
 - any accident, malfunction, or emergency which results or could result in the discharge of fire-fighting washwater or other wastes from the premises.
8. The licence holder must;
- maintain a separation distance of at least 18 metres between stockpiles of tyres and all other waste material;
 - maintain a separation distance of at least 6 metres between waste stockpiles; and
 - maintain a separation distance of at least 6 metres between waste stockpiles and the active landfilling area.
9. The licence holder must:
- erect and maintain a security fence, at least 1.8 metres high, around the perimeter of the premises to prevent unauthorised access;
 - ensure that any entrance gates to the premises are securely locked when the premises is unattended; and
 - undertake regular inspections of all security measures and repair damage within five working days of its discovery.

Water management

10. The licence holder must;
- (a) direct uncontaminated stormwater run-off away from the landfill, waste storage areas and associated sumps or drains, into dedicated stormwater drains; and
 - (b) ensure stormwater drains on the premises are kept clear of waste to allow for their effective use.
11. The licence holder shall maintain an undisturbed separation distance of at least two metres between the base of the current and future waste disposal areas and the highest level of groundwater.

Windblown waste

12. The licence holder must ensure that:
- (a) all reasonable and practicable measures are taken to ensure that no windblown waste escapes from the active landfill area and the premises;
 - (b) any windblown waste is collected on at least a weekly basis and returned to the active landfill area or otherwise appropriately contained;
 - (c) litter screens are inspected no less than once per week to ensure their integrity and if damaged, repaired within two working days.

Dust emissions

13. The licence holder must ensure that no visible dust generated from the primary activities crosses the boundary of the premises.
14. The licence holder must manage dust generation at the premises by:
- (a) wetting down unsealed roads and exposed areas with a water truck;
 - (b) using dust suppression methods, including sprinklers, water cart, chemical stabilisation, hydromulch or covers to prevent the potential for dust generation; and
 - (c) ceasing dust-generating activities during strong wind conditions.

Monitoring

Landfill gas

15. The licence holder must monitor emissions in accordance with the requirements specified in Table 5 and record the results of all such monitoring.

Table 5: Emissions and discharge monitoring

Discharge point	Discharge point location	Parameter	Unit	Frequency	Method
Landfill gas flare (A1)	As shown in Schedule 1: Figure 3	Volumetric flow rate	m ³ /s	Continuous	USEPA Method 2
		Temperature	°C		N/A

Groundwater

16. The licence holder must;
- monitor groundwater for concentrations of the identified parameter(s) in accordance with Table 6;
 - ensure all sample analysis is undertaken by laboratories with current NATA accreditation for the relevant parameters, unless otherwise specified in Table 6; and
 - repair and maintain all monitoring bores as required, to ensure they are free from blockages and in good working order to allow representative groundwater samples to be taken.

Table 6: Groundwater monitoring of ambient concentrations

Monitoring well location	Parameter	Unit	Frequency	Method
Field measurements				
SP1-S, SP1-I, SP2-S, SP2-I, SP3-S, SP3-I, P1-S, P1-I, P2-S, P2-I, P3-S and P3-I, as shown in Schedule 1: Figure 3	Standing water level (SWL) ¹	m AHD and m BGL	Biannually (April to May and September to October)	Spot sample, in accordance with AS/NZS 5667.1 and AS/NZS 5667.11
	pH ¹	-		
	Electrical conductivity ¹	µs/cm		
	Oxidation-reduction potential ¹	mV		
	Temperature ¹	°C		
	Dissolved oxygen ¹	mg/L		
General water quality parameters				
SP1-S, SP1-I, SP2-S, SP2-I, SP3-S, SP3-I, P1-S, P1-I, P2-S, P2-I, P3-S and P3-I, as shown in Schedule 1: Figure 3	Total dissolved solids	mg/L	Biannually (April to May and September to October)	Spot sample, in accordance with AS/NZS 5667.1 and AS/NZS 5667.11
	Major cations (Ca, Mg, Na, K)			
	Major anions (Cl, SO ₄ , CO ₃ , HCO ₃)			
	Total organic carbon			
	Methane			
	Total phosphorus			
	Total nitrogen			
	Total Kjeldahl nitrogen			
	Ammonium-nitrogen			
	Nitrate + nitrite-nitrogen			
Metals (dissolved)				
SP1-S, SP1-I, SP2-S, SP2-I, SP3-S, SP3-I, P1-S, P1-I, P2-S, P2-I, P3-S and P3-I, as shown in Schedule 1: Figure 3	Arsenic	mg/L	Biannually (April to May and September to October)	Spot sample, in accordance with AS/NZS 5667.1 and AS/NZS 5667.11
	Cadmium			
	Chromium			
	Copper			
	Ferrous iron			

