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	L9227/2019/1
Licence Holder	Total Green Recycling Pty Ltd
ACN	131 084 805
Application Number	APP-0029067
Premises	Total Green Recycling 16-30 Sheffield Road WELSHPOOL WA 6106 Legal description - Part of Lot 6 on Deposited 91787 Certificate of Title Volume 2087 Folio 321
Date of Report	8 September 2025
Decision	Revised licence granted

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1. Decision summary

Licence L9227/2019/1 is held by Total Green Recycling Pty Ltd (licence holder) for Total Green Recycling (the premises), located at 16-30 Sheffield Road Welshpool.

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 L9227/2019/1 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. The revised licence has been granted in a new format with existing conditions being transferred, but not reassessed.

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

On 9 May 2025, the licence holder submitted an application to the department to amend Licence L9227/2019/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendment being sought is for the installation of upgraded equipment to facilitate an increase in the rate of acceptance of e-wastes from 4,000 tonnes per annum up to 8,000 tonnes per annum. There is no change to the types of e-waste being accepted.

This amendment is limited only to changes to Category 61A approved throughputs from the existing Licence. Table 1 below outlines the proposed changes to the existing licence.

Table 1: Proposed throughput capacity changes

Category	Current throughput capacity	Proposed throughput capacity
Category 61A: Solid waste facility: premises (other than premises within Category 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land.	4 000 tonnes per annum	8 000 tonnes per annum

2.3 Overview of premises

The licence holder operates a manual and mechanical e-waste processing facility, combining pre- and post-sorting by trained staff with separation, shredding, and optical sorting technologies. The system is designed to recover target commodities including ferrous and non-ferrous metals, printed circuit boards (PCBs), copper wire, and plastics. Hazardous components such as batteries and mercury lamps are removed in accordance with AS 5377:2022 - *Requirements for the treatment of end-of-life electrical and electronic equipment.*

E-waste is received primarily from local governments, commercial clients, and waste service providers. The premises has five sorting zones that operate independently:

- MRS sorting conveyor system;
- Manual pre-sorting stations;
- Flatscreen processing stations;
- CRT processing line; and
- Shredding and separation line.

MRS sorting conveyor system

The dual-conveyor setup with five manual sorting stations is used to manually classify and sort the items. The incoming loads of mixed e-waste are unloaded into bunkers where they undergo pre-sorting if necessary to remove oversized items such as photocopiers. Forklifts are then used to push the e-waste from the bunkers to the conveyor belt, transferring the e-waste to the five sorting stations. Cables are removed, then station one removes CRTs and flatscreens which are sent down a gravity roller and transferred to the Flatscreen Processing Station for further mechanical processing.

Station two removes printers that are sent to the manual pre-sorting station for removal of ink and toner, then are sent to the Shredding and separation line for further mechanical processing.

Station three removes PCs and laptops which are sent to the manual pre-sorting station for removal of HDD, RAM, CPU and batteries, with the shells being sent to the shredding and separation line for further mechanical processing.

Station four removes by-catch that is either sent to the manual pre-sorting station for manual processing or sent to the shredding and separation line for further mechanical processing.

Station five removes computer peripherals that are either sent to the manual pre-sorting station for manual processing or sent to the Shredding and separation line for further mechanical processing.

A portion of residual waste is removed from this process.

Manual pre-sorting stations

Items that have been identified as potentially containing hazardous components from the MRS sorting line are sent to the manual pre-sorting station. This includes photocopiers, any devices containing batteries, by-catch items that contain hazardous components and items containing heavy steel that may damage machinery.

Staff manually dismantle these items to remove and recover the batteries, ink and toner, lighting waste, miscellaneous oil and liquids, finished commodities and non-shreddable metal.

Flatscreen processing stations

Flatscreens are processed manually in accordance with AS 5377 where glass is removed and steel, plastic, PCB and copper derivatives are recovered.