Monitoring well location	Parameter	Unit	Frequency	Method
	Manganese			
	Nickel			
	Lead			
	Zinc			
Hydrocarbons				
SP1-S, SP1-I, SP2-S, SP2-I, SP3-S, SP3-I, P1-S, P1-I, P2-S, P2-I, P3-S and P3-I, as shown in Schedule 1: Figure 3	BTEX (benzene, toluene, ethylbenzene, xylene)	mg/L	Biannually (April to May and September to October)	Spot sample, in accordance with AS/NZS 5667.1 and AS/NZS 5667.11
	Total recoverable hydrocarbons			

Note 1: In-field non-NATA accredited analysis permitted.

Waste inputs and outputs

17. The licence holder must record the total amount of waste accepted onto and removed from the premises, for each waste type listed in Table 7, in the corresponding unit, and for each corresponding time period, as set out in Table 7.

Table 7: Waste accepted and removed from the premises

Input/Output	Waste type	Unit	Time period
Waste inputs	Clean fill	tonnes	Each load accepted at the premises
	Inert Waste Type 1		
	Inert Waste Type 2 (excluding tyres)		
	Putrescible Waste		
	Tyres	Number of individual tyres and tonnes	
	Hazardous Waste	tonnes	
	Special Waste Type 1		
Waste outputs	Clean fill	tonnes	Each load leaving or rejected from the premises following acceptance at the weighbridge
	Inert Waste Type 1		
	Inert Waste Type 2 (excluding tyres)		
	Putrescible Waste		
	Tyres	Number of individual tyres and tonnes	
	Special Waste Type 1	tonnes	
	Hazardous Waste		

Records and reporting

- 18.** The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:
- (a) the name and contact details of the complainant, (if provided);
 - (b) the time and date of the complaint;
 - (c) the meteorological conditions at the time of the complaint;
 - (d) the complete details of the complaint and any other concerns or other issues raised; and
 - (e) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.
- 19.** The licence holder must:
- (a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
 - (b) prepare and submit to the CEO by no later than 1 September after the end of that annual period an Annual Audit Compliance Report in the approved form.
- 20.** The licence holder must submit to the CEO by 1 September after the end of each annual period, an Annual Environmental Report for that annual period for the conditions listed in Table 8, and which provides information in accordance with the corresponding requirement set out in Table 8.

Table 8: Annual Environmental Report requirements

Condition	Requirement
3	A summary of the average compaction rates for landfilled waste during the annual period.
6 and 7	A summary for the annual period of the; <ul style="list-style-type: none"> (a) number and severity of any fires on the premises; and (b) the estimated volume of fire-fighting washwater generated when extinguishing any fires including the details of discharge areas and any likely receptors.
12	The measures taken to control windblown waste at the premises during the annual period.
13 and 14	The measures taken to suppress dust at the premises during the annual period.
-	The measures taken to control pests and vermin at the premises during the annual period.
15	<ul style="list-style-type: none"> (a) a clear statement of the scope of work carried out; (b) a description of the methodologies employed; (c) an interpretive summary and assessment of results against previous monitoring results; and (d) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.

Condition	Requirement
16	<ul style="list-style-type: none"> (a) a clear statement of the scope of work carried out; (b) a description of the field methodologies employed; (c) copies of the field monitoring records; (d) an assessment of reliability of field procedures and laboratory results; (e) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis; (f) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient; (g) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the AMCS Guideline; (h) an interpretive summary and assessment of results against previous monitoring results; and (i) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.
17	<p>A summary of waste inputs and outputs monitoring conducted at the premises during the annual period. The summary must also include the methodology used for determining the reported tonnages and any standard weights or conversion factors that have been used.</p>
18	<p>The number and type of complaints received including complainants name, address, nature of complaint, meteorological conditions during the complaint and any actions taken.</p>

- 21.** The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:
- (a) the calculation of fees payable in respect of this licence;
 - (b) any maintenance of infrastructure that is performed in the course of complying with the conditions of this licence;
 - (c) monitoring programs undertaken in accordance with conditions 15 and 16 of this licence; and
 - (d) complaints received under condition 18 of this licence.
- 22.** The books specified under condition 21 must:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;
 - (c) be retained by the licence holder for the duration of the licence; and
 - (d) be available to be produced to an inspector or the CEO as required.

Definitions

In this licence, the terms in Table 9 have the meanings defined.

Table 9: Definitions

Term	Definition
AHD	Australian Height Datum
Alternative Daily Cover	refers to a proprietary mixture of clays and polymers mixed with cellulose fibres and water or leachate, applied to waste material by a mechanical spray unit.
AMCS Guideline	means the document titled <i>Assessment and management of contaminated sites: Contaminated sites guidelines</i> published by the Department, as amended from time to time.
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department’s website).
annual period	a 12 month period commencing from 1 August until 31 July of the immediately following year.
AS/NZS 5667.1	means the Australian Standard <i>AS/NZS 5667.1 Water quality - Sampling – Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples</i> .
AS/NZS 5667.11	means the Australian Standard <i>AS/NZS 5667.11 Water quality - Sampling – Part 11: Guidance on sampling of groundwaters</i> .
asbestos	means the asbestiform variety of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals and includes actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite, and any mixture containing 2 or more of those.
BGL	below ground level
BTEX	benzene, toluene, ethylbenzene, xylene
books	has the same meaning given to that term under the EP Act.
Ca	calcium
CEO	means Chief Executive Officer of the Department. “submit to / notify the CEO” (or similar), means either: <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-left: 40px;"> <div style="text-align: center;"> <p>Director Department administering the Locked Joondalup DC WA 6919</p> </div> <div style="text-align: center;"> <p>General <i>Environmental Protection Act 1986</i> Bag 10</p> </div> </div> or: info@dwer.wa.gov.au
Cl	chloride
Clean fill	has the meaning defined in the Landfill Definitions.

Term	Definition
CO ₃	carbonate
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)
HCO ₃	bicarbonate
Inert Waste Type 1	has the meaning defined in the Landfill Definitions.
Inert Waste Type 2	has the meaning defined in the Landfill Definitions.
K	potassium
Landfill Definitions	<i>Landfill Waste Classification and Waste Definitions 1996</i> (as amended from time to time).
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
litter screen	means a chicken wire fence or similar, with a maximum hole aperture of 50 mm and at least 1.8 metres in height.
Mg	magnesium
Na	sodium
NATA	National Association of Testing Authorities
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this licence.
prescribed premises	has the same meaning given to that term under the EP Act.
Putrescible Waste	has the meaning defined in the Landfill Definitions.
SO ₄	sulphate
Special Waste Type 1	has the meaning defined in the Landfill Definitions.

Term	Definition
Tipping area	means the area of the premises where waste currently being brought to the premises is being deposited
Tyre Pile	means a group of four tyre stacks.
USEPA	United States (of America) Environmental Protection Agency
USEPA Method 2	means the USEPA Method 2 – Determination of stack gas velocity and volumetric flow rate
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is depicted by the pink line in the map below (Figure 1).