Cold cathode fluorescent lamp (CCFL) backlights extracted from legacy flat-screen displays (note: modern flat-screens using LED technology do not contain CCFLs) are removed and disposed of into the Bulb Eater. This unit operates under negative pressure to capture mercury vapour, crushes the lamps and stores the fragments and mercury residue in a sealed 44-gallon drum. Once full, the drum is securely dispatched off site for compliant downstream processing.

The flatscreen processing benches are equipped with downdraft tables connected to a

specialised dust extraction system to capture fine particulates.

CRT processing line

Cathode ray tubes (CRT) are processed via a fully manual process. Yoke, degaussing wire, steel, plastic, copper cable, transformers and wood are recovered.

The CRT glass items are manually separated to recover the panels, steel, funnel and phosphor, a non-odorous, solid used to refract light within the tube to create the image seen on the TV screen.

Shredding and separation line

Prior to material entering the shredder, all items have been manually prepared to ensure hazardous components such as batteries, ink and toner and leaded glass have already been removed from the waste stream and are not shredded.

The primary shredder dismantles larger pieces, with the screen removing smaller pieces of finished product. The magbelt removes ferrous finished product items. The picking conveyor removes non-ferrous finished product items. The secondary shredder dismantles oversized pieces which then pass through the hammermill, Steinert Unisort, Eddy current and Steinert KSS separator

The dust extraction system operates above the shredders, hammermill and Steinert Unisort and KSS separators.

Batteries

The site receives various battery chemistries, both loose and embedded within e-waste devices. All batteries are identified and removed during the manual pre-sorting process. Once extracted, they are sorted by chemistry and packaged in accordance with the handling and transport specifications of our downstream processing partner, Eco Batt.

All batteries are stored in specialised, clearly labelled containers that are designed for safe containment and minimisation of risk. The site operates on a minimal inventory policy, ensuring batteries are regularly dispatched and do not accumulate to high volumes.

At any given time, the total volume of batteries stored on site does not exceed 7 tonnes, with a typical breakdown as follows:

- 2 tonnes – Lead Acid
- 2 tonnes – Lithium-ion
- 2 tonnes – Household Alkaline
- 1 tonne – Other chemistries (e.g., NiMH, NiCd)

All wet cell batteries are stored in containers that are bunded, should a leak of an individual cell occur it is contained by the storage container.

Ethylene Glycol Oil

The site receives ethylene glycol oil which is a coolant from waste rear projection TVs. Each TV contains approx. 100ml of oil which is decanted and stored in a 44 G drum on a bunded pallet. Once full the oil is sent to Wren oil or Cleanaway's liquids division for processing.

It is worth noting that this waste stream has largely stopped, meaning that the 44 G oil drum now fills very slowly over the course of years.