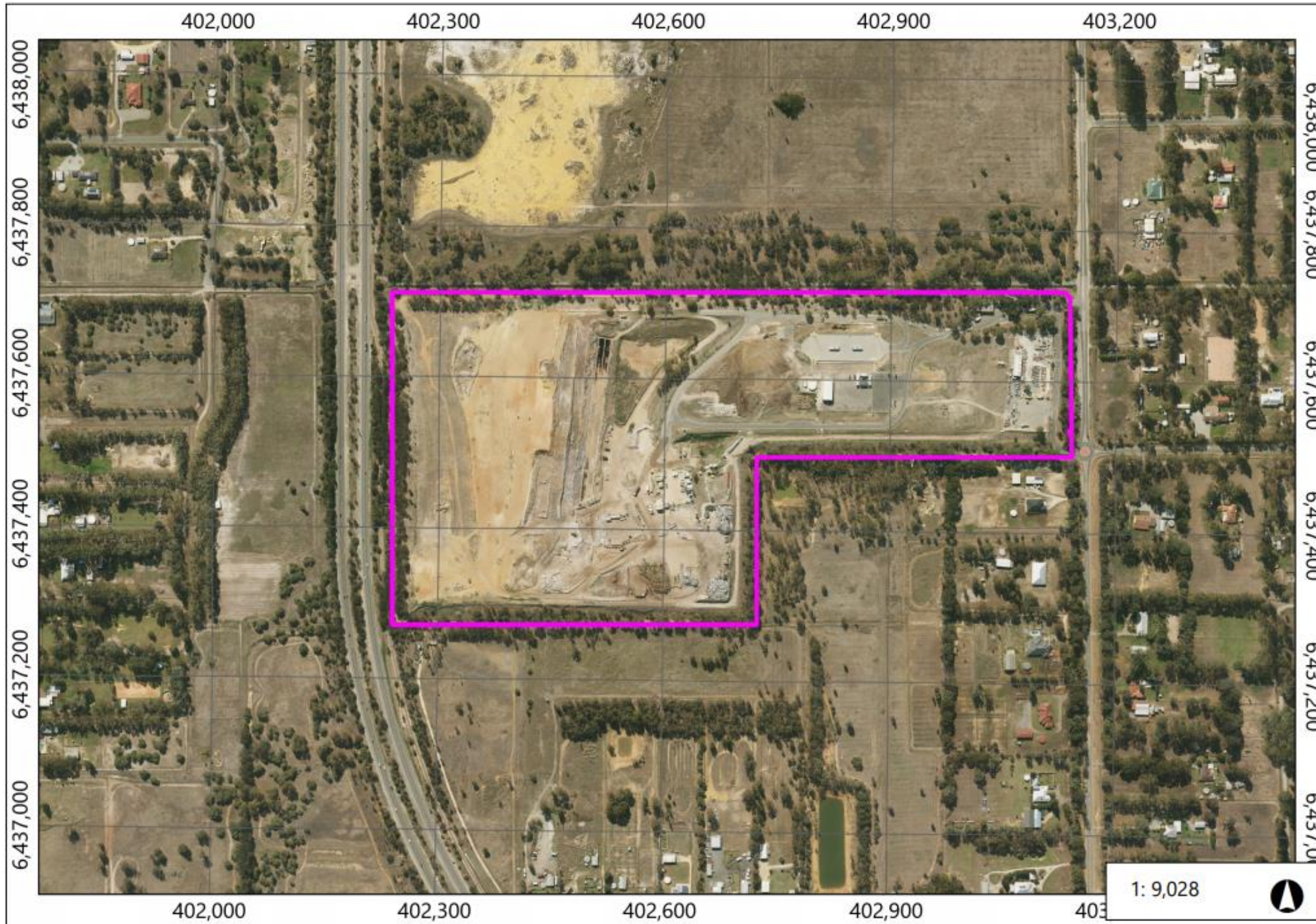


Figure 1: Map of the boundary of the prescribed premises

L6964/1997/11 – amended 18/08/2023



Diagram 2. Fire Hazard Assessment



Figure 2: Premises layout map

L6964/1997/11 – amended 18/08/2023



Figure 3: Emissions and monitoring points map

L6964/1997/11 – amended 18/08/2023

IR-T06 Licence template (v7.0) (February 2020)

Schedule 2: Tyre storage arrangement

Tyre stack arrangement

Tyres are stacked in an over-lapping manner to create a woven or laced arrangement. This configuration helps limit fire spread as it reduces ability of burning tyres to fall and roll into unignited stock

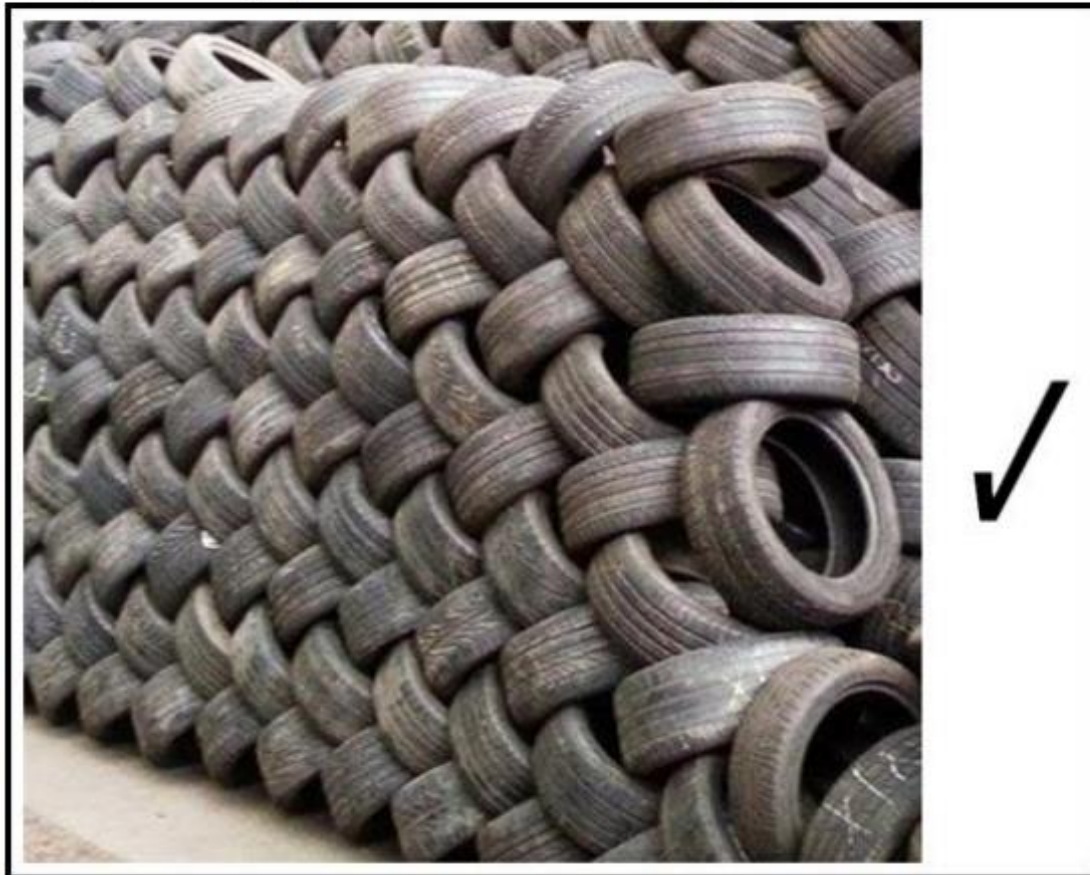


Figure 4: Tyres stacked in a laced arrangement

Tyre stack height

Individual stacks should not exceed 3.7m in height, 60m² in area and/or 12.5 tonnes in weight