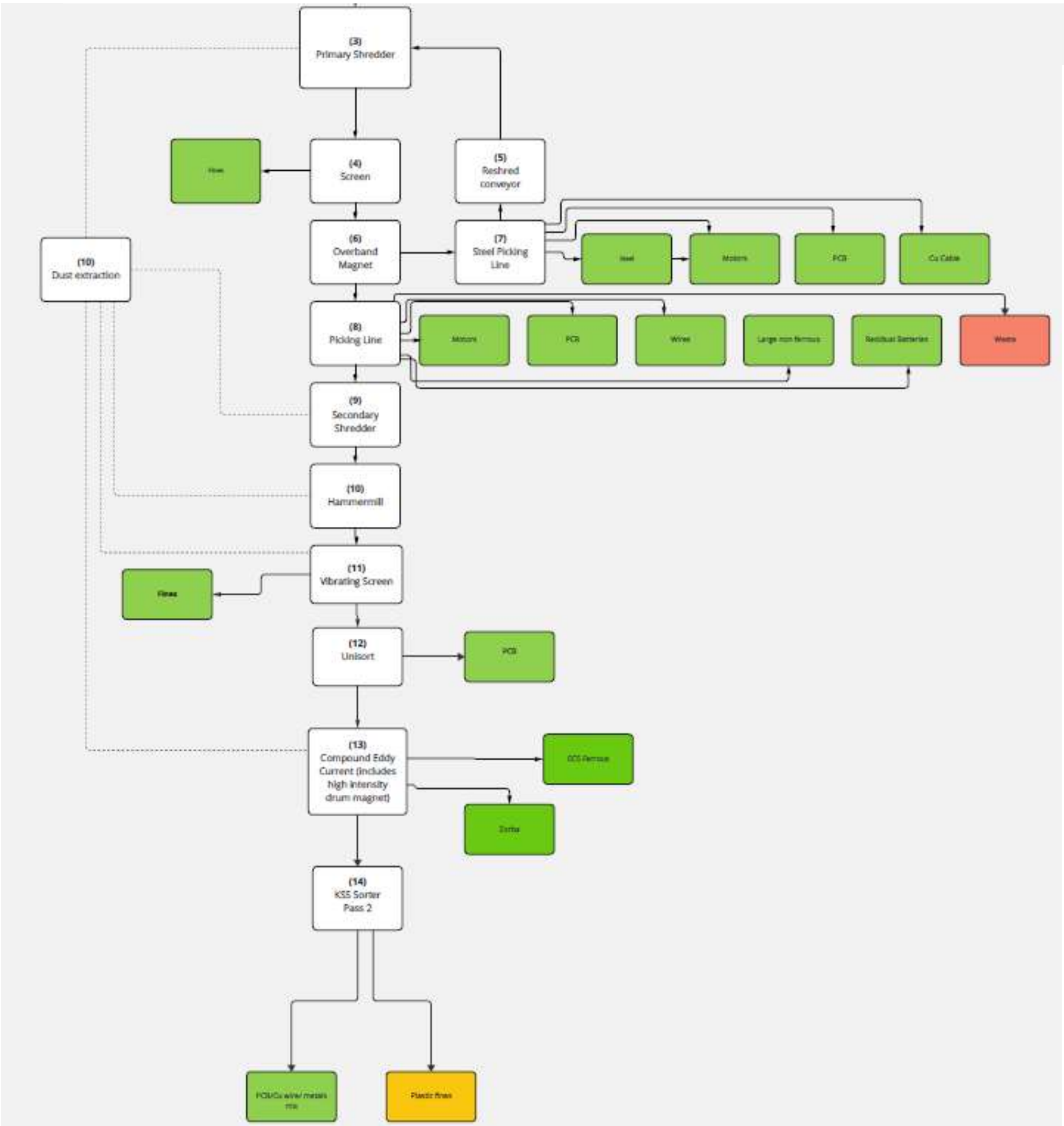

Figure 1: Mechanical shredding and separation line process flow diagram

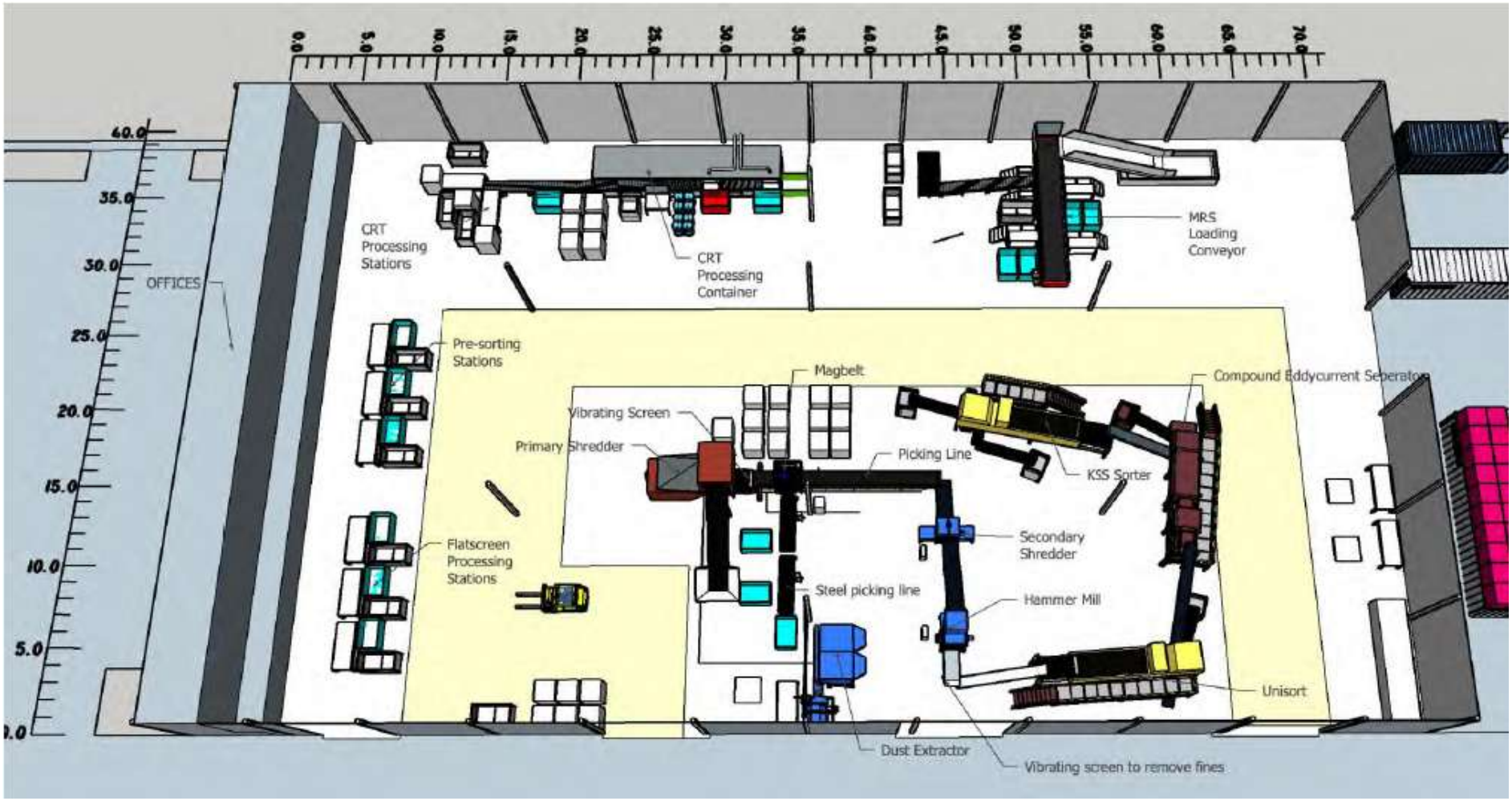

Figure 2: Proposed equipment layout

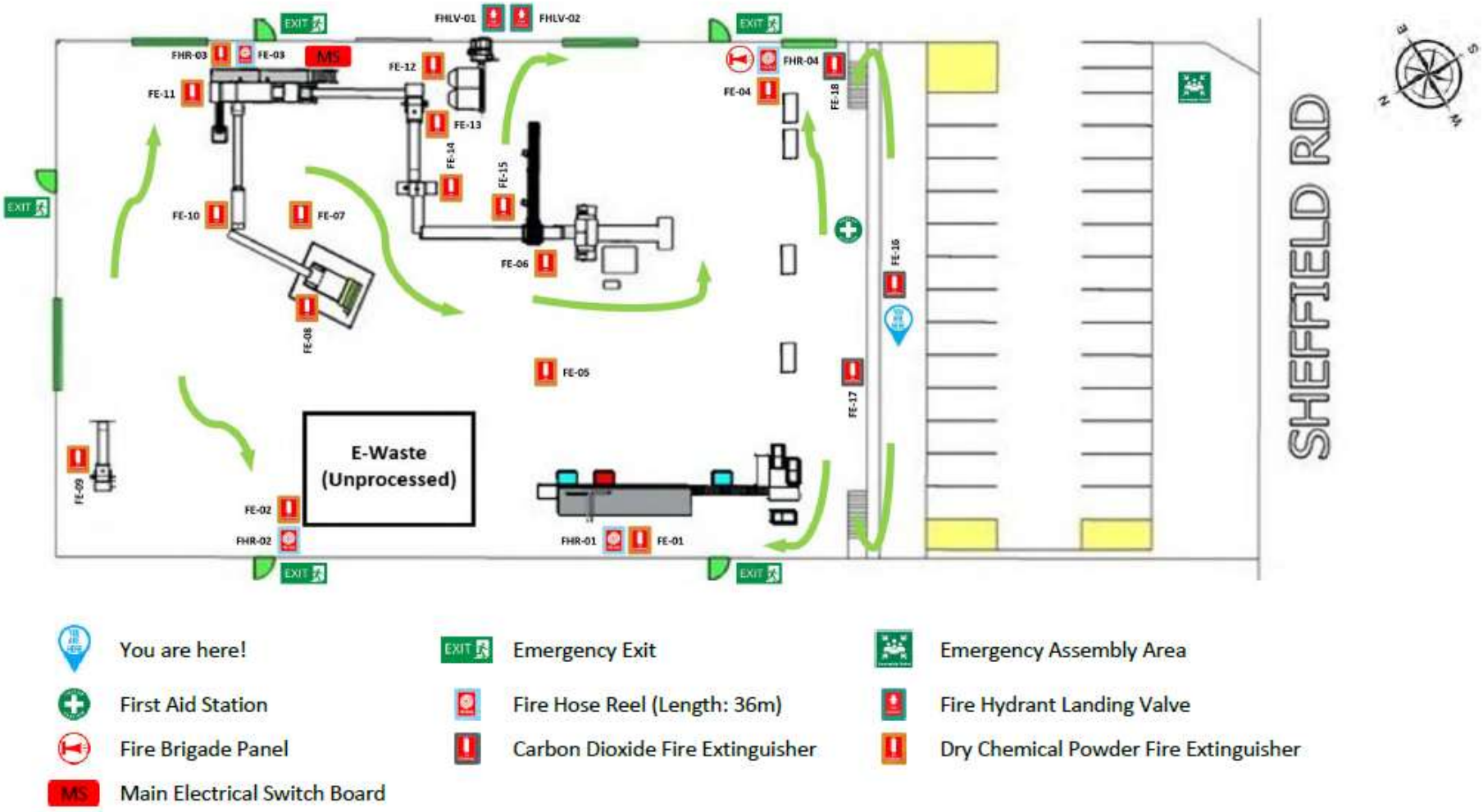

Figure 3: Fire suppression equipment at the premises

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

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 Table 2 below. Table 2 also details the 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
Operation of plant and shredding equipment	Dust and particulates	Air	All dismantling and shredding occurs within the warehouse. One 11 kW GFC 300 extractor will be installed with two downdraft tables at the flatscreen processing station to capture mercury vapour and fine particulate matter during manual dismantling of screens. Two 4 kW Forst cartridge filter dust extractors will be installed at the CRT line and the conveyor transfer point on the primary shredder One 37 kW Forst cartridge filter dust extractor will be installed above the primary shredder, hammer mill and secondary shredder.
	Noise and vibrations	Air and ground	All activities are confined within the warehouse in an area zoned industrial. Operating hours will be Monday to Friday 5:00 am to 6:00 pm and Saturday 6:00am to 12:30 pm. High risk plant (dust extraction unit) will be located on the eastern side of the premises, away from the western neighbour.
	Spills of mercury (vapour and powder)	Air Subsurface seepage	Cold cathode fluorescent lamps (CCFL) are manually removed from flat screens and inserted into a Bulb Eater 3L unit, which draws the bulbs inside via negative pressure, contains three HEPA filters and one carbon filter, crushes the lamps and stores the fragments and mercury residue in a sealed 44 gallon drum prior to removal off site for