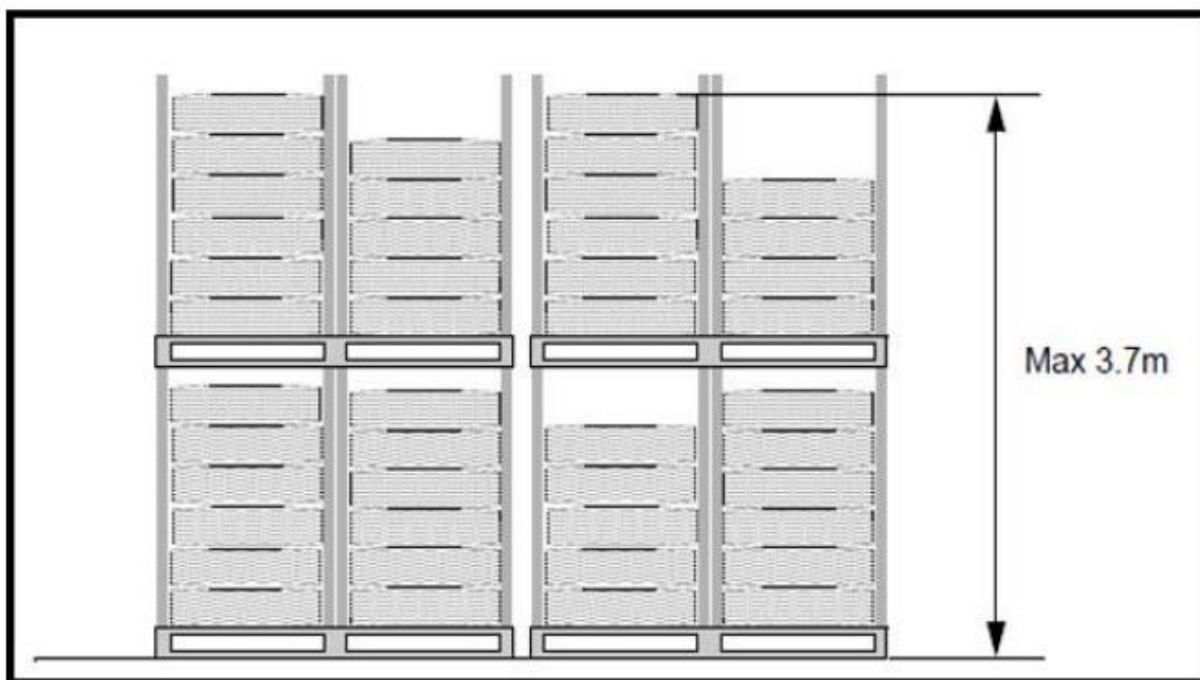


Figure 5: Maximum tyre stack height

Tyre stack separation

A maximum of four (4) individual **stacks** can be grouped. Each group of 4 stacks is referred to as a **pile**. A clear separation distance of not less than 2.5m at the base must be maintained between each stack

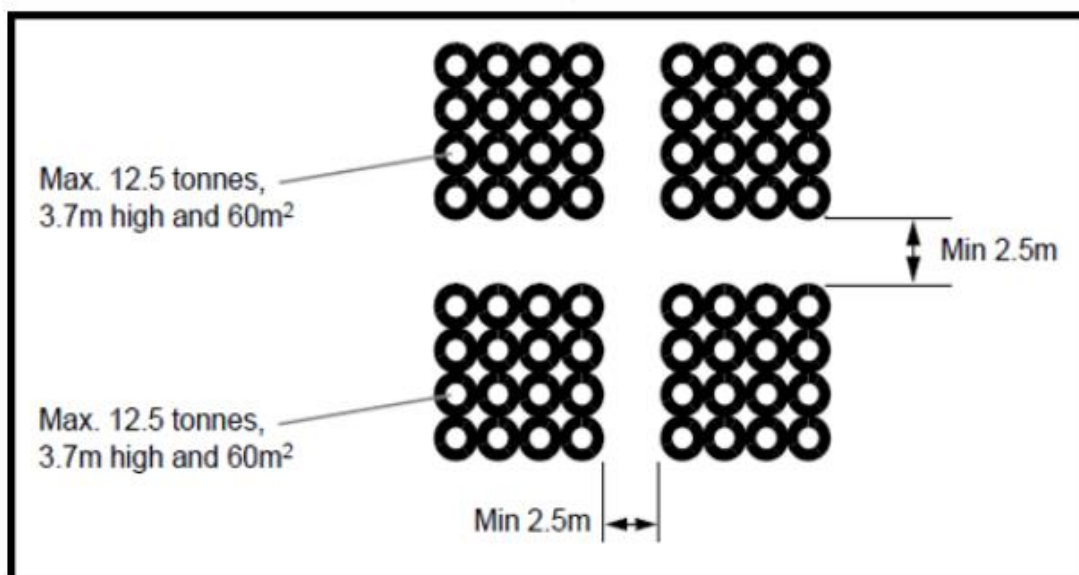


Figure 6: Minimum separation distance between four stacks in one tyre pile

Tyre pile separation

A clear separation distance of not less than 18 metres must be maintained between each pile (of 4 stacks)

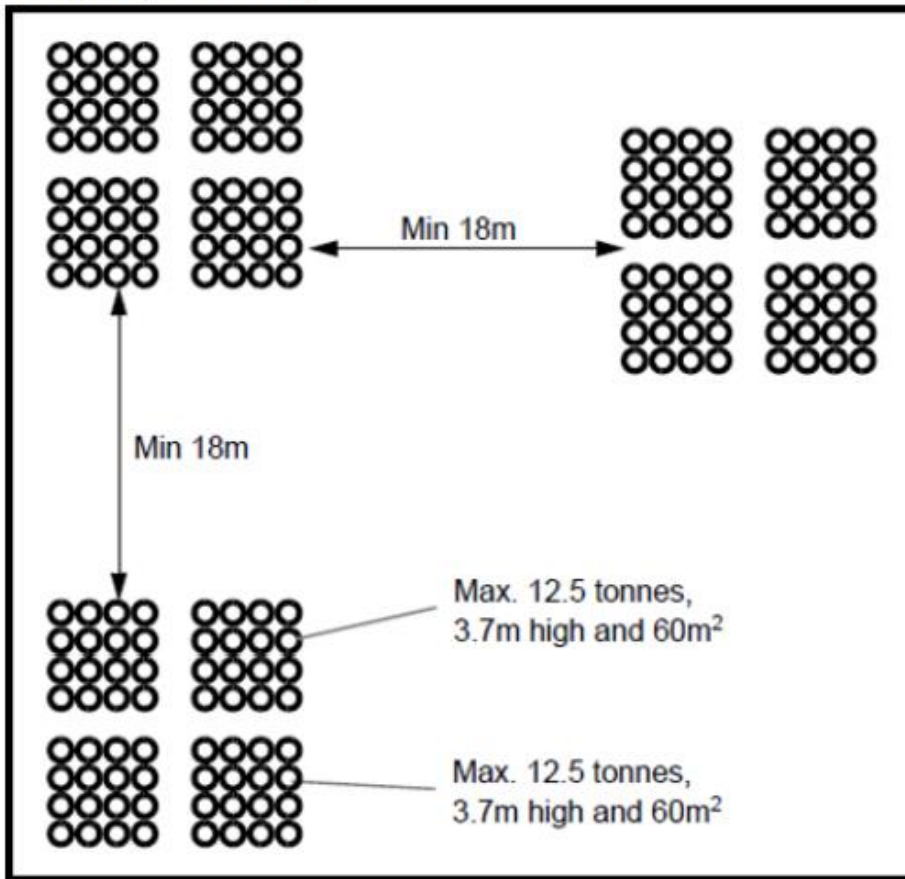


Figure 7: Minimum separation distances between Tyre Piles