Sources	Emission	Potential pathways	Proposed controls
			disposal or reprocessing.
	Spills of lead and sulphuric acid from ULABs	Subsurface seepage	Used lead acid batteries (ULABs) are accepted in minor quantities, are manually handled, are not dismantled nor reprocessed, and are stored within self bunded pallets prior to removal off site for disposal or reprocessing.
	Spills of ethylene glycol oil	Subsurface seepage	Ethylene glycol oil is manually recovered from rear projection TVs, the supply of which is diminishing, is stored in a 44 G drum upon a self bunded pallet prior to removal off site for disposal or reprocessing.
	Spills of ink or toner	Subsurface seepage	Ink and toner cartridges are manually removed from printers and photocopiers prior to removal off site for disposal or reprocessing.
	Spills – other including hydrocarbons from equipment	Subsurface seepage	The licence holder conducts routine spill response drills in accordance with AS 5377 and ISO 14001 certifications. Spill kits are located at the shredding plant and unloading area. Bunded pallets are available for the storage of mistakenly received bycatch liquids, prior to removal off site for disposal.
	Unauthorised fires – smoke and fire spread	Air/windborne	The Fire & Emergency Management Plan for the premises is prepared in accordance with AS 5377 and includes fire hazard analysis, staff training in fire extinguisher use and emergency response and evacuation, independent audible alarms, inspection and testing regime and replacement of fire equipment. The premises has two fire hydrant landing valves for firefighter connection to water, four fire hoses of 36 m each, three carbon dioxide fire extinguishers and 15 dry chemical powder fire extinguishers installed within the warehouse (Figure 3). Dangerous goods accepted at the premises includes lithium-ion batteries, lead acid batteries and general household batteries. The batteries are handled in accordance with relevant dangerous goods storage and safety requirements, including appropriate containment, fire protection measures, and separation from incompatible substances. Current volumes of batteries stored onsite are monitored to ensure they remain below the licensing thresholds for dangerous goods storage. If thresholds are exceeded, the site

Sources	Emission	Potential pathways	Proposed controls
			will obtain a dangerous good licence.
	Containment of contaminated firefighting water and/or stormwater	Overland flow and subsurface seepage	Equipment within the warehouse is situated upon a concrete floor. Premises stormwater system includes manual shut-off valves to contain contaminated firefighting water if necessary.

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
Residential areas	There are no residential areas within 1 km of the premises boundary.
Industrial premises	The premises is located within the Welshpool Industrial Area. The premises is surrounded by industrial properties in all directions.
Environmental receptors	**Distance from prescribed activity**
Perth Airport flight path	The premises is located approximately 3km south of the Perth Airport runways and is in close proximity to flight paths regularly used by arriving and departing flights. Based on the City of Canning Local Planning Scheme No. 40, the premises is located within the Perth Airport Special Control Area. One of the main planning objectives of this area is to prevent unreasonable encroachment of incompatible (noise sensitive) land uses and those activities affected or potentially impacted upon by aircraft noise.
Underlying groundwater (non-potable purposes)	Groundwater located approximately 4 metres below ground level.
Geomorphic Wetlands Swan Coastal Plain	• Kewdale Freight Terminal Site (Conservation and Multiple Use), approximately 520 m north-east of the premises. • South Kewdale Yard (Resource Enhancement) Approximately 550 m east of the premises. • Artificial lake (Resource Enhancement) approximately 700 m west of the premises. • Palusplain (Conservation and Multiple Use) approximately 760 m south-east of the premises.

Figure 4: 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 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 L9227/2019/1 that accompanies this amendment report authorises emissions associated with the operation of the premises.

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 of plant and shredding equipment	Dust and particulates	Air / windborne pathway causing impacts to health and amenity	Industrial users Wetland systems	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Yes	Conditions 1, 2, 3, 4, 5, 6, 7, 8, 13 and 14	The delegated officer considers the controls proposed by the applicant are sufficient to prevent dust and particulates emissions occurring under most circumstances. The proposed applicant controls will be included in the licence as regulatory controls.
	Noise and vibrations	Air / windborne pathway causing impacts to health and amenity	Industrial users	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Yes	N/A	Emissions to be regulated under the *Environmental Protection (Noise) Regulations 1997*
	Spills of chemicals including mercury, lead, sulphuric acid, ethylene glycol oil, ink, toner or hydrocarbons	Air / windborne pathway causing impacts to health and amenity Overland runoff / migration onto surrounding land causing ecosystem disturbance Seepage through soil to groundwater causing contamination and impacting groundwater quality	Industrial users Wetland systems	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Yes	Conditions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12 and 13	The delegated officer considers the controls proposed by the applicant are sufficient to prevent chemical spills occurring under most circumstances. As this risk is mitigated by adequate implementation of these applicant controls, the proposed applicant controls will be included in the licence as regulatory controls.
	Unauthorised fires – smoke and fire spread	Air / windborne pathway causing impacts to health, amenity and disruption to airport services	Industrial users Perth airport	Refer to Section 3.1	C = Severe L = Unlikely **High Risk**	Yes	Conditions 5, 6, 7, 8 and 13	The delegated officer considers the controls proposed by the applicant are sufficient to prevent unauthorised fires occurring under most circumstances. As this risk is mitigated by adequate implementation of these applicant controls, the proposed applicant controls will be included in the licence as regulatory controls.
	Containment of contaminated firefighting water and/or stormwater	Overland runoff / migration onto surrounding land causing ecosystem disturbance Seepage through soil to groundwater causing contamination and impacting groundwater quality	Wetland systems	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	Yes	Conditions 5, 7 and 11	The delegated officer considers the controls proposed by the applicant are sufficient to prevent emissions of contaminated firefighting water and/or stormwater occurring under most circumstances. As this risk is mitigated by adequate implementation of these applicant controls, the proposed applicant controls will be included in the licence as regulatory controls.

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
City of Canning advised of proposal (10/06/2025)	None	N/A
Licence holder provided with draft amendment (22/08/2025)	See Appendix 1	See 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 a 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

Revised licence condition	Previous licence condition	Proposed amendments
Front page	Front page	Updated registered business address. Addition of instrument number. Amended assessed production capacity from 4000 to 8000 tonnes per year.
Condition 1 Table 1	N/A	Addition of installation requirements for new equipment.
Condition 2	N/A	Addition of the provision of an Environmental Compliance Report.
Condition 3	N/A	Addition of Environmental Compliance Report requirements.
Condition 4	N/A	Addition of commencement of operations for equipment installed in accordance with condition 1.
Condition 5 Table 2	Condition 1 Table 2	Amended to include operational requirements for the upgraded equipment.

Revised licence condition	Previous licence condition	Proposed amendments
N/A	Condition 2 Table 3	Deletion of redundant condition. Revised to current licensing format.
Condition 6 Table 3	Condition 3 Appendix 1 Table A	Condition wording revised to current licensing format. Incorporation of the portion of Appendix 1 Table A relating to waste acceptance into Table 3. Rate at which rate is received amended as requested from 4,000 tonnes to 8,000 tonnes per annum. Acceptance specification column deleted, as redundant. Acronyms detailed to provide further clarity.
Condition 7	Condition 4	Amendment of wording referencing modified condition number.
Condition 8 Table 4	Condition 5 Appendix 1 Table A	Condition wording revised to current licensing format. Incorporation of the portion of Appendix 1 Table A relating to waste processing into Table 4.
Condition 9	N/A	Addition of the requirement for spills of environmentally hazardous materials to be recovered, removed and disposed of.
Condition 10	N/A	Addition of the requirement for all material used for the recovery, removal, and/or disposal of environmentally hazardous materials is adequately stored and disposed of.
Condition 11	N/A	Addition of the requirement for the prevention of stormwater run-off being contaminated.
Condition 12	Condition 6 Appendix 1 Table B	Revised to current licence format. Incorporation of the storage requirements table from Appendix 1 Table B into the condition text.
Condition 13 Table 5	Condition 7 Table 4	Revised to current licence format. Amendment of wording referencing modified table number. Amendment of monitoring requirements to clarify the monitoring of waste inputs and waste outputs. Addition of a monthly averaging period.

Revised licence condition	Previous licence condition	Proposed amendments
N/A	Condition 8	Deletion of redundant condition. Sufficiently regulated by condition 14 (previously condition 11).
Condition 14	Condition 11	No change.
Condition 15	Condition 12	Revised to current licence format.
Condition 16	Condition 9	Revised to current licence format. Amendment of wording referencing modified condition numbers. Addition of maintaining books regarding the works conducted under condition 1.
Condition 17	Condition 10	Amendment of wording referencing modified condition number.
Definitions Table 6	Definitions Table 5	Deletion of AACR. Addition of approved form, condition, DWER, Environmental Compliance Report, Landfill Definitions, monthly period, suitably qualified engineer.
Schedule 1: Maps	Schedule 1: Maps	No change.
Schedule 2: Premises boundary Table 7	Schedule 2: Premises boundary Table 6	Revised to current licence format. Zone added for clarity.
N/A	Appendix 1 Table A	Appendix 1 Table A deleted and incorporated into condition 6 and condition 8.
N/A	Appendix 1 Table B	Appendix 1 Table B deleted and incorporated into condition 12.

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.

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

Licence	Summary of Licence holder's comment	Department's response
Condition 1 Table 2	Clarifying information provided on the dust extraction systems to be installed and where they will be located. A third dust extractor was omitted, request to add.	Condition 1 Table 1 amended as requested for accuracy. Table 2 of the amendment report has also been modified for consistency.
Condition 2	The current requirement for submission of the Environmental Compliance Report is within 30 days. We request an extension to 45 days to allow sufficient time for commissioning and collation of manufacturer reports.	Condition 2 amended as requested.
Condition 3	The draft condition requires certification by a suitably qualified engineer. The equipment listed in condition 1 that is being installed is not structural in nature and is largely plug-and-play. Therefore we believe manufacturer sign-off is the most appropriate confirmation, as four separate manufacturers supply the listed equipment and each is the technical expert for their machinery.	The delegated officer considers a compliance report from the manufacturer of each item of infrastructure is sufficient to confirm the correct installation of the infrastructure. Condition 3 has been amended to require certification by the manufacturers.
Condition 5 Table 2	Clarifying information provided on the dust extraction systems and where they will be located. A forth dust extractor was omitted, request to add.	Condition 5 Table 2 amended as requested for accuracy. Information on the dust extractor system is moved to a stand-alone row for clarity.
	Clarifying that the dust extraction system discharges air via an outlet located out of the roof of the building, at least 2 metres above the roof.	The delegated officer considers the rooftop discharge of filtered air appropriate. Condition 5 Table 2 amended to reflect the correct discharge point.
	Request the addition of 'mechanical processing of residuals' to the listed processes for LCD and LED monitors and televisions. CCFL's contained within LCD and LED monitors and televisions are removed in the manual disassembly line prior to the item entering the mechanical processing operation. CCFL's are not shredded, in accordance with AS/NZ 5377	Condition 5 Table 2 amended as requested for accuracy.

Licence	Summary of Licence holder's comment	Department's response
	requirements.